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LTE;
Mission Critical (MC) services over LTE;
Part 2: Mission Critical Push To Talk (MCPTT)
User Equipment (UE)
Protocol conformance specification
(3GPP TS 36.579-2 version 14.11.0 Release 14)

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Contents

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

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The present document is part 2 of a multi-part deliverable covering conformance test specification for Mission Critical Services over LTE consisting of:

3GPP TS 36.579-1 [2]: "Mission Critical (MC) services over LTE; Part 1: Common test environment"

3GPP TS 36.579-2: "Mission Critical (MC) services **over LTE; Part 2: Mission Critical Push To Talk (MCPTT) User Equipment (UE) Protocol conformance specification" (the present document);**

3GPP TS 36.579-3 [3]: " Mission Critical (MC) services over LTE; Part 3: Mission Critical Push To Talk (MCPTT) Server Application conformance specification";

3GPP TS 36.579-4 [4]: "Mission Critical (MC) services over LTE; Part 4: Test Applicability and Implementation Conformance Statement (ICS) proforma specification";

3GPP TS 36.579-5 [5]: "Mission Critical (MC) services over LTE; Part 5: Abstract test suite (ATS)".

1 Scope

The present document specifies the protocol conformance testing for testing a MCPTT Client for compliance to the Mission Critical Push To Talk (MCPTT) over LTE protocol requirements defined by 3GPP.

In particular the present document contains:

- the overall test structure;
- the test configurations;
- the conformance requirement and reference to the core specifications;
- the test purposes; and
- a brief description of the test procedure, the specific test requirements and short message exchange table.

The present document is valid for MCPTT Clients implemented according to 3GPP releases starting from Release 13 up to the Release indicated on the cover page of the present document.

The following information relevant to testing specified in the present document could be found in accompanying specifications:

- default setting of the test parameters TS 36.579-1 [2];
- Implementation Conformance Statement (ICS) TS 36.579-4 [4] and Implementation eXtra Information for Testing (IXIT) TS 36.579-5 [5];
- the applicability of each test case TS 36.579-4 [4].

The test cases are expected to be executed through the 3GPP radio interface. The present document does not specify the protocol conformance testing for the EPS (LTE) bearers which carry the MCPTT data sent or received by the MCPTT Client and which are required to be supported by the UE in which the MCPTT Client is installed. This is defined in TS 36.523-1 [6].

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 36.579-1: "Mission Critical (MC) services over LTE; Part 1: Common test environment".

[3] 3GPP TS 36.579-3: " Mission Critical (MC) services over LTE; Part 3: Mission Critical Push To Talk (MCPTT) Server Application test specification".

[4] 3GPP TS 36.579-4: " Mission Critical (MC) services over LTE; Part 4: Test Applicability and Implementation Conformance Statement (ICS).

[5] 3GPP TS 36.579-5: "Mission Critical (MC) services over LTE; Part 5: Abstract test suite (ATS)".

[6] 3GPP TS 36.523-1: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification".

[7] 3GPP TS 22.179: "Mission Critical Push To Talk (MCPTT) over LTE; Stage 1".

[8] 3GPP TS 23.179: "Functional architecture and information flows to support mission critical communication services; Stage 2".

[9] 3GPP TS 24.379: "Mission Critical Push To Talk (MCPTT) call control; Protocol specification".

[10] 3GPP TS 24.380: "Mission Critical Push To Talk (MCPTT) media plane control; Protocol specification ".

[11] 3GPP TS 24.481: "Mission Critical Services (MCS) group management; Protocol specification".

[12] 3GPP TS 24.482: "Mission Critical Services (MCS) identity management; Protocol specification".

[13] 3GPP TS 24.483: "Mission Critical Services (MCS) Management Object (MO)".

[14] 3GPP TS 24.484: "Mission Critical Services (MCS) configuration management; Protocol specification".

[15] 3GPP TS 33.179: " Security of Mission Critical Push To Talk (MCPTT) over LTE ".

[16] 3GPP TS 24.229: "IP multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3".

[17] Void.

[18] Void.

[19] 3GPP TS 24.301: "Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3".

[20] 3GPP TS 24.008: "Mobile Radio Interface Layer 3 specification; Core Network Protocols; Stage 3".

[21] Void.

[22] Void.

[23] 3GPP TS 36.509: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access Network (E-UTRAN); Special conformance testing functions for User Equipment (UE)".

[24] 3GPP TS 36.508: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access (E-UTRAN); Common Test Environments for User Equipment (UE) Conformance Testing".

[25] OpenID Connect 1.0: "OpenID Connect Core 1.0 incorporating errata set 1", http://openid.net/specs/openid-connect-core-1_0.html.

[26] Void.

[27] Void

[28] Void.

[29] Void.

[30] 3GPP TS 33.310: "Network Domain Security (NDS); Authentication Framework (AF)".

[31] Void.

[32] 3GPP TS 23.003: "Numbering, addressing and identification".

[33] 3GPP TS 33.180: "Security of the mission critical service".

[34] IETF RFC 4354 "A Session Initiation Protocol (SIP) Event Package and Data Format for Various Settings in Support for the Push-to-Talk over Cellular (PoC) Service"

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

For the purpose of the present document, the following terms and definitions given in 3GPP TS 24.379 [9] apply:

An MCPTT user is affiliated to an MCPTT group
An MCPTT user is affiliated to an MCPTT group at an MCPTT client
Affiliation status
Group identity
In-progress emergency private call state
In-progress imminent peril group state
MCPTT client ID
MCPTT emergency alert state
MCPTT emergency group state
MCPTT emergency group call state
MCPTT emergency private call state
MCPTT emergency private priority state
MCPTT imminent peril group call state
MCPTT imminent peril group state
MCPTT private emergency alert state
MCPTT speech
Media-floor control entity
Temporary MCPTT group identity
Trusted mutual aid
Untrusted mutual aid

For the purposes of the present document, the following terms and definitions given in 3GPP TS 22.179 [7] apply:

In-progress emergency
MCPTT emergency alert
MCPTT emergency group call
MCPTT emergency state
Partner MCPTT system
Primary MCPTT system

For the purpose of the present document, the following terms and definitions given in 3GPP TS 24.380 [10] apply:

MBMS subchannel

For the purpose of the present document, the following terms and definitions given in 3GPP TS 23.179 [8] apply:

Pre-selected MCPTT user profile

3.2 Symbols

For the purposes of the present document, the following symbols apply:

None.

3.3 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

ECGI	E-UTRAN Cell Global Identification
FFS	For Further Study
ICS	Implementation Conformance Statement
IPEG	In-Progress Emergency Group
IPEPC	In-Progress Emergency Private Call
IPIG	In-Progress Imminent peril Group
IUT	Implementation Under Test
IXIT	Implementation eXtra Information for Testing
MBMS	Multimedia Broadcast and Multicast Service
MBSFN	Multimedia Broadcast multicast service Single Frequency Network
MCPTT	Mission Critical Push To Talk
MCPTT group ID	MCPTT group IDentity
MEA	MCPTT Emergency Alert
MEG	MCPTT Emergency Group
MEGC	MCPTT Emergency Group Call
MEPC	MCPTT Emergency Private Call
MEPP	MCPTT Emergency Private Priority
MES	MCPTT Emergency State
MIME	Multipurpose Internet Mail Extensions
MIG	MCPTT Imminent peril Group
MIGC	MCPTT Imminent peril Group Call
MONP	MCPTT Off-Network Protocol
MPEA	MCPTT Private Emergency Alert
NAT	Network Address Translation
PLMN	Public Land Mobile Network
QCI	QoS Class Identifier
RTP	Real-time Transport Protocol
SAI	Service Area Identifier
SDP	Session Description Protocol
SIP	Session Initiation Protocol
SS	System Simulator
SSRC	Synchronization SouRCe
TGI	Temporary MCPTT Group Identity
TMGI	Temporary Mobile Group Identity
TP	Transmission Point
TP	Test Purpose
UE	User Equipment
URI	Uniform Resource Identifier

4 General

4.1 Test methodology

4.1.1 Testing of optional functions and procedures

Any function or procedure which is optional, may be subject to a conformance test if it is implemented in the MCPTT Client.

A declaration by the MCPTT Client supplier (to use the Implementation Conformance Statement (ICS) proforma specified in TS 36.579-4 [4]) is used to determine whether an optional function/procedure has been implemented.

4.1.2 Test interfaces and facilities

Detailed descriptions of the MCPTT Client test interfaces and special facilities for testing are provided in 3GPP TS 36.509 [23].

4.2 Implicit testing

For some 3GPP MCPTT protocol features conformance is not verified explicitly in the present document. This does not imply that correct functioning of these features is not essential, but that these are implicitly tested to a sufficient degree in tests which are not explicitly dedicated to test the feature.

4.3 Repetition of tests

As a general rule, the test cases specified in the present document are highly reproducible and do not need to be repeated unless otherwise stated.

4.4 Handling of differences between conformance requirements in different releases of cores specifications

The conformance requirements which determine the scope of each test case are explicitly copy-pasted from relevant core specifications in the especially dedicated for this clause of each test with the title 'Conformance requirements'.

NOTE: When in the copy/pasted text there are references to other specifications the reference numbers will not match the reference numbers used in the present document. This approach has been taken in order to allow easy copy and then search for conformance requirements in those specifications.

When differences between conformance requirements in different releases of the cores specifications have impact on the Pre-test conditions, Test procedure sequence or/and the Specific message contents, the Conformance requirements related to different releases are specified separately with clear indication of the Release of the spec from which they were copied.

When there is no Release indicated for a conformance requirement text, this should be understood either as the Conformance requirements in the latest version of the spec with release = the TC Applicability release (which can be found in TS 36.579-4 [4], Table 4-1: Applicability of tests and additional information for testing, column 'Release'), or, as the Conformance requirements in the latest version of the spec of the release when the feature was introduced to the core specs.

4.5 Reference conditions

The reference environments used by all signalling and protocol tests is specified in TS 36.579-1 [2]. Where a test requires an environment that is different, this will be specified in the test itself.

4.6 Generic setup procedures

A set of basic generic procedures for MCPTT Client-Server communication are described in TS 36.579-1 [2]. These procedures will be used in numerous test cases throughout the present document.

5 MCPTT Client Configuration

5.1 Configuration / Authentication / User Authorisation / UE Configuration / User Profile / Key Generation

5.1.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) attached to EPS services }
ensure that {
  when { the MCPTT User activates an MCPTT application and requests MCPTT initialisation }
    then { UE (MCPTT Client) performs MCPTT User Authentication }
            }
```

(2)

```
with { UE (MCPTT Client) user authenticated }
ensure that {
  when { the UE (MCPTT Client) has established a secure HTTP tunnel  }
    then { UE (MCPTT Client) performs key management authorization and obtains identity management
key material }
            }
```

(3)

```
with { UE (MCPTT Client) has obtained identity management key material }
ensure that {
  when { the UE (MCPTT Client) requests user service authorization }
    then { UE (MCPTT Client) sends a user authorization request to the MCPTT Server }
            }
```

(4)

```
with { UE (MCPTT Client) authorized for user services }
ensure that {
  when { the UE (MCPTT Client) requests configuration management authorization}
    then { UE (MCPTT Client) requests subscription to multiple documents simultaneously and request
the retrieval of the MCPTT UE Configuration document, the MCPTT User Profile Configuration Document
and the MCPTT Service Configuration Document }
            }
```

(5)

```
with { UE (MCPTT Client) having obtained user configuration data }
ensure that {
  when { the UE (MCPTT Client) requests group management authorization }
    then { UE (MCPTT Client) receives the group profile including group traffic keys }
            }
```

(6)

```
with { UE (MCPTT Client) having obtained all required configuration data }
ensure that {
  when { the UE (MCPTT Client) requires to refresh its service settings }
    then { UE (MCPTT Client) sends a SIP PUBLISH request }
            }
```

5.1.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: TR 24.980 clauses 4.2.1 and 4.3.1, TS 24.482 clause 6.2.1 and Annex A.2.1.2, TS 24.484 clauses 4.2.1, 4.2.2, 6.2.2, 6.3.1.1, 6.3.2.1, 6.3.2.2, 6.3.13.2.1 and 6.3.13.2.2, TS 24.481 clauses 6.2.2.2, 6.2.3, 6.3.3.2.1, 6.3.3.2.2 and 6.3.13.2.1, TS 24.379 clauses 7.2.1, 7.2.1A, 7.2.2 and 7.2.3, TS 33.179 clauses 5.6.1, 6.2, 7.2.3 and Annex D. Unless otherwise stated these are Rel-13 requirements.

[TR 24.980, clause 4.2.1]

The MCPTT UE follows the SIP registration procedures defined in 3GPP TS 24.229 [4]. In addition, when the conditions for performing IMS registration in bullets 2, 3, 4, 5 and 6 in subclause L.3.1.2 of 3GPP TS 24.229 [4] evaluate to true, the MCPTT UE registers with the IMS.

[TR 24.980, clause 4.3.1]

The MCPTT UE follows the procedures defined in 3GPP TS 24.229 [4] and 3GPP TS 33.203 [7] for authentication with IMS Authentication and Key Agreement (IMS-AKA), Sec-Agree and IPSec. The MCPTT UE supports integrity protection.

[TS 24.482, clause 6.2.1]

Upon an indication from the MCPTT client to initiate MCPTT user authentication, the IdM client shall perform the user authentication procedure according to 3GPP TS 33.179 [2] with the following clarifications:

1) shall establish a TLS tunnel to the authorisation endpoint of the IdM server as specified in 3GPP TS 33.179 [2] using the configured URL of the authorisation endpoint of the IdM server as specified in the "/<x>/OnNetwork/AppServerInfo/IDMSAuthEndpoint" leaf node defined in 3GPP TS 24.383 [11] and the clarifications in annex A;

2) shall generate an OIDC Authentication Request message as specified in the OpenID Connect 1.0 [6] and IETF RFC 6749 [5] with the following clarifications:

   a) shall generate an HTTP GET request method according to IETF RFC 2616 [4];

   b) shall include the configured parameter IdM client id as the client_id parameter specified in 3GPP TS 33.179 [2] in the query component of the authorization endpoint's URI using the "application/x-www-form-urlencoded" format as specified in W3C.REC-html401-19991224 [7]; and

   NOTE 1: The configuration of client_id is specified in 3GPP TS 24.383 [11].

   c) shall include the remaining required parameters as specified in 3GPP TS 33.179 [2] in the query component of the authorization endpoint's URI using the "application/x-www-form-urlencoded" format as specified in W3C.REC-html401-19991224 [7]; and

3) shall send the HTTP GET request method towards the IdM server.

NOTE 2: The OpenID Connect 1.0 [6] specification allows for an alternative mechanism for sending the OIDC Authentication request message using an HTTP POST request method which can be used in place of steps 1, 2, and 3 above.

Upon receipt of an HTTP 200 (OK) response from the IdM server, the IdM client:

1) shall prompt the MCPTT user for their username and password;

NOTE 3: Other types of authentication are supported and are not defined by the OIDC specifications. 3GPP TS 33.179 [2] has defined username and password as a mandatory authentication method to be supported; hence a procedure to realize that method is included here.

2) shall generate an HTTP POST request method containing the MCPTT user's username and password; and

3) shall send the HTTP POST request method towards the IdM server.

Upon receipt of an OIDC Authentication Response message, the IdM client:

1) shall establish a TLS tunnel to the token endpoint of the IdM server as specified in 3GPP TS 33.179 [2] using the configured URL of the token endpoint of the IdM server as specified in the "/<x>/OnNetwork/AppServerInfo/IDMSTokenEndpoint" leaf node defined in 3GPP TS 24.383 [11] and the clarifications in annex A;

2) shall generate an OIDC Token Request message as specified in OpenID Connect 1.0 [6] and IETF RFC 6749 [5] with the following clarifications:

   a) shall generate an HTTP POST request method according to IETF RFC 2616 [4]; and

   b) shall include the grant_type parameter set to a value of "authorization_code" and the other required parameters in the entity body of the HTTP POST request method using the using the "application/x-www-form-urlencoded" format as specified in 3GPP TS 33.179 [2]; and

3) shall send the HTTP POST request method towards the IdM server.

Upon receipt of an OIDC Token Response message, the IdM client:

1) shall validate the id_token, access_token and refresh token in the received OIDC Token Response message as specified in the OpenID Connect 1.0 [6] specification; and

2) shall provide the id_token and access_token in the received OIDC Token Response message to the MCPTT client.

NOTE 4: The method in which the IdM client provides the id_token and access_token to the MCPTT client is implementation specific.

[TS 24.482, Annex A.2.1.2]

The HTTP client in the UE shall establish a TCP connection towards the home HTTP proxy FQDN and the home HTTP proxy port, unless the specific TCP connection is to be used for the IdM client to IdM server procedures described in subclause 6.2 and subclause 6.3 in the present document, in which case the HTTP client shall establish a TCP connection towards the IdM server.

The HTTP client in the UE shall establish a TLS tunnel via the TCP connection as specified in 3GPP TS 33.179 [2]. When establishing the TLS tunnel, the HTTP client in the UE shall act as a TLS client and the UE shall perform the TLS tunnel authentication using the TLS authentication method indicated by the TLS tunnel authentication method parameter according to 3GPP TS 33.179 [2]. The UE shall use the configured TLS tunnel authentication X.509 certificate and the configured TLS tunnel authentication pre-shared key when applicable for the used TLS authentication method. In order to prevent man-in-the-middle attacks, the HTTP client in the UE shall check the home HTTP proxy FQDN against the server's identity as presented in the received server's certificate message if the TCP connection terminates on the HTTP proxy. The HTTP client in the UE shall not check the portion of dereferenced HTTP URL against the server's identity as presented in the received server's certificate message if the TCP connection terminates on the HTTP proxy, but shall do so if the TCP connection terminates on the IdM server.

NOTE: The TLS tunnel can be terminated in the HTTP proxy (rather than in the HTTP server providing the dereferenced HTTP URL).

The HTTP client in the UE shall send and receive all HTTP messages via the TLS tunnel.

If the HTTP client in the UE has an access token of the "bearer" token type as specified in IETF RFC 6750 [14], the HTTP client in the UE shall include an Authorization header field with the "Bearer" authentication scheme as specified in IETF RFC 6750 [14] in HTTP requests.

[TS 33.179 Annex D]

All KMS communications are made via HTTPS. The MCPTT key management client is provisioned via XML content in the KMS's response. The XML content is designed to be extendable to allow KMS/client providers to add further information in the XML. Where the interface is extended, a different XML namespace should be used (so that may be ignored by non-compatible clients).

It is assumed that transmissions between the KMS and the key management client are secure and that the KMS has authenticated the identity of the key management client.

Additionally, to allow the transmission of key material securely between a secure element within the KMS and a secure element within the key management client, a security extension is defined which allows messages to be signed and key material to be encrypted using a shared Transport Key (TrK).

[TS 33.179 clause 5.6.1]

For key management authorization, the KM client in the UE presents an access token to the KMS over HTTP. The KMS validates the access token and if successful, provides user specific key material back to the UE KM client based on the MCPTT ID of the user. This includes identity based key information used for media and signalling protection.

For user service authorization, the MCPTT client in the UE presents an access token to the MCPTT server over SIP. The MCPTT server validates the access token and if successful, authorizes the user for full MCPTT services and sends an acknowledgement back to the MCPTT client. The MCPTT server then maps and maintains the IMPU to MCPTT ID association. The MCPTT ID to IMPU association shall only be known to the application layer. The SIP message used to convey the access token from the MCPTT client to the MCPTT server may be either a SIP REGISTER or SIP PUBLISH message.

The UE can now perform configuration management authorization and download the user profile. Following the flow described in subclause 10.1.4.2 of 3GPP TS 23.179 [2] "MCPTT user obtains the user profile (UE initiated)", the Configuration Management (CM) client in the UE sends an access token in the user profile query to the Configuration Management server over HTTP. The CM server receives the request and validates the access token, and if valid, the CM server uses the MCPTT ID to obtain the user profile from the MCPTT user database. The CM server then sends the user profile back to the CM client over HTTP.

Upon receiving the user's profile, the Group Management (GM) client in the UE can now perform group management authorization. The GM client obtains the user's group membership information from the user's profile, and following the flow shown in clause 10.1.5.2 of 3GPP TS 23.179 [2] "Retrieve group configurations at the group management client", the Group Management (GM) client in the UE sends an access token in the Get group configuration request to the host GM server of the group membership over HTTP. The GM server validates the access token, and if valid, completes the flow. As part of group management authorization, group key information is provided as per subclause 7.3.2 of the present document.

[TS 33.179 clause 7.2.3]

Case that HTTP proxy is used between the KMC and KMS

0) The key management client establishes a connection to the MCPTT KMS. As with other elements in the Common Services Core, the connection routed via, and secured by, the HTTP Proxy. The message flow below is within this secure connection.

NOTE: Additionally, the connection between the MCPTT KMS and the HTTP Proxy is secured according to clause 8.

1) The key management client makes a request for user key material from the MCPTT KMS. The request contains details of the identity (e.g. the MCPTT ID) requested for key management, and the time for which the key material is required.

2) The KMS provides a response containing key material. The response includes the type of key material, the period of use for the material and any domain-specific parameters required for its use. For public safety use, the key material itself shall be wrapped using a 256-bit transport key (TrK). The TrK is distributed via an out-of-band mechanism along with a 32-bit identifier, TrK-ID.

Case that HTTP proxy is not used between the KMC and KMS

0) The key management client establishes a direct HTTPS connection to the MCPTT KMS. The following message flow is within this secure connection.

1) The key management client makes a request for user key material from the MCPTT KMS. The request contains details of the identity requested for key management, and the time at which the key material is required.

2) The KMS provides a response containing key material. The response includes the type of key material, the period of use for the material and any domain-specific parameters required for its use. Optionally, the key material itself may also be wrapped using a 256-bit transport key (TrK), distributed via an out-of-band mechanism along with a 32-bit identifier (TrK-ID).

[TS 24.484, clause 4.2.1]

Upon start up the MCPTT UE bootstraps the required information (e.g. FQDN or IP address) to locate the configuration management server for configuration of the MCPTT UE initial configuration management object (MO) and the default MCPTT user profile configuration management object (MO).

In order to obtain access to the MCPTT service the MCPTT UE needs to obtain configuration data either online via the network or offline using some external device (e.g. a laptop). As part of the bootstrap process the MCPTT UE needs to discover either:

1. the online configuration management server in the network that configures the MPCTT UE initial configuration MO and the default MCPTT user profile configuration MO, then the MCPTT UE:

   a) using the URI of the configuration management server obtained from the MPCTT UE initial configuration MO, obtains:

      - the MCPTT UE configuration document;

      - the MCPTT user profile configuration document; and

      - the MCPTT service configuration document; and

   b) using the URI of the group management server obtained from the MPCTT UE initial configuration MO obtain the MCPTT group document; or

[TS 24.484, clause 4.2.2]

The MCPTT UE contacts the identity management server using the HTTPS URI stored in the MCPTT UE initial configuration MO and performs MCPTT User authentication as specified in 3GPP TS 24.382 [6].

The MCPTT UE, using the MCPTT ID obtained during MCPTT user authentication, subscribes to the MCPTT UE configuration document, the MCPTT user profile configuration document and the MCPTT service configuration document using the procedure for subscribing to multiple documents simultaneously using the subscription proxy function specified in subclause 6.3.13.2.2 (i.e., the CMS acts as a Subscription Proxy) and subscribes to the MCPTT group document using the procedure specified in 3GPP TS 24.381 [5]. If these documents have been updated since the current version stored in the MCPTT UE, then the MCPTT UE will receive a SIP NOTIFY request with an XCAP Diff document (see IETF RFC 5875 [11]), in which case the CMC updates its local document copies. Retrieval by the MCPTT UE using the notified HTTPS URI of the MCPTT group document is performed as specified in 3GPP TS 24.381 [5].

[TS 24.484, clause 6.2.2]

The CMC shall send the HTTP request over TLS connection as specified for the HTTP client in the UE in annex A of 3GPP TS 24.382 [6].

[TS 24.484, clause 6.3.1.1]

A CMC shall support subclause 6.1.1 "*Document Management*" of OMA OMA-TS-XDM_Core-V2_1 [2] and subclause 6.3.13.2.2 for subscribing to configuration management documents.

[TS 24.484, clause 6.3.3.2.1]

In order to retrieve a configuration management document, a GC shall send an HTTP GET request with the Request URI that references the document to be updated to the network according to procedures specified in IETF RFC 4825 [14] "*Retrieve a Document*".

[TS 24.484, clause 6.3.3.2.2]

In order to retrieve a configuration management document, a CMC shall perform the procedures in subclause 6.3.3.2.1 specified for GC. The CMC shall set the Request-URI of the HTTP GET request to the "CMSXCAPRootURI" configured as per 3GPP TS 24.383 [4] and include the "auid" as per the appropriate application usage in clause 7.

Subclause 7.5 specifies which configuration management documents can be retrieved from the CMS over the CSC-4 reference point.

[TS 24.484, clause 6.3.13.2.1]

This procedure enables the CMC to subscribe to notification of changes of one or more configuration management documents defined in clause 7.

This procedure enables the MCPTT server to subscribe to notification of changes of the MCPTT service configuration document.

[TS 24.484, clause 6.3.13.2.2]

In order to subscribe to Configuration management document, a CMC shall send an initial SIP SUBSCRIBE request to the network according to the UE originating procedures specified in 3GPP TS 24.229 [22] and IETF RFC 5875 [11]. In the initial SIP SUBSCRIBE request, the CMC:

a) …

b) if subscription to multiple documents simultaneously using the subscription proxy function is used:

   1) shall include an application/resource-lists+xml MIME body. In the application/resource-lists+xml MIME body, the CMC shall include one <entry> element for each document or element to be subscribed to, such that the "uri" attribute of the <entry> element contains a relative path reference:

      A) with the base URI being equal to the "CMSXCAPRootURI" configured in the CMC as per 3GPP TS 24.383 [4]; and

      B) with the "auid" parameter set to the appropriate application usage identifying a configuration management document as described in clause 7;

   2) shall set the Request-URI to the configured public service identity for performing subscription proxy function of the CMS;

c) shall include an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcptt-access-token> element set to the value of the access token received during authentication procedure as described in 3GPP TS 24.382 [6];

d) if identity hiding is required:

   1) shall perform the confidentiality protection procedures and integrity protection procedures defined in 3GPP TS 24.379 [9] for MCPTT client on the application/vnd.3gpp.mcptt-info+xml MIME body and on the application/resource-lists+xml MIME body; and

   2) shall include an application/mikey MIME body with the CSK as specified in 3GPP TS 24.379 [9];

e) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [22]), in a P-Preferred-Service header field according to IETF RFC 6050 [23]; and

f) shall include the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field.

Upon receiving a SIP NOTIFY request associated with a subscription created as result of the sent initial SIP SUBSCRIBE request:

1) if identity hiding is required, the CMC shall perform the confidentiality protection procedures and integrity protection procedures defined in 3GPP TS 24.379 [9] for MCPTT client; and

2) shall handle the SIP NOTIFY request according to IETF RFC 5875 [11].

[TS 24.481, clauses 6.2.2.2]

In order to address an existing group document defining a group ID known by GC, the GC shall set the Request-URI of an HTTP request to a XCAP URI identifying a group document addressed by a group ID as described in subclause 7.2.10.2, where the group ID is set to the group ID known by GC and where the XCAP root URI is the XCAP root URI configured in the UE.

[TS 24.481, clauses 6.2.3]

The GMC shall send the HTTP request over a TLS connection as specified for the HTTP client in the UE in annex A of 3GPP TS 24.382 [10].

The GMC shall perform the procedures in subclause 6.2.2 specified for GC.

[TS 24.481, clauses 6.3.3.2.1]

In order to retrieve a group document, a GC shall send an HTTP GET request with the Request URI that references the document to be retrieved to the network according to procedures specified in IETF RFC 4825 [22] "*Fetch a Document*".

[TS 24.481, clauses 6.3.3.2.2]

In order to retrieve a group document, a GMC shall perform the procedures in subclause 6.3.3.2.1 specified for GC.

[TS 24.481, clauses 6.3.13.2.1]

In order to subscribe to notification of changes of:

a) one or more MCPTT group documents of MCPTT groups identified by MCPTT group IDs;

…

a GMC shall send an initial SIP SUBSCRIBE request to the network according to the UE originating procedures specified in 3GPP TS 24.229 [12] and IETF RFC 5875 [13]. In the initial SIP SUBSCRIBE request, the GMC:

a) shall include an application/resource-lists+xml MIME body. In the application/resource-lists+xml MIME body, the GMC shall include one <entry> element for each document or element to be subscribed to, such that the "uri" attribute of the <entry> element:

   1) contains a relative path reference:

      A) with the base URI being equal to the XCAP root URI configured in the GMC; and

      B) identifying a group document addressed by a group ID as described in subclause 7.2.10.2 where the group ID is set to the MCPTT group ID; or

   ...

b) shall set the Request-URI to the configured public service identity for performing subscription proxy function of the GMS;

c) shall include an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcptt-access-token> element set to the value of the access token received during authentication procedure as described in 3GPP TS 24.382 [49];

d) if identity hiding is required:

   1) shall perform the confidentiality protection procedures and integrity protection procedures defined in 3GPP TS 24.379 [5] for MCPTT client on the application/vnd.3gpp.mcptt-info+xml MIME body and on the application/resource-lists+xml MIME body; and

   2) shall include an application/mikey MIME body with the CSK as specified in 3GPP TS 24.379 [5];

e) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [12]), in a P-Preferred-Service header field according to IETF RFC 6050 [14]; and

f) shall include the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field.

Upon receiving a SIP NOTIFY request associated with a subscription created as result of the sent initial SIP SUBSCRIBE request:

1) if identity hiding is required, the GMC shall perform the confidentiality protection procedures and integrity protection procedures defined in 3GPP TS 24.379 [5] for MCPTT client; and

2) shall handle the SIP NOTIFY request according to IETF RFC 5875 [13].

[TS 24.379, clause 7.2.1]

When the MCPTT client performs SIP registration the MCPTT client shall perform the registration procedures as specified in 3GPP TS 24.229 [4].

The MCPTT client shall include the following media feature tags in the Contact header field of the SIP REGISTER request:

1) the g.3gpp.mcptt media feature tag; and

2) the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt".

…

If the MCPTT client, upon performing SIP registration:

1) has successfully finished the user authentication procedure as described in 3GPP TS 24.382 [49];

2) has an available access-token;

3) based on implementation decides to use SIP REGISTER for service authorization; and

4) either confidentiality protection is enabled as specified in subclause 6.6.2.3.1 or integrity protection is enabled as specified in subclause 6.6.3.3.1;

then the MCPTT client:

...

2) if confidentiality protection is enabled as specified in subclause 6.6.2.3.1, shall encrypt the received access-token using the client server key (CSK) and shall include in the body of the SIP REGISTER request, an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcptt-access-token> element set to the encrypted access-token, as specified in subclause 6.6.2.3.3;

...

4) if integrity protection is enabled as specified in subclause 6.6.3.3.1, shall use the CSK to integrity protect the application/vnd.3gpp.mcptt-info+xml MIME body by following the procedures in subclause 6.6.3.3.3.

[TS 24.379, clause 7.2.1A]

This procedure is only referenced from other procedures.

When populating the SIP PUBLISH request, the MCPTT client shall:

1) shall set the Request-URI to the public service identity identifying the participating MCPTT function serving the MCPTT user;

2) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9];

3) shall set the Event header field to the "poc-settings" value; and

4) shall set the Expires header field according to IETF RFC 3903 [37], to 4294967295, if the MCPTT user is not removing the MCPTT service settings, otherwise to remove the MCPTT service settings the MCPTT client shall set the Expires header field to zero.

[TS 24.379, clause 7.2.2]

If based on implementation the MCPTT client decides to use SIP PUBLISH for MCPTT server settings to also perform service authorization and

1) has successfully finished the user authentication procedure as described in 3GPP TS 24.382 [49]; and

2) has available an access-token;

then the MCPTT client:

1) shall perform the procedures in subclause 7.2.1A;

...

3) if either confidentiality protection is enabled as specified in subclause 6.6.2.3.1 or integrity protection is enabled as specified in subclause 6.6.3.3.1 shall include an application/mikey MIME body with the CSK as MIKEY-SAKKE I_MESSAGE as specified in 3GPP TS 33.179 [46] in the body of the SIP PUBLISH request;

4) if confidentiality protection is enabled as specified in subclause 6.6.2.3.1, shall include in the body of the SIP PUBLISH request an application/vnd.3gpp.mcptt-info+xml MIME body with:

   a) the <mcptt-access-token> element set to the received access-token encrypted using the client server key (CSK), as specified in subclause 6.6.2.3.3; and

   b) the <mcptt-client-id> element set to the encrypted MCPTT client ID of the originating MCPTT client, as specified in subclause 6.6.2.3.3;

...

6) shall include an application/poc-settings+xml MIME body containing the Answer-Mode Indication setting in the <am-settings> element of the poc-settings event package set to the current answer mode setting ("auto-answer" or "manual-answer") of the MCPTT client according to IETF RFC 4354 [55]; and

7) if integrity protection is enabled as specified in subclause 6.6.3.3.1, shall use the CSK to integrity protect the application/vnd.3gpp.mcptt-info+xml MIME body and application/poc-settings+xml MIME body by following the procedures in subclause 6.6.3.3.3.

The MCPTT client shall send the SIP PUBLISH request according to 3GPP TS 24.229 [4].

[TS 24.379, clause 7.2.3]

To set, update, remove or refresh the MCPTT service settings, the MCPTT client shall generate a SIP PUBLISH request according 3GPP TS 24.229 [4], IETF RFC 3903 [37] and IETF RFC 4354 [55]. In the SIP PUBLISH request, the MCPTT client:

1) shall perform the procedures in subclause 7.2.1A;

2) if confidentiality protection is enabled as specified in subclause 6.6.2.3.1, shall include in the body of the SIP PUBLISH request, an application/vnd.3gpp.mcptt-info+xml MIME body with:

   a) the <mcptt-request-uri> element set to the targeted MCPTT ID encrypted using the client server key (CSK), as specified in subclause 6.6.2.3.3; and

   b) the <mcptt-client-id> element set to the encrypted MCPTT client ID of the originating MCPTT client, as specified in subclause 6.6.2.3.3;

...

4) shall include an application/poc-settings+xml MIME body containing the Answer-Mode Indication setting in the <am-settings> element of the poc-settings event package set to the current answer mode setting ("auto-answer" or "manual-answer") of the MCPTT client according to IETF RFC 4354 [55]; and

5) if integrity protection is enabled as specified in subclause 6.6.3.3.1, shall use the CSK to integrity protect the application/vnd.3gpp.mcptt-info+xml MIME body and application/poc-settings+xml MIME body by following the procedures in subclause 6.6.3.3.3.

The MCPTT client shall send the SIP PUBLISH request according to 3GPP TS 24.229 [4].

On receiving the SIP 200 (OK) response to the SIP PUBLISH request the MCPTT client may indicate to the MCPTT User the successful communication of the MCPTT service settings to the MCPTT server.

[TS 33.179, clause 6.2]

The support of Transport Layer Security (TLS) on HTTP-1 is mandatory. The profile for TLS implementation and usage shall follow the provisions given in 3GPP TS 33.310 [5], annex E.

If the PSK TLS based authentication mechanism is supported, the HTTP client in the MCPTT UE and the HTTP Proxy shall support the TLS version, PSK ciphersuites and TLS Extensions as specified in the TLS profile given in 3GPP TS 33.310 [5], annex E. The usage of pre-shared key ciphersuites for TLS is specified in the TLS profile given in 3GPP TS 33.310 [5], annex E.

5.1.3 Test description

5.1.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server).
- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10, is inserted.
- The MCPTT Client has been provisioned with the Initial UE Configuration Data as specified in TS 36.579-1 [2], clause 5.5.8.1 allowing for the location of the configuration management server for configuration of the MCPTT UE initial configuration management object (MO) and the default MCPTT user profile configuration management object (MO).
- A single APN (px_MCPTT_ALL_APN, TS 36.579-5 [5]) shall be provided in the Initial UE Configuration Data which the UE shall use to access each and all MCPTT relevant services including the MCPTT SIP-1 reference point, the MC common core services for the HTTP-1 reference point and the MC identity management service for the CSC-1 reference point.
- According to TS 33.180 [94] all HTTP connections are secured by TLS.
  The HTTP-1 interface authentication between the HTTP client in the MC UE and the HTTP server endpoint (HTTP proxy, IdM server or KMS) shall be performed by one-way authentication of the HTTP server endpoint based on server certificate as described in TS 33.180 [33] clause 6.1.1.
- The UE User is provided with username/password for user authentication (px_MCPTT_User_A_username, px_MCPTT_User_A_password as provided in TS 36.579-5 [5], Table 9.2-1: MCPTT Client Common PIXIT).
- The UE is provisioned with the names and values of the Transport Key (TrK) and the Integrity Key (InK), since the KMS shall encrypt the key material sent to the client with the TrK and sign the response with the TrK or the InK according to TS 33.180 [94].

Preamble:

- The UE is Switched OFF (state 1) according to TS 36.508 [24].

5.1.3.2 Test procedure sequence

Table 5.1.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	The UE is switched-on.	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC related actions which step 1 above will trigger are described in TS 36.579-1 [2], subclause 5.4.2 'Generic Test Procedure for MCPTT UE registration" starting with Step 2. The test sequence below shows only the MCPTT relevant messages being exchanged.	-	-	-	-
2	Make the UE user request MCPTT service authorisation/configuration. NOTE: This is expected to be done via a suitable implementation dependent mechanism and may be manually or automatically initiated.	-	-	-	-
3 - 12	Check: Does the UE (MCPTT client) perform the generic procedure for MCPTT user authentication specified in TS 36.579-1 [2] Table 5.3.2.3-1 steps 1 through 10?	-	-	1	P
13 - 16	Check: Does the UE (MCPTT client) perform the generic procedure for MCPTT key management authorization and obtain identity management key material as specified in TS 36.579-1 [2] Table 5.3.2.3-1, steps 11 through 14?	-	-	2	P
-	EXCEPTION: In parallel to the events described in all steps below, the steps in Table 5.1.3.2-2 and Table 5.1.3.2-3 should take place.	-	-	-	-
-	EXCEPTION: Steps 17a1-17b2 describe behaviour that depends on UE implementation; the "lower case letter" identifies a step sequence that take place when one or the other is the case.	-	-	-	-
17a1	Check: Does the UE (MCPTT client) send a SIP REGISTER request for service authorisation?	-->	SIP REGISTER	3	P
17a2	The SS (MCPTT server) sends SIP 200 (OK). NOTE: The user is now authorized for MCPTT service.	<--	SIP 200 (OK)	-	-
17a3	Check: Does the UE (MCPTT client) send a SIP PUBLISH request for update of PoC-settings? NOTE: See NOTE 1 of TS 36.579-1 [2] Table 5.3.2.3-2.	-->	SIP PUBLISH	6	P
17a4	The SS (MCPTT server) sends SIP 200 (OK).	<--	SIP 200 (OK)	-	-
17b1	Check: Does the UE (MCPTT client) send a SIP PUBLISH request for service authorisation and update of PoC-settings? NOTE: See NOTE 1 of TS 36.579-1 [2] Table 5.3.2.3-2.	-->	SIP PUBLISH	3, 6	P
17b2	The SS (MCPTT server) sends SIP 200 (OK).	<--	SIP 200 (OK)	-	-
-	EXCEPTION: SS releases the E-UTRA connection.	-	-	-	-

Table 5.1.3.2-2: Parallel Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCPTT client) perform the configuration management subscription and notification procedure as described in TS 36.579-1 [2] Table 5.3.2.3-2A?	-	-	4	P

Table 5.1.3.2-3: Parallel Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCPTT client) perform the group document subscription and notification procedure as described in TS 36.579-1 [2] Table 5.3.2.3-2B?	-	-	5	P

5.1.3.3 Specific message contents

Table 5.1.3.3-1: SIP REGISTER (Step 17a1, Table 5.1.3.2-1)

Derivation Path: TS 36.579-1 [2],Table 5.3.2.4-12

Table 5.1.3.3-2: SIP PUBLISH (Step 17a3, Table 5.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.3.2.4-13A

Table 5.1.3.3-3: SIP PUBLISH (Step 17b1, Table 5.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.3.2.4-13

Table 5.1.3.3-4: SIP 200 (OK) (Step 17a2, 17a4, 17b2, Table 5.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.3.2.4-26

5.2 Configuration / Group Creation / Group Regroup Creation / Group Regroup Teardown

5.2.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) attached to EPS services }
ensure that {
  when { the UE (MCPTT Client) requests formation of a new MCPTT group }
    then { on successful group creation the UE (MCPTT Client) has access to the new group }
            }
```

(2)

```
with { UE (MCPTT Client) having access to at least two MCPTT groups }
ensure that {
  when { the UE (MCPTT Client) requests the groups to be combined }
    then { on successful group regrouping the UE (MCPTT Client) has access to the temporary group }
            }
```

(3)

```
with { UE (MCPTT Client) having access to a temporary group }
ensure that {
  when { the UE (MCPTT Client) requests temporary group tear down }
    then { on successful group tear down the UE (MCPTT Client) removes the temporary group }
           }
```

5.2.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: TS 24.481 clauses 6.3.2.2.1, 6.3.2.2.2, 6.3.14.1, 6.3.14.2, 6.3.15.1 and 6.3.15.2; TS 33.180 clauses 7.3.2. Unless otherwise stated these are Rel-13 requirements.

[TS 24.481 clause 6.3.2.2.1]

In order to create a group document, a GC shall create an XML document of the application usage specified in subclause 7.2.1 and shall send the XML document to the network according to procedures specified in IETF RFC 4825 [22] "*Create or Replace a Document*". The GC shall set the Request-URI of the HTTP PUT request to an XCAP URI in users' tree where the XUI is set to a group creation XUI configuration parameter.

[TS 24.481 clause 6.3.2.2.2]

In order to create a group document, a GMC shall perform the procedures in subclause 6.3.2.2.1 specified for GC.

[TS 24.481 clause 6.3.14.1]

This procedure enables a GMC to initiate creation of a temporary MCPTT group by combining MCPTT groups.

[TS 24.481 clause 6.3.14.2]

In order to form a temporary MCPTT group, a GMC shall send a HTTP POST request according to procedures specified in IETF RFC 2616 [21] and subclause 6.2.3. In the HTTP POST request, the GMC:

a) shall set the Request-URI to an XCAP URI:

   1) in users tree where the XUI is set to a group creation XUI configuration parameter; and

   2) with the document selector identifying the temporary MCPTT group to be created; and

b) shall include an application/vnd.3gpp.GMOP+xml MIME body containing a GMOP document requesting group regroup creation specified in subclause 7.3.4.3, with a <group> element containing a group document for an MCPTT group. In the group document, the GMC shall include the <on-network-temporary> element according to subclause 7.2. In the <on-network-temporary> element, the GMC shall include <constituent-MCPTT-group-IDs> element according to subclause 7.2. In the <constituent-MCPTT-group-IDs> element, the GMC shall include one <constituent-MCPTT-group-ID> element according to subclause 7.2 for each MCPTT group to be combined.

Upon reception of an HTTP 2xx response to the sent HTTP POST request, the GMC shall consider the temporary MCPTT group formation as successful.

Upon reception of an HTTP 409 (Conflict) response with at least one <alt-value> element in the <uniqueness-failure> error element, the GMC may repeat procedures of the present subclause and identify the temporary MCPTT group being formed with an MCPTT Group ID indicated in an <alt-value> element.

[TS 24.481 clause 6.3.15.1] This procedure enables a GMC to initiate tear down of a temporary MCPTT group.

[TS 24.481 clause 6.3.15.2]

In order to tear down a temporary MCPTT group, the GMC shall send an HTTP DELETE request with Request-URI with an XCAP URI identifying a group document of the temporary MCPTT group according to procedures specified in IETF RFC 4825 [22] "*Delete an Element*".

[TS 33.180 clause 7.3.2]

The group creation procedure is described in clause 10.2.3 of 3GPP TS 23.280 [36] and applies to the MCPTT scenario of normal group creation by an MC administrator and user regrouping operations by an authorized user/dispatcher. To

establish the security context for the group, the GMS follows the procedures in clause 5.7 to create a new GMK and GMK-ID.

The encapsulated GMK and GUK-ID is sent to group members by the GMS within a notification message (step 4 in clause 10.2.3 of 3GPP TS 23.280 [36]). The procedure is equivalent to that described in clause 5.7 of this specification.

[TS 33.180 clause 7.3.3.2]

Group Regroup procedures for the MC system are described in clause 10.2.4.1 of 3GPP TS 23.280 [36]. To create the security context for the temporary group, the GMS follows the procedures in clause 5.7, creating a new GMK and GMK-ID for the temporary group.

An encapsulated GMK and GUK-ID is sent to the temporary group members by the GMS within a notification message (step 5 in clause 10.2.4.1 of 3GPP TS 23.280 [36]). The procedure is equivalent to that described in clause 5.7.

5.2.3 Test description

5.2.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)
- E-UTRA related parameters are set to the default parameters for the basic single cell environment, as defined in TS 36.508 [6] clause 4.4.

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10, is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

5.2.3.2 Test procedure sequence

Table 5.2.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Void	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC related actions are described in TS 36.579-1 [2], subclause 5.4.3 'Generic Test Procedure for MCPTT CO communication in E-UTRA'. The test sequence below shows only the MCPTT relevant messages being exchanged.	-	-	-	-
2	Make the MCPTT User request the creation of a new group, MCPTT Group B, for communication with the user and two other users, MCPTT Client B and MCPTT Client C. (NOTE 1)	-	-	-	-
3	Check: Does the UE (MCPTT Client) correctly perform Generic Test Procedure for MCPTT CO Group Creation as described in TS 36.579-1 [2] Table 5.3.26.3-1 to create GROUP B and retrieve group configuration?	-	-	1	P
4-7	Void	-	-	-	-
8	Make the MCPTT User request the creation of a new group, MCPTT Group C, for communication with the user and two other users, MCPTT Client B and MCPTT Client C. (NOTE 1)	-	-	-	-
9	Check: Does the UE (MCPTT client) correctly perform Generic Test Procedure for MCPTT CO Group Creation as described in TS 36.579-1 [2] Table 5.3.26.3-1 to create GROUP C and retrieve group configuration?	-	-	1	P
10-12	Void	-	-	-	-
13	Make the MCPTT User request the creation of a temporary group MCPPT Group T formed from MCPTT Group B and MCPTT Group C to communicate with itself and MCPTT Client B and MCPTT Client C. (NOTE 1)	-	-	-	-
14	Check: Does the UE (MCPTT Client) correctly perform Generic Test Procedure for MCPTT CO Group Creation as described in TS 36.579-1 [2] Table 5.3.26.3-1 to create temporary GROUP T and retrieve group configuration??	-	-	1	P
15-20	Void	-	-	-	-
21	Make the MCPTT User request tear down of the temporary MCPTT Group T (NOTE 1)	-	-	-	-
22	Check: Does the UE (MCPTT Client) send a HTTP DELETE to the SS to request tear down of the temporary group?	-->	HTTP DELETE	3	P
22A	The SS (MCPTT Server) sends a HTTP 200 (OK) indicating group tear down completed.	<--	HTTP 200 (OK)	-	-
23	Step 2 to Step 5 of Generic Test Procedure for MCPTT CO Group Creation as described in TS 36.579-1 [2] Table 5.3.26.3-1 are performed (update the user profile after temporary group deletion)	-	-	-	-
24-26	Void	-	-	-	-

NOTE 1: This is expected to be done via a suitable implementation dependent mechanism and may be manually or automatically initiated.

5.2.3.3 Specific message contents

Table 5.2.3.3-1: HTTP PUT (Step 3, Table 5.2.3.2-1; Step 1b1, TS 36.579-1 [2] Table 5.3.26.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.4.4-1, condition GROUPCREATE

Table 5.2.3.3-1A: HTTP 201 (Created) (Step 3, Table 5.2.3.2-1; Step 1b2, TS 36.579-1 [2] Table 5.3.26.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.4.7-1, conditions GROUPCONFIG. GROUP_B

Table 5.2.3.3-2: Void

Table 5.2.3.3-3: Void

Table 5.2.3.3-3A: Void

Table 5.2.3.3-3B: HTTP 200 (OK) (Step 3, Table 5.2.3.2-1 Step 5, TS 36.579-1 [2] Table 5.3.26.3-1)

Derivation Path: Table 5.5.4.6-1, condition UEUSERPROF				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
mcptt-user-profile	User Profile Document described in Table 5.2.3.3-3C	User Profile Document returned		

Table 5.2.3.3-3C: User Profile Document in HTTP 200 (OK) (Table 5.2.3.3-3B)

Derivation Path: Table 5.5.8.3-1 condition GROUP_B

Table 5.2.3.3-3D: SIP SUBSCRIBE (Step 3, Table 5.2.3.2-1; Step 1, TS 36.579-1 [2] Table 5.3.2.3-2B)

Derivation Path: TS 36.579-1 [2],Table 5.3.26.4-13, condition GROUPCONFIG, GROUP_B

Table 5.2.3.3-4: SIP NOTIFY (Step 3, Table 5.2.3.2-1; Step 3, TS 36.579-1 [2] Table 5.3.2.3-2B)

Derivation Path: TS 36.579-1 [2], Table 5.3.26.4-14, conditions GROUPCONFIG, GROUP_B

Table 5.2.3.3-4A: Void

Table 5.2.3.3-4B: SIP SUBSCRIBE (Step 3, Table 5.2.3.2-1; Step 2a1, TS 36.579-1 [2] Table 5.3.2.3-2C)

Derivation Path: TS 36.579-1 [2], Table 5.3.26.4-19, condition GROUPCONFIG, GROUP_B

Table 5.2.3.3-4C: SIP NOTIFY (Step 3, Table 5.2.3.2-1; S Step 7a1, Table 5.3.2.3-2B and Step 2a3, Table 5.3.2.3-2C)

Derivation Path: TS 36.579-1 [2], Table 5.3.26.4-20, conditions GROUPCONFIG, GROUP_B

Table 5.2.3.3-5: Void)

Table 5.2.3.3-6: Void

Table 5.2.3.3-7: Void

Table 55.2.3.3-7A: HTTP 200 (OK) (Step 3, Table 5.2.3.2-1; Step 5, TS 36.579-1 [2] Table 5.3.26.3-1)

Derivation Path: Table 5.5.4.6-1, condition GROUPCONFIG, GROUP_B

Table 5.2.3.3-7B: HTTP PUT (Step 9, Table 5.2.3.2-1; Step 1b1, TS 36.579-1 [2] Table 5.3.26.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.4.4-1, conditions GROUPCREATE, GROUP_C

Table 5.2.3.3-7C: HTTP 201 (Created) (Step 9, Table 5.2.3.2-1; Step 1b2, TS 36.579-1 [2] Table 5.3.26.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.4.7-1 conditions GROUPCONFIG. GROUP_C

Table 5.2.3.3-7D: HTTP 200 (OK) (Step 9, Table 5.2.3.2-1 Step 5, TS 36.579-1 [2] Table 5.3.26.3-1)

Derivation Path: Table 5.5.4.6-1, condition UEUSERPROF				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
mcptt-user-profile	User Profile Document described in Table 5.2.3.3-7E	User Profile Document returned		

Table 5.2.3.3-7E: User Profile Document in HTTP 200 (OK) (Table 5.2.3.3-7D)

Derivation Path: Table 5.5.8.3-1 conditions GROUP_B, GROUP_C

Table 5.2.3.3-8: Void

Table 5.2.3.3-8A: SIP SUBSCRIBE (Step 9, Table 5.2.3.2-1; Step 1, TS 36.579-1 [2] Table 5.3.2.3-2B)

Derivation Path: TS 36.579-1 [2],Table 5.3.26.4-13, condition GROUPCONFIG, GROUP_C

Table 5.2.3.3-8B: SIP NOTIFY (Step 9, Table 5.2.3.2-1; Step 3, TS 36.579-1 [2] Table 5.3.2.3-2B)

Derivation Path: TS 36.579-1 [2], Table 5.3.26.4-14, conditions GROUPCONFIG, GROUP_C

Table 5.2.3.3-8C: HTTP GET (Step 9, Table 5.2.3.2-1; Step 5, TS 36.579-1 [2] Table 5.3.2.3-2B)

Derivation Path: TS 36.579-1 [2], Table 5.3.26.4-16, condition GROUPCONFIG, GROUP_C

Table 5.2.3.3-8D: HTTP 200 (OK) (Step 9, Table 5.2.3.2-1; Step 6, TS 36.579-1 [2] Table 5.3.2.3-2B)

Derivation Path: TS 36.579-1 [2], Table 5.3.26.4-17 condition GROUPCONFIG, GROUP_C

Table 5.2.3.3-8E: SIP SUBSCRIBE (Step 9, Table 5.2.3.2-1; Step 2a1, TS 36.579-1 [2] Table 5.3.2.3-2C)

Derivation Path: TS 36.579-1 [2], Table 5.3.26.4-19, condition GROUPCONFIG, GROUP_C

Table 5.2.3.3-8F: SIP NOTIFY (Step 9, Table 5.2.3.2-1; S Step 7a1, Table 5.3.2.3-2B and Step 2a3, Table 5.3.2.3-2C)

Derivation Path: TS 36.579-1 [2], Table 5.3.26.4-20, conditions GROUPCONFIG, GROUP_C

Table 5.2.3.3-9: HTTP POST (Step 14, Table 5.2.3.2-1; Step 1a1, TS 36.579-1 [2] Table 5.3.26.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.4.3-1 condition TEMPGROUP

Table 5.2.3.3-10: Void

Table 5.2.3.3-11: Void

Table 5.2.3.3-11A:Void

Table 5.2.3.3-12: Void

Table 5.2.3.3-13: HTTP 200 (OK) (Step 14, Table 5.2.3.2-1; Step 5, TS 36.579-1 [2] Table 5.3.26.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.4.6-1, conditions UEUSERPROF , GROUP_T

Table 5.2.3.3-13A: SIP SUBSCRIBE (Step 14, Table 5.2.3.2-1; Step 1, TS 36.579-1 [2] Table 5.3.2.3-2B)

Derivation Path: TS 36.579-1 [2],Table 5.3.26.4-13, condition GROUPCONFIG, GROUP_T

Table 5.2.3.3-13B: SIP NOTIFY (Step 14, Table 5.2.3.2-1; Step 3, TS 36.579-1 [2] Table 5.3.2.3-2B)

Derivation Path: TS 36.579-1 [2], Table 5.3.26.4-14 conditions GROUPCONFIG, GROUP_T

Table 5.2.3.3-13C: HTTP GET (Step 14, Table 5.2.3.2-1; Step 5, TS 36.579-1 [2] Table 5.3.2.3-2B)

Derivation Path: TS 36.579-1 [2], Table 5.3.26.4-16, condition GROUPCONFIG, GROUP_T

Table 5.2.3.3-13D: HTTP 200 (OK) (Step 14, Table 5.2.3.2-1; Step 6, TS 36.579-1 [2] Table 5.3.2.3-2B)

Derivation Path: TS 36.579-1 [2], Table 5.3.26.4-17, condition GROUPCONFIG, GROUP_T

Table 5.2.3.3-13E: SIP SUBSCRIBE (Step 14, Table 5.2.3.2-1; Step 2a1, TS 36.579-1 [2] Table 5.3.2.3-2C)

Derivation Path: TS 36.579-1 [2], Table 5.3.26.4-19, condition GROUPCONFIG, GROUP_T

Table 5.2.3.3-13F: SIP NOTIFY (Step 14, Table 5.2.3.2-1; Step 7a1, Table 5.3.2.3-2B and Step 2a3, Table 5.3.2.3-2C)

Derivation Path: TS 36.579-1 [2], Table 5.3.26.4-20, conditions GROUPCONFIG, GROUP_T

Table 5.2.3.3-14: HTTP DELETE (Step 22, Table 5.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.4.5-1

Table 5.2.3.3-15: Void

Table 5.2.3.3-16: HTTP 200 (OK) (Step 23, Table 5.2.3.3-1; (Step 5 TS 36.579-1 [2], Table 5.3.26.3-1)

Derivation Path: Table 5.5.4.6-1, condition UEUSERPROF

Editor's Note: Additionally to the conditions in default message contents, the conditions GROUP_B, GROUP_C and GROUP_T refer to tables in generic test procedures, how to note this in a better way is for FFS.

5.3 Configuration / Group Affiliation / Remote change / De-affiliation / Home MCPTT system

5.3.1 Test Purpose (TP)

(1)

```
with { MCPTT Client already provisioned with the group information or a pointer to the group
information, that the MCPTT Client is allowed to be affiliated }
ensure that {
  when { MCPTT User requests for current affiliation status and to subscribe to affiliation status
changes for the MCPTT User }
    then { UE (MCPTT Client) requests to subscribe to affiliation status changes for the MCPTT User
by sending the SS a SIP SUBSCRIBE message and starts informing the MCPTT User of any affiliation
status changes for the MCPTT User after the subscription is accepted }
            }
```

(2)

```
with { MCPTT Client already provisioned with the group information or a pointer to the group
information, that the MCPTT Client is allowed to be affiliated }
ensure that {
  when { MCPTT User requests to affiliate to an MCPTT group }
    then { UE (MCPTT Client) requests to affiliate to an MCPTT group by sending the SS a SIP PUBLISH
message }
            }
```

(3)

```
with { MCPTT Client already provisioned with the group information or a pointer to the group
information, that the MCPTT Client is allowed to be affiliated }
ensure that {
  when { MCPTT User requests for current affiliation status and to subscribe to affiliation status
changes for a target user }
    then { UE (MCPTT Client) requests to subscribe to affiliation status changes for the target user
by sending the SS a SIP SUBSCRIBE message and starts informing the MCPTT User of any affiliation
status changes for the target user after the subscription is accepted }
            }
```

(4)

```
with { MCPTT client already provisioned with the group information or a pointer to the group
information that the MCPTT client is allowed to make affiliation changes for another user }
ensure that {
  when { MCPTT User requests that a target user be affiliated to an MCPTT group via mandatory mode }
    then { UE (MCPTT Client) requests that a target user be affiliated to an MCPTT group via
mandatory mode by sending the SS a SIP PUBLISH message }
            }
```

(5)

```
with { MCPTT client already provisioned with the group information or a pointer to the group
information that the MCPTT client is allowed to make affiliation changes for another user }
ensure that {
  when { MCPTT User requests that a target user be de-affiliated to an MCPTT group via mandatory
mode }
    then { UE (MCPTT Client) requests that a target user be de-affiliated to an MCPTT group via
mandatory mode by sending the SS a SIP PUBLISH message }
```

```
            }
```

(6)

```
with { MCPTT client already provisioned with the group information or a pointer to the group
information that the MCPTT client is allowed to make affiliation changes for another user }
ensure that {
  when { MCPTT User requests that a target user be affiliated to an MCPTT group via negotiated mode
}
    then { UE (MCPTT Client) requests that a target user be affiliated to an MCPTT group via
negotiated mode by sending the SS a SIP MESSAGE message }
            }
```

(7)

```
with { MCPTT Client already provisioned with the group information or a pointer to the group
information, that the MCPTT Client is allowed to be affiliated }
ensure that {
  when { MCPTT User requests to de-subscribe to affiliation status changes for a target user }
    then { UE (MCPTT Client) requests to de-subscribe to affiliation status changes for a target
user by sending the SS a SIP SUBSCRIBE message }
            }
```

(8)

```
with { MCPTT Client already affiliated with an MCPTT group }
ensure that {
  when { MCPTT User requests to de-affiliate from an MCPTT group }
    then { UE (MCPTT Client) requests to de-affiliate from an MCPTT group by sending the SS a SIP
PUBLISH message }
            }
```

(9)

```
with { MCPTT Client already provisioned with the group information or a pointer to the group
information, that the MCPTT Client is allowed to be affiliated }
ensure that {
  when { MCPTT Server requests that the MCPTT User choose to affiliate to an MCPTT group via
negotiated mode by sending a SIP MESSAGE message }
    then { UE (MCPTT Client) accepts to affiliate to an MCPTT group by sending the SS a SIP PUBLISH
message }
            }
```

5.3.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.379, clauses 9.2.1.2, 9.2.1.3, 9.2.1.4, and 9.2.1.5. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.379, clause 9.2.1.2]

In order:

- to indicate that an MCPTT user is interested in one or more MCPTT group(s) at an MCPTT client;
- to indicate that the MCPTT user is no longer interested in one or more MCPTT group(s) at the MCPTT client;
- to refresh indication of an MCPTT user interest in one or more MCPTT group(s) at an MCPTT client due to near expiration of the expiration time of an MCPTT group with the affiliation status set to the "affiliated" state received in a SIP NOTIFY request in subclause 9.2.1.3;
- to send an affiliation status change request in mandatory mode to another MCPTT user; or
- any combination of the above;

the MCPTT client shall generate a SIP PUBLISH request according to 3GPP TS 24.229 [4], IETF RFC 3903 [37], and IETF RFC 3856 [51].

In the SIP PUBLISH request, the MCPTT client:

1) shall set the Request-URI to the public service identity identifying the originating participating MCPTT function serving the MCPTT user;

2) shall include an application/vnd.3gpp.mcptt-info+xml MIME body. In the application/vnd.3gpp.mcptt-info+xml MIME body, the MCPTT client shall include the <mcptt-request-uri> element set to the MCPTT ID of the MCPTT user;

3) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9];

4) if the targeted MCPTT user is interested in at least one MCPTT group at the targeted MCPTT client, shall set the Expires header field according to IETF RFC 3903 [37], to 4294967295;

NOTE 1: 4294967295, which is equal to 2^{32}-1, is the highest value defined for Expires header field in IETF RFC 3261 [24].

5) if the targeted MCPTT user is no longer interested in any MCPTT group at the targeted MCPTT client, shall set the Expires header field according to IETF RFC 3903 [37], to zero; and

6) shall include an application/pidf+xml MIME body indicating per-user affiliation information according to subclause 9.3.1. In the MIME body, the MCPTT client:

   a) shall include all MCPTT groups where the targeted MCPTT user indicates its interest at the targeted MCPTT client;

   b) shall include the MCPTT client ID of the targeted MCPTT client;

   c) shall not include the "status" attribute and the "expires" attribute in the <affiliation> element; and

   d) shall set the <p-id> child element of the <presence> root element to a globally unique value.

The MCPTT client shall send the SIP PUBLISH request according to 3GPP TS 24.229 [4].

[TS 24.379, clause 9.2.1.3]

NOTE 1: The MCPTT UE also uses this procedure to determine which MCPTT groups the MCPTT user successfully affiliated to.

In order to discover MCPTT groups:

1) which the MCPTT user at an MCPTT client is affiliated to; or

2) which another MCPTT user is affiliated to;

the MCPTT client shall generate an initial SIP SUBSCRIBE request according to 3GPP TS 24.229 [4], IETF RFC 3856 [51], and IETF RFC 6665 [27].

In the SIP SUBSCRIBE request, the MCPTT client:

1) shall set the Request-URI to the public service identity identifying the originating participating MCPTT function serving the MCPTT user;

2) shall include an application/vnd.3gpp.mcptt-info+xml MIME body. In the application/vnd.3gpp.mcptt-info+xml MIME body, the MCPTT client shall include the <mcptt-request-uri> element set to the MCPTT ID of the targeted MCPTT user;

3) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9];

4) if the MCPTT client wants to receive the current status and later notification, shall set the Expires header field according to IETF RFC 6665 [26], to 4294967295;

NOTE 2: 4294967295, which is equal to 2^{32}-1, is the highest value defined for Expires header field in IETF RFC 3261 [24].

5) if the MCPTT client wants to fetch the current state only, shall set the Expires header field according to IETF RFC 6665 [26], to zero; and

6) shall include an Accept header field containing the application/pidf+xml MIME type; and

7) if requesting MCPTT groups where the MCPTT user is affiliated to at the MCPTT client, shall include an application/simple-filter+xml MIME body indicating per client restrictions of presence event package notification information according to subclause 9.3.2.

In order to re-subscribe or de-subscribe, the MCPTT client shall generate an in-dialog SIP SUBSCRIBE request according to 3GPP TS 24.229 [4], IETF RFC 3856 [51], and IETF RFC 6665 [26]. In the SIP SUBSCRIBE request, the MCPTT client:

1) if the MCPTT client wants to receive the current status and later notification, shall set the Expires header field according to IETF RFC 6665 [26], to 4294967295;

NOTE 3: 4294967295, which is equal to 2^{32}-1, is the highest value defined for Expires header field in IETF RFC 3261 [24].

2) if the MCPTT client wants to de-subscribe, shall set the Expires header field according to IETF RFC 6665 [26], to zero; and

3) shall include an Accept header field containing the application/pidf+xml MIME type.

Upon receiving a SIP NOTIFY request according to 3GPP TS 24.229 [4], IETF RFC 3856 [51], and IETF RFC 6665 [26], if SIP NOTIFY request contains an application/pidf+xml MIME body indicating per-user affiliation information constructed according to subclause 9.3.1, then the MCPTT client shall determine affiliation status of the MCPTT user for each MCPTT group at the MCPTT client(s) in the MIME body. If the <p-id> child element of the <presence> root element of the application/pidf+xml MIME body of the SIP NOTIFY request is included, the <p-id> element value indicates the SIP PUBLISH request which triggered sending of the SIP NOTIFY request.

[TS 24.379, clause 9.2.1.4]

NOTE: Procedure for sending affiliation status change request in negotiated mode to several target MCPTT users is not supported in this version of the specification.

Upon receiving a request from the MCPTT user to send an affiliation status change request in negotiated mode to a target MCPTT user, the MCPTT client shall generate a SIP MESSAGE request in accordance with 3GPP TS 24.229 [4] and IETF RFC 3428 [33]. In the SIP MESSAGE request, the MCPTT client:

1) shall set the Request-URI to the public service identity identifying the originating participating MCPTT function serving the MCPTT user;

2) shall include an application/vnd.3gpp.mcptt-info+xml MIME body. In the application/vnd.3gpp.mcptt-info+xml MIME body, the MCPTT client shall include the <mcptt-request-uri> element set to the MCPTT ID of the target MCPTT user;

3) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP MESSAGE request;

4) shall include an application/vnd.3gpp.mcptt-affiliation-command+xml MIME body as specified in Annex F.4; and

5) shall send the SIP MESSAGE request according to rules and procedures of 3GPP TS 24.229 [4].

On receiving a SIP 2xx response to the SIP MESSAGE request, the MCPTT client shall indicate to the user that the request has been delivered to an MCPTT client of the target MCPTT user.

[TS 24.379, clause 9.2.1.5]

Upon receiving a SIP MESSAGE request containing:

1) the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Asserted-Service header field according to IETF RFC 6050 [9]; and

2) an application/vnd.3gpp.mcptt-affiliation-command+xml MIME body with a list of MCPTT groups for affiliation under the <affiliate> element and a list of MCPTT groups for de-affiliation under the <de-affiliate> element;

then the MCPTT client:

1) shall send a 200 (OK) response to the SIP MESSAGE request;

2) shall seek confirmation of the list of MCPTT groups for affiliation and the list of MCPTT groups for de-affiliation, resulting in an accepted list of MCPTT groups for affiliation and an accepted list of MCPTT groups for de-affiliation; and

3) if the user accepts the request:

   a) shall perform affiliation for each entry in the accepted list of MCPTT groups for affiliation for which the MCPTT client is not affiliated, as specified in subclause 9.2.1.2; and

   b) shall perform de-affiliation for each entry in the accepted list of MCPTT groups for de-affiliation for which the MCPTT client is affiliated, as specified in subclause 9.2.1.2.

5.3.3 Test description

5.3.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)

- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

- UE States at the end of the preamble:

  - The UE is in E-UTRA Registered, Idle Mode state.

  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

5.3.3.2 Test procedure sequence

Table 5.3.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the MCPTT User send a request to discover which groups the MCPTT User is affiliated to and to subscribe to affiliation status changes for the MCPTT User. (NOTE 1)	-	-	-	-
2	Check: Does the UE (MCPTT Client) send a SIP SUBSCRIBE message to subscribe to its own affiliation status changes?	-->	SIP SUBSCRIBE	1	P
3	The SS responds to the SIP SUBSCRIBE message with a SIP 200 (OK) message.	<--	SIP 200 (OK)	-	-
4	The SS sends a SIP NOTIFY informing that the affiliation status of the MCPTT USER with GROUP A is “affiliated”, but no other group is "affiliated"	<--	SIP NOTIFY	-	-
4A	The UE responds with a SIP 200 (OK)	-->	SIP 200 (OK)	-	-
4B	Check: Does the UE (MCPTT client) notify the user that the MCPTT User is affiliated with GROUP A? (NOTE 1)	-	-	1	P
4C	Make the MCPTT User send a request to de-affiliate from an MCPTT group, GROUP A. (NOTE 1)	-	-	-	-
4D	Check: Does the UE (MCPTT Client) send a SIP PUBLISH message to de-affiliate with GROUP A?	-->	SIP PUBLISH	8	P
4E	The SS responds to the SIP PUBLISH message with a SIP 200 (OK) message.	<--	SIP 200 (OK)	-	-
4F	The SS sends a SIP NOTIFY informing that the affiliation status of the user with GROUP A is “de-affiliating”	<--	SIP NOTIFY	-	-
4G	The UE responds with a SIP 200 (OK)	-->	SIP 200 (OK)	-	-
4H	The SS sends a SIP NOTIFY informing that the affiliation status of the user is not affiliated to any group	<--	SIP NOTIFY	-	-
4I	The UE responds with a SIP 200 (OK)	-->	SIP 200 (OK)	-	-
4J	Check: Does the UE (MCPTT client) notify the user that the MCPTT User is no longer affiliated with GROUP A? (NOTE 1)	-	-	1	P
5	Make the MCPTT User send a request to affiliate to an MCPTT group, GROUP A. (NOTE 1)	-	-	-	-
6	Check: Does the UE (MCPTT Client) send a SIP PUBLISH message to affiliate with GROUP A?	-->	SIP PUBLISH	2	P
7	The SS responds to the SIP PUBLISH message with a SIP 200 (OK) message.	<--	SIP 200 (OK)	-	-
8	The SS sends a SIP NOTIFY informing that the affiliation status of the MCPTT USER with GROUP A is “affiliating”	<--	SIP NOTIFY	-	-
8A	The UE responds with a SIP 200 (OK)	-->	SIP 200 (OK)	-	-
9	The SS sends a SIP NOTIFY informing that the affiliation status of the MCPTT USER with GROUP A is “affiliated”	<--	SIP NOTIFY	-	-
9A	The UE responds with a SIP 200 (OK)	-->	SIP 200 (OK)	-	-
10	Check: Does the UE (MCPTT client) notify the user that the MCPTT User is now affiliated with GROUP A? (NOTE 1)	-	-	1	P
11	Make the MCPTT User send a request to discover which groups a target user is affiliated to and to subscribe to affiliation status changes for that target user. (NOTE 1)	-	-	-	-

12	Check: Does the UE (MCPTT Client) send a SIP SUBSCRIBE message to subscribe to affiliation status changes of a target user?	-->	SIP SUBSCRIBE	3	P
13	The SS responds to the SIP SUBSCRIBE message with a SIP 200 (OK) message.	<--	SIP 200 (OK)	-	-
13A	The SS sends a SIP NOTIFY informing that the affiliation status of the user is not affiliated to any group	<--	SIP NOTIFY	-	-
13B	The UE responds with a SIP 200 (OK)	-->	SIP 200 (OK)	-	-
14	Make the MCPTT User send a request to have a target user affiliate to an MCPTT group, GROUP A (mandatory mode). (NOTE 1)	-	-	-	-
15	Check: Does the UE (MCPTT Client) send a SIP PUBLISH message to have the target user affiliate with GROUP A?	-->	SIP PUBLISH	4	P
16	The SS responds to the SIP PUBLISH message with a SIP 200 (OK) message.	<--	SIP 200 (OK)	-	-
17	The SS sends a SIP NOTIFY informing that the affiliation status of the target user with GROUP A is “affiliating”	<--	SIP NOTIFY	-	-
17A	The UE responds with a SIP 200 (OK)	-->	SIP 200 (OK)	-	-
18	The SS sends a SIP NOTIFY informing that the affiliation status of the target user with GROUP A is “affiliated”	<--	SIP NOTIFY	-	-
18A	The UE responds with a SIP 200 (OK)	-->	SIP 200 (OK)	-	-
19	Check: Does the UE (MCPTT client) notify the user that the target user is now affiliated with GROUP A? (NOTE 1)	-	-	3	P
20	Make the MCPTT User send a request to have a target user de-affiliate to an MCPTT group, GROUP A (mandatory mode). (NOTE 1)	-	-	-	-
21	Check: Does the UE (MCPTT Client) send a SIP PUBLISH message to have the target user de-affiliate with GROUP A?	-->	SIP PUBLISH	5	P
22	The SS responds to the SIP PUBLISH message with a SIP 200 (OK) message.	<--	SIP 200 (OK)	-	-
23	The SS sends a SIP NOTIFY informing that the affiliation status of the target user with GROUP A is “de-affiliating”	<--	SIP NOTIFY	-	-
23A	The UE responds with a SIP 200 (OK)	-->	SIP 200 (OK)	-	-
23B	The SS sends a SIP NOTIFY informing that the affiliation status of the target user is not affiliated to any group	<--	SIP NOTIFY	-	-
23C	The UE responds with a SIP 200 (OK)	-->	SIP 200 (OK)	-	-
24	Check: Does the UE (MCPTT client) notify the user that the target user is now de-affiliated with GROUP A? (NOTE 1)	-	-	3	P
25	Make the MCPTT User send a request to have a target user affiliate to an MCPTT group, GROUP A (negotiated mode). (NOTE 1)	-	-	-	-
26	Check: Does the UE (MCPTT Client) send a SIP MESSAGE message to have a target user affiliate with GROUP A via negotiated mode?	-->	SIP MESSAGE	6	P
27	The SS responds to the SIP MESSAGE message with a SIP 200 (OK) message.	<--	SIP 200 (OK)	-	-
28	The SS sends a SIP NOTIFY informing that the affiliation status of the target user with GROUP A is “affiliating”	<--	SIP NOTIFY	-	-
28A	The UE responds with a SIP 200 (OK)	-->	SIP 200 (OK)	-	-
29	The SS sends a SIP NOTIFY informing that the affiliation status of the target user with GROUP A is “affiliated”	<--	SIP NOTIFY	-	-

29A	The UE responds with a SIP 200 (OK)	-->	SIP 200 (OK)	-	-
30	Check: Does the UE (MCPTT client) notify the user that the target user is now affiliated with GROUP A? (NOTE 1)	-	-	3	P
31	Make the MCPTT User send a request to de-subscribe from affiliation status changes of a target user. (NOTE 1)	-	-	-	-
32	Check: Does the UE (MCPTT Client) send a SIP SUBSCRIBE message with the Expires header field set to zero to de-subscribe from affiliation status changes for a target user?	-->	SIP SUBSCRIBE	7	P
33	The SS responds to the SIP SUBSCRIBE message with a SIP 200 (OK) message.	<--	SIP 200 (OK)	-	-
34	Make the MCPTT User send a request to de-affiliate from an MCPTT group, GROUP A. (NOTE 1)	-	-	-	-
35	Check: Does the UE (MCPTT Client) send a SIP PUBLISH message to de-affiliate with GROUP A?	-->	SIP PUBLISH	8	P
36	The SS responds to the SIP PUBLISH message with a SIP 200 (OK) message.	<--	SIP 200 (OK)	-	-
37	The SS sends a SIP NOTIFY informing that the affiliation status of the user with GROUP A is “de-affiliating”	<--	SIP NOTIFY	-	-
37A	The UE responds with a SIP 200 (OK)	-->	SIP 200 (OK)	-	-
37B	The SS sends a SIP NOTIFY informing that the affiliation status of the user is not affiliated to any group”	<--	SIP NOTIFY	-	-
37C	The UE responds with a SIP 200 (OK)	-->	SIP 200 (OK)	-	-
38	Check: Does the UE (MCPTT client) notify the user that the MCPTT User is no longer affiliated with GROUP A? (NOTE 1)	-	-	1	P
39	The SS sends a SIP MESSAGE to the MCPTT Client to affiliate the MCPTT User to GROUP A via negotiated mode	<--	SIP MESSAGE	-	-
40	Check: Does the UE (MCPTT Client) send a SIP 200 (OK) message in response to the SIP MESSAGE message?	-->	SIP 200 (OK	9	P
41	Check: Does the UE (MCPTT client) notify the user that another user is requesting the MCPTT User affiliate to GROUP A? (NOTE 1)	-	-	9	P
42	Make the MCPTT User accept to affiliate to GROUP A. (NOTE 1)	-	-	-	-
43	Check: Does the UE (MCPTT Client) send a SIP PUBLISH message to affiliate with GROUP A?	-->	SIP PUBLISH	9	P
44	The SS responds to the SIP PUBLISH message with a SIP 200 (OK) message.	<--	SIP 200 (OK)	-	-
45	The SS sends a SIP NOTIFY informing that the affiliation status of the MCPTT USER with GROUP A is “affiliating”	<--	SIP NOTIFY	-	-
45A	The UE responds with a SIP 200 (OK)	-->	SIP 200 (OK)	-	-
46	The SS sends a SIP NOTIFY informing that the affiliation status of the MCPTT USER with GROUP A is “affiliated”	<--	SIP NOTIFY	-	-
46A	The UE responds with a SIP 200 (OK)	-->	SIP 200 (OK)	-	-
47	Check: Does the UE (MCPTT client) notify the user that the MCPTT User is now affiliated with GROUP A? (NOTE 1)	-	-	1	P
-	EXCEPTION: SS releases the E-UTRA connection.	-	-	-	-

NOTE 1: This is expected to be done via a suitable implementation dependent MMI.

5.3.3.3 Specific message contents

Table 5.3.3.3-1: SIP SUBSCRIBE (step 2, Table 5.3.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.14-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Expires				
delta-seconds	"4294967295"			
Message-body				
MIME body part		**MCPTT-Info**		
MIME-part-body	MCPTT-Info as described in Table 5.3.3.3-2			

Table 5.3.3.3-2: MCPTT-INFO in SIP SUBSCRIBE (Table 5.3.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
mcptt-request-uri	px_MCPTT_ID_User_A			

Table 5.3.3.3-3: SIP SUBSCRIBE (step 12, Table 5.3.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.14-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Expires				
delta-seconds	"4294967295"			
Message-body				
MIME body part		**MCPTT-Info**		
MIME-part-body	MCPTT-Info as described in Table 5.3.3.3-4			

Table 5.3.3.3-4: MCPTT-INFO in SIP SUBSCRIBE (Table 5.3.3.3-3)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
mcptt-request-uri	px_MCPTT_ID_User_B			

Table 5.3.3.3-5: Void

Table 5.3.3.3-6: SIP SUBSCRIBE (step 32, Table 5.3.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.14-1 condition re-SUBSCRIBE				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Expires				
delta-seconds	"0"			
Message-body				
MIME body part		**MCPTT-Info**		
MIME-part-body	MCPTT-Info as described in Table 5.3.3.3-7			

Table 5.3.3.3-7: MCPTT-INFO in SIP SUBSCRIBE (Table 5.3.3.3-6)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
mcptt-request-uri	px_MCPTT_ID_User_B			

Table 5.3.3.3-8: Void

Table 5.3.3.3-9: SIP 200 (OK) (steps 3, 7, 13, 16, 27, 44 Table 5.3.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.17.1.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Expires				
delta-seconds	"4294967295"			

Table 5.3.3.3-10: SIP 200 (OK) (steps 4E, 22, 33, 36, Table 5.3.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.17.1.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Expires				
delta-seconds	"0"			

Table 5.3.3.3-11: Void

Table 5.3.3.3-12: SIP PUBLISH (steps 6, 43, Table 5.3.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.11-1 with condition PRESENCE-EVENT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**MCPTT-Info**		
MIME-part-body	MCPTT-Info as described in Table 5.3.3.3-13			
MIME body part		**PIDF**		
MIME-part-body	PIDF as described in Table 5.3.3.3-14			

Table 5.3.3.3-13: MCPTT-INFO in SIP PUBLISH (Table 5.3.3.3-12)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
mcptt-request-uri	px_MCPTT_ID_User_A			

Table 5.3.3.3-14: PIDF in SIP PUBLISH (Table 5.3.3.3-12)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.5.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
..p-id	any allowed value	p-id shall be present acc. to TS 24.379 [9] clause 9.2.2.2.5 and clause 9.2.2.3.5		

Table 5.3.3.3-15: SIP PUBLISH (step 15, Table 5.3.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.11-1 with condition PRESENCE-EVENT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		MCPTT-Info		
MIME-part-body	MCPTT-Info as described in Table 5.3.3.3-16			
MIME body part		PIDF		
MIME-part-body	PIDF as described in Table 5.3.3.3-17			

Table 5.3.3.3-16: MCPTT-INFO in SIP PUBLISH (Table 5.3.3.3-15)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
mcptt-request-uri	px_MCPTT_ID_User_B			

Table 5.3.3.3-17: PIDF in SIP PUBLISH (Table 5.3.3.3-15)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.5.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
presence				
Entity attribute	px_MCPTT_ID_User_B			
tuple				
Id attribute	px_MCPTT_Client_B_ID			
..p-id	any allowed value	p-id shall be present acc. to TS 24.379 [9] clause 9.2.2.2.5 and clause 9.2.2.3.5		

Table 5.3.3.3-18: SIP PUBLISH (step 21, Table 5.3.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.11-1 with condition PRESENCE-EVENT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Expires				
delta-seconds	"0"			
Message-body				
MIME body part		MCPTT-Info		
MIME-part-body	MCPTT-Info as described in Table 5.3.3.3-19			
MIME body part		PIDF		
MIME-part-body	PIDF as described in Table 5.3.3.3-20			

Table 5.3.3.3-19: MCPTT-INFO in SIP PUBLISH (Table 5.3.3.3-18)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
mcptt-request-uri	px_MCPTT_ID_User_B			

Table 5.3.3.3-20: PIDF in SIP PUBLISH (Table 5.3.3.3-18)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.5.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
presence				
entity attribute	px_MCPTT_ID_User_B			
tuple				
Id attribute	px_MCPTT_Client_B_ID			
status	not present			
..p-id	any allowed value	p-id shall be present acc. to TS 24.379 [9] clause 9.2.2.2.5 and clause 9.2.2.3.5		

Table 5.3.3.3-21: SIP PUBLISH (step 4D, 35, Table 5.3.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.11-1 with condition PRESENCE-EVENT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Expires				
delta-seconds	"0"			
Message-body				
MIME body part		MCPTT-Info		
MIME-part-body	MCPTT-Info as described in Table 5.3.3.3-22			
MIME body part		PIDF		
MIME-part-body	PIDF as described in Table 5.3.3.3-23			

Table 5.3.3.3-22: MCPTT-INFO in SIP PUBLISH (Table 5.3.3.3-21)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
mcptt-request-uri	px_MCPTT_ID_User_A			

Table 5.3.3.3-23: PIDF in SIP PUBLISH (Table 5.3.3.3-21)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.5.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
presence				
tuple				
status	not present			
..p-id	any allowed value	p-id shall be present acc. to TS 24.379 [9] clause 9.2.2.2.5 and clause 9.2.2.3.5		

Table 5.3.3.3-24: SIP NOTIFY (step 4, Table 5.3.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.8-1 with condition PRESENCE-EVENT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		PIDF		
MIME-part-body	PIDF as described in Table 5.3.3.3-25			

Table 5.3.3.3-25: PIDF in SIP NOTIFY (Table 5.3.3.3-24)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.5.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
presence				
tuple				
status				
affiliation				
status	“affiliated”			

Table 5.3.3.3-26: SIP NOTIFY (steps 8, 45, Table 5.3.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.8-1 with condition PRESENCE-EVENT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		PIDF		
MIME-part-body	PIDF as described in Table 5.3.3.3-27			

Table 5.3.3.3-27: PIDF in SIP NOTIFY (Table 5.3.3.3-26)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.5.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
presence				
tuple				
status				
affiliation				
status	“affiliating”			
..p-id	same value as received in corresponding SIP PUBLISH (step 6, 43)			

Table 5.3.3.3-28: SIP NOTIFY (steps 9, 46, Table 5.3.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.8-1 with condition PRESENCE-EVENT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		PIDF		
MIME-part-body	PIDF as described in Table 5.3.3.3-29			

Table 5.3.3.3-29: PIDF in SIP NOTIFY (Table 5.3.3.3-28)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.5.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
presence				
tuple				
status				
affiliation				
status	“affiliated”			
..p-id	same value as received in corresponding SIP PUBLISH (step 6, 43)			

Table 5.3.3.3-30: SIP NOTIFY (step 17, Table 5.3.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.8-1 with condition PRESENCE-EVENT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		PIDF		
MIME-part-body	PIDF as described in Table 5.3.3.3-31			

Table 5.3.3.3-31: PIDF in SIP NOTIFY (Table 5.3.3.3-30)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.5.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
presence				
entity attribute	px_MCPTT_ID_User_B			
tuple				
Id attribute	px_MCPTT_Client_B_ID			
status				
affiliation				
status	“affiliating”			
..p-id	same value as received in corresponding SIP PUBLISH (step 15)			

Table 5.3.3.3-31A: SIP NOTIFY (step 28, Table 5.3.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.8-1 with condition PRESENCE-EVENT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**PIDF**		
MIME-part-body	PIDF as described in Table 5.3.3.3-31B			

Table 5.3.3.3-31B: PIDF in SIP NOTIFY (Table 5.3.3.3-31A)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.5.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
presence				
entity attribute	px_MCPTT_ID_User_B			
tuple				
Id attribute	px_MCPTT_Client_B_ID			
status				
affiliation				
status	“affiliating”			

Table 5.3.3.3-32: SIP NOTIFY (step 18, Table 5.3.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.8-1 with condition PRESENCE-EVENT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		PIDF		
MIME-part-body	PIDF as described in Table 5.3.3.3-33			

Table 5.3.3.3-33: PIDF in SIP NOTIFY (Table 5.3.3.3-32)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.5.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
presence entity				
entity attribute	px_MCPTT_ID_User_B			
tuple id				
Id attribute	px_MCPTT_Client_B_ID			
status				
affiliation				
status	“affiliated”			
..p-id	same value as received in corresponding SIP PUBLISH (step 15)			

Table 5.3.3.3-33A: SIP NOTIFY (step 29, Table 5.3.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.8-1 with condition PRESENCE-EVENT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**PIDF**		
MIME-part-body	PIDF as described in Table 5.3.3.3-33B			

Table 5.3.3.3-33B: PIDF in SIP NOTIFY (Table 5.3.3.3-33A)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.5.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
presence				
entity attribute	px_MCPTT_ID_User_B			
tuple				
Id attribute	px_MCPTT_Client_B_ID			
status				
affiliation				
status	“affiliated”			

Table 5.3.3.3-34: SIP NOTIFY (step 23, Table 5.3.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.8-1 with condition PRESENCE-EVENT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		PIDF		
MIME-part-body	PIDF as described in Table 5.3.3.3-35			

Table 5.3.3.3-35: PIDF in SIP NOTIFY (Table 5.3.3.3-34)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.5.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
presence				
entity attribute	px_MCPTT_ID_User_B			
tuple				
Id attribute	px_MCPTT_Client_B_ID			
status				
affiliation				
status	“deaffiliating”			
..p-id	same value as received in corresponding SIP PUBLISH (step 21)			

Table 5.3.3.3-36: SIP NOTIFY (step 37, Table 5.3.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.8-1 with condition PRESENCE-EVENT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		PIDF		
MIME-part-body	PIDF as described in Table 5.3.3.3-37			

Table 5.3.3.3-37: PIDF in SIP NOTIFY (Table 5.3.3.3-36)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.5.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
presence				
tuple				
status				
affiliation				
status	“deaffiliating”			
..p-id	same value as received in corresponding SIP PUBLISH (step 35)			

Table 5.3.3.3-38: SIP MESSAGE (step 26, Table 5.3.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.7.1-1 with condition AFFILIATION				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		MCPTT-Info		
MIME-part-body	MCPTT-Info as described in Table 5.3.3.3-39			

Table 5.3.3.3-39: MCPTT-INFO in SIP MESSAGE (Table 5.3.3.3-38)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
mcptt-request-uri	px_MCPTT_ID_User_B			

Table 5.3.3.3-40: Void

Table 5.3.3.3-41: SIP MESSAGE (step 39, Table 5.3.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.7.2-1 with condition AFFILIATION				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		MCPTT-Info		
MIME-part-body	MCPTT-Info as described in Table 5.3.3.3-42			

Table 5.3.3.3-42: MCPTT-INFO in SIP MESSAGE (Table 5.3.3.3-41)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
mcptt-calling-user-id	not present			

Table 5.3.3.3-43: Void

Table 5.3.3.3-44: SIP NOTIFY (step 13A, Table 5.3.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.8-1 with condition PRESENCE-EVENT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		PIDF		
MIME-part-body	PIDF as described in Table 5.3.3.3-45			

Table 5.3.3.3-45: PIDF in SIP NOTIFY (Table 5.3.3.3-44)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.5.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
presence				
tuple				
status	not present			

Table 5.3.3.3-46: SIP NOTIFY (step 4H, 37B, Table 5.3.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.8-1 with condition PRESENCE-EVENT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		PIDF		
MIME-part-body	PIDF as described in Table 5.3.3.3-46A			

Table 5.3.3.3-46A: PIDF in SIP NOTIFY (Table 5.3.3.3-46)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.5.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
presence				
tuple id				
status	not present			
..p-id	same value as received in the corresponding SIP PUBLISH (step 4D, 35)			

Table 5.3.3.3-46B: SIP NOTIFY (step 23B, Table 5.3.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.8-1 with condition PRESENCE-EVENT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**PIDF**		
MIME-part-body	PIDF as described in Table 5.3.3.3-46C			

Table 5.3.3.3-46C: PIDF in SIP NOTIFY (Table 5.3.3.3-46B)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.5.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
presence				
entity attribute	px_MCPTT_ID_User_B			
tuple id				
Id attribute	px_MCPTT_Client_B_ID			
status	not present			
..p-id	same value as received in corresponding SIP PUBLISH (step 21)			

Table 5.3.3.3-47: SIP NOTIFY (step 4F, Table 5.3.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.8-1 with condition PRESENCE-EVENT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		PIDF		
MIME-part-body	PIDF as described in Table 5.3.3.3-48			

Table 5.3.3.3-48: PIDF in SIP NOTIFY (Table 5.3.3.3-47)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.5.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
presence				
tuple				
status				
affiliation				
status	“deaffiliating”			
..p-id	same value as received in corresponding SIP PUBLISH (step 4D)			

5.4 Configuration / Pre-established Session Establishment / Pre-established Session Modification / Pre-established Session Release

5.4.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service }
ensure that {
  when { MCPTT User requests the creation of a pre-established session }
    then { UE (MCPTT Client) requests the creation of a pre-establish session by sending a SIP
INVITE message }
            }
```

(2)

```
with { the MCPTT client already having a pre-established session created }
ensure that {
  when { MCPTT User requests the modification of a pre-established session }
    then { UE (MCPTT Client) requests the modification of a pre-establish session by sending a SIP
re-INVITE message or a SIP UPDATE message (depending on UE implementation) }
            }
```

(3)

```
with { the MCPTT client already having a pre-stablished session created }
ensure that {
  when { MCPTT Server requests the modification of a pre-established session by sending either a SIP
UPDATE message or a SIP re-INVITE message }
    then { UE (MCPTT Client) responds to the pre-established session modification request by sending
a SIP 200 (OK) message }
            }
```

(4)

```
with { the MCPTT client already having a pre-stablished session created }
ensure that {
  when { MCPTT User requests the release of a pre-established session }
    then { UE (MCPTT Client) requests the release of a pre-establish session by sending a SIP BYE
message }
            }
```

(5)

```
with { the MCPTT client already having a pre-stablished session created }
ensure that {
  when { MCPTT Server requests the release of a pre-established session by sending a SIP BYE message
}
    then { UE (MCPTT Client) responds to the pre-established session release request by sending a
SIP 200 (OK) message }
            }
```

5.4.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.379, clauses 8.2.1, 8.3.1.1, 8.3.1.2, 8.4.1.1, 8.4.1.2. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.379, clause 8.2.1]

When the MCPTT client initiates a pre-established session the MCPTT client shall:

1) gather ICE candidates according to IETF RFC 5245 [17]; and

NOTE 1: ICE candidates are only gathered on interfaces that the MCPTT UE uses to obtain MCPTT service.

2) generate an initial SIP INVITE request by following the UE originating session procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

1) shall set the Request-URI of the SIP INVITE request to the public service identity of the participating MCPTT function serving the MCPTT user;

2) may include a P-Preferred-Identity header field in the SIP INVITE request containing a public user identity as specified in 3GPP TS 24.229 [4];

3) shall include the g.3gpp.mcptt media feature tag in the Contact header field of the SIP INVITE request according to IETF RFC 3840 [16];

4) shall include an Accept-Contact header field with the media feature tag g.3gpp.mcptt along with parameters "require" and "explicit" according to IETF RFC 3841 [6];

5) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP INVITE request;

6) shall include an Accept-Contact header field with the media feature tag g.3gpp.icsi-ref set to the value "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with parameters "require" and "explicit" according to IETF RFC 3841 [6];

7) shall include the "timer" option tag in the Supported header field;

8) should include the Session-Expires header field according to IETF RFC 4028 [7] and should not include the "refresher" header field. The "refresher" header field parameter shall be set to "uac" if included;

9) shall include an SDP offer according to 3GPP TS 24.229 [4] with the clarifications given in subclause 6.2.1, and include ICE candidates in the SDP offer as per IETF RFC 5245 [17]; and

10) shall send the SIP INVITE request according to 3GPP TS 24.229 [4].

Upon receiving a SIP 2xx response to the SIP INVITE request the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5].

NOTE 2: If ICE candidate evaluation results in candidate pairs other than the default candidate pair being selected a further offer answer exchange using the procedures in subclause 8.3 will be needed.

[TS 24.379, clause 8.3.1.1]

When the MCPTT client needs to modify the pre-established session outside of an MCPTT session, the MCPTT client:

1) shall generate a SIP UPDATE request or a SIP re-INVITE request according to 3GPP TS 24.229 [4];

2) shall include an SDP offer according to 3GPP TS 24.229 [4] with the clarifications given in subclause 6.2.1, and include ICE candidates in the SDP offer as per IETF RFC 5245 [17], if required; and

3) shall send the SIP request towards the MCPTT server according to rules and procedures of 3GPP TS 24.229 [4].

On receipt of the SIP 200 (OK) response the MCPTT client:

1) shall interact with media plane as specified in 3GPP TS 24.380 [5], if there is change in media parameters or codecs in the received SDP answer, compared to those in the previously agreed SDP; and

2) shall interact with media plane as specified in 3GPP TS 24.380 [5], if there is a media stream that is currently used in the pre-established session, marked as rejected in the received SDP answer.

NOTE: The MCPTT client keeps resources for previously agreed media stream, media parameters and codecs until it receives a SIP 200 (OK) response.

[TS 24.379, clause 8.3.1.2]

Upon receiving a SIP UPDATE request or a SIP re-INVITE request to modify an existing pre-established session without associated MCPTT session, the MCPTT client:

1) shall validate that the received SDP offer includes at least one media stream for which the media parameters and at least one codec is acceptable by the MCPTT client and if not reject the request with a SIP 488 (Not Acceptable Here) response. Otherwise, continue with the rest of the steps; and

2) shall generate a SIP 200 (OK) response as follows:

a) shall include an SDP answer according to 3GPP TS 24.229 [4] with the clarifications given in subclause 6.2.2, and include ICE candidates in the SDP answer as per IETF RFC 5245 [17]. if required.

[TS 24.379, clause 8.4.1.1]

NOTE: The MCPTT client needs to be prepared to release the pre-established session when receiving a SIP BYE request generated by the SIP core (e.g. due to network release of media plane resources).

When a MCPTT client needs to release a pre-established session as created in subclause 8.2.1, the MCPTT client:

1) shall generate a SIP BYE request according to rules and procedures of 3GPP TS 24.229 [4];

2) shall set the Request-URI of the SIP BYE request to the URI that identifies the pre-established session;

3) shall send the SIP BYE request towards the participating MCPTT function within the SIP dialog of the pre-established session according to rules and procedures of the 3GPP TS 24.229 [4]; and

4) shall, upon receiving a SIP 200 (OK) response to the SIP BYE request interact with the media plane as specified in 3GPP TS 24.380 [5].

[TS 24.379, clause 8.4.1.2]

Upon receiving a SIP BYE request from the participating MCPTT function within a pre-established session the MCPTT client shall check whether there are any MCPTT sessions using the pre-established session, and:

1) if there is an established MCPTT session then the MCPTT client shall remove the MCPTT client from the MCPTT session by performing the procedures for session release for each MCPTT session as specified in 3GPP TS 24.380 [5]; and

2) if there is no MCPTT session using the pre-established session, then the MCPTT client shall:

   a) interact with the media plane as specified in 3GPP TS 24.380 [5] for disconnecting the media plane resources towards the participating MCPTT function; and

   b) shall generate and send a SIP 200 (OK) response to the SIP BYE request according to rules and procedures of 3GPP TS 24.229 [4].

5.4.3 Test description

5.4.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)

- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

- UE States at the end of the preamble

  - The UE is in E-UTRA Registered, Idle Mode state.

  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

5.4.3.2 Test procedure sequence

Table 5.4.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the MCPTT User request the creation of a pre-established session without implicit floor control (NOTE 1)	-	-	-	-
2	Check: Does the UE (MCPTT Client) perform Generic Test Procedure for MCPTT pre-established session establishment CO as described in TS 36.579-1 [2] Table 5.3.3.3-1 to create a pre-established session?	-	-	1	-
2A-3A	Void	-	-	-	-
-	EXCEPTION: Steps 4a1-5b1 describe behaviour that depends on the UE implementation. The "lower case letter" identifies a step sequence that takes place if the UE is capable to provide pre-established session modification triggered by the user.	-	-	-	-
4a1	IF pc_MCX_UserinitiatedPreestablishedSessionModification: Make the MCPTT User request to modify the pre-established session by requesting usage of implicit floor control (NOTE 1)	-	-	-	-
4a2	The E-UTRA/EPC signalling according to clause 5.4.13 'Generic Test Procedure for MCPTT radio bearer establishment for use of pre-established session' starting with Step 2 takes place	-	-	-	-
-	EXCEPTION: Steps 5a1-5b1 describe behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that takes place if the UE uses the SIP UPDATE message or the SIP re-INVITE message to modify an existing pre-established session.	-	-	-	-
5a1	Check: Does the UE (MCPTT Client) send a SIP UPDATE message to modify a pre-established session?	-->	SIP UPDATE	2	P
5a2	The SS responds to the SIP UPDATE message with a SIP 200 (OK) message	<--	SIP 200 (OK)	-	-
5b1	Check: Does the UE (MCPTT Client) perform Step 1-4 of the Generic Test Procedure for MCPTT CO session modification with implicit Floor Control as described in TS 36.579-1 [2] Table 5.3.14.3-1 to modify a pre-established session?	-	-	2	-
6	Void	-	-	-	-
-	EXCEPTION: Steps 6Aa1 describes behaviour that depends on the UE implementation. The "lower case letter" identifies a step sequence that takes place if the UE is not capable to provide pre-established session modification triggered by the user.	-	-	-	-
6Aa1	IF NOT pc_MCX_UserinitiatedPreestablishedSessionModification: The E-UTRA/EPC signalling according to clause 5.4.13 'Generic Test Procedure for MCPTT radio bearer establishment for use of pre-established session' takes place	-	-	-	-
7	The SS sends a SIP UPDATE message to modify the Floor priority of the pre-established session.	<--	SIP UPDATE	-	-
8	Check: Does the UE (MCPTT Client) respond to the SIP UPDATE message with a SIP 200 (OK) message?	-->	SIP 200 (OK)	3	P

9	Check: Is the Generic Test Procedure for MCPTT CT session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.4.3-1 to modify the Floor priority of the pre-established session correctly performed?	-	-	3	-
10	Void	-	-	-	-
11	Make the MCPTT User request to release the pre-established session (NOTE 1)	-	-	-	-
12	Check: Does the UE (MCPTT Client) perform Generic Test Procedure for MCPTT CO call release as described in TS 36.579-1 [2] Table 5.3.10.3-1 to release the pre-established session?	-	-	4	-
13	Void	-	-	-	-
14	Make the MCPTT User request the creation of a pre-established session (NOTE 1)	-	-	-	-
15	The Generic Test Procedure for MCPTT pre-established session establishment CO as described in TS 36.579-1 [2] Table 5.3.3.3-1 to create a pre-established session is performed.	-	-	-	-
15A - 16A	Void	-	-	-	-
17	Check: Is the Generic Test Procedure for MCPTT CT call release as described in TS 36.579-1 [2] Table 5.3.12.3-1 to release the pre-established session correctly performed?	-	-	5	-
18	Void	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI.					

5.4.3.3 Specific message contents

Table 5.4.3.3-1: SIP INVITE (steps 2, 15, Table 5.4.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Content-Type				
media-type	"application/sdp"			
Message-body				
SDP message	SDP message as described in Table 5.4.3.3-1A			

Table 5.4.3.3-1A: SDP in SIP INVITE (Table 5.4.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.1.1-1, condition INITIAL_SDP_OFFER

Table 5.4.3.3-2: SIP 200 (OK) (steps 2, Table 5.4.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.17.1.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
SDP message	SDP message as described in Table 5.4.3.3-2A			

Table 5.4.3.3-2A: SDP in SIP 200 (OK) (Table 5.4.3.3-2)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.1.2-1

Table 5.4.3.3-3: Void

Table 5.4.3.3-4: Void

Table 5.4.3.3-5: Void

Table 5.4.3.3-5A: SIP UPDATE (step 5a1, Table 5.4.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.15.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
SDP Message	SDP Message as described in Table 5.4.3.3-5B			

Table 5.4.3.3-5B: SDP in SIP UPDATE (Table 5.4.3.3-5A) or re-INVITE (Table 5.4.3.3-6)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.1.1-1 with condition IMPLICIT_GRANT_REQUESTED

Table 5.4.3.3-6: SIP re-INVITE (step 5b1, Table 5.4.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.1-1 with condition re-INVITE				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Contact	Contact header with the same Contact URI and the same mandatory feature parameters as in the INVITE creating the dialog			
Content-Type				
media-type	"application/sdp"			
Message-body				
SDP Message	SDP Message as described in Table 5.4.3.3-5B			

Table 5.4.3.3-6A: SIP 200 (OK) (step 5a2 or 5b3)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.17.1.2-1 with condition INVITE-RSP				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Contact				
addr-spec				
user-info and host	tsc_MCX_SessionID_B	The URI that identifies the pre-established session		

Table 5.4.3.3-6B: SIP UPDATE (step 7, Table 5.4.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.15.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
SDP Message	SDP Message as described in Table 5.4.3.3-6D			

Table 5.4.3.3-6C: SIP 200 (OK) (step 8)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.17.1.1-1 with condition INVITE-RSP				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Contact	Contact header with the same Contact URI and the same mandatory feature parameters as in the INVITE creating the dialog			
Content-Type				
media-type	"application/sdp"			
Message-body				
SDP Message	SDP message as described in Table TS 36.579-1 [2] 5.5.3.1.1-1			

Table 5.4.3.3-6D: SDP in SIP UPDATE (Table 5.4.3.3-6B)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.1.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Media descriptions				
media attribute		a= line attribute = fmtp		
fmtp				
format specific parameters				
mc_priority	"2"			

Table 5.4.3.3-7: SIP re-INVITE (step 9, Table 5.4.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.2-1 with condition re_INVITE				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Contact	same as in the response for the INVITE creating the dialog			
Message-body				
SDP Message	SDP Message as described in Table 5.4.3.3-7A			

Table 5.4.3.3-7A: SDP in SIP re-INVITE (Table 5.4.3.3-7)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.1.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Media descriptions				
media attribute		a= line attribute = fmtp		
fmtp				
format specific parameters				
mc_priority	"3"			

Table 5.4.3.3-7B: SIP 200 (OK) (step 9, Table 5.4.3.2-1; step 4, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation Path: Table 5.4.3.3-6C

Table 5.4.3.3-8: SIP BYE (step 12, Table 5.4.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.10.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.2.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line				
Request-URI	tsc_MCX_SessionID_B	The URI that identifies the pre-established session		

Table 5.4.3.3-9: SIP BYE (step 17, Table 5.4.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.12.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.2.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line				
Request-URI	tsc_MCX_SessionID_B	The URI that identifies the pre-established session		

5.5 Configuration / Determination of MCPTT Service Settings / Current Active MCPTT Settings / De-subscribe

5.5.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service }
ensure that {
  when { MCPTT User requests to verify the currently active MCPTT service settings or to discover
MCPTT service settings }
    then { UE (MCPTT Client) sends a SIP SUBSCRIBE message to find the MCPTT service settings and
responds to the SIP NOTIFY message with a SIP 200 (OK) message }
            }
```

(2)

```
with { UE (MCPTT Client) having already subscribed to find the MCPTT service settings }
ensure that {
  when { MCPTT User requests to re-subscribe for MCPTT service settings }
    then { UE (MCPTT Client) sends a SIP SUBSCRIBE message to re-subscribe for the MCPTT service
settings and responds to the SIP NOTIFY message with a SIP 200 (OK) message }
            }
```

(3)

```
with { UE (MCPTT Client) having already subscribed to find the MCPTT service settings }
ensure that {
  when { MCPTT User requests to de-subscribe for MCPTT service settings }
    then { UE (MCPTT Client) sends a SIP SUBSCRIBE message to de-subscribe for the MCPTT service
settings and responds to the SIP NOTIFY message with a SIP 200 (OK) message }
            }
```

5.5.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: TS 24.379 clause 7.2.4. Unless otherwise stated these are Rel-14 requirements.

[TS 24.281, clause 7.2.4]

In order to discover MCPTT service settings of another MCPTT client of the same MCPTT user or to verify the currently active MCPTT service settings of this MCPTT client, the MCPTT client shall generate an initial SIP SUBSCRIBE request according to 3GPP TS 24.229 [4], IETF RFC 6665 [26], and IETF RFC 4354 [55].

In the SIP SUBSCRIBE request, the MCPTT client:

1) shall set the Request-URI to the public service identity identifying the originating participating MCPTT function serving the MCPTT user;

2) shall include an application/vnd.3gpp.mcptt-info+xml MIME body. In the application/vnd.3gpp.mcptt-info+xml MIME body, the MCPTT client shall include the <mcptt-request-uri> element set to the MCPTT ID of the MCPTT user;

3) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9];

4) shall set the Event header field to the 'poc-settings' value;

5) shall include an Accept header field containing the "application/poc-settings+xml" MIME type;

6) if the MCPTT client wants to receive the current status and later notification, shall set the Expires header field according to IETF RFC 6665 [26], to 4294967295; and

NOTE 1: 4294967295, which is equal to 2^{32}-1, is the highest value defined for Expires header field in IETF RFC 3261 [24].

7) if the MCPTT client wants to fetch the current state only, shall set the Expires header field according to IETF RFC 6665 [26], to zero.

In order to re-subscribe or de-subscribe, the MCPTT client shall generate an in-dialog SIP SUBSCRIBE request according to 3GPP TS 24.229 [4], IETF RFC 6665 [26], IETF RFC 4354 [55]. In the SIP SUBSCRIBE request, the MCPTT client:

1) shall set the Event header field to the 'poc-settings' value;

2) shall include an Accept header field containing the "application/poc-settings+xml" MIME type;

3) if the MCPTT client wants to receive the current status and later notification, shall set the Expires header field according to IETF RFC 6665 [26], to 4294967295; and

NOTE 2: 4294967295, which is equal to 2^{32}-1, is the highest value defined for Expires header field in IETF RFC 3261 [24].

4) if the MCPTT client wants to de-subscribe, shall set the Expires header field according to IETF RFC 6665 [26], to zero.

Upon receiving a SIP NOTIFY request according to 3GPP TS 24.229 [4], IETF RFC 6665 [26] and IETF RFC 4354 [55], that contains an application/poc-settings+xml MIME body the MCPTT client shall cache:

1) the <am-settings> element of the poc-settings+xml MIME body for each MCPTT client identified by the "id" attribute according to IETF RFC 4354 [55] as the current Answer-mode indication of that MPCTT client; and

2) the <selected-user-profile-index> element of the poc-settings+xml MIME body for each MCPTT client identified by the "id" attribute according to IETF RFC 4354 [55] as the active MCPTT service user profile of that MCPTT client.

5.5.3 Test description

5.5.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

- E-UTRA related parameters are set to the default parameters for the basic single cell environment, as defined in TS 36.508 [20] clause 4.4.

IUT:

- UE (MCPTT Client)

- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10, is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

5.5.3.2 Test procedure sequence

Table 5.5.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the MCPTT User request to verify the currently active MCPTT service settings of the UE (MCPTT Client) and to receive later notifications. NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.3 'Generic Test Procedure for MCPTT CO communication in E-UTRA'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
2	Check: Does the UE (MCPTT Client) send a SIP SUBSCRIBE message to request to verify the currently active MCPTT service settings of the UE (MCPTT Client)?	-->	SIP SUBSCRIBE	1	P
3	The SS (MCPTT Server) responds to the SIP SUBSCRIBE message with a SIP 200 (OK) message.	<--	SIP 200 (OK)	-	-
4	The SS (MCPTT Server) sends a SIP NOTIFY with the currently active MCPTT service settings of the UE (MCPTT Client).	<--	SIP NOTIFY	-	-
5	The UE (MCPTT Client) responds with a SIP 200 (OK) message.	-->	SIP 200 (OK)		
-	EXCEPTION: SS (MCPTT Server) releases the E-UTRA connection.	-	-	-	-
6	Make the MCPTT User request to re-subscribe to MCPTT service settings and to receive later notifications. NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.3 'Generic Test Procedure for MCPTT CO communication in E-UTRA'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
7	Check: Does the UE (MCPTT Client) send a SIP SUBSCRIBE message to re-subscribe to MCPTT service settings and to receive later notifications?	-->	SIP SUBSCRIBE	2	P
8	The SS (MCPTT Server) responds to the SIP SUBSCRIBE message with a SIP 200 (OK) message.	<--	SIP 200 (OK)	-	-
9	The SS (MCPTT Server) sends a SIP NOTIFY with the currently active MCPTT service settings of the UE (MCPTT Client).	<--	SIP NOTIFY	-	-
10	The UE (MCPTT Client) responds with a SIP 200 (OK) message.	-->	SIP 200 (OK)		
-	EXCEPTION: SS (MCPTT Server) releases the E-UTRA connection.	-	-	-	-
11	Make the MCPTT User request to de-subscribe to MCPTT service settings. NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.3 'Generic Test Procedure for MCPTT CO communication in E-UTRA'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-

12	Check: Does the UE (MCPTT Client) send a SIP SUBSCRIBE message to de-subscribe to MCPTT service settings?	-->	SIP SUBSCRIBE	3	P
13	The SS (MCPTT Server) responds to the SIP SUBSCRIBE message with a SIP 200 (OK) message.	<--	SIP 200 (OK)	-	-
-	EXCEPTION: SS (MCPTT Server) releases the E-UTRA connection.	-	-	-	-

5.5.3.3 Specific message contents

Table 5.5.3.3-1: SIP SUBSCRIBE (steps 2, 7, Table 5.5.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.14-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Accept			TS 24.379 [9] clause 7.2.4	
media-range	"application/poc-settings+xml"			
Expires			TS 24.379 [9] clause 7.2.4	
value	"4294967295"			
Event			TS 24.379 [9] clause 7.2.4	
event-type	"poc-settings"			
Content-Type				
media-type	"application/vnd.3gpp. mcptt-info+xml"			
Message-body				
MIME body part		MCPTT Info		
MIME-part-body	MCPTT-Info as described in Table 5.5.3.3-2			
MIME body part		SIMPLE-FILTER		
MIME-part-body	not present			

Table 5.5.3.3-2: MCPTT-Info (Table 5.5.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcptt-info				
mcptt-Params				
mcptt-request-uri	px_MCPTT_ID_User_A			
mcptt-calling-user-id	not present			
mcptt-called-party-id	not present			
emergency-ind	not present			
alert-ind	not present			
imminentperil-ind	not present			
anyExt	not present			

Table 5.5.3.3-3: SIP 200 (OK) from the SS (steps 3, 8, 13, Table 5.5.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.17.1.2-1, condition INVITE-RSP				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Content-Type	not present			
Content-Length				
value	"0"	No message body included		

Table 5.5.3.3-4: SIP NOTIFY from the SS (steps 4, 9, Table 5.5.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.8-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Contact				
feature-param	not present	"+g.3gpp.icsi-ref= urn:urn- 7:3gpp-service.ims.icsi.mcptt.sds" is not present		
Content-Type				
media-type	"application/poc-settings+xml"			
Message-body				
MIME body part		PoC-Settings	RFC 4354 [103]	
MIME-part-body	PoC-Settings as described in Table 5.5.3.3-5			

Table 5.5.3.3-5: PoC-Settings (Table 5.5.3.3-4)

Derivation Path: RFC 4354 [103]				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
poc-settings				
incoming-session-barring	"false"			
answer-mode	"automatic"			
incoming-personal-alert-barring	"false"			
simultaneous-sessions-support	"true"			
selected-user-profile-index	element identifying the active MCPTT user profile			

Table 5.5.3.3-6: SIP 200 (OK) from the UE (steps 5, 10, Table 5.5.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.17.1.1-1, condition INVITE-RSP				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Content-Type	not present			
Content-Length				
value	"0"	No message body included		

Table 5.5.3.3-7: SIP SUBSCRIBE (step 12, Table 5.5.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.14-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Accept			TS 24.379 [9] clause 7.2.4	
media-range	"application/poc-settings+xml"			
Expires			TS 24.379 [9] clause 7.2.4	
value	"0"			
Event			TS 24.379 [9] clause 7.2.4	
event-type	"poc-settings"			
Content-Type				
media-type	"application/vnd.3gpp.mcptt-info+xml"			
Message-body				
MIME body part		MCPTT Info		
MIME-part-body	MCPTT-Info as described in Table 5.5.3.3-2			
MIME body part		SIMPLE-FILTER		
MIME-part-body	not present			

6 MCPTT Client on-network operation

6.1 Group Calls

6.1.1 Pre-arranged Group Call

6.1.1.1 On-network / On-demand Pre-arranged Group Call / Automatic Commencement Mode / End-to-end communication security / Floor Control / Upgrade to Emergency Group Call / Cancel Emergency State / Upgrade to Imminent Peril Group Call / Cancel Imminent Peril State / Client Originated (CO)

6.1.1.1.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service }
ensure that {
  when { the MCPTT User requests the establishment of an MCPTT On-demand Pre-arranged Group Call
requesting force of Automatic Commencement Mode at the invited MCPTT client(s) and implicit floor
control }
    then { UE (MCPTT Client) requests On-demand Automatic Commencement Mode Pre-arranged Group Call
establishment with implicit floor control by sending a SIP INVITE message, and, after indication
from the MCPTT Server that the call was established and receiving a Floor Granted message, notifies
the user }
           }
```

(2)

```
with { UE (MCPTT Client) having established an MCPTT On-demand Pre-arranged Group Call with
Automatic Commencement Mode }
ensure that {
  when { the MCPTT User (MCPTT Client) engages in communication with the invited MCPTT User(s) }
```

```
    then { UE (MCPTT Client) respects the floor control imposed by the MCPTT Server (Floor Request
during a talk burst, Floor granting/release, Floor idle, Floor deny, Floor taken/revoked, Floor
request queued and queue handling) }
            }
```

(3)

```
with { UE (MCPTT Client) having an ongoing On-demand Pre-arranged Group Call with Automatic
Commencement Mode }
ensure that {
  when { the SS (MCPTT Server) needs to terminate the ongoing MCPTT Group Call and the SS (MCPTT
Server) sends a SIP BYE request }
    then { UE (MCPTT Client) responds with a SIP 200 (OK) and leaves the MCPTT session }
            }
```

(4)

```
with { UE (MCPTT Client) having established an On-demand Pre-arranged Group Call with Automatic
Commencement Mode and the MCPTT User being authorised for initiating an MCPTT Emergency Group Call }
ensure that {
  when { the MCPTT User (MCPTT Client) wants to upgrade the ongoing MCPTT Group Call to an MCPTT
Emergency Group Call with floor control }
    then { UE (MCPTT Client) sends a SIP re-INVITE request and upon receipt of a SIP 2xx response
considers the call as being upgraded to Emergency Group Call (emergency group call state = "MEGC 3:
emergency-call-granted") }
            }
```

(5)

```
with { UE (MCPTT Client) having upgraded to an Emergency Group Call }
ensure that {
  when { the MCPTT User (MCPTT Client) continues communication with the invited MCPTT User(s) }
    then { UE (MCPTT Client) respects the floor control imposed by the MCPTT Server }
            }
```

(6)

```
with { UE (MCPTT Client) having upgraded an On-demand Pre-arranged Group Call with Automatic
Commencement Mode to an Emergency Group Call and the MCPTT User being authorised for cancelling an
MCPTT Emergency state (MCPTT in-progress emergency cancel) }
ensure that {
  when { the MCPTT User (MCPTT Client) wants to cancel the ongoing MCPTT Emergency state }
    then { UE (MCPTT Client) sends a SIP re-INVITE request and upon receipt of a SIP 2xx response
considers the emergency condition cancelled }
            }
```

(7)

```
with { UE (MCPTT Client) having established an On-demand Pre-arranged Group Call with Automatic
Commencement Mode and the MCPTT User being authorised for initiating an MCPTT Imminent Peril Group
Call }
ensure that {
  when { the MCPTT User (MCPTT Client) wants to upgrade the ongoing MCPTT Group Call to an MCPTT
Imminent Peril Group Call with floor control }
    then { UE (MCPTT Client) sends a SIP re-INVITE request and upon receipt of a SIP 2xx response
considers the call as being upgraded to Imminent Peril Group Call (imminent peril group call state =
"MIG 2: in-progress") }
            }
```

(8)

```
with { UE (MCPTT Client) having upgraded to an Imminent Peril Group Call }
ensure that {
  when { the MCPTT User (MCPTT Client) continues communication with the invited MCPTT User(s) }
    then { UE (MCPTT Client) respects the floor control imposed by the MCPTT Server }
            }
```

(9)

```
with { UE (MCPTT Client) having upgraded an On-demand Pre-arranged Group Call with Automatic
Commencement Mode to an Imminent Peril Group Call and the MCPTT User being authorised for cancelling
an MCPTT Imminent Peril state (MCPTT in-progress imminent peril cancel) }
```

```
ensure that {
  when { the MCPTT User (MCPTT Client) wants to cancel the ongoing MCPTT Imminent Peril state }
    then { UE (MCPTT Client) sends a SIP re-INVITE request and upon receipt of a SIP 2xx response
considers the imminent peril condition cancelled }
            }
```

(10)

```
with { UE (MCPTT Client) having an ongoing On-demand Pre-arranged Group Call with Automatic
Commencement Mode }
ensure that {
  when { the MCPTT User (MCPTT Client) wants to terminate the ongoing MCPTT Group Call }
    then { UE (MCPTT Client) sends a SIP BYE request and leaves the MCPTT session }
            }
```

6.1.1.1.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.379, clauses 10.1.1.2.1.1, 6.2.1, 6.2.3.1.2, 6.4, 6.5, 6.2.6, 10.1.1.2.1.3, 10.1.1.2.1.4, 6.2.8.1.3, 10.1.1.2.1.5, 6.2.8.1.11, 6.2.4.1, TS 24.380, clauses 6.2.4.5.3,6.2.4.6.4, 6.2.4.3.5, 6.2.4.4.2, 6.2.4.5.4, 6.2.4.6.5, 6.2.4.4.4, 6.2.4.4.9, 6.2.4.9.9, 6.2.4.9.6, 6.2.4.9.4. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.379, clause 10.1.1.2.1.1]

Upon receiving a request from an MCPTT user to establish an MCPTT prearranged group session the MCPTT client shall generate an initial SIP INVITE request by following the UE originating session procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

1) if the MCPTT user has requested the origination of an MCPTT emergency group call or is originating an MCPTT prearranged group call and the MCPTT emergency state is already set, the MCPTT client shall comply with the procedures in subclause 6.2.8.1.1;

2) if the MCPTT user has requested the origination of an MCPTT imminent peril group call, the MCPTT client shall comply with the procedures in subclause 6.2.8.1.9;

3) if the MCPTT user has requested the origination of a broadcast group call, the MCPTT client shall comply with the procedures in subclause 6.2.8.2;

4) shall include the g.3gpp.mcptt media feature tag and the g.3gpp.icsi-ref media feature tag with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP INVITE request according to IETF RFC 3840 [16];

5) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

6) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP INVITE request;

7) shall include an Accept-Contact header field with the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

8) should include the "timer" option tag in the Supported header field;

9) should include the Session-Expires header field according to IETF RFC 4028 [7]. It is recommended that the "refresher" header field parameter is omitted. If included, the "refresher" header field parameter shall be set to "uac";

10) shall set the Request-URI of the SIP INVITE request to the public service identity identifying the participating MCPTT function serving the MCPTT user;

NOTE 1: The MCPTT client is configured with public service identity identifying the participating MCPTT function serving the MCPTT user.

11) may include a P-Preferred-Identity header field in the SIP INVITE request containing a public user identity as specified in 3GPP TS 24.229 [4];

12) if the MCPTT emergency state is already set or the MCPTT client emergency group state for this group is set to "MEG 2: in-progress", the MCPTT client shall include the Resource-Priority header field and comply with the procedures in subclause 6.2.8.1.2;

13) if the MCPTT client imminent peril group state for this group is set to "MIG 2: in-progress" or "MIG 3: confirm-pending" shall include the Resource-Priority header field and comply with the procedures in subclause 6.2.8.1.12;

14) shall contain in an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with:

a) the <session-type> element set to a value of "prearranged";

b) the <mcptt-request-uri> element set to the group identity;

c) the <mcptt-client-id> element set to the MCPTT client ID of the originating MCPTT client; and

NOTE 2: The MCPTT client does not include the MCPTT ID of the originating MCPTT user in the body, as this will be inserted into the body of the SIP INVITE request that is sent from the originating participating MCPTT function.

d) if the group identity can be determined to be a TGI and if the MCPTT client can associate the TGI with a MCPTT group ID, the <associated-group-id> element set to the MCPTT group ID;

NOTE 3: The text "can associate the TGI with a MCPTT group ID" means that the MCPTT client is able to determine that there is a constituent group of the temporary group that it is a member of.

NOTE 4: The MCPTT client is informed about temporary groups and regrouping of MCPTT groups that the user is a member of as specified in 3GPP TS 24.381 [31].

NOTE 5: If the MCPTT user selected a TGI where there are several MCPTT groups where the MCPTT user is a member, the MCPTT client selects one of those MCPTT groups.

15) shall include an SDP offer according to 3GPP TS 24.229 [4] with the clarifications given in subclause 6.2.1;

16) if an implicit floor request is required, shall indicate this as specified in subclause 6.4; and

17) shall send the SIP INVITE request towards the MCPTT server according to 3GPP TS 24.229 [4].

On receiving a SIP 2xx response to the SIP INVITE request, the MCPTT client:

1) shall interact with the user plane as specified in 3GPP TS 24.380 [5] ;

2) if the MCPTT emergency group call state is set to "MEGC 2: emergency-call-requested" or "MEGC 3: emergency-call-granted" or the MCPTT imminent peril group call state is set to "MIGC 2: imminent-peril-call-requested" or "MIGC 3: imminent-peril-call-granted", the MCPTT client shall perform the actions specified in subclause 6.2.8.1.4; and

3) may subscribe to the conference event package as specified in subclause 10.1.3.1.

On receiving a SIP 4xx response, a SIP 5xx response or a SIP 6xx response to the SIP INVITE request:

1) if the MCPTT emergency group call state is set to "MEGC 2: emergency-call-requested" or "MEGC 3: emergency-call-granted"; or

2) if the MCPTT imminent peril group call state is set to "MIGC 2: imminent-peril-call-requested" or "MIGC 3: imminent-peril-call-granted";

the MCPTT client shall perform the actions specified in subclause 6.2.8.1.5.

On receiving a SIP INFO request where the Request-URI contains an MCPTT session ID identifying an ongoing group session, the MCPTT client shall follow the actions specified in subclause 6.2.8.1.13.

[TS 24.379, clause 6.2.1]

The SDP offer shall contain only one SDP media-level section for MCPTT speech according to 3GPP TS 24.229 [4] and, if floor control shall be used during the session, shall contain one SDP media-level section for a media-floor control entity according to 3GPP TS 24.380 [5].

When composing an SDP offer according to 3GPP TS 24.229 [4] the MCPTT client:

1) shall set the IP address of the MCPTT client for the offered MCPTT speech media stream and, if floor control shall be used, for the offered media-floor control entity;

NOTE: If the MCPTT client is behind a NAT the IP address and port included in the SDP offer can be a different IP address and port than the actual IP address and port of the MCPTT client depending on the NAT traversal method used by the SIP/IP Core.

2) shall include an "m=audio" media-level section for the MCPTT media stream consisting of:

   a) the port number for the media stream selected; and

   b) the codec(s) and media parameters and attributes with the following clarification:

      i) if the MCPTT client is initiating a call to a group identity;

      ii) if the <preferred-voice-encodings> element is present in the group document retrieved by the group management client as specified in 3GPP TS 24.381 [31] containing an <encoding> element with a "name" attribute; and

      iii) if the MCPTT client supports the encoding name indicated in the value of the "name" attribute;

      then the MCPTT client:

      i) shall insert the value of the "name" attribute in the <encoding name> field of the "a=rtpmap" attribute as defined in IETF RFC 4566 [12]; and

   c) "i=" field set to "speech" according to 3GPP TS 24.229 [4];

3) if floor control shall be used during the session, shall include an "m=application" media-level section as specified in 3GPP TS 24.380 [5] clause 12 for a media-floor control entity, consisting of:

   a) the port number for the media-floor control entity selected as specified in 3GPP TS 24.380 [5]; and

   b) the 'fmtp' attributes as specified in 3GPP TS 24.380 [5] clause 14; and

4) if end-to-end security is required for a private call and the SDP offer is not for establishing a pre-established session, shall include the MIKEY-SAKKE I_MESSAGE in an "a=key-mgmt" attribute as a "mikey" attribute value in the SDP offer as specified in IETF RFC 4567 [47].

[TS 24.379, clause 6.2.3.1.2]

When performing the automatic commencement mode procedures, the MCPTT client shall follow the procedures in subclause 6.2.3.1.1 with the following clarification:

- The MCPTT client may include a P-Answer-State header field with the value "Confirmed" as specified in IETF RFC 4964 [34] in the SIP 200 (OK) response.

[TS 24.379, clause 6.4]

An initial SIP INVITE request fulfilling the following criteria shall be regarded by the MCPTT server as an implicit floor request when the MCPTT client:

1) initiates an MCPTT speech session or initiates a pre-established session; and

2) includes the "mc_implicit_request" 'fmtp' attribute in the associated UDP stream for the floor control in the SDP offer/answer as specified in 3GPP TS 24.380 [5] clause 12.

A SIP re-INVITE request fulfilling the following criteria shall be regarded by the MCPTT server as an implicit floor request when the MCPTT client:

1) performs an upgrade of:

a) an MCPTT group call to an emergency MCPTT group call;

b) an MCPTT private call to an emergency MCPTT private call; or

c) an MCPTT group call to an imminent peril MCPTT group call; and

2) includes the "mc_implicit_request" 'fmtp' attribute in the associated UDP stream for the floor control in the SDP offer/answer as specified in 3GPP TS 24.380 [5] clause 12.

In all other cases the SIP (re-)INVITE request shall be regarded as received without an implicit floor request.

[TS 24.379, clause 6.5]

The MCPTT client and the MCPTT server shall support several MIME bodies in SIP request and SIP responses.

When the MCPTT client or the MCPTT server sends a SIP message and the SIP message contains more than one MIME body, the MCPTT client or the MCPTT server:

1) shall, as specified in IETF RFC 2046 [21], include one Content-Type header field with the value set to multipart/mixed and with a boundary delimiter parameter set to any chosen value;

2) for each MIME body:

a) shall insert the boundary delimiter;

b) shall insert the Content-Type header field with the MIME type of the MIME body; and

c) shall insert the content of the MIME body;

3) shall insert a final boundary delimiter; and

4) if an SDP offer or an SDP answer is one of the MIME bodies, shall insert the application/sdp MIME body as the first MIME body.

NOTE: The reason for inserting the application/sdp MIME body as the first body is that if a functional entity in the underlying SIP core does not understand multiple MIME bodies, the functional entity will ignore all MIME bodies with the exception of the first MIME body. The order of multiple MCPTT application MIME bodies in a SIP message is irrelevant.

When the MCPTT client or the MCPTT server sends a SIP message and the SIP message contains only one MIME body, the MCPTT client or the MCPTT server:

1) shall include a Content-Type header field set to the MIME type of the MIME body; and

2) shall insert the content of the MIME body.

[TS 24.380, clause 6.2.4.5.3]

Upon receiving an indication from the user to release the permission to send RTP media, the floor participant:

1. shall send a Floor Release message towards the floor control server The Floor Release message:

a. may include the first bit in the subtype of the Floor Release message set to '1' (acknowledgement is required) as specified in subclause 8.2.2;

NOTE: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

b. if the session is a broadcast call and if the session was established as a normal call, shall include the Floor Indicator with the A-bit set to '1' (Normal call); and

c. if the Floor Granted message included the G-bit set to '1' (Dual floor), shall include the Floor Indicator with the G-bit set to '1' (Dual floor);

2. shall remove the indication that the participant is overriding without revoke if this indication is stored;

3. shall start timer T100 (Floor Release) and initialize counter C100 (Floor Release) to 1; and

4. shall enter the 'U: pending Release' state.

[TS 24.380, Clause 6.2.4.6.4]

Upon receiving a Floor Idle message, the floor participant:

1. if the first bit in the subtype of the Floor Idle message to '1' (Acknowledgment is required) as described in subclause 8.3.2, shall send a Floor Ack message. The Floor Ack message:

   a. shall include the Message Type field set to '5' (Floor Idle); and

   b. shall include the Source field set to '0' (the floor participant is the source);

2. may provide a floor idle notification to the MCPTT user;

3. if the Floor Indicator field is included and the B-bit set to '1' (Broadcast group call), shall provide a notification to the user indicating the type of call;

4. shall stop timer T100 (Floor Release);

5. if the session is not a broadcast group call or if the A-bit in the Floor Indicator field is set to '1' (Normal call), shall enter the 'U: has no permission' state; and

6. if the session was initiated as a broadcast group call:

   a. shall indicate to the MCPTT client the media transmission is completed; and

   b shall enter the 'Releasing' state.

[TS 24.380, clause 6.2.4.3.5]

Upon receiving an indication from the user to request permission to send media, the floor participant:

1. shall send the Floor Request message toward the floor control server; The Floor Request message:

   a. if a different priority than the normal priority is required, shall include the Floor Priority field with the priority not higher than negotiated with the floor control server as specified in subclause 14.3.3; and

   b. if the floor request is a broadcast group call, system call, emergency call or an imminent peril call, shall include a Floor Indicator field indicating the relevant call types;

2. shall start timer T101 (Floor Request) and initialise counter C101 (Floor Request) to 1; and

3. shall enter the 'U: pending Request' state.

[TS 24.380, clause 6.2.4.4.2]

Upon receiving a Floor Granted message from the floor control server or a floor granted indication in an SIP 200 (OK) response in the application and signalling layer, the floor participant:

1. if the first bit in the subtype of the Floor Granted message is set to '1' (Acknowledgment is required) as described in subclause 8.3.2, shall send a Floor Ack message. The Floor Ack message:

   a. shall include the Message Type field set to '1' (Floor Granted); and

   b. shall include the Source field set to '0' (the floor participant is the source);

2. shall provide floor granted notification to the user, if not already done;

NOTE: Providing the floor granted notification to the user prior to receiving the Floor Granted message is an implementation option.

3. if the Floor Indicator field is included and the B-bit is set to '1' (Broadcast group call), shall provide a notification to the user indicating the type of call;

4. if the G-bit in the Floor Indicator is set to '1' (Dual floor) shall store an indication that the participant is overriding without revoke;

5. shall stop the optional timer T103 (End of RTP media), if running;
6. shall stop timer T101 (Floor Request); and
7. shall enter the 'U: has permission' state.

[TS 24.380, clause 6.2.4.5.4]

Upon receiving a Floor Revoke message, the floor participant:

1. shall inform the user that the permission to send RTP media is being revoked;
2. may give information to the user about the reason for revoking the permission to send media;
3. shall request the media in the MCPTT client discard any remaining buffered RTP media packets and to stop forwarding of encoded voice to the MCPTT server;
4 if the G-bit in the Floor Indicator is set to '1' (Dual floor):
   a. shall send a Floor Release message. In the Floor Release message:
      i. shall include the Floor Indicator with the G-bit set to '1' (Dual floor); and
      ii. may set the first bit in the subtype to '1' (Acknowledgment is required) as described in subclause 8.3.2;
5 if the G-bit in the Floor Indicator is set to '0' (not Dual floor):
   a. shall send a Floor Release message. In the Floor Release message:
      i. shall include the Floor Indicator with the G-bit set to '0' (not Dual floor); and
      ii. may set the first bit in the subtype to '1' (Acknowledgment is required) as described in subclause 8.3.2;

NOTE: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

6. shall start timer T100 (Floor Release) and initialize counter C100 (Floor Release) to 1; and
7. shall enter the 'U: pending Release' state.

[TS 24.380, Clause 6.2.4.6.5]

Upon receiving a Floor Taken message, the floor participant:

1. if the first bit in the subtype of the Floor Taken message is set to '1' (Acknowledgment is required) as described in subclause 8.3.2, shall send a Floor Ack message. The Floor Ack message:
   a. shall include the Message Type field set to '2' (Floor Taken); and
   b. shall include the Source field set to '0' (the floor participant is the source);
2. may provide floor taken notification to the user;
3. if the Floor Indicator field is included and the B-bit is set to '1' (Broadcast group call), shall provide a notification to the user indicating the type of call;
4. should start the optional timer T103 (End of RTP media);
5. shall stop timer T100 (Floor Release); and
6. shall enter the 'U: has no permission' state.

[TS 24.380, clause 6.2.4.4.4]

Upon receiving a Floor Deny message, the floor participant:

1. if the first bit in the subtype of the Floor Deny message is set to '1' (Acknowledgment is required) as described in subclause 8.3.2, shall send a Floor Ack message. The Floor Ack message:

a. shall include the Message Type field set to '3' (Floor Deny); and

b. shall include the Source field set to '0' (the floor participant is the source);

2. shall provide floor deny notification to the user;

3. may display the floor deny reason to the user using information in the Reject Cause field;

4. shall stop timer T101 (Floor Request); and

5. shall enter the 'U: has no permission' state.

[TS 24.380, clause 6.2.4.4.9]

Upon receiving a Floor Queue Position Info message, the floor participant:

1. if the first bit in the subtype of the Floor Queue Position Info message is set to '1' (Acknowledgment is required) as described in subclause 8.3.2, shall send a Floor Ack message. The Floor Ack message:

   a. shall include the Message Type field set to '9' (Floor Queue Position Info); and

   b. shall include the Source field set to '0' (the floor participant is the source);

2. shall provide floor request queued response notification to the MCPTT user;

3. may provide the queue position and priority to the MCPTT user; and

4. shall enter the 'U: queued' state.

[TS 24.380, clause 6.2.4.9.9]

Upon receipt of an indication from the MCPTT client to request the queue position, the floor participant:

1. shall send the Floor Queue Position Request message;

2. shall start timer T104 (Floor Queue Position Request) and initialize counter C104 (Floor Queue Position Request) to 1; and

3. remain in the 'U: queued' state.

[TS 24.380, clause 6.2.4.9.6]

Upon receiving an indication from the MCPTT user to release the queued floor request, the floor participant:

1. shall send a Floor Release message: The Floor Release message:

   a. may include the Floor Indicator field changing a broadcast group call to a normal call;

2. may set the first bit in the subtype of the Floor Release message to '1' (Acknowledgment is required) as described in subclause 8.3.2;

NOTE: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

3. shall start timer T100 (Floor Release) and initialise counter C10 (Floor Release) to 1;

4. shall stop timer T104 (Floor Queue Position Request), if running; and

5. shall enter the 'U: pending Release' state.

[TS 24.380, clause 6.2.4.9.4]

Upon receiving a Floor Granted message, the floor participant:

1. if the first bit in the subtype of the Floor Granted message is set to '1' (Acknowledgment is required) as described in subclause 8.3.2, shall send a Floor Ack message. The Floor Ack message:

   a. shall include the Message Type field set to '1' (Floor Granted); and

b. shall include the Source field set to '0' (the floor participant is the source);

2. shall provide a floor granted notification to the MCPTT user;

3. if the Floor Indicator field is included and the B-bit is set to '1' (Broadcast group call), shall provide a notification to the user indicating the type of call;

4. shall stop timer T104 (Floor Queue Position Request), if running;

5. shall start timer T132 (Queued granted user action);

6. shall indicate the user that the floor is granted; and

7. shall remain in the 'U: queued' state.

[TS 24.379, clause 6.2.6]

Upon receiving a SIP BYE request, the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5]; and

2) shall send SIP 200 (OK) response towards MCPTT server according to 3GPP TS 24.229 [4].

[TS 24.379, clause 10.1.1.2.1.3]

This subclause covers both on-demand session and pre-established sessions.

Upon receiving a request from an MCPTT user to upgrade the MCPTT group session to an emergency condition or an imminent peril condition on an MCPTT prearranged group, the MCPTT client shall generate a SIP re-INVITE request as specified in 3GPP TS 24.229 [4], with the clarifications given below.

1) if the MCPTT user is requesting to upgrade the MCPTT group session to an in-progress emergency group state and this is an unauthorised request for an MCPTT emergency call as determined by the procedures of subclause 6.2.8.1.8, the MCPTT client:

   a) should indicate to the MCPTT user that they are not authorised to upgrade the MCPTT group session to an in-progress emergency group state; and

   b) shall skip the remaining steps of the current subclause;

2) if the MCPTT user is requesting to upgrade the MCPTT group session to an in-progress imminent peril state and this is an unauthorised request for an MCPTT imminent peril group call as determined by the procedures of subclause 6.2.8.1.8, the MCPTT client:

   a) should indicate to the MCPTT user that they are not authorised to upgrade the MCPTT group session to an in-progress imminent peril group state; and

   b) shall skip the remaining steps of the current subclause;

3) if the MCPTT user has requested to upgrade the MCPTT group session to an MCPTT emergency call, the MCPTT client:

   a) shall include an application/vnd.3gpp.mcptt-info+xml MIME body populated as specified in subclause 6.2.8.1.1;

   b) if an indication of an MCPTT emergency alert is to be included, shall perform the procedures specified in subclause 6.2.9.1 for the MCPTT emergency alert trigger; and

   c) shall include a Resource-Priority header field and comply with the procedures in subclause 6.2.8.1.2.

4) if the MCPTT user has requested to upgrade the MCPTT group session to an MCPTT imminent peril call, the MCPTT client:

   a) shall include an application/vnd.3gpp.mcptt-info+xml MIME body populated as specified in subclause 6.2.8.1.9; and

   b) shall include a Resource-Priority header field and comply with the procedures in subclause 6.2.8.1.12;

5) if the SIP re-INVITE request is to be sent within an on-demand session, shall include in the SIP re-INVITE request an SDP offer according to 3GPP TS 24.229 [4] with the clarifications specified in subclause 6.2.1;

6) if the SIP re-INVITE request is to be sent within a pre-established session, shall include an SDP offer in the SIP re-INVITE request according to 3GPP TS 24.229 [4], based upon the parameters already negotiated for the pre-established session;

NOTE: The SIP re-INVITE request can be sent within an on-demand session or a pre-established session. If the SIP re-INVITE request is sent within a pre-established session, the media-level section for the offered MCPTT speech media stream and the media-level section of the offered media-floor control entity are expected to be the same as was negotiated in the existing pre-established session.

7) if an implicit floor request is required, shall indicate this as specified in subclause 6.4; and

8) shall send the SIP re-INVITE request according to 3GPP TS 24.229 [4].

On receiving a SIP 2xx response to the SIP re-INVITE request the MCPTT client:

1) shall interact with the user plane as specified in 3GPP TS 24.380 [5]; and

2) shall perform the actions specified in subclause 6.2.8.1.4.

[TS 24.379, clause 10.1.1.2.1.4]

This subclause covers both on-demand session and pre-established sessions.

Upon receiving a request from an MCPTT user to cancel the in-progress emergency condition on a prearranged MCPTT group, the MCPTT client shall generate a SIP re-INVITE request by following the UE originating session procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

1) if the MCPTT user is not authorised to cancel the in-progress emergency group state of the MCPTT group as determined by the procedures of subclause 6.2.8.1.7, the MCPTT client:

   a) should indicate to the MCPTT user that they are not authorised to cancel the in-progress emergency group state of the MCPTT group; and

   b) shall skip the remaining steps of the current subclause;

2) shall, if the MCPTT user is cancelling an in-progress emergency condition and optionally an MCPTT emergency alert originated by the MCPTT user, include an application/vnd.3gpp.mcptt-info+xml MIME body populated as specified in subclause 6.2.8.1.3;

3) shall, if the MCPTT user is cancelling an in-progress emergency condition and an MCPTT emergency alert originated by another MCPTT user, include an application/vnd.3gpp.mcptt-info+xml MIME body populated as specified in subclause 6.2.8.1.14;

4) shall include in the application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with:

   a) the <session-type> element set to a value of "prearranged"; and

   b) the <mcptt-request-uri> element set to the group identity;

NOTE 1: The MCPTT ID of the originating MCPTT user is not included in the body, as this will be inserted into the body of the SIP INVITE request that is sent by the originating participating MCPTT function.

5) shall include the g.3gpp.mcptt media feature tag in the Contact header field of the SIP re-INVITE request according to IETF RFC 3840 [16];

6) if the SIP re-INVITE request is to be sent within an on-demand session, shall include in the SIP re-INVITE request an SDP offer according to 3GPP TS 24.229 [4] with the clarifications specified in subclause 6.2.1;

7) if the SIP re-INVITE request is to be sent within a pre-established session, shall include an SDP offer in the SIP re-INVITE request according to 3GPP TS 24.229 [4], based upon the parameters already negotiated for the pre-established session;

NOTE 2: The SIP re-INVITE request can be sent within an on-demand session or a pre-established session. If the SIP re-INVITE request is sent within a pre-established session, the media-level section for the offered MCPTT speech media stream and the media-level section of the offered media-floor control entity are expected to be the same as was negotiated in the existing pre-established session.

8) shall include a Resource-Priority header field and comply with the procedures in subclause 6.2.8.1.2; and

9) shall send the SIP re-INVITE request according to 3GPP TS 24.229 [4].

On receiving a SIP 2xx response to the SIP re-INVITE request, the MCPTT client:

1) shall interact with the user plane as specified in 3GPP TS 24.380 [5];

2) shall set the MCPTT emergency group state of the group to "MEG 1: no-emergency";

3) shall set the MCPTT emergency group call state of the group to "MEGC 1: emergency-gc-capable"; and

4) if the MCPTT emergency alert state is set to "MEA 4: Emergency-alert-cancel-pending", the sent SIP re-INVITE request did not contain an <originated-by> element in the application/vnd.3gpp.mcptt-info+xml MIME body and the SIP 2xx response to the SIP request for a priority group call does not contain a Warning header field as specified in subclause 4.4 with the warning text containing the mcptt-warn-code set to "149", shall set the MCPTT emergency alert state to "MEA 1: no-alert".

[TS 24.379, clause 6.2.8.1.3]

This subclause is referenced from other procedures.

If the MCPTT emergency group call state is set to "MEGC 3: emergency-call-granted" and the MCPTT emergency alert state is set to "MEA 1: no-alert", the MCPTT client shall generate a SIP re-INVITE request according to 3GPP TS 24.229 [4] with the clarifications given below.

NOTE 1: This procedure assumes that the calling procedure has verified that the MCPTT user has made an authorised request for cancelling MCPTT in-progress emergency group state of the group.

The MCPTT client:

1) shall include in the SIP re-INVITE request an application/vnd.3gpp.mcptt-info+xml MIME body as defined in clause F.1 with the <emergency-ind> element set to "false";

2) shall clear the MCPTT emergency state; and

3) shall set MCPTT emergency group state of the MCPTT group to "MEG 3: cancel-pending"

NOTE 2: This is the case of an MCPTT user who has initiated an MCPTT emergency group call and wants to cancel it.

If the MCPTT emergency group call state is set to "MEGC 3: emergency-call-granted" and the MCPTT emergency alert state is set to a value other than "MEA 1: no-alert" and the MCPTT user has indicated only the MCPTT emergency group call should be cancelled, the MCPTT client:

1) shall include in the SIP re-INVITE request an application/vnd.3gpp.mcptt-info+xml MIME body as defined in clause F.1 with the <emergency-ind> element set to "false"; and

2) shall set the MCPTT emergency group state of the MCPTT group to "MEG 3: cancel-pending".

NOTE 3: This is the case of an MCPTT user has initiated both an MCPTT emergency group call and an MCPTT emergency alert and wishes to only cancel the MCPTT emergency group call. This leaves the MCPTT emergency state set.

If the MCPTT emergency group call state is set to "MEGC 3: emergency-call-granted" and the MCPTT emergency alert state is set to a value other than "MEA 1: no-alert" and the MCPTT user has indicated that the MCPTT emergency alert on the MCPTT group should be cancelled in addition to the MCPTT emergency group call, the MCPTT client:

1) shall include in the SIP re-INVITE request an application/vnd.3gpp.mcptt-info+xml MIME body as defined in clause F.1 with the <emergency-ind> element set to "false";

2) shall if this is an authorised request to cancel an MCPTT emergency alert as determined by the procedures of subclause 6.2.8.1.6:

   a) include in the application/vnd.3gpp.mcptt-info+xml MIME body an <alert-ind> element set to "false";

   b) set the MCPTT emergency alert state to "MEA 4: Emergency-alert-cancel-pending"; and

   c) clear the MCPTT emergency state;

3) should, if this is not an authorised request to cancel an MCPTT emergency alert as determined by the procedures of subclause 6.2.8.1.6, indicate to the MCPTT user that they are not authorised to cancel the MCPTT emergency alert; and

4) shall set the MCPTT emergency group state of the MCPTT group to "MEG 3: cancel-pending".

NOTE 4: This is the case of an MCPTT user that has initiated both an MCPTT emergency group call and an MCPTT emergency alert and wishes to cancel both.

[TS 24.379, clause 10.1.1.2.1.5]

This subclause covers both on-demand session and pre-established sessions.

Upon receiving a request from an MCPTT user to cancel the in-progress imminent peril condition on a prearranged MCPTT group, the MCPTT client shall generate a SIP re-INVITE request by following the procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

1) if the MCPTT user is not authorised to cancel the in-progress imminent peril group state of the MCPTT group as determined by the procedures of subclause 6.2.8.1.10, the MCPTT client:

   a) should indicate to the MCPTT user that they are not authorised to cancel the in-progress imminent peril group state of the MCPTT group; and

   b) shall skip the remaining steps of the current subclause;

2) shall include an application/vnd.3gpp.mcptt-info+xml MIME body populated as specified in subclause 6.2.8.1.11; and

3) shall include a Resource-Priority header field and comply with the procedures in subclause 6.2.8.1.12;

4) shall include in the application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with:

   a) the <session-type> element set to a value of "prearranged"; and

   b) the <mcptt-request-uri> element set to the group identity;

NOTE 1: The MCPTT ID of the originating MCPTT user is not included in the body, as this will be inserted into the body of the SIP re-INVITE request that is sent by the originating participating MCPTT function.

5) shall include the g.3gpp.mcptt media feature tag in the Contact header field of the SIP re-INVITE request according to IETF RFC 3840 [16];

6) if the SIP re-INVITE request is to be sent within an on-demand session, shall include in the SIP re-INVITE request an SDP offer according to 3GPP TS 24.229 [4] with the clarifications specified in subclause 6.2.1;

7) if the SIP re-INVITE request is to be sent within a pre-established session, shall include an SDP offer in the SIP re-INVITE request according to 3GPP TS 24.229 [4], based upon the parameters already negotiated for the pre-established session; and

NOTE 2: The SIP re-INVITE request can be sent within an on-demand session or a pre-established session. If the SIP re-INVITE request is sent within a pre-established session, the media-level section for the offered MCPTT speech media stream and the media-level section of the offered media-floor control entity are expected to be the same as was negotiated in the existing pre-established session.

8) shall send the SIP re-INVITE request according to 3GPP TS 24.229 [4].

On receiving a SIP 2xx response to the SIP re-INVITE request, the MCPTT client:

1) shall interact with the user plane as specified in 3GPP TS 24.380 [5];

2) shall set the MCPTT imminent peril group state of the group to "MIG 1: no-imminent-peril"; and

3) shall set the MCPTT imminent peril group call state of the group to "MIGC 1: imminent-peril-gc-capable".

[TS 24.379, clause 6.2.8.1.11]

This subclause is referenced from other procedures.

If the MCPTT imminent peril group call state is set to "MIGC 3: imminent-peril-call-granted" or the MCPTT imminent peril group state of the MCPTT group is set to "MIG 2: in-progress", the MCPTT client shall generate a SIP re-INVITE request according to 3GPP TS 24.229 [4] with the clarifications given below.

NOTE 1: This procedure assumes that the calling procedure has verified that the MCPTT user has made an authorised request for cancelling the in-progress imminent peril group state of the group.

The MCPTT client:

1) shall include in the SIP re-INVITE request an application/vnd.3gpp.mcptt-info+xml MIME body as defined in clause F.1 with the <imminentperil-ind> element set to "false"; and

2) shall set MCPTT imminent peril group state of the MCPTT group to "MIG 4: cancel-pending".

NOTE 2: This is the case of an MCPTT user who has initiated an MCPTT imminent peril group call and wants to cancel it, or another authorised member of the group who wishes to cancel the in-progress imminent peril state of the group.

[TS 24.379, clause 6.2.4.1]

Upon receiving a request from an MCPTT user to leave an MCPTT session established using on-demand session signalling, the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

2) shall generate a SIP BYE request according to 3GPP TS 24.229 [4];

3) shall set the Request-URI to the MCPTT session identity to leave; and

4) shall send a SIP BYE request towards MCPTT server according to 3GPP TS 24.229 [4].

Upon receiving a SIP 200 (OK) response to the SIP BYE request, the MCPTT client shall interact with the media plane as specified in 3GPP TS 24.380 [5].

6.1.1.1.3 Test description

6.1.1.1.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)

- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.1.1.3.2 Test procedure sequence

Table 6.1.1.1.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the MCPTT User request the establishment of an MCPTT on-demand pre-arranged group call using Group A, automatic commencement mode, with implicit floor control. (NOTE 1)	-	-	-	-
2	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.7.3-1 to establish an MCPTT on-demand pre-arranged group call, automatic commencement mode, applying End-to-end communication security with implicit floor control according to option b.i of NOTE 1 in TS 36.579.1 [2] Table 5.3.7.3-1?	-	-	1	P
3-6	Void	-	-	-	-
7	Check: Does the UE (MCPTT client) provide floor granted notification to the MCPTT User? (NOTE 1)	-	-	1	P
8	Make the MCPTT User indicate end of talking (e.g. releasing the PTT button). (NOTE 1)	-	-	-	-
9	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor release – Floor Idle as described in TS 36.579-1 [2] Table 5.3.20.3-1?	-	-	2	P
10a1-11	Void	-	-	-	-
12	Make the MCPTT User request to speak (e.g. pressing the PTT button). (NOTE 1)	-	-	-	-
13	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Request – Floor Granted as described in TS 36.579-1 [2] Table 5.3.16.3-1?	-	-	2	P
14-16	Void	-	-	-	-
17	The SS overrides the MCPTT Client and grants the floor to a higher priority MCPTT Client.	-	-	-	-
18	The SS sends a Floor Revoke message with the Reject Cause set to #4 - Media Burst pre-empted.	<--	Floor Revoke	-	-
18A	Void	-	-	-	-
-	EXCEPTION: In parallel to the events described in step 19, the step specified in Table 6.1.1.1.3.2-2 takes place.	-	-	-	-
19	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Release – Floor Taken as described in TS 36.579-1 [2] Table 5.3.21.3-1?	-	-	2	P
20	Void	-	-	-	-
21	Make the MCPTT User request to speak (e.g. pressing the PTT button). (NOTE 1)	-	-	-	-
22	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Request – Floor Deny as described in TS 36.579-1 [2] Table 5.3.19.3-1?	-	-	2	P
23-24	Void	-	-	-	-
25	Make the MCPTT User request to speak (e.g. pressing the PTT button). (NOTE 1)	-	-	-	-
26	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Request – Floor Queue Position Info as described in TS 36.579-1 [2] Table 5.3.17.3-1?	-	-	2	P
27	Void	-	-	-	-

28	Check: Does the MCPTT Client provide floor request queued response notification to the MCPTT user? (NOTE 1)	-	-	2	P
29	Make the MCPTT User request the current position in the queue. (NOTE 1)	-	-	-	-
30	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Queuing Position Request as described in TS 36.579-1 [2] Table 5.3.18.3-1?	-	-	2	P
30A	Check: Does the UE (MCPTT Client) provide floor queue position information to the MCPTT user? (NOTE 1)	-	-	2	P
31	Void	-	-	-	-
32	Make the MCPTT User request to cancel the Floor Request and end being in the queue (e.g. releasing the PTT button). (NOTE 1)	-	-	-	-
33	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Release – Floor Taken as described in TS 36.579-1 [2] Table 5.3.21.3-1 to cancel the queue position?	-	-	2	P
34a1-34A	Void	-	-	-	-
35	Make the MCPTT User request to speak (e.g. pressing the PTT button). (NOTE 1)	-	-	-	-
36	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Request – Floor Queue Position Info as described in TS 36.579-1 [2] Table 5.3.17.3-1?	-	-	2	P
37	Void	-	-	-	-
38	Check: Does the UE (MCPTT Client) provide floor request queued response notification to the MCPTT user? (NOTE 1)	-	-	2	P
39	The SS sends a Floor Granted message with no acknowledgement required	<--	Floor Granted	-	-
40	Check: Does the UE (MCPTT Client) provide a floor granted notification to the MCPTT user? (NOTE 1)	-	-	2	P
41	Make the MCPTT User indicate end of talking (e.g. releasing the PTT button). (NOTE 1)	-	-	-	-
42	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Release – Floor Idle as described in TS 36.579-1 [2] Table 5.3.20.3-1?	-	-	2	P
43a1-44	Void	-	-	-	-
45	Check: Is the Generic Test Procedure for MCPTT CT call release as described in TS 36.579-1 [2] Table 5.3.12.3-1 correctly performed?	-	-	3	P
46	Void	-	-	-	-
47	Make the MCPTT User request the establishment of an MCPTT on-demand pre-arranged group call, automatic commencement mode, with implicit floor control. (NOTE 1)	-	-	-	-
48	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.7.3-1 to establish an MCPTT on-demand pre-arranged group call, automatic commencement mode, with implicit floor control according to option b.i of NOTE 1 in TS 36.579.1 [2] Table 5.3.7.3-1?	-	-	1	P

49-52	Void	-	-	-	-
53	Check: Does the UE (MCPTT client) provide floor granted notification to the MCPTT User? (NOTE 1)	-	-	-	-
54	Make the MCPTT User indicate end of talking (e.g. releasing the PTT button). (NOTE 1)	-	-	-	-
55	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Release – Floor Idle as described in TS 36.579-1 [2] Table 5.3.20.3-1?	-	-	2	P
56a1-58	Void	-	-	-	-
59	Make the MCPTT User request upgrade of the ongoing On-Demand Pre-arranged Group Call to MCPTT Emergency Group Call with implicit floor control. (NOTE 1)	-	-	-	-
60	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO session modification with implicit Floor Control as described in TS 36.579-1 [2] Table 5.3.14.3-1 to upgrade the call to an emergency call with implicit floor control?	-	-	4, 5	P
61-61C	Void	-	-	-	-
61D	Check: Does the UE (MCPTT client) provide floor granted notification to the MCPTT User? (NOTE 1)	-	-	5	P
62	Make the MCPTT User indicate end of talking (e.g. releasing the PTT button). (NOTE 1)	-	-	-	-
63	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Release – Floor Idle as described in TS 36.579-1 [2] Table 5.3.20.3-1?	-	-	5	P
64a1-65	Void	-	-	-	-
66	Make the MCPTT User request to speak (e.g. pressing the PTT button). (NOTE 1)	-	-	-	-
67	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Request – Floor Granted as described in TS 36.579-1 [2] Table 5.3.16.3-1?	-	-	5	P
68-70	Void	-	-	-	-
71	Make the MCPTT User indicate end of talking (e.g. releasing the PTT button). (NOTE 1)	-	-	-	-
72	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Release – Floor Idle as described in TS 36.579-1 [2] Table 5.3.20.3-1?	-	-	5	P
73a1-74	Void	-	-	-	-
75	Make the MCPTT User cancel the Emergency State. (NOTE 1)	-	-	-	-
76	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO session modification without implicit Floor Control as described in TS 36.579-1 [2] Table 5.3.15.3-1 to cancel the emergency state with implicit floor control?	-	-	5,6	P
77	Make the MCPTT User request to speak (e.g. pressing the PTT button). (NOTE 1)	-	-	-	-
77A	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Request – Floor Granted as described in TS 36.579-1 [2] Table 5.3.16.3-1?	-	-	5	-
77B-D	Void	-	-	-	-

78	Make the MCPTT User indicate end of talking (e.g. releasing the PTT button). (NOTE 1)	-	-	-	-
79	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Release – Floor Idle as described in TS 36.579-1 [2] Table 5.3.20.3-1?	-	-	5	P
80a1-81	Void	-	-	-	-
82	Make the MCPTT User request upgrade of the ongoing On-Demand Pre-arranged Group Call to MCPTT Imminent Peril Group Call with explicit request for floor control (implicit floor control). (NOTE 1)	-	-	-	-
83	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO session modification with implicit Floor Control as described in TS 36.579-1 [2] Table 5.3.14.3-1 to upgrade the call to an imminent peril call with implicit floor control?	-	-	7, 8	P
84-84C	Void	-	-	-	-
84D	Check: Does the UE (MCPTT client) provide floor granted notification to the MCPTT User? (NOTE 1)	-	-	8	P
85	Make the MCPTT User indicate end of talking (e.g. releasing the PTT button). (NOTE 1)	-	-	-	-
86	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Release – Floor Idle as described in TS 36.579-1 [2] Table 5.3.20.3-1?	-	-	8	P
87a1-88	Void	.-	.-	-	-
89	Make the MCPTT User request to speak (e.g. pressing the PTT button). (NOTE 1)	-	-	-	-
90	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Request – Floor Granted as described in TS 36.579-1 [2] Table 5.3.16.3-1?	-	-	8	P
91-93	Void	-	-	-	-
94	Make the MCPTT User indicate end of talking (e.g. releasing the PTT button). (NOTE 1)	-	-	-	-
95	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Release – Floor Idle as described in TS 36.579-1 [2] Table 5.3.20.3-1?	-	-	8	P
96a1-97	Void	-	-	-	-
98	Make the MCPTT User cancel the Imminent Peril State. (NOTE 1)	-	-	-	-
99	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO session modification without implicit Floor Control as described in TS 36.579-1 [2] Table 5.3.15.3-1 to cancel the imminent peril state with implicit floor control?	-	-	8, 9	P
100	Make the MCPTT User request to speak (e.g. pressing the PTT button). (NOTE 1)	-	-	-	-
100A	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Request – Floor Granted as described in TS 36.579-1 [2] Table 5.3.16.3-1?	-	-	8	P
100B-D	Void	-	-	-	-
101	Make the MCPTT User indicate end of talking (e.g. releasing the PTT button). (NOTE 1)	-	-	-	-

102	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Release – Floor Idle as described in TS 36.579-1 [2] Table 5.3.20.3-1?	-	-	8	P
103a 1-104	Void	-	-	-	-
105	Make the MCPTT User end the on-demand group call. (NOTE 1)	-	-	-	-
106	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO call release as described in TS 36.579-1 [2] Table 5.3.10.3-1 to end the on-demand group call?	-	-	10	P
107	Void	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI.					

Table 6.1.1.1.3.2-2: Parallel Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCPTT Client) inform the MCPTT User that the permission to send RTP media is being revoked? NOTE 1 in Table 6.1.1.1.3.2-1	-	-	2	P

6.1.1.1.3.3 Specific message contents

Table 6.1.1.1.3.3-1: SIP INVITE (steps 2, 48, Table 6.1.1.1.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.7.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.1-1

Information Element	Value/remark	Comment	Reference	Condition
Message-body				
MIME body part		**SDP message**		
MIME-part-body	SDP Message as described in Table 6.1.1.1.3.3-1A			
MIME body part		**MCPTT Info**	TS 24.379 [9] clause F.1	
MIME-part-body	MCPTT-Info as described in Table 6.1.1.1.3.3-2			

Table 6.1.1.1.3.3-1A: SDP in SIP INVITE (Table 6.1.1.1.3.3-1)

Derivation Path: TS 36.579-1 [2], 5.5.3.1.1-1 condition INITIAL_SDP_OFFER, IMPLICIT_GRANT_REQUESTED

Table 6.1.1.1.3.3-2: MCPTT-INFO in SIP INVITE (Table 6.1.1.1.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1 condition GROUP-CALL, INVITE_REFER

Table 6.1.1.1.3.3-3: Void

Table 6.1.1.1.3.3-3A: SIP 200 (OK) (step 2, 48 Table 6.1.1.1.3.2-1; step 4, TS 36.579-1 [2] Table 5.3.7.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.17.1.2-1 condition INVITE_RSP				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
SDP Message	As described in Table 6.1.1.1.3.3-3B			

Table 6.1.1.1.3.3-3B: SDP in SIP 200 (OK) (Table 6.1.1.1.3.3-3A)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.1.2-1 conditions SDP_ANSWER, IMPLICIT_GRANT_REQUESTED and IMPLICIT_FLOOR_GRANTED

Table 6.1.1.1.3.3-4: Void

Table 6.1.1.1.3.3-5: SIP INVITE (step 60, Table 6.1.1.1.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.14.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.1-1 condition EMERGENCY-CALL and re_INVITE				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		SDP message		
MIME-part-body	SDP Message as described in Table 6.1.1.1.3.3-6A			
MIME body part		MCPTT Info		
MIME-part-body	MCPTT-Info as described in Table 6.1.1.1.3.3-6B			

Table 6.1.1.1.3.3-6: Void

Table 6.1.1.1.3.3-6A: SDP in SIP INVITE (Tables 6.1.1.1.3.3-5)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.1.1-1, conditions SDP_OFFER and IMPLICIT_GRANT_REQUESTED

Table 6.1.1.1.3.3-6B: MCPTT-Info in SIP INVITE (Tables 6.1.1.1.3.3-5)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1 conditions GROUP-CALL, EMERGENCY-CALL, INVITE_REFER

Table 6.1.1.1.3.3-7: Void

Table 6.1.1.1.3.3-7B: SIP 200 (OK) (steps 60, 83 Table 6.1.1.1.3.2-1; step 3, TS 36.579-1 [2] Table 5.3.14.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.17.1.2-1 condition INVITE_RSP				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
SDP Message	As described in Table 6.1.1.1.3.3-7C			

Table 6.1.1.1.3.3-7C: SDP in SIP 200 (OK) (Table 6.1.1.1.3.3-7B)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.1.2-1 conditions SDP_ANSWER, IMPLICIT_GRANT_REQUESTED

Table 6.1.1.1.3.3-8: SIP INVITE (step 76 Table 6.1.1.1.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.15.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.1-1 condition re_INVITE				
Message-body				
MIME body part		SDP message		
MIME-part-body	SDP Message as described in Table 6.1.1.1.3.3-8A			
MIME body part		MCPTT Info	TS 24.379 [9] clause F.1	
MIME-part-body	MCPTT-Info as described in Table 6.1.1.1.3.3-9			

Table 6.1.1.1.3.3-8A: SDP in SIP INVITE (Tables 6.1.1.1.3.3-8)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.1.1-1, condition SDP_OFFER

Table 6.1.1.1.3.3-9: MCPTT-Info in SIP INVITE (Table 6.1.1.1.3.3-8)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1 conditions GROUP-CALL, INVITE_REFER				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
emergency-ind	"false"			

Table 6.1.1.1.3.3-9A: SIP 200 (OK) (steps 76, 99 Table 6.1.1.1.3.2-1; step 3, TS 36.579-1 [2] Table 5.3.15.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.17.1.2-1 condition INVITE_RSP				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
SDP Message	As described in Table 6.1.1.1.3.3-9B			

Table 6.1.1.1.3.3-9B: SDP in SIP 200 (OK) (Table 6.1.1.1.3.3-9A)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.1.2-1 condition SDP_ANSWER

Table 6.1.1.1.3.3-10: SIP INVITE (step 83, Table 6.1.1.1.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.14.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.1-1 conditions IMMPERIL-CALL and re_INVITE				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		SDP message		
MIME-part-body	SDP Message as described in Table 6.1.1.1.3.3-10A			
MIME body part		MCPTT Info	TS 24.379 [9] clause F.1	
MIME-part-body	MCPTT-Info as described in Table 6.1.1.1.3.3-11			

Table 6.1.1.1.3.3-10A: SDP in SIP INVITE (Tables 6.1.1.1.3.3-10)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.1.1-1, conditions SDP_OFFER and IMPLICIT_GRANT_REQUESTED

Table 6.1.1.1.3.3-11: MCPTT-INFO in SIP INVITE (Table 6.1.1.1.3.3-10)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1 condition GROUP-CALL, INVITE_REFER and IMMPERIL-CALL

Table 6.1.1.1.3.3-12: SIP-INVITE (step 99, Table 6.1.1.1.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.15.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.1-1 condition re_INVITE				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		SDP message		
MIME-part-headers				
Content-Type	"application/sdp"		RFC 4566 [27]	
MIME-part-body	SDP Message as described in Table 6.1.1.1.3.3-8A			
MIME body part		MCPTT Info	TS 24.379 [9] clause F.1	
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-info+xml"			
MIME-part-body	MCPTT-Info as described in Table 6.1.1.1.3.3-13			

Table 6.1.1.1.3.3-13: MCPTT-INFO in SIP INVITE (Table 6.1.1.1.3.3-12)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1 condition GROUP-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
imminentperil-ind	"false"			

Table 6.1.1.1.3.3-14: Floor Request (steps 13, 22, 26, 36, 77A, 100A, Table 6.1.1.1.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.16.3-1; step 1, TS 36.579-1 [2] Table 5.3.19.3-1; step 1, TS 36.579-1 [2] Table 5.3.17.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.2-1 condition ON-NETWORK

Table 6.1.1.1.3.3-15: Floor Request (step 67, Table 6.1.1.1.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.16.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.2-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"00010X0000000000"	bit D=1 (Emergency call) bit F=X (Queueing supported) any value	

Table 6.1.1.1.3.3-16: Floor Request (step 90, Table 6.1.1.1.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.16.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.2-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"00001X0000000000"	bit E=1 (Imminent Peril call) bit F=X (Queueing supported) any value	

Table 6.1.1.1.3.3-17: Floor Granted (step 39, Table 6.1.1.1.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	"00001"	Acknowledgment not required for Floor Granted message	

Table 6.1.1.1.3.3-18: Floor Release (steps 9, 18, 33, 42, 55, 79, 102, Table 6.1.1.1.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.20.3-1; step 1, TS 36.579-1 [2] Table 5.3.21.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.5-1 condition ON-NETWORK

Table 6.1.1.1.3.3-19: Floor Release (steps 63, 72, Table 6.1.1.1.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.20.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.5-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"00010X0000000000"	bit D=1 (Emergency call) bit F=X (Queueing supported) any value	

Table 6.1.1.1.3.3-20: Floor Release (steps 86, 95, Table 6.1.1.1.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.20.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.5-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"00001X0000000000"	bit E=1 (Imminent Peril call) bit F=X (Queueing supported) any value	

Table 6.1.1.1.3.3-21: Floor Idle (steps 9, 42, 55, 76, 79, 99, 102, Table 6.1.1.1.3.2-1; step 3, TS 36.579-1 [2] Table 5.3.20.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.6-1

Table 6.1.1.1.3.3-22: Floor Idle (steps 63, 72, Table 6.1.1.1.3.2-1; step 3, TS 36.579-1 [2] Table 5.3.20.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.6-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"0001010000000000"	bit D=1 (Emergency call) bit F=1 (Queueing supported)	

Table 6.1.1.1.3.3-23: Floor Idle (steps 86, 95, Table 6.1.1.1.3.2-1; step 3, TS 36.579-1 [2] Table 5.3.20.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.6-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"0000110000000000"	bit E=1 (Imminent Peril call) bit F=1 (Queueing supported)	

Table 6.1.1.1.3.3-24: Floor Granted (step 13, Table 6.1.1.1.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.16.3-1; step 5, TS 36.579-1 [2] Table 5.3.14.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition ON-NETWORK

Table 6.1.1.1.3.3-25: Floor Granted (step 60, 67, Table 6.1.1.1.3.2-1; step 5, TS 36.579-1 [2] Table 5.3.14.3-1; step 2, TS 36.579-1 [2] Table 5.3.16.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"0001010000000000"	bit D=1 (Emergency call) bit F=1 (Queueing supported)	

Table 6.1.1.1.3.3-26: Floor Granted (step 83, 90, Table 6.1.1.1.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.16.3-1; step 5, TS 36.579-1 [2] Table 5.3.14.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"0000110000000000"	bit E=1 (Imminent Peril call) bit F=1 (Queueing supported)	

Table 6.1.1.1.3.3-27: Floor Ack (steps 13, 60, 67, 77A, 83, 90, 100A, Table 6.1.1.1.3.2-1; step 3, TS 36.579-1 [2] Table 5.3.16.3-1; step 6, TS 36.579-1 [2] Table 5.3.14.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.11-1, condition UPLINK

Table 6.1.1.1.3.3-28: Floor Revoke (step 18, Table 6.1.1.1.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.8-1

Table 6.1.1.1.3.3-29: Floor Taken (steps 19, 33, Table 6.1.1.1.3.2-1; step 3, TS 36.579-1 [2] Table 5.3.21.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.7-1 condition ON-NETWORK

Table 6.1.1.1.3.3-30: Floor Deny (step 22, Table 6.1.1.1.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.19.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.4-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Reject Cause			
Reject Cause	"255"	Cause #255 - Other reason	
Reject Phrase	"Other reason"		

Table 6.1.1.1.3.3-31: Floor Queue Position Info (steps 26, 30, 36, Table 6.1.1.1.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.17.3-1; step 2, TS 36.579-1 [2] Table 5.3.18.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.10-1 condition ON-NETWORK

Table 6.1.1.1.3.3-32: Floor Queue Position Request (step 30, Table 6.1.1.1.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.18.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.9-1 condition ON-NETWORK

6.1.1.2 On-network / On-demand Pre-arranged Group Call / Automatic Commencement Mode / Floor Control / Upgrade to Emergency Group Call / Cancel Emergency State / Upgrade to Imminent Peril Group Call / Cancel Imminent Peril State / Client Terminated (CT)

6.1.1.2.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT }
ensure that {
  when { the SS (MCPTT Server) initiates an On-demand Pre-arranged group call with Automatic
Commencement Mode and implicit floor control }
    then { UE (MCPTT Client) responds by sending a SIP 200 (OK) message and after indication from
the MCPTT Server that the call was established notifies the user }
            }
```

(2)

```
with { UE (MCPTT Client) having an ongoing MCPTT On-demand Pre-arranged Group Call with Automatic
Commencement Mode }
ensure that {
  when { the MCPTT User (MCPTT Client) engages in communication with the invited MCPTT User(s) }
    then { UE (MCPTT Client) respects the floor control imposed by the MCPTT Server (Floor Request
during a talk burst, Floor granting/release, Floor idle, Floor deny, Floor taken/revoked, Floor
request queued and queue handling) }
            }
```

(3)

```
with { UE (MCPTT Client) having an ongoing On-demand Pre-arranged Group Call with Automatic
Commencement Mode }
ensure that {
  when { the MCPTT User (MCPTT Client) wants to terminate the ongoing MCPTT Group Call }
    then { UE (MCPTT Client) sends a SIP BYE request and leaves the MCPTT session }
            }
```

(4)

```
with { UE (MCPTT Client) having an ongoing On-demand Pre-arranged Group Call with Automatic
Commencement Mode }
ensure that {
  when { the SS (MCPTT Server) upgrades the ongoing MCPTT Group Call to an MCPTT Emergency Group
Call with floor control }
    then { UE (MCPTT Client) responds to the SIP re-INVITE request with a SIP 200 (OK) response and
considers the call as being upgraded to an Emergency Group Call (emergency group call state = "MEGC
3: emergency-call-granted") }
            }
```

(5)

```
with { UE (MCPTT Client) in an upgraded Emergency Group Call }
ensure that {
  when { the MCPTT User (MCPTT Client) continues communication with the invited MCPTT User(s) }
    then { UE (MCPTT Client) respects the floor control imposed by the MCPTT Server }
            }
```

(6)

```
with { UE (MCPTT Client) having an ongoing On-demand Pre-arranged Group Call with Automatic
Commencement Mode which was upgraded to an Emergency Group Call }
ensure that {
  when { the SS (MCPTT Server) cancels the ongoing MCPTT Emergency state }
    then { UE (MCPTT Client) responds to the SIP re-INVITE request with a SIP 200 (OK) and considers
the emergency condition cancelled }
            }
```

(7)

```
with { UE (MCPTT Client) having an ongoing On-demand Pre-arranged Group Call with Automatic
Commencement Mode }
ensure that {
  when { the SS (MCPTT Server) upgrades the ongoing MCPTT Group Call to an MCPTT Imminent Peril
Group Call with floor control }
    then { UE (MCPTT Client) responds to the SIP re-INVITE request with a SIP 200 (OK) response and
considers the call as being upgraded to an cImminent Peril Group Call (imminent peril group call
state = "MIG 2: in-progress") }
            }
```

(8)

```
with { UE (MCPTT Client) in an upgraded Imminent Peril Group Call }
ensure that {
  when { the MCPTT User (MCPTT Client) continues communication with the invited MCPTT User(s) }
    then { UE (MCPTT Client) respects the floor control imposed by the MCPTT Server }
            }
```

(9)

```
with { UE (MCPTT Client) having an ongoing On-demand Pre-arranged Group Call with Automatic
Commencement Mode which was upgraded to an Imminent Peril Group Call }
ensure that {
  when { the SS (MCPTT Server) cancels the ongoing MCPTT Imminent Peril state }
    then { UE (MCPTT Client) responds to the SIP re-INVITE request with a SIP 200 (OK) and considers
the imminent peril condition cancelled }
            }
```

(10)

```
with { UE (MCPTT Client) having an ongoing On-demand Pre-arranged Group Call with Automatic
Commencement Mode }
ensure that {
  when { the SS (MCPTT Server) needs to terminate the ongoing MCPTT Group Call }
    then { the SS (MCPTT Server) sends a SIP BYE request and the UE (MCPTT Client) responds with a
SIP 200 (OK) and leaves the MCPTT session }
            }
```

6.1.1.2.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.379 clauses 10.1.1.2.1.2, 6.2.2, 6.2.3.1.2, 6.2.6, 10.1.1.2.1.6, 6.2.5.1, 10.1.1.2.3.1, 10.1.1.2.3.3 and TS 24.380, clauses 6.2.4.5.3, 6.2.4.3.5, 6.2.4.4.2, 6.2.4.5.4, 6.2.4.4.4, 6.2.4.4.9, 6.2.4.9.9, 6.2.4.9.6, 6.2.4.9.4. The following represents a copy/paste extraction of the requirements relevant to the test purpose; any references within the copy/paste text should be understood within the scope of the core spec they have been copied from. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.379, clause 10.1.1.2.1.2]

In the procedures in this subclause:

1) emergency indication in an incoming SIP INVITE request refers to the <emergency-ind> element of the application/vnd.3gpp.mcptt-info+xml MIME body; and

2) imminent peril indication in an incoming SIP INVITE request refers to the <imminentperil-ind> element of the application/vnd.3gpp.mcptt-info+xml MIME body.

Upon receipt of an initial SIP INVITE request, the MCPTT client shall follow the procedures for termination of multimedia sessions in the IM CN subsystem as specified in 3GPP TS 24.229 [4] with the clarifications below.

The MCPTT client:

1) may reject the SIP INVITE request if either of the following conditions are met:

   a) MCPTT client does not have enough resources to handle the call; or

   b) any other reason outside the scope of this specification;

   and skip the rest of the steps;

2) if the SIP INVITE request is rejected in step 1), shall respond toward participating MCPTT function either with appropriate reject code as specified in 3GPP TS 24.229 [4] and warning texts as specified in subclause 4.4.2 or with SIP 480 (Temporarily unavailable) response not including warning texts if the user is authorised to restrict the reason for failure and skip the rest of the steps of this subclause;

NOTE: If the SIP INVITE request contains an emergency indication or imminent peril indication, the MCPTT client can by means beyond the scope of the present document choose to accept the request.

3) shall check if a Resource-Priority header field is included in the incoming SIP INVITE request and may perform further actions outside the scope of the present document to act upon an included Resource-Priority header field as specified in 3GPP TS 24.229 [4];

4) if the SIP INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <emergency-ind> element set to a value of "true":

   a) should display to the MCPTT user an indication that this is a SIP INVITE request for an MCPTT emergency group call and:

      i) should display the MCPTT ID of the originator of the MCPTT emergency group call contained in the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body;

      ii) should display the MCPTT group identity of the group with the emergency condition contained in the <mcptt-calling-group-id> element; and

      iii) if the <alert-ind> element is set to "true", should display to the MCPTT user an indication of the MCPTT emergency alert and associated information;

   b) shall set the MCPTT emergency group state to "MEG 2: in-progress";

   c) shall set the MCPTT imminent peril group state to "MIG 1: no-imminent-peril"; and

   d) shall set the MCPTT imminent peril group call state to "MIGC 1: imminent-peril-gc-capable"; otherwise

5) if the SIP INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <imminentperil-ind> element set to a value of "true":

a) should display to the MCPTT user an indication that this is a SIP INVITE request for an MCPTT imminent peril group call and:

i) should display the MCPTT ID of the originator of the MCPTT imminent peril group call contained in the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body; and

ii) should display the MCPTT group identity of the group with the imminent peril condition contained in the <mcptt-calling-group-id> element; and

b) shall set the MCPTT imminent peril group state to "MIG 2: in-progress";

6) may display to the MCPTT user the MCPTT ID of the inviting MCPTT user;

7) shall perform the automatic commencement procedures specified in subclause 6.2.3.1.2 if one of the following conditions are met:

a) SIP INVITE request contains an Answer-Mode header field with the value "Auto" and the MCPTT service setting at the invited MCPTT client for answering the call is set to automatic commencement mode; or

b) SIP INVITE request contains an Answer-Mode header field with the value "Auto" and the MCPTT service setting at the invited MCPTT client for answering the call is set to manual commencement mode, yet the invited MCPTT client allows the call to be answered with automatic commencement mode;

8) shall perform the manual commencement procedures specified in subclause 6.2.3.2.2 if one of the following conditions are met:

a) SIP INVITE request contains an Answer-Mode header field with the value "Manual" and the MCPTT service setting at the invited MCPTT client for answering the call is to use manual commencement mode; or

b) SIP INVITE request contains an Answer-Mode header field with the value "Manual" and the MCPTT service setting at the invited MCPTT client for answering the call is set to automatic commencement mode, yet the invited MCPTT client allows the call to be answered with manual commencement mode; and

9) when the SIP 200 (OK) response to the SIP INVITE request is sent, may subscribe to the conference event package as specified in subclause 10.1.3.1.

[TS 24.379, clause 6.2.2]

When the MCPTT client receives an initial SDP offer for an MCPTT session, the MCPTT client shall process the SDP offer and shall compose an SDP answer according to 3GPP TS 24.229 [4].

When composing an SDP answer, the MCPTT client:

1) shall accept the MCPTT speech media stream in the SDP offer;

2) shall set the IP address of the MCPTT client for the accepted MCPTT speech media stream and, if included in the SDP offer, for the accepted media-floor control entity;

NOTE: If the MCPTT client is behind a NAT the IP address and port included in the SDP answer can be a different IP address and port than the actual IP address and port of the MCPTT client depending on the NAT traversal method used by the SIP/IP Core.

3) shall include an "m=audio" media-level section for the accepted MCPTT speech media stream consisting of:

a) the port number for the media stream;

b) media-level attributes as specified in 3GPP TS 24.229 [4]; and

c) "i=" field set to "speech" according to 3GPP TS 24.229 [4]; and

4) if included in the SDP offer, shall include the media-level section of the offered media-floor control entity consisting of:

a) an "m=application" media-level section as specified in 3GPP TS 24.380 [5] clause 12; and

b) 'fmtp' attributes as specified in 3GPP TS 24.380 [5] clause 14.

[TS 24.379, clause 6.2.3.1.2]

When performing the automatic commencement mode procedures, the MCPTT client shall follow the procedures in subclause 6.2.3.1.1 with the following clarification:

- The MCPTT client may include a P-Answer-State header field with the value "Confirmed" as specified in IETF RFC 4964 [34] in the SIP 200 (OK) response.

[TS 24.379, clause 6.2.6]

Upon receiving a SIP BYE request, the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5]; and

2) shall send SIP 200 (OK) response towards MCPTT server according to 3GPP TS 24.229 [4].

[TS 24.379, clause 10.1.1.2.1.6]

This subclause covers both on-demand session and pre-established sessions.

Upon receipt of a SIP re-INVITE request the MCPTT client:

1) if the SIP re-INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <emergency-ind> element set to a value of "true":

   a) should display to the MCPTT user the MCPTT ID of the originator of the MCPTT emergency group call and an indication that this is an MCPTT emergency group call;

   b) if the <mcpttinfo> element containing the <mcptt-Params> element contains an <alert-ind> element set to "true", should display to the MCPTT user an indication of the MCPTT emergency alert and associated information;

   c) shall set the MCPTT emergency group state to "MEG 2: in-progress";

   d) shall set the MCPTT imminent peril group state to "MIG 1: no-imminent-peril"; and

   e) shall set the MCPTT imminent peril group call state to "MIGC 1: imminent-peril-gc-capable";

2) if the SIP re-INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <imminentperil-ind> element set to a value of "true":

   a) should display to the MCPTT user the MCPTT ID of the originator of the MCPTT imminent peril group call and an indication that this is an MCPTT imminent peril group call; and

   b) shall set the MCPTT imminent peril group state to "MIG 2: in-progress";

3) if the SIP re-INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <emergency-ind> element set to a value of "false":

   a) should display to the MCPTT user the MCPTT ID of the MCPTT user cancelling the MCPTT emergency group call;

   b) if the <mcpttinfo> element containing the <mcptt-Params> element contains an <alert-ind> element set to "false":

      i) should display to the MCPTT user an indication of the MCPTT emergency alert cancellation and the MCPTT ID of the MCPTT user cancelling the MCPTT emergency alert; and

      ii) if the SIP re-INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body including an <originated-by> element:

         A) should display to the MCPTT user the MCPTT ID contained in the <originated-by> element of the MCPTT user that originated the MCPTT emergency alert; and

B) if the MCPTT ID contained in the <originated-by> element is the MCPTT ID of the receiving MCPTT user shall set the MCPTT emergency alert state to "MEA 1: no-alert";

c) shall set the MCPTT emergency group state to "MEG 1: no-emergency"; and

d) if the MCPTT emergency group call state of the group is set to "MEGC 3: emergency-call-granted", shall set the MCPTT emergency group call state of the group to "MEGC 1: emergency-gc-capable";

4) if the SIP re-INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <imminentperil-ind> element set to a value of "false":

a) should display to the MCPTT user the MCPTT ID of the MCPTT user cancelling the MCPTT imminent peril group call and an indication that this is an MCPTT imminent peril group call;

b) shall set the MCPTT imminent peril group state to "MIG 1: no-imminent-peril"; and

c) shall set the MCPTT imminent peril group call state to "MIGC 1: imminent-peril-gc-capable";

5) shall check if a Resource-Priority header field is included in the incoming SIP re-INVITE request and may perform further actions outside the scope of the present document to act upon an included Resource-Priority header field as specified in 3GPP TS 24.229 [4];

6) shall accept the SIP re-INVITE request and generate a SIP 200 (OK) response according to rules and procedures of 3GPP TS 24.229 [4];

7) shall include the g.3gpp.mcptt media feature tag in the Contact header field of the SIP 200 (OK) response;

8) shall include the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP 200 (OK) response;

9) if the SIP re-INVITE request was received within an on-demand session, shall include an SDP answer in the SIP 200 (OK) response to the SDP offer in the incoming SIP re-INVITE request according to 3GPP TS 24.229 [4] with the clarifications given in subclause 6.2.2;

10) if the SIP re-INVITE request was received within a pre-established session, shall include an SDP answer in the SIP 200 (OK) response to the SDP offer in the incoming SIP re-INVITE request according to 3GPP TS 24.229 [4], based upon the parameters already negotiated for the pre-established session;

NOTE: The SIP re-INVITE request can be received within an on-demand session or a pre-established session. If the SIP re-INVITE request is received within a pre-established session, the media-level section for the MCPTT speech media stream and the media-level section of the media-floor control entity are expected to be the same as was negotiated in the existing pre-established session.

11) shall send the SIP 200 (OK) response towards the MCPTT server according to rules and procedures of 3GPP TS 24.229 [4]; and

12) shall interact with the media plane as specified in 3GPP TS 24.380 [5].

[TS 24.379, clause 6.2.5.1]

When the MCPTT client wants to release an MCPTT session established using on-demand session signalling, the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

2) shall generate a SIP BYE request according to 3GPP TS 24.229 [4];

3) shall set the Request-URI to the MCPTT session identity to release; and

4) shall send a SIP BYE request towards MCPTT server according to 3GPP TS 24.229 [4].

Upon receiving a SIP 200 (OK) response to the SIP BYE request, the MCPTT client shall interact with the media plane as specified in 3GPP TS 24.380 [5].

[TS 24.379, clause 10.1.1.2.3.1]

When an MCPTT client wants to leave the MCPTT session that has been established using on-demand session, the MCPTT client shall follow the procedures as specified in subclause 6.2.4.1.

[TS 24.379, clause 10.1.1.2.3.3]

Upon receiving a SIP BYE request for releasing the prearranged MCPTT group call, the MCPTT client shall follow the procedures as specified in subclause 6.2.6.

[TS 24.380, clause 6.2.4.5.3]

Upon receiving an indication from the user to release the permission to send RTP media, the floor participant:

1. shall send a Floor Release message towards the floor control server The Floor Release message:

   a. may include the first bit in the subtype of the Floor Release message set to '1' (acknowledgement is required) as specified in subclause 8.2.2;

NOTE: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

   b. if the session is a broadcast call and if the session was established as a normal call, shall include the Floor Indicator with the A-bit set to '1' (Normal call); and

   c. if the Floor Granted message included the G-bit set to '1' (Dual floor), shall include the Floor Indicator with the G-bit set to '1' (Dual floor);

2. shall remove the indication that the participant is overriding without revoke if this indication is stored;

3. shall start timer T100 (Floor Release) and initialize counter C100 (Floor Release) to 1; and

4. shall enter the 'U: pending Release' state.

[TS 24.380, clause 6.2.4.3.5]

Upon receiving an indication from the user to request permission to send media, the floor participant:

1. shall send the Floor Request message toward the floor control server; The Floor Request message:

   a. if a different priority than the normal priority is required, shall include the Floor Priority field with the priority not higher than negotiated with the floor control server as specified in subclause 14.3.3; and

   b. if the floor request is a broadcast group call, system call, emergency call or an imminent peril call, shall include a Floor Indicator field indicating the relevant call types;

2. shall start timer T101 (Floor Request) and initialise counter C101 (Floor Request) to 1; and

3. shall enter the 'U: pending Request' state.

[TS 24.380, clause 6.2.4.4.2]

Upon receiving a Floor Granted message from the floor control server or a floor granted indication in an SIP 200 (OK) response in the application and signalling layer, the floor participant:

1. if the first bit in the subtype of the Floor Granted message is set to '1' (Acknowledgment is required) as described in subclause 8.3.2, shall send a Floor Ack message. The Floor Ack message:

   a. shall include the Message Type field set to '1' (Floor Granted); and

   b. shall include the Source field set to '0' (the floor participant is the source);

2. shall provide floor granted notification to the user, if not already done;

NOTE: Providing the floor granted notification to the user prior to receiving the Floor Granted message is an implementation option.

3. if the Floor Indicator field is included and the B-bit is set to '1' (Broadcast group call), shall provide a notification to the user indicating the type of call;

4. if the G-bit in the Floor Indicator is set to '1' (Dual floor) shall store an indication that the participant is overriding without revoke;
5. shall stop the optional timer T103 (End of RTP media), if running;
6. shall stop timer T101 (Floor Request); and
7. shall enter the 'U: has permission' state.

[TS 24.380, clause 6.2.4.5.4]

Upon receiving a Floor Revoke message, the floor participant:

1. shall inform the user that the permission to send RTP media is being revoked;
2. may give information to the user about the reason for revoking the permission to send media;
3. shall request the media in the MCPTT client discard any remaining buffered RTP media packets and to stop forwarding of encoded voice to the MCPTT server;

4 if the G-bit in the Floor Indicator is set to '1' (Dual floor):

   a. shall send a Floor Release message. In the Floor Release message:

      i. shall include the Floor Indicator with the G-bit set to '1' (Dual floor); and

      ii. may set the first bit in the subtype to '1' (Acknowledgment is required) as described in subclause 8.3.2;

5 if the G-bit in the Floor Indicator is set to '0' (not Dual floor):

   a. shall send a Floor Release message. In the Floor Release message:

      i. shall include the Floor Indicator with the G-bit set to '0' (not Dual floor); and

      ii. may set the first bit in the subtype to '1' (Acknowledgment is required) as described in subclause 8.3.2;

NOTE: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

6. shall start timer T100 (Floor Release) and initialize counter C100 (Floor Release) to 1; and
7. shall enter the 'U: pending Release' state.

[TS 24.380, clause 6.2.4.4.4]

Upon receiving a Floor Deny message, the floor participant:

1. if the first bit in the subtype of the Floor Deny message is set to '1' (Acknowledgment is required) as described in subclause 8.3.2, shall send a Floor Ack message. The Floor Ack message:

   a. shall include the Message Type field set to '3' (Floor Deny); and

   b. shall include the Source field set to '0' (the floor participant is the source);

2. shall provide floor deny notification to the user;
3. may display the floor deny reason to the user using information in the Reject Cause field;
4. shall stop timer T101 (Floor Request); and
5. shall enter the 'U: has no permission' state.

[TS 24.380, clause 6.2.4.4.9]

Upon receiving a Floor Queue Position Info message, the floor participant:

1. if the first bit in the subtype of the Floor Queue Position Info message is set to '1' (Acknowledgment is required) as described in subclause 8.3.2, shall send a Floor Ack message. The Floor Ack message:

a. shall include the Message Type field set to '9' (Floor Queue Position Info); and

b. shall include the Source field set to '0' (the floor participant is the source);

2. shall provide floor request queued response notification to the MCPTT user;

3. may provide the queue position and priority to the MCPTT user; and

4. shall enter the 'U: queued' state.

[TS 24.380, clause 6.2.4.9.9]

Upon receipt of an indication from the MCPTT client to request the queue position, the floor participant:

1. shall send the Floor Queue Position Request message;

2. shall start timer T104 (Floor Queue Position Request) and initialize counter C104 (Floor Queue Position Request) to 1; and

3. remain in the 'U: queued' state.

[TS 24.380, clause 6.2.4.9.6]

Upon receiving an indication from the MCPTT user to release the queued floor request, the floor participant:

1. shall send a Floor Release message: The Floor Release message:

a. may include the Floor Indicator field changing a broadcast group call to a normal call;

2. may set the first bit in the subtype of the Floor Release message to '1' (Acknowledgment is required) as described in subclause 8.3.2;

NOTE: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

3. shall start timer T100 (Floor Release) and initialise counter C10 (Floor Release) to 1;

4. shall stop timer T104 (Floor Queue Position Request), if running; and

5. shall enter the 'U: pending Release' state.

[TS 24.380, clause 6.2.4.9.4]

Upon receiving a Floor Granted message, the floor participant:

1. if the first bit in the subtype of the Floor Granted message is set to '1' (Acknowledgment is required) as described in subclause 8.3.2, shall send a Floor Ack message. The Floor Ack message:

a. shall include the Message Type field set to '1' (Floor Granted); and

b. shall include the Source field set to '0' (the floor participant is the source);

2. shall provide a floor granted notification to the MCPTT user;

3. if the Floor Indicator field is included and the B-bit is set to '1' (Broadcast group call), shall provide a notification to the user indicating the type of call;

4. shall stop timer T104 (Floor Queue Position Request), if running;

5. shall start timer T132 (Queued granted user action);

6. shall indicate the user that the floor is granted; and

7. shall remain in the 'U: queued' state.

6.1.1.2.3 Test description

6.1.1.2.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)
- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.1.2.3.2 Test procedure sequence

Table 6.1.1.2.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Is the Generic Test Procedure for MCPTT CT session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.4.3-1 to establish an on-demand pre-arranged group call with automatic commencement mode and implicit floor control correctly performed?	-	-	1	P
2a1-9	Void	-	-	-	-
10	Make the MCPTT User request to speak (e.g. pressing the PTT button) (NOTE 1).	-	-	-	-
11	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Request – Floor Granted as described in TS 36.579-1 [2] Table 5.3.16.3-1?	-	-	2	P
12-14	Void	--	-	-	-
15	The SS overrides the UE (MCPTT client) and grants the floor to a higher priority MCPTT Client.	-	-	-	-
16	The SS sends a Floor Revoke message with the Reject Cause set to #4 - Media Burst pre-empted.	<--	Floor Revoke	-	-
-	EXCEPTION: In parallel to the events described in step 17, the step specified in Table 6.1.1.2.3.2-2 takes place.	-	-	-	-
17	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Release – Floor Taken as described in TS 36.579-1 [2] Table 5.3.21.3-1?	-	-	2	P
18	Void	--	-	-	-
19	Make the MCPTT User request to speak (e.g. pressing the PTT button) (NOTE 1).	-	-	-	-
20	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Request – Floor Deny as described in TS 36.579-1 [2] Table 5.3.19.3-1?	-	-	2	P
21-22	Void	-	-	-	-
23	Make the MCPTT User request to speak (e.g. pressing the PTT button) (NOTE 1).	-	-	-	-
24	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Request – Floor Queue Position Info as described in TS 36.579-1 [2] Table 5.3.17.3-1?	-	-	2	P
25	Void	-	-	-	-
26	Check: Does the UE (MCPTT client) provide floor request queued response notification to the MCPTT user (NOTE 1)?	-	-	2	P
27	Make the MCPTT User request the current position in the queue (NOTE 1).	-	-	-	-
28	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Queuing Position Request as described in TS 36.579-1 [2] Table 5.3.18.3-1?	-	-	2	P
28A	Check: Does the UE (MCPTT Client) provide floor granted notification to the MCPTT User? (NOTE 1)	-	-	2	P
29	Void	-	-	-	-
30	Make the MCPTT User request to cancel the Floor Request and end being in the queue (e.g. releasing the PTT button) (NOTE 1).	-	-	-	-

31	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Release – Floor Taken as described in TS 36.579-1 [2] Table 5.3.21.3-1 to cancel the queue position?	-	-	2	P
32a1-32A	Void	-	-	-	-
33	Make the MCPTT User request to speak (e.g. pressing the PTT button) (NOTE 1).	-	-	-	-
34	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Request – Floor Queue Position Info as described in TS 36.579-1 [2] Table 5.3.17.3-1?	-	-	2	P
35	Void	-	-	-	-
36	Check: Does the UE (MCPTT client) provide floor request queued response notification to the MCPTT user (NOTE 1)?	-	-	2	P
37	The SS sends a Floor Granted message with no acknowledgement required	<--	Floor Granted	-	-
38	Check: Does the UE (MCPTT client) provide a floor granted notification to the MCPTT user (NOTE 1)?	-	-	2	P
39	Make the MCPTT User indicate end of talking (e.g. releasing the PTT button) (NOTE 1).	-	-	-	-
40	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Release – Floor Idle as described in TS 36.579-1 [2] Table 5.3.20.3-1?	->	-	2	P
41a1-42	Void	-	-	-	-
43	Make the MCPTT User end the on-demand group call. (NOTE 1).	-	-	-	-
44	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO call release as described in TS 36.579-1 [2] Table 5.3.10.3-1 to end the on-demand group call?	-	-	3	P
45	Void	-	-	-	-
46	Check: Is the Generic Test Procedure for MCPTT CT session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.4.3-1 to establish an on-demand pre-arranged group call with automatic commencement mode and implicit floor control correctly performed?	-	-	1	P
47a1-51	Void	-	-	-	-
52	The SS sends a Floor Taken message with no acknowledgement required	<--	Floor Taken	-	-
53	Check: Is the Generic Test Procedure for MCPTT CT session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.4.3-1 to upgrade the On-Demand Pre-arranged Group Call to an MCPTT Emergency Group Call correctly performed?	-	-	4	P
54A	Void	-	-	-	-
54B	The SS sends a Floor Taken message	<--	Floor Taken	-	-
55	The SS sends a Floor Idle message with no acknowledgement required	<--	Floor Idle	-	-
56	Make the MCPTT User request to speak (e.g. pressing the PTT button) (NOTE 1).	-	-	-	-

57	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Request – Floor Granted as described in TS 36.579-1 [2] Table 5.3.16.3-1?	-	-	5	P
58-60	Void	-	-	-	-
61	Make the MCPTT User indicate end of talking (e.g. releasing the PTT button) (NOTE 1).	-	-	-	-
62	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Release – Floor Idle as described in TS 36.579-1 [2] Table 5.3.20.3-1?	-	-	5	P
63a1-64	Void	-	-	-	-
65	Check: is the Generic Test Procedure for MCPTT CT session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.4.3-1 to cancel the emergency state correctly performed?	-	-	6	P
65Aa1-66A	Void	-	-	-	-
67	The SS sends a Floor Taken message with no acknowledgement required	<--	Floor Taken	-	-
68	The SS sends a Floor Idle message with no acknowledgement required	<--	Floor Idle	-	-
69	Make the MCPTT User request to speak (e.g. pressing the PTT button) (NOTE 1).	-	-	-	-
70	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Request – Floor Granted as described in TS 36.579-1 [2] Table 5.3.16.3-1?	-	-	2	P
71-73	Void	-	-	-	-
74	Make the MCPTT User indicate end of talking (e.g. releasing the PTT button) (NOTE 1).	-	-	-	-
75	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Release – Floor Idle as described in TS 36.579-1 [2] Table 5.3.20.3-1?	-	-	2	P
76a1-77	Void	-	-	-	-
78	Check: Is the Generic Test Procedure for MCPTT CT session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.4.3-1 to upgrade the On-Demand Pre-arranged Group Call to MCPTT Imminent Peril Group Call correctly performed?	-	-	7	P
78Aa1-79A	Void	-	-	-	-
80	The SS sends a Floor Idle message with no acknowledgement required	<--	Floor Idle	-	-
81	Make the MCPTT User request to speak (e.g. pressing the PTT button) (NOTE 1).	-	-	-	-
82	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Request – Floor Granted as described in TS 36.579-1 [2] Table 5.3.16.3-1?	-	-	8	P
83-85	Void	-	-	-	-
86	Make the MCPTT User indicate end of talking (e.g. releasing the PTT button) (NOTE 1).	-	-	-	-

87	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Release – Floor Idle as described in TS 36.579-1 [2] Table 5.3.20.3-1?	-	-	8	P
88a1-89	Void	-	-	-	-
90	Check: Is the Generic Test Procedure for MCPTT CT session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.4.3-1 to cancel the imminent peril state correctly performed?	-	-	9	P
90Aa1-91A	Void	-	-	-	-
92	The SS sends a Floor Taken message with no acknowledgement required	<--	Floor Taken	-	-
93	The SS sends a Floor Idle message with no acknowledgement required	<--	Floor Idle	-	-
94	Make the MCPTT User request to speak (e.g. pressing the PTT button) (NOTE 1).	-	-	-	-
95	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Request – Floor Granted as described in TS 36.579-1 [2] Table 5.3.16.3-1?	-	-	9	P
96-98	Void	-	-	-	-
99	Make the MCPTT User indicate end of talking (e.g. releasing the PTT button) (NOTE 1).	-	-	-	-
100	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Release – Floor Idle as described in TS 36.579-1 [2] Table 5.3.20.3-1?	-	-	9	P
101a1-102	Void	-	-	-	-
103	Check: Is the Generic Test Procedure for MCPTT CT call release as described in TS 36.579-1 [2] Table 5.3.12.3-1 to end the On-demand Pre-arranged Group Call correctly performed?	-	-	10	P
104	Void	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI.					

Table 6.1.1.2.3.2-2: Parallel Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCPTT Client) inform the MCPTT User that the permission to send RTP media is being revoked? NOTE 1 in Table 6.1.1.2.3.2-1	-	-	2	P

6.1.1.2.3.3 Specific message contents

Table 6.1.1.2.3.3-1: SIP INVITE (steps 1, 46, Table 6.1.1.2.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		MCPTT Info		
MIME part body	MCPTT Info as described in Table 6.1.1.2.3.3-1A			

Table 6.1.1.2.3.3-1A: MCPTT-Info in SIP INVITE (Table 6.1.1.2.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.2-1, condition GROUP-CALL

Table 6.1.1.2.3.3-2: Void

Table 6.1.1.2.3.3-3: SIP INVITE (step 53, Table 6.1.1.2.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.2-1 condition EMERGENCY-CALL and re_INVITE				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		MCPTT Info	TS 24.379 [9] clause F.1	
MIME-part-body	MCPTT-Info as described in Table 6.1.1.2.3.3-4			

Table 6.1.1.2.3.3-4: MCPTT-INFO in SIP INVITE (Table 6.1.1.2.3.3-3)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1 condition GROUP-CALL and EMERGENCY-CALL

Table 6.1.1.2.3.3-5: SIP INVITE (step 65, Table 6.1.1.2.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.2-1 condition re_INVITE				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		MCPTT Info	TS 24.379 [9] clause F.1	
MIME-part-body	MCPTT-Info as described in Table 6.1.1.2.3.3-6			

Table 6.1.1.2.3.3-6: MCPTT-INFO in SIP INVITE (Table 6.1.1.2.3.3-5)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1 condition GROUP-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
emergency-ind	"false"			
alert-ind	"false"			

Table 6.1.1.2.3.3-7: SIP INVITE (step 78, Table 6.1.1.2.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.2-1 condition GROUP-CALL, IMMPERIL-CALL and re_INVITE

Table 6.1.1.2.3.3-8: SIP INVITE (step 90, Table 6.1.1.2.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.2-1 condition re_INVITE				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		MCPTT Info	TS 24.379 [9] clause F.1	
MIME-part-body	MCPTT-Info as described in Table 6.1.1.2.3.3-9			

Table 6.1.1.2.3.3-9: MCPTT-INFO in SIP INVITE (Table 6.1.1.2.3.3-8)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1 condition GROUP-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
imminentperil-ind	"false"			

Table 6.1.1.2.3.3-10: Void

Table 6.1.1.2.3.3-11: Floor Taken (steps 7, 18, 52, 67, 92, Table 6.1.1.2.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.7-1 condition ON-NETWORK

Table 6.1.1.2.3.3-11A: Floor Taken (step 54B Table 6.1.1.2.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.7-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"0001010000000000"	bit D=1 (Emergency call) bit F=1 (Queueing supported)	

Table 6.1.1.2.3.3-12: Floor Idle (steps 40, 68, 75, 93, 100, Table 6.1.1.2.3.2-1; step 3, TS 36.579-1 [2] Table 5.3.19.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.6-1

Table 6.1.1.2.3.3-13: Floor Idle (steps 55, 62, Table 6.1.1.2.3.2-1; step 3, TS 36.579-1 [2] Table 5.3.19.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.6-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"0001010000000000"	bit D=1 (Emergency call) bit F=1 (Queueing supported)	

Table 6.1.1.2.3.3-14: Floor Idle (steps 80, 87, Table 6.1.1.2.3.2-1; step 3, TS 36.579-1 [2] Table 5.3.19.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.6-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"0000110000000000"	bit E=1 (Imminent Peril call) bit F=1 (Queueing supported)	

Table 6.1.1.2.3.3-15: Floor Request (steps 11, 20, 24, 34, 70, 95, Table 6.1.1.2.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.14.3-1; step 1, TS 36.579-1 [2] Table 5.3.16.3-1; step 1, TS 36.579-1 [2] Table 5.3.17.3-1; step 1, TS 36.579-1 [2] Table 5.3.18.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.2-1 condition ON-NETWORK

Table 6.1.1.2.3.3-16: Floor Request (step 57, Table 6.1.1.2.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.14.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.2-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"00010X0000000000"	bit D=1 (Emergency call) bit F=X (Queueing supported) any value	

Table 6.1.1.2.3.3-17: Floor Request (step 82, Table 6.1.1.2.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.14.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.2-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"00001X0000000000"	bit E=1 (Imminent Peril call) bit F=X (Queueing supported) any value	

Table 6.1.1.2.3.3-18: Floor Granted (step 11, 70, 95, Table 6.1.1.2.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.14.3-1))

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition ON-NETWORK

Table 6.1.1.2.3.3-19: Floor Granted (step 37, Table 6.1.1.2.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	"00001"	Acknowledgment not required for Floor Granted message	

Table 6.1.1.2.3.3-20: Floor Granted (step 57, Table 6.1.1.2.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.14.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"0001010000000000"	bit D=1 (Emergency call) bit F=1 (Queueing supported)	

Table 6.1.1.2.3.3-21: Floor Granted (step 82, Table 6.1.1.2.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.14.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"0000110000000000"	bit E=1 (Imminent Peril call) bit F=1 (Queueing supported)	

Table 6.1.1.2.3.3-22: Floor Ack (steps 11, 57, 70, 82, 95, Table 6.1.1.2.3.2-1; step 3, TS 36.579-1 [2] Table 5.3.14.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.11-1, condition UPLINK

Table 6.1.1.2.3.3-23: Floor Revoke (step 16, Table 6.1.1.2.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.8-1

Table 6.1.1.2.3.3-24: Floor Release (steps 16, 31, 40, 75, 100, Table 6.1.1.2.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.20.3-1; step 1, TS 36.579-1 [2] Table 5.3.19.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.5-1 condition ON-NETWORK

Table 6.1.1.2.3.3-25: Floor Release (step 62, Table 6.1.1.2.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.19.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.5-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"00010x0000000000"	bit D=1 (Emergency call) bit F=X (Queueing supported) any value	

Table 6.1.1.2.3.3-26: Floor Release (step 87, Table 6.1.1.2.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.19.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.5-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"00001x0000000000"	bit E=1 (Imminent Peril call) bit F=X (Queueing supported) any value	

Table 6.1.1.2.3.3-27: Floor Deny (step 21, Table 6.1.1.2.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.18.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.4-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Reject Cause			
Reject Cause	"255"	Cause #255 - Other reason	
Reject Phrase	"Other reason"		

Table 6.1.1.2.3.3-28: Floor Queue Position Info (steps 24, 28, 34, Table 6.1.1.2.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.16.3-1; step 2, TS 36.579-1 [2] Table 5.3.17.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.10-1 condition ON-NETWORK

Table 6.1.1.2.3.3-29: Floor Queue Position Request (step 28, Table 6.1.1.2.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.17.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.9-1 condition ON-NETWORK

6.1.1.3 On-network / On-demand Pre-arranged Group Call / Manual Commencement Mode / Client Originated (CO)

6.1.1.3.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service }
ensure that {
  when { the MCPTT User requests the establishment of an MCPTT On-demand Pre-arranged Group Call
requesting Manual Commencement Mode at the invited MCPTT client(s) and implicit floor control }
    then { UE (MCPTT Client) requests On-demand Manual Commencement Mode Pre-arranged Group Call
establishment with implicit floor control by sending a SIP INVITE message and, after indication from
the MCPTT Server that the call was established and receiving a Floor Granted message, notifies the
user and respects the floor control imposed by the MCPTT Server }
            }
```

(2)

```
with { UE (MCPTT Client) having an ongoing On-demand Pre-arranged Group Call with Manual
Commencement Mode }
ensure that {
  when { the MCPTT User (MCPTT Client) wants to terminate the ongoing MCPTT Group Call }
    then { UE (MCPTT Client) sends a SIP BYE request and leaves the MCPTT session }
            }
```

6.1.1.3.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.379, clauses 10.1.1.2.1.1, 6.2.1, 10.1.1.2.3.1, 6.2.4.1. The following represents a copy/paste extraction of the requirements relevant to the test purpose; any references within the copy/paste text should be understood within the scope of the core spec they have been copied from. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.379, clause 10.1.1.2.1.1]

Upon receiving a request from an MCPTT user to establish an MCPTT prearranged group session the MCPTT client shall generate an initial SIP INVITE request by following the UE originating session procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

1) if the MCPTT user has requested the origination of an MCPTT emergency group call or is originating an MCPTT prearranged group call and the MCPTT emergency state is already set, the MCPTT client shall comply with the procedures in subclause 6.2.8.1.1;

2) if the MCPTT user has requested the origination of an MCPTT imminent peril group call, the MCPTT client shall comply with the procedures in subclause 6.2.8.1.9;

3) if the MCPTT user has requested the origination of a broadcast group call, the MCPTT client shall comply with the procedures in subclause 6.2.8.2;

4) shall include the g.3gpp.mcptt media feature tag and the g.3gpp.icsi-ref media feature tag with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP INVITE request according to IETF RFC 3840 [16];

5) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

6) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP INVITE request;

7) shall include an Accept-Contact header field with the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

8) should include the "timer" option tag in the Supported header field;

9) should include the Session-Expires header field according to IETF RFC 4028 [7]. It is recommended that the "refresher" header field parameter is omitted. If included, the "refresher" header field parameter shall be set to "uac";

10) shall set the Request-URI of the SIP INVITE request to the public service identity identifying the participating MCPTT function serving the MCPTT user;

NOTE 1: The MCPTT client is configured with public service identity identifying the participating MCPTT function serving the MCPTT user.

11) may include a P-Preferred-Identity header field in the SIP INVITE request containing a public user identity as specified in 3GPP TS 24.229 [4];

12) if the MCPTT client emergency group state for this group is set to "MEG 2: in-progress" or "MEG 4: confirm-pending", the MCPTT client shall include the Resource-Priority header field and comply with the procedures in subclause 6.2.8.1.2;

13) if the MCPTT client imminent peril group state for this group is set to "MIG 2: in-progress" or "MIG 3: confirm-pending" shall include the Resource-Priority header field and comply with the procedures in subclause 6.2.8.1.12;

14) shall contain in an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with:

   a) the <session-type> element set to a value of "prearranged";

   b) the <mcptt-request-uri> element set to the group identity;

   c) the <mcptt-client-id> element set to the MCPTT client ID of the originating MCPTT client; and

NOTE 2: The MCPTT client does not include the MCPTT ID of the originating MCPTT user in the body, as this will be inserted into the body of the SIP INVITE request that is sent from the originating participating MCPTT function.

   d) if the group identity can be determined to be a TGI and if the MCPTT client can associate the TGI with a MCPTT group ID, the <associated-group-id> element set to the MCPTT group ID;

NOTE 3: The text "can associate the TGI with a MCPTT group ID" means that the MCPTT client is able to determine that there is a constituent group of the temporary group that it is a member of.

NOTE 4: The MCPTT client is informed about temporary groups and regrouping of MCPTT groups that the user is a member of as specified in 3GPP TS 24.381 [31].

NOTE 5: If the MCPTT user selected a TGI where there are several MCPTT groups where the MCPTT user is a member, the MCPTT client selects one of those MCPTT groups.

15) shall include an SDP offer according to 3GPP TS 24.229 [4] with the clarifications given in subclause 6.2.1;

16) if an implicit floor request is required, shall indicate this as specified in subclause 6.4; and

17) shall send the SIP INVITE request towards the MCPTT server according to 3GPP TS 24.229 [4].

On receiving a SIP 2xx response to the SIP INVITE request, the MCPTT client:

1) shall interact with the user plane as specified in 3GPP TS 24.380 [5] ;

2) if the MCPTT emergency group call state is set to "MEGC 2: emergency-call-requested" or "MEGC 3: emergency-call-granted" or the MCPTT imminent peril group call state is set to "MIGC 2: imminent-peril-call-requested" or "MIGC 3: imminent-peril-call-granted", the MCPTT client shall perform the actions specified in subclause 6.2.8.1.4; and

3) may subscribe to the conference event package as specified in subclause 10.1.3.1.

On receiving a SIP 4xx response, a SIP 5xx response or a SIP 6xx response to the SIP INVITE request:

1) if the MCPTT emergency group call state is set to "MEGC 2: emergency-call-requested" or "MEGC 3: emergency-call-granted"; or

2) if the MCPTT imminent peril group call state is set to "MIGC 2: imminent-peril-call-requested" or "MIGC 3: imminent-peril-call-granted";

the MCPTT client shall perform the actions specified in subclause 6.2.8.1.5.

On receiving a SIP INFO request where the Request-URI contains an MCPTT session ID identifying an ongoing group session, the MCPTT client shall follow the actions specified in subclause 6.2.8.1.13.

[TS 24.379, clause 6.2.1]

The SDP offer shall contain only one SDP media-level section for MCPTT speech according to 3GPP TS 24.229 [4] and, if floor control shall be used during the session, shall contain one SDP media-level section for a media-floor control entity according to 3GPP TS 24.380 [5].

When composing an SDP offer according to 3GPP TS 24.229 [4] the MCPTT client:

1) shall set the IP address of the MCPTT client for the offered MCPTT speech media stream and, if floor control shall be used, for the offered media-floor control entity;

NOTE: If the MCPTT client is behind a NAT the IP address and port included in the SDP offer can be a different IP address and port than the actual IP address and port of the MCPTT client depending on the NAT traversal method used by the SIP/IP Core.

2) shall include an "m=audio" media-level section for the MCPTT media stream consisting of:

   a) the port number for the media stream selected; and

   b) the codec(s) and media parameters and attributes with the following clarification:

      i) if the MCPTT client is initiating a call to a group identity;

      ii) if the <preferred-voice-encodings> element is present in the group document retrieved by the group management client as specified in 3GPP TS 24.381 [31] containing an <encoding> element with a "name" attribute; and

      iii) if the MCPTT client supports the encoding name indicated in the value of the "name" attribute;

      then the MCPTT client:

      i) shall insert the value of the "name" attribute in the <encoding name> field of the "a=rtpmap" attribute as defined in IETF RFC 4566 [12]; and

   c) "i=" field set to "speech" according to 3GPP TS 24.229 [4];

3) if floor control shall be used during the session, shall include an "m=application" media-level section as specified in 3GPP TS 24.380 [5] clause 12 for a media-floor control entity, consisting of:

   a) the port number for the media-floor control entity selected as specified in 3GPP TS 24.380 [5]; and

b) the 'fmtp' attributes as specified in 3GPP TS 24.380 [5] clause 14; and

4) if end-to-end security is required for a private call and the SDP offer is not for establishing a pre-established session, shall include the MIKEY-SAKKE I_MESSAGE in an "a=key-mgmt" attribute as a "mikey" attribute value in the SDP offer as specified in IETF RFC 4567 [47].

[TS 24.379, clause 10.1.1.2.3.1]

When an MCPTT client wants to leave the MCPTT session that has been established using on-demand session, the MCPTT client shall follow the procedures as specified in subclause 6.2.4.1.

[TS 24.379, clause 6.2.4.1]

Upon receiving a request from an MCPTT user to leave an MCPTT session established using on-demand session signalling, the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

2) shall generate a SIP BYE request according to 3GPP TS 24.229 [4];

3) shall set the Request-URI to the MCPTT session identity to leave; and

4) shall send a SIP BYE request towards MCPTT server according to 3GPP TS 24.229 [4].

Upon receiving a SIP 200 (OK) response to the SIP BYE request, the MCPTT client shall interact with the media plane as specified in 3GPP TS 24.380 [5].

6.1.1.3.3 Test description

6.1.1.3.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)

- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

- UE States at the end of the preamble

  - The UE is in E-UTRA Registered, Idle Mode state.

  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.1.3.3.2 Test procedure sequence

Table 6.1.1.3.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the MCPTT User request the establishment of an MCPTT on-demand pre-arranged group call, manual commencement mode, with explicit request for floor control (implicit floor control).(NOTE 1)	-	-	--	-
2	Check: Does the UE (MCPTT client) perform the SIP signalling for MCPTT CO group call establishment, manual commencement procedure as described in TS 36.579-1 [2] Table 5.3.7.3-1 to establish an MCPTT on-demand pre-arranged group call with manual commencement mode and implicit request for floor control according to option b.ii of NOTE 1 in TS 36.579.1 [2] Table 5.3.7.3-1?	-	-	1	-
3-6	Void	-	-	-	-
6A	Check: Does the UE (MCPTT client) provide floor granted notification to the MCPTT User? (NOTE 1)	-	-	1	P
6B	Make the MCPTT User indicate end of talking (e.g. releasing the PTT button). (NOTE 1)	-	-	-	-
6C	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor release – Floor Idle as described in TS 36.579-1 [2] Table 5.3.20.3-1?	-	-	1	P
7	Make the MCPTT User end the on-demand group call. (NOTE 1)	-	-	-	-
8	Check: Does the UE (MCPTT Client) perform Generic Test Procedure for MCPTT CO call release as described in TS 36.579-1 [2] Table 5.3.10.3-1 to end the on-demand group call?	-	-	2	P
9	Void	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI.					

6.1.1.3.3.3 Specific message contents

All message contents as specified in TS 36.579-1 [2], subclause 5.3.7.4 with the modification that Conditions MANUAL and GROUP-CALL apply with following clarifications:

Table 6.1.1.3.3.3-1: SIP INVITE (step 2, Table 6.1.1.3.3.2-1); step 2, TS 36.579-1 [2] Table 5.3.7.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.1-1 condition IMPLICIT_GRANT_REQUESTED

Table 6.1.1.3.3.3-2: Void

Table 6.1.1.3.3.3-2A: SIP 200 (OK) (step 2, Table 6.1.1.3.3.2-1; step 4, TS 36.579-1 [2] Table 5.3.7.3-1

Derivation Path: TS 36.579-1 [2], Table 5.5.2.17.1.2-1 condition IMPLICIT_GRANT_REQUESTED

6.1.1.4 On-network / On-demand Pre-arranged Group Call / Manual Commencement Mode / Client Terminated (CT)

6.1.1.4.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT }
ensure that {
  when { the SS (MCPTT Server) initiates an On-demand Pre-arranged group call with Manual
Commencement Mode }
    then { UE (MCPTT Client) responds by sending a SIP 200 (OK) message and notifies the user that
the call was established and respects the floor control imposed by the MCPTT Server }
            }
```

(2)

```
with { UE (MCPTT Client) having an ongoing On-demand Pre-arranged Group Call with Manual
Commencement Mode }
ensure that {
  when { the SS (MCPTT Server) ends the ongoing MCPTT Group Call by sending a SIP BYE message}
    then { the UE (MCPTT Client) responds with a SIP 200 (OK)}
            }
```

(3)

```
with { UE (MCPTT Client) registered and authorised for MCPTT }
ensure that {
  when { the SS (MCPTT Server) initiates an On-demand Pre-arranged group call with Manual
Commencement Mode and the MCPTT User (MCPTT Client) chooses to reject the call }
    then { UE (MCPTT Client) responds by sending a SIP 480 (Temporarily unavailable) message to the
SS in order to reject the call }
            }
```

6.1.1.4.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.379, clauses 10.1.1.2.1.2, 6.2.2, 6.2.3.2.2, 6.5, 10.1.1.2.3.3, 6.2.6. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 10.1.1.2.1.2]

In the procedures in this subclause:

1) emergency indication in an incoming SIP INVITE request refers to the <emergency-ind> element of the application/vnd.3gpp.mcptt-info+xml MIME body; and

2) imminent peril indication in an incoming SIP INVITE request refers to the <imminentperil-ind> element of the application/vnd.3gpp.mcptt-info+xml MIME body.

Upon receipt of an initial SIP INVITE request, the MCPTT client shall follow the procedures for termination of multimedia sessions in the IM CN subsystem as specified in 3GPP TS 24.229 [4] with the clarifications below.

The MCPTT client:

1) may reject the SIP INVITE request if either of the following conditions are met:

   a) MCPTT client does not have enough resources to handle the call; or

   b) any other reason outside the scope of the present document;

   and skip the rest of the steps;

2) if the SIP INVITE request is rejected in step 1), shall respond toward participating MCPTT function either with appropriate reject code as specified in 3GPP TS 24.229 [4] and warning texts as specified in subclause 4.4.2 or with SIP 480 (Temporarily unavailable) response not including warning texts if the user is authorised to restrict the reason for failure and skip the rest of the steps of this subclause;

NOTE: If the SIP INVITE request contains an emergency indication or imminent peril indication, the MCPTT client can by means beyond the scope of the present document choose to accept the request.

3) shall check if a Resource-Priority header field is included in the incoming SIP INVITE request and may perform further actions outside the scope of the present document to act upon an included Resource-Priority header field as specified in 3GPP TS 24.229 [4];

4) if the SIP INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <emergency-ind> element set to a value of "true":

   a) should display to the MCPTT user an indication that this is a SIP INVITE request for an MCPTT emergency group call and:

      i) should display the MCPTT ID of the originator of the MCPTT emergency group call contained in the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body;

      ii) should display the MCPTT group identity of the group with the emergency condition contained in the <mcptt-calling-group-id> element; and

      iii) if the <alert-ind> element is set to "true", should display to the MCPTT user an indication of the MCPTT emergency alert and associated information;

   b) shall set the MCPTT emergency group state to "MEG 2: in-progress";

   c) shall set the MCPTT imminent peril group state to "MIG 1: no-imminent-peril"; and

   d) shall set the MCPTT imminent peril group call state to "MIGC 1: imminent-peril-gc-capable"; otherwise

5) if the SIP INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <imminentperil-ind> element set to a value of "true":

   a) should display to the MCPTT user an indication that this is a SIP INVITE request for an MCPTT imminent peril group call and:

      i) should display the MCPTT ID of the originator of the MCPTT imminent peril group call contained in the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body; and

      ii) should display the MCPTT group identity of the group with the imminent peril condition contained in the <mcptt-calling-group-id> element; and

   b) shall set the MCPTT imminent peril group state to "MIG 3: in-progress";

6) may display to the MCPTT user the MCPTT ID of the inviting MCPTT user;

7) shall perform the automatic commencement procedures specified in subclause 6.2.3.1.2 if one of the following conditions are met:

   a) SIP INVITE request contains an Answer-Mode header field with the value "Auto" and the MCPTT service setting at the invited MCPTT client for answering the call is set to automatic commencement mode; or

   b) SIP INVITE request contains an Answer-Mode header field with the value "Auto" and the MCPTT service setting at the invited MCPTT client for answering the call is set to manual commencement mode, yet the invited MCPTT client allows the call to be answered with automatic commencement mode;

8) shall perform the manual commencement procedures specified in subclause 6.2.3.2.2 if one of the following conditions are met:

   a) SIP INVITE request contains an Answer-Mode header field with the value "Manual" and the MCPTT service setting at the invited MCPTT client for answering the call is to use manual commencement mode; or

   b) SIP INVITE request contains an Answer-Mode header field with the value "Manual" and the MCPTT service setting at the invited MCPTT client for answering the call is set to automatic commencement mode, yet the invited MCPTT client allows the call to be answered with manual commencement mode; and

9) when the SIP 200 (OK) response to the SIP INVITE request is sent, may subscribe to the conference event package as specified in subclause 10.1.3.1.

[TS 24.379, clause 6.2.2]

When the MCPTT client receives an initial SDP offer for an MCPTT session, the MCPTT client shall process the SDP offer and shall compose an SDP answer according to 3GPP TS 24.229 [4].

When composing an SDP answer, the MCPTT client:

1) shall accept the MCPTT speech media stream in the SDP offer;

2) shall set the IP address of the MCPTT client for the accepted MCPTT speech media stream and, if included in the SDP offer, for the accepted media-floor control entity;

NOTE: If the MCPTT client is behind a NAT the IP address and port included in the SDP answer can be a different IP address and port than the actual IP address and port of the MCPTT client depending on the NAT traversal method used by the SIP/IP Core.

3) shall include an "m=audio" media-level section for the accepted MCPTT speech media stream consisting of:

   a) the port number for the media stream;

   b) media-level attributes as specified in 3GPP TS 24.229 [4]; and

   c) "i=" field set to "speech" according to 3GPP TS 24.229 [4]; and

4) if included in the SDP offer, shall include the media-level section of the offered media-floor control entity consisting of:

   a) an "m=application" media-level section as specified in 3GPP TS 24.380 [5] clause 12; and

   b) 'fmtp' attributes as specified in 3GPP TS 24.380 [5] clause 14.

[TS 24.379, clause 6.2.3.2.2]

When performing the manual commencement mode procedures:

1) the terminating MCPTT client may automatically generate a SIP 183 (Session Progress) in accordance with 3GPP TS 24.229 [4], prior to the MCPTT user's acknowledgement; and

2) if the MCPTT user declines the MCPTT session invitation the MCPTT client shall send a SIP 480 (Temporarily Unavailable) response towards the MCPTT server with the warning text set to: "110 user declined the call invitation" in a Warning header field as specified in subclause 4.4, and not continue with the rest of the steps in this subclause.

When generating a SIP 183 (Session Progress) response, the MCPTT client:

1) shall include the following in the Contact header field:

   a) the g.3gpp.mcptt media feature tag; and

   b) the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt"; and

2) may include a P-Answer-State header field with the value "Unconfirmed" as specified in IETF RFC 4964 [34];

When sending the SIP 200 (OK) response to the incoming SIP INVITE request, the MCPTT client shall follow the procedures in subclause 6.2.3.1.2.

When NAT traversal is supported by the MCPTT client and when the MCPTT client is behind a NAT, generation of SIP responses is done as specified in this subclause and as specified in IETF RFC 5626 [15].

[TS 24.379, clause 6.5]

The MCPTT client and the MCPTT server shall support several MIME bodies in SIP request and SIP responses.

When the MCPTT client or the MCPTT server sends a SIP message and the SIP message contains more than one MIME body, the MCPTT client or the MCPTT server:

1) shall, as specified in IETF RFC 2046 [21], include one Content-Type header field with the value set to multipart/mixed and with a boundary delimiter parameter set to any chosen value;

2) for each MIME body:

   a) shall insert the boundary delimiter;

   b) shall insert the Content-Type header field with the MIME type of the MIME body; and

   c) shall insert the content of the MIME body;

3) shall insert a final boundary delimiter; and

4) if an SDP offer or an SDP answer is one of the MIME bodies, shall insert the application/sdp MIME body as the first MIME body.

NOTE: The reason for inserting the application/sdp MIME body as the first body is that if a functional entity in the underlying SIP core does not understand multiple MIME bodies, the functional entity will ignore all MIME bodies with the exception of the first MIME body. The order of multiple MCPTT application MIME bodies in a SIP message is irrelevant.

When the MCPTT client or the MCPTT server sends a SIP message and the SIP message contains only one MIME body, the MCPTT client or the MCPTT server:

1) shall include a Content-Type header field set to the MIME type of the MIME body; and

2) shall insert the content of the MIME body.

[TS 24.379, clause 10.1.1.2.3.3]

Upon receiving a SIP BYE request for releasing the prearranged MCPTT group call, the MCPTT client shall follow the procedures as specified in subclause 6.2.6.

[TS 24.379, clause 6.2.6]

Upon receiving a SIP BYE request, the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5]; and

2) shall send SIP 200 (OK) response towards MCPTT server according to 3GPP TS 24.229 [4].

6.1.1.4.3 Test description

6.1.1.4.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)

- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

- UE States at the end of the preamble

  - The UE is in E-UTRA Registered, Idle Mode state.

  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.1.4.3.2 Test procedure sequence

Table 6.1.1.4.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Is the MCPTT CT group call establishment, manual commencement procedure as described in TS 36.579-1 [2], Table 5.3.5.3-1 correctly performed?	-	-	1	-
2-6	Void	-	-	-	-
7	Void	-	-	-	-
8	Check: Is the MCPTT CT call release procedure as described in TS 36.579-1 [2], Table 5.3.12.3-1 correctly performed?	-	-	2	-
9	Void	-	-	-	-
10	Void	-	-	-	-
11-15c1	The MCPTT CT group call establishment, manual commencement procedure as described in TS 36.579-1 [2], Table 5.3.5.3-1 Steps 1a1 - 5c1 is performed.	-	-	-	-
14	Make the MCPTT User decline the call. NOTE 1	-	-	-	-
15	Check: Does the UE (MCPTT Client) answer the call with a SIP 480 (Temporarily unavailable)?	-->	SIP 480 (Temporarily unavailable)	3	P
16	SS responds to the SIP 480 (Temporarily unavailable) with a SIP ACK	<--	SIP ACK	-	-
-	EXCEPTION: SS releases the E-UTRA connection.	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI					

6.1.1.4.3.3 Specific message contents

None.

Table 6.1.1.4.3.3-1: Void

Table 6.1.1.4.3.3-2: Void

6.1.1.5 On-network / Pre-arranged Group Call using pre-established session / Client originated Pre-established Session Release with associated MCPTT session / Client Originated (CO)

6.1.1.5.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service and having a pre-established
session with the MCPTT Server }
ensure that {
```

```
  when { the MCPTT User requests the establishment of an MCPTT On-demand Pre-arranged Group Call
using a pre-established session requesting Automatic Commencement Mode at the invited MCPTT
client(s) and implicit floor control }
    then { UE (MCPTT Client) requests On-demand Pre-arranged Group Call using a pre-established
session establishment by sending a SIP REFER message and responds to the SS with correct MCPC
messages }
            }
```

(2)

```
with { UE (MCPTT Client) having an ongoing On-demand Pre-arranged Group Call using a pre-established
session }
ensure that {
  when { the MCPTT User (MCPTT Client) wants to terminate the ongoing MCPTT Group Call but keep the
pre-established session }
    then { UE (MCPTT Client) sends a SIP REFER request and leaves the MCPTT session }
            }
```

6.1.1.5.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.379, clauses 10.1.1.2.2.1, 10.1.1.2.3.2, 6.2.4.2,TS 24.380, clauses 9.2.2.2.2, 9.2.2.3.2, 9.2.2.4.6. The following represents a copy/paste extraction of the requirements relevant to the test purpose; any references within the copy/paste text should be understood within the scope of the core spec they have been copied from. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.379, clause 10.1.1.2.1.1]

Upon receiving a request from an MCPTT user to establish an MCPTT group session using an MCPTT group identity identifying a prearranged MCPTT group within the pre-established session, the MCPTT client shall generate a SIP REFER request as specified in IETF RFC 3515 [25] as updated by IETF RFC 6665 [26] and IETF RFC 7647 [27], and in accordance with the UE procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client shall follow the procedures specified in subclause 10.1.2.2.2.1 with the clarification in step 3) of subclause 10.1.2.2.2.1 that:

1) the <entry> element in the application/resource-lists MIME body shall contain a "uri" attribute set to the prearranged MCPTT group identity;

2) the <session-type> element of the application/vnd.3gpp.mcptt-info MIME body in the hname "body" URI header field shall be set to a value of "prearranged"; and

3) if the MCPTT user has requested the origination of a broadcast group call, the MCPTT client shall comply with the procedures in subclause 6.2.8.2.

[TS 24.379, clause 10.1.1.2.3.2]

When an MCPTT client wants to leave the MCPTT session within a pre-established session, the MCPTT client shall follow the procedures as specified in subclause 6.2.4.2.

[TS 24.379, clause 6.2.4.2]

Upon receiving a request from an MCPTT user to leave an MCPTT session within a pre-established session, the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

2) shall generate an initial SIP REFER request outside a dialog in accordance with the procedures specified in 3GPP TS 24.229 [4], IETF RFC 4488 [22] and IETF RFC 3515 [25] as updated by IETF RFC 6665 [26] and IETF RFC 7647 [27];

3) shall set the Request-URI of the SIP REFER request to the public service identity identifying the pre-established session on the MCPTT server serving the MCPTT user;

4) shall include the Refer-Sub header field with value "false" according to rules and procedures of IETF RFC 4488 [22];

5) shall include the Supported header field with value "norefersub" according to rules and procedures of IETF RFC 4488 [22];

6) shall set the Refer-To header field of the SIP REFER request to the MCPTT session identity to leave;

7) shall include the "method" SIP URI parameter with the value "BYE" in the URI in the Refer-To header field;

8) shall include a Target-Dialog header field as specified in IETF RFC 4538 [23] identifying the pre-established session; and

9) shall send the SIP REFER request according to 3GPP TS 24.229 [4].

Upon receiving a SIP 2xx response to the SIP REFER request, the MCPTT client shall interact with media plane as specified in 3GPP TS 24.380 [5].

[TS 24.380, clause 9.2.2.2.2]

When a pre-established session is created between the MCPTT client and the participating MCPTT function, as specified in 3GPP TS 24.379 [2], the MCPTT client:

1. shall initialize any needed user plane resources for the pre-established session as specified in 3GPP TS 24.379 [2]; and

2. shall enter the 'U: Pre-established session not in use' state.

[TS 24.380, clause 9.2.2.3.2]

Upon reception of a Connect message:

1. if the MCPTT client accepts the incoming call the MCPTT client:

   a. shall send the Acknowledgement message with Reason Code field set to 'Accepted';

   b. shall use only the media streams of the pre-established session which are indicated as used in the associated call session Media Streams field, if the Connect contains a Media Streams field;

   c. shall create an instance of the 'Floor participant state transition diagram for basic operation' as specified in subclause 6.2.4; and

   d. shall enter the 'U: Pre-established session in use' state; or

2. Otherwise the MCPTT client:

   a. shall send the Acknowledgement message with the Reason Code field set to 'Busy' or 'Not Accepted'; and

   b. shall remain in 'U: Pre-established session not in use' state.

[TS 24.380, clause 9.2.2.4.6]

Upon receiving a 2xx response to the sent SIP REFER request as described in 3GPP TS 24.379 [2] when the call is released, but the Pre-established Session is kept alive the MCPTT client:

1. shall enter the 'U: Pre-established session not in use' state; and

2. shall terminate the instance of 'Floor participant state transition diagram for basic operation' state machine as specified in subclause 6.2.4.

6.1.1.5.3 Test description

6.1.1.5.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT pre-established session establishment CO as specified in TS 36.579-1 [2], subclause 5.3.3.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.1.5.3.2 Test procedure sequence

Table 6.1.1.5.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the MCPTT User request the establishment of an MCPTT pre-arranged group call using a pre-established session, automatic commencement mode, with implicit Floor Control (NOTE 1)	-	-	-	-
2	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO call establishment using a pre-established session as described in TS 36.579-1 [2] table 5.3.9.3-1 to establish an MCPTT pre-arranged group call with automatic commencement mode?	-	-	1	P
2A	The SS (MCPTT Server) sends a Floor Taken message with no acknowledgement required.	<--	Floor Taken	-	-
3-6	Void	-	-	-	-
7	Make the MCPTT User leave the MCPTT session (NOTE 1)	-	-	-	-
8	Check: Does the UE (MCPTT Client) perform Generic Test Procedure for MCPTT CO call release keeping the pre-established session as described in TS 36.579-1 [2] table 5.3.11.3-1 to end the on-demand group call?	-	-	2	P
9	Void	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI					

6.1.1.5.3.3 Specific message contents

Table 6.1.1.5.3.3-1: SIP REFER (step 2, Table 6.1.1.5.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.9.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.12-1 condition GROUP-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**Resource list**		
MIME-part-body	Resource-lists as described in Table 6.1.1.5.3.3-3			

Table 6.1.1.5.3.3-2: Void

Table 6.1.1.5.3.3-3: Resource-lists in SIP REFER (Table 6.1.1.5.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.3.1-1 conditions PRE-ESTABLISH and GROUP-CALL

Table 6.1.1.5.3.3-3A: SIP header fields extending the uri attribute of the resource-lists' single entry (step 2, Table 6.1.1.5.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.9.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.12-2: condition GROUP-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
body				
MIME body part		**SDP Message**		
MIME-part-headers				
Content-Type	“application/sdp”			
MIME-part-body	SDP Message as described in Table 6.1.1.5.3.3-3B			
MIME body part		**MCPTT-Info**		
MIME-part-body	MCPTT-Info as described in Table 6.1.1.5.3.3-3C			

Table 6.1.1.5.3.3-3B: SDP in SIP header fields (Table 6.1.1.5.3.3-3A)

Derivation Path: TS 36.579-1 [2], 5.5.3.1.1-1 condition IMPLICIT_GRANT_REQUESTED

Table 6.1.1.5.3.3-3C: MCPTT-Info in SIP header fields (Table 6.1.1.5.3.3-3A)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1, conditions GROUP-CALL, INVITE-REFER

Table 6.1.1.5.3.3-4: SIP 200 (OK) (step 2 Table 6.1.1.5.3.2-1; step 3, TS 36.579-1 [2] Table 5.3.9.3-1))

Derivation Path: TS 36.579-1 [2], Table 5.5.2.17.1.2-1 condition REFER-RSP				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Content-Type				
media-type	"application/sdp"			
Message-body				
SDP message	SDP message as described in Table 6.1.1.5.3.3-4A			

Table 6.1.1.5.3.3-4A: SDP in SIP 200 (OK) (Table 6.1.1.5.3.3-4)

Derivation Path: TS 36.579-1 [2], 5.5.3.1.2-1 conditions SDP_ANSWER, IMPLICIT_GRANT_REQUESTED

6.1.1.6 On-network / Pre-arranged Group Call using pre-established session / Automatic Commencement Mode / Server originated Pre-established Session Release with associated MCPTT session / Client Terminated (CT)

6.1.1.6.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service and having a pre-established
session with the MCPTT Server }
ensure that {
  when { the MCPTT Server requests the establishment of an MCPTT On-demand Pre-arranged Group Call
using a pre-established session requesting Automatic Commencement Mode to the UE (MCPTT Client) by
sending a Connect}
    then { UE (MCPTT Client) accepts the On-demand Pre-arranged Group Call by sending an
Acknowledgement }
            }
```

(2)

```
with { UE (MCPTT Client) having an ongoing On-demand Pre-arranged Group Call using a pre-established
session with Automatic Commencement Mode }
ensure that {
  when { the MCPTT Server wants to terminate the ongoing MCPTT Group Call and sends a Disconnect }
    then { UE (MCPTT Client) accepts the ending of the MCPTT Group Call by sending an
Acknowledgement }
            }
```

6.1.1.6.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.380, clauses 4.1.2.2, 4.1.2.3, 9.2.2.3.2, 9.2.2.3.4. The following represents a copy/paste extraction of the requirements relevant to the test purpose; any references within the copy/paste text should be understood within the scope of the core spec they have been copied from. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.380, clause 4.1.2.2]

For a pre-arranged group call if the controlling MCPTT function as triggered by an originating group member initiates a call as specified in 3GPP TS 24.379 [2], the participating MCPTT function which serves the terminating MCPTT client sends a Connect message to all affiliated MCPTT clients of this group. After the reception of the Connect message the terminating MCPTT client sends an Acknowledgment message by indicating that the connection is accepted or by indicating that the connection is not accepted. If the connection is accepted by the terminating MCPTT client, the floor control for this call continues a specified in clause 6.

NOTE: If a terminating client does not have an available pre-established session, the call setup proceeds as in on-demand call setup as specified in 3GPP TS 24.379 [2].

[TS 24.380, clause 4.1.2.3]

When a call is released by the controlling MCPTT function (as specified in 3GPP TS 24.379 [2]), the participating MCPTT function sends a Disconnect message to all MCPTT clients which used a pre-established session for this call. Then the call is released (see also 3GPP TS 24.379 [2]) and the pre-established session can be used for another call. When an MCPTT client leaves a call (as specified in 3GPP TS 24.379 [2]) which was setup over a pre-established session without releasing the pre-established session, this pre-established session can be used for another call.

[TS 24.380, clause 9.2.2.3.2]

Upon reception of a Connect message:

1. if the MCPTT client accepts the incoming call the MCPTT client:

a. shall send the Acknowledgement message with Reason Code field set to 'Accepted';

b. shall use only the media streams of the pre-established session which are indicated as used in the associated call session Media Streams field, if the Connect contains a Media Streams field;

c. shall create an instance of the 'Floor participant state transition diagram for basic operation' as specified in subclause 6.2.4; and

d. shall enter the 'U: Pre-established session in use' state; or

2. Otherwise the MCPTT client:

a. shall send the Acknowledgement message with the Reason Code field set to 'Busy' or 'Not Accepted'; and

b. shall remain in 'U: Pre-established session not in use' state.

[TS 24.380, clause 9.2.2.3.4]

Upon reception of a Disconnect message the MCPTT client:

1. if the first bit in the subtype of the Disconnect message is set to '1' (acknowledgement is required), shall send the Acknowledgement message with the Reason Code set to 'Accepted'; and

2. shall remain in 'U: Pre-established session not in use' state.

6.1.1.6.3 Test description

6.1.1.6.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)

- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

- The MCPTT User performs the Generic Test Procedure for MCPTT pre-established session establishment CO as specified in TS 36.579-1 [2], subclause 5.3.3.

- UE States at the end of the preamble

  - The UE is in E-UTRA Registered, Idle Mode state.

  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.1.6.3.2 Test procedure sequence

Table 6.1.1.6.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Is the Generic Test Procedure for MCPTT CT Group Call establishment using a pre-established session as described in TS 36.579-1 [2] Table 5.3.23.3-1 to initiate an on-demand pre-arranged group call with automatic commencement mode using a pre-established session correctly performed?	-	-	1	P
2	Void	-	-	-	-
3	Check: Is the Generic Test Procedure MCPTT CT call release keeping the pre-established session as described in TS 36.579-1 [2] Table 5.3.13.3-1 to release the call correctly performed?	-	-	2	P
4	Void	-	-	-	-

6.1.1.6.3.3 Specific message contents

Table 6.1.1.6.3.3-1: Connect (Step 1, Table 6.1.1.6.3.2-1, Step 2, TS 36.579-1 [2] Table 5.3.23.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.12-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Answer State field			
Answer State	"0"	unconfirmed	

6.1.1.7 On-network / Pre-arranged Group Call using pre-established session / Manual Commencement Mode / Client Terminated (CT)

6.1.1.7.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service and having a pre-established
session with the MCPTT Server }
ensure that {
  when { the MCPTT Server requests the establishment of an MCPTT On-demand Pre-arranged Group Call
using a pre-established session requesting Manual Commencement Mode to the UE (MCPTT Client) by
sending a SIP re-INVITE}
    then { UE (MCPTT Client) accepts the On-demand Pre-arranged Group Call by sending an SIP 200
(OK) and responds to MCPC messages with an Acknowledgement }
            }
```

(2)

```
with { UE (MCPTT Client) having an ongoing On-demand Pre-arranged Group Call using a pre-established
session with Automatic Commencement Mode }
ensure that {
  when { the MCPTT Server wants to terminate the ongoing MCPTT Group Call and sends a Disconnect }
    then { UE (MCPTT Client) accepts the ending of the MCPTT Group Call by sending an
Acknowledgement }
            }
```

6.1.1.7.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.380, clauses 4.1.2.2, 4.1.2.3, 9.2.2.3.2, 9.2.2.3.4, 9.2.2.3.3 and TS 24.379, clause 10.1.1.2.2.2, 10.1.1.2.1.2. The following represents a copy/paste extraction of the requirements relevant to the test purpose; any references within the copy/paste text should

be understood within the scope of the core spec they have been copied from. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.380, clause 4.1.2.2]

For a pre-arranged group call if the controlling MCPTT function as triggered by an originating group member initiates a call as specified in 3GPP TS 24.379 [2], the participating MCPTT function which serves the terminating MCPTT client sends a Connect message to all affiliated MCPTT clients of this group. After the reception of the Connect message the terminating MCPTT client sends an Acknowledgment message by indicating that the connection is accepted or by indicating that the connection is not accepted. If the connection is accepted by the terminating MCPTT client, the floor control for this call continues a specified in clause 6.

NOTE: If a terminating client does not have an available pre-established session, the call setup proceeds as in on-demand call setup as specified in 3GPP TS 24.379 [2].

[TS 24.380, clause 4.1.2.3]

When a call is released by the controlling MCPTT function (as specified in 3GPP TS 24.379 [2]), the participating MCPTT function sends a Disconnect message to all MCPTT clients which used a pre-established session for this call. Then the call is released (see also 3GPP TS 24.379 [2]) and the pre-established session can be used for another call. When an MCPTT client leaves a call (as specified in 3GPP TS 24.379 [2]) which was setup over a pre-established session without releasing the pre-established session, this pre-established session can be used for another call.

[TS 24.380, clause 9.2.2.3.2]

Upon reception of a Connect message:

1. if the MCPTT client accepts the incoming call the MCPTT client:

   a. shall send the Acknowledgement message with Reason Code field set to 'Accepted';

   b. shall use only the media streams of the pre-established session which are indicated as used in the associated call session Media Streams field, if the Connect contains a Media Streams field;

   c. shall create an instance of the 'Floor participant state transition diagram for basic operation' as specified in subclause 6.2.4; and

   d. shall enter the 'U: Pre-established session in use' state; or

2. Otherwise the MCPTT client:

   a. shall send the Acknowledgement message with the Reason Code field set to 'Busy' or 'Not Accepted'; and

   b. shall remain in 'U: Pre-established session not in use' state.

[TS 24.380, clause 9.2.2.3.4]

Upon reception of a Disconnect message the MCPTT client:

1. if the first bit in the subtype of the Disconnect message is set to '1' (acknowledgement is required), shall send the Acknowledgement message with the Reason Code set to 'Accepted'; and

2. shall remain in 'U: Pre-established session not in use' state.

[TS 24.380, clause 9.2.2.3.3]

When the associated pre-established session between the MCPTT client and the MCPTT server is released the MCPTT client:

1. shall release any user plane resources including any running timers associated with the pre-established session; and

2. shall enter the 'Start-stop' state and then the 'Call setup control over pre-established session state machine' is released.

[TS 24.379, clause 10.1.1.2.2.2]

Upon receiving a SIP re-INVITE request within a pre-established Session without an associated MCPTT session or when generating SIP responses to the SIP re-INVITE request, the MCPTT client shall follow the procedures in subclause 10.1.1.2.1.2.

NOTE: In subclause 10.1.1.2.1.2, the reader is assumed to replace occurrences of SIP INVITE request with SIP re-INVITE request.

[TS 24.379, clause 10.1.1.2.2.2]

In the procedures in this subclause:

1) emergency indication in an incoming SIP INVITE request refers to the <emergency-ind> element of the application/vnd.3gpp.mcptt-info+xml MIME body; and

2) imminent peril indication in an incoming SIP INVITE request refers to the <imminentperil-ind> element of the application/vnd.3gpp.mcptt-info+xml MIME body.

Upon receipt of an initial SIP INVITE request, the MCPTT client shall follow the procedures for termination of multimedia sessions in the IM CN subsystem as specified in 3GPP TS 24.229 [4] with the clarifications below.

The MCPTT client:

1) may reject the SIP INVITE request if either of the following conditions are met:

   a) MCPTT client does not have enough resources to handle the call; or

   b) any other reason outside the scope of this specification;

2) if the SIP INVITE request is rejected in step 1), shall respond toward participating MCPTT function either with appropriate reject code as specified in 3GPP TS 24.229 [4] and warning texts as specified in subclause 4.4.2 or with SIP 480 (Temporarily unavailable) response not including warning texts if the user is authorised to restrict the reason for failure and skip the rest of the steps of this subclause;

NOTE: If the SIP INVITE request contains an emergency indication or imminent peril indication, the MCPTT client can by means beyond the scope of this specification choose to accept the request.

3) shall check if a Resource-Priority header field is included in the incoming SIP INVITE request and may perform further actions outside the scope of this specification to act upon an included Resource-Priority header field as specified in 3GPP TS 24.229 [4];

4) if the SIP INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <emergency-ind> element set to a value of "true":

   a) should display to the MCPTT user an indication that this is a SIP INVITE request for an MCPTT emergency group call and:

      i) should display the MCPTT ID of the originator of the MCPTT emergency group call contained in the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body;

      ii) should display the MCPTT group identity of the group with the emergency condition contained in the <mcptt-calling-group-id> element; and

      iii) if the <alert-ind> element is set to "true", should display to the MCPTT user an indication of the MCPTT emergency alert and associated information;

   b) shall set the MCPTT emergency group state to "MEG 2: in-progress";

   c) shall set the MCPTT imminent peril group state to "MIG 1: no-imminent-peril"; and

   d) shall set the MCPTT imminent peril group call state to "MIGC 1: imminent-peril-gc-capable"; otherwise

5) if the SIP INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <imminentperil-ind> element set to a value of "true":

   a) should display to the MCPTT user an indication that this is a SIP INVITE request for an MCPTT imminent peril group call and:

i) should display the MCPTT ID of the originator of the MCPTT imminent peril group call contained in the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body; and

ii) should display the MCPTT group identity of the group with the imminent peril condition contained in the <mcptt-calling-group-id> element; and

b) shall set the MCPTT imminent peril group state to "MIG 2: in-progress";

6) may display to the MCPTT user the MCPTT ID of the inviting MCPTT user;

7) shall perform the automatic commencement procedures specified in subclause 6.2.3.1.2 if one of the following conditions are met:

a) SIP INVITE request contains an Answer-Mode header field with the value "Auto" and the MCPTT service setting at the invited MCPTT client for answering the call is set to automatic commencement mode; or

b) SIP INVITE request contains an Answer-Mode header field with the value "Auto" and the MCPTT service setting at the invited MCPTT client for answering the call is set to manual commencement mode, yet the invited MCPTT client allows the call to be answered with automatic commencement mode;

8) shall perform the manual commencement procedures specified in subclause 6.2.3.2.2 if one of the following conditions are met:

a) SIP INVITE request contains an Answer-Mode header field with the value "Manual" and the MCPTT service setting at the invited MCPTT client for answering the call is to use manual commencement mode; or

b) SIP INVITE request contains an Answer-Mode header field with the value "Manual" and the MCPTT service setting at the invited MCPTT client for answering the call is set to automatic commencement mode, yet the invited MCPTT client allows the call to be answered with manual commencement mode; and

9) when the SIP 200 (OK) response to the SIP INVITE request is sent, may subscribe to the conference event package as specified in subclause 10.1.3.1.6.1.1.7.3 Test description

6.1.1.7.3 Test description

6.1.1.7.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)

- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

- The MCPTT User performs the Generic Test Procedure for MCPTT pre-established session establishment CO as specified in TS 36.579-1 [2], subclause 5.3.3.

- UE States at the end of the preamble

- The UE is in E-UTRA Registered, Idle Mode state.
- The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.1.7.3.2 Test procedure sequence

Table 6.1.1.7.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Is the MCPTT CT group call establishment, manual commencement procedure as described in TS 36.579-1 [2], Table 5.3.5.3-1 correctly performed?	-	-	1	P
2-6	Void	-	-	-	-
7	Check: Is the Generic Test Procedure for MCPTT CT Group Call establishment using a pre-established session as described in TS 36.579-1 [2] Table 5.3.23.3-1 starting with Step 2 correctly performed?	-	-	1	P
8	Void	-	-	-	-
9	Check: Is the Generic Test Procedure for MCPTT CT call release keeping the pre-established session as described in TS 36.579-1 [2], Table 5.3.13.3-1 correctly performed?	-	-	2	P
10	Void	-	-	-	-

6.1.1.7.3.3 Specific message contents

Table 6.1.1.7.3.3-1: SIP re-INVITE (step 1, Table 6.1.1.7.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.5.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.2-1 condition re_INVITE				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part	"application/vnd.3gpp.mcptt-info+xml"	**MCPTT Info**		
MIME-part-body	MCPTT-Info as described in Table 6.1.1.7.3.3-3			

Table 6.1.1.7.3.3-2: Void

Table 6.1.1.7.3.3-3: MCPTT-Info in SIP INVITE (Table 6.1.1.7.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.32.1-1 condition GROUP-CALL

6.1.1.8 On-network / Pre-arranged Broadcast Group Call / Client Originated (CO)

6.1.1.8.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service }
ensure that {
  when { the MCPTT User requests the establishment of an MCPTT On-demand Pre-arranged Broadcast
Group Call }
```

```
    then { UE (MCPTT Client) requests On-demand Pre-arranged Broadcast Group Call by sending a SIP
INVITE message and responds to the SS with correct SIP messages }
            }
```

6.1.1.8.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in TS 24.379, clause 4.12, 6.2.8.2 and 10.1.1.2.1.1. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.379, clause 4.12]

A broadcast group call is a group call where the initiating MCPTT user expects no response from the other MCPTT users, so that when the user's transmission is complete, so is the call. The functionality in the present release of the specification for broadcast group calls is not compliant to the requirements for user-broadcast group and group-broadcast group calls as specified in 3GPP TS 22.179 [2], 3GPP TS 22.280 [76] and 3GPP TS 23.379 [3]. In the present release of the specification, a broadcast group call can be initiated by an MCPTT user on any MCPTT group that the MCPTT user is part of.

NOTE 1: Configuration related to the authorisation to create a user-broadcast group or a group-broadcast exists in the user profile document as specified in 3GPP TS 24.484 [50], but is not used by any procedures in 3GPP TS 24.481 [31] in the current release, as the ability for an authorised user to create user-broadcast groups and group-broadcast groups is not provided in the current release.

NOTE 2: Configuration related to broadcast group hierarchies can be found in the group document as specified in 3GPP TS 24.481 [31] and in the service configuration document as specified in 3GPP TS 24.484 [50]. However, this configuration is not used by any procedures in 3GPP TS 24.380 [5] in the current release.

[TS 24.379, clause 6.2.8.2]

NOTE: This subclause is referenced from other procedures.

When the MCPTT user initiates a broadcast group call, the MCPTT client:

1) in the case of the prearranged group call is initiated on-demand, shall include in the application/vnd.3gpp.mcptt-info+xml MIME body the <broadcast-ind> element set to "true" as defined in clause F.1; and

2) in the case the prearranged group call is initiated using a pre-established session, shall include in the application/vnd.3gpp.mcptt-info+xml MIME body in the "body" URI header field in the Refer-To header field the <broadcast-ind> element set to "true" as defined in clause F.1.

[TS 24.379, clause 10.1.1.2.1.1]

Upon receiving a request from an MCPTT user to establish an MCPTT prearranged group session the MCPTT client shall generate an initial SIP INVITE request by following the UE originating session procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

…

3) if the MCPTT user has requested the origination of a broadcast group call, the MCPTT client shall comply with the procedures in subclause 6.2.8.2;

4) shall include the g.3gpp.mcptt media feature tag and the g.3gpp.icsi-ref media feature tag with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP INVITE request according to IETF RFC 3840 [16];

5) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

6) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP INVITE request;

7) shall include an Accept-Contact header field with the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

8) should include the "timer" option tag in the Supported header field;

9) should include the Session-Expires header field according to IETF RFC 4028 [7]. It is recommended that the "refresher" header field parameter is omitted. If included, the "refresher" header field parameter shall be set to "uac";

10) shall set the Request-URI of the SIP INVITE request to the public service identity identifying the participating MCPTT function serving the MCPTT user;

NOTE 1: The MCPTT client is configured with public service identity identifying the participating MCPTT function serving the MCPTT user.

11) may include a P-Preferred-Identity header field in the SIP INVITE request containing a public user identity as specified in 3GPP TS 24.229 [4];

…

14) shall contain in an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with:

a) the <session-type> element set to a value of "prearranged";

b) the <mcptt-request-uri> element set to the group identity;

c) the <mcptt-client-id> element set to the MCPTT client ID of the originating MCPTT client; and

NOTE 2: The MCPTT client does not include the MCPTT ID of the originating MCPTT user in the body, as this will be inserted into the body of the SIP INVITE request that is sent from the originating participating MCPTT function.

d) if the group identity can be determined to be a TGI and if the MCPTT client can associate the TGI with a MCPTT group ID, the <associated-group-id> element set to the MCPTT group ID;

NOTE 3: The text "can associate the TGI with a MCPTT group ID" means that the MCPTT client is able to determine that there is a constituent group of the temporary group that it is a member of.

NOTE 4: The MCPTT client is informed about temporary groups and regrouping of MCPTT groups that the user is a member of as specified in 3GPP TS 24.481 [31].

NOTE 5: If the MCPTT user selected a TGI where there are several MCPTT groups where the MCPTT user is a member, the MCPTT client selects one of those MCPTT groups.

15) shall include an SDP offer according to 3GPP TS 24.229 [4] with the clarifications given in subclause 6.2.1;

16) if an implicit floor request is required, shall indicate this as specified in subclause 6.4; and

17) shall send the SIP INVITE request towards the MCPTT server according to 3GPP TS 24.229 [4].

On receiving a SIP 2xx response to the SIP INVITE request, the MCPTT client:

1) shall interact with the user plane as specified in 3GPP TS 24.380 [5] ;

…

On receiving a SIP INFO request where the Request-URI contains an MCPTT session ID identifying an ongoing group session, the MCPTT client shall follow the actions specified in subclause 6.2.8.1.13.

6.1.1.8.3 Test description

6.1.1.8.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.1.8.3.2 Test procedure sequence

Table 6.1.1.8.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the MCPTT User request the establishment of an MCPTT On-demand pre-arranged broadcast group call for the selected MCPTT broadcast group GROUP A, with Implicit floor control. NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	-	-
2	Check: Does the UE (MCPTT client) perform the MCPTT CO session establishment/modification without provisional responses other than 100 Trying procedure as described in TS 36.579-1 [2] Table 5.3.7.3-1 with implicit floor control according to option b.iii of NOTE 1 in TS 36.579.1 [2] Table 5.3.7.3-1?	-	-	1	P
3-5	Void	-	-	-	-
6	The Generic Test Procedure for MCPTT CT call release as described in TS 36.579-1 [2] Table 5.3.12.3-1 to terminate the MCPTT session is performed.	.	.	-	-
7	Void	-	-	-	-

6.1.1.8.3.3 Specific message contents

Table 6.1.1.8.3.3-1: SIP INVITE (step 2, Table 6.1.1.8.3.2-1: step 2, TS 36.579-1 [2] Table 5.3.7.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**SDP message**		

MIME-part-body	SDP Message as described in Table 6.1.1.8.3.3-1A			
MIME body part		**MCPTT Info**		
MIME-part-body	MCPTT-Info as described in Table 6.1.1.8.3.3-2			

Table 6.1.1.8.3.3-1A: SDP in SIP INVITE (Table 6.1.1.8.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.1.1-1, conditions INITIAL_SDP_OFFER and IMPLICIT_GRANT_REQUESTED

Table 6.1.1.8.3.3-2: MCPTT-Info in SIP INVITE (Table 6.1.1.8.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.32.1-1 conditions INVITE-REFER, GROUP-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
broadcast-ind	"true"			

Table 6.1.1.8.3.3-3: Void

6.1.1.9 On-network / Pre-arranged Broadcast Group Call / Client Terminated (CT)

6.1.1.9.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service }
ensure that {
  when { the MCPTT Client receives a SIP INVITE message of an MCPTT On-demand Pre-arranged Broadcast
Group Call }
then { the MCPTT Client displays an indication for the Pre-arranged MCPTT group call to the user and
responds to the SS with correct SIP messages }
            }
```

(2)

```
with { UE (MCPTT Client) having an incoming Pre-arranged MCPTT group call and the Answer-Mode header
in the SIP INVITE message is set to Manual }
ensure that {
  when { the user answers the MCPTT group call }
    then { UE sends a SIP 200 OK as a response to the SIP INVITE message }
            }
```

6.1.1.9.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in TS 24.379, clauses 4.12, and 10.1.1.2.1.2. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.379, clause 4.12]

A broadcast group call is a group call where the initiating MCPTT user expects no response from the other MCPTT users, so that when the user's transmission is complete, so is the call. The functionality in the present release of the specification for broadcast group calls is not compliant to the requirements for user-broadcast group and group-broadcast group calls as specified in 3GPP TS 22.179 [2], 3GPP TS 22.280 [76] and 3GPP TS 23.379 [3]. In the present release of the specification, a broadcast group call can be initiated by an MCPTT user on any MCPTT group that the MCPTT user is part of.

NOTE 1: Configuration related to the authorisation to create a user-broadcast group or a group-broadcast exists in the user profile document as specified in 3GPP TS 24.484 [50], but is not used by any procedures in 3GPP TS 24.481 [31] in the current release, as the ability for an authorised user to create user-broadcast groups and group-broadcast groups is not provided in the current release.

NOTE 2: Configuration related to broadcast group hierarchies can be found in the group document as specified in 3GPP TS 24.481 [31] and in the service configuration document as specified in 3GPP TS 24.484 [50]. However, this configuration is not used by any procedures in 3GPP TS 24.380 [5] in the current release.

[TS 24.379, clause 10.1.1.2.1.2]

In the procedures in this subclause:

...

Upon receipt of an initial SIP INVITE request, the MCPTT client shall follow the procedures for termination of multimedia sessions in the IM CN subsystem as specified in 3GPP TS 24.229 [4] with the clarifications below.

The MCPTT client:

…

6) may display to the MCPTT user the MCPTT ID of the inviting MCPTT user;

7) shall perform the automatic commencement procedures specified in subclause 6.2.3.1.2 if one of the following conditions are met:

   a) SIP INVITE request contains an Answer-Mode header field with the value "Auto" and the MCPTT service setting at the invited MCPTT client for answering the call is set to automatic commencement mode; or

   b) SIP INVITE request contains an Answer-Mode header field with the value "Auto" and the MCPTT service setting at the invited MCPTT client for answering the call is set to manual commencement mode, yet the invited MCPTT client allows the call to be answered with automatic commencement mode;

8) shall perform the manual commencement procedures specified in subclause 6.2.3.2.2 if one of the following conditions are met:

   a) SIP INVITE request contains an Answer-Mode header field with the value "Manual" and the MCPTT service setting at the invited MCPTT client for answering the call is to use manual commencement mode; or

   b) SIP INVITE request contains an Answer-Mode header field with the value "Manual" and the MCPTT service setting at the invited MCPTT client for answering the call is set to automatic commencement mode, yet the invited MCPTT client allows the call to be answered with manual commencement mode; and

9) when the SIP 200 (OK) response to the SIP INVITE request is sent, may subscribe to the conference event package as specified in subclause 10.1.3.1.

6.1.1.9.3 Test description

6.1.1.9.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)

- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.1.9.3.2 Test procedure sequence

Table 6.1.1.9.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Is the MCPTT CT broadcast group call establishment, manual commencement procedure as described in TS 36.579-1 [2], Table 5.3.5.3-1 correctly performed?	-	-	1, 2	P
2-7	Void	-	-	-	-
8	Execute the Generic Test Procedure for MCPTT CT call release as described in TS 36.579-1 [2] Table 5.3.12.3-1 to terminate the MCPTT session.	-	-	-	-
9	Void	-	-	-	-

6.1.1.9.3.3 Specific message contents

Table 6.1.1.9.3.3-1: SIP INVITE (step 1, Table 6.1.1.9.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.5.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.2-1 MANUAL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**MCPTT-Info**		
MIME-part-body	MCPTT-Info as described in Table 6.1.1.9.3.3-2			

Table 6.1.1.9.3.3-2: MCPTT-Info in SIP INVITE (Table 6.1.1.9.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.2-1, condition GROUP-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
broadcast-ind	"true"			

Table 6.1.1.9.3.3-3: Void

6.1.1.10 On-network / Broadcast Group Call with Temporary Group / Client Originated (CO)

6.1.1.10.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service }
ensure that {
  when { the MCPTT User requests the establishment of an MCPTT On-demand Pre-arranged Broadcast
Group Call with Temporary Group }
    then { UE (MCPTT Client) requests On-demand Pre-arranged Broadcast Group Call by sending a SIP
INVITE message and respects the floor control imposed by the MCPTT Server }
            }
```

6.1.1.10.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in TS 24.379, clause 4.12, 6.2.8.2 and 10.1.1.2.1.1, and TS 24.481 clause 6.3.14. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.379, clause 4.12]

A broadcast group call is a group call where the initiating MCPTT user expects no response from the other MCPTT users, so that when the user's transmission is complete, so is the call. The functionality in the present release of the specification for broadcast group calls is not compliant to the requirements for user-broadcast group and group-broadcast group calls as specified in 3GPP TS 22.179 [2], 3GPP TS 22.280 [76] and 3GPP TS 23.379 [3]. In the present release of the specification, a broadcast group call can be initiated by an MCPTT user on any MCPTT group that the MCPTT user is part of.

NOTE 1: Configuration related to the authorisation to create a user-broadcast group or a group-broadcast exists in the user profile document as specified in 3GPP TS 24.484 [50], but is not used by any procedures in 3GPP TS 24.481 [31] in the current release, as the ability for an authorised user to create user-broadcast groups and group-broadcast groups is not provided in the current release.

NOTE 2: Configuration related to broadcast group hierarchies can be found in the group document as specified in 3GPP TS 24.481 [31] and in the service configuration document as specified in 3GPP TS 24.484 [50]. However, this configuration is not used by any procedures in 3GPP TS 24.380 [5] in the current release.

[TS 24.379, clause 6.2.8.2]

NOTE: This subclause is referenced from other procedures.

When the MCPTT user initiates a broadcast group call, the MCPTT client:

1) in the case of the prearranged group call is initiated on-demand, shall include in the application/vnd.3gpp.mcptt-info+xml MIME body the <broadcast-ind> element set to "true" as defined in clause F.1; and

2) in the case the prearranged group call is initiated using a pre-established session, shall include in the application/vnd.3gpp.mcptt-info+xml MIME body in the "body" URI header field in the Refer-To header field the <broadcast-ind> element set to "true" as defined in clause F.1.

[TS 24.379, clause 10.1.1.2.1.1]

Upon receiving a request from an MCPTT user to establish an MCPTT prearranged group session the MCPTT client shall generate an initial SIP INVITE request by following the UE originating session procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

…

3) if the MCPTT user has requested the origination of a broadcast group call, the MCPTT client shall comply with the procedures in subclause 6.2.8.2;

4) shall include the g.3gpp.mcptt media feature tag and the g.3gpp.icsi-ref media feature tag with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP INVITE request according to IETF RFC 3840 [16];

5) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

6) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP INVITE request;

7) shall include an Accept-Contact header field with the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

8) should include the "timer" option tag in the Supported header field;

9) should include the Session-Expires header field according to IETF RFC 4028 [7]. It is recommended that the "refresher" header field parameter is omitted. If included, the "refresher" header field parameter shall be set to "uac";

10) shall set the Request-URI of the SIP INVITE request to the public service identity identifying the participating MCPTT function serving the MCPTT user;

NOTE 1: The MCPTT client is configured with public service identity identifying the participating MCPTT function serving the MCPTT user.

11) may include a P-Preferred-Identity header field in the SIP INVITE request containing a public user identity as specified in 3GPP TS 24.229 [4];

…

14) shall contain in an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with:

   a) the <session-type> element set to a value of "prearranged";

   b) the <mcptt-request-uri> element set to the group identity;

   c) the <mcptt-client-id> element set to the MCPTT client ID of the originating MCPTT client; and

NOTE 2: The MCPTT client does not include the MCPTT ID of the originating MCPTT user in the body, as this will be inserted into the body of the SIP INVITE request that is sent from the originating participating MCPTT function.

   d) if the group identity can be determined to be a TGI and if the MCPTT client can associate the TGI with a MCPTT group ID, the <associated-group-id> element set to the MCPTT group ID;

NOTE 3: The text "can associate the TGI with a MCPTT group ID" means that the MCPTT client is able to determine that there is a constituent group of the temporary group that it is a member of.

NOTE 4: The MCPTT client is informed about temporary groups and regrouping of MCPTT groups that the user is a member of as specified in 3GPP TS 24.481 [31].

NOTE 5: If the MCPTT user selected a TGI where there are several MCPTT groups where the MCPTT user is a member, the MCPTT client selects one of those MCPTT groups.

15) shall include an SDP offer according to 3GPP TS 24.229 [4] with the clarifications given in subclause 6.2.1;

16) if an implicit floor request is required, shall indicate this as specified in subclause 6.4; and

17) shall send the SIP INVITE request towards the MCPTT server according to 3GPP TS 24.229 [4].

On receiving a SIP 2xx response to the SIP INVITE request, the MCPTT client:

1) shall interact with the user plane as specified in 3GPP TS 24.380 [5] ;

…

3) may subscribe to the conference event package as specified in subclause 10.1.3.1.

…

On receiving a SIP INFO request where the Request-URI contains an MCPTT session ID identifying an ongoing group session, the MCPTT client shall follow the actions specified in subclause 6.2.8.1.13.

[TS 24.481, clause 6.3.14]

In order to form a temporary MCS group, a GMC shall send a HTTP POST request according to procedures specified in IETF RFC 2616 [21] and subclause 6.2.3. In the HTTP POST request, the GMC:

a) shall set the Request-URI to an XCAP URI:

   1) in users tree where the XUI is set to a group creation XUI configuration parameter; and

   2) with the document selector identifying the temporary MCS group to be created; and

b) shall include an application/vnd.3gpp.GMOP+xml MIME body containing a GMOP document requesting group regroup creation specified in subclause 7.3.4.3, with a <group> element containing a group document for an MCS group. In the group document, the GMC shall include the <on-network-temporary> element according to subclause 7.2. In the <on-network-temporary> element, the GMC shall include <constituent-MCPTT-group-IDs> element according to subclause 7.2. In the <constituent-MCPTT-group-IDs> element, the GMC shall include one <constituent-MCPTT-group-ID> element according to subclause 7.2 for each MCS group to be combined.

Upon reception of an HTTP 2xx response to the sent HTTP POST request, the GMC shall consider the temporary MCS group formation as successful.

Upon reception of an HTTP 409 (Conflict) response with at least one <alt-value> element in the <uniqueness-failure> error element, the GMC may repeat procedures of the present subclause and identify the temporary MCS group being formed with an MCS Group ID indicated in an <alt-value> element.

6.1.1.10.3 Test description

6.1.1.10.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)

The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

- The UE has affiliated to an MCPTT temporary group identity TGI, identifying an MCPTT temporary group GROUP T as a member of MCPTT broadcast group GROUP A according to the Generic Test Procedure for NW initiated temporary group creation as specified in TS 36.579-1 [2], subclause 5.3.22.

- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.1.10.3.2 Test procedure sequence

Table 6.1.1.10.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the MCPTT User request the establishment of an MCPTT On-demand pre-arranged broadcast group call for the selected MCPTT temporary group GROUP B as a member of the MCPTT broadcast group GROUP A, with explicit floor control. (NOTE 1)	-	-	-	-
2	Check: Does the UE (MCPTT client) perform the Generic Test Procedure for MCPTT CO establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.7.3-1 for the establishment of an MCPTT On-demand pre-arranged broadcast group call with temporary group? Option b.iii in TS 36.579-1 [2] Table 5.3.7.3-1 is used.	-	-	1	P
3-5	Void			-	-
5A	The SS (MCPTT Server) sends a Floor Taken message with acknowledgement required.	<--	Floor Taken	-	-
5B	Check: Does the UE (MCPTT Client) send a Floor Ack message in response to the Floor Taken message?	-->	Floor Ack	1	P
6	Execute the Generic Test Procedure for MCPTT CT call release as described in TS 36.579-1 [2] Table 5.3.12.3-1 to terminate the MCPTT session.	-	-	-	-
7	Void	-	-	-	-

NOTE 1: This is expected to be done via a suitable implementation dependent MMI command.

6.1.1.10.3.3 Specific message contents

Table 6.1.1.10.3.3-1: SIP INVITE (step 2, Table 6.1.1.10.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.7.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.1-1				
Message-body				
MIME body part		MCPTT Info	TS 24.379 [9] clause F.1	
MIME-part-body	MCPTT-Info as described in Table 6.1.1.10.3.3-2			

Table 6.1.1.10.3.3-2: MCPTT-Info in SIP INVITE (Table 6.1.1.10.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1, condition GROUP-CALL, INVITE_REFER				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
mcptt-request-uri	px_MCPTT_Group_T_ID			
broadcast-ind	"true"			

Table 6.1.1.10.3.3-3: Void

Table 6.1.1.10.3.3-4: Floor Taken (step 5A)

Derivation Path: 36.579-1 [2], Table 5.5.6.7-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	"10010"	Acknowledgment required for Floor Taken message	

Table 6.1.1.10.3.3-5: Floor Ack (step 5B)

Derivation Path: 36.579-1 [2], Table 5.5.6.11-1, condition UPLINK

6.1.1.11 On-network / Pre-arranged Emergency Group Call / Client Originated (CO)

6.1.1.11.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service }
ensure that {
  when { the MCPTT User requests the establishment of an MCPTT On-demand Pre-arranged Emergency
Group Call }
    then { UE (MCPTT Client) requests On-demand Pre-arranged Emergency Group Call by sending a SIP
INVITE message and responds to the SS with correct SIP messages }
            }
```

6.1.1.11.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in TS 24.379, clause 6.2.8.1.1 and 10.1.1.2.1.1. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.379, clause 6.2.8.1.1]

When the MCPTT emergency state is set and the MCPTT user is authorised to initiate an MCPTT emergency group call on the targeted MCPTT group as determined by the procedures of subclause 6.2.8.1.8, the MCPTT client:

1) shall include in the application/vnd.3gpp.mcptt-info+xml MIME body in the SIP INVITE request or SIP REFER request, an <emergency-ind> element set to "true";

2) if the MCPTT emergency group call state is set to "MEGC 1: emergency-gc-capable", shall set the MCPTT emergency group call state to "MEGC 2: emergency-call-requested";

3) if the MCPTT user has also requested an MCPTT emergency alert to be sent and this is an authorised request for MCPTT emergency alert as determined by the procedures of subclause 6.2.8.1.6, and the MCPTT emergency alert state is set to "MEA 1: no-alert", shall:

a) set the <alert-ind> element of the application/vnd.3gpp.mcptt-info+xml MIME body to "true" and set the MCPTT emergency alert state to "MEA 2: emergency-alert-confirm-pending"; and

b) include in the SIP INVITE request the specific location information for MCPTT emergency alert as specified in subclause 6.2.9.1;

4) if the MCPTT user has not requested an MCPTT emergency alert to be sent and the MCPTT emergency alert state is set to "MEA 1: no-alert", shall set the <alert-ind> element of the application/vnd.3gpp.mcptt-info+xml MIME body to "false"; and

5) if the MCPTT client emergency group state of the group is set to a value other than "MEG 2: in-progress" set the MCPTT client emergency group state of the MCPTT group to "MEG 4: confirm-pending".

NOTE 1: This is the case of an MCPTT user already being in the MCPTT emergency state it initiated previously while originating an MCPTT emergency group call or MCPTT emergency alert. All group calls the MCPTT user originates while in MCPTT emergency state will be MCPTT emergency group calls.

When the MCPTT emergency state is clear and the MCPTT emergency group call state is set to "MEGC 1: emergency-gc-capable" and the the MCPTT user is authorised to initiate an MCPTT emergency group call on the targetted MCPTT group as determined by the procedures of subclause 6.2.8.1.8, the MCPTT client:

1) shall set the MCPTT emergency state;

2) shall include in the application/vnd.3gpp.mcptt-info+xml MIME body in the SIP INVITE request or SIP REFER request an <emergency-ind> element set to "true" and set the MCPTT emergency group call state to "MEGC 2: emergency-call-requested" state;

3) if the MCPTT user has also requested an MCPTT emergency alert to be sent and this is an authorised request for MCPTT emergency alert as determined by the procedures of subclause 6.2.8.1.6, shall:

a) include in the application/vnd.3gpp.mcptt-info+xml MIME body the <alert-ind> element set to "true" and set the MCPTT emergency alert state to "MEA 2: emergency-alert-confirm-pending"; and

b) include in the SIP INVITE request the specific location information for MCPTT emergency alert as specified in subclause 6.2.9.1;

4) if the MCPTT user has not requested an MCPTT emergency alert to be sent, shall set the <alert-ind> element of the application/vnd.3gpp.mcptt-info+xml MIME body to "false"; and

5) if the MCPTT client emergency group state of the group is set to a value other than "MEG 2: in-progress" shall set the MCPTT client emergency group state of the MCPTT group to "MEG 4: confirm-pending".

NOTE 2: This is the case of an initial MCPTT emergency group call and optionally an MCPTT emergency alert being sent. As the MCPTT emergency state is not sent, there is no MCPTT emergency alert outstanding.

NOTE 3: An MCPTT group call originated by an affiliated member of an MCPTT group which is in an in-progress emergency state (as tracked on the MCPTT client by the MCPTT client emergency group state) but is not in an MCPTT emergency state of their own will also be an MCPTT emergency group call. The <emergency-ind> and <alert-ind> elements of the application/vnd.3gpp.mcptt-info+xml MIME body do not need to be included in this case and hence no action needs to be taken in this subclause.

[TS 24.379, clause 10.1.1.2.1.1]

Upon receiving a request from an MCPTT user to establish an MCPTT prearranged group session the MCPTT client shall generate an initial SIP INVITE request by following the UE originating session procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

1) if the MCPTT user has requested the origination of an MCPTT emergency group call or is originating an MCPTT prearranged group call and the MCPTT emergency state is already set, the MCPTT client shall comply with the procedures in subclause 6.2.8.1.1;

...

4) shall include the g.3gpp.mcptt media feature tag and the g.3gpp.icsi-ref media feature tag with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP INVITE request according to IETF RFC 3840 [16];

5) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

6) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP INVITE request;

7) shall include an Accept-Contact header field with the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

8) should include the "timer" option tag in the Supported header field;

9) should include the Session-Expires header field according to IETF RFC 4028 [7]. It is recommended that the "refresher" header field parameter is omitted. If included, the "refresher" header field parameter shall be set to "uac";

10) shall set the Request-URI of the SIP INVITE request to the public service identity identifying the participating MCPTT function serving the MCPTT user;

NOTE 1: The MCPTT client is configured with public service identity identifying the participating MCPTT function serving the MCPTT user.

11) may include a P-Preferred-Identity header field in the SIP INVITE request containing a public user identity as specified in 3GPP TS 24.229 [4];

12) if the MCPTT client emergency group state for this group is set to "MEG 2: in-progress" or "MEG 4: confirm-pending", the MCPTT client shall include the Resource-Priority header field and comply with the procedures in subclause 6.2.8.1.2;

...

14) shall contain in an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with:

   a) the <session-type> element set to a value of "prearranged";

   b) the <mcptt-request-uri> element set to the group identity;

   c) the <mcptt-client-id> element set to the MCPTT client ID of the originating MCPTT client; and

NOTE 2: The MCPTT client does not include the MCPTT ID of the originating MCPTT user in the body, as this will be inserted into the body of the SIP INVITE request that is sent from the originating participating MCPTT function.

   d) if the group identity can be determined to be a TGI and if the MCPTT client can associate the TGI with a MCPTT group ID, the <associated-group-id> element set to the MCPTT group ID;

NOTE 3: The text "can associate the TGI with a MCPTT group ID" means that the MCPTT client is able to determine that there is a constituent group of the temporary group that it is a member of.

NOTE 4: The MCPTT client is informed about temporary groups and regrouping of MCPTT groups that the user is a member of as specified in 3GPP TS 24.481 [31].

NOTE 5: If the MCPTT user selected a TGI where there are several MCPTT groups where the MCPTT user is a member, the MCPTT client selects one of those MCPTT groups.

15) shall include an SDP offer according to 3GPP TS 24.229 [4] with the clarifications given in subclause 6.2.1;

16) if an implicit floor request is required, shall indicate this as specified in subclause 6.4; and

17) shall send the SIP INVITE request towards the MCPTT server according to 3GPP TS 24.229 [4].

On receiving a SIP 2xx response to the SIP INVITE request, the MCPTT client:

1) shall interact with the user plane as specified in 3GPP TS 24.380 [5] ;

2) if the MCPTT emergency group call state is set to "MEGC 2: emergency-call-requested" or "MEGC 3: emergency-call-granted" or the MCPTT imminent peril group call state is set to "MIGC 2: imminent-peril-call-requested" or "MIGC 3: imminent-peril-call-granted", the MCPTT client shall perform the actions specified in subclause 6.2.8.1.4; and

3) may subscribe to the conference event package as specified in subclause 10.1.3.1.

On receiving a SIP 4xx response, a SIP 5xx response or a SIP 6xx response to the SIP INVITE request:

1) if the MCPTT emergency group call state is set to "MEGC 2: emergency-call-requested" or "MEGC 3: emergency-call-granted"; or

…

the MCPTT client shall perform the actions specified in subclause 6.2.8.1.5.

On receiving a SIP INFO request where the Request-URI contains an MCPTT session ID identifying an ongoing group session, the MCPTT client shall follow the actions specified in subclause 6.2.8.1.13.

6.1.1.11.3 Test description

6.1.1.11.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)

The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

- UE States at the end of the preamble

  - The UE is in E-UTRA Registered, Idle Mode state.

  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.1.11.3.2 Test procedure sequence

Table 6.1.1.11.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the MCPTT User requesting the establishment of an MCPTT On-demand pre-arranged emergency group call for the selected MCPTT emergency group GROUP A, with explicit floor control. (NOTE 1)	-	-	-	-
2	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.7.3-1 to establish an MCPTT On-demand pre-arranged emergency group call according to option b.i of NOTE 1 in TS 36.579.1 [2] Table 5.3.7.3-1?	-	-	1	P
3-5	Void	-	-		
5A	Check: Does the UE (MCPTT client) notify the user that the call has been successfully established? (NOTE 1)	-	-	1	P
6	The Generic Test Procedure for MCPTT CT call release as described in TS 36.579-1 [2] Table 5.3.12.3-1 is performed to terminate the MCPTT session.	-	-	-	-
7	Void	-	-	-	-

NOTE 1: This is expected to be done via a suitable implementation dependent MMI.

6.1.1.11.3.3 Specific message contents

Table 6.1.1.11.3.3-1: SIP INVITE (step 2, Table 6.1.1.11.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.1-1, conditions EMERGENCY-CALL, IMPLICIT_GRANT_REQUESTED				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		MCPTT-Info		
MIME-part-body	MCPTT-Info as described in Table 6.1.1.11.3.3-2			

Table 6.1.1.11.3.3-2: MCPTT-Info in SIP INVITE (Table 6.1.1.11.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1 conditions GROUP-CALL, INVITE_REFER, EMERGENCY-CALL

Table 6.1.1.11.3.3-2A: SIP 200 (OK) (step 2, Table 6.1.1.11.3.2-1; step 4, TS 36.579-1 [2] Table 5.3.7.3-1

Derivation Path: TS 36.579-1 [2], Table 5.5.2.17.1.2-1 condition INVIITE-RSP, IMPLICIT_FLOOR_GRANTED, IMPLICIT_GRANT_REQUESTED

Table 6.1.1.11.3.3-3: Void

6.1.1.12 On-network / Pre-arranged Emergency Group Call / Client Terminated (CT)

6.1.1.12.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service }
ensure that {
  when { the MCPTT Client receives a SIP INVITE message with a emergency indication of an MCPTT On-
demand Pre-arranged emergency Group Call }
    then { the MCPTT Client displays an indication for the Pre-arranged MCPTT emergency group call
to the user and responds to the SS with correct SIP messages }
            }
```

(2)

```
with { UE (MCPTT Client) having an incoming Pre-arranged MCPTT emergency group call and the Answer-
Mode header in the SIP INVITE message is set to Manual }
ensure that {
  when { the user answers the MCPTT emergency group call }
    then { UE sends a SIP 200 OK as a response to the SIP INVITE message }
            }
```

6.1.1.12.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in TS 24.379, clauses 4.12, 6.2.8.2 and 10.1.1.2.1.2. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.379, clause 4.12]

A broadcast group call is a group call where the initiating MCPTT user expects no response from the other MCPTT users, so that when the user's transmission is complete, so is the call. The functionality in the present release of the specification for broadcast group calls is not compliant to the requirements for user-broadcast group and group-broadcast group calls as specified in 3GPP TS 22.179 [2], 3GPP TS 22.280 [76] and 3GPP TS 23.379 [3]. In the present release of the specification, a broadcast group call can be initiated by an MCPTT user on any MCPTT group that the MCPTT user is part of.

NOTE 1: Configuration related to the authorisation to create a user-broadcast group or a group-broadcast exists in the user profile document as specified in 3GPP TS 24.484 [50], but is not used by any procedures in 3GPP TS 24.481 [31] in the current release, as the ability for an authorised user to create user-broadcast groups and group-broadcast groups is not provided in the current release.

NOTE 2: Configuration related to broadcast group hierarchies can be found in the group document as specified in 3GPP TS 24.481 [31] and in the service configuration document as specified in 3GPP TS 24.484 [50]. However, this configuration is not used by any procedures in 3GPP TS 24.380 [5] in the current release.

[TS 24.379, clause 6.2.8.2]

NOTE: This subclause is referenced from other procedures.

When the MCPTT user initiates a broadcast group call, the MCPTT client:

1) in the case of the prearranged group call is initiated on-demand, shall include in the application/vnd.3gpp.mcptt-info+xml MIME body the <broadcast-ind> element set to "true" as defined in clause F.1; and

2) in the case the prearranged group call is initiated using a pre-established session, shall include in the application/vnd.3gpp.mcptt-info+xml MIME body in the "body" URI header field in the Refer-To header field the <broadcast-ind> element set to "true" as defined in clause F.1.

[TS 24.379, clause 10.1.1.2.1.2]

In the procedures in this subclause:

1) emergency indication in an incoming SIP INVITE request refers to the <emergency-ind> element of the application/vnd.3gpp.mcptt-info+xml MIME body; and

...

Upon receipt of an initial SIP INVITE request, the MCPTT client shall follow the procedures for termination of multimedia sessions in the IM CN subsystem as specified in 3GPP TS 24.229 [4] with the clarifications below.

The MCPTT client:

...

4) if the SIP INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <emergency-ind> element set to a value of "true":

   a) should display to the MCPTT user an indication that this is a SIP INVITE request for an MCPTT emergency group call and:

      i) should display the MCPTT ID of the originator of the MCPTT emergency group call contained in the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body;

      ii) should display the MCPTT group identity of the group with the emergency condition contained in the <mcptt-calling-group-id> element; and

      iii) if the <alert-ind> element is set to "true", should display to the MCPTT user an indication of the MCPTT emergency alert and associated information;

   b) shall set the MCPTT emergency group state to "MEG 2: in-progress";

   …

6) may display to the MCPTT user the MCPTT ID of the inviting MCPTT user;

   …

8) shall perform the manual commencement procedures specified in subclause 6.2.3.2.2 if one of the following conditions are met:

   a) SIP INVITE request contains an Answer-Mode header field with the value "Manual" and the MCPTT service setting at the invited MCPTT client for answering the call is to use manual commencement mode; or

   b) SIP INVITE request contains an Answer-Mode header field with the value "Manual" and the MCPTT service setting at the invited MCPTT client for answering the call is set to automatic commencement mode, yet the invited MCPTT client allows the call to be answered with manual commencement mode; and

9) when the SIP 200 (OK) response to the SIP INVITE request is sent, may subscribe to the conference event package as specified in subclause 10.1.3.1.

6.1.1.12.3 Test description

6.1.1.12.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)

The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.1.12.3.2 Test procedure sequence

Table 6.1.1.12.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Is the Generic Test Procedure for MCPTT CT group call establishment, manual commencement as described in TS 36.579-1 [2] Table 5.3.5.3-1 to establish an on-demand pre-arranged MCPTT emergency group call with manual commencement mode correctly performed?			1, 2	P
1A-7A	Void				
7B	Check: Is the On-demand pre-arranged MCPTT emergency group call with manual commencement mode established? NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	2	P
8	Execute the Generic Test Procedure for MCPTT CT call release as described in TS 36.579-1 [2] Table 5.3.12.3-1 to terminate the MCPTT session.	-	-	-	-
9	Void	-	-	-	-

6.1.1.12.3.3 Specific message contents

Table 6.1.1.12.3.3-1: SIP INVITE (step 1, Table 6.1.1.12.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.5.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.2-1, conditions MANUAL, EMERGENCY-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**MCPTT-Info**		
MIME-part-body	MCPTT-Info as described in Table 6.1.1.12.3.3-2			

Table 6.1.1.12.3.3-2: MCPTT-Info in SIP INVITE (Table 6.1.1.12.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.2-1 conditions GROUP-CALL, EMERGENCY-CALL

Table 6.1.1.12.3.3-3: Void

6.1.1.13 On-network / Pre-arranged Imminent Peril Group Call / Client Originated (CO)

6.1.1.13.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service }
ensure that {
  when { the MCPTT User requests the establishment of an MCPTT On-demand Pre-arranged Imminent Peril
Group Call }
    then { UE (MCPTT Client) sends a SIP INVITE message to setup the Imminent Peril Group Call }
            }
```

6.1.1.13.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in TS 24.379, clause 10.1.1.2.1.1. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.379, clause 10.1.1.2.1.1]

Upon receiving a request from an MCPTT user to establish an MCPTT prearranged group session the MCPTT client shall generate an initial SIP INVITE request by following the UE originating session procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

…

2) if the MCPTT user has requested the origination of an MCPTT imminent peril group call, the MCPTT client shall comply with the procedures in subclause 6.2.8.1.9;

…

4) shall include the g.3gpp.mcptt media feature tag and the g.3gpp.icsi-ref media feature tag with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP INVITE request according to IETF RFC 3840 [16];

5) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

6) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP INVITE request;

7) shall include an Accept-Contact header field with the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

8) should include the "timer" option tag in the Supported header field;

9) should include the Session-Expires header field according to IETF RFC 4028 [7]. It is recommended that the "refresher" header field parameter is omitted. If included, the "refresher" header field parameter shall be set to "uac";

10) shall set the Request-URI of the SIP INVITE request to the public service identity identifying the participating MCPTT function serving the MCPTT user;

NOTE 1: The MCPTT client is configured with public service identity identifying the participating MCPTT function serving the MCPTT user.

11) may include a P-Preferred-Identity header field in the SIP INVITE request containing a public user identity as specified in 3GPP TS 24.229 [4];

…

13) if the MCPTT client imminent peril group state for this group is set to "MIG 2: in-progress" or "MIG 3: confirm-pending" shall include the Resource-Priority header field and comply with the procedures in subclause 6.2.8.1.12;

14) shall contain in an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with:

a) the <session-type> element set to a value of "prearranged";

b) the <mcptt-request-uri> element set to the group identity;

c) the <mcptt-client-id> element set to the MCPTT client ID of the originating MCPTT client; and

NOTE 2: The MCPTT client does not include the MCPTT ID of the originating MCPTT user in the body, as this will be inserted into the body of the SIP INVITE request that is sent from the originating participating MCPTT function.

d) if the group identity can be determined to be a TGI and if the MCPTT client can associate the TGI with a MCPTT group ID, the <associated-group-id> element set to the MCPTT group ID;

NOTE 3: The text "can associate the TGI with a MCPTT group ID" means that the MCPTT client is able to determine that there is a constituent group of the temporary group that it is a member of.

NOTE 4: The MCPTT client is informed about temporary groups and regrouping of MCPTT groups that the user is a member of as specified in 3GPP TS 24.481 [31].

NOTE 5: If the MCPTT user selected a TGI where there are several MCPTT groups where the MCPTT user is a member, the MCPTT client selects one of those MCPTT groups.

15) shall include an SDP offer according to 3GPP TS 24.229 [4] with the clarifications given in subclause 6.2.1;

16) if an implicit floor request is required, shall indicate this as specified in subclause 6.4; and

17) shall send the SIP INVITE request towards the MCPTT server according to 3GPP TS 24.229 [4].

On receiving a SIP 2xx response to the SIP INVITE request, the MCPTT client:

1) shall interact with the user plane as specified in 3GPP TS 24.380 [5] ;

2) if the MCPTT emergency group call state is set to "MEGC 2: emergency-call-requested" or "MEGC 3: emergency-call-granted" or the MCPTT imminent peril group call state is set to "MIGC 2: imminent-peril-call-requested" or "MIGC 3: imminent-peril-call-granted", the MCPTT client shall perform the actions specified in subclause 6.2.8.1.4; and

3) may subscribe to the conference event package as specified in subclause 10.1.3.1.

On receiving a SIP 4xx response, a SIP 5xx response or a SIP 6xx response to the SIP INVITE request:

…

2) if the MCPTT imminent peril group call state is set to "MIGC 2: imminent-peril-call-requested" or "MIGC 3: imminent-peril-call-granted";

the MCPTT client shall perform the actions specified in subclause 6.2.8.1.5.

On receiving a SIP INFO request where the Request-URI contains an MCPTT session ID identifying an ongoing group session, the MCPTT client shall follow the actions specified in subclause 6.2.8.1.13.

6.1.1.13.3 Test description

6.1.1.13.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.1.13.3.2 Test procedure sequence

Table 6.1.1.13.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the MCPTT User requesting the establishment of an MCPTT On-demand pre-arranged imminent peril group call for the selected MCPTT imminent peril group GROUP A, with implicit floor control. (NOTE 1).	-	-	-	-
2	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.7.3-1 to establish an MCPTT On-demand pre-arranged imminent peril group call according to option b.i of NOTE 1 in TS 36.579.1 [2] Table 5.3.7.3-1?	-	-	1	P
3-5	Void	-	-		
5A	Check: Does the UE (MCPTT client) notify the user that the call has been successfully established and the floor has been granted to the user? (NOTE 1)	-	-	1	P
6	The Generic Test Procedure for MCPTT CT call release as described in TS 36.579-1 [2] Table 5.3.12.3-1 is performed to terminate the MCPTT session.	-	-	-	-
7	Void	-	-	-	-

NOTE 1: This is expected to be done via a suitable implementation dependent MMI.

6.1.1.13.3.3 Specific message contents

Table 6.1.1.13.3.3-1: SIP INVITE (step 2, Table 6.1.1.13.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.1-1, condition IMMPERIL-CALL, IMPLICIT_GRANT_REQUESTED				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		MCPTT-Info		
MIME-part-body	MCPTT-Info as described in Table 6.1.1.13.3.3-2			

Table 6.1.1.13.3.3-2: MCPTT-Info in SIP INVITE (Table 6.1.1.13.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1, condition IMMPERIL-CALL, INVITE_REFER, GROUP-CALL

Table 6.1.1.13.3.3-2A: SIP 200 (OK) (step 2, Table 6.1.1.13.3.2-1; step 4, TS 36.579-1 [2] Table 5.3.7.3-1

Derivation Path: TS 36.579-1 [2], Table 5.5.2.17.1.2-1 condition INVIITE-RSP, IMPLICIT_FLOOR_GRANTED, IMPLICIT_GRANT_REQUESTED

Table 6.1.1.13.3.3-3: Void

6.1.1.14 On-network / Pre-Arranged Imminent Peril Group Call / Client Terminated (CT)

6.1.1.14.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service }
ensure that {
  when { the MCPTT Client receives a SIP INVITE message of an MCPTT On-demand Pre-arranged Imminent
Peril Group Call }
    then { the MCPTT Client displays an indication for the Pre-arranged MCPTT imminent peril group
call to the user and responds to the SS with correct SIP messages }
           }
```

(2)

```
with { UE (MCPTT Client) having an incoming Pre-arranged MCPTT imminent peril group call and the
Answer-Mode header in the SIP INVITE message is set to Manual }
ensure that {
  when { the user answers the MCPTT imminent peril group call }
    then { UE sends a SIP 200 OK as a response to the SIP INVITE message }
           }
```

6.1.1.14.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in TS 24.379, clause 10.1.1.2.1.2. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.379, clause 10.1.1.2.1.2]

In the procedures in this subclause:

...

2) imminent peril indication in an incoming SIP INVITE request refers to the <imminentperil-ind> element of the application/vnd.3gpp.mcptt-info+xml MIME body.

Upon receipt of an initial SIP INVITE request, the MCPTT client shall follow the procedures for termination of multimedia sessions in the IM CN subsystem as specified in 3GPP TS 24.229 [4] with the clarifications below.

The MCPTT client:

...

5) if the SIP INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <imminentperil-ind> element set to a value of "true":

   a) should display to the MCPTT user an indication that this is a SIP INVITE request for an MCPTT imminent peril group call and:

      i) should display the MCPTT ID of the originator of the MCPTT imminent peril group call contained in the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body; and

      ii) should display the MCPTT group identity of the group with the imminent peril condition contained in the <mcptt-calling-group-id> element; and

   b) shall set the MCPTT imminent peril group state to "MIG 2: in-progress";

6) may display to the MCPTT user the MCPTT ID of the inviting MCPTT user;

7) shall perform the automatic commencement procedures specified in subclause 6.2.3.1.2 if one of the following conditions are met:

   a) SIP INVITE request contains an Answer-Mode header field with the value "Auto" and the MCPTT service setting at the invited MCPTT client for answering the call is set to automatic commencement mode; or

   b) SIP INVITE request contains an Answer-Mode header field with the value "Auto" and the MCPTT service setting at the invited MCPTT client for answering the call is set to manual commencement mode, yet the invited MCPTT client allows the call to be answered with automatic commencement mode;

8) shall perform the manual commencement procedures specified in subclause 6.2.3.2.2 if one of the following conditions are met:

   a) SIP INVITE request contains an Answer-Mode header field with the value "Manual" and the MCPTT service setting at the invited MCPTT client for answering the call is to use manual commencement mode; or

   b) SIP INVITE request contains an Answer-Mode header field with the value "Manual" and the MCPTT service setting at the invited MCPTT client for answering the call is set to automatic commencement mode, yet the invited MCPTT client allows the call to be answered with manual commencement mode; and

9) when the SIP 200 (OK) response to the SIP INVITE request is sent, may subscribe to the conference event package as specified in subclause 10.1.3.1.

6.1.1.14.3 Test description

6.1.1.14.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)

The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.1.14.3.2 Test procedure sequence

Table 6.1.1.14.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Is the Generic Test Procedure for MCPTT CT group call establishment, manual commencement as described in TS 36.579-1 [2] Table 5.3.5.3-1 to establish an on-demand pre-arranged MCPTT imminent peril group call with manual commencement mode correctly performed?	-	-	1,2	P
2-7A	Void	-	-	-	-
7B	Check: Is the On-demand pre-arranged MCPTT emergency group call with manual commencement mode established and an indication displayed to the user? NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	1	P
8	Execute the Generic Test Procedure for MCPTT CT call release as described in TS 36.579-1 [2] Table 5.3.12.3-1 to terminate the MCPTT session.	-	-	-	-

6.1.1.14.3.3 Specific message contents

Table 6.1.1.14.3.3-1: SIP INVITE (step 1, Table 6.1.1.14.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.5.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.2-1, conditions MANUAL, IMMPERIL-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**MCPTT Info**	TS 24.379 [9] clause F.1	
MIME part body	MCPTT-Info as described in Table 6.1.1.14.3.3-2			

Table 6.1.1.14.3.3-2: MCPTT-Info in SIP INVITE (Table 6.1.1.14.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.2-1 conditions GROUP-CALL, IMMPERIL-CALL

6.1.1.15 On-network / Emergency Alert / Cancel Emergency Alert / Client Originated (CO)

6.1.1.15.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including authorized to
initiate an emergency alert }
ensure that {
  when { the MCPTT User requests to send an emergency alert with the location of emergency }
    then { UE (MCPTT Client) sends a SIP MESSAGE initiating an emergency alert and reporting the
specific location information }
            }
```

(2)

```
with { UE (MCPTT Client) in the “MEA3: emergency-alert-initiated” state}
ensure that {
  when { the MCPTT User requests to cancel the emergency alert}
    then { UE (MCPTT Client) sends a SIP MESSAGE requesting the cancelation of the emergency alert}
            }
```

6.1.1.15.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.379, clauses 12.1.1.1, 12.1.1.2. The following represents a copy/paste extraction of the requirements relevant to the test purpose; any references within the copy/paste text should be understood within the scope of the core spec they have been copied from. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.379 clause 12.1.1.1]

Upon receiving a request from the MCPTT user to send an MCPTT emergency alert to the indicated MCPTT group and this is an authorised request for an MCPTT emergency alert as determined by subclause 6.2.8.1.6, the MCPTT client shall generate a SIP MESSAGE request in accordance with 3GPP TS 24.229 [4] and IETF RFC 3428 [33] with the clarifications given below.

NOTE 1: this SIP MESSAGE request is assumed to be sent out-of-dialog.

The MCPTT client:

1) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP MESSAGE request;

2) shall include an Accept-Contact header field with the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

3) may include a P-Preferred-Identity header field in the SIP MESSAGE request containing a public user identity as specified in 3GPP TS 24.229 [4];

4) shall include an application/vnd.3gpp.mcptt-info+xml MIME body as specified in clause F.1 with the <mcpttinfo> element containing the <mcptt-Params> element with:

   a) the <mcptt-request-uri> element set to the group identity;

   b) the <alert-ind> element set to a value of "true"; and

   c) the <mcptt-client-id> element set to the MCPTT client ID of the originating MCPTT client;

5) shall include an application/vnd.3gpp.mcptt-location-info+xml MIME body as specified in Annex F.3 with a <Report> element included in the <location-info> root element;

6) shall include in the <Report> element the specific location information configured for the MCPTT emergency alert location trigger;

7) shall set the MCPTT emergency state if not already set;

8) shall set the MCPTT emergency alert state to "MEA 2: emergency-alert-confirm-pending";

9) shall set the Request-URI to the public service identity identifying the participating MCPTT function serving the group identity; and

10) shall send the SIP MESSAGE request according to rules and procedures of 3GPP TS 24.229 [4].

On receiving a SIP 2xx response to the SIP MESSAGE request, the MCPTT client shall set the MCPTT emergency alert state to "MEA 3: emergency-alert-initiated".

On receiving a SIP 4xx response a SIP 5xx response or a SIP 6xx response to the SIP MESSAGE request, the MCPTT client shall set the MCPTT emergency alert state to "MEA 1: no-alert".

NOTE 2: the MCPTT emergency state is left set in this case as the MCPTT user presumably is in the best position to determine whether or not they are in a life-threatening condition. The assumption is that the MCPTT user can clear the MCPTT emergency state manually if need be.

[TS 24.379 clause 12.1.1.2]

Upon receiving a request from the MCPTT user to send an MCPTT emergency alert cancellation to the indicated MCPTT group and this is an authorised request for an MCPTT emergency alert cancellation as determined by subclause 6.2.8.1.6, the MCPTT client shall generate a SIP MESSAGE request in accordance with 3GPP TS 24.229 [4] and IETF RFC 3428 [33] with the clarifications given below.

NOTE 1: This SIP MESSAGE request is assumed to be sent out-of-dialog.

The MCPTT client:

1) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP MESSAGE request;

2) shall include an Accept-Contact header field with the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

3) may include a P-Preferred-Identity header field in the SIP MESSAGE request containing the public user identity of the originator as specified in 3GPP TS 24.229 [4];

4) shall include an application/vnd.3gpp.mcptt-info+xml MIME body as specified in clause F.1 with the <mcpttinfo> element containing the <mcptt-Params> element with:

   a) the <mcptt-request-uri> element set to the MCPTT group identity;

   b) the <alert-ind> element set to a value of "false"; and

   c) if the MCPTT user is cancelling an MCPTT emergency alert originated by another MCPTT user, include the <originated-by> element set to the MCPTT ID of the MCPTT user who originated the MCPTT emergency alert;

5) if the MCPTT user has additionally requested the cancellation of the in-progress emergency state of the MCPTT group and this is an authorised request for an in-progress emergency group state cancellation as determined by subclause 6.2.8.1.7, shall include an <emergency-ind> element set to a value of "false" in the <mcpttinfo> element containing the <mcptt-Params> element;

6) shall set the Request-URI to the public service identity identifying the participating MCPTT function serving the group identity;

7) if the generated SIP MESSAGE request does not contain an <originated-by> element in the application/vnd.3gpp.mcptt-info+xml MIME body, shall set the MCPTT emergency alert state to "MEA 4: Emergency-alert-cancel-pending"; and

8) shall send the SIP MESSAGE request according to rules and procedures of 3GPP TS 24.229 [4].

On receipt of a SIP MESSAGE request containing an application/vnd.3gpp.mcptt-info+xml MIME body with an <alert-ind-rcvd> element set to true and an <mcptt-client-id> matching the MCPTT client ID included in the sent SIP MESSAGE request:

1) if the <alert-ind> element is set to a value of "false" in the application/vnd.3gpp.mcptt-info+xml MIME body of the received SIP MESSAGE request and the sent SIP MESSAGE request did not contain an <originated-by> element in the application/vnd.3gpp.mcptt-info+xml MIME body, shall:

   a) set the MCPTT emergency alert state to "MEA 1: no-alert"; and

   b) clear the MCPTT emergency state if not already cleared;

2) if the <alert-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body of the received SIP MESSAGE request is set to a value of "true" and if the MCPTT emergency alert state is set to "MEA 4: Emergency-alert-cancel-pending" and the sent SIP MESSAGE request did not contain an <originated-by> element in the application/vnd.3gpp.mcptt-info+xml MIME body, shall set the MCPTT emergency alert state to "MEA 3: emergency-alert-initiated"; and

NOTE 2: It would appear to be an unusual situation for the initiator of an MCPTT emergency alert to not be able to clear their own alert. Nevertheless, an MCPTT user can be configured to be authorised to initiate MCPTT emergency alerts but not have the authority to clear them. Hence, the case is covered here.

3) if an <emergency-ind> element is present in the application/vnd.3gpp.mcptt-info+xml MIME body of received SIP MESSAGE request and is set to a value of "false":

   a) shall set the MCPTT emergency group call state of the group to "MEGC 1: emergency-gc-capable"; and

   b) shall set the MCPTT emergency group state of the group to "MEG 1: no-emergency".

NOTE 3: The case where an <emergency-ind> element is set to true is possible but not handled specifically above as it results in no state changes.

On receiving a SIP 4xx response, SIP 5xx response or SIP 6xx response to the sent SIP MESSAGE request:

1) if the received SIP 4xx response, SIP 5xx response or SIP 6xx response contains an application/vnd.3gpp.mcptt-info+xml MIME body as specified in clause F.1 with the <mcpttinfo> element containing the <mcptt-Params> element with the <alert-ind> element set to a value of "true", the sent SIP MESSAGE request did not contain an <originated-by> element in the application/vnd.3gpp.mcptt-info+xml MIME body and the MCPTT emergency alert state is set to "MEA 4: Emergency-alert-cancel-pending", shall set the MCPTT emergency alert state to "MEA 3: emergency-alert-initiated"; and

NOTE 4: In this case, an <emergency-ind> element would either not be present or would be set to true. In either case, no change in state would result. Hence, this case is not specified above.

2) if the received SIP 4xx response, SIP 5xx response or a SIP 6xx response to the SIP MESSAGE request does not contain an application/vnd.3gpp.mcptt-info+xml MIME body with an <alert-ind> element, the sent SIP MESSAGE request does not contain an <originated-by> element in the application/vnd.3gpp.mcptt-info+xml MIME body and the MCPTT emergency alert state is set to "MEA 4: Emergency-alert-cancel-pending", shall set the MCPTT emergency alert state to "MEA 3: emergency-alert-initiated".

6.1.1.15.3 Test description

6.1.1.15.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

  - For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

- GNSS simulator to simulate a location.

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- The GNSS simulator is configured to simulate a location in the centre of Geographical area #1 to provide a location, as defined in TS 36.508 [24] Table 4.11.2-2 scenario #1.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.1.15.3.2 Test procedure sequence

Table 6.1.1.15.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
0	Trigger the UE to reset UTC time and location. NOTE: The UTC time and location reset may be performed by MMI or AT command (+CUTCR).	-	-	-	-
1	Make the MCPTT User request the establishment of an emergency alert. (NOTE 1):	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.3 'Generic Test Procedure for MCPTT CO communication in E-UTRA'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
2	Check: Does the UE (MCPTT Client) send a SIP MESSAGE request for an emergency alert providing location information?	-->	SIP MESSAGE	1	P
3	SS (MCPTT Server) responds with 200 OK	<--	SIP 200 (OK)		
4	Make the MCPTT User request to send an emergency alert cancellation to the MCPTT group. (NOTE 1)	-	-	-	-
5	Check: Does the UE (MCPTT Client) send a SIP MESSAGE request to cancel the emergency alert?	-->	SIP MESSAGE	2	P
6	SS (MCPTT Server) responds with 200 OK	<--	SIP 200 (OK)		
-	EXCEPTION: SS releases the E-UTRA connection.	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI					

6.1.1.15.3.3 Specific message contents

Table 6.1.1.15.3.3-1: SIP MESSAGE (Step 2, Table 6.1.1.15.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.7.2-1, condition LOCATION-INFO				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		MCPTT Info		
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-info+xml"			
MIME-part-body	MCPTT-Info as described in Table 6.1.1.15.3.3-1B			
MIME body part		Location info		
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-location-info+xml"			
MIME-part-body	Location-info as described in Table 6.1.1.15.3.3-1A			

Table 6.1.1.15.3.3-1A: Location-Info in SIP MESSAGE (Table 6.1.1.15.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.4.1-1.				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
location-info				
Report				
TriggerID	a unique string to identify what triggered the location report	The value need not be checked however the inclusion of a non-zero length string shall be verified. For the string semantics see TS 24.379 [9] clause F.3.		
CurrentLocation				
CurrentCoordinate		As per the location simulated by the GNSS simulator at the time of transmission of the message		
longitude	The longitude value as specified for location number #1 defined in TS 36.508 [24] Table 4.11.2-3 +/- 0.00016 degrees.			
latitude	The latitude value as specified for location number #1 defined in TS 36.508 [24] Table 4.11.2-3+/- 0.00013 degrees.			

Table 6.1.1.15.3.3-1B: MCPTT-Info in SIP MESSAGE (Table 6.1.1.15.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1 condition GROUP-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
alert-ind	"true"			

Table 6.1.1.15.3.3-2: SIP 200 (OK) (steps 3, 6, Table 6.1.1.15.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.17-1.2-1

Table 6.1.1.15.3.3-3: SIP MESSAGE (Step 5, Table 6.1.1.15.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.7.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		MCPTT Info		
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-info+xml"			
MIME-part-body	MCPTT-Info as described in Table 6.1.1.15.3.3-3A			

Table 6.1.1.15.3.3-3A: MCPTT-Info in SIP MESSAGE (Table 6.1.1.15.3.3-3)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1 condition GROUP-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
alert-ind	"false"			

6.1.1.16 On-network / Emergency Alert / Client Terminated (CT)

6.1.1.16.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service}
ensure that {
  when { MCPTT Server notifies the UE (MCPTT client) with an emergency alert with the location of
emergency by sending the UE (MCPTT Client) a SIP MESSAGE }
    then {UE (MCPTT client) acknowledges the emergency alert by sending a SIP 200 (OK) response and
notifies the user of the emergency alert }
            }
```

(2)

```
with { UE (MCPTT Client) having been previously notified of an emergency alert}
ensure that {
  when { MCPTT Server sends an emergency alert cancellation to the UE (MCPTT client) }
    then {UE (MCPTT client) acknowledges the cancellation of the emergency state by sending a SIP
200 (OK) response and notifies the user of the cancellation }
            }
```

6.1.1.16.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.379, clause 12.1.1.3. The following represents a copy/paste extraction of the requirements relevant to the test purpose; any references within the copy/paste text should be understood within the scope of the core spec they have been copied from. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.379 clause 12.1.1.3]

Upon receipt of a "SIP MESSAGE request for emergency notification", the MCPTT client:

1) if the received SIP MESSAGE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <alert-ind> element set to a value of "true", should display to the MCPTT user an indication of the MCPTT emergency alert and associated information, including:

a) the MCPTT group identity contained in <mcptt-calling-group-id> element application/vnd.3gpp.mcptt-info+xml MIME body;

b) the originator of the MCPTT emergency alert contained in the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body; and

c) the mission critical organization of the MCPTT emergency alert originator contained in the <mc-org> element of the application/vnd.3gpp.mcptt-info+xml MIME body;

NOTE 1: This is the case of the MCPTT client receiving the notification of another MCPTT user's emergency alert.

2) if the received SIP MESSAGE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <alert-ind> element set to a value of "false":

a) should display to the MCPTT user an indication of the MCPTT emergency alert cancellation and associated information, including:

i) the MCPTT group identity contained in the <mcptt-calling-group-id> element application/vnd.3gpp.mcptt-info+xml MIME body;

ii) the originator of the MCPTT emergency alert contained in:

A) if present, the <originated-by> element of the application/vnd.3gpp.mcptt-info+xml MIME body; or

B) the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body; and

b) if the MCPTT ID contained in the <originated-by> element is the MCPTT ID of the receiving MCPTT user, shall set the MCPTT emergency alert state to "MEA 1: no-alert"; and

c) if the received SIP MESSAGE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <emergency-ind> element set to a value of "false":

i) shall set the MCPTT emergency group state to "MEG 1: no-emergency"; and

ii) shall set the MCPTT emergency group call state to "MEGC 1: emergency-gc-capable";

NOTE 2: This is the case of the MCPTT client receiving the notification of the cancellation by a third party of an MCPTT emergency alert. This can be the MCPTT emergency alert of another MCPTT user or the MCPTT emergency alert of the recipient, as determined by the contents of the <originated-by> element. Optionally, notification of the cancellation of the in-progress emergency state of the MCPTT group can be included.

3) if the received SIP MESSAGE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <emergency-ind> element set to a value of "true":

a) should display to the MCPTT user an indication of the additional emergency MCPTT user participating in the MCPTT emergency group call including the following if not already displayed as part of step 1):

i) the MCPTT group identity contained in the <mcptt-calling-group-id> element application/vnd.3gpp.mcptt-info+xml MIME body; and

ii) the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body;

b) shall set the MCPTT emergency group state to "MEG 2: in-progress" if not already set to that value;

NOTE 3: This is the case of the MCPTT client receiving notification of an additional MCPTT user in an MCPTT emergency state (i.e., not the MCPTT user that originally triggered the in-progress emergency state of the group) joining the in-progress emergency group call. An emergency alert indication, if included, is handled in step 1).

4) if the received SIP MESSAGE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <emergency-ind> element set to a value of "false":

a) should display to the MCPTT user an indication of the cancellation of the in-progress emergency state of the MCPTT group call including the following if not already displayed as part of step 2):

i) the MCPTT group identity contained in the <mcptt-calling-group-id> element application/vnd.3gpp.mcptt-info+xml MIME body; and

ii) the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body;

b) shall set the MCPTT emergency group state to "MEG 1: no-emergency"; and

c) shall set the MCPTT emergency group call state to "MEGC 1: emergency-gc-capable";

NOTE 4: This is the case of the MCPTT client receiving the notification of the cancellation of the in-progress emergency state of the MCPTT group. In this case, the receiving MCPTT client is affiliated with the MCPTT group but not participating in the session. An emergency alert cancellation, if included, is handled in step 2).

5) if the received SIP MESSAGE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <imminentperil-ind> element set to a value of "true":

a) should display to the MCPTT user an indication of the MCPTT user participating in the MCPTT imminent peril group call including the following if not already displayed as part of step 1):

i) the MCPTT group identity contained in the <mcptt-calling-group-id> element application/vnd.3gpp.mcptt-info+xml MIME body; and

ii) the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body; and

b) shall set the MCPTT imminent peril group state to "MIG 2: in-progress" if not already set to that value;

NOTE 5: This is the case of the MCPTT client receiving notification of an additional MCPTT user initiating an imminent peril group call when there is already an in-progress imminent peril state in effect on the group.

6) if the received SIP MESSAGE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <imminentperil-ind> element set to a value of "false":

a) should display to the MCPTT user an indication of the cancellation of the in-progress imminent peril state of the MCPTT group including the following if not already displayed as part of step 2):

i) the MCPTT group identity contained in the <mcptt-calling-group-id> element application/vnd.3gpp.mcptt-info+xml MIME body; and

ii) the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body;

b) shall set the MCPTT imminent peril group state to "MIG 1: no-imminent-peril"; and

c) shall set the MCPTT imminent peril group call state to "MIGC 1: imminent-peril-gc-capable";

NOTE 6: This is the case of the MCPTT client receiving notification of the cancellation of the in-progress imminent peril state of the group.

7) shall generate a SIP 200 (OK) response according to rules and procedures of 3GPP TS 24.229 [4]; and

8) shall send the SIP 200 (OK) response towards the MCPTT server according to rules and procedures of 3GPP TS 24.229 [4].

6.1.1.16.3 Test description

6.1.1.16.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

  - For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

- GNSS simulator to simulate a location.

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- The GNSS simulator is configured to simulate a location in the centre of Geographical area #1 to provide a location, as defined in TS 36.508 [24] Table 4.11.2-2 scenario #1.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.1.16.3.2 Test procedure sequence

Table 6.1.1.16.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
0	Trigger the UE to reset UTC time and location. NOTE: The UTC time and location reset may be performed by MMI or AT command (+CUTCR).	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.4 Generic Test Procedure for MCPTT CT communication in E-UTRA '. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
1	SS sends an emergency alert providing location information.	<--	SIP MESSAGE	-	-
2	Check: Does the UE (MCPTT Client) respond with a 200 (OK)?	-->	SIP 200 (OK)	1	P
3	Check: Does the UE (MCPTT Client) notify the user of the emergency alert? (NOTE 1) :	-	-	1	P
4	SS sends an emergency alert cancel	<--	SIP MESSAGE	-	-
5	Check: Does the UE (MCPTT Client) respond with a 200 (OK)?	-->	SIP 200 (OK)	2	P
6	Check: Does the UE (MCPTT Client) notify the user of the emergency alert cancellation? (NOTE 1)	-	-	2	P
-	EXCEPTION: SS releases the E-UTRA connection.	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI					

6.1.1.16.3.3 Specific message contents

Table 6.1.1.16.3.3-1: SIP MESSAGE (Step 1, Table 6.1.1.16.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.7.2-1, condition LOCATION-INFO				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		MCPTT Info		
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-info+xml"			
MIME-part-body	MCPTT-Info as described in Table 6.1.1.16.3.3-1B			
MIME body part		Location info		
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-location-info+xml"			
MIME-part-body	Location-info as described in Table 6.1.1.16.3.3-1A			

Table 6.1.1.16.3.3-1A: Location-Info in SIP MESSAGE (Table 6.1.1.16.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.4.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
location-info	present			
Report	present			
TriggerID	"EMERGENCY ALERT"	A randomly chosen string to reflect the trigger of the message.		
CurrentLocation				
CurrentCoordinate		The location simulated by the GNSS simulator at the time of transmission of the message is for location number #1. The #7 is chosen below to simulate an Emergency alert coming from an User hypothetically located in location #7. No need for GNSS simulaiton for this.		
longitude	The longitude value as specified for location number #7 defined in TS 36.508 [24] Table 4.11.2-3.			
latitude	The latitude value as specified for location number #7 defined in TS 36.508 [24] Table 4.11.2-3.			

Table 6.1.1.16.3.3-1B: MCPTT-Info in SIP MESSAGE (Table 6.1.1.16.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.2-1 condition GROUP-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
alert-ind	"true"			

Table 6.1.1.16.3.3-2: SIP 200 (OK) (Steps 2, 5, Table 6.1.1.16.3.2-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.17.1.1-1

Table 6.1.1.16.3.3-3: SIP MESSAGE (Step 4, Table 6.1.1.16.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.7.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		MCPTT Info		
MIME-part-headers				
Content-Type	"application/vnd.3gpp. mcptt-info+xml"			
MIME-part-body	MCPTT-Info as described in Table 6.1.1.16.3.3-3A			

Table 6.1.1.16.3.3-3A: MCPTT-Info in SIP MESSAGE (Table 6.1.1.16.3.3-3)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.2-1 condition GROUP-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
alert-ind	"false"			

6.1.1.17 On-network / Broadcast Group Call using pre-established session / Client originated Pre-established Session Release with associated MCPTT session / Client Originated (CO)

6.1.1.17.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service and having a pre-established
session with the MCPTT Server }
ensure that {
  when { the MCPTT User requests the establishment of an MCPTT Broadcast Group Call using a pre-
established session requesting implicit floor control }
    then { UE (MCPTT Client) requests Broadcast Group Call using a pre-established session
establishment by sending a SIP REFER message and responds to the SS with correct MCPC messages }
            }
```

(2)

```
with { UE (MCPTT Client) having an ongoing Broadcast Group Call using a pre-established session }
ensure that {
  when { the MCPTT User (MCPTT Client) wants to terminate the ongoing MCPTT Broadcast Group Call but
keep the pre-established session }
    then { UE (MCPTT Client) sends a SIP REFER request and leaves the MCPTT session }
            }
```

6.1.1.17.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in TS 24.379, clauses 4.12, 6.2.8.2, 10.1.1.2.2.1, 10.1.1.2.3.2 and 6.2.4.2, and TS 24.380, clauses 9.2.2.2.2, 9.2.2.3.2 and 9.2.2.4.6. The following represents a copy/paste extraction of the requirements relevant to the test purpose; any references within the copy/paste text should

be understood within the scope of the core spec they have been copied from. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.379, clause 10.1.1.2.2.1]

Upon receiving a request from an MCPTT user to establish an MCPTT group session using an MCPTT group identity identifying a prearranged MCPTT group within the pre-established session, the MCPTT client shall generate a SIP REFER request as specified in IETF RFC 3515 [25] as updated by IETF RFC 6665 [26] and IETF RFC 7647 [27], and in accordance with the UE procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client shall follow the procedures specified in subclause 10.1.2.2.2.1 with the clarification in step 3) of subclause 10.1.2.2.2.1 that:

1) the <entry> element in the application/resource-lists MIME body shall contain a "uri" attribute set to the prearranged MCPTT group identity;

2) the <session-type> element of the application/vnd.3gpp.mcptt-info MIME body in the hname "body" URI header field shall be set to a value of "prearranged"; and

3) if the MCPTT user has requested the origination of a broadcast group call, the MCPTT client shall comply with the procedures in subclause 6.2.8.2.

[TS 24.379, clause 6.2.8.2]

When the MCPTT user initiates a broadcast group call, the MCPTT client:

1) in the case of the prearranged group call is initiated on-demand, shall include in the application/vnd.3gpp.mcptt-info+xml MIME body the <broadcast-ind> element set to "true" as defined in clause F.1; and

2) in the case the prearranged group call is initiated using a pre-established session, shall include in the application/vnd.3gpp.mcptt-info+xml MIME body in the "body" URI header field in the Refer-To header field the <broadcast-ind> element set to "true" as defined in clause F.1.

[TS 24.379, clause 10.1.1.2.3.2]

When an MCPTT client wants to leave the MCPTT session within a pre-established session, the MCPTT client shall follow the procedures as specified in subclause 6.2.4.2.

[TS 24.379, clause 6.2.4.2]

Upon receiving a request from an MCPTT user to leave an MCPTT session within a pre-established session, the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

2) shall generate an initial SIP REFER request outside a dialog in accordance with the procedures specified in 3GPP TS 24.229 [4], IETF RFC 4488 [22] and IETF RFC 3515 [25] as updated by IETF RFC 6665 [26] and IETF RFC 7647 [27];

3) shall set the Request-URI of the SIP REFER request to the public service identity identifying the pre-established session on the MCPTT server serving the MCPTT user;

4) shall include the Refer-Sub header field with value "false" according to rules and procedures of IETF RFC 4488 [22];

5) shall include the Supported header field with value "norefersub" according to rules and procedures of IETF RFC 4488 [22];

6) shall set the Refer-To header field of the SIP REFER request to the MCPTT session identity to leave;

7) shall include the "method" SIP URI parameter with the value "BYE" in the URI in the Refer-To header field;

8) shall include a Target-Dialog header field as specified in IETF RFC 4538 [23] identifying the pre-established session; and

9) shall send the SIP REFER request according to 3GPP TS 24.229 [4].

Upon receiving a SIP 2xx response to the SIP REFER request, the MCPTT client shall interact with media plane as specified in 3GPP TS 24.380 [5].

[TS 24.380, clause 9.2.2.2.2]

When a pre-established session is created between the MCPTT client and the participating MCPTT function, as specified in 3GPP TS 24.379 [2], the MCPTT client:

1. shall initialize any needed user plane resources for the pre-established session as specified in 3GPP TS 24.379 [2]; and

2. shall enter the 'U: Pre-established session not in use' state.

[TS 24.380, clause 9.2.2.3.2]

Upon reception of a Connect message:

1. if the MCPTT client accepts the incoming call the MCPTT client:

   a. shall send the Acknowledgement message with Reason Code field set to 'Accepted';

   b. shall use only the media streams of the pre-established session which are indicated as used in the associated call session Media Streams field, if the Connect contains a Media Streams field;

   c. shall create an instance of the 'Floor participant state transition diagram for basic operation' as specified in subclause 6.2.4; and

   d. shall enter the 'U: Pre-established session in use' state; or

2. Otherwise the MCPTT client:

   a. shall send the Acknowledgement message with the Reason Code field set to 'Busy' or 'Not Accepted'; and

   b. shall remain in 'U: Pre-established session not in use' state.

[TS 24.380, clause 9.2.2.4.6]

Upon receiving a 2xx response to the sent SIP REFER request as described in 3GPP TS 24.379 [2] when the call is released, but the Pre-established Session is kept alive the MCPTT client:

1. shall enter the 'U: Pre-established session not in use' state; and

2. shall terminate the instance of 'Floor participant state transition diagram for basic operation' state machine as specified in subclause 6.2.4.

6.1.1.17.3 Test description

6.1.1.17.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)

- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT pre-established session establishment CO as specified in TS 36.579-1 [2], subclause 5.3.3.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.1.17.3.2 Test procedure sequence

Table 6.1.1.17.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the MCPTT User request the establishment of an MCPTT broadcast group call using a pre-established session, automatic commencement mode, with Floor implicit Control (NOTE 1)	-	-	-	-
2	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO call establishment using a pre-established session as described in TS 36.579-1 [2] Table 5.3.9.3-1 to establish an MCPTT broadcast group call with automatic commencement mode?	-	-	1	P
3-5	Void	-	-	-	-
6	Make the MCPTT User leave the MCPTT session (NOTE 1)	-	-	-	-
7	Check: Does the UE (MCPTT Client) s perform Generic Test Procedure for MCPTT CO call release keeping the pre-established session as described in TS 36.579-1 [2] Table 5.3.11.3-1 to end the broadcast group call?	-	-	2	P
8	Void	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI.					

6.1.1.17.3.3 Specific message contents

Table 6.1.1.17.3.3-1: SIP REFER (step 2, Table 6.1.1.17.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.12-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		Resource-Lists		
MIME-part-body	Resource-Lists as described in Table 6.1.1.17.3.3-3			

Table 6.1.1.17.3.3-2: Void

Table 6.1.1.17.3.3-3: Resource-lists (Table 6.1.1.17.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.3.1-1, conditions PRE-ESTABLISH, GROUP-CALL

Table 6.1.1.17.3.3-3A: SIP header fields extending the uri attribute of the resource-lists' single entry (step 2, Table 6.1.1.17.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.12-2: condition GROUP-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
body				
MIME body part		MCPTT Info		
MIME-part-body	MCPTT-Info as described in Table 6.1.1.17.3.3-3B			

Table 6.1.1.17.3.3-3B: MCPTT-Info (Table 6.1.1.17.3.3-3A)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1, conditions GROUP-CALL, INVITE_REFER				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
broadcast-ind	"true"			

Table 6.1.1.17.3.3-4: Void

Table 6.1.1.17.3.3-5: Void

6.1.1.18 On-network / Broadcast Group Call using pre-established session / Automatic Commencement Mode / Server originated Pre-established Session Release with associated MCPTT session / Client Terminated (CT)

6.1.1.18.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service and having a pre-established
session with the MCPTT Server }
ensure that {
  when { the MCPTT Server requests the establishment of an MCPTT Broadcast Group Call using a pre-
established session requesting Automatic Commencement Mode to the UE (MCPTT Client) by sending a
Connect}
    then { UE (MCPTT Client) accepts the Broadcast Group Call by sending an Acknowledgement }
            }
```

(2)

```
with { UE (MCPTT Client) having accepted the Broadcast Group Call }
ensure that {
  when { the MCPTT Server sends a Floor taken request }
    then {  the user is notified about the type of call }
            }
```

(3)

```
with { UE (MCPTT Client) having an ongoing Broadcast Group Call using a pre-established session with
Automatic Commencement Mode }
ensure that {
  when { the MCPTT Server wants to terminate the ongoing MCPTT Broadcast Group Call and sends a
Disconnect }
    then { UE (MCPTT Client) accepts the ending of the MCPTT Group Call by sending an
Acknowledgement }
            }
```

6.1.1.18.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.380, clauses 4.1.2.2, 4.1.2.3, 9.2.2.3.2, 9.2.2.3.4 and 6.2.4.3.3. The following represents a copy/paste extraction of the requirements relevant to the test purpose; any references within the copy/paste text should be understood within the scope of the core spec they have been copied from. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.380, clause 4.1.2.2]

For a pre-arranged group call if the controlling MCPTT function as triggered by an originating group member initiates a call as specified in 3GPP TS 24.379 [2], the participating MCPTT function which serves the terminating MCPTT client sends a Connect message to all affiliated MCPTT clients of this group. After the reception of the Connect message the terminating MCPTT client sends an Acknowledgment message by indicating that the connection is accepted or by indicating that the connection is not accepted. If the connection is accepted by the terminating MCPTT client, the floor control for this call continues a specified in clause 6.

NOTE: If a terminating client does not have an available pre-established session, the call setup proceeds as in on-demand call setup as specified in 3GPP TS 24.379 [2].

[TS 24.380, clause 4.1.2.3]

When a call is released by the controlling MCPTT function (as specified in 3GPP TS 24.379 [2]), the participating MCPTT function sends a Disconnect message to all MCPTT clients which used a pre-established session for this call. Then the call is released (see also 3GPP TS 24.379 [2]) and the pre-established session can be used for another call. When an MCPTT client leaves a call (as specified in 3GPP TS 24.379 [2]) which was setup over a pre-established session without releasing the pre-established session, this pre-established session can be used for another call.

TS 24.380, clause 9.2.2.3.2]

Upon reception of a Connect message:

1. if the MCPTT client accepts the incoming call the MCPTT client:

   a. shall send the Acknowledgement message with Reason Code field set to 'Accepted';

   b. shall use only the media streams of the pre-established session which are indicated as used in the associated call session Media Streams field, if the Connect contains a Media Streams field;

   c. shall create an instance of the 'Floor participant state transition diagram for basic operation' as specified in subclause 6.2.4; and

   d. shall enter the 'U: Pre-established session in use' state; or

2. Otherwise the MCPTT client:

   a. shall send the Acknowledgement message with the Reason Code field set to 'Busy' or 'Not Accepted'; and

   b. shall remain in 'U: Pre-established session not in use' state.

[TS 24.380, clause 9.2.2.3.4]

Upon reception of a Disconnect message the MCPTT client:

1. if the first bit in the subtype of the Disconnect message is set to '1' (acknowledgement is required), shall send the Acknowledgement message with the Reason Code set to 'Accepted'; and

2. shall remain in 'U: Pre-established session not in use' state.

[TS 24.380, clause 6.2.4.3.3]

Upon receiving the Floor Taken message, the floor participant:

1. if the first bit in the subtype of the Floor Taken message is set to '1' (Acknowledgment is required) as described in subclause 8.3.2, shall send a Floor Ack message. The Floor Ack message:

   a. shall include the Message Type field set to '2' (Floor Taken); and

b. shall include the Source field set to '0' (the floor participant is the source);

2. may provide a floor taken notification to the user;

3. if the Floor Indicator field is included and the B-bit is set to '1' (Broadcast group call), shall provide a notification to the user indicating the type of call;

4. should start the optional timer T103 (End of RTP media); and

5. shall remain in the 'U: has no permission' state.

6.1.1.18.3 Test description

6.1.1.18.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)

- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

- The MCPTT User performs the Generic Test Procedure for MCPTT pre-established session establishment CO as specified in TS 36.579-1 [2], subclause 5.3.3.

- UE States at the end of the preamble

  - The UE is in E-UTRA Registered, Idle Mode state.

  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.1.18.3.2 Test procedure sequence

Table 6.1.1.18.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Is the Generic Test Procedure for MCPTT CT Group Call establishment using a pre-established session as described in TS 36.579-1 [2] Table 5.3.23.3-1 correctly performed?	-	-	1	P
2	Void	-	-	-	-
3	The SS sends a Floor Taken message with no acknowledgement required and the B-bit set to '1' (broadcast group call)	<--	Floor Taken	-	-
4	Check: Does the MCPTT Client provide notification indicating broadcast call to the MCPTT User? NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	2	P
5	Check: Is the Generic Test Procedure for MCPTT CT call release keeping the pre-established session as described in TS 36.579-1 [2], Table 5.3.13.3-1 correctly performed?	-	-	3	P
6	Void	-	-	-	-

6.1.1.18.3.3 Specific message contents

Table 6.1.1.18.3.3-1: Connect (step 1, Table 6.1.1.18.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.12-1, condition GROUPCALL			
Information Element	**Value/remark**	**Comment**	**Condition**
Answer State field			
Answer State	"0"	unconfirmed	

Table 6.1.1.18.3.3-2: Floor Taken (step 3, Table 6.1.1.18.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.7-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"1100010000000000"	bit A=1 (Normal call) bit B=1 (Broadcast call) bit F=1 (Queueing supported)	

6.1.1.19 Void

6.1.1.20 Void

6.1.1.21 On-network / On-demand Pre-arranged Group Call / No Implicit Floor Control / Client Originated (CO)

6.1.1.21.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service }
ensure that {
  when { the MCPTT User requests the establishment of an MCPTT On-demand Pre-arranged Group Call
requesting force of Automatic Commencement Mode at the invited MCPTT client(s) and without implicit
floor control }
    then { UE (MCPTT Client) sends a SIP INVITE message }
            }
```

(2)

```
with { UE (MCPTT Client) having established an MCPTT On-demand Pre-arranged Group Call without
implicit floor control }
ensure that {
  when { the MCPTT User requests to speak (e.g. pressing the PTT button) }
    then { UE (MCPTT Client) sends a Floor Request message and respects the floor control imposed by
the MCPTT Server }
            }
```

(3)

```
with { UE (MCPTT Client) having established an MCPTT On-demand Pre-arranged Group Call without
implicit floor control }
ensure that {
  when { the MCPTT User wants to terminate the ongoing MCPTT Group Call }
    then { UE (MCPTT Client) sends a SIP BYE request and leaves the MCPTT session }
            }
```

6.1.1.21.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in TS 24.379, clauses 10.1.1.2.1.1, 6.2.4.1, TS 24.380, clauses 6.2.4.2.2, 6.2.4.3.5, 6.2.4.4.2. Unless otherwise stated, these are Rel-14 requirements.

[TS 24.379, clause 10.1.1.2.1.1]

Upon receiving a request from an MCPTT user to establish an MCPTT prearranged group session the MCPTT client shall generate an initial SIP INVITE request by following the UE originating session procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

1) if the MCPTT user has requested the origination of an MCPTT emergency group call or is originating an MCPTT prearranged group call and the MCPTT emergency state is already set, the MCPTT client shall comply with the procedures in subclause 6.2.8.1.1;

2) if the MCPTT user has requested the origination of an MCPTT imminent peril group call, the MCPTT client shall comply with the procedures in subclause 6.2.8.1.9;

3) if the MCPTT user has requested the origination of a broadcast group call, the MCPTT client shall comply with the procedures in subclause 6.2.8.2;

4) shall include the g.3gpp.mcptt media feature tag and the g.3gpp.icsi-ref media feature tag with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP INVITE request according to IETF RFC 3840 [16];

5) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

6) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP INVITE request;

7) shall include an Accept-Contact header field with the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

8) should include the "timer" option tag in the Supported header field;

9) should include the Session-Expires header field according to IETF RFC 4028 [7]. It is recommended that the "refresher" header field parameter is omitted. If included, the "refresher" header field parameter shall be set to "uac";

10) shall set the Request-URI of the SIP INVITE request to the public service identity identifying the participating MCPTT function serving the MCPTT user;

NOTE 1: The MCPTT client is configured with public service identity identifying the participating MCPTT function serving the MCPTT user.

11) may include a P-Preferred-Identity header field in the SIP INVITE request containing a public user identity as specified in 3GPP TS 24.229 [4];

12) if the MCPTT client emergency group state for this group is set to "MEG 2: in-progress" or "MEG 4: confirm-pending", the MCPTT client shall include the Resource-Priority header field and comply with the procedures in subclause 6.2.8.1.2;

13) if the MCPTT client imminent peril group state for this group is set to "MIG 2: in-progress" or "MIG 4: confirm-pending" shall include the Resource-Priority header field and comply with the procedures in subclause 6.2.8.1.12;

14) shall contain in an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with:

   a) the <session-type> element set to a value of "prearranged";

   b) the <mcptt-request-uri> element set to the group identity;

   c) the <mcptt-client-id> element set to the MCPTT client ID of the originating MCPTT client;

NOTE 2: The MCPTT client does not include the MCPTT ID of the originating MCPTT user in the body, as this will be inserted into the body of the SIP INVITE request that is sent from the originating participating MCPTT function.

   d) if the group identity can be determined to be a TGI and if the MCPTT client can associate the TGI with a MCPTT group ID, the <associated-group-id> element set to the MCPTT group ID; and

   e) if the MCPTT client is aware of active functional-aliases, and an active functional alias is to be included in the initial SIP INVITE request, the <functional-alias-URI> set to the URI of the used functional alias;

NOTE 3: The text "can associate the TGI with a MCPTT group ID" means that the MCPTT client is able to determine that there is a constituent group of the temporary group that it is a member of.

NOTE 4: The MCPTT client is informed about temporary groups and regrouping of MCPTT groups that the user is a member of as specified in 3GPP TS 24.481 [31].

NOTE 5: If the MCPTT user selected a TGI where there are several MCPTT groups where the MCPTT user is a member, the MCPTT client selects one of those MCPTT groups.

NOTE 6: The MCPTT client learns the functional aliases that are activated for an MCPTT ID from procedures specified in subclause 9A.2.1.3.

15) shall include an SDP offer according to 3GPP TS 24.229 [4] with the clarifications given in subclause 6.2.1;

16) if an implicit floor request is required, shall indicate this as specified in subclause 6.4; and

17) shall send the SIP INVITE request towards the MCPTT server according to 3GPP TS 24.229 [4].

On receiving a SIP 2xx response to the SIP INVITE request, the MCPTT client:

1) shall interact with the user plane as specified in 3GPP TS 24.380 [5] ;

2) if the MCPTT emergency group call state is set to "MEGC 2: emergency-call-requested" or "MEGC 3: emergency-call-granted" or the MCPTT imminent peril group call state is set to "MIGC 2: imminent-peril-call-requested" or "MIGC 3: imminent-peril-call-granted", the MCPTT client shall perform the actions specified in subclause 6.2.8.1.4;

2A) may notify the answer state to the user (i.e. "Unconfirmed" or "Confirmed") if received in the P-Answer-State header field; and

3) may subscribe to the conference event package as specified in subclause 10.1.3.1.

On receiving a SIP 4xx response, a SIP 5xx response or a SIP 6xx response to the SIP INVITE request:

1) if the MCPTT emergency group call state is set to "MEGC 2: emergency-call-requested" or "MEGC 3: emergency-call-granted"; or

2) if the MCPTT imminent peril group call state is set to "MIGC 2: imminent-peril-call-requested" or "MIGC 3: imminent-peril-call-granted";

the MCPTT client shall perform the actions specified in subclause 6.2.8.1.5.

On receiving a SIP INFO request where the Request-URI contains an MCPTT session ID identifying an ongoing group session, the MCPTT client shall follow the actions specified in subclause 6.2.8.1.13.

[TS 24.379, clause 6.2.4.1]

Upon receiving a request from an MCPTT user to leave an MCPTT session established using on-demand session signalling, the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

2) shall generate a SIP BYE request according to 3GPP TS 24.229 [4];

3) shall set the Request-URI to the MCPTT session identity to leave; and

4) shall send a SIP BYE request towards MCPTT server according to 3GPP TS 24.229 [4].

Upon receiving a SIP 200 (OK) response to the SIP BYE request, the MCPTT client shall interact with the media plane as specified in 3GPP TS 24.380 [5].

[TS 24.380, clause 6.2.4.2.2]

When a call is initiated as described in 3GPP TS 24.379 [2], the floor participant:

1. shall create an instance of the 'Floor participant state transition diagram for basic operation';

2. if the originating floor participant receives a floor control message before it receives the SIP 200 (OK) response, shall store the floor control message;

NOTE: The originating floor participant might receive a floor control message before the SIP 200 (OK) response when initiating, joining or rejoining a call because of processing delays of the SIP 200 (OK) response in the SIP core.

3. if the established MCPTT call is a chat group call and the SIP INVITE request is not an implicit floor request, shall enter the 'U: has no permission' state; and

4. if for the established MCPTT call the SIP INVITE request is an implicit floor request:

   a. shall start timer T101 (Floor Request) and initialise counter C101 (Floor Request) to 1;

b. shall enter the 'U: pending Request' state; and

c. if the floor participant has received and stored a floor control message before the reception of the SIP 200 (OK) response, shall act as if the floor control message was received in the 'U: pending Request' state after entering the 'U: pending Request' state.

When the floor participant is rejoining an ongoing MCPTT call as described in 3GPP TS 24.379 [2] the floor participant shall enter the 'U: has no permission' state.

[TS 24.380, clause 6.2.4.3.5]

Upon receiving an indication from the user to request permission to send media, the floor participant:

1. shall send the Floor Request message toward the floor control server; The Floor Request message:

   a. if a different priority than the normal priority is required, shall include the Floor Priority field with the priority not higher than negotiated with the floor control server as specified in subclause 14.3.3;

   b. if the floor request is a broadcast group call, system call, emergency call or an imminent peril call, shall include a Floor Indicator field indicating the relevant call types; and

   c. shall include the Location field:

      i. if the current location of the talker is not available or is not to be reported according to the MCPTT user profile, then the location type is set to '0' (Not provided); or

      ii. if the current location of the talker is available and may be reported according to the MCPTT user profile, then the location type and location value are set as specified in table 8.2.3.21-3;

2. shall start timer T101 (Floor Request) and initialise counter C101 (Floor Request) to 1; and

3. shall enter the 'U: pending Request' state.

[TS 24.380, clause 6.2.4.4.2]

Upon receiving a Floor Granted message from the floor control server or a floor granted indication in a SIP 200 (OK) response in the application and signalling layer, the floor participant:

1. if the first bit in the subtype of the Floor Granted message is set to '1' (Acknowledgment is required) as described in subclause 8.3.2, shall send a Floor Ack message. The Floor Ack message:

   a. shall include the Message Type field set to '1' (Floor Granted); and

   b. shall include the Source field set to '0' (the floor participant is the source);

2. if the call is not an ambient listening call, shall provide floor granted notification to the user, if not already done;

NOTE: Providing the floor granted notification to the user prior to receiving the Floor Granted message is an implementation option.

3. if the Floor Indicator field is included and the B-bit is set to '1' (Broadcast group call), shall provide a notification to the user indicating the type of call;

4. if the G-bit in the Floor Indicator is set to '1' (Dual floor) shall store an indication that the participant is overriding without revoke;

5. shall stop the optional timer T103 (End of RTP media), if running;

6. shall stop timer T101 (Floor Request); and

7. shall enter the 'U: has permission' state.

6.1.1.21.3 Test description

6.1.1.21.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)
- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.1.21.3.2 Test procedure sequence

Table 6.1.1.21.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the MCPTT User request the establishment of an MCPTT on-demand pre-arranged group call without implicit floor control. (NOTE 1)	-	-	-	-
2	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.7.3-1 to establish an MCPTT on-demand pre-arranged group call, automatic commencement mode, applying End-to-end communication security with implicit floor control according to option b.i of NOTE 1 in TS 36.579.1 [2] Table 5.3.7.3-1?	-	-	1	-
3	Make the MCPTT User request to speak (e.g. pressing the PTT button). (NOTE 1)	-	-	-	-
4	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Request – Floor Granted as described in TS 36.579-1 [2] Table 5.3.16.3-1?	-	-	2	-
5	Check: Does the UE (MCPTT client) provide floor granted notification to the MCPTT User? (NOTE 1)	-	-	2	-
6	Make the MCPTT User end the on-demand pre-arranged group call. (NOTE 1)	-	-	-	-
7	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO call release as described in TS 36.579-1 [2] Table 5.3.10.3-1 to end the on-demand group call?	-	-	3	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI.					

6.1.1.21.3.3 Specific message contents

Table 6.1.1.21.3.3-1: SIP INVITE (step 2, Table 6.1.1.21.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.7.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.3.7.4-1 condition MCPTT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**SDP message**		
MIME-part-body	SDP Message as described in Table 6.1.1.21.3.3-2			
MIME body part		**MCPTT Info**		
MIME-part-body	MCPTT-Info as described in Table 6.1.1.21.3.3-3			

Table 6.1.1.21.3.3-2: SDP in SIP INVITE (Table 6.1.1.21.3.3-1)

Derivation Path: TS 36.579-1 [2], 5.5.3.1.1-1 condition SDP_OFFER

Table 6.1.1.21.3.3-3: MCPTT-Info in SIP INVITE (Table 6.1.1.21.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2-1, conditions INVITE_REFER, GROUP-CALL

Table 6.1.1.21.3.3-4: SIP 200 (OK) (step 2, Table 6.1.1.21.3.2-1; step 4, TS 36.579-1 [2] Table 5.3.7.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.3.7.4-2 conditions INVITE_RSP, MCPTT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
SDP Message	As described in Table 6.1.1.21.3.3-5			

Table 6.1.1.21.3.3-5: SDP in SIP 200 (OK) (Table 6.1.1.21.3.3-4)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.1.2-1 conditions SDP_ANSWER

6.1.2 Chat Group Calls

6.1.2.1 Void

6.1.2.2 On-network / Chat Group Call Using Pre-established Session Including Emergency and Imminent Peril Calls / Client Server originated Pre-established Session Release with associated MCPTT session / Client Origination (CO)

6.1.2.2.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service }
ensure that {
  when { the MCPTT User requests the establishment of an MCPTT group session using an MCPTT group
identity identifying a chat MCPTT group that is within a pre-established session}
    then { UE (MCPTT Client) requests to join the Chat Group Call within a pre-established session
by generating a SIP REFER message and, after indication from the MCPTT Server that the join request
has been accepted, the user can participate in the group call }
            }
```

(2)

```
with { UE (MCPTT Client) having established a Chat Group Call within a pre-established session }
ensure that {
  when { the MCPTT User (MCPTT Client) requests the origination of an emergency group call }
    then { UE (MCPTT Client) requests the set up and is able to join an emergency group call, or if
unauthorised indicates to the user that they are not authorised to set up emergency calls and no
call is set up }
            }
```

(3)

```
with { UE (MCPTT Client) having established a Chat Group Call within a pre-established session }
ensure that {
  when { the MCPTT User (MCPTT Client) requests the origination of an imminent peril group call }
    then { UE (MCPTT Client) requests the set up and is able to join an imminent peril group call,
or if unauthorised indicates to the user that they are not authorised to set up imminent peril calls
and no call is set up }
            }
```

(4)

```
with { UE (MCPTT Client) having established a Chat Group Call within a pre-established session }
ensure that {
```

```
  when { the UE (MCPTT Client) wishes to leave the MCPTT session within a pre-established session  }
    then { UE (MCPTT Client) initiates leaving by sending a SIP REFER and leaves the call  }
           }
```

6.1.2.2.2 Conformance Requirements

References: The conformance requirements covered in the present TC are specified in: TS 24.379 clauses 4.9, 6.2.4.2, 10.1.2.2.2, 10.1.2.2.3.2. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 4.9]

When establishing a pre-established session, the MCPTT client negotiates the media parameters, including establishing IP addresses and ports using interactive connectivity establishment (ICE) as specified in IETF RFC 5245 with the participating MCPTT function, prior to using the pre-established session for establishing MCPTT sessions with other MCPTT users.

The pre-established session can later be used in MCPTT calls. This avoids the need to negotiate media parameters (including evaluating ICE candidates) and reserving bearer resources during the MCPTT call establishment that results in delayed MCPTT call establishment.

The use of pre-established session on the origination side is compatible with the use of on demand session on the termination side. The use of pre-established session on the termination side is compatible with the use of on demand session on the origination side.

[TS 24.379, clause 10.1.2.2.2]

Upon receiving a request from an MCPTT user to establish an MCPTT group session using an MCPTT group identity identifying a chat MCPTT group within the pre-established session, the MCPTT client shall generate a SIP REFER request as specified in IETF RFC 3515 [25] as updated by IETF RFC 6665 [26] and IETF RFC 7647 [27], and in accordance with the UE procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

1) shall set the Request URI of the SIP REFER request to the session identity of the pre-established session;

2) shall set the Refer-To header field of the SIP REFER request as specified in IETF RFC 3515 [25] with a Content-ID ("cid") Uniform Resource Locator (URL) as specified in IETF RFC 2392 [62] that points to an application/resource-lists MIME body as specified in IETF RFC 5366 [20], and with the Content-ID header field set to this "cid" URL;

3) shall include in the application/resource-lists MIME body a single <entry> element containing a "uri" attribute set to the chat group identity, extended with the following URI header fields:

NOTE: Characters that are not formatted as ASCII characters are escaped in the following URI header fields;

   a) the Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

   b) an Accept-Contact header field with the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6]; and

   c) an hname "body" URI header field populated with:

      i) an application/sdp MIME body containing an SDP offer, if the session parameters of the pre-established session require modification or if implicit floor control is required, according to the conditions specified in subclause 6.4; and

      ii) an application/vnd.3gpp.mcptt-info MIME body with:

         A) the <session-type> element set to a value of "chat"; and

         B) the <mcptt-client-id> element set to the MCPTT client ID of the originating MCPTT client;

4) if the MCPTT user has requested the origination of an MCPTT emergency group call or is originating an MCPTT group call and the MCPTT emergency state is already set:

a) if this is an authorised request for an MCPTT emergency group call as determined by the procedures of subclause 6.2.8.8.1.8, shall comply with the procedures in subclause 6.2.8.1.1; and

b) if this is an unauthorised request for an MCPTT emergency group call as determined in step a) above, should indicate to the MCPTT user that they are not authorised to initiate an MCPTT emergency group call;

...

6) if the MCPTT user has requested the origination of an MCPTT imminent peril group call:

a) if this is an authorised request for an MCPTT imminent peril group call as determined by the procedures of subclause 6.2.8.8.1.8, shall comply with the procedures in subclause 6.2.8.1.9;

b) if this is an unauthorised request for an MCPTT imminent peril group call as determined in step a) above, should indicate to the MCPTT user that they are not authorised to initiate an MCPTT imminent peril group call;

...

8) shall include a P-Preferred-Service header field set to the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), according to IETF RFC 6050 [9];

9) shall include the following according to IETF RFC 4488 [22]:

a) the option tag "norefersub" in the Supported header field; and

b) the value "false" in the Refer-Sub header field.

10) shall include a Target-Dialog header field as specified in IETF RFC 4538 [23] identifying the pre-established session;

11) shall include the g.3gpp.mcptt media feature tag in the Contact header field of the SIP REFER request according to IETF RFC 3840 [16]; and

12) shall send the SIP REFER request according to 3GPP TS 24.229 [4].

On receiving a final SIP 2xx response to the SIP REFER request, the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5].

On receiving a SIP 4xx response, SIP 5xx response or a SIP 6xx response to the SIP REFER request:

1) if the MCPTT emergency group call state is set to "MEGC 2: emergency-call-requested" or "MEGC 3: emergency-call-granted"; or

2) if the MCPTT imminent peril group call state is set to "MIGC 2: imminent-peril-call-requested" or "MIGC 3: imminent-peril-call-granted";

the MCPTT client shall perform the actions specified in subclause 6.2.8.1.5 and shall skip the remaining steps.

On receiving a SIP re-INVITE request within the pre-established session targeted by the sent SIP REFER request, and if the sent SIP REFER request was a request for an MCPTT emergency group call or an MCPTT imminent peril group call, the MCPTT client:

1) shall perform the actions specified in subclause 6.2.8.1.16;

2) shall check if a Resource-Priority header field is included in the incoming SIP re-INVITE request and may perform further actions outside the scope of the present document to act upon an included Resource-Priority header field as specified in 3GPP TS 24.229 [4];

3) shall accept the SIP re-INVITE request and generate a SIP 200 (OK) response according to rules and procedures of 3GPP TS 24.229 [4];

4) shall include an SDP answer in the SIP 200 (OK) response to the SDP offer in the incoming SIP re-INVITE request according to 3GPP TS 24.229 [4], based upon the parameters already negotiated for the pre-established session; and

5) shall send the SIP 200 (OK) response towards the participating MCPTT function according to rules and procedures of 3GPP TS 24.229 [4].

On call release by interaction with the media plane as specified in subclause 9.2.2 of 3GPP TS 24.380 [5] if the sent SIP REFER request was a request for an MCPTT emergency group call or an MCPTT imminent peril group call, the MCPTT client shall perform the procedures specified in subclause 6.2.8.1.17.

[TS 24.379, clause 6.2.4.2]

Upon receiving a request from an MCPTT user to leave an MCPTT session within a pre-established session, the MCPTT client:

...

2) shall generate an initial SIP REFER request outside a dialog in accordance with the procedures specified in 3GPP TS 24.229 [4], IETF RFC 4488 [22] and IETF RFC 3515 [25] as updated by IETF RFC 6665 [26] and IETF RFC 7647 [27];

3) shall set the Request-URI of the SIP REFER request to the public service identity identifying the pre-established session on the MCPTT server serving the MCPTT user;

4) shall include the Refer-Sub header field with value "false" according to rules and procedures of IETF RFC 4488 [22];

5) shall include the Supported header field with value "norefersub" according to rules and procedures of IETF RFC 4488 [22];

6) shall set the Refer-To header field of the SIP REFER request to the MCPTT session identity to leave;

7) shall include the "method" SIP URI parameter with the value "BYE" in the URI in the Refer-To header field;

8) shall include a Target-Dialog header field as specified in IETF RFC 4538 [23] identifying the pre-established session; and

9) shall send the SIP REFER request according to 3GPP TS 24.229 [4].

[TS 24.379, clause 10.1.2.2.3.2]

When an MCPTT client wants to leave the MCPTT session within a pre-established session, the MCPTT client shall follow the procedures as specified in subclause 6.2.4.2.

6.1.2.2.3 Test description

6.1.2.2.3.1 Pre-test conditions

System Simulator:

SS (MCPTT server)

For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)

- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10, is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

- The MCPTT client has followed the steps defined in TS 36.579-1 [2], subclause 5.3.3 Generic Test Procedure for MCPTT pre-established session establishment CO.

- UE States at the end of the preamble

  - The UE is in E-UTRA Registered, Idle Mode state.

  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.2.2.3.2 Test procedure sequence

Table 6.1.2.2.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the MCPTT User initiate a chat group call over the pre-established session. (NOTE 1)	-	-	-	-
2	Check: Does the UE (MCPTT Client) perform Generic Test Procedure for MCPTT CO call establishment using a pre-established session as described in TS 36.579-1 [2] Table 5.3.9.3-1 to establish an MCPTT chat group call with implicit floor request?	-	-	1	P
3-5	Void	-	-	-	-
6	The SS sends Floor Granted.	<--	Floor Granted	-	-
7	Check: Does the UE (MCPTT client) provide floor granted notification to the MCPTT User? (NOTE 1)	-	-	1	P
8	The Generic Test Procedure for MCPTT CT call release keeping the pre-established session as described in TS 36.579-1 [2], Table 5.3.13.3-1 is executed.	-	-	-	-
9	Void	-	-	-	-
10	Make the MCPTT User request an MCPTT emergency chat group call. (NOTE 1)	-	-	-	-
10A	E-UTRA/EPC signalling according to TS 36.579-1 [2] clause 5.4.13 'Generic Test Procedure for MCPTT radio bearer establishment for use of pre-established session' takes place	-	-	-	-
11	Check: Does the UE (MCPTT Client) send a SIP REFER request with <emergency_ind> set true?	-->	SIP REFER	2	P
12	The SS sends SIP 403 (Forbidden).	<--	SIP 403 (Forbidden)	-	-
12A	The SS waits 2 seconds before it releases the RRC connection	-	-	-	-
13	Check: Does the UE (MCPTT client) notify the user that the emergency group call is not allowed and that the call is not set up? (NOTE 1)	-	-	2	P
14	Make the MCPTT User request an MCPTT emergency chat group call. (NOTE 1)	-	-	-	-
15	Check: Does the UE (MCPTT Client) send a SIP REFER request with <emergency_ind> set true??	-->	SIP REFER	2	P
15A	The SS sends SIP 200 (OK).	<--	SIP 200 (OK)	-	-
16	Check: Is the Generic Test Procedure for MCPTT CT session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.4.3-1 starting with Step 2 correctly performed?	-	-	2	P
17-17A	Void	-	-	-	-
18	Check: Does the UE (MCPTT client) notify the user that the emergency group call has been successfully established? (NOTE 1)	-	-	2	P
19	Make the MCPTT User leave the emergency chat group call. (NOTE 1)	-	-	-	-
20	The UE (MCPTT Client) performs the Generic Test Procedure for MCPTT CO call release keeping the pre-established session as described in TS 36.579-1 [2] Table 5.3.11.3-1 to leave the chat group call.	-	-	-	-
21	Void	-	-	-	-

22	Make the MCPTT User request an imminent peril chat group call. (NOTE 1)	-	-	-	-
23	Check: Does the UE (MCPTT Client) send a SIP REFER request with <imminentperil_ind> set true?	-->	SIP REFER	3	P
24	The SS sends SIP 403 (Forbidden).	<--	SIP 403 (Forbidden)	-	-
25	Check: Does the UE (MCPTT client) notify the user that the imminent peril call is not allowed and that the call is not set up? (NOTE 1)	-	-	3	P
25 A	The SS waits 2 seconds before it releases the RRC connection	-	-	-	-
26	Make the MCPTT User re-request an imminent peril chat group call (NOTE 1):	-	-	-	-
26 A	E-UTRA/EPC signalling according to TS 36.579-1 [2] clause 5.4.13 'Generic Test Procedure for MCPTT radio bearer establishment for use of pre-established session' takes place	-	-	-	-
27	Check: Does the UE (MCPTT Client) send a SIP REFER request with <imminentperil_ind> set true?	-->	SIP REFER	3	P
27 A	The SS sends SIP 200 (OK).	<--	SIP 200 (OK)	-	-
28	Check: Is the Generic Test Procedure for MCPTT CT session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.4.3-1 starting with Step 2 correctly performed?	-	-	3	P
29-29 A	Void	-	-	-	-
30	Check: Does the UE (MCPTT client) notify the user that the imminent peril call has been successfully established? (NOTE 1)	-	-	3	P
31	Make the US user request to leave the chat group call. (NOTE 1)	-	-	-	-
32	Check: Does the UE (MCPTT Client) perform the Generic Test Procedure for MCPTT CO call release keeping the pre-established session as described in TS 36.579-1 [2] Table 5.3.11.3-1 to leave the chat group call?	-	-	4	P
33-34	Void	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI					

6.1.2.2.3.3 Specific message contents

Table 6.1.2.2.3.3-1: SIP REFER (Step 2, Table 6.1.2.2.3.2-1; Step 2, TS 36.579-1 [2] Table 5.3.9.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.12-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**Resource list**		
MIME-part-body	Resource-lists as described in Table 6.1.2.2.3.3-2A			

Table 6.1.2.2.3.3-2: Void

Table 6.1.2.2.3.3-2A: Resource-lists (Table 6.1.2.2.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.3.1-1 conditions PRE-ESTABLISH, CHAT-GROUP-CALL

Table 6.1.2.2.3.3-2B: SIP header fields extending the uri attribute of the resource-lists' single entry (Step 2, Table 6.1.2.2.3.3-2A)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.12-2: condition CHAT-GROUP-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
body				
MIME body part		**SDP Message**		
MIME-part-headers				
Content-Type	“application/sdp”			
MIME-part-body	SDP Message as described in Table 6.1.2.2.3.3-2C			
MIME body part		MCPTT Info		
MIME-part-body	MCPTT-Info as described in Table 6.1.2.2.3.3-2D			

Table 6.1.2.2.3.3-2C: SDP in SIP REFER (Table 6.1.2.2.3.3-2B)

Derivation Path: TS 36.579-1 [2], 5.5.3.1.1-1 conditions SDP_OFFER, IMPLICIT_GRANT_REQUESTED

Table 6.1.2.2.3.3-2D: MCPTT-Info (Table 6.1.2.2.3.3-2B)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1, condition CHAT-GROUP-CALL, INVITE_REFER

Table 6.1.2.2.3.3-2E: SIP 200 (OK) (Step 2, Table 6.1.2.2.3.2-1; Step 3, TS 36.579-1 [2] Table 5.3.9.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.17.1.2-1 condition REFER-RSP				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Content-Type				
media-type	"application/sdp"			
Message-body				
SDP message	SDP message as described in Table 6.1.2.2.3.3-2F			

Table 6.1.2.2.3.3-2F: SDP in SIP 200 (OK) (Table 6.1.2.2.3.3-2E)

Derivation Path: TS 36.579-1 [2], 5.5.3.1.2-1 conditions SDP_ANSWER, IMPLICIT_GRANT_REQUESTED

Table 6.1.2.2.3.3-2G: Floor Granted (Step 6, Table 6.1.2.2.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	"00001"	Acknowledgment not required for Floor Granted message	

Table 6.1.2.2.3.3-3: SIP REFER (Step 11 and 15, Table 6.1.2.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.12-1 conditions EMERGENCY-CALL, GROUP-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		Resource list		
MIME-part-body	Resource-lists as described in Table 6.1.2.2.3.3-3A			

Table 6.1.2.2.3.3-3A: Resource-lists in SIP REFER (Step 11 and 15, Table 6.1.2.2.3.3-3)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1, conditions PRE_ESTABLISH, CHAT-GROUP-CALL

Table 6.1.2.2.3.3-3B: SIP header fields extending the uri attribute of the resource-lists' single entry (Steps 11. 15, Table 6.1.2.2.3.3-3A)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.12-2: condition CHAT-GROUP-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
body				
MIME body part		MCPTT Info		
MIME-part-body	MCPTT-Info as described in Table 6.1.2.2.3.3-3C			

Table 6.1.2.2.3.3-3C: MCPTT-Info (Table 6.1.2.2.3.3-3B)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1, conditions EMERGENCY-CALL CHAT-GROUP-CALL, INVITE_REFER

Table 6.1.2.2.3.3-4: Void

Table 6.1.2.2.3.3-4A: SIP 200 (OK) (Step 15A, 27A, Table 6.1.2.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.17.1.1-1 condition REFER_RSP

Table 6.1.2.2.3.3-4B: SIP INVITE (Step 16, Table 6.1.2.2.3.2-1; Step 2, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.2-1, conditions re_INVITE, MO_CALL, EMERGENCY-CALL, CHAT-GROUP-CALL

Table 6.1.2.2.3.3-5: SIP REFER (Step 23 and 27, Table 6.1.2.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.12-1 conditions IMMPERIL-CALL, CHAT-GROUP-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		Resource list		
MIME-part-body	Resource-lists as described in Table 6.1.2.2.3.3-5A			

Table 6.1.2.2.3.3-5A: Resource-lists in SIP REFER (6.1.2.2.3.3-5)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1, conditions PRE_ESTABLISH, CHAT-GROUP-CALL

Table 6.1.2.2.3.3-6: Void

Table 6.1.2.2.3.3-6A: SIP header fields extending the uri attribute of the resource-lists' single entry (steps 23, 27, Table 6.1.2.2.3.3-5A)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.12-2: condition CHAT-GROUP-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
body				
MIME body part		MCPTT Info		
MIME-part-body	MCPTT-Info as described in Table 6.1.2.2.3.3-6B			

Table 6.1.2.2.3.3-6B: MCPTT-Info (Table 6.1.2.2.3.3-6A)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1, conditions I IMMPERIL-CALL, CHAT-GROUP-CALL, INVITE_REFER

Table 6.1.2.2.3.3-7: SIP re-INVITE (Step 28, Table 6.1.2.2.3.2-1; Step 2, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.2-1, conditions re_INVITE, MO-CALL, IMMPERIL-CALL, CHAT-GROUP-CALL

Table 6.1.2.2.3.3-8: Void

Table 6.1.2.2.3.3-9: Void

Table 6.1.2.2.3.3-10: SIP 403 (Forbidden) (Steps 12 and 24, Table 6.1.2.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.19.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Warning				
mcptt-warn[1]	"function not allowed due to user authorisation"			

6.1.2.3 Void

6.1.2.4 Void

6.1.2.5 Void

6.1.2.6 Void

6.1.2.7 On-network / Chat Group Call / Emergency Group Call / Client Originated (CO)

6.1.2.7.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service }
ensure that {
  when { the MCPTT User requests the establishment of an MCPTT On-demand Chat Group Emergency Group
Call }
```

```
    then { UE (MCPTT Client) requests Chat Group Emergency Group Call by sending a SIP INVITE
message and responds to the SS with correct SIP messages and provides floor granted notification to
the MCPTT User }
            }
```

6.1.2.7.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in TS 24.379, clause 10.1.2.2.1.1, TS 24.380, clause 6.2.4.4.2. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.379, clause 10.1.2.2.1.1]

Upon receiving a request from an MCPTT user to initiate or join an MCPTT group session using an MCPTT group identity, identifying a chat MCPTT group, the MCPTT client shall generate an initial SIP INVITE request by following the UE originating session procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

1) if the MCPTT user has requested the origination of an MCPTT emergency group call or is originating an MCPTT chat group call and the MCPTT emergency state is already set, the MCPTT client shall comply with the procedures in subclause 6.2.8.1.1;

...

3) shall include the g.3gpp.mcptt media feature tag and the g.3gpp.icsi-ref media feature tag with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP INVITE request according to IETF RFC 3840 [16];

4) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

5) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP INVITE request;

6) shall include an Accept-Contact header field with the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

7) should include the "timer" option tag in the Supported header field;

8) should include the Session-Expires header field according to IETF RFC 4028 [7]. It is recommended that the refresher parameter is omitted. If included, the refresher parameter shall be set to "uac";

9) shall set the Request-URI of the SIP INVITE request to the public service identity identifying the participating MCPTT function serving the MCPTT user;

NOTE 1: The MCPTT client is configured with public service identity identifying the participating MCPTT function serving the MCPTT user.

10) may include a P-Preferred-Identity header field in the SIP INVITE request containing a public user identity as specified in 3GPP TS 24.229 [4];

11) if the MCPTT client emergency group state for this group is set to "MEG 2: in-progress" or "MEG 4: confirm-pending", the MCPTT client shall comply with the procedures in subclause 6.2.8.1.2;

...

13) shall contain an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with:

    a) the <session-type> element set to a value of "chat";

    b) the <mcptt-request-uri> element set to the group identity; and

    c) the <mcptt-client-id> element set to the MCPTT client ID of the originating MCPTT client;

NOTE 2: The MCPTT ID of the originating MCPTT user is not included in the body, as this will be inserted into the body of the SIP INVITE request that is sent by the originating participating MCPTT function.

14) shall include in the SIP INVITE request an SDP offer according to 3GPP TS 24.229 [4] with the clarifications specified in subclause 6.2.1;

15) if an implicit floor request is required, shall indicate this as specified in subclause 6.4; and

16) shall send the SIP INVITE request according to 3GPP TS 24.229 [4].

On receiving a SIP 2xx response to the SIP INVITE request, the MCPTT client:

1) shall interact with the user plane as specified in 3GPP TS 24.380 [5]; and

2) if the MCPTT emergency group call state is set to "MEGC 2: emergency-call-requested" or "MEGC 3: emergency-call-granted" or the MCPTT imminent peril group call state is set to "MIGC 2: imminent-peril-call-requested" or "MIGC 3: imminent-peril-call-granted", the MCPTT client shall perform the actions specified in subclause 6.2.8.1.4.

On receiving a SIP 4xx response, a SIP 5xx response or a SIP 6xx response to the SIP INVITE request:

1) if the MCPTT emergency group call state is set to "MEGC 2: emergency-call-requested" or "MEGC 3: emergency-call-granted"; or

…

the MCPTT client shall perform the actions specified in subclause 6.2.8.1.5.

On receiving a SIP INFO request where the Request-URI contains an MCPTT session ID identifying an ongoing group session, the MCPTT client shall follow the actions specified in subclause 6.2.8.1.13.

[TS 24.380, clause 6.2.4.4.2]

Upon receiving a Floor Granted message from the floor control server or a floor granted indication in a SIP 200 (OK) response in the application and signalling layer, the floor participant:

1. if the first bit in the subtype of the Floor Granted message is set to '1' (Acknowledgment is required) as described in subclause 8.3.2, shall send a Floor Ack message. The Floor Ack message:

   a. shall include the Message Type field set to '1' (Floor Granted); and

   b. shall include the Source field set to '0' (the floor participant is the source);

2. shall provide floor granted notification to the user, if not already done;

NOTE: Providing the floor granted notification to the user prior to receiving the Floor Granted message is an implementation option.

3. if the Floor Indicator field is included and the B-bit is set to '1' (Broadcast group call), shall provide a notification to the user indicating the type of call;

4. if the G-bit in the Floor Indicator is set to '1' (Dual floor) shall store an indication that the participant is overriding without revoke;

5. shall stop the optional timer T103 (End of RTP media), if running;

6. shall stop timer T101 (Floor Request); and

7. shall enter the 'U: has permission' state.

6.1.2.7.3 Test description

6.1.2.7.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)
- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.2.7.3.2 Test procedure sequence

Table 6.1.2.7.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the MCPTT User request the establishment of an MCPTT On-demand chat group emergency group call for the selected MCPTT chat group emergency group GROUP A, with implicit floor control. (NOTE 1)	-	-	-	-
2	Check: Does the UE (MCPTT client) perform the Generic Test Procedure for MCPTT CO session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.7.3-1 to establish an MCPTT on-demand pre-arranged chat group call, automatic commencement mode, with implicit floor control? Option b.ii in TS 36.579.1 [2] Table 5.3.7.3-1 is applied.	-	-	1	P
3-8	Void	-	-	-	-
9	Check: Does the UE (MCPTT client) provide floor granted notification to the MCPTT User? (NOTE 1)	-	-	1	P
10	Make the MCPTT User end the on-demand chat group emergency group call. (NOTE 1)	-	-	-	-
11	Execute the Generic Test Procedure for MCPTT CO call release as described in TS 36.579-1 [2] Table 5.3.10.3-1 to terminate the MCPTT session.	-	-	-	-
12	Void	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI.					

6.1.2.7.3.3 Specific message contents

Table 6.1.2.7.3.3-1: SIP INVITE (step 2, Table 6.1.2.7.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.7.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.1-1, condition EMERGENCY-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**SDP message**		
MIME-part-body	SDP Message as described in Table 6.1.2.7.3.3-1A			
MIME body part		**MCPTT Info**	TS 24.379 [9] clause F.1	
MIME-part-body	MCPTT-Info as described in Table 6.1.2.7.3.3-2			

Table 6.1.2.7.3.3-1A: SDP in SIP INVITE (Table 6.1.2.7.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.1.1-1, conditions INITIAL_SDP_OFFER, IMPLICIT_GRANT_REQUESTED

Table 6.1.2.7.3.3-2: MCPTT-Info in SIP INVITE (Table 6.1.2.7.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1, conditions EMERGENCY-CALL, INVITE_REFER, CHAT-GROUP-CALL

Table 6.1.2.7.3.3-3: Floor Granted (step 2, Table 6.1.2.7.3.3-1, step 6a1, TS 36.579-1 [2] Table 5.3.7.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	"00001"	Acknowledgment is not required for Floor Granted message	
Floor Indicator			
Floor Indicator	"0001010000000000"	bit D=1 (Emergency call) bit F=1 (Queueing supported)	

Table 6.1.2.7.3.3-4: Void

6.1.2.8 On-network / Chat Group Call / Emergency Group Call / Client Terminated (CT)

6.1.2.8.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service }
ensure that {
  when { the MCPTT Client receives a SIP INVITE message with a emergency indication for an MCPTT On-demand Chat Group Emergency Group Call }
    then { the UE (MCPTT Client) sends a SIP 200 OK as a response to the SIP INVITE message and respects floor control }
            }
```

6.1.2.8.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in TS 24.379, clause 10.1.2.2.1.6, TS 24.380, clause 6.2.4.3.3. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.379, clause 10.1.2.2.1.6]

This procedure is used for MCPTT emergency and MCPTT imminent peril calls when the MCPTT client is affiliated but not joined to the chat group.

In the procedures in this subclause:

1) emergency indication in an incoming SIP INVITE request refers to the <emergency-ind> element of the application/vnd.3gpp.mcptt-info+xml MIME body; and

...

Upon receipt of an initial SIP INVITE request, the MCPTT client:

...

3) if the SIP INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <emergency-ind> element set to a value of "true":

a) should display to the MCPTT user an indication that this is a SIP INVITE request for an MCPTT emergency group call and:

i) should display the MCPTT ID of the originator of the MCPTT emergency group call contained in the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body;

ii) should display the MCPTT group identity of the group with the emergency condition contained in the <mcptt-calling-group-id> element; and

iii) if the <alert-ind> element is set to "true", should display to the MCPTT user an indication of the MCPTT emergency alert and associated information;

b) shall set the MCPTT emergency group state to "MEG 2: in-progress";

…

6) shall accept the SIP INVITE request and generate a SIP 200 (OK) response according to rules and procedures of 3GPP TS 24.229 [4];

7) shall include the option tag "timer" in a Require header field of the SIP 200 (OK) response;

8) shall include the g.3gpp.mcptt media feature tag in the Contact header field of the SIP 200 (OK) response;

9) shall include the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP 200 (OK) response;

10) shall include the Session-Expires header field in the SIP 200 (OK) response and start the SIP session timer according to IETF RFC 4028 [7]. If no "refresher" parameter was included in the received SIP INVITE request the "refresher" parameter in the Session-Expires header field shall be set to "uas", otherwise shall include a "refresher" parameter set to the value received in the Session-Expires header field the received SIP INVITE request;

11) shall include an SDP answer in the SIP 200 (OK) response to the SDP offer in the incoming SIP INVITE request according to 3GPP TS 24.229 [4] with the clarifications given in subclause 6.2.2;

12) shall send the SIP 200 (OK) response towards the MCPTT server according to rules and procedures of 3GPP TS 24.229 [4]; and

13) shall interact with the media plane as specified in 3GPP TS 24.380 [5].

[TS 24.380, clause 6.2.4.3.3]

Upon receiving the Floor Taken message, the floor participant:

1. if the first bit in the subtype of the Floor Taken message is set to '1' (Acknowledgment is required) as described in subclause 8.3.2, shall send a Floor Ack message. The Floor Ack message:

   a. shall include the Message Type field set to '2' (Floor Taken); and

   b. shall include the Source field set to '0' (the floor participant is the source);

2. may provide a floor taken notification to the user;

3. if the Floor Indicator field is included and the B-bit is set to '1' (Broadcast group call), shall provide a notification to the user indicating the type of call;

4. should start the optional timer T103 (End of RTP media); and

5. shall remain in the 'U: has no permission' state.

6.1.2.8.3 Test description

6.1.2.8.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)
- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.2.8.3.2 Test procedure sequence

Table 6.1.2.8.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Is the Generic Test Procedure for MCPTT CT session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.4.3-1 to establish an on-demand MCPTT chat emergency group call with automatic commencement mode and implicit floor control correctly performed?	-	-	1	P
1A-3	Void	-	-	-	-
3A	The SS (MCPTT server) sends a Floor Taken message with an acknowledgement required.	<--	Floor Taken	-	-
3B	Check: Does the UE (MCPTT Client) respond with a Floor Ack message?	-->	Floor Ack	1	P
4	Execute the Generic Test Procedure for MCPTT CT call release as described in TS 36.579-1 [2] Table 5.3.12.3-1 to terminate the MCPTT session.	-	-	-	-
5	Void	-	-	-	-

6.1.2.8.3.3 Specific message contents

Table 6.1.2.8.3.3-1: SIP INVITE (step 1, Table 6.1.2.8.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.2-1, condition EMERGENCY-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body		**MCPTT Info**	TS 24.379 [9] clause F.1	
MIME body part				
MIME-part-body	MCPTT-Info as described in Table 6.1.2.8.3.3-2			

Table 6.1.2.8.3.3-2: MCPTT-Info in SIP INVITE (Table 6.1.2.8.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.2-1, EMERGENCY-CALL,CHAT-GROUP-CALL

Table 6.1.2.8.3.3-3: Floor Taken (step 3A, Table 6.1.2.8.3.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.7-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	"10010"	Acknowledgment is required for Floor Taken message	
Floor Indicator			
Floor Indicator	"0001010000000000"	bit D=1 (Emergency call) bit F=1 (Queueing supported)	

Table 6.1.2.8.3.3-4: Floor Ack (step 3B, Table 6.1.2.8.3.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.7-1 condition UPLINK			
Information Element	**Value/remark**	**Comment**	**Condition**
Message Type			
Message Type	"00010010"	Message type of the Floor Ack message for Floor Taken message which requested acknowledgment	

Table 6.1.2.8.3.3-5: Void

6.1.2.9 On-network / Chat Group Call / Imminent Peril Group Call / Client Originated (CO)

6.1.2.9.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service }
ensure that {
  when { the MCPTT User requests the establishment of an MCPTT On-demand Chat Group Imminent Peril
Group Call }
    then { UE (MCPTT Client) sends a SIP INVITE message to setup the Chat Group Imminent Peril Group
Call and provides floor granted notification to the MCPTT User }
           }
```

6.1.2.9.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in TS 24.379, clause 10.1.2.2.1.1, TS 24.380, clause 6.2.4.4.2. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.379, clause 10.1.2.2.1.1]

Upon receiving a request from an MCPTT user to initiate or join an MCPTT group session using an MCPTT group identity, identifying a chat MCPTT group, the MCPTT client shall generate an initial SIP INVITE request by following the UE originating session procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

…

2) if the MCPTT user has requested the origination of an MCPTT imminent peril group call, the MCPTT client shall comply with the procedures in subclause 6.2.8.1.9;

3) shall include the g.3gpp.mcptt media feature tag and the g.3gpp.icsi-ref media feature tag with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP INVITE request according to IETF RFC 3840 [16];

4) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

5) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP INVITE request;

6) shall include an Accept-Contact header field with the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

7) should include the "timer" option tag in the Supported header field;

8) should include the Session-Expires header field according to IETF RFC 4028 [7]. It is recommended that the refresher parameter is omitted. If included, the refresher parameter shall be set to "uac";

9) shall set the Request-URI of the SIP INVITE request to the public service identity identifying the participating MCPTT function serving the MCPTT user;

NOTE 1: The MCPTT client is configured with public service identity identifying the participating MCPTT function serving the MCPTT user.

10) may include a P-Preferred-Identity header field in the SIP INVITE request containing a public user identity as specified in 3GPP TS 24.229 [4];

…

12) if the MCPTT client imminent peril group state for this group is set to "MIG 2: in-progress" or "MIG 4: confirm-pending" shall include the Resource-Priority header field and comply with the procedures in subclause 6.2.8.1.12;

13) shall contain an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with:

a) the <session-type> element set to a value of "chat";

b) the <mcptt-request-uri> element set to the group identity; and

c) the <mcptt-client-id> element set to the MCPTT client ID of the originating MCPTT client;

NOTE 2: The MCPTT ID of the originating MCPTT user is not included in the body, as this will be inserted into the body of the SIP INVITE request that is sent by the originating participating MCPTT function.

14) shall include in the SIP INVITE request an SDP offer according to 3GPP TS 24.229 [4] with the clarifications specified in subclause 6.2.1;

15) if an implicit floor request is required, shall indicate this as specified in subclause 6.4; and

16) shall send the SIP INVITE request according to 3GPP TS 24.229 [4].

On receiving a SIP 2xx response to the SIP INVITE request, the MCPTT client:

1) shall interact with the user plane as specified in 3GPP TS 24.380 [5]; and

2) if the MCPTT emergency group call state is set to "MEGC 2: emergency-call-requested" or "MEGC 3: emergency-call-granted" or the MCPTT imminent peril group call state is set to "MIGC 2: imminent-peril-call-requested" or "MIGC 3: imminent-peril-call-granted", the MCPTT client shall perform the actions specified in subclause 6.2.8.1.4.

On receiving a SIP 4xx response, a SIP 5xx response or a SIP 6xx response to the SIP INVITE request:

…

2) if the MCPTT imminent peril group call state is set to "MIGC 2: imminent-peril-call-requested" or "MIGC 3: imminent-peril-call-granted";

the MCPTT client shall perform the actions specified in subclause 6.2.8.1.5.

On receiving a SIP INFO request where the Request-URI contains an MCPTT session ID identifying an ongoing group session, the MCPTT client shall follow the actions specified in subclause 6.2.8.1.13.

[TS 24.380, clause 6.2.4.4.2]

Upon receiving a Floor Granted message from the floor control server or a floor granted indication in a SIP 200 (OK) response in the application and signalling layer, the floor participant:

1. if the first bit in the subtype of the Floor Granted message is set to '1' (Acknowledgment is required) as described in subclause 8.3.2, shall send a Floor Ack message. The Floor Ack message:

a. shall include the Message Type field set to '1' (Floor Granted); and

b. shall include the Source field set to '0' (the floor participant is the source);

2. shall provide floor granted notification to the user, if not already done;

NOTE: Providing the floor granted notification to the user prior to receiving the Floor Granted message is an implementation option.

3. if the Floor Indicator field is included and the B-bit is set to '1' (Broadcast group call), shall provide a notification to the user indicating the type of call;

4. if the G-bit in the Floor Indicator is set to '1' (Dual floor) shall store an indication that the participant is overriding without revoke;

5. shall stop the optional timer T103 (End of RTP media), if running;

6. shall stop timer T101 (Floor Request); and

7. shall enter the 'U: has permission' state.

6.1.2.9.3 Test description

6.1.2.9.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)

- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

- UE States at the end of the preamble

  - The UE is in E-UTRA Registered, Idle Mode state.

  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.2.9.3.2 Test procedure sequence

Table 6.1.2.9.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the MCPTT User request the establishment of an MCPTT On-demand imminent peril chat group call for the selected MCPTT imminent peril group GROUP A, with implicit floor control. (NOTE 1)	-	-	-	-
2	Check: Does the UE (MCPTT client) perform the Generic Test Procedure for MCPTT CO session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.7.3-1 to establish an MCPTT on-demand imminent peril chat group call, automatic commencement mode, with implicit floor control? Option b.ii in TS 36.579.1 [2] Table 5.3.7.3-1 is applied.	-	-	1	P
3-8	Void	-	-	-	-
9	Check: Does the UE (MCPTT client) provide floor granted notification to the MCPTT User?	-	-	1	P
10	Make the MCPTT User end the on-demand chat group imminent peril group call. (NOTE 1)	-	-	-	-
11	Execute the Generic Test Procedure for MCPTT CO call release as described in TS 36.579-1 [2] Table 5.3.10.3-1 to terminate the MCPTT session.	-	-	-	-
12	Void	-	-	-	-

NOTE 1: This is expected to be done via a suitable implementation dependent MMI

6.1.2.9.3.3 Specific message contents

Table 6.1.2.9.3.3-1: SIP INVITE (step 2, Table 6.1.2.9.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.7.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.1-1, condition IMMPERIL-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**SDP message**		
MIME-part-body	SDP Message as described in Table 6.1.2.9.3.3-1A			
MIME body part		**MCPTT Info**	TS 24.379 [9] clause F.1	
MIME-part-body	MCPTT-Info as described in Table 6.1.2.9.3.3-2			

Table 6.1.2.9.3.3-1A: SDP in SIP INVITE (Table 6.1.2.9.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.1.1-1, conditions INITIAL_SDP_OFFER, IMPLICIT_GRANT_REQUESTED

Table 6.1.2.9.3.3-2: MCPTT-Info in SIP INVITE (Table 6.1.2.9.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1, conditions IMMPERIL-CALL and CHAT-GROUP-CALL

Table 6.1.2.9.3.3-3: Floor Granted (step 8, Table 6.1.2.9.3.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	"00001"	Acknowledgment is not required for Floor Granted message	
Floor Indicator			
Floor Indicator	"0000110000000000"	bit E=1 (Imminent Peril call) bit F=1 (Queueing supported)	

6.1.2.10 On-network / Chat Group Call / Imminent Peril Group Call / Client Terminated (CT)

6.1.2.10.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service }
ensure that {
  when { the MCPTT Client receives a SIP INVITE message for an On-demand MCPTT Chat Group Imminent
Peril Group Call }
    then { the UE (MCPTT Client) sends a SIP 200 OK as a response to the SIP INVITE message and
respects floor control }
            }
```

6.1.2.10.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in TS 24.379, clause 10.1.2.2.1.6, TS 24.380, clause 6.2.4.3.3. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.379, clause 10.1.2.2.1.6]

This procedure is used for MCPTT emergency and MCPTT imminent peril calls when the MCPTT client is affiliated but not joined to the chat group.

In the procedures in this subclause:

...

2) imminent peril indication in an incoming SIP INVITE request refers to the <imminentperil-ind> element of the application/vnd.3gpp.mcptt-info+xml MIME body.

Upon receipt of an initial SIP INVITE request, the MCPTT client:

…

4) if the SIP INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <imminentperil-ind> element set to a value of "true":

   a) should display to the MCPTT user an indication that this is a SIP INVITE request for an MCPTT imminent peril group call and:

      i) should display the MCPTT ID of the originator of the MCPTT imminent peril group call contained in the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body; and

ii) should display the MCPTT group identity of the group with the imminent peril condition contained in the <mcptt-calling-group-id> element; and

b) shall set the MCPTT imminent peril group state to "MIG 2: in-progress";

5) shall check if a Resource-Priority header field is included in the incoming SIP INVITE request and may perform further actions outside the scope of the present document to act upon an included Resource-Priority header field as specified in 3GPP TS 24.229 [4];

6) shall accept the SIP INVITE request and generate a SIP 200 (OK) response according to rules and procedures of 3GPP TS 24.229 [4];

7) shall include the option tag "timer" in a Require header field of the SIP 200 (OK) response;

8) shall include the g.3gpp.mcptt media feature tag in the Contact header field of the SIP 200 (OK) response;

9) shall include the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP 200 (OK) response;

10) shall include the Session-Expires header field in the SIP 200 (OK) response and start the SIP session timer according to IETF RFC 4028 [7]. If no "refresher" parameter was included in the received SIP INVITE request the "refresher" parameter in the Session-Expires header field shall be set to "uas", otherwise shall include a "refresher" parameter set to the value received in the Session-Expires header field the received SIP INVITE request;

11) shall include an SDP answer in the SIP 200 (OK) response to the SDP offer in the incoming SIP INVITE request according to 3GPP TS 24.229 [4] with the clarifications given in subclause 6.2.2;

12) shall send the SIP 200 (OK) response towards the MCPTT server according to rules and procedures of 3GPP TS 24.229 [4]; and

13) shall interact with the media plane as specified in 3GPP TS 24.380 [5].

[TS 24.380, clause 6.2.4.3.3]

Upon receiving the Floor Taken message, the floor participant:

1. if the first bit in the subtype of the Floor Taken message is set to '1' (Acknowledgment is required) as described in subclause 8.3.2, shall send a Floor Ack message. The Floor Ack message:

   a. shall include the Message Type field set to '2' (Floor Taken); and

   b. shall include the Source field set to '0' (the floor participant is the source);

2. may provide a floor taken notification to the user;

3. if the Floor Indicator field is included and the B-bit is set to '1' (Broadcast group call), shall provide a notification to the user indicating the type of call;

4. should start the optional timer T103 (End of RTP media); and

5. shall remain in the 'U: has no permission' state.

6.1.2.10.3 Test description

6.1.2.10.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.2.10.3.2 Test procedure sequence

Table 6.1.2.10.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Is the Generic Test Procedure for MCPTT CT session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.4.3-1 to establish an on-demand pre-arranged chat and Imminent Peril group call with automatic commencement mode and implicit floor control correctly performed?	-	-	1	P
1A-3	Void	-	-	-	-
3A	The SS (MCPTT server) sends a Floor Taken message with an acknowledgement required.	<--	Floor Taken	-	-
3B	Check: Does the UE (MCPTT Client) respond with a Floor Ack message?	-->	Floor Ack	1	P
4	Execute the Generic Test Procedure for MCPTT CT call release as described in TS 36.579-1 [2] Table 5.3.12.3-1 to terminate the MCPTT session.		-	-	-
5	Void	-	-	-	-

6.1.2.10.3.3 Specific message contents

Table 6.1.2.10.3.3-1: SIP INVITE (step 1, Table 6.1.2.10.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.2-1, condition IMMPERIL-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Content-Type				
MIME body part		**MCPTT-Info**		
MIME-part-body	MCPTT-Info as described in Table 6.1.2.10.3.3-2			

Table 6.1.2.10.3.3-2: MCPTT-Info in SIP INVITE (Table 6.1.2.10.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.2-1, condition IMMPERIL-CALL and CHAT-GROUP-CALL

Table 6.1.2.10.3.3-3: Floor Taken (step 3A, Table 6.1.2.10.3.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.7-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	"00010"	Acknowledgment not required for Floor Taken message	
Floor Indicator			
Floor Indicator	"0000110000000000"	bit E=1 (Imminent Peril call) bit F=1 (Queueing supported)	

Table 6.1.2.10.3.3-4: Floor Ack (step 3B, Table 6.1.2.10.3.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.7-1 condition UPLINK			
Information Element	**Value/remark**	**Comment**	**Condition**
Message Type			
Message Type	"00010010"	Message type of the Floor Ack message for Floor Taken message which requested acknowledgment	

Table 6.1.2.10.3.3-5: Void

6.1.2.11 On-network / Chat Group Call / Join Chat Group Session / Upgrade to Emergency / Cancel Emergency / Upgrade to Imminent Peril / Cancel Imminent Peril / Client Originated (CO)

6.1.2.11.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service }
ensure that {
  when { the MCPTT User requests to initiate an MCPTT On-demand Chat Group Call with implicit floor
control }
    then { UE (MCPTT Client) sends a SIP INVITE message and respects the floor control imposed by
the MCPTT Server and provides floor granted notification to the MCPTT User }
            }
```

(2)

```
with { UE (MCPTT Client) having an ongoing On-demand Chat Group Call }
ensure that {
  when { the MCPTT User requests to upgrade the MCPTT group session to an emergency condition }
    then { UE (MCPTT Client) sends a SIP re-INVITE message and respects the floor control imposed by
the MCPTT Server and provides floor granted notification to the MCPTT User }
            }
```

(3)

```
with { UE (MCPTT Client) having an ongoing Emergency Chat Group Call }
ensure that {
  when { the MCPTT User requests to cancel the in-progress emergency condition }
    then { UE (MCPTT Client) sends a SIP re-INVITE message and upon receipt of a SIP 2xx response
considers the emergency condition cancelled and correctly interacts with the media plane }
            }
```

(4)

```
with { UE (MCPTT Client) having an ongoing On-demand Chat Group Call }
ensure that {
  when { the MCPTT User requests to upgrade the MCPTT group session to an imminent peril condition }
    then { UE (MCPTT Client) sends a SIP re-INVITE message and respects the floor control imposed by
the MCPTT Server and provides floor granted notification to the MCPTT User }
            }
```

(5)

```
with { UE (MCPTT Client) having an ongoing Imminent Peril Chat Group Call }
ensure that {
  when { the MCPTT User requests to cancel the in-progress imminent peril condition }
    then { UE (MCPTT Client) sends a SIP re-INVITE message and upon receipt of a SIP 2xx response
considers the imminent peril condition cancelled and correctly interacts with the media plane }
            }
```

(6)

```
with { UE (MCPTT Client) having an ongoing On-demand Pre-arranged Chat Group Call }
ensure that {
  when { the MCPTT User (MCPTT Client) wants to terminate the ongoing MCPTT Chat Group Call }
    then { UE (MCPTT Client) sends a SIP BYE request and leaves the MCPTT session }
            }
```

6.1.2.11.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in TS 24.379, clauses 10.1.2.2.1.1, 6.2.4.1, 10.1.2.2.1.4, 6.2.8.1.1, 6.2.8.1.2, 6.2.8.1.4, 10.1.2.2.1.3, 10.1.2.2.1.5, TS 24.380, clauses 6.2.4.2.2, 6.2.4.5.3. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.379, clause 10.1.2.2.1.1]

Upon receiving a request from an MCPTT user to initiate or join an MCPTT group session using an MCPTT group identity, identifying a chat MCPTT group, the MCPTT client shall generate an initial SIP INVITE request by following the UE originating session procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

…

3) shall include the g.3gpp.mcptt media feature tag and the g.3gpp.icsi-ref media feature tag with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP INVITE request according to IETF RFC 3840 [16];

4) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

5) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP INVITE request;

6) shall include an Accept-Contact header field with the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

7) should include the "timer" option tag in the Supported header field;

8) should include the Session-Expires header field according to IETF RFC 4028 [7]. It is recommended that the refresher parameter is omitted. If included, the refresher parameter shall be set to "uac";

9) shall set the Request-URI of the SIP INVITE request to the public service identity identifying the participating MCPTT function serving the MCPTT user;

NOTE 1: The MCPTT client is configured with public service identity identifying the participating MCPTT function serving the MCPTT user.

10) may include a P-Preferred-Identity header field in the SIP INVITE request containing a public user identity as specified in 3GPP TS 24.229 [4];

…

13) shall contain an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with:

   a) the <session-type> element set to a value of "chat";

   b) the <mcptt-request-uri> element set to the group identity; and

   c) the <mcptt-client-id> element set to the MCPTT client ID of the originating MCPTT client;

NOTE 2: The MCPTT ID of the originating MCPTT user is not included in the body, as this will be inserted into the body of the SIP INVITE request that is sent by the originating participating MCPTT function.

14) shall include in the SIP INVITE request an SDP offer according to 3GPP TS 24.229 [4] with the clarifications specified in subclause 6.2.1;

15) if an implicit floor request is required, shall indicate this as specified in subclause 6.4; and

16) shall send the SIP INVITE request according to 3GPP TS 24.229 [4].

On receiving a SIP 2xx response to the SIP INVITE request, the MCPTT client:

1) shall interact with the user plane as specified in 3GPP TS 24.380 [5]; and

2) if the MCPTT emergency group call state is set to "MEGC 2: emergency-call-requested" or "MEGC 3: emergency-call-granted" or the MCPTT imminent peril group call state is set to "MIGC 2: imminent-peril-call-requested" or "MIGC 3: imminent-peril-call-granted", the MCPTT client shall perform the actions specified in subclause 6.2.8.1.4.

[TS 24.379, clause 6.2.4.1]

Upon receiving a request from an MCPTT user to leave an MCPTT session established using on-demand session signalling, the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

2) shall generate a SIP BYE request according to 3GPP TS 24.229 [4];

3) shall set the Request-URI to the MCPTT session identity to leave; and

4) shall send a SIP BYE request towards MCPTT server according to 3GPP TS 24.229 [4].

Upon receiving a SIP 200 (OK) response to the SIP BYE request, the MCPTT client shall interact with the media plane as specified in 3GPP TS 24.380 [5].

[TS 24.379, clause 10.1.2.2.1.4]

This subclause covers both on-demand session and pre-established sessions.

Upon receiving a request from an MCPTT user to upgrade the MCPTT group session to an emergency condition or an imminent peril condition on a chat MCPTT group, the MCPTT client shall generate a SIP re-INVITE request as specified in 3GPP TS 24.229 [4], with the clarifications given below.

1) if the MCPTT user is requesting to upgrade the MCPTT group session to an in-progress emergency group state and is not authorised to do so as determined by the procedures of subclause 6.2.8.1.8, the MCPTT client:

   a) should indicate to the MCPTT user that they are not authorised to upgrade the MCPTT group session to an in-progress emergency group state; and

   b) shall skip the remaining steps of the current subclause;

2) if the MCPTT user is requesting to upgrade the MCPTT group session to an in-progress imminent peril state and is not authorised to do so as determined by the procedures of subclause 6.2.8.1.8, the MCPTT client:

a) should indicate to the MCPTT user that they are not authorised to upgrade the MCPTT group session to an in-progress imminent peril group state; and

b) shall skip the remaining steps of the current subclause;

3) if the MCPTT user has requested to upgrade the MCPTT group session to an MCPTT emergency call, the MCPTT client:

a) shall include an application/vnd.3gpp.mcptt-info+xml MIME body populated as specified in subclause 6.2.8.1.1; and

b) shall include a Resource-Priority header field and comply with the procedures in subclause 6.2.8.1.2.

4) if the MCPTT user has requested to upgrade the MCPTT group session to an MCPTT imminent peril call, the MCPTT client:

a) shall include an application/vnd.3gpp.mcptt-info+xml MIME body populated as specified in subclause 6.2.8.1.9; and

b) shall include a Resource-Priority header field and comply with the procedures in subclause 6.2.8.1.12;

5) if the SIP re-INVITE request is to be sent within an on-demand session, shall include in the SIP re-INVITE request an SDP offer according to 3GPP TS 24.229 [4] with the clarifications specified in subclause 6.2.1;

6) if the SIP re-INVITE request is to be sent within a pre-established session, shall include an SDP offer in the SIP re-INVITE request according to 3GPP TS 24.229 [4], based upon the parameters already negotiated for the pre-established session;

NOTE: The SIP re-INVITE request can be sent within an on-demand session or a pre-established session associated with an MCPTT group session. If the SIP re-INVITE request is sent within a pre-established session, the media-level section for the offered MCPTT speech media stream and the media-level section of the offered media-floor control entity are expected to be the same as was negotiated in the existing pre-established session.

7) if an implicit floor request is required, shall indicate this as specified in subclause 6.4;

8) shall include a Resource-Priority header field and comply with the procedures in subclause 6.2.8.1.2; and

9) shall send the SIP re-INVITE request according to 3GPP TS 24.229 [4].

On receiving a SIP 2xx response to the SIP re-INVITE request the MCPTT client:

1) shall interact with the user plane as specified in 3GPP TS 24.380 [5]; and

2) shall perform the actions specified in subclause 6.2.8.1.4.

[TS 24.379, clause 6.2.8.1.1]

This subclause is referenced from other procedures.

When the MCPTT emergency state is set and the MCPTT user is authorised to initiate an MCPTT emergency group call on the targeted MCPTT group as determined by the procedures of subclause 6.2.8.1.8, the MCPTT client:

1) shall include in the application/vnd.3gpp.mcptt-info+xml MIME body in the SIP INVITE request or SIP REFER request, an <emergency-ind> element set to "true" and if the MCPTT emergency group call state is set to "MEGC 1: emergency-gc-capable", shall set the MCPTT emergency group call state to "MEGC 2: emergency-call-requested";

2) if the MCPTT user has also requested an MCPTT emergency alert to be sent and this is an authorised request for MCPTT emergency alert as determined by the procedures of subclause 6.2.8.1.6, and the MCPTT emergency alert state is set to "MEA 1: no-alert", shall:

a) set the <alert-ind> element of the application/vnd.3gpp.mcptt-info+xml MIME body to "true" and set the MCPTT emergency alert state to "MEA 2: emergency-alert-confirm-pending"; and

b) include in the SIP INVITE request the specific location information for MCPTT emergency alert as specified in subclause 6.2.9.1;

3) if the MCPTT user has not requested an MCPTT emergency alert to be sent and the MCPTT emergency alert state is set to "MEA 1: no-alert", shall set the <alert-ind> element of the application/vnd.3gpp.mcptt-info+xml MIME body to "false"; and

4) if the MCPTT client emergency group state of the group is set to a value other than "MEG 2: in-progress" set the MCPTT client emergency group state of the MCPTT group to "MEG 4: confirm-pending".

NOTE 1: This is the case of an MCPTT user already being in the MCPTT emergency state it initiated previously while originating an MCPTT emergency group call or MCPTT emergency alert. All group calls the MCPTT user originates while in MCPTT emergency state will be MCPTT emergency group calls.

When the MCPTT emergency state is clear and the MCPTT emergency group call state is set to "MEGC 1: emergency-gc-capable" and the received SIP request contains an authorised request for MCPTT emergency group call as determined by the procedures of subclause 6.2.8.1.8, the MCPTT client shall set the MCPTT emergency state and perform the following actions:

1) shall include in the application/vnd.3gpp.mcptt-info+xml MIME body in the SIP INVITE request or SIP REFER request an <emergency-ind> element set to "true" and set the MCPTT emergency group call state to "MEGC 2: emergency-call-requested" state;

2) if the MCPTT user has also requested an MCPTT emergency alert to be sent and this is an authorised request for MCPTT emergency alert as determined by the procedures of subclause 6.2.8.1.6, shall:

   a) include in the application/vnd.3gpp.mcptt-info+xml MIME body the <alert-ind> element set to "true" and set the MCPTT emergency alert state to "MEA 2: emergency-alert-confirm-pending"; and

   b) include in the SIP INVITE request the specific location information for MCPTT emergency alert as specified in subclause 6.2.9.1;

3) if the MCPTT user has not requested an MCPTT emergency alert to be sent, shall set the <alert-ind> element of the application/vnd.3gpp.mcptt-info+xml MIME body to "false"; and

4) if the MCPTT client emergency group state of the group is set to a value other than "MEG 2: in-progress" shall set the MCPTT client emergency group state of the MCPTT group to "MEG 4: confirm-pending".

NOTE 2: This is the case of an initial MCPTT emergency group call and optionally an MCPTT emergency alert being sent. As the MCPTT emergency state is not sent, there is no MCPTT emergency alert outstanding.

NOTE 3: An MCPTT group call originated by an affiliated member of an MCPTT group which is in an in-progress emergency state (as tracked on the MCPTT client by the MCPTT client emergency group state) but is not in an MCPTT emergency state of their own will also be an MCPTT emergency group call. The <emergency-ind> and <alert-ind> elements of the application/vnd.3gpp.mcptt-info+xml MIME body do not need to be included in this case and hence no action needs to be taken in this subclause.

[TS 24.379, clause 6.2.8.1.2]

This subclause is referenced from other procedures.

If the MCPTT emergency group call state is set to either "MEGC 2: emergency-call-requested" or "MEGC 3: emergency-call-granted" and this is an authorised request for an MCPTT emergency group call as determined by the procedures of subclause 6.2.8.1.8, or the MCPTT client emergency group state of the group is set to "MEG 2: in-progress", the MCPTT client shall include in the SIP INVITE request or SIP REFER request a Resource-Priority header field populated with the values for an MCPTT emergency group call as specified in subclause 6.2.8.1.15.

NOTE: The MCPTT client ideally would not need to maintain knowledge of the in-progress emergency state of the group (as tracked on the MCPTT client by the MCPTT client emergency group state) but can use this knowledge to provide a Resource-Priority header field set to emergency level priority, which starts the infrastructure priority adjustment process sooner than otherwise would be the case.

If this is an authorised request to cancel the MCPTT emergency group call as determined by the procedures of subclause 6.2.8.1.7, and the MCPTT client emergency group state of the group is "no-emergency" or "cancel-pending", the MCPTT client shall include in the SIP INVITE request or SIP REFER request a Resource-Priority header field populated with the values for a normal MCPTT group call as specified in subclause 6.2.8.1.15.

[TS 24.379, clause 6.2.8.1.4]

In the procedures in this subclause, a priority group call refers to an MCPTT emergency group call or an MCPTT imminent peril group call.

On receiving a SIP 2xx response to a SIP request for a priority group call, the MCPTT client:

1) if the MCPTT emergency group call state is set to "MEGC 2: emergency-call-requested" or "MEGC 3: emergency-call-granted":

   a) shall set the MCPTT client emergency group state of the group to "MEG 2: in-progress" if it was not already set;

   b) if the MCPTT emergency alert state is set to "MEA 2: emergency-alert-confirm-pending" and the SIP 2xx response to the SIP request for a priority group call does not contain a Warning header field as specified in subclause 4.4 with the warning text containing the mcptt-warn-code set to "149", shall set the MCPTT emergency alert state to "MEA 3: emergency-alert-initiated;

   c) shall set the MCPTT emergency group call state to "MEGC 3: emergency-call-granted"; and

   d) shall set the MCPTT imminent peril group call state to "MIGC 1: imminent-peril-capable" and the MCPTT imminent peril group state to "MIG 1: no-imminent-peril"; or

2) if the MCPTT imminent peril group call state is set to "MIGC 2: imminent-peril-call-requested" or "MIGC 3: imminent-peril-call-granted" and the SIP 2xx response to the SIP request for an imminent peril group call does not contain a Warning header field as specified in subclause 4.4 with the warning text containing the mcptt-warn-code set to "149":

   a) set the MCPTT imminent peril group call state to "MIGC 3: imminent-peril-call-granted"; and

   b) set the MCPTT imminent peril group state to "MIG 2: in-progress".

[TS 24.379, clause 10.1.2.2.1.3]

This subclause covers both on-demand session and pre-established sessions.

Upon receiving a request from an MCPTT user to cancel the in-progress emergency condition on a chat MCPTT group, the MCPTT client shall generate a SIP re-INVITE request as specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

1) if the MCPTT user is not authorised to cancel the in-progress emergency group state of the MCPTT group as determined by the procedures of subclause 6.2.8.1.7, the MCPTT client:

   a) should indicate to the MCPTT user that they are not authorised to cancel the in-progress emergency group state of the MCPTT group; and

   b) shall skip the remaining steps of the current subclause;

2) shall, if the MCPTT user is cancelling an in-progress emergency condition and optionally an MCPTT emergency alert originated by the MCPTT user, include an application/vnd.3gpp.mcptt-info+xml MIME body populated as specified in subclause 6.2.8.1.3;

3) shall, if the MCPTT user is cancelling an in-progress emergency condition and optionally an MCPTT emergency alert originated by another MCPTT user, include an application/vnd.3gpp.mcptt-info+xml MIME body populated as specified in subclause 6.2.8.1.14;

4) shall, if the SIP re-INVITE request is to be sent within an on-demand session, include in the SIP re-INVITE request an SDP offer according to 3GPP TS 24.229 [4] with the clarifications specified in subclause 6.2.1;

5) if the SIP re-INVITE request is to be sent within a pre-established session, shall include an SDP offer in the SIP re-INVITE request according to 3GPP TS 24.229 [4], based upon the parameters already negotiated for the pre-established session;

NOTE 1: The SIP re-INVITE request can be sent within an on-demand session or a pre-established session associated with an MCPTT group session. If the SIP re-INVITE request is sent within a pre-established session, the media-level section for the MCPTT speech media stream and the media-level section of the media-floor control entity are expected to be the same as was negotiated in the existing pre-established session.

6) shall include a Resource-Priority header field and comply with the procedures in subclause 6.2.8.1.2; and

7) shall send the SIP re-INVITE request according to 3GPP TS 24.229 [4].

On receiving a SIP 2xx response to the SIP re-INVITE request, the MCPTT client:

1) shall set the MCPTT emergency group state of the group to "MEG 1: no-emergency";

2) shall set the MCPTT emergency group call state of the group to "MEGC 1: emergency-gc-capable"; and

3) if the MCPTT emergency alert state is set to "MEA 4: Emergency-alert-cancel-pending", the sent SIP re-INVITE request did not contain an <originated-by> element in the application/vnd.3gpp.mcptt-info+xml MIME body and the SIP 2xx response to the SIP request for a priority group call does not contain a Warning header field as specified in subclause 4.4 with the warning text containing the mcptt-warn-code set to "149", shall set the MCPTT emergency alert state to "MEA 1: no-alert".

[TS 24.379, clause 10.1.2.2.1.5]

This subclause covers both on-demand session and pre-established sessions.

Upon receiving a request from an MCPTT user to cancel the in-progress imminent peril condition on a chat MCPTT group, the MCPTT client shall generate a SIP re-INVITE request by following the procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

1) if the MCPTT user is not authorised to cancel the in-progress imminent peril group state of the MCPTT group as determined by the procedures of subclause 6.2.8.1.10, the MCPTT client:

   a) should indicate to the MCPTT user that they are not authorised to cancel the in-progress imminent peril group state of the MCPTT group; and

   b) shall skip the remaining steps of the current subclause;

2) shall include an application/vnd.3gpp.mcptt-info+xml MIME body populated as specified in subclause 6.2.8.1.11;

3) shall include a Resource-Priority header field and comply with the procedures in subclause 6.2.8.1.12;

4) shall include in the application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with:

   a) the <session-type> element set to a value of "chat"; and

   b) the <mcptt-request-uri> element set to the group identity;

NOTE 1: The MCPTT ID of the originating MCPTT user is not included in the body, as this will be inserted into the body of the SIP re-INVITE request that is sent by the originating participating MCPTT function.

5) shall include the g.3gpp.mcptt media feature tag in the Contact header field of the SIP re-INVITE request according to IETF RFC 3840 [16];

6) if the SIP re-INVITE request is to be sent within an on-demand session, shall include in the SIP re-INVITE request an SDP offer according to 3GPP TS 24.229 [4] with the clarifications specified in subclause 6.2.1;

7) if the SIP re-INVITE request is to be sent within a pre-established session, shall include an SDP offer in the SIP re-INVITE request according to 3GPP TS 24.229 [4], based upon the parameters already negotiated for the pre-established session; and

NOTE 2: The SIP re-INVITE request can be sent within an on-demand session or a pre-established session associated with an MCPTT group session. If the SIP re-INVITE request is sent within a pre-established session, the media-level section for the offered MCPTT speech media stream and the media-level section of the offered media-floor control entity are expected to be the same as was negotiated in the existing pre-established session.

8) shall send the SIP re-INVITE request according to 3GPP TS 24.229 [4].

On receiving a SIP 2xx response to the SIP re-INVITE request, the MCPTT client:

1) shall interact with the user plane as specified in 3GPP TS 24.380 [5];

2) shall set the MCPTT imminent peril group state of the group to "MIG 1: no-imminent-peril"; and

3) shall set the MCPTT imminent peril group call state of the group to "MIGC 1: imminent-peril-gc-capable".

[TS 24.380, clause 6.2.4.2.2]

When a call is initiated as described in 3GPP TS 24.379 [2], the floor participant:

1. shall create an instance of the 'Floor participant state transition diagram for basic operation';

2. if the originating floor participant receives a floor control message before it receives the SIP 200 (OK) response, shall store the floor control message;

NOTE: The originating floor participant might receive a floor control message before the SIP 200 (OK) response when initiating, joining or re-joining a call because of processing delays of the SIP 200 (OK) response in the SIP core.

3. if the established MCPTT call is a chat group call and the SIP INVITE request is not an implicit floor request, shall enter the 'U: has no permission' state; and

4. if for the established MCPTT call the SIP INVITE request is an implicit floor request:

   a. shall start timer T101 (Floor Request) and initialise counter C101 (Floor Request) to 1;

   b. shall enter the 'U: pending Request' state; and

   c. if the floor participant has received and stored a floor control message before the reception of the SIP 200 (OK) response, shall act as if the floor control message was received in the 'U: pending Request' state after entering the 'U: pending Request' state.

When the floor participant is re-joining an ongoing MCPTT call as described in 3GPP TS 24.379 [2] the floor participant shall enter the 'U: has no permission' state.

[TS 24.380, clause 6.2.4.5.3]

Upon receiving an indication from the user to release the permission to send RTP media, the floor participant:

1. shall send a Floor Release message towards the floor control server. The Floor Release message:

   a. may include the first bit in the subtype of the Floor Release message set to '1' (acknowledgement is required) as specified in subclause 8.2.2;

NOTE: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

   b. if the session is a broadcast call and if the session was established as a normal call, shall include the Floor Indicator with the A-bit set to '1' (Normal call); and

   c. if the Floor Granted message included the G-bit set to '1' (Dual floor), shall include the Floor Indicator with the G-bit set to '1' (Dual floor);

2. shall remove the indication that the participant is overriding without revoke if this indication is stored;

3. shall remove the indication that the participant is overridden without revoke if this indication is stored;

4. shall start timer T100 (Floor Release) and initialize counter C100 (Floor Release) to 1; and
5. shall enter the 'U: pending Release' state.

6.1.2.11.3 Test description

6.1.2.11.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)
- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.2.11.3.2 Test procedure sequence

Table 6.1.2.11.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the MCPTT User request the establishment of an MCPTT On-demand chat group call with implicit floor control. (NOTE 1).	-	-	-	-
2	Check: Does the UE (MCPTT client) perform the Generic Test Procedure for MCPTT CO establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.7.3-1 for the establishment of an MCPTT On-demand chat group call? Option b.ii in TS 36.579-1 [2] Table 5.3.7.3-1 is used.	-	-	1	P
3-6	Void	-	-	-	-
7	Check: Does the UE (MCPTT client) provide floor granted notification to the MCPTT User? (NOTE 1)	-	-	1	P
7A	Make the MCPTT User release the floor. (NOTE 1)	-	-	-	-
7B	The UE (MCPTT client) performs Generic Test Procedure for MCPTT Floor Release – Floor Idle as described in TS 36.579-1 [2] Table 5.3.20.3-1.	-	-	-	-
8	Make the MCPTT User request to upgrade the MCPTT group session to an emergency condition (NOTE 1)	-	-	-	-
9	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO session modification with implicit Floor Control as described in TS 36.579-1 [2] Table 5.3.14.3-1 to upgrade the call to an emergency call with implicit floor control?	.	-	2	P
10-13	Void	-	-	-	-
14	Check: Does the UE (MCPTT client) provide floor granted notification to the MCPTT User? (NOTE 1)	-	-	2	P
15	Make the MCPTT User release the floor. (NOTE 1)	-	-	-	-
16	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Release – Floor Idle as described in TS 36.579-1 [2] Table 5.3.20.3-1?	-	-	2	P
17-18	Void	-	-	-	-
19	Make the MCPTT User cancel the Emergency State. (NOTE 1)	-	-	-	-
20	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO session modification without implicit Floor Control as described in TS 36.579-1 [2] Table 5.3.15.3-1 to cancel the emergency state with implicit floor control?	-	-	3	P
21-24	Void	-	-	-	-
24A	Make the MCPTT User request the floor (NOTE 1)	-	-	-	-
24B	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Request – Floor Granted as described in TS 36.579-1 [2] Table 5.3.16.3-1?	-	-	3	P
25	Void	-	-	-	-
26	Make the MCPTT User release the floor. (NOTE 1)	-	-	-	-

27	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Release – Floor Idle as described in TS 36.579-1 [2] Table 5.3.20.3-1?	-		3	P
28-29	Void	-	-	-	-
30	Make the MCPTT User request to upgrade the MCPTT group session to an imminent peril condition. (NOTE 1).	-	-	-	-
31	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO session modification with implicit Floor Control as described in TS 36.579-1 [2] Table 5.3.14.3-1 to upgrade the call to an imminent peril call with implicit floor control?	-	-	4	P
32-35	Void	-	-	-	-
36	Check: Does the UE (MCPTT client) provide floor granted notification to the MCPTT User? (NOTE 1).	-	-	4	P
37	Make the MCPTT User release the floor (NOTE 1)	-	-	-	-
38	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Release – Floor Idle as described in TS 36.579-1 [2] Table 5.3.20.3-1?	-	-	4	P
39-40	Void	-	-	-	-
41	Make the MCPTT User cancel the Imminent Peril State. (NOTE 1).	-	-	-	-
42	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO session modification without implicit Floor Control as described in TS 36.579-1 [2] Table 5.3.15.3-1 to cancel the emergency state with implicit floor control?	-	-	5	P
43-46	Void	-	-	-	-
46A	Make the MCPTT User request the floor. (NOTE 1)	-	-	-	-
46B	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Request – Floor Granted as described in TS 36.579-1 [2] Table 5.3.16.3-1?	-	-	5	P
47	Void	-	-	-	-
48	Make the MCPTT User release the floor. (NOTE 1).	-	-	-	-
49	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Release – Floor Idle as described in TS 36.579-1 [2] Table 5.3.20.3-1?	-	-	5	P
50-51	Void	-	-	-	-
52	Make the MCPTT User end the on-demand chat group emergency group call. (NOTE 1)	-	-	-	-
53	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO call release as described in TS 36.579-1 [2] Table 5.3.10.3-1 to end the on-demand group call?	-	-	6	P
54	Void	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI.					

6.1.2.11.3.3 Specific message contents

Table 6.1.2.11.3.3-1: SIP INVITE (step 2, Table 6.1.2.11.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.7.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**SDP message**		
MIME-part-body	SDP Message as described in Table 6.1.1.1.3.3-1A			
MIME body part		**MCPTT Info**		
MIME-part-body	MCPTT-Info as described in Table 6.1.2.11.3.3-2			

Table 6.1.2.11.3.3-1A: SDP in SIP INVITE (Table 6.1.2.11.3.3-1)

Derivation Path: TS 36.579-1 [2], 5.5.3.1.1-1 condition INITIAL_SDP_OFFER, IMPLICIT_GRANT_REQUESTED

Table 6.1.2.11.3.3-2: MCPTT-Info in SIP INVITE (Table 6.1.2.11.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1, conditions INVITE_REFER, CHAT-GROUP-CALL

Table 6.1.2.11.3.3-3: Floor Granted (step 2, Table 6.1.2.11.3.3-1; step 6a1, TS 36.579-1 [2] Table 5.3.7.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1, condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	"00001"	Acknowledgment is not required for Floor Granted message	

Table 6.1.2.11.3.3-4: SIP INVITE (step 9, Table 6.1.2.11.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.14.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.1-1, conditions re_INVITE, EMERGENCY-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**SDP message**		
MIME part body	SDP Message as described in Table 6.1.1.1.3.3-4A			
MIME body part		**MCPTT Info**		
MIME part body	MCPTT Info as described in Table 6.1.2.11.3.3-5			

Table 6.1.2.11.3.3-4A: SDP in SIP INVITE (Table 6.1.2.11.3.3-4)

Derivation Path: TS 36.579-1 [2], 5.5.3.1.1-1 condition SDP_OFFER, IMPLICIT_GRANT_REQUESTED

Table 6.1.2.11.3.3-5: MCPTT-Info (Table 6.1.2.11.3.3-4)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1 conditions INVITE_REFER, CHAT, GROUP-CALL and EMERGENCY-CALL

Table 6.1.2.11.3.3-6: Void

Table 6.1.2.11.3.3-7: Floor Granted (step 9, Table 6.1.2.11.3.3-1; step 5, TS 36.579-1 [2] Table 5.3.14.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1, condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"0001010000000000"	bit D=1 (Emergency call) bit F=1 (Queueing supported)	

Table 6.1.2.11.3.3-8: Floor Release (steps 16, Table 6.1.2.11.3.3-1; step 1, TS 36.579-1 [2] Table 5.3.20.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.5-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"00010x0000000000"	bit D=1 (Emergency call) bit F=1 (Queueing supported)	

Table 6.1.2.11.3.3-9: Floor Idle (step 16, Table 6.1.2.11.3.3-1; step 3, TS 36.579-1 [2] Table 5.3.20.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.6-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"0001010000000000"	bit D=1 (Emergency call) bit F=1 (Queueing supported)	

Table 6.1.2.11.3.3-10: SIP INVITE (step 20, Table 6.1.2.11.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.15.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.1-1 condition re_INVITE				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
MIME body part		**SDP message**		
MIME part body	SDP Message as described in Table 6.1.1.1.3.3-10A			
Message-body				
MIME body part		MCPTT Info		
MIME part body	MCPTT-Info as described in Table 6.1.2.11.3.3-11			

Table 6.1.2.11.3.3-10A: SDP in SIP INVITE (Table 6.1.2.11.3.3-10)

Derivation Path: TS 36.579-1 [2], 5.5.3.1.1-1 condition SDP_OFFER

Table 6.1.2.11.3.3-11: MCPTT-Info in SIP INVITE (Table 6.1.2.11.3.3-10)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1, conditions INVITE_REFER, CHAT-GROUP-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
emergency-ind	"false"			

Table 6.1.2.11.3.3-12: Void

Table 6.1.2.11.3.3-13: Void

Table 6.1.2.11.3.3-14: SIP INVITE (step 31, Table 6.1.2.11.3.2-1; Step 1, TS 36.579-1 [2] Table 5.3.14.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.1-1, conditions re_INVITE, IMMPERIL-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
MIME body part		**SDP message**		
MIME part body	SDP Message as described in Table 6.1.2.11.3.3-14A			
Message-body				
MIME body part		MCPTT Info		
MIME part body	MCPTT-Info as described in Table 6.1.2.11.3.3-15			

Table 6.1.2.11.3.3-14A: SDP in SIP INVITE (Table 6.1.2.11.3.3-14)

Derivation Path: TS 36.579-1 [2], 5.5.3.1.1-1 condition SDP_OFFER, IMPLICIT_GRANT_REQUESTED

Table 6.1.2.11.3.3-15: MCPTT-Info in SIP INVITE (Table 6.1.2.11.3.3-14)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1 conditions INVITE_REFER, CHAT-GROUP-CALL and IMMPERIL-CALL

Table 6.1.2.11.3.3-16: Floor Granted (step 31, Table 6.1.2.11.3.3-1; step 5, TS 36.579-1 [2] Table 5.3.14.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1, condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"0000110000000000"	bit E=1 (Imminent Peril call) bit F=1 (Queueing supported)	

Table 6.1.2.11.3.3-16A: Floor Release (steps 38, Table 6.1.2.11.3.3-1; step 1, TS 36.579-1 [2] Table 5.3.20.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.5-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"00001x0000000000"	bit D=1 (Imminent Peril call) bit F=1 (Queueing supported)	

Table 6.1.2.11.3.3-17: Floor Idle (step 38, Table 6.1.2.11.3.3-1; step 3, TS 36.579-1 [2] Table 5.3.20.3)

Derivation Path: 36.579-1 [2], Table 5.5.6.6-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"0000110000000000"	bit E=1 (Imminent Peril call) bit F=1 (Queueing supported)	

Table 6.1.2.11.3.3-18: SIP INVITE (step 42, Table 6.1.2.11.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.15.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.1-1 condition re_INVITE				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
MIME body part		**SDP message**		
MIME part body	SDP Message as described in Table 6.1.2.11.3.3-18A			
Message-body		MCPTT Info		
MIME body part				
MIME part body	MCPTT Info as described in Table 6.1.2.11.3.3-19			

Table 6.1.2.11.3.3-18A: SDP in SIP INVITE (Table 6.1.2.11.3.3-18)

Derivation Path: TS 36.579-1 [2], 5.5.3.1.1-1 condition SDP_OFFER

Table 6.1.2.11.3.3-19: MCPTT-Info in SIP INVITE (Table 6.1.2.11.3.3-18)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1, condition CHAT-GROUP-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
imminentperil-ind	"false"			

Table 6.1.2.11.3.3-20: Void

6.1.2.12 On-network / Chat Group Call / Join Chat Group Session / Upgrade to Emergency / Cancel Emergency / Upgrade to Imminent Peril / Cancel Imminent Peril / Client Originated (CT)

6.1.2.12.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service }
ensure that {
  when { the MCPTT User requests to initiate an MCPTT On-demand Chat Group Call with implicit floor
control }
    then { UE (MCPTT Client) sends a SIP INVITE message and respects the floor control imposed by
the MCPTT Server and provides floor granted notification to the MCPTT User }
            }
```

(2)

```
with { UE (MCPTT Client) having an ongoing On-demand Chat Group Call }
ensure that {
  when { UE (MCPTT Client) receives a SIP re-INVITE message to upgrade the MCPTT group session to an
emergency condition }
```

```
    then { UE (MCPTT Client) responds with a SIP 200 (OK) message and respects the floor control
imposed by the MCPTT Server }
            }
```

(3)

```
with { UE (MCPTT Client) participating in an ongoing Emergency Chat Group Call }
ensure that {
  when { UE (MCPTT Client) receives a SIP re-INVITE message to cancel the in-progress emergency
condition }
    then { UE (MCPTT Client) responds with a SIP 200 (OK) message and respects the floor control
imposed by the MCPTT Server }
            }
```

(4)

```
with { UE (MCPTT Client) participating in an ongoing On-demand Chat Group Call }
ensure that {
  when { UE (MCPTT Client) receives a SIP re-INVITE message to upgrade the MCPTT group session to an
imminent peril condition }
    then { UE (MCPTT Client) responds with a SIP 200 (OK) message and respects the floor control
imposed by the MCPTT Server }
            }
```

(5)

```
with { UE (MCPTT Client) participating in an ongoing Emergency Chat Group Call }
ensure that {
  when { UE (MCPTT Client) receives a SIP re-INVITE message to cancel the in-progress imminent peril
condition }
    then { UE (MCPTT Client) responds with a SIP 200 (OK) message and respects the floor control
imposed by the MCPTT Server }
            }
```

(6)

```
with { UE (MCPTT Client) participating in an ongoing On-demand Pre-arranged Group Call with Manual
Commencement Mode }
ensure that {
  when { UE (MCPTT Client) receives a SIP BYE message to end the Chat Group Call }
    then { UE (MCPTT Client) responds with a SIP 200 (OK) message }
            }
```

6.1.2.12.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in TS 24.379, clauses 10.1.2.2.1.1, 10.1.2.2.1.2, 6.2.6, TS 24.380, clauses 6.2.4.2.3, 6.2.4.3.3, 6.2.4.3.2. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.379, clause 10.1.2.2.1.1]

Upon receiving a request from an MCPTT user to initiate or join an MCPTT group session using an MCPTT group identity, identifying a chat MCPTT group, the MCPTT client shall generate an initial SIP INVITE request by following the UE originating session procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

…

3) shall include the g.3gpp.mcptt media feature tag and the g.3gpp.icsi-ref media feature tag with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP INVITE request according to IETF RFC 3840 [16];

4) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

5) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP INVITE request;

6) shall include an Accept-Contact header field with the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

7) should include the "timer" option tag in the Supported header field;

8) should include the Session-Expires header field according to IETF RFC 4028 [7]. It is recommended that the refresher parameter is omitted. If included, the refresher parameter shall be set to "uac";

9) shall set the Request-URI of the SIP INVITE request to the public service identity identifying the participating MCPTT function serving the MCPTT user;

NOTE 1: The MCPTT client is configured with public service identity identifying the participating MCPTT function serving the MCPTT user.

10) may include a P-Preferred-Identity header field in the SIP INVITE request containing a public user identity as specified in 3GPP TS 24.229 [4];

…

13) shall contain an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with:

   a) the <session-type> element set to a value of "chat";

   b) the <mcptt-request-uri> element set to the group identity; and

   c) the <mcptt-client-id> element set to the MCPTT client ID of the originating MCPTT client;

NOTE 2: The MCPTT ID of the originating MCPTT user is not included in the body, as this will be inserted into the body of the SIP INVITE request that is sent by the originating participating MCPTT function.

14) shall include in the SIP INVITE request an SDP offer according to 3GPP TS 24.229 [4] with the clarifications specified in subclause 6.2.1;

15) if an implicit floor request is required, shall indicate this as specified in subclause 6.4; and

16) shall send the SIP INVITE request according to 3GPP TS 24.229 [4].

On receiving a SIP 2xx response to the SIP INVITE request, the MCPTT client:

1) shall interact with the user plane as specified in 3GPP TS 24.380 [5]; and

2) if the MCPTT emergency group call state is set to "MEGC 2: emergency-call-requested" or "MEGC 3: emergency-call-granted" or the MCPTT imminent peril group call state is set to "MIGC 2: imminent-peril-call-requested" or "MIGC 3: imminent-peril-call-granted", the MCPTT client shall perform the actions specified in subclause 6.2.8.1.4.

[TS 24.379, clause 10.1.2.2.1.2]

This subclause covers both on-demand session and pre-established sessions.

Upon receipt of a SIP re-INVITE request the MCPTT client:

1) if the SIP re-INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <emergency-ind> element set to a value of "true":

   a) should display to the MCPTT user the MCPTT ID of the originator of the MCPTT emergency group call and an indication that this is an MCPTT emergency group call;

   b) if the <mcpttinfo> element containing the <mcptt-Params> element contains an <alert-ind> element set to "true", should display to the MCPTT user an indication of the MCPTT emergency alert and associated information;

   c) shall set the MCPTT emergency group state to "MEG 2: in-progress";

d) shall set the MCPTT imminent peril group state to "MIG 1: no-imminent-peril";and

e) shall set the MCPTT imminent peril group call state to "MIGC 1: imminent-peril-gc-capable";

2) if the SIP re-INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <imminentperil-ind> element set to a value of "true":

a) should display to the MCPTT user the MCPTT ID of the originator of the MCPTT imminent peril group call and an indication that this is an MCPTT imminent peril group call; and

b) shall set the MCPTT imminent peril group state to "MIG 2: in-progress";

3) if the SIP re-INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <emergency-ind> element set to a value of "false":

a) should display to the MCPTT user the MCPTT ID of the MCPTT user cancelling the MCPTT emergency group call;

b) if the <mcpttinfo> element containing the <mcptt-Params> element contains an <alert-ind> element set to "false":

i) should display to the MCPTT user an indication of the MCPTT emergency alert cancellation and the MCPTT ID of the MCPTT user cancelling the MCPTT emergency alert; and

ii) if the SIP re-INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body including an <originated-by> element:

A) should display to the MCPTT user the MCPTT ID contained in the <originated-by> element of the MCPTT user that originated the MCPTT emergency alert; and

B) if the MCPTT ID contained in the <originated-by> element is the MCPTT ID of the receiving MCPTT user, shall set the MCPTT emergency alert state to "MEA 1: no-alert";

c) shall set the MCPTT emergency group state to "MEG 1: no-emergency"; and

d) if the MCPTT emergency group call state of the group is set to "MEGC 3: emergency-call-granted", shall set the MCPTT emergency group call state of the group to "MEGC 1: emergency-gc-capable";

4) if the SIP re-INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <imminentperil-ind> element set to a value of "false":

a) should display to the MCPTT user the MCPTT ID of the MCPTT user cancelling the MCPTT imminent peril group call and an indication that this is an MCPTT imminent peril group call;

b) shall set the MCPTT imminent peril group state to "MIG 1: no-imminent-peril"; and

c) shall set the MCPTT imminent peril group call state to "MIGC 1: imminent-peril-gc-capable";

5) may check if a Resource-Priority header field is included in the incoming SIP re-INVITE request and may perform further actions outside the scope of this specification to act upon an included Resource-Priority header field as specified in 3GPP TS 24.229 [4];

6) shall accept the SIP re-INVITE request and generate a SIP 200 (OK) response according to rules and procedures of 3GPP TS 24.229 [4];

7) shall include the g.3gpp.mcptt media feature tag in the Contact header field of the SIP 200 (OK) response;

8) shall include the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP 200 (OK) response;

9) if the SIP re-INVITE request was received within an on-demand session, shall include an SDP answer in the SIP 200 (OK) response to the SDP offer in the incoming SIP re-INVITE request according to 3GPP TS 24.229 [4] with the clarifications given in subclause 6.2.2;

10) if the SIP re-INVITE request was received within a pre-established session, shall include an SDP answer in the SIP 200 (OK) response to the SDP offer in the incoming SIP re-INVITE request according to 3GPP TS 24.229 [4], based upon the parameters already negotiated for the pre-established session; and

NOTE: The SIP re-INVITE request can be received within an on-demand session or a pre-established session associated with an MCPTT group session. If the SIP re-INVITE request is received within a pre-established session, the media-level section for the MCPTT speech media stream and the media-level section of the media-floor control entity are expected to be the same as was negotiated in the existing pre-established session.

11) shall send the SIP 200 (OK) response towards the MCPTT server according to rules and procedures of 3GPP TS 24.229 [4].

[TS 24.379, clause 6.2.6]

Upon receiving a SIP BYE request, the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5]; and

2) shall send SIP 200 (OK) response towards MCPTT server according to 3GPP TS 24.229 [4].

[TS 24.380, clause 6.2.4.2.3]

When an MCPTT call is established, the terminating floor participant:

1. shall create an instance of a 'Floor participant state transition diagram for basic operation'; and

2. shall enter the 'U: has no permission' state.

NOTE: From a floor participant perspective the MCPTT call is established when the application and signalling plane sends the SIP 200 (OK) response.

[TS 24.380, clause 6.2.4.3.3]

Upon receiving the Floor Taken message, the floor participant:

1. if the first bit in the subtype of the Floor Taken message is set to '1' (Acknowledgment is required) as described in subclause 8.3.2, shall send a Floor Ack message. The Floor Ack message:

   a. shall include the Message Type field set to '2' (Floor Taken); and

   b. shall include the Source field set to '0' (the floor participant is the source);

2. may provide a floor taken notification to the user;

3. if the Floor Indicator field is included and the B-bit is set to '1' (Broadcast group call), shall provide a notification to the user indicating the type of call;

4. should start the optional timer T103 (End of RTP media); and

5. shall remain in the 'U: has no permission' state.

[TS 24.380, clause 6.2.4.3.2]

Upon receiving a Floor Idle message, the participant:

1. if the first bit in the subtype of the Floor Idle message is set to '1' (Acknowledgment is required) as described in subclause 8.3.2, shall send a Floor Ack message. The Floor Ack message:

   a. shall include the Message Type field set to '5' (Floor Idle); and

   b. shall include the Source field set to '0' (the floor participant is the source);

2. may provide floor idle notification to the user, if it has not already done so;

3. shall stop the optional timer T103 (End of RTP media), if it is running; and

4. shall remain in the 'U: has no permission' state.

6.1.2.12.3 Test description

6.1.2.12.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)
- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.1.2.12.3.2 Test procedure sequence

Table 6.1.2.12.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the MCPTT User request the establishment of an MCPTT On-demand chat group call with implicit floor control. (NOTE 1)	-	-	-	-
2	Check: Does the UE (MCPTT client) perform the Generic Test Procedure for MCPTT CO establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.7.3-1 for the establishment of an MCPTT On-demand chat group call? Option b.ii in TS 36.579-1 [2] Table 5.3.7.3-1 is used.	-	-	1	P
3-6	Void	-		-	-
7	Check: Does the UE (MCPTT client) provide floor granted notification to the MCPTT User? (NOTE 1)	-	-	1	P
7A	Make the MCPTT User release the floor. (NOTE 1)	-	-	-	-
7B	The UE (MCPTT client) performs Generic Test Procedure for MCPTT Floor Release – Floor Idle as described in TS 36.579-1 [2] Table 5.3.20.3-1.	-	-	-	-
8	Check: Is the Generic Test Procedure for MCPTT CT session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.4.3-1 to upgrade the call to an emergency chat group call correctly performed?	-	-	2	P
9-9A	Void		-	-	-
10	The SS (MCPTT server) sends a Floor Taken messages with an acknowledgement required.	<--	Floor Taken	-	-
11	Check: Does the UE (MCPTT client) send a Floor Ack message in response to the Floor Taken message?	-->	Floor Ack	2	P
12	The SS sends a Floor Idle message with no acknowledgement required.	<--	Floor Idle	-	-
13	Check: Is the Generic Test Procedure for MCPTT CT session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.4.3-1 to cancel the emergency condition correctly performed?			3	P
14-14A	Void		-	-	-
15	The SS (MCPTT server) sends a Floor Taken messages with an acknowledgement required.	<--	Floor Taken	-	-
16	Check: Does the UE (MCPTT client) send a Floor Ack message in response to the Floor Taken message?	-->	Floor Ack	3	P
17	The SS sends a Floor Idle message with no acknowledgement required.	<--	Floor Idle	-	-
18	Check: Is the Generic Test Procedure for MCPTT CT session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.4.3-1 to upgrade the call to an imminent peril chat group call correctly performed?	-	-	4	P
19-19A	Void	-	-	-	-

20	The SS (MCPTT server) sends a Floor Taken messages with an acknowledgement required.	<--	Floor Taken	-	-
21	Check: Does the UE (MCPTT client) send a Floor Ack message in response to the Floor Taken message?	-->	Floor Ack	4	P
22	The SS sends a Floor Idle message with no acknowledgement required.	<--	Floor Idle	-	-
23	Check: Is the Generic Test Procedure for MCPTT CT session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.4.3-1 to cancel the imminent peril condition correctly performed?	-	-	5	P
24-24A	Void	-	-	-	-
25	The SS (MCPTT server) sends a Floor Taken messages with an acknowledgement required.	<--	Floor Taken	-	-
26	Check: Does the UE (MCPTT client) send a Floor Ack message in response to the Floor Taken message?	-->	Floor Ack	5	P
27	The SS sends a Floor Idle message with no acknowledgement required.	<--	Floor Idle	-	-
28	Check: Is the Generic Test Procedure for MCPTT CT call release as described in TS 36.579-1 [2] Table 5.3.12.3-1 to end the On-demand Pre-arranged Group Call correctly performed?	-	-	6	P
29	Void	--	-	-	-

NOTE 1: This is expected to be done via a suitable implementation dependent MMI.

6.1.2.12.3.3 Specific message contents

Table 6.1.2.12.3.3-1: SIP INVITE (step 2, Table 6.1.2.12.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.7.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		SDP message		
MIME-part-body	SDP Message as described in Table 6.1.2.12.3.3-1A			
MIME body part		MCPTT Info		
MIME part body	MCPTT Info as described in Table 6.1.2.12.3.3-2			

Table 6.1.2.12.3.3-1A: SDP in SIP INVITE (Tables 6.1.2.12.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.1.1-1, conditions INITIAL_SDP_OFFER and IMPLICIT_GRANT_REQUESTED

Table 6.1.2.12.3.3-1B: SIP 200 (OK) (step 2, Table 6.1.2.12.3.3-1; step 4, TS 36.579-1 [2] Table 5.3.7.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.17.1.2-1 condition INVITE-RSP				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
SDP Message	As described in Table 6.1.2.12.3.3-1C			

Table 6.1.2.12.3.3-1C: SDP in SIP 200 (OK) (Table 6.1.2.12.3.3-1B)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.1.2-1 conditions SDP_ANSWER, IMPLICIT_GRANT_REQUESTED

Table 6.1.2.12.3.3-2: MCPTT-Info in SIP INVITE (Table 6.1.2.12.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2-1, conditions INVITE_REFER, CHAT-GROUP-CALL

Table 6.1.2.12.3.3-3: Floor Granted (step 2, Table 6.1.2.12.3.3-1; step 6a1, TS 36.579-1 [2] Table 5.3.7.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1, condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	"00001"	Acknowledgment is not required for Floor Granted message	

Table 6.1.2.12.3.3-4: SIP INVITE (step 8, Table 6.1.2.12.3.3-1; step 2, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.2-1 conditions re_INVITE, EMERGENCY-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		MCPTT Info		
MIME part body	MCPTT Info as described in Table 6.1.2.12.3.3-5			

Table 6.1.2.12.3.3-5: MCPTT-INFO in SIP INVITE (Table 6.1.2.12.3.3-4)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.22.2.2-1 conditions CHAT-GROUP-CALL and EMERGENCY-CALL

Table 6.1.2.12.3.3-6: Floor Taken (step 10, Table 6.1.2.12.3.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.7-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	"10010"	Acknowledgment required for Floor Taken message	
Floor Indicator			
Floor Indicator	"0001010000000000"	bit D=1 (Emergency call) bit F=1 (Queueing supported)	

Table 6.1.2.12.3.3-7: Floor Ack (steps 11, 16, 21, 26, Table 6.1.2.12.3.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.11-1 condition UPLINK			
Information Element	**Value/remark**	**Comment**	**Condition**
Message Type			
Message Type	"00010010"	Floor Ack message for Floor Taken message which requested acknowledgment	

Table 6.1.2.12.3.3-8: Floor Idle (step 12, Table 6.1.2.12.3.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.6-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"0001010000000000"	bit D=1 (Emergency call) bit F=1 (Queueing supported)	

Table 6.1.2.12.3.3-9: SIP INVITE (step 13, Table 6.1.2.12.3.3-1; step 2, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.2-1 condition re_INVITE				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body		MCPTT Info		
MIME body part				
MIME part body	MCPTT Info as described in Table 6.1.2.12.3.3-10			

Table 6.1.2.12.3.3-10: MCPTT-INFO in SIP INVITE (Table 6.1.2.12.3.3-9)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.22.2.2-1 condition CHAT-GROUP-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
emergency-ind	"false"			
alert-ind	"false"			

Table 6.1.2.12.3.3-11: Floor Taken (steps 15, 25, 6.1.2.12.3.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.7-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	"10010"	Acknowledgment required for Floor Taken message	

Table 6.1.2.12.3.3-12: Floor Idle (steps 17, 27, Table 6.1.2.12.3.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.6-1

Table 6.1.2.12.3.3-13: SIP INVITE (step 18, Table 6.1.2.12.3.3-1; step 2, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.2-1 conditions re_INVITE, IMMPERIL-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body		MCPTT Info		
MIME body part				
MIME part body	MCPTT Info as described in Table 6.1.2.12.3.3-14			

Table 6.1.2.12.3.3-14: MCPTT-INFO in SIP INVITE (Table 6.1.2.12.3.3-13)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.22.2.2-1 conditions CHAT-GROUP-CALL and IMMPERIL-CALL

Table 6.1.2.12.3.3-15: Floor Taken (step 20, Table 6.1.2.12.3.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.7-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	"10010"	Acknowledgment required for Floor Taken message	
Floor Indicator			
Floor Indicator	"0000110000000000"	bit E=1 (Imminent Peril call) bit F=1 (Queueing supported)	

Table 6.1.2.12.3.3-16: Floor Idle (step 22, Table 6.1.2.12.3.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.6-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"0000110000000000"	bit E=1 (Imminent Peril call) bit F=1 (Queueing supported)	

Table 6.1.2.12.3.3-17: SIP INVITE (step 23, Table 6.1.2.12.3.3-1; step 2, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.2-1 condition re_INVITE,				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		MCPTT Info		
MIME part body	MCPTT Info as described in Table 6.1.2.12.3.3-18			

Table 6.1.2.12.3.3-18: MCPTT-INFO in SIP INVITE (Table 6.1.2.12.3.3-17)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.22.2.2-1 condition CHAT-GROUP-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
imminentperil-ind	"false"			

Table 6.1.2.12.3.3-19: Void

6.2 Private Calls

6.2.1 On-network / Private Call / On-demand / Automatic Commencement Mode / With Floor Control / Upgrade to Emergency Call / Cancellation of Emergency on User request / Client Originated (CO)

6.2.1.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including authorized to
initiate/cancel private and private emergency calls with automatic commencement }
```

```
ensure that {
  when { the MCPTT User requests the establishment of an MCPTT private call, on-demand Automatic
Commencement Mode, no Force of automatic commencement, applying End-to-end communication security
with Floor Control }
    then { UE (MCPTT Client) sends a SIP INVITE message requesting private call on-demand Automatic
Commencement Mode, applying End-to-end communication security, and offering a media-level section
for a media-floor control entity, and, after indication from the MCPTT Server that the call was
established notifies the user }
            }
```

(2)

```
with { UE (MCPTT Client) having established an MCPTT private call, on-demand Automatic Commencement
Mode with Floor Control }
ensure that {
  when { the MCPTT User engages in communication with the invited MCPTT User }
    then { UE (MCPTT Client) respects the floor control imposed by the MCPTT Server (Floor
granting/release/deny) applying Floor Control confidentiality and integrity protection }
            }
```

(3)

```
with { UE (MCPTT Client) having established an MCPTT private call, on-demand Automatic Commencement
Mode with Floor Control }
ensure that {
  when { the MCPTT User wants to upgrade the ongoing MCPTT private call to an MCPTT emergency
private call with floor control }
    then { UE (MCPTT Client) sends a SIP re-INVITE message requesting private emergency call on-
demand Automatic Commencement Mode offering a media-level section for a media-floor control entity,
and, upon receipt of a SIP 200 (OK) response considers the call as being upgraded to emergency
private call (emergency private call state = "MEPC 3: emergency-pc-granted") }
            }
```

(4)

```
with { UE (MCPTT Client) having upgraded an MCPTT private call, on-demand Automatic Commencement
Mode with Floor Control to emergency private call with floor control }
ensure that {
  when { the MCPTT User engages in communication with the invited MCPTT User }
    then { UE (MCPTT Client) respects the floor control imposed by the MCPTT Server including
override of the invited MCPTT user (who is not in MCPTT emergency state) and applying Floor Control
confidentiality and integrity protection }
            }
```

(5)

```
with { UE (MCPTT Client) having upgraded an MCPTT private call, on-demand Automatic Commencement
Mode with Floor Control to emergency private call with floor control }
ensure that {
  when { the MCPTT User wants to cancel the ongoing MCPTT emergency private call }
    then { UE (MCPTT Client) sends a SIP re-INVITE request requesting the emergency state
cancellation, and. upon receipt of a SIP 200 (OK) response considers the emergency condition
cancelled and the call being reverted back to MCPTT Private Call }
            }
```

(6)

```
with { UE (MCPTT Client) having an ongoing MCPTT private call, on-demand Automatic Commencement Mode
with Floor Control }
ensure that {
  when { the MCPTT User wants to terminate the ongoing MCPTT private call }
    then { UE (MCPTT Client) sends a SIP BYE request and after receiving a SIP 200 (OK) leaves the
MCPTT session }
            }
```

6.2.1.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: TS 24.379 clauses 4.6.2, 4.7, 6.2.1, 6.2.5.1, 6.2.8.3.4, 6.2.8.3.6, 11.1.1.2.1.1, 11.1.1.2.1.4, 11.1.1.2.1.5, 11.1.3.1.1.1, TS 24.380 clauses 4.1.1.2, 5.2.1, 5.2.2, 12.1.2.2, 13.1, 13.3.3, TS 33.180, clause 5.3.4. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 4.6.2]

Key aspects of MCPTT emergency private calls include:

- adjusted EPS bearer priority for both participants whether or not they are both in an emergency condition (i.e. both have their MCPTT emergency state set). This is achieved by using the Resource-Priority header field as specified in IETF RFC 4412 [29] with namespaces defined for use by MCPTT specified in draft-holmberg-dispatch-mcptt-rp-namespace [48];

- the initiator of the MCPTT emergency private call can override the other MCPTT user in the MCPTT emergency private call unless that user also has their MCPTT emergency state set;

...

- restoration of normal floor control priority participants when the emergency elevated priority is cancelled;

- requires the MCPTT user to be authorised to either originate or cancel an MCPTT emergency private call;

...

- the originator of the MCPTT emergency private call can request that the call use either manual or automatic commencement mode.

[TS 24.379, clause 4.7]

If a mission critical organisation requires MCPTT users to communicate using end-to-end security, a security context needs to be established between the initiator of the call and the recipient(s) of the call, prior to the establishment of media, or floor control signalling. This provides assurance to MCPTT users that no unauthorised access to communications is taking place within the MCPTT network. An MCPTT key management server (KMS) manages the security domain. For any end-point to use or access end-to-end secure communications, it needs to be provisioned with keying material associated to its identity by the KMS as specified in 3GPP TS 33.179 [46].

...

For private calls, the security context is initiated at call setup. An end-to-end security context is established that is unique to the pair of users involved in the call. The procedure involves transferral of an encapsulated private call key (PCK) and private call key id (PCK-ID) from the initiator to the terminator. The PCK is encrypted using the terminator's MCPTT ID and domain-specific material provided from the KMS. The PCK and PCK-ID are distributed within a MIKEY payload within the SDP offer of the private call request. This payload is called a MIKEY-SAKKE I_MESSAGE, as defined in IETF RFC 6509 [75], which ensures the confidentiality, integrity and authenticity of the payload. The encoding of the MIKEY payload in the SDP offer is described in IETF RFC 4567 [47] using an "a=key-mgmt" attribute. The payload is signed using a key associated to the identity of the initiating user. At the terminating side, the signature is validated. If valid, the UE extracts and decrypts the encapsulated PCK. The MCPTT UE also extracts the PCK-ID. This process is described in 3GPP TS 33.179 [46]. With the PCK successfully shared between the two MCPTT UEs, the UEs are able to use SRTP/SRTCP to create an end-to-end secure session.

End-to-end security is independent of the transmission path and hence is applicable to both on and off-network communications. With a security context established, the group call key and private call key can be used to encrypt media and, if required, floor control traffic between the end-points as described in 3GPP TS 24.380 [5] clause 13.

[TS 33.179, clause 5.3.4]

End-to-end communication security for either group or private calls requires the provisioning of key material from the KMS. The key material provisioned to each user is listed below:

- A KMSInit Response contains the Home KMS Certificate (domain specific key material associated to the KMS), and may contain:
  - An updated TrK for the user (to replace the offline-provisioned, bootstrap TrK).
- A KMSKeyProv Response contains zero, or more, KMSKeySets and may contain:
  - An updated TrK for the user (to replace existing TrK).
- A KMSCertCache Response may contain:
  - Home KMS Certificate(s) (current, updated or future).

- External KMS Certificates. This is domain specific key material associated with other KMSs. It is required to enable secure communications across security domains.

[TS 24.379, clause 6.2.1]

The SDP offer shall contain only one SDP media-level section for MCPTT speech according to 3GPP TS 24.229 [4] and, if floor control shall be used during the session, shall contain one SDP media-level section for a media-floor control entity according to 3GPP TS 24.380 [5].

When composing an SDP offer according to 3GPP TS 24.229 [4] the MCPTT client:

1) shall set the IP address of the MCPTT client for the offered MCPTT speech media stream and, if floor control shall be used, for the offered media-floor control entity;

NOTE: If the MCPTT client is behind a NAT the IP address and port included in the SDP offer can be a different IP address and port than the actual IP address and port of the MCPTT client depending on the NAT traversal method used by the SIP/IP Core.

2) shall include an "m=audio" media-level section for the MCPTT media stream consisting of:

   a) the port number for the media stream selected; and

   b) the codec(s) and media parameters and attributes with the following clarification:

      ...

   c) "i=" field set to "speech" according to 3GPP TS 24.229 [4];

3) if floor control shall be used during the session, shall include an "m=application" media-level section as specified in 3GPP TS 24.380 [5] clause 12 for a media-floor control entity, consisting of:

   a) the port number for the media-floor control entity selected as specified in 3GPP TS 24.380 [5]; and

   b) the 'fmtp' attributes as specified in 3GPP TS 24.380 [5] clause 14; and

4) if end-to-end security is required for a private call and the SDP offer is not for establishing a pre-established session, shall include the MIKEY-SAKKE I_MESSAGE in an "a=key-mgmt" attribute as a "mikey" attribute value in the SDP offer as specified in IETF RFC 4567 [47].

[TS 24.379, clause 6.2.5.1]

When the MCPTT client wants to release an MCPTT session established using on-demand session signalling, the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

2) shall generate a SIP BYE request according to 3GPP TS 24.229 [4];

3) shall set the Request-URI to the MCPTT session identity to release; and

4) shall send a SIP BYE request towards MCPTT server according to 3GPP TS 24.229 [4].

Upon receiving a SIP 200 (OK) response to the SIP BYE request, the MCPTT client shall interact with the media plane as specified in 3GPP TS 24.380 [5].

[TS 24.379, clause 6.2.8.3.4]

On receiving a SIP 2xx response to a SIP request for an MCPTT emergency private call and if the MCPTT emergency private call state is set to "MEPC 2: emergency-pc-requested" or "MEPC 3: emergency-pc-granted", the MCPTT client:

1) shall set the MCPTT emergency private priority state of the call to "MEPP 2: in-progress" if it was not already set;

2) shall set the MCPTT emergency private call state to "MEPC 3: emergency-pc-granted"; and

[TS 24.379, clause 6.2.8.3.6]

When the MCPTT emergency private call state is set to "MEPC 3: emergency-pc-granted" and the MCPTT emergency alert state is set to "MPEA 1: no-alert", the MCPTT client shall generate a SIP re-INVITE request according to 3GPP TS 24.229 [4] with the clarifications given below.

NOTE 1: This procedure assumes that the MCPTT client in the calling procedure has verified that the MCPTT user has made an authorised request for cancelling MCPTT the in-progress emergency private call state of the call.

The MCPTT client:

1) shall include in the SIP re-INVITE request an application/vnd.3gpp.mcptt-info+xml MIME body as defined in clause F.1 with the <emergency-ind> element set to "false";

2) shall clear the MCPTT emergency state; and

3) shall set MCPTT emergency private priority state of the MCPTT emergency private call to "MEPP 3: cancel-pending".

NOTE 2: This is the case of an MCPTT user who has initiated an MCPTT emergency private call and wants to cancel it.

[TS 24.379, clause 11.1.1.2.1.1]

Upon receiving a request from an MCPTT user to establish an MCPTT private call the MCPTT client shall generate an initial SIP INVITE request by following the UE originating session procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

1) shall set the Request-URI of the SIP INVITE request to a public service identity of the participating MCPTT function serving the MCPTT user;

...

3) may include a P-Preferred-Identity header field in the SIP INVITE request containing a public user identity as specified in 3GPP TS 24.229 [4];

4) shall include the g.3gpp.mcptt media feature tag and the g.3gpp.icsi-ref media feature tag with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP INVITE request according to IETF RFC 3840 [16];

5) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

6) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP INVITE request;

7) shall include an Accept-Contact header field with the media feature tag g.3gpp.icsi-ref contain with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with parameters "require" and "explicit" according to IETF RFC 3841 [6];

8) shall insert in the SIP INVITE request a MIME resource-lists body with the MCPTT ID of the invited MCPTT user, according to rules and procedures of IETF RFC 5366 [20];

9) if an end-to-end security context needs to be established then:

   a) if necessary, shall instruct the key management client to request keying material from the key management server as described in 3GPP TS 33.179 [46];

   b) shall use the keying material to generate a PCK as described in 3GPP TS 33.179 [46];

   c) shall use the PCK to generate a PCK-ID with the four most significant bits set to "0001" to indicate that the purpose of the PCK is to protect private call communications and with the remaining twenty eight bits being randomly generated as described in 3GPP TS 33.179 [46];

d) shall encrypt the PCK to a UID associated to the MCPTT client using the MCPTT ID of the invited user and a time related parameter as described in 3GPP TS 33.179 [46];

e) shall generate a MIKEY-SAKKE I_MESSAGE using the encapsulated PCK and PCK-ID as specified in 3GPP TS 33.179 [46]; and

g) shall add the MCPTT ID of the originating MCPTT to the initiator field (IDRi) of the I_MESSAGE as described in 3GPP TS 33.179 [46]; and

f) shall sign the MIKEY-SAKKE I_MESSAGE using the originating MCPTT user's signing key provided in the keying material together with a time related parameter, and add this to the MIKEY-SAKKE payload, as described in 3GPP TS 33.179 [46].

10) shall include an SDP offer according to 3GPP TS 24.229 [4] with the clarification given in subclause 6.2.1 and with a media stream of the offered media-floor control entity;

11) if implicit floor control is required, shall comply with the conditions specified in subclause 6.4;

...13) if force of automatic commencement mode at the invited MCPTT client is not requested by the MCPTT user and:

a) if automatic commencement mode at the invited MCPTT client is requested by the MCPTT user, shall include in the SIP INVITE request an Answer-Mode header field with the value "Auto" according to the rules and procedures of IETF RFC 5373 [18]; and

...

14) shall contain an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <session-type> element set to a value of "private";

...

16) shall send SIP INVITE request towards the MCPTT server according to 3GPP TS 24.229 [4].

Upon receiving a SIP 183(Session Progress) response to the SIP INVITE request the MCPTT client:

1) may indicate the progress of the session establishment to the inviting MCPTT user.

Upon receiving a SIP 200 (OK) response to the SIP INVITE request the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

...

3) shall notify the user that the call has been successfully established.

[TS 24.379, clause 11.1.1.2.1.4]

Upon receiving a request from an MCPTT user to cancel the in-progress emergency condition on an MCPTT emergency private call, the MCPTT client shall generate a SIP re-INVITE request by following the UE session procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

1) if the MCPTT user is not authorised to cancel the in-progress emergency condition on an MCPTT emergency private call as determined by the procedures of subclause 6.2.8.3.1.2, the MCPTT client:

a) should indicate to the MCPTT user that they are not authorised to cancel the in-progress emergency condition on an MCPTT emergency private call; and

b) shall skip the remaining steps of the current subclause;

2) shall, if the MCPTT user is cancelling an in-progress emergency condition and optionally an MCPTT emergency alert originated by the MCPTT user, include an application/vnd.3gpp.mcptt-info+xml MIME body populated as specified in subclause 6.2.8.3.6;

...

4) shall include a Resource-Priority header field and comply with the procedures in subclause 6.2.8.3.3;

5) shall include in the SIP re-INVITE request an SDP offer the media parameters as currently established;

NOTE 1: The SIP re-INVITE request can be sent within an on-demand session or a pre-established session associated with an MCPTT group session. If the SIP re-INVITE request is sent within a pre-established session, the media-level section for the offered MCPTT speech media stream and the media-level section of the offered media-floor control entity are expected to be the same as was negotiated in the existing pre-established session.

6) if an implicit floor request is required, shall indicate this as specified in subclause 6.4; and

7) shall send the SIP re-INVITE request according to 3GPP TS 24.229 [4].

On receiving a SIP 2xx response to the SIP re-INVITE request, the MCPTT client:

1) shall interact with the user plane as specified in 3GPP TS 24.380 [5];

2) shall set the MCPTT emergency private priority state of the MCPTT private call to "MEPP 1: no-emergency";

3) shall set the MCPTT emergency private call state of the call to "MEPC 1: emergency-pc-capable"; and

[TS 24.379, clause 11.1.1.2.1.5]

Upon receiving a request from an MCPTT user to upgrade the ongoing MCPTT private call to an MCPTT emergency private call, the MCPTT client shall generate a SIP re-INVITE request as specified in 3GPP TS 24.229 [4], with the clarifications given below.

1) shall include an application/vnd.3gpp.mcptt-info+xml MIME body populated as specified in subclause 6.2.8.3.2;

2) shall include a Resource-Priority header field and comply with the procedures in subclause 6.2.8.3.3.

3) shall include an SDP offer with the media parameters as currently established according to 3GPP TS 24.229 [4];

NOTE: The SIP re-INVITE request can be sent within an on-demand session or a pre-established session associated with an MCPTT private call. If the SIP re-INVITE request is sent within a pre-established session, the media-level section for the offered MCPTT speech media stream and the media-level section of the offered media-floor control entity are expected to be the same as was negotiated in the existing pre-established session.

4) if an implicit floor request is required, shall indicate this as specified in subclause 6.4; and

5) shall send the SIP re-INVITE request according to 3GPP TS 24.229 [4].

On receiving a SIP 2xx response to the SIP re-INVITE request the MCPTT client:

1) shall interact with the user plane as specified in 3GPP TS 24.380 [5]; and

2) shall perform the actions specified in subclause 6.2.8.3.4.

[TS 24.379, clause 11.1.3.1.1.1]

Upon receiving a request from an MCPTT user to release an MCPTT private call session established using on-demand session signalling, the MCPTT client shall follow the procedures as specified in subclause 6.2.5.1.

[TS 24.380, clause 4.1.1.2]

At any point in time a group member can request permission to talk.

When all group members are silent, a group member can press the PTT button, meaning the request for permission to talk. The floor participant entity of this user reflects this request to the floor control server by sending a Floor Request message. If the floor control server decides to permit, it informs this permission for this request by sending a Floor Granted message to the requesting group member. The floor control server informs the initiation of the talk to the other group members by sending a Floor Taken message. Once the group member receives the permission, a permission indication (permission tone) is generated and the user can talk. The media packets (encoded voice) are sent to the controlling MCPTT server and from there they are distributed to all listeners of this group. The release of the PTT button indicates the user’s intension to end talking. Once the PTT button is released, the floor participant sends a Floor

Release message to the floor control server indicating that this user has finished talking. This cycle, starting from the Floor Granted message and ending with Floor Release message, is known as 'talk burst' or 'media burst'.

In the beginning of a call the initial talk permission request can be implied by the SIP message which initiates the call as specified in 3GPP TS 24.379 [2] without any specific Floor Request message.

A group member can also request for permission to talk by sending a Floor Request message during a talk burst. The floor control server can resolve this request in several ways.

1. If this request has higher priority than the ongoing talk burst, the floor control server revokes the current talk burst by sending a Floor Revoke message to the current talker. The current talker is interrupted and the current media burst is ended by the current floor participant by sending a Floor Release message. Then the floor control server sends a Floor Granted message to the revoking user and send Floor Taken message to other group members. Then a new media burst starts.

2. If this request does not have higher priority and floor request queuing is not used the floor control server rejects this request by sending a Floor Deny message to the requester. Then a reject indication (reject tone) is generated for the user. The ongoing talk burst continues.

...

During silence (when no talk burst is ongoing), the floor control server can send Floor Idle message to all floor participants from time to time. The floor control server sends Floor Idle message in the beginning of silence.

[TS 24.380, clause 5.2.1]

To be compliant with the procedures in the present document, an MCPTT client shall:

1. support the role of an MCPTT client as specified 3GPP TS 23.179 [5];

2. support the on-network MCPTT client role as specified in 3GPP TS 24.379 [2];

...

4. support media plane security as specified in clause 13.

To be compliant with the on-network procedures in the present document, an MCPTT client shall:

1. provide the role of a floor participant in on-network mode as specified in subclause 5.2.2;

2. provide the media mixer function as described in subclause 4.2.2 and support the related procedures in subclause 6.2;

...

4. provide PTT button events towards the on-network floor participant as specified in subclause 6.2;

5. provide means (sound, display, etc.) for indications towards the MCPTT user as specified in subclause 6.2;

6. support negotiating media plane control channel media level attributes as specified in subclause 4.3; and

[TS 24.380, clause 5.2.2]

To be compliant with the on-network procedures in the present document, a floor participant in on-network mode shall:

1. support the on-network floor control procedures as defined in 3GPP TS 23.179 [5];

2. support acting as an on-network floor participant as specified in subclause 6.2; and

3. support the on-network mode floor control protocol elements as specified in the clause 8.

A floor participant in on-network mode may:

1. support queuing of floor requests as specified in subclause 6.2 and subclause 4.1.1.2.

[TS 24.380, clause 12.1.2.2]

In an SDP offer, the "mc_priority" fmtp attribute indicates (using an integer value between '1' and '255') the maximum floor priority that the offerer requests to be used with Floor Request messages sent by the offerer. In an SDP answer, the attribute parameter indicates the maximum priority level that the answerer has granted to the offerer. The value has to be equal or less than the value provided in the associated SDP offer.

NOTE 1: If the "mc_priority" fmtp attribute is not used within an SDP offer or answer, a default priority value is assumed.

In an SDP offer, the "mc_granted" fmtp attribute parameter indicates that the offerer supports the procedure where the answerer indicates, using the fmtp attribute in the associated SDP answer, that the floor has been granted to the offerer.

NOTE 2: When the "mc_granted" fmtp attribute is used in an SDP offer, it does not indicate an actual request for the floor. The SDP "mc_implicit_request" fmtp attribute can be used to request the floor. In an SDP answer, the attribute indicates that the floor has been granted to the offerer.

NOTE 3: Once the offerer has been granted the floor, the offerer has the floor until it receives a Floor Revoke message, or until the offerer itself releases the floor by sending a Floor Release message, as described in the present specification.

In an SDP offer, the "mc_implicit_request" fmtp attribute indicates that the offerer implicitly requests the floor (without the need to send a Floor Request message). In an SDP answer, the attribute parameter indicates that the answerer has accepted the implicit floor request. Once the answerer grants the floor to the offerer, the answerer will send a Floor Granted message.

NOTE 4: The usage of the "mc_implicit_request" fmtp attribute in an SDP answer does not mean that the answerer has granted the floor to the offerer, only that the answerer has accepted the implicit floor request.

[TS 24.380, clause 13.1]

Media plane security provides integrity and confidentiality protection of individual media streams and media plane control messages in MCPTT sessions.

The media plane security is based on 3GPP MCPTT security solution including key management and end-to-end media and floor control messages protection as defined in 3GPP TS 33.179 [14].

Various keys and associated key identifiers protect:

1. RTP transported media;
2. RTCP transported media control messages (i.e. RTCP SR packets, RTCP RR packets, RTCP SDES packets);
3. RTCP APP transported floor control messages;

...

In an on-network private call:

1. if protection of media is negotiated, the PCK and the PCK-ID protect media sent and received by the MCPTT clients;
2. if protection of floor control messages sent using unicast between the MCPTT client and the participating MCPTT function serving the MCPTT client is negotiated, the CSK and the CSK-ID protect the floor control messages sent and received by the MCPTT client and by the participating MCPTT function;

...

4. if protection of media control messages sent using unicast between the MCPTT client and the participating MCPTT function serving the MCPTT client is negotiated, the CSK and the CSK-ID protect the media control messages sent and received using unicast by the MCPTT client and by a participating MCPTT function; and

...

The CSK and the CSK-ID are generated by the MCPTT client and provided to the participating MCPTT function serving the MCPTT client using SIP signalling according to 3GPP TS 24.379 [2].

..

The PCK and the PCK-ID are generated by the MCPTT client initiating the private call and provided to the MCPTT client receiving the private call using SIP signalling according to 3GPP TS 24.379 [2], using Connect message described in subclause 8.3.4 or using MONP signalling according to 3GPP TS 24.379 [2].

[TS 24.380, clause 13.3.3]

3. in an on-network private call:

   A) if:

      i) protection of media is negotiated in originating call and the PCK and the PCK-ID were sent to the remote MCPTT client using SIP signalling according to 3GPP TS 24.379 [2]; or

      ...

      then:

      i) shall encrypt sent media according to IETF RFC 3711 [16] and 3GPP TS 33.179 [14] using SRTP-MK, SRTP-MS and SRTP-MKI generated using the PCK and PCK-ID as specified in subclause 13.2; and

      ii) shall decrypt received media according to IETF RFC 3711 [16] and 3GPP TS 33.179 [14] using SRTP-MK, SRTP-MS and SRTP-MKI generated using the PCK and PCK-ID as specified in subclause 13.2;

   B) if protection of floor control messages is negotiated and the CSK and the CSK-ID were sent to the participating MCPTT function using SIP signalling according to 3GPP TS 24.379 [2]:

      i) shall encrypt sent floor control messages according to IETF RFC 3711 [16] and 3GPP TS 33.179 [14] using SRTP-MK, SRTP-MS and SRTP-MKI generated using the CSK and CSK-ID as specified in subclause 13.2; and

      ii) shall decrypt received floor control messages according to IETF RFC 3711 [16] and 3GPP TS 33.179 [14] using SRTP-MK, SRTP-MS and SRTP-MKI generated using the CSK and CSK-ID as specified in subclause 13.2; and

   D) if protection of media control messages sent using unicast between the participating MCPTT function and the MCPTT client is negotiated and the CSK and the CSK-ID were sent to the participating MCPTT function using SIP signalling according to 3GPP TS 24.379 [2]:

      i) shall encrypt media control messages sent using unicast according to IETF RFC 3711 [16] and 3GPP TS 33.179 [14] using SRTP-MK, SRTP-MS and SRTP-MKI generated using the CSK and CSK-ID as specified in subclause 13.2; and

      ii) shall decrypt media control messages received using unicast according to IETF RFC 3711 [16] and 3GPP TS 33.179 [14] using SRTP-MK, SRTP-MS and SRTP-MKI generated using the CSK and CSK-ID as specified in subclause 13.2;

6.2.1.3 Test description

6.2.1.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)

- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.2.1.3.2 Test procedure sequence

Table 6.2.1.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the UE (MCPTT User) request the establishment of an MCPTT private call, on-demand Automatic Commencement Mode, no Force of automatic commencement, applying End-to-end communication security with Floor Control. (NOTE 1)	-	-	-	-
2	Check: Does the UE (MCPTT client) perform the generic test procedure for MCPTT CO session establishment/modification as described in TS 36.579-1 [2] Table 5.3.7.3-1 to establish an MCPTT private call, on-demand Automatic Commencement Mode, no Force of automatic commencement, applying End-to-end communication security with Floor Control? Option b.ii of NOTE 1 in TS 36.579.1 [2] Table 5.3.7.3-1 is applied.	-	-	1, 2	P
3-5	Void	-	-	-	-
5A	Check: Does the UE (MCPTT client) provide floor granted notification to the MCPTT User? (NOTE 1)	-	-	1	P
6	Make the UE (MCPTT User) release the floor. (NOTE 1)	-	-	-	-
7	Check: Does the UE (MCPTT client) perform the generic test procedure for MCPTT Floor Release – Floor Taken as described in TS 36.579-1 [2] Table 5.3.21.3-1?	-	-	2	P
8-9	Void	-	-	-	-
10	Make the UE (MCPTT User) request the floor. (NOTE 1)	-	-	-	-
11	Check: Does the UE (MCPTT client) perform generic for MCPTT Floor Request – Floor Deny as described in TS 36.579-1 [2] Table 5.3.19.3-1?	-	-	2	P
12	Void	-	-	-	-
13	Make the UE (MCPTT User) release the floor. (NOTE 1)	-	-	-	-
14	The SS (MCPTT server) sends a Floor Idle message.	<--	Floor Idle	-	-
15	Make the UE (MCPTT User) request the floor (NOTE 1)	-	-	-	-
16	Check: Does the UE (MCPTT client) perform generic procedure for MCPTT Floor Request – Floor Granted as described in TS 36.579-1 [2] Table 5.3.16.3-1?	-	-	2	P
17	Void	-	-	-	-
18	Make the UE (MCPTT User) release the floor. (NOTE 1)	-	-	-	-
18A	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Release – Floor Idle as described in TS 36.579-1 [2] Table 5.3.20.3-1?	-	-	2	P
19	Make the UE (MCPTT User) request upgrade of the ongoing private call to MCPTT emergency private call. (NOTE 1).	-	-	-	-
20	Check: Does the UE (MCPTT client) perform the generic test procedure for MCPTT CO session modification with implicit Floor Control as described in TS 36.579-1 [2] Table 5.3.14.3-1 to upgrade the call to an MCPTT private emergency call?	-	-	3, 4	P
21-22	Void	-	-	-	-

22 A	The UE (MCPTT client) provides floor granted notification to the MCPTT User. (NOTE 1)	-	-	-	-
23	Make the UE (MCPTT User) release the floor (NOTE 1)	-	-	-	-
24	Check: Does the UE (MCPTT client) perform the generic test procedure for MCPTT Floor Release – Floor Taken as described in TS 36.579-1 [2] Table 5.3.21.3-1?	-	-	4	P
25-26	Void	-	-	-	-
27	Make the UE (MCPTT User) request the floor. (NOTE 1):	-	-	-	-
28	Check: Does the UE (MCPTT client) perform the generic test procedure for MCPTT Floor Request – Floor Granted as described in TS 36.579-1 [2] Table 5.3.16.3-1?	-	-	4	P
29	Void	-	-	-	-
30	Make the UE (MCPTT User) release the floor. (NOTE 1)	-	-	-	-
31	Check: Does the UE (MCPTT client) perform the generic test procedure for MCPTT Floor Release – Floor Idle as described in TS 36.579-1 [2] Table 5.3.20.3-1?	-	-	4	P
32	Void	-	-	-	-
33	Make the UE (MCPTT User) request cancelling of MCPTT emergency private call. (NOTE 1)	-	-	-	-
34	Check: Does the UE (MCPTT client) perform the generic test procedure for MCPTT CO session modification without implicit Floor Control as described in TS 36.579-1 [2] Table 5.3.15.3-1 to cancel the private emergency call?	-	-	5	P
35-36	Void	-	-	-	-
36 A	Make the UE (MCPTT User) request the floor (NOTE 1)	-	-	-	-
36 B	Check: Does the UE (MCPTT client) perform the generic test procedure for MCPTT Floor Request – Floor Granted as described in TS 36.579-1 [2] Table 5.3.16.3-1?	-	-	2	P
37	Make the UE (MCPTT User) release the PTT button indicating end of talking. (NOTE 1)	-	-	-	-
38	Check: Does the UE (MCPTT client) perform the generic test procedure for MCPTT Floor Release – Floor Idle as described in TS 36.579-1 [2] Table 5.3.20.3-1?	-	-	2	P
39	Void	-	-	-	-
40	Make the UE (MCPTT User) request termination of the MCPTT private call. (NOTE 1)	-	-	-	-
41	Check: Does the UE (MCPTT Client) perform the generic test procedure for MCPTT CO call release as described in TS 36.579-1 [2] Table 5.3.10.3-1 to end the private call?	-	-	5	P
42-43	Void	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI					

6.2.1.3.3 Specific message contents

Table 6.2.1.3.3-1: SIP INVITE (Step 2, Table 6.2.1.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.7.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.5.1-1, condition PRIVATE-CALL

Table 6.2.1.3.3-1A: Floor Granted (step 2, Table 6.2.1.3.2-1; step 6a1, TS 36.579-1 [2] Table 5.3.7.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1, condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	"00001"	Acknowledgment is not required for Floor Granted message	

Table 6.2.1.3.3-2: SIP INVITE (Step 20, Table 6.2.1.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.14.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.5.1-1, conditions re_INVITE, PRIVATE-CALL, EMERGENCY-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		MCPTT Info		
MIME-part-body	MCPTT-Info as described in Table 6.2.1.3.3-3			

Table 6.2.1.3.3-3: MCPTT-Info in SIP INVITE (Table 6.2.1.3.3-2)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.2.1-1, conditions INVITE_REFER, PRIVATE-CALL and EMERGENCY-CALL

Table 6.2.1.3.3-4: SIP INVITE (Step 34, Table 6.2.1.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.15.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.5.1-1 conditions re_INVITE, PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		MCPTT Info		
MIME part body	MCPTT-Info as described in Table 6.2.1.3.3-5			

Table 6.2.1.3.3-5: MCPTT-Info in SIP INVITE (Table 6.2.1.3.3-4)

Derivation Path: TS 36.579-1 [2], table 5.5.3.2.1-1, conditions INVITE_REFER, PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
emergency-ind	"false"			

Table 6.2.1.3.3-6: Void

Table 6.2.1.3.3-7: Floor Release (Step 7, 18A, Table 6.2.1.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.21.3-1; step 1, TS 36.579-1 [2] Table 5.3.20.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.5-1 condition ON-NETWORK

Table 6.2.1.3.3-8: Floor Taken (Step 7, Table 6.2.1.3.2-1; step 3, TS 36.579-1 [2] Table 5.3.21.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.7-1 condition ON-NETWORK

Table 6.2.1.3.3-9: Floor Request (Steps 11, 16, 36B, Table 6.2.1.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.16.3-1; step 1, TS 36.579-1 [2] Table 5.3.19.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.2-1 condition ON-NETWORK

Table 6.2.1.3.3-10: Floor Deny (Step 11, Table 6.2.1.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.19.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.4-1 condition ON-NETWORK

Table 6.2.1.3.3-11: Floor Idle (Step 14, 18A, 38, Table 6.2.1.3.2-1; step 3, TS 36.579-1 [2] Table 5.3.20.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.6-1

Table 6.2.1.3.3-12: Floor Granted (Steps 16, 36B, Table 6.2.1.3.2-1; step 6a1, TS 36.579-1 [2] Table 5.3.7.3-1; step 2, TS 36.579-1 [2] Table 5.3.16.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition ON-NETWORK

Table 6.2.1.3.3-13: Floor Request (Steps 28, Table 6.2.1.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.16.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.2-1 condition ON-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'00010x00 0000000	Bit D=1 (Emergency call) bit F=x (Queueing supported) any value	

Table 6.2.1.3.3-14: Floor Granted (Steps 20, 28, Table 6.2.1.3.2-1; step 5, TS 36.579-1 [2] Table 5.3.14.3-; step 2, TS 36.579-1 [2] Table 5.3.16.3-11)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'00010100 0000000	Bit D=1 (Emergency call) bit F=x (Queueing supported) any value	

Table 6.2.1.3.3-15: Floor Release (Steps 24, 31, Table 6.2.1.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.21.3-1; step 1, TS 36.579-1 [2] Table 5.3.20.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.5-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'00010x00 0000000	Bit D=1 (Emergency call) bit F=x (Queueing supported) any value	

Table 6.2.1.3.3-16: Floor Taken (Step 24, Table 6.2.1.3.2-1; step 3, TS 36.579-1 [2] Table 5.3.21.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.7-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'00010100 0000000	Bit D=1 (Emergency call) bit F=x (Queueing supported) any value	

Table 6.2.1.3.3-17: Floor Idle (Step 31, Table 6.2.1.3.2-1; step 3, TS 36.579-1 [2] Table 5.3.20.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.6-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"0001010000000000"	bit D=1 (Emergency call) bit F=1 (Queueing supported)	

6.2.2 On-network / Private Call / On-demand / Automatic Commencement Mode / With Floor Control / Upgrade to Emergency Call / Cancellation of Emergency on User request / Client Terminated (CT)

6.2.2.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including authorized to
receive private and private emergency calls with automatic commencement }
ensure that {
  when { the UE (MCPTT Client) receives a request for establishment of an MCPTT private call, on-
demand Automatic Commencement Mode, no Force of automatic commencement, applying End-to-end
communication security with Floor Control }
    then { UE (MCPTT Client) sends a SIP 200 (OK) accepting the establishment of an MCPTT private
call, on-demand Automatic Commencement Mode applying End-to-end communication security with Floor
Control, and, notifies the user for the call establishment }
```

(2)

```
with { UE (MCPTT Client) having established an On-demand Automatic Commencement Mode Private Call
with Floor Control }
ensure that {
  when { the MCPTT User (MCPTT Client) engages in communication with the inviting MCPTT User }
    then { UE (MCPTT Client) respects the floor control imposed by the MCPTT Server (Floor
granting/release/deny) applying Floor Control confidentiality and integrity protection }
            }
```

(3)

```
with { UE (MCPTT Client) having established an MCPTT private call, on-demand Automatic Commencement
Mode with Floor Control }
ensure that {
  when { the MCPTT User (MCPTT Client) receives a request for upgrade of the ongoing MCPTT private
call to an MCPTT emergency private call with floor control }
    then { UE (MCPTT Client) accepts the request and upon sending SIP 200 (OK) message considers the
call as being upgraded to emergency private call (emergency private call state = "MEPC 3: emergency-
pc-granted") }
            }
```

(4)

```
with { UE (MCPTT Client) having upgraded an On-demand Automatic Commencement Mode Private Call to
emergency private call }
```

```
ensure that {
  when { the MCPTT User (MCPTT Client) continues communication with the invited MCPTT User }
    then { UE (MCPTT Client) respects the floor control imposed by the MCPTT Server including being
able to handle override requested by the inviting MCPTT user and applying Floor Control
confidentiality and integrity protection }
            }
```

(5)

```
with { UE (MCPTT Client) having upgraded an On-demand Automatic Commencement Mode Private Call to an
Emergency Private Call }
ensure that {
  when { the MCPTT User (MCPTT Client) receives a request to cancel the ongoing MCPTT emergency
private call }
    then { UE (MCPTT Client) accepts the request and after sending a SIP 200 (OK) response considers
the emergency condition cancelled and the call being reverted back to MCPTT Private Call }
            }
```

(6)

```
with { UE (MCPTT Client) having an ongoing On-demand Automatic Commencement Mode Private Call }
ensure that {
  when { the MCPTT User (MCPTT Client) receives a request for termination of the ongoing MCPTT
private call }
    then { UE (MCPTT Client) accept the request and after sending a SIP 200 (OK) response leaves the
MCPTT session }
            }
```

6.2.2.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: TS 24.379 clauses 4.6.2, 4.7, 6.2.2, 6.2.3.1.1, 6.2.6, 11.1.1.2.1.2, 11.1.1.2.1.3, 11.1.3.1.1.2, TS 24.380 clauses 4.1.1.2, 5.2.1, 5.2.2, 12.1.2.2, 13.1, 13.3.3, TS 33.180, clause 5.3.4. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 4.6.2]

Key aspects of MCPTT emergency private calls include:

- adjusted EPS bearer priority for both participants whether or not they are both in an emergency condition (i.e. both have their MCPTT emergency state set). This is achieved by using the Resource-Priority header field as specified in IETF RFC 4412 [29] with namespaces defined for use by MCPTT specified in draft-holmberg-dispatch-mcptt-rp-namespace [48];

- the initiator of the MCPTT emergency private call can override the other MCPTT user in the MCPTT emergency private call unless that user also has their MCPTT emergency state set;

...

- restoration of normal floor control priority participants when the emergency elevated priority is cancelled;

...

- requires the targeted MCPTT user to be authorised to receive an MCPTT emergency private call;

[TS 24.379, clause 4.7]

If a mission critical organisation requires MCPTT users to communicate using end-to-end security, a security context needs to be established between the initiator of the call and the recipient(s) of the call, prior to the establishment of media, or floor control signalling. This provides assurance to MCPTT users that no unauthorised access to communications is taking place within the MCPTT network. An MCPTT key management server (KMS) manages the security domain. For any end-point to use or access end-to-end secure communications, it needs to be provisioned with keying material associated to its identity by the KMS as specified in 3GPP TS 33.179 [46].

...

For private calls, the security context is initiated at call setup. An end-to-end security context is established that is unique to the pair of users involved in the call. The procedure involves transferral of an encapsulated private call key (PCK) and private call key id (PCK-ID) from the initiator to the terminator. The PCK is encrypted using the

terminator's MCPTT ID and domain-specific material provided from the KMS. The PCK and PCK-ID are distributed within a MIKEY payload within the SDP offer of the private call request. This payload is called a MIKEY-SAKKE I_MESSAGE, as defined in IETF RFC 6509 [75], which ensures the confidentiality, integrity and authenticity of the payload. The encoding of the MIKEY payload in the SDP offer is described in IETF RFC 4567 [47] using an "a=key-mgmt" attribute. The payload is signed using a key associated to the identity of the initiating user. At the terminating side, the signature is validated. If valid, the UE extracts and decrypts the encapsulated PCK. The MCPTT UE also extracts the PCK-ID. This process is described in 3GPP TS 33.179 [46]. With the PCK successfully shared between the two MCPTT UEs, the UEs are able to use SRTP/SRTCP to create an end-to-end secure session.

End-to-end security is independent of the transmission path and hence is applicable to both on and off-network communications. With a security context established, the group call key and private call key can be used to encrypt media and, if required, floor control traffic between the end-points as described in 3GPP TS 24.380 [5] clause 13.

[TS 33.180, clause 5.3.4]

End-to-end communication security for either group or private calls requires the provisioning of key material from the KMS. The key material provisioned to each user is listed below:

- A KMSInit Response contains the Home KMS Certificate (domain specific key material associated to the KMS), and may contain:
  - An updated TrK for the user (to replace the offline-provisioned, bootstrap TrK).
- A KMSKeyProv Response contains zero, or more, KMSKeySets and may contain:
  - An updated TrK for the user (to replace existing TrK).
- A KMSCertCache Response may contain:
  - Home KMS Certificate(s) (current, updated or future).
  - External KMS Certificates. This is domain specific key material associated with other KMSs. It is required to enable secure communications across security domains.

[TS 24.379, clause 6.2.2]

When the MCPTT client receives an initial SDP offer for an MCPTT session, the MCPTT client shall process the SDP offer and shall compose an SDP answer according to 3GPP TS 24.229 [4].

When composing an SDP answer, the MCPTT client:

1) shall accept the MCPTT speech media stream in the SDP offer;
2) shall set the IP address of the MCPTT client for the accepted MCPTT speech media stream and, if included in the SDP offer, for the accepted media-floor control entity;

NOTE: If the MCPTT client is behind a NAT the IP address and port included in the SDP answer can be a different IP address and port than the actual IP address and port of the MCPTT client depending on the NAT traversal method used by the SIP/IP Core.

3) shall include an "m=audio" media-level section for the accepted MCPTT speech media stream consisting of:
   a) the port number for the media stream;
   b) media-level attributes as specified in 3GPP TS 24.229 [4]; and
   c) "i=" field set to "speech" according to 3GPP TS 24.229 [4]; and
4) if included in the SDP offer, shall include the media-level section of the offered media-floor control entity consisting of:
   a) an "m=application" media-level section as specified in 3GPP TS 24.380 [5] clause 12; and
   b) 'fmtp' attributes as specified in 3GPP TS 24.380 [5] clause 14.

[TS 24.379, clause 6.2.3.1.1]

When performing the automatic commencement mode procedures, the MCPTT client:

1) shall accept the SIP INVITE request and generate a SIP 200 (OK) response according to rules and procedures of 3GPP TS 24.229 [4];

2) shall include the option tag "timer" in a Require header field of the SIP 200 (OK) response;

3) shall include the g.3gpp.mcptt media feature tag in the Contact header field of the SIP 200 (OK) response;

4) shall include the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP 200 (OK) response;

5) shall include the Session-Expires header field in the SIP 200 (OK) response and start the SIP session timer according to IETF RFC 4028 [7]. The "refresher" parameter in the Session-Expires header field shall be set to "uas";

...

7) shall, if the incoming SIP INVITE request does not contain a Replaces header field, include an SDP answer in the SIP 200 (OK) response to the SDP offer in the incoming SIP INVITE request according to 3GPP TS 24.229 [4] with the clarifications given in subclause 6.2.2;

NOTE: In the case of a new emergency call where the terminating client is using a pre-established session, the SIP INVITE request containing a Replaces header is used to replace the pre-established session.

8) shall send the SIP 200 (OK) response towards the MCPTT server according to rules and procedures of 3GPP TS 24.229 [4];

...

10) shall interact with the media plane as specified in 3GPP TS 24.380 [5] subclause 6.2.

When NAT traversal is supported by the MCPTT client and when the MCPTT client is behind a NAT, generation of SIP responses is done as specified in this subclause and as specified in IETF RFC 5626 [15].

[TS 24.379, clause 6.2.6]

Upon receiving a SIP BYE request, the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5]; and

2) shall send SIP 200 (OK) response towards MCPTT server according to 3GPP TS 24.229 [4].

[TS 24.379, clause 11.1.1.2.1.2]

Upon receipt of an initial SIP INVITE request, the MCPTT client shall follow the procedures for termination of multimedia sessions in the IM CN subsystem as specified in 3GPP TS 24.229 [4] with the clarifications below.

The MCPTT client:

...

3) if the SIP INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <emergency-ind> element set to a value of "true":

   a) should display to the MCPTT user an indication that this is a SIP INVITE request for an MCPTT emergency private call and:

      i) should display the MCPTT ID of the originator of the MCPTT emergency private call contained in the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body; and

      ...

   b) shall set the MCPTT emergency private priority state to "MEPP 2: in-progress" for this private call;

4) if the SDP offer of the SIP INVITE request contains an "a=key-mgmt" attribute field with a "mikey" attribute value containing a MIKEY-SAKKE I_MESSAGE:

a) shall extract the MCPTT ID of the originating MCPTT from the initiator field (IDRi) of the I_MESSAGE as described in 3GPP TS 33.179 [46];

b) shall convert the MCPTT ID to a UID as described in 3GPP TS 33.179 [46];

c) shall use the UID to validate the signature of the MIKEY-SAKKE I_MESSAGE as described in 3GPP TS 33.179 [46];

d) if authentication verification of the MIKEY-SAKKE I_MESSAGE fails, shall reject the SIP INVITE request with a SIP 488 (Not Acceptable Here) response as specified in IETF RFC 4567 [47], and include warning text set to "136 authentication of the MIKEY-SAKE I_MESSAGE failed" in a Warning header field as specified in subclause 4.4; and

e) if the signature of the MIKEY-SAKKE I_MESSAGE was successfully validated:

i) shall extract and decrypt the encapsulated PCK using the terminating user's (KMS provisioned) UID key as described in 3GPP TS 33.179 [46]; and

ii) shall extract the PCK-ID, from the payload as specified in 3GPP TS 33.179 [46];

NOTE: With the PCK successfully shared between the originating MCPTT client and the terminating MCPTT client, both clients are able to use SRTP/SRTCP to create an end-to-end secure session.

5) may check if a Resource-Priority header field is included in the incoming SIP INVITE request and may perform further actions outside the scope of this specification to act upon an included Resource-Priority header field as specified in 3GPP TS 24.229 [4];

6) may display to the MCPTT user the MCPTT ID of the inviting MCPTT user;

7) shall perform the automatic commencement procedures specified in subclause 6.2.3.1.1 if one of the following conditions are met:

a) SIP INVITE request contains an Answer-Mode header field with the value "Auto" and the MCPTT service setting at the invited MCPTT client for answering the call is set to automatic commencement mode;

[TS 24.379, clause 11.1.1.2.1.3]

Upon receipt of a SIP re-INVITE request for an existing private call session, the MCPTT client shall:

1) if the SIP re-INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <emergency-ind> element set to a value of "true":

a) should display to the MCPTT user an indication that this is a SIP re-INVITE request to upgrade this call to an MCPTT emergency private call and:

i) should display the MCPTT ID of the originator of the MCPTT emergency private call contained in the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body; and

ii) if the <alert-ind> element is set to "true", should display to the MCPTT user an indication of the MCPTT emergency alert and associated information; and

b) shall set the MCPTT emergency private priority state to "MEPP 2: in-progress" for this private call;

2) if the SIP re-INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <emergency-ind> element set to a value of "false":

a) should display to the MCPTT user an indication that this is a SIP re-INVITE request to downgrade this emergency private call to a normal priority private call and:

i) should display the MCPTT ID of the sender of the SIP re-INVITE request contained in the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body; and

..

b) shall set the MCPTT emergency private priority state to "MEPP 1: no-emergency" for this private call; and

c) if the MCPTT emergency private call state of the call is set to "MEPC 3: emergency-call-granted", shall set the MCPTT emergency private call state of the call to "MEPC 1: emergency-pc-capable";

3) may check if a Resource-Priority header field is included in the incoming SIP INVITE request and may perform further actions outside the scope of this specification to act upon an included Resource-Priority header field as specified in 3GPP TS 24.229 [4];

4) may display to the MCPTT user the MCPTT ID of the inviting MCPTT user if not done so in step 1 or step 2 above;

NOTE 1: As this is a re-INVITE for an existing MCPTT private call session, there is no attempt made to change the answer-mode from its current state.

5) shall accept the SIP re-INVITE request and generate a SIP 200 (OK) response according to rules and procedures of 3GPP TS 24.229 [4];

6) if the SIP re-INVITE request was received within an on-demand session, shall include an SDP answer in the SIP 200 (OK) response to the SDP offer in the incoming SIP INVITE request according to 3GPP TS 24.229 [4] with the clarifications given in subclause 6.2.2;

...

8) shall send the SIP 200 (OK) response towards the MCPTT server according to rules and procedures of 3GPP TS 24.229 [4]; and

9) shall interact with the media plane as specified in 3GPP TS 24.380 [5].

[TS 24.379, clause 11.1.3.1.1.2]

Upon receiving a SIP BYE request for private call session, the MCPTT client shall follow the procedures as specified in subclause 6.2.6.

[TS 24.380, clause 4.1.1.2]

At any point in time a group member can request permission to talk.

When all group members are silent, a group member can press the PTT button, meaning the request for permission to talk. The floor participant entity of this user reflects this request to the floor control server by sending a Floor Request message. If the floor control server decides to permit, it informs this permission for this request by sending a Floor Granted message to the requesting group member. The floor control server informs the initiation of the talk to the other group members by sending a Floor Taken message. Once the group member receives the permission, a permission indication (permission tone) is generated and the user can talk. The media packets (encoded voice) are sent to the controlling MCPTT server and from there they are distributed to all listeners of this group. The release of the PTT button indicates the user’s intension to end talking. Once the PTT button is released, the floor participant sends a Floor Release message to the floor control server indicating that this user has finished talking. This cycle, starting from the Floor Granted message and ending with Floor Release message, is known as 'talk burst' or 'media burst'.

In the beginning of a call the initial talk permission request can be implied by the SIP message which initiates the call as specified in 3GPP TS 24.379 [2] without any specific Floor Request message.

A group member can also request for permission to talk by sending a Floor Request message during a talk burst. The floor control server can resolve this request in several ways.

1. If this request has higher priority than the ongoing talk burst, the floor control server revokes the current talk burst by sending a Floor Revoke message to the current talker. The current talker is interrupted and the current media burst is ended by the current floor participant by sending a Floor Release message. Then the floor control server sends a Floor Granted message to the revoking user and send Floor Taken message to other group members. Then a new media burst starts.

2. If this request does not have higher priority and floor request queuing is not used the floor control server rejects this request by sending a Floor Deny message to the requester. Then a reject indication (reject tone) is generated for the user. The ongoing talk burst continues.

...

During silence (when no talk burst is ongoing), the floor control server can send Floor Idle message to all floor participants from time to time. The floor control server sends Floor Idle message in the beginning of silence.

[TS 24.380, clause 5.2.1]

To be compliant with the procedures in the present document, an MCPTT client shall:

1. support the role of an MCPTT client as specified 3GPP TS 23.179 [5];
2. support the on-network MCPTT client role as specified in 3GPP TS 24.379 [2];

...

4. support media plane security as specified in clause 13.

To be compliant with the on-network procedures in the present document, an MCPTT client shall:

1. provide the role of a floor participant in on-network mode as specified in subclause 5.2.2;
2. provide the media mixer function as described in subclause 4.2.2 and support the related procedures in subclause 6.2;

...

4. provide PTT button events towards the on-network floor participant as specified in subclause 6.2;
5. provide means (sound, display, etc.) for indications towards the MCPTT user as specified in subclause 6.2;
6. support negotiating media plane control channel media level attributes as specified in subclause 4.3; and

[TS 24.380, clause 5.2.2]

To be compliant with the on-network procedures in the present document, a floor participant in on-network mode shall:

1. support the on-network floor control procedures as defined in 3GPP TS 23.179 [5];
2. support acting as an on-network floor participant as specified in subclause 6.2; and
3. support the on-network mode floor control protocol elements as specified in the clause 8.

A floor participant in on-network mode may:

1. support queuing of floor requests as specified in subclause 6.2 and subclause 4.1.1.2.

[TS 24.380, clause 12.1.2.2]

In an SDP offer, the "mc_priority" fmtp attribute indicates (using an integer value between '1' and '255') the maximum floor priority that the offerer requests to be used with Floor Request messages sent by the offerer. In an SDP answer, the attribute parameter indicates the maximum priority level that the answerer has granted to the offerer. The value has to be equal or less than the value provided in the associated SDP offer.

NOTE 1: If the "mc_priority" fmtp attribute is not used within an SDP offer or answer, a default priority value is assumed.

In an SDP offer, the "mc_granted" fmtp attribute parameter indicates that the offerer supports the procedure where the answerer indicates, using the fmtp attribute in the associated SDP answer, that the floor has been granted to the offerer.

NOTE 2: When the "mc_granted" fmtp attribute is used in an SDP offer, it does not indicate an actual request for the floor. The SDP "mc_implicit_request" fmtp attribute can be used to request the floor. In an SDP answer, the attribute indicates that the floor has been granted to the offerer.

NOTE 3: Once the offerer has been granted the floor, the offerer has the floor until it receives a Floor Revoke message, or until the offerer itself releases the floor by sending a Floor Release message, as described in the present specification.

In an SDP offer, the "mc_implicit_request" fmtp attribute indicates that the offerer implicitly requests the floor (without the need to send a Floor Request message). In an SDP answer, the attribute parameter indicates that the answerer has

accepted the implicit floor request. Once the answerer grants the floor to the offerer, the answerer will send a Floor Granted message.

NOTE 4: The usage of the "mc_implicit_request" fmtp attribute in an SDP answer does not mean that the answerer has granted the floor to the offerer, only that the answerer has accepted the implicit floor request.

[TS 24.380, clause 13.1]

Media plane security provides integrity and confidentiality protection of individual media streams and media plane control messages in MCPTT sessions.

The media plane security is based on 3GPP MCPTT security solution including key management and end-to-end media and floor control messages protection as defined in 3GPP TS 33.179 [14].

Various keys and associated key identifiers protect:

1. RTP transported media;
2. RTCP transported media control messages (i.e. RTCP SR packets, RTCP RR packets, RTCP SDES packets);
3. RTCP APP transported floor control messages;

...

In an on-network private call:

1. if protection of media is negotiated, the PCK and the PCK-ID protect media sent and received by the MCPTT clients;
2. if protection of floor control messages sent using unicast between the MCPTT client and the participating MCPTT function serving the MCPTT client is negotiated, the CSK and the CSK-ID protect the floor control messages sent and received by the MCPTT client and by the participating MCPTT function;

...

4. if protection of media control messages sent using unicast between the MCPTT client and the participating MCPTT function serving the MCPTT client is negotiated, the CSK and the CSK-ID protect the media control messages sent and received using unicast by the MCPTT client and by a participating MCPTT function; and

...

The CSK and the CSK-ID are generated by the MCPTT client and provided to the participating MCPTT function serving the MCPTT client using SIP signalling according to 3GPP TS 24.379 [2].

..

The PCK and the PCK-ID are generated by the MCPTT client initiating the private call and provided to the MCPTT client receiving the private call using SIP signalling according to 3GPP TS 24.379 [2], using Connect message described in subclause 8.3.4 or using MONP signalling according to 3GPP TS 24.379 [2].

[TS 24.380, clause 13.3.3]

3. in an on-network private call:

   A) if:

      ...

      ii) protection of media is negotiated in terminating call and the PCK and the PCK-ID were received from the remote MCPTT client using SIP signalling according to 3GPP TS 24.379 [2];

      then:

      i) shall encrypt sent media according to IETF RFC 3711 [16] and 3GPP TS 33.179 [14] using SRTP-MK, SRTP-MS and SRTP-MKI generated using the PCK and PCK-ID as specified in subclause 13.2; and

ii) shall decrypt received media according to IETF RFC 3711 [16] and 3GPP TS 33.179 [14] using SRTP-MK, SRTP-MS and SRTP-MKI generated using the PCK and PCK-ID as specified in subclause 13.2;

B) if protection of floor control messages is negotiated and the CSK and the CSK-ID were sent to the participating MCPTT function using SIP signalling according to 3GPP TS 24.379 [2]:

i) shall encrypt sent floor control messages according to IETF RFC 3711 [16] and 3GPP TS 33.179 [14] using SRTP-MK, SRTP-MS and SRTP-MKI generated using the CSK and CSK-ID as specified in subclause 13.2; and

ii) shall decrypt received floor control messages according to IETF RFC 3711 [16] and 3GPP TS 33.179 [14] using SRTP-MK, SRTP-MS and SRTP-MKI generated using the CSK and CSK-ID as specified in subclause 13.2; and

D) if protection of media control messages sent using unicast between the participating MCPTT function and the MCPTT client is negotiated and the CSK and the CSK-ID were sent to the participating MCPTT function using SIP signalling according to 3GPP TS 24.379 [2]:

i) shall encrypt media control messages sent using unicast according to IETF RFC 3711 [16] and 3GPP TS 33.179 [14] using SRTP-MK, SRTP-MS and SRTP-MKI generated using the CSK and CSK-ID as specified in subclause 13.2; and

ii) shall decrypt media control messages received using unicast according to IETF RFC 3711 [16] and 3GPP TS 33.179 [14] using SRTP-MK, SRTP-MS and SRTP-MKI generated using the CSK and CSK-ID as specified in subclause 13.2;

6.2.2.3 Test description

6.2.2.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)
- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.2.2.3.2 Test procedure sequence

Table 6.2.2.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Is the Generic Test Procedure for MCPTT CT session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.4.3-1 to establish an MCPTT private call, on-demand Automatic Commencement Mode, no Force of automatic commencement, applying End-to-end communication security with Floor Control correctly performed?	-		1	P
2 - 3	Void				
4	SS (MCPTT server) sends a Floor Taken message.	<--	Floor Taken	-	-
5	Make the UE (MCPTT User) request the floor (NOTE 1)	-	-	-	-
6	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Request – Floor Deny as described in TS 36.579-1 [2] Table 5.3.19.3-1?			2	P
7	Void			-	-
8	SS (MCPTT server) sends a Floor Idle message.	<--	Floor Idle	-	-
9	Make the UE (MCPTT User) request the floor (NOTE 1)	-	-	-	-
10	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Request – Floor Granted as described in TS 36.579-1 [2] Table 5.3.16.3-1?	-	--	2	P
11	Void			-	-
12	Make the UE (MCPTT User) release the floor (NOTE 1)	-	-	-	-
13	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Release – Floor Idle as described in TS 36.579-1 [2] Table 5.3.20.3-1?			2	P
14-15	Void	-	-	-	-
16	Check: Is the Generic Test Procedure for MCPTT CT session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.4.3-1 to upgrade to an MCPTT private emergency call on-demand Automatic Commencement Mode offering a media-level section for a media-floor control entity correctly performed?	-	-	3	P
17	Void	-	-	-	-
-	EXCEPTION: Step 18a1 describes behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place if the UE displays information to the User upon accepting establishment/releasing of Emergency call.	-	-	-	-
18a 1	IF pc_MCX_DisplayInfoEmergencyCall THEN Check: Does the UE (MCPTT client) notify the user about the upgrade of the private call to an emergency private call? (NOTE 1) NOTE 2: The display information may include - indication for upgrade of the private call to an emergency private call - the MCPTT ID of the sender of the SIP re-INVITE request.	-	-	5	P

19	SS (MCPTT server) sends a Floor Taken message.	<--	Floor Taken	-	-
20	Void	-	-	-	-
21	SS (MCPTT server) sends a Floor Idle message.	<--	Floor Idle	-	-
22	Make the UE (MCPTT User) request the floor (NOTE 1)	-	-	-	-
23	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Request – Floor Granted as described in TS 36.579-1 [2] Table 5.3.16.3-1?	-	-	4	P
24	Void	-	-	-	-
25	SS (MCPTT server) sends a Floor Revoke message.	<--	Floor Revoke	-	-
26	Void	-	-	-	-
-	EXCEPTION: In parallel to the events described in step 27, the step specified in Table 6.2.2.3.2-2 takes place.	-	-	-	-
27	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Release – Floor Taken as described in TS 36.579-1 [2] Table 5.3.21.3-1?	-	-	4	P
28-30	Void	.	-	-	-
31	SS (MCPTT server) sends a Floor Idle message.	<--	Floor Idle	-	-
32	Make the UE (MCPTT User) request the floor (NOTE 1)	-	-	-	-
33	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT Floor Request – Floor Granted as described in TS 36.579-1 [2] Table 5.3.16.3-1?	-	-	4	P
34	Void	-	-	-	-
35	Check: Is the Generic Test Procedure for MCPTT CT session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.4.3-1 to cancel the emergency call correctly performed?	-	-	5	P
36	Void	-	-	-	-
-	EXCEPTION: Step 37a1 describes behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place if the UE displays information to the User upon accepting establishment/releasing of Emergency call.	-	-	-	-
37a1	IF pc_MCX_DisplayInfoEmergencyCall THEN Check: Does the UE (MCPTT client) notify the user about the downgrade of the emergency private call to a normal priority private call? (NOTE 1) (NOTE 2)	-	-	5	P
38	SS (MCPTT server) sends a Floor Taken message.	<--	Floor Taken	-	-
39	Void	-	-	-	-
40	SS (MCPTT server) sends a Floor Idle message.	<--	Floor Idle	-	-
41	Check: Is the Generic Test Procedure for MCPTT CT call release as described in TS 36.579-1 [2] Table 5.3.12.3-1 to end the call correctly performed?	-	-	6	P
42	Void	-	-	-	-

NOTE 1: This is expected to be done via a suitable implementation dependent MMI.
NOTE 2: The display information may include
- indication for downgrade of the emergency private call to a normal priority private call
- the MCPTT ID of the sender of the SIP re-INVITE request.

Table 6.2.2.3.2-2: Parallel Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCPTT Client) inform the MCPTT User that the permission to send RTP media is being revoked? NOTE 1 in Table 6.2.2.3.2-1	-	-	2	P

6.2.2.3.3 Specific message contents

Table 6.2.2.3.3-1: SIP INVITE (Step 1, Table 6.2.2.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation path: TS 36.579-1 [2], table 5.5.2.5.2-1, condition PRIVATE-CALL

Table 6.2.2.3.3-2: SIP INVITE (Step 16, Table 6.2.2.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.5.2-1, conditions re_INVITE, EMERGENCY-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body		MCPTT Info		
MIME body part				
MIME part body	MCPTT Info as described in Table 6.2.2.3.3-3			

Table 6.2.2.3.3-3: MCPTT-Info in SIP INVITE (Table 6.2.2.3.3-2)

Derivation Path: TS 36.579-1 [2], table 5.5.3.2.1-1, conditions PRIVATE-CALL and EMERGENCY-CALL

Table 6.2.2.3.3-4: SIP INVITE (Step 35, Table 6.2.2.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.5.2-1 conditions re_INVITE				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body		MCPTT Info		
MIME body part				
MIME part body	MCPTT Info as described in Table 6.2.2.3.3-5			

Table 6.2.2.3.3-5: MCPTT-Info in SIP INVITE (Table 6.2.2.3.3-4)

Derivation Path: TS 36.579-1 [2], table 5.5.3.2.2-1, condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
emergency-ind	"false"			
alert-ind	"false"			

Table 6.2.2.3.3-6: Void

Table 6.2.2.3.3-7: Floor Release (Step 13, Table 6.2.2.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.20.3-1;)

Derivation Path: 36.579-1 [2], Table 5.5.6.5-1 condition ON-NETWORK.

Table 6.2.2.3.3-8: Floor Taken (Steps 4, 38, Table 6.2.2.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.7-1 condition ON-NETWORK.

Table 6.2.2.3.3-9: Floor Request (Steps 6, 10, Table 6.2.2.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.19.3-1; step 1, TS 36.579-1 [2] Table 5.3.16.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.2-1 condition ON-NETWORK.

Table 6.2.2.3.3-10: Floor Deny (Step 6, Table 6.2.2.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.19.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.4-1 condition ON-NETWORK.

Table 6.2.2.3.3-11: Void

Table 6.2.2.3.3-12: Floor Granted (Step 10, Table 6.2.2.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.16.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition ON-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	00001	Floor Granted with acknowledgment not required	

Table 6.2.2.3.3-13: Floor Request (Steps 23, 33, Table 6.2.2.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.16.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.2-1 condition ON-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'00010x00 0000000'	Bit D=1 (Emergency call) bit F=x (Queueing supported) any value	

Table 6.2.2.3.3-14: Floor Granted (Steps 23, 33, Table 6.2.2.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.16.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition ON-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
RTCP header			
Subtype	00001	Floor Granted with acknowledgment not required	
Floor Indicator			
Floor Indicator	'00010100 0000000'	Bit D=1 (Emergency call) bit F=x (Queueing supported) any value	

Table 6.2.2.3.3-15: Floor Release (Steps 27, Table 6.2.2.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.21.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.5-1 condition ON-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'00010x00 0000000'	Bit D=1 (Emergency call) bit F=x (Queueing supported) any value	

Table 6.2.2.3.3-16: Floor Taken (Steps 19, 27, Table 6.2.2.3.2-1; step 3, TS 36.579-1 [2] Table 5.3.21.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.7-1 condition ON-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'00010100 0000000'	Bit D=1 (Emergency call) bit F=x (Queueing supported) any value	

Table 6.2.2.3.3-17: Floor Revoke (Step 25, Table 6.2.2.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.8-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'00010100 0000000'	Bit D=1 (Emergency call) bit F=x (Queueing supported) any value	

Table 6.2.2.3.3-18: Floor Idle (Step 21, 31, Table 6.2.2.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.6-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'00010100 0000000'	Bit D=1 (Emergency call) bit F=x (Queueing supported) any value	

6.2.3 On-network / Private Call / On-demand / Automatic Commencement Mode / Without Floor Control / Client Originated (CO)

6.2.3.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including authorized to
initiate/cancel private calls with automatic commencement }
ensure that {
  when { the MCPTT User requests the establishment of an MCPTT private call, on-demand Automatic
Commencement Mode, no Force of automatic commencement, without floor control }
    then { UE (MCPTT Client) sends a SIP INVITE message requesting on-demand Automatic Commencement
Mode and not offering a media-level section for a media-floor control entity, and, after indication
from the MCPTT Server that the call was established notifies the user }
           }
```

(2)

```
with { UE (MCPTT Client) having an ongoing On-demand Automatic Commencement Mode Private Call
without Floor control }
ensure that {
  when { the MCPTT User wants to terminate the ongoing MCPTT private call }
    then { UE (MCPTT Client) sends a SIP BYE request and after receiving a SIP 200 (OK) leaves the
MCPTT session }
            }
```

6.2.3.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: TS 24.379 clauses 6.2.1, 6.2.5.1, 11.1.1.2.1.1, 11.1.2.2, 11.1.3.1.1.1. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 6.2.1]

The SDP offer shall contain only one SDP media-level section for MCPTT speech according to 3GPP TS 24.229 [4] and, if floor control shall be used during the session, shall contain one SDP media-level section for a media-floor control entity according to 3GPP TS 24.380 [5].

When composing an SDP offer according to 3GPP TS 24.229 [4] the MCPTT client:

1) shall set the IP address of the MCPTT client for the offered MCPTT speech media stream and, if floor control shall be used, for the offered media-floor control entity;

NOTE: If the MCPTT client is behind a NAT the IP address and port included in the SDP offer can be a different IP address and port than the actual IP address and port of the MCPTT client depending on the NAT traversal method used by the SIP/IP Core.

2) shall include an "m=audio" media-level section for the MCPTT media stream consisting of:

   a) the port number for the media stream selected; and

   b) the codec(s) and media parameters and attributes with the following clarification:

      i) if the MCPTT client is initiating a call to a group identity;

      ii) if the <preferred-voice-encodings> element is present in the group document retrieved by the group management client as specified in 3GPP TS 24.381 [31] containing an <encoding> element with a "name" attribute; and

      iii) if the MCPTT client supports the encoding name indicated in the value of the "name" attribute;

      then the MCPTT client:

      i) shall insert the value of the "name" attribute in the <encoding name> field of the "a=rtpmap" attribute as defined in IETF RFC 4566 [12]; and

   c) "i=" field set to "speech" according to 3GPP TS 24.229 [4];

[TS 24.379, clause 6.2.5.1]

When the MCPTT client wants to release an MCPTT session established using on-demand session signalling, the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

2) shall generate a SIP BYE request according to 3GPP TS 24.229 [4];

3) shall set the Request-URI to the MCPTT session identity to release; and

4) shall send a SIP BYE request towards MCPTT server according to 3GPP TS 24.229 [4].

Upon receiving a SIP 200 (OK) response to the SIP BYE request, the MCPTT client shall interact with the media plane as specified in 3GPP TS 24.380 [5].

[TS 24.379, clause 11.1.1.2.1.1]

Upon receiving a request from an MCPTT user to establish an MCPTT private call the MCPTT client shall generate an initial SIP INVITE request by following the UE originating session procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

1) shall set the Request-URI of the SIP INVITE request to a public service identity of the participating MCPTT function serving the MCPTT user;

...

3) may include a P-Preferred-Identity header field in the SIP INVITE request containing a public user identity as specified in 3GPP TS 24.229 [4];

4) shall include the g.3gpp.mcptt media feature tag and the g.3gpp.icsi-ref media feature tag with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP INVITE request according to IETF RFC 3840 [16];

5) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

6) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP INVITE request;

7) shall include an Accept-Contact header field with the media feature tag g.3gpp.icsi-ref contain with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with parameters "require" and "explicit" according to IETF RFC 3841 [6];

8) shall insert in the SIP INVITE request a MIME resource-lists body with the MCPTT ID of the invited MCPTT user, according to rules and procedures of IETF RFC 5366 [20];

...

13) if force of automatic commencement mode at the invited MCPTT client is not requested by the MCPTT user and:

    a) if automatic commencement mode at the invited MCPTT client is requested by the MCPTT user, shall include in the SIP INVITE request an Answer-Mode header field with the value "Auto" according to the rules and procedures of IETF RFC 5373 [18]; and

    ...

14) shall contain an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <session-type> element set to a value of "private";

...

16) shall send SIP INVITE request towards the MCPTT server according to 3GPP TS 24.229 [4].

Upon receiving a SIP 183(Session Progress) response to the SIP INVITE request the MCPTT client:

1) may indicate the progress of the session establishment to the inviting MCPTT user.

Upon receiving a SIP 200 (OK) response to the SIP INVITE request the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

...

3) shall notify the user that the call has been successfully established.

[TS 24.379, clause 11.1.2.2]

When the MCPTT user wants to make an on-demand private call without floor control, the MCPTT client shall follow the procedures in subclause 11.1.1.2.1.1 with the following exceptions:

1) in step 10) of subclause 11.1.1.2.1.1, the MCPTT client shall not offer a media-level section for a media-floor control entity; and

2) step 11) of subclause 11.1.1.2.1.1 shall be ignored.

[TS 24.379, clause 11.1.3.1.1.1]

Upon receiving a request from an MCPTT user to release an MCPTT private call session established using on-demand session signalling, the MCPTT client shall follow the procedures as specified in subclause 6.2.5.1.

6.2.3.3 Test description

6.2.3.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)
- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.2.3.3.2 Test procedure sequence

Table 6.2.3.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the UE (MCPTT User) request the establishment of an MCPTT private call, on-demand Automatic Commencement Mode, no Force of automatic commencement, without Floor Control. (NOTE 1)	-	-	-	-
2	Check: Does the UE (MCPTT client) perform the Generic Test Procedure for MCPTT CO session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.7.3-1 to establish an MCPTT private call, on-demand Automatic Commencement Mode, no Force of automatic commencement, without Floor Control according to option a of NOTE 1 in TS 36.579.1 [2] Table 5.3.7.3-1?	-	-	1	P
3-4	Void	-	-	-	-
5	Check: Does the UE (MCPTT client) notify the user that the call has been successfully established? (NOTE 1)	-	-	1	P
6-7	Void	-	-	-	-
8	Make the UE (MCPTT User) request termination of the MCPTT private call. (NOTE 1)	-	-	-	-
9	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO call release as described in TS 36.579-1 [2] Table 5.3.10.3-1 to end the private call?	-	-	2	P
10-11	Void	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI.					

6.2.3.3.3 Specific message contents

Table 6.2.3.3.3-1: SIP INVITE (Step 2, Table 6.2.3.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.7.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.5.1-1, condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**SDP message**		
MIME-part-body	SDP Message as described in Table 6.2.3.3.3-2			

Table 6.2.3.3.3-2: SDP Message in SIP INVITE (Table 6.2.3.3.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.1-1, conditions PRIVATE-CALL, WITHOUT_MEDIACONTROL

Table 6.2.3.3.3-3: SIP 200 (OK) (Step 2, Table 6.2.3.3.2-1; step 4, TS 36.579-1 [2] Table 5.3.7.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.17.1.2-1 condition INVITE_RSP				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
SDP Message	As described in Table 6.2.3.3.3-4			

Table 6.2.3.3.3-4: SDP Message in SIP 200 (OK) (Table 6.2.3.3.3-3)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.2-1 conditions PRIVATE-CALL, WITHOUT_MEDIACONTROL

Table 6.2.3.3.3-5: Void

6.2.4 On-network / Private Call / On-demand / Automatic Commencement Mode / Without Floor Control / Client Terminated (CT)

6.2.4.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including authorized to
receive private and private emergency calls with automatic commencement }
ensure that {
  when { the UE (MCPTT Client) receives a request for establishment of an MCPTT private call, on-
demand Automatic Commencement Mode, no Force of automatic commencement, without Floor Control }
    then { UE (MCPTT Client) sends a SIP 200 (OK) accepting the establishment of an MCPTT private
call, on-demand Automatic Commencement Mode and not offering a media-level section for a media-floor
control entity }
```

(2)

```
with { UE (MCPTT Client) having an ongoing On-demand Automatic Commencement Mode Private Call }
ensure that {
  when { the MCPTT User (MCPTT Client) receives a request for termination of the ongoing MCPTT
private call }
    then { UE (MCPTT Client) accept the request and after sending a SIP 200 (OK) response leaves the
MCPTT session }
            }
```

6.2.4.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: TS 24.379 clauses 6.2.2, 6.2.3.1.1, 6.2.6, 11.1.1.2.1.2, 11.1.2.2, 11.1.3.1.1.2. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 6.2.2]

When the MCPTT client receives an initial SDP offer for an MCPTT session, the MCPTT client shall process the SDP offer and shall compose an SDP answer according to 3GPP TS 24.229 [4].

When composing an SDP answer, the MCPTT client:

1) shall accept the MCPTT speech media stream in the SDP offer;

2) shall set the IP address of the MCPTT client for the accepted MCPTT speech media stream and, if included in the SDP offer, for the accepted media-floor control entity;

NOTE: If the MCPTT client is behind a NAT the IP address and port included in the SDP answer can be a different IP address and port than the actual IP address and port of the MCPTT client depending on the NAT traversal method used by the SIP/IP Core.

3) shall include an "m=audio" media-level section for the accepted MCPTT speech media stream consisting of:

   a) the port number for the media stream;

   b) media-level attributes as specified in 3GPP TS 24.229 [4]; and

   c) "i=" field set to "speech" according to 3GPP TS 24.229 [4]; and

[TS 24.379, clause 6.2.3.1.1]

When performing the automatic commencement mode procedures, the MCPTT client:

1) shall accept the SIP INVITE request and generate a SIP 200 (OK) response according to rules and procedures of 3GPP TS 24.229 [4];

2) shall include the option tag "timer" in a Require header field of the SIP 200 (OK) response;

3) shall include the g.3gpp.mcptt media feature tag in the Contact header field of the SIP 200 (OK) response;

4) shall include the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP 200 (OK) response;

5) shall include the Session-Expires header field in the SIP 200 (OK) response and start the SIP session timer according to IETF RFC 4028 [7]. The "refresher" parameter in the Session-Expires header field shall be set to "uas";

...

8) shall send the SIP 200 (OK) response towards the MCPTT server according to rules and procedures of 3GPP TS 24.229 [4];

[TS 24.379, clause 6.2.6]

Upon receiving a SIP BYE request, the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5]; and

2) shall send SIP 200 (OK) response towards MCPTT server according to 3GPP TS 24.229 [4].

[TS 24.379, clause 11.1.2.2]

Upon receipt of an initial SIP INVITE request for the private call with an SDP offer not including a media-level section for a media-floor control entity, the MCPTT client shall consider it as the request for private call without floor control and shall follow the procedures as specified in subclause 11.1.1.2.1.2 for on-demand session and subclause 11.1.1.2.2.2 for pre-established session.

[TS 24.379, clause 11.1.1.2.1.2]

Upon receipt of an initial SIP INVITE request, the MCPTT client shall follow the procedures for termination of multimedia sessions in the IM CN subsystem as specified in 3GPP TS 24.229 [4] with the clarifications below.

The MCPTT client:

...

4) if the SDP offer of the SIP INVITE request contains an "a=key-mgmt" attribute field with a "mikey" attribute value containing a MIKEY-SAKKE I_MESSAGE:

   a) shall extract the MCPTT ID of the originating MCPTT from the initiator field (IDRi) of the I_MESSAGE as described in 3GPP TS 33.179 [46];

   b) shall convert the MCPTT ID to a UID as described in 3GPP TS 33.179 [46];

   c) shall use the UID to validate the signature of the MIKEY-SAKKE I_MESSAGE as described in 3GPP TS 33.179 [46];

   ...

   e) if the signature of the MIKEY-SAKKE I_MESSAGE was successfully validated:

      i) shall extract and decrypt the encapsulated PCK using the terminating user's (KMS provisioned) UID key as described in 3GPP TS 33.179 [46]; and

      ii) shall extract the PCK-ID, from the payload as specified in 3GPP TS 33.179 [46];

NOTE: With the PCK successfully shared between the originating MCPTT client and the terminating MCPTT client, both clients are able to use SRTP/SRTCP to create an end-to-end secure session.

...

7) shall perform the automatic commencement procedures specified in subclause 6.2.3.1.1 if one of the following conditions are met:

   a) SIP INVITE request contains an Answer-Mode header field with the value "Auto" and the MCPTT service setting at the invited MCPTT client for answering the call is set to automatic commencement mode;

[TS 24.379, clause 11.1.3.1.1.2]

Upon receiving a SIP BYE request for private call session, the MCPTT client shall follow the procedures as specified in subclause 6.2.6.

6.2.4.3 Test description

6.2.4.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)
- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.2.4.3.2 Test procedure sequence

Table 6.2.4.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Is the Generic Test Procedure for MCPTT CT session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.4.3-1 to establish MCPTT private call, on-demand Automatic Commencement, no Force of automatic commencement, without Floor Control correctly performed?	-	-	1	P
2-4	Void	-	-	-	-
5	Check: Is the Generic Test Procedure for MCPTT CT call release as described in TS 36.579-1 [2] Table 5.3.12.3-1 to end the private call correctly performed?	-	-	2	P
6-7	Void	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI					

6.2.4.3.3 Specific message contents

Table 6.2.4.3.3-1: SIP INVITE (Step 1, Table 6.2.4.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.5.2-1, condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**SDP Message**		
MIME-part-body	SDP Message as described in Table 6.2.4.3.3-2			

Table 6.2.4.3.3-2: SDP Message in SIP INVITE (Table 6.2.4.3.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.2-1, conditions PRIVATE-CALL, WITHOUT_MEDIACONTROL

Table 6.2.4.3.3-3: SIP 200 (OK) (Step 1, Table 6.2.4.3.2-1; step 4, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.17.1.1-1 condition INVITE-RSP,				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
SDP Message	As described in Table 6.2.3.3.3-4			

Table 6.2.4.3.3-4: SDP Message in SIP 200 (OK) (Table 6.2.4.3.3-3)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.1-1 conditions PRIVATE-CALL, WITHOUT_MEDIACONTROL

Table 6.2.4.3.3-5: Void

6.2.5 On-network / Private Call / Emergency Private Call / On-demand / Automatic Commencement Mode / Force of automatic commencement mode / Without Floor Control / Client Originated (CO)

6.2.5.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service including authorization to
initiate and cancel emergency calls }
ensure that {
  when { the MCPTT User requests the establishment of an MCPTT private emergency call, on-demand,
automatic commencement mode, Force of automatic commencement mode without floor control }
    then { UE (MCPTT Client) requests Private Emergency Call establishment without floor control by
sending a SIP INVITE message including a Priv-Answer-Mode header field with the value "Auto" not
offering a media-level section for a media-floor control entity, and, after indication from the
MCPTT Server that the call was established notifies the user}
            }
```

(2)

```
with { UE (MCPTT Client) having established an Emergency Private Call }
ensure that {
  when { the MCPTT User wants to terminate the ongoing MCPTT emergency private call }
    then { UE (MCPTT Client) sends a SIP BYE request and after receiving a SIP 200 (OK) leaves the
MCPTT session }
            }
```

6.2.5.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: TS 24.379 clauses 6.2.1, 6.2.5.1, 6.2.8.3.2, 6.2.8.3.3, 6.2.8.3.4, 6.2.8.3.6, 11.1.1.2.1.1, 11.1.2.2, 11.1.3.1.1.1. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 6.2.1]

The SDP offer shall contain only one SDP media-level section for MCPTT speech according to 3GPP TS 24.229 [4] and, if floor control shall be used during the session, shall contain one SDP media-level section for a media-floor control entity according to 3GPP TS 24.380 [5].

When composing an SDP offer according to 3GPP TS 24.229 [4] the MCPTT client:

1) shall set the IP address of the MCPTT client for the offered MCPTT speech media stream and, if floor control shall be used, for the offered media-floor control entity;

NOTE: If the MCPTT client is behind a NAT the IP address and port included in the SDP offer can be a different IP address and port than the actual IP address and port of the MCPTT client depending on the NAT traversal method used by the SIP/IP Core.

2) shall include an "m=audio" media-level section for the MCPTT media stream consisting of:

   a) the port number for the media stream selected; and

   b) the codec(s) and media parameters and attributes with the following clarification:

      ...

   c) "i=" field set to "speech" according to 3GPP TS 24.229 [4];

4) if end-to-end security is required for a private call and the SDP offer is not for establishing a pre-established session, shall include the MIKEY-SAKKE I_MESSAGE in an "a=key-mgmt" attribute as a "mikey" attribute value in the SDP offer as specified in IETF RFC 4567 [47].

[TS 24.379, clause 6.2.5.1]

When the MCPTT client wants to release an MCPTT session established using on-demand session signalling, the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

2) shall generate a SIP BYE request according to 3GPP TS 24.229 [4];

3) shall set the Request-URI to the MCPTT session identity to release; and

4) shall send a SIP BYE request towards MCPTT server according to 3GPP TS 24.229 [4].

Upon receiving a SIP 200 (OK) response to the SIP BYE request, the MCPTT client shall interact with the media plane as specified in 3GPP TS 24.380 [5].

[TS 24.379, clause 6.2.8.3.2]

When the MCPTT emergency private call state is set to "MEPC 1: emergency-pc-capable" and this is an authorised request for an MCPTT emergency private call as determined by the procedures of subclause 6.2.8.3.1.1, the MCPTT client:

1) shall set the MCPTT emergency state if not already set;

2) shall include in the application/vnd.3gpp.mcptt-info+xml MIME body in the SIP request an <emergency-ind> element set to "true" and set the MCPTT emergency private call state to "MEPC 2: emergency-pc-requested";

3) if the MCPTT user has also requested an MCPTT emergency alert to be sent and this is an authorised request for MCPTT emergency alert as determined by the procedures of subclause 6.2.8.3.1.3, shall:

   a) include in the application/vnd.3gpp.mcptt-info+xml MIME body the <alert-ind> element set to "true" and set the MCPTT private emergency alert state to "MPEA 2: emergency-alert-confirm-pending"; and

   b) include in the SIP request the specific location information for MCPTT emergency alert as specified in subclause 6.2.9.1;

4) if the MCPTT user has not requested an MCPTT emergency alert to be sent, shall set the <alert-ind> element of the application/vnd.3gpp.mcptt-info+xml MIME body to "false"; and

5) if the MCPTT emergency private priority state of this private call is set to a value other than "MEPP 2: in-progress" shall set the MCPTT emergency private priority state to "MEPP 4: confirm-pending".

[TS 24.379, clause 6.2.8.3.3]

If the MCPTT emergency private call state is set to either "MEPC 2: emergency-pc-requested" or "MEPC 3: emergency-pc-granted" and this is an authorised request for an MCPTT emergency private call as determined by the procedures of subclause 6.2.8.3.1.1, or the MCPTT emergency private priority state of the call is set to "MEPP 2: in-progress", the MCPTT client shall include in the SIP request a Resource-Priority header field populated with the values for an MCPTT emergency private call as specified in subclause 6.2.8.1.15.

NOTE: The MCPTT client ideally would not need to maintain knowledge of the in-progress emergency state of the call (as tracked on the MCPTT client by the MCPTT client emergency private state) but can use this knowledge to provide a Resource-Priority header field set to emergency level priority, which starts the infrastructure priority adjustment process sooner than otherwise would be the case.

[TS 24.379, clause 6.2.8.3.4]

On receiving a SIP 2xx response to a SIP request for an MCPTT emergency private call and if the MCPTT emergency private call state is set to "MEPC 2: emergency-pc-requested" or "MEPC 3: emergency-pc-granted", the MCPTT client:

1) shall set the MCPTT emergency private priority state of the call to "MEPP 2: in-progress" if it was not already set;

2) shall set the MCPTT emergency private call state to "MEPC 3: emergency-pc-granted"; and

[TS 24.379, clause 6.2.8.3.6]

When the MCPTT emergency private call state is set to "MEPC 3: emergency-pc-granted" and the MCPTT emergency alert state is set to "MPEA 1: no-alert", the MCPTT client shall generate a SIP re-INVITE request according to 3GPP TS 24.229 [4] with the clarifications given below.

NOTE 1: This procedure assumes that the MCPTT client in the calling procedure has verified that the MCPTT user has made an authorised request for cancelling MCPTT the in-progress emergency private call state of the call.

The MCPTT client:

1) shall include in the SIP re-INVITE request an application/vnd.3gpp.mcptt-info+xml MIME body as defined in clause F.1 with the <emergency-ind> element set to "false";

2) shall clear the MCPTT emergency state; and

3) shall set MCPTT emergency private priority state of the MCPTT emergency private call to "MEPP 3: cancel-pending".

NOTE 2: This is the case of an MCPTT user who has initiated an MCPTT emergency private call and wants to cancel it.

[TS 24.379, clause 11.1.1.2.1.1]

Upon receiving a request from an MCPTT user to establish an MCPTT private call the MCPTT client shall generate an initial SIP INVITE request by following the UE originating session procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

1) shall set the Request-URI of the SIP INVITE request to a public service identity of the participating MCPTT function serving the MCPTT user;

2) if the MCPTT user has requested the origination of an MCPTT emergency private call or is originating an MCPTT private call and the MCPTT emergency state is already set, the MCPTT client:

   a) shall, if this is an authorised request for an MCPTT emergency private call as determined by the procedures of subclause 6.2.8.3.1.1, comply with the procedures in subclause 6.2.8.3.2; and

   b) should, if this is an unauthorised request for an MCPTT emergency private call as determined in step a) above, indicate to the MCPTT user that they are not authorised to initiate an MCPTT emergency private call;

3) may include a P-Preferred-Identity header field in the SIP INVITE request containing a public user identity as specified in 3GPP TS 24.229 [4];

4) shall include the g.3gpp.mcptt media feature tag and the g.3gpp.icsi-ref media feature tag with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP INVITE request according to IETF RFC 3840 [16];

5) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

6) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP INVITE request;

7) shall include an Accept-Contact header field with the media feature tag g.3gpp.icsi-ref contain with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with parameters "require" and "explicit" according to IETF RFC 3841 [6];

8) shall insert in the SIP INVITE request a MIME resource-lists body with the MCPTT ID of the invited MCPTT user, according to rules and procedures of IETF RFC 5366 [20];

9) if an end-to-end security context needs to be established then:

   a) if necessary, shall instruct the key management client to request keying material from the key management server as described in 3GPP TS 33.179 [46];

b) shall use the keying material to generate a PCK as described in 3GPP TS 33.179 [46];

c) shall use the PCK to generate a PCK-ID with the four most significant bits set to "0001" to indicate that the purpose of the PCK is to protect private call communications and with the remaining twenty eight bits being randomly generated as described in 3GPP TS 33.179 [46];

d) shall encrypt the PCK to a UID associated to the MCPTT client using the MCPTT ID of the invited user and a time related parameter as described in 3GPP TS 33.179 [46];

e) shall generate a MIKEY-SAKKE I_MESSAGE using the encapsulated PCK and PCK-ID as specified in 3GPP TS 33.179 [46]; and

g) shall add the MCPTT ID of the originating MCPTT to the initiator field (IDRi) of the I_MESSAGE as described in 3GPP TS 33.179 [46]; and

f) shall sign the MIKEY-SAKKE I_MESSAGE using the originating MCPTT user's signing key provided in the keying material together with a time related parameter, and add this to the MIKEY-SAKKE payload, as described in 3GPP TS 33.179 [46].

10) shall include an SDP offer according to 3GPP TS 24.229 [4] with the clarification given in subclause 6.2.1 and with a media stream of the offered media-floor control entity;

...

12) if force of automatic commencement mode at the invited MCPTT client is requested by the MCPTT user, shall include in the SIP INVITE request a Priv-Answer-Mode header field with the value "Auto" according to the rules and procedures of IETF RFC 5373 [18];

...

14) shall contain an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <session-type> element set to a value of "private";

15) if the MCPTT emergency private call state is set to either "MEPC 2: emergency-pc-requested" or "MEPC 3: emergency-pc-granted" or the MCPTT emergency private priority state for this private call is set to "MEPP 2: in-progress", the MCPTT client shall comply with the procedures in subclause 6.2.8.3.3; and

16) shall send SIP INVITE request towards the MCPTT server according to 3GPP TS 24.229 [4].

Upon receiving a SIP 183(Session Progress) response to the SIP INVITE request the MCPTT client:

1) may indicate the progress of the session establishment to the inviting MCPTT user.

Upon receiving a SIP 200 (OK) response to the SIP INVITE request the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

2) if the MCPTT emergency private call state is set to "MEPC 2: emergency-pc-requested" or "MEPC 3: emergency-pc-granted", shall perform the actions specified in subclause 6.2.8.3.4; and

3) shall notify the user that the call has been successfully established.

[TS 24.379, clause 11.1.2.2]

Upon receipt of an initial SIP INVITE request for the private call with an SDP offer not including a media-level section for a media-floor control entity, the MCPTT client shall consider it as the request for private call without floor control and shall follow the procedures as specified in subclause 11.1.1.2.1.2 for on-demand session and subclause 11.1.1.2.2.2 for pre-established session.

[TS 24.379, clause 11.1.3.1.1.1]

Upon receiving a request from an MCPTT user to release an MCPTT private call session established using on-demand session signalling, the MCPTT client shall follow the procedures as specified in subclause 6.2.5.1.

6.2.5.3 Test description

6.2.5.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)
- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.2.5.3.2 Test procedure sequence

Table 6.2.5.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the UE (MCPTT User) request the establishment of an MCPTT private emergency call, force of automatic commencement mode, without Floor Control. (NOTE 1).	-	-	-	-
2	Check: Does the UE (MCPTT client) perform the Generic Test Procedure for MCPTT CO session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.7.3-1 to establish an MCPTT private call, automatic commencement mode according to option a of NOTE 1 in TS 36.579.1 [2] Table 5.3.7.3-1?	-	-	1	P
3-4	Void	-	-	-	-
5	Check: Does the UE (MCPTT client) notify the user that the call has been successfully established? (NOTE 1)	-	-	1	P
6-7	Void	-	-	-	-
8	Make the UE (MCPTT User) request termination of the MCPTT private emergency call. (NOTE 1):	-	-	-	-
9	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO call release as described in TS 36.579-1 [2] Table 5.3.10.3-1 to end the call?	-	-	2	P
10-11	Void	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI.					

6.2.5.3.3 Specific message contents

Table 6.2.5.3.3-1: SIP INVITE (Step 2, Table 6.2.5.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.7.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.5.1-1, conditions PRIVATE-CALL and EMERGENCY-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Answer-Mode	Not present			
Priv-Answer-Mode				
answer-mode-value	"Auto"			
answer-mode-param	“require”			
Message-body				
MIME body part		SDP message		
MIME-part-body	SDP message as described in Table 6.2.5.3.3-2			
MIME body part		MCPTT-Info		
MIME-part-body	MCPTT-Info as described in Table 6.2.5.3.3-3			

Table 6.2.5.3.3-2: SDP Message in SIP INVITE (Table 6.2.5.3.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.1-1, conditions PRIVATE-CALL, WITHOUT_MEDIACONTROL

Table 6.2.5.3.3-3: MCPTT-Info in SIP INVITE (Table 6.2.5.3.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.3.2.1-1, conditions PRIVATE-CALL, INVITE_REFER and EMERGENCY-CALL

Table 6.2.5.3.3-4: SIP 200 (OK) (Step 2, Table 6.2.5.3.2-1; step 4, TS 36.579-1 [2] Table 5.3.7.3-)

Derivation Path: TS 36.579-1 [2], table 5.5.2.17.1.2-1 condition INVITE-RSP				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
SDP Message	As described in Table 6.2.5.3.3-5			

Table 6.2.5.3.3-5: SDP Message in SIP 200 (OK) (Table 6.2.5.3.3-4)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.2-1 conditions PRIVATE-CALL, WITHOUT_MEDIACONTROL

Table 6.2.5.3.3-6: Void

6.2.6 On-network / Private Call / Emergency Private Call / On-demand / Automatic Commencement Mode / Force of automatic commencement mode / Without Floor Control / Client Terminated (CT)

6.2.6.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service including authorization to
receive an MCPTT private call, the MCPTT service setting for answering the call is set to manual
commencement mode }
ensure that {
  when { the UE (MCPTT Client) receives a request for establishment of an MCPTT emergency private
call, On-demand Automatic Commencement Mode, Force of automatic commencement mode without floor
control }
    then { UE (MCPTT Client) accepts the call (automatic commencement) by sending a SIP 200 (OK)
message accepting the private emergency call, on-demand Automatic Commencement Mode, not offering a
media-level section for a media-floor control entity, and, optionally notifies the user }
            }
```

(2)

```
with { UE (MCPTT Client) having established an MCPTT Emergency Private Call }
ensure that {
  when { the UE (MCPTT Client) is informed by the remote client that the ongoing MCPTT emergency
private call has been cancelled }
    then { UE (MCPTT Client) accept the request and after sending a SIP 200 (OK) response leaves the
MCPTT session }
            }
```

6.2.6.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: TS 24.379 clauses 6.2.2, 6.2.3.1.1, 6.2.6, 11.1.1.2.1.2, 11.1.2.2, 11.1.3.1.1.2. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 6.2.2]

When the MCPTT client receives an initial SDP offer for an MCPTT session, the MCPTT client shall process the SDP offer and shall compose an SDP answer according to 3GPP TS 24.229 [4].

When composing an SDP answer, the MCPTT client:

1) shall accept the MCPTT speech media stream in the SDP offer;

2) shall set the IP address of the MCPTT client for the accepted MCPTT speech media stream and, if included in the SDP offer, for the accepted media-floor control entity;

NOTE: If the MCPTT client is behind a NAT the IP address and port included in the SDP answer can be a different IP address and port than the actual IP address and port of the MCPTT client depending on the NAT traversal method used by the SIP/IP Core.

3) shall include an "m=audio" media-level section for the accepted MCPTT speech media stream consisting of:

   a) the port number for the media stream;

   b) media-level attributes as specified in 3GPP TS 24.229 [4]; and

   c) "i=" field set to "speech" according to 3GPP TS 24.229 [4]; and

[TS 24.379, clause 6.2.3.1.1]

When performing the automatic commencement mode procedures, the MCPTT client:

1) shall accept the SIP INVITE request and generate a SIP 200 (OK) response according to rules and procedures of 3GPP TS 24.229 [4];

2) shall include the option tag "timer" in a Require header field of the SIP 200 (OK) response;

3) shall include the g.3gpp.mcptt media feature tag in the Contact header field of the SIP 200 (OK) response;

4) shall include the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP 200 (OK) response;

5) shall include the Session-Expires header field in the SIP 200 (OK) response and start the SIP session timer according to IETF RFC 4028 [7]. The "refresher" parameter in the Session-Expires header field shall be set to "uas";

...

7) shall, if the incoming SIP INVITE request does not contain a Replaces header field, include an SDP answer in the SIP 200 (OK) response to the SDP offer in the incoming SIP INVITE request according to 3GPP TS 24.229 [4] with the clarifications given in subclause 6.2.2;

NOTE: In the case of a new emergency call where the terminating client is using a pre-established session, the SIP INVITE request containing a Replaces header is used to replace the pre-established session.

8) shall send the SIP 200 (OK) response towards the MCPTT server according to rules and procedures of 3GPP TS 24.229 [4];

...

10) shall interact with the media plane as specified in 3GPP TS 24.380 [5] subclause 6.2.

When NAT traversal is supported by the MCPTT client and when the MCPTT client is behind a NAT, generation of SIP responses is done as specified in this subclause and as specified in IETF RFC 5626 [15].

[TS 24.379, clause 6.2.6]

Upon receiving a SIP BYE request, the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5]; and

2) shall send SIP 200 (OK) response towards MCPTT server according to 3GPP TS 24.229 [4].

[TS 24.379, clause 11.1.1.2.1.2]

Upon receipt of an initial SIP INVITE request, the MCPTT client shall follow the procedures for termination of multimedia sessions in the IM CN subsystem as specified in 3GPP TS 24.229 [4] with the clarifications below.

The MCPTT client:

...

3) if the SIP INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <emergency-ind> element set to a value of "true":

   a) should display to the MCPTT user an indication that this is a SIP INVITE request for an MCPTT emergency private call and:

      i) should display the MCPTT ID of the originator of the MCPTT emergency private call contained in the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body; and

      ...

   b) shall set the MCPTT emergency private priority state to "MEPP 2: in-progress" for this private call;

...

5) may check if a Resource-Priority header field is included in the incoming SIP INVITE request and may perform further actions outside the scope of the present document to act upon an included Resource-Priority header field as specified in 3GPP TS 24.229 [4];

...

7) shall perform the automatic commencement procedures specified in subclause 6.2.3.1.1 if one of the following conditions are met:

   ...

   c) SIP INVITE request contains a Priv-Answer-Mode header field with the value of "Auto"; and

[TS 24.379, clause 11.1.2.2]

Upon receipt of an initial SIP INVITE request for the private call with an SDP offer not including a media-level section for a media-floor control entity, the MCPTT client shall consider it as the request for private call without floor control and shall follow the procedures as specified in subclause 11.1.1.2.1.2 for on-demand session and subclause 11.1.1.2.2.2 for pre-established session.

[TS 24.379, clause 11.1.3.1.1.2]

Upon receiving a SIP BYE request for private call session, the MCPTT client shall follow the procedures as specified in subclause 6.2.6.

6.2.6.3 Test description

6.2.6.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)
- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)

- receive emergency calls; MCPTT service setting for answering the call is set to manual commencement mode (3GPP TS 24.483 [12], /<x>/<x>/Common/PrivateCall/AutoCommence="false", /<x>/<x>/Common/PrivateCall/ManualCommence="true")

- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

- UE States at the end of the preamble

  - The UE is in E-UTRA Registered, Idle Mode state.

  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.2.6.3.2 Test procedure sequence

Table 6.2.6.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Is the Generic Test Procedure for MCPTT CT session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.4.3-1 to establish an MCPTT private emergency call with force of automatic commencement mode without floor control correctly performed?	-	-	1	P
2	Void	-	-	-	-
-	EXCEPTION: Step 3a1 describes behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place if the UE displays information to the User upon accepting establishment/releasing of private call.	-	-	-	-
3a1	IF pc_MCX_DisplayInfoEmergencyCall THEN Check: Does the UE (MCPTT client) notify the user about the emergency call establishment? (NOTE 1): NOTE 2: The display information may include - indication for a request for an MCPTT private call - the MCPTT ID of the originator of the MCPTT private call.	-	-	1	P
4-5	Void	-	-	-	-
6	Check: Is the Generic Test Procedure for MCPTT CT call release as described in TS 36.579-1 [2] Table 5.3.12.3-1 to end the call correctly performed?	-	-	2	P
7-8	Void	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI.					

6.2.6.3.3 Specific message contents

Table 6.2.6.3.3-1: MCPTT User Profile (Preamble, USIM)

Derivation Path: TS 36.579-1 [2], table 5.5.8.3-1.				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcptt-user-profile				
cp:ruleset				
cp:rule				
cp:actions				
allow-automatic-commencement	"false"			

Table 6.2.6.3.3-2: SIP INVITE (Step 1, Table 6.2.6.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.5.2-1, conditions PRIVATE-CALL and EMERGENCY-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Answer-Mode	Not present			
Priv-Answer-Mode				
answer-mode-value	"Auto"			
answer-mode-param	“require”			
Message-body				
MIME body part		**SDP Message**		
MIME-part-body	SDP Message as described in Table 6.2.6.3.3-3			

Table 6.2.6.3.3-3: SDP Message in SIP INVITE (Table 6.2.6.3.3-2)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.2-1, conditions PRIVATE-CALL, WITHOUT_MEDIACONTROL

Table 6.2.6.3.3-3: SIP 200 (OK) (Step 1, Table 6.2.6.3.2-1; step 4, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.17.1.1-1 condition INVITE-RSP				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
SDP Message	As described in Table 6.2.6.3.3-4			

Table 6.2.6.3.3-4: SDP Message in SIP 200 (OK) (Table 6.2.6.3.3-3)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.1-1 condition WITHOUT_MEDIACONTROLL

Table 6.2.6.3.3-6: Void

6.2.7 On-network / Private Call / On-demand / Manual Commencement Mode / Without Floor Control / Client Originated (CO)

6.2.7.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service and authorized to initiate
private calls with manual commencement }
ensure that {
  when { the MCPTT User requests the establishment of an MCPTT on-demand Manual Commencement private
call without floor control }
```

```
    then { UE (MCPTT Client) requests On-demand Manual Commencement Mode Private Call establishment
without floor control by sending a SIP INVITE message not offering a media-level section for a
media-floor control entity, and, after indication from the MCPTT Server that the call was
established the UE notifies the user }
            }
```

(2)

```
with { UE (MCPTT Client) having established an MCPTT on-demand Manual Commencement private call
without floor control }
ensure that {
  when { the MCPTT User wants to cancel the ongoing MCPTT on-demand Manual Commencement private call
}
    then { UE (MCPTT Client) sends a SIP BYE request and after receiving a SIP 200 (OK) response
leaves the MCPTT session }
            }
```

6.2.7.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: TS 24.379 clauses 6.2.1, 6.2.5.1, 11.1.1.2.1.1, 11.1.2.2, 11.1.3.1.1.1. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 6.2.1]

The SDP offer shall contain only one SDP media-level section for MCPTT speech according to 3GPP TS 24.229 [4] and, if floor control shall be used during the session, shall contain one SDP media-level section for a media-floor control entity according to 3GPP TS 24.380 [5].

When composing an SDP offer according to 3GPP TS 24.229 [4] the MCPTT client:

1) shall set the IP address of the MCPTT client for the offered MCPTT speech media stream and, if floor control shall be used, for the offered media-floor control entity;

NOTE: If the MCPTT client is behind a NAT the IP address and port included in the SDP offer can be a different IP address and port than the actual IP address and port of the MCPTT client depending on the NAT traversal method used by the SIP/IP Core.

2) shall include an "m=audio" media-level section for the MCPTT media stream consisting of:

   a) the port number for the media stream selected; and

   b) the codec(s) and media parameters and attributes with the following clarification:

      ...

      i) shall insert the value of the "name" attribute in the <encoding name> field of the "a=rtpmap" attribute as defined in IETF RFC 4566 [12]; and

   c) "i=" field set to "speech" according to 3GPP TS 24.229 [4];

...

4) if end-to-end security is required for a private call and the SDP offer is not for establishing a pre-established session, shall include the MIKEY-SAKKE I_MESSAGE in an "a=key-mgmt" attribute as a "mikey" attribute value in the SDP offer as specified in IETF RFC 4567 [47].

[TS 24.379, clause 6.2.5.1]

When the MCPTT client wants to release an MCPTT session established using on-demand session signalling, the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

2) shall generate a SIP BYE request according to 3GPP TS 24.229 [4];

3) shall set the Request-URI to the MCPTT session identity to release; and

4) shall send a SIP BYE request towards MCPTT server according to 3GPP TS 24.229 [4].

Upon receiving a SIP 200 (OK) response to the SIP BYE request, the MCPTT client shall interact with the media plane as specified in 3GPP TS 24.380 [5].

[TS 24.379, clause 11.1.1.2.1.1]

Upon receiving a request from an MCPTT user to establish an MCPTT private call the MCPTT client shall generate an initial SIP INVITE request by following the UE originating session procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

1) shall set the Request-URI of the SIP INVITE request to a public service identity of the participating MCPTT function serving the MCPTT user;

9...

3) may include a P-Preferred-Identity header field in the SIP INVITE request containing a public user identity as specified in 3GPP TS 24.229 [4];

4) shall include the g.3gpp.mcptt media feature tag and the g.3gpp.icsi-ref media feature tag with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP INVITE request according to IETF RFC 3840 [16];

5) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

6) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP INVITE request;

7) shall include an Accept-Contact header field with the media feature tag g.3gpp.icsi-ref contain with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with parameters "require" and "explicit" according to IETF RFC 3841 [6];

8) shall insert in the SIP INVITE request a MIME resource-lists body with the MCPTT ID of the invited MCPTT user, according to rules and procedures of IETF RFC 5366 [20];

9) if an end-to-end security context needs to be established then:

   a) if necessary, shall instruct the key management client to request keying material from the key management server as described in 3GPP TS 33.179 [46];

   b) shall use the keying material to generate a PCK as described in 3GPP TS 33.179 [46];

   c) shall use the PCK to generate a PCK-ID with the four most significant bits set to "0001" to indicate that the purpose of the PCK is to protect private call communications and with the remaining twenty eight bits being randomly generated as described in 3GPP TS 33.179 [46];

   d) shall encrypt the PCK to a UID associated to the MCPTT client using the MCPTT ID of the invited user and a time related parameter as described in 3GPP TS 33.179 [46];

   e) shall generate a MIKEY-SAKKE I_MESSAGE using the encapsulated PCK and PCK-ID as specified in 3GPP TS 33.179 [46]; and

   g) shall add the MCPTT ID of the originating MCPTT to the initiator field (IDRi) of the I_MESSAGE as described in 3GPP TS 33.179 [46]; and

   f) shall sign the MIKEY-SAKKE I_MESSAGE using the originating MCPTT user's signing key provided in the keying material together with a time related parameter, and add this to the MIKEY-SAKKE payload, as described in 3GPP TS 33.179 [46].

10) shall include an SDP offer according to 3GPP TS 24.229 [4] with the clarification given in subclause 6.2.1 and with a media stream of the offered media-floor control entity;

...

13) if force of automatic commencement mode at the invited MCPTT client is not requested by the MCPTT user and:

   b) if manual commencement mode at the invited MCPTT client is requested by the MCPTT user, shall include in the SIP INVITE request an Answer-Mode header field with the value "Manual" according to the rules and procedures of IETF RFC 5373 [18];

14) shall contain an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <session-type> element set to a value of "private";

...

16) shall send SIP INVITE request towards the MCPTT server according to 3GPP TS 24.229 [4].

Upon receiving a SIP 183(Session Progress) response to the SIP INVITE request the MCPTT client:

1) may indicate the progress of the session establishment to the inviting MCPTT user.

Upon receiving a SIP 200 (OK) response to the SIP INVITE request the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

...

3) shall notify the user that the call has been successfully established.

[TS 24.379, clause 11.1.2.2]

When the MCPTT user wants to make an on-demand private call without floor control, the MCPTT client shall follow the procedures in subclause 11.1.1.2.1.1 with the following exceptions:

1) in step 10) of subclause 11.1.1.2.1.1, the MCPTT client shall not offer a media-level section for a media-floor control entity; and

2) step 11) of subclause 11.1.1.2.1.1 shall be ignored.

[TS 24.379, clause 11.1.3.1.1.1]

Upon receiving a request from an MCPTT user to release an MCPTT private call session established using on-demand session signalling, the MCPTT client shall follow the procedures as specified in subclause 6.2.5.1.

6.2.7.3 Test description

6.2.7.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)
- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

- UE States at the end of the preamble

  - The UE is in E-UTRA Registered, Idle Mode state.

  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.2.7.3.2 Test procedure sequence

Table 6.2.7.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the UE (MCPTT User) request the establishment of an MCPTT private call, manual commencement mode, and no floor control. (NOTE 1)	-	-	-	-
2	Check: Does the UE (MCPTT Client) perform Generic Test Procedure for MCPTT CO private call establishment, manual commencement to establish an MCPTT private call with manual commencement mode as described in TS 36.579.1 [2] Table 5.3.8.3-1 with option a of NOTE 1 applied?	-	-	1	P
3-5	Void	-	-	-	-
6	Check: Does the UE (MCPTT client) notify the user that the call has been successfully established? (NOTE 1)	-	-	1	P
7-8	Void	-	-	-	-
9	Make the UE (MCPTT User) request termination of the MCPTT private call. (NOTE 1)	-	-	-	-
10	Check: Does the UE (MCPTT Client) perform Generic Test Procedure for MCPTT CO call release as described in TS 36.579-1 [2] Table 5.3.10.3-1 to end the private call?	-	-	2	P
11-12	Void	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI.					

6.2.7.3.3 Specific message contents

Table 6.2.7.3.3-1: SIP INVITE (Step 2, Table 6.2.7.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.8.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.5.1-1, conditions PRIVATE-CALL, MANUAL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		SDP Message		
MIME-part-body	SDP Message as described in Table 6.2.7.3.3-2			

Table 6.2.7.3.3-2: SDP Message in SIP INVITE (Table 6.2.7.3.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.1-1, conditions PRIVATE-CALL, WITHOUT_MEDIACONTROL

Table 6.2.7.3.3-3: SIP 200 (OK) (Steps 2, Table 6.2.7.3.2-1; step 5, TS 36.579-1 [2] Table 5.3.8.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.17.1.2-1 condition INVITE-RSP				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
SDP Message	As described in Table 6.2.7.3.3-4			

Table 6.2.7.3.3-4: SDP Message in SIP 200 (OK) (Table 6.2.7.3.3-3)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.2-1 conditions PRIVATE-CALL, WITHOUT_MEDIACONTROL

Table 6.2.7.3.3-5: Void

6.2.8 On-network / Private Call / On-demand / Manual Commencement Mode / Without Floor Control / Client Terminated (CT)

6.2.8.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service including authorization to
receive an MCPTT private call }
ensure that {
  when { the UE (MCPTT Client) receives a request for establishment of an MCPTT private call, On-
demand Manual Commencement Mode without floor control }
    then { UE (MCPTT Client) notifies the User for the incoming call responding to the Server with a
SIP 180 (Ringing) message, and, after the User accepts the call sends to the Server a SIP 200 (OK)
message, and, does not apply floor control }
            }
```

(2)

```
with { UE (MCPTT Client) having established an MCPTT Private Call }
ensure that {
  when { the MCPTT User (MCPTT Client) is informed for the termination of the ongoing MCPTT private
call }
    then { UE (MCPTT Client) accepts the request and after sending a SIP 200 (OK) response leaves
the MCPTT session }
            }
```

6.2.8.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: TS 24.379 clauses 6.2.2, 6.2.3.2.1, 6.2.6, 11.1.1.2.1.2, 11.1.1.2.1.3, 11.1.3.1.1.2. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 6.2.2]

When the MCPTT client receives an initial SDP offer for an MCPTT session, the MCPTT client shall process the SDP offer and shall compose an SDP answer according to 3GPP TS 24.229 [4].

When composing an SDP answer, the MCPTT client:

1) shall accept the MCPTT speech media stream in the SDP offer;

2) shall set the IP address of the MCPTT client for the accepted MCPTT speech media stream and, if included in the SDP offer, for the accepted media-floor control entity;

NOTE: If the MCPTT client is behind a NAT the IP address and port included in the SDP answer can be a different IP address and port than the actual IP address and port of the MCPTT client depending on the NAT traversal method used by the SIP/IP Core.

3) shall include an "m=audio" media-level section for the accepted MCPTT speech media stream consisting of:

   a) the port number for the media stream;

   b) media-level attributes as specified in 3GPP TS 24.229 [4]; and

   c) "i=" field set to "speech" according to 3GPP TS 24.229 [4]; and

[TS 24.379, clause 6.2.3.2.1]

The MCPTT client:

1) shall accept the SIP INVITE request and generate a SIP 180 (Ringing) response according to rules and procedures of 3GPP TS 24.229 [4];

2) shall include the option tag "timer" in a Require header field of the SIP 180 (Ringing) response;

3) shall include the g.3gpp.mcptt media feature tag in the Contact header field of the SIP 180 (Ringing) response;

4) shall include the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP 180 (Ringing) response; and

5) shall send the SIP 180 (Ringing) response to the MCPTT server.

When sending the SIP 200 (OK) response to the incoming SIP INVITE request, the MCPTT client shall follow the procedures in subclause 6.2.3.1.1.

When NAT traversal is supported by the MCPTT client and when the MCPTT client is behind a NAT, generation of SIP responses is done as specified in this subclause and as specified in IETF RFC 5626 [15].

[TS 24.379, clause 6.2.6]

Upon receiving a SIP BYE request, the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5]; and

2) shall send SIP 200 (OK) response towards MCPTT server according to 3GPP TS 24.229 [4].

[TS 24.379, clause 11.1.1.2.1.2]

Upon receipt of an initial SIP INVITE request, the MCPTT client shall follow the procedures for termination of multimedia sessions in the IM CN subsystem as specified in 3GPP TS 24.229 [4] with the clarifications below.

The MCPTT client:

...

4) if the SDP offer of the SIP INVITE request contains an "a=key-mgmt" attribute field with a "mikey" attribute value containing a MIKEY-SAKKE I_MESSAGE:

   a) shall extract the MCPTT ID of the originating MCPTT from the initiator field (IDRi) of the I_MESSAGE as described in 3GPP TS 33.179 [46];

   b) shall convert the MCPTT ID to a UID as described in 3GPP TS 33.179 [46];

   c) shall use the UID to validate the signature of the MIKEY-SAKKE I_MESSAGE as described in 3GPP TS 33.179 [46];

   d) if authentication verification of the MIKEY-SAKKE I_MESSAGE fails, shall reject the SIP INVITE request with a SIP 488 (Not Acceptable Here) response as specified in IETF RFC 4567 [47], and include warning text set to "136 authentication of the MIKEY-SAKE I_MESSAGE failed" in a Warning header field as specified in subclause 4.4; and

   e) if the signature of the MIKEY-SAKKE I_MESSAGE was successfully validated:

      i) shall extract and decrypt the encapsulated PCK using the terminating user's (KMS provisioned) UID key as described in 3GPP TS 33.179 [46]; and

ii) shall extract the PCK-ID, from the payload as specified in 3GPP TS 33.179 [46];

NOTE: With the PCK successfully shared between the originating MCPTT client and the terminating MCPTT client, both clients are able to use SRTP/SRTCP to create an end-to-end secure session.

5) may check if a Resource-Priority header field is included in the incoming SIP INVITE request and may perform further actions outside the scope of the present document to act upon an included Resource-Priority header field as specified in 3GPP TS 24.229 [4];

6) may display to the MCPTT user the MCPTT ID of the inviting MCPTT user;

...

8) shall perform the manual commencement procedures specified in subclause 6.2.3.2.1 if either of the following conditions are met:

a) SIP INVITE request contains an Answer-Mode header field with the value "Manual" and the MCPTT service setting at the invited MCPTT client for answering the call is set to manual commencement mode; or

[TS 24.379, clause 11.1.2.2]

Upon receipt of an initial SIP INVITE request for the private call with an SDP offer not including a media-level section for a media-floor control entity, the MCPTT client shall consider it as the request for private call without floor control and shall follow the procedures as specified in subclause 11.1.1.2.1.2 for on-demand session and subclause 11.1.1.2.2.2 for pre-established session.

[TS 24.379, clause 11.1.3.1.1.2]

Upon receiving a SIP BYE request for private call session, the MCPTT client shall follow the procedures as specified in subclause 6.2.6.

6.2.8.3 Test description

6.2.8.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)
- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.2.8.3.2 Test procedure sequence

Table 6.2.8.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCPTT client) successfully complete a CT MCPTT private call, on-demand Manual Commencement Mode and no floor control call setup as per the step sequence specified in TS 36.579-1 [2], subclause 5.3.6, Generic Test Procedure for MCPTT CT private call establishment, manual commencement?	-	-	1	P
2-6	Void.	-	-	-	-
7	Wait 5 sec	-	-	-	-
8	Check: Does the UE (MCPTT client) successfully complete a CT MCPTT private call, on-demand Manual Commencement Mode and no floor control call release as per the step sequence specified in TS 36.579-1 [2], subclause 5.3.12 Generic Test Procedure for MCPTT CT call release?	-	-	2	-
9-10	Void.	-	-	-	-

6.2.8.3.3 Specific message contents

Table 6.2.8.3.3-1: SIP INVITE (Step 1, Table 6.2.8.3.2-1; step 2, TS 36.579-1 [2], Table 5.3.6.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.5.2-1, condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		SDP message		
MIME-part-body	SDP message as described in Table 6.2.8.3.3-2			

Table 6.2.8.3.3-2: SDP Message in SIP INVITE (Table 6.2.8.3.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.2-1, conditions PRIVATE-CALL, WITHOUT_MEDIACONTROL

Table 6.2.8.3.3-3: SIP 200 (OK) (Step 1, Table 6.2.8.3.2-1; step 6, TS 36.579-1 [2], Table 5.3.6.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.17.1.1-1 conditions INVITE_RSP, PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Content-Type				
media-type	"application/sdp"			
Message-body				
SDP message	As described in Table 6.2.8.3.3-4			

Table 6.2.8.3.3-4: SDP Message in SIP 200 (OK) (Table 6.2.8.3.3-3)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.1-1 conditions PRIVATE-CALL, SDP_ANSWER, WITHOUT_MEDIACONTROL

Table 6.2.8.3.3-5: Void

6.2.9 On-network / Private Call / Within a pre-established session / Automatic Commencement Mode / Without Floor Control / Client Originated (CO)

6.2.9.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including authorized to
initiate/cancel private calls with automatic commencement, and, having established a pre-established
session }
ensure that {
  when { the MCPTT User requests the establishment of an MCPTT private call within the pre-
established session, Automatic Commencement Mode, no Force of automatic commencement, without floor
control }
    then { UE (MCPTT Client) sends a SIP REFER request outside a dialog indicating Automatic
Commencement Mode and not offering a media-level section for a media-floor control entity, and,
after receiving a Connect message from the participating MCPTT function sends an Acknowledgment
message indicating that the connection is accepted }
            }
```

(2)

```
with { UE (MCPTT Client) having Private Call Within a pre-established session, Automatic
Commencement Mode Private Call without Floor control }
ensure that {
  when { the MCPTT User wants to release the ongoing MCPTT private call }
    then { UE (MCPTT Client) sends a REFER request with the value "BYE" in the URI in the Refer-To
header field and after receiving a SIP 200 (OK) leaves the MCPTT session }
            }
```

6.2.9.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: TS 24.379 clauses 11.1.2.2, 11.1.1.2.2.1, 11.1.3.1.2.1, 6.2.5.2, TS 24.380 clauses 4.1.2.1, 4.1.2.2, 9.2.2.3.2, 9.2.2.4.6. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 11.1.2.2]

When the MCPTT user wants to make a private call without floor control using a pre-established session, the MCPTT client shall follow the procedures in subclause 11.1.1.2.2.1 with the exception that step 8 c) i) is re-written as:

- if the SDP parameters of the pre-established session contain a media-level section of a media-floor control entity or if end-to-end security is required for the private call, an application/sdp MIME body containing the SDP parameters of the pre-established session according to 3GPP TS 24.229 [4] with the clarification given in subclause 6.2.1. If the pre-established session was established with implicit floor control, then the application/sdp MIME body shall not contain the implicit floor request as specified in subclause 6.4.

[TS 24.379, clause 11.1.1.2.2.1]

Upon receiving a request from an MCPTT user to establish an MCPTT private call within a pre-established session the MCPTT client shall generate a SIP REFER request outside a dialog in accordance with the procedures specified in 3GPP TS 24.229 [4], IETF RFC 4488 [22] and IETF RFC 3515 [25] as updated by IETF RFC 6665 [26] and IETF RFC 7647 [27], with the clarifications given below.

...

The MCPTT client populates the SIP REFER request as follows:

1) shall include the Request-URI set to the public service identity identifying the pre-established session on the MCPTT server serving the MCPTT user;

2) shall include the Refer-Sub header field with value "false" according to rules and procedures of IETF RFC 4488 [22];

3) shall include the Supported header field with value "norefersub" according to rules and procedures of IETF RFC 4488 [22];

4) shall include the option tag "multiple-refer" in the Require header field;

5) may include a P-Preferred-Identity header field in the SIP REFER request containing a public user identity as specified in 3GPP TS 24.229 [4];

6) shall include a P-Preferred-Service header field set to the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), according to IETF RFC 6050 [9];

7) shall set the Refer-To header field of the SIP REFER request as specified in IETF RFC 3515 [25] with a Content-ID ("cid") Uniform Resource Locator (URL) as specified in IETF RFC 2392 [62] that points to an application/resource-lists MIME body as specified in IETF RFC 5366 [20], and with the Content-ID header field set to this "cid" URL.

8) shall include in the application/resource-lists MIME body a single <entry> element containing a "uri" attribute set to the MCPTT ID of the called user, extended with the following URI header fields:

NOTE: Characters that are not formatted as ASCII characters are escaped in the following URI header fields

..

b) if force of automatic commencement mode at the invited MCPTT client is not requested by the MCPTT user and:

i) if automatic commencement mode at the invited MCPTT client is requested by the MCPTT user, shall include an Answer-Mode header field with the value "Automatic" according to rules and procedures of IETF RFC 5373 [18]; and

...

c) shall include in a hname "body" URI header field:

i) ...

ii) an application/vnd.3gpp.mcptt-info MIME body with the <session-type> element set to "private"; and

iii) an application/resources-list MIME body with an <entry> element containing a "uri" attribute set to the MCPTT ID of the called user;

...

11) shall include a Target-Dialog header field as specified in IETF RFC 4538 [23] identifying the pre-established session.

The MCPTT client shall send the SIP REFER request towards the MCPTT server according to 3GPP TS 24.229 [4].

Upon receiving a final SIP 2xx response to the SIP REFER request the MCPTT client shall interact with media plane as specified in 3GPP TS 24.380 [5].

[TS 24.379, clause 11.1.3.1.2.1]

Upon receiving a request from an MCPTT user to release an MCPTT private call within a pre-established session, the MCPTT client shall follow the procedures as specified in subclause 6.2.5.2.

[TS 24.379, clause 6.2.5.2]

When the MCPTT client wants to release an MCPTT session using a pre-established session, the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

2) shall generate an initial SIP REFER request outside a dialog in accordance with the procedures specified in 3GPP TS 24.229 [4], IETF RFC 4488 [22] and IETF RFC 3515 [25] as updated by IETF RFC 6665 [26] and IETF RFC 7647 [27];

3) shall set the Request-URI of the SIP REFER request to the public service identity identifying the pre-established session on the MCPTT server serving the MCPTT user;

4) shall include the Refer-Sub header field with value "false" according to rules and procedures of IETF RFC 4488 [22];

5) shall include the Supported header field with value "norefersub" according to rules and procedures of IETF RFC 4488 [22];

6) shall set the Refer-To header field of the SIP REFER request to the MCPTT session identity to release;

7) shall include the "method" SIP URI parameter with the value "BYE" in the URI in the Refer-To header field;

8) shall include a Target-Dialog header field as specified in IETF RFC 4538 [23] identifying the pre-established session; and

9) shall send the SIP REFER request according to 3GPP TS 24.229 [4].

Upon receiving a SIP 2xx response to the SIP REFER request, the MCPTT client shall interact with media plane as specified in 3GPP TS 24.380 [5].

[TS 24.380, clause 4.1.2.1]

A pre-established session can be used when initiating a pre-arranged group call, a chat group call or a private call. Similarly a pre-established session can be released for reuse after the termination of a pre-arranged group call, chat group call and private call.

The media plane control messages related to call setup over a pre-established session are sent over the channel used for media plane control. The media plane control messages related to the release of a call which was setup over a pre-established session, without terminating the pre-established session, are sent over the channel used for media plane control. The unicast channel for media plane control is over the MCPTT-4 reference point.

[TS 24.380, clause 4.1.2.2]

For a pre-arranged group call, when the originator initiates the call setup indicating the use of a pre-established session using SIP messages as specified in 3GPP TS 24.379 [2], the participating MCPTT function (which serves the originating MCPTT client) sends to the originating MCPTT client a Connect message after the controlling MCPTT function accepts the initiation of this call. After the reception of this Connect message the originating MCPTT client sends an Acknowledgment message by indicating that the connection is accepted or by indicating that the connection is not accepted. If the connection is accepted by the originating MCPTT client, the floor control for this call continues a specified in clause 6.

[TS 24.380, clause 9.2.2.3.2]

Upon reception of a Connect message:

1. if the MCPTT client accepts the incoming call the MCPTT client:

   a. shall send the Acknowledgement message with Reason Code field set to 'Accepted';

   b. shall use only the media streams of the pre-established session which are indicated as used in the associated call session Media Streams field, if the Connect contains a Media Streams field;

   c. shall create an instance of the 'Floor participant state transition diagram for basic operation' as specified in subclause 6.2.10; and

   d. shall enter the 'U: Pre-established session in use' state; or

[TS 24.380, clause 9.2.2.4.6]

Upon receiving a 2xx response to the sent SIP REFER request as described in 3GPP TS 24.379 [2] when the call is released, but the Pre-established Session is kept alive the MCPTT client:

1. shall enter the 'U: Pre-established session not in use' state; and

2. shall terminate the instance of 'Floor participant state transition diagram for basic operation' state machine as specified in subclause 6.2.4.

6.2.9.3 Test description

6.2.9.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)
- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT pre-established session establishment CO as specified in TS 36.579-1 [2], subclause 5.3.3.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.2.9.3.2 Test procedure sequence

Table 6.2.9.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the UE (MCPTT User) request the establishment of an MCPTT private call within a pre-established session, Automatic Commencement Mode, no Force of automatic commencement, without Floor Control. (NOTE 1)	-	-	-	-
2	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO call establishment using a pre-established session as described in TS 36.579-1 [2] table 5.3.9.3-1 to establish an MCPTT private call, within a pre-established session, Automatic Commencement Mode without Floor Control?	-	-	1	P
3-5	Void	-	-	-	-
5A	Make the UE (MCPTT User) request the Floor (NOTE 1).	-	-	-	-
5B	Check: Does the UE (MCPTT client) send a Floor Request message in the next 5 sec?	-->	Floor Request	1	F
6	Make the UE (MCPTT User) request release of the MCPTT private call. (NOTE 1)	-	-	-	-
7	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO call release keeping the pre-established session as described in TS 36.579-1 [2] table 5.3.11.3-1 to end the private call?	-	-	2	P
8-9	Void	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI NOTE 2: The media plane control messages related to call setup/release over a pre-established session are sent over the channel used for media plane control.					

6.2.9.3.3 Specific message contents

Table 6.2.9.3.3-1: SIP REFER (Step 2, Table 6.2.9.3.2-1; Step 2, TS 36.579-1 [2] Table 5.3.9.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.2.12-1, condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part	"application/sdp"	**Resource list**		
MIME-part-body	Resource-lists as described in Table 6.2.9.3.3-1A			

Table 6.2.9.3.3-1A: Resource-lists in SIP REFER (Table 6.2.9.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.3.1-1 conditions PRE-ESTABLISH and PRIVATE-CALL

Table 6.2.9.3.3-1B: SIP header fields extending the uri attribute of the resource-lists' single entry (step 2, Table 6.2.9.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.9.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.12-2: condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
body				
MIME body part		**SDP Message**		
MIME-part-headers				
Content-Type	"application/sdp"			
MIME-part-body	SDP Message as described in Table 6.2.9.3.3-2			

Table 6.2.9.3.3-2: SDP Message in SIP REFER (Table 6.2.9.3.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.1-1, conditions SDP_OFFER, PRIVATE-CALL

Table 6.2.9.3.3-3: SIP 200 (OK) (Step 2, Table 6.2.9.3.2-1; Step 3, TS 36.579-1 [2] Table 5.3.9.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.17.1.2-1 condition REFER_RSP

Table 6.2.9.3.3-4: Void)

Table 6.2.9.3.3-5: Void)

Table 6.2.9.3.3-3: Connect (Step 2, Table 6.2.9.3.2-1; Step 4, TS 36.579-1 [2] Table 5.3.9.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.12-1, conditions PRIVATE-CALL, WITHOUT_FLOORCONTROL

Table 6.2.9.3.3-4: Void

Table 6.2.9.3.3-5: Void

6.2.10 On-network / Private Call / Within a pre-established session / Automatic Commencement Mode / Without Floor Control / Client Terminated (CT)

6.2.10.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including authorized to
receive private calls with automatic commencement, and, having established a pre-established
session, Automatic Commencement Mode without End-to-end communication security and without floor
control }
ensure that {
  when { the UE (MCPTT Client) receives a media plane control Connect message as a part of request
for establishment of a client Terminated MCPTT private call, within the pre-established session }
    then { UE (MCPTT Client) sends a media plane control Acknowledgement message accepting the
establishment of the media plane and thereby the establishment of the MCPTT private call }
```

(2)

```
with { UE (MCPTT Client) having Private Call Within a pre-established session }
ensure that {
  when { the MCPTT User (MCPTT Client) receives a media plane control Disconnect message for
termination of the ongoing MCPTT private call }
    then { UE (MCPTT Client) accept the request by sending a media plane control Acknowledgement
message and releases the call but keeps the pre-established session, and, does not terminate the
pre-established session }
            }
```

6.2.10.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: TS 24.380 clauses 4.1.2.1, 4.1.2.3, 9.2.2.3.2, 9.2.2.3.4. Unless otherwise stated these are Rel-13 requirements.

[TS 24.380, clause 4.1.2.1]

A pre-established session can be used when initiating a pre-arranged group call, a chat group call or a private call. Similarly a pre-established session can be released for reuse after the termination of a pre-arranged group call, chat group call and private call.

The media plane control messages related to call setup over a pre-established session are sent over the channel used for media plane control. The media plane control messages related to the release of a call which was setup over a pre-established session, without terminating the pre-established session, are sent over the channel used for media plane control. The unicast channel for media plane control is over the MCPTT-4 reference point.

[TS 24.380, clause 4.1.2.3]

When an MCPTT client leaves a call (as specified in 3GPP TS 24.379 [2]) which was setup over a pre-established session without releasing the pre-established session, this pre-established session can be used for another call.

[TS 24.380, clause 9.2.2.3.2]

Upon reception of a Connect message:

1. if the MCPTT client accepts the incoming call the MCPTT client:

   a. shall send the Acknowledgement message with Reason Code field set to 'Accepted';

   b. shall use only the media streams of the pre-established session which are indicated as used in the associated call session Media Streams field, if the Connect contains a Media Streams field;

   c. shall create an instance of the 'Floor participant state transition diagram for basic operation' as specified in subclause 6.2.10; and

   d. shall enter the 'U: Pre-established session in use' state; or

[TS 24.380, clause 9.2.2.3.4]

Upon reception of a Disconnect message the MCPTT client:

1. if the first bit in the subtype of the Disconnect message is set to '1' (acknowledgement is required), shall send the Acknowledgement message with the Reason Code set to 'Accepted'; and

2. shall remain in 'U: Pre-established session not in use' state.

6.2.10.3 Test description

6.2.10.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)

- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT pre-established session establishment CO as specified in TS 36.579-1 [2], subclause 5.3.3.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.2.10.3.2 Test procedure sequence

Table 6.2.10.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Is the Generic Test Procedure MCPTT CT Call establishment automatic commencement using a pre-established session as described in TS 36.579-1 [2] table 5.3.23.3-1 correctly performed?	-	-	1	P
2	Void	-	-	-	-
3	Check: Does the UE (MCPTT client) notify the user that the call has been successfully established? (NOTE 1)	-	-	1	P
4	Make the UE (MCPTT User) request the Floor (NOTE 1).	-	-	-	-
4A	Check: Does the UE (MCPTT client) send a Floor Request message in the next 5 sec?	-->	Floor Request	1	F
5	Check: Is the Generic Test Procedure MCPTT CT call release keeping the pre-established session as described in TS 36.579-1 [2] table 5.3.13.3-1 to release the call correctly performed?	-	-	2	P
6	Void	-	-	-	-
7	Check: Does the UE (MCPTT client) notify the user that the call has been terminated? (NOTE 1):	-	-	2	P
8	Void	-	-	-	-
9	Make the UE (MCPTT User) request the establishment of an MCPTT private call within a pre-established session, Automatic Commencement Mode without Floor Control. (NOTE 1): NOTE: This is to verify that although the Client has released the call it has not terminated the pre-established session.	-	-	-	-
10	perform Generic Test Procedure for MCPTT CO call establishment using a pre-established session as described in TS 36.579-1 [2] table 5.3.9.3-1 to establish an MCPTT private call, within a pre-established session, Automatic Commencement Mode, no Force of automatic commencement, without Floor Control?	-	-	2	P
11	Void	-	-	-	-
12	Check: Does the UE (MCPTT client) notify the user that the call has been successfully established? (NOTE 1)	-	-	-	-
13	Wait for 5 sec.	-	-	-	-
14	Make the UE (MCPTT User) request release of the MCPTT private call. (NOTE 1)	-	-	-	-
15	The UE (MCPTT client) s performs Generic Test Procedure for MCPTT CO call release keeping the pre-established session as described in TS 36.579-1 [2] table 5.3.11.3-1	-	-	-	-
16	Void	-	-	-	-

NOTE 1: This is expected to be done via a suitable implementation dependent MMI
NOTE 2: The media plane control messages related to call setup/release over a pre-established session are sent over the channel used for media plane control.

6.2.10.3.3 Specific message contents

Table 6.2.10.3.3-1: Connect (Step 1, Table 6.2.10.3.2-1; Step 2, TS 36.579-1 [2] Table 5.3.23.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.12-1, conditions PRIVATE-CALL, WITHOUT_FLOORCONTROL

Table 6.2.10.3.3-2: Void

Table 6.2.10.3.3-3: Void

Table 6.2.10.3.3-4: SIP REFER (Step 10, Table 6.2.10.3.2-1; Step 2, TS 36.579-1 [2] Table 5.3.9.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.2.12-1, condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		**Resource list**		
MIME-part-body	Resource-lists as described in Table 6.2.10.3.3-4A			

Table 6.2.10.3.3-4A: Resource-lists (Table 6.2.10.3.3-4)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.3.1-1 conditions PRE-ESTABLISH and PRIVATE-CALL

Table 6.2.10.3.3-4B: SIP header fields extending the uri attribute of the resource-lists' single entry (Step 10, Table 6.2.10.3.2-1; Step 2, TS 36.579-1 [2] Table 5.3.9.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.12-2: condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
body				
MIME body part		**SDP Message**		
MIME-part-headers				
Content-Type	“application/sdp”			
MIME-part-body	SDP Message as described in Table 6.2.10.3.3.-5			

Table 6.2.10.3.3-5: SDP Message in SIP REFER (Table 6.2.10.3.3-4B)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.1-1, conditions SDP_OFFER, PRIVATE-CALL, WITHOUT_SECURITY

Table 6.2.10.3.3-6: SIP 200 (OK) (Step 10, Table 6.2.10.3.2-1; step 3, TS 36.579-1 [2] Table 5.3.9.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.17.1.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Content-Type	"application/sdp"			
Content-Length	length of message-body			
Message-body				
MIME-Content-Type	"application/sdp"			
SDP Message	As described in Table 6.2.10.3.3-7			

Table 6.2.10.3.3-7: SDP Message in SIP 200 (OK) (Table 6.2.10.3.3-6)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.2-1 condition SDP_ANSWER

Table 6.2.10.3.3-7A: Connect (Step 10, Table 6.2.10.3.2-1; step 4, TS 36.579-1 [2] Table 5.3.9.3-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.12-1, conditions PRIVATE-CALL, WITHOUT_FLOORCONTROL

Table 6.2.10.3.3-8: Void)

Table 6.2.10.3.3-9: Void

6.2.11 On-network / Private Call / Within a pre-established session / Manual Commencement Mode / Without Floor Control / Release of the Call and the pre-established session / Client Terminated (CT)

6.2.11.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including authorized to
receive private calls with manual commencement, and, having established a pre-established session,
without End-to-end communication security and without floor control }
ensure that {
  when { the UE (MCPTT Client) receives a SIP re-INVITE message as a part of request for
establishment of a client Terminated MCPTT private call, within the pre-established session, Manual
Commencement Mode }
    then { UE (MCPTT Client) notifies the User for the incoming call, and, responds to the Server
with a SIP 180 (Ringing) message, and, after the User accepts the call sends to the Server a SIP 200
(OK) message }
            }
```

(2)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including authorized to
receive private calls with automatic commencement, and, having established a pre-established
session, Automatic Commencement Mode without End-to-end communication security and without floor
control, and, the User having accepted a request for the establishment of a client Terminated MCPTT
private call within the pre-established session }
ensure that {
  when { the UE (MCPTT Client) receives a media plane control Connect message as a part of request
for establishment of a client Terminated MCPTT private call, within the pre-established session }
    then { UE (MCPTT Client) sends a media plane control Acknowledgement message accepting the
establishment of the media plane and thereby the establishment of the MCPTT private call }
            }
```

(3)

```
with { UE (MCPTT Client) having Private Call Within a pre-established session }
ensure that {
  when { the MCPTT User (MCPTT Client) is informed for the termination of the ongoing MCPTT private
call by the Server sending a SIP BYE message }
    then { UE (MCPTT Client) accepts the request and after sending a SIP 200 (OK) response
terminates the call and the pre-established MCPTT session }
            }
```

6.2.11.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: TS 24.379 clauses 6.2.3.1.1, 6.2.3.2.1, 6.2.6, 11.1.1.2.1.2, 11.1.1.2.2.2, 11.1.2.2, TS 24.380 clauses 4.1.2.1, 4.1.2.3, 9.2.2.3.2. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 6.2.3.1.1]

2) shall include the option tag "timer" in a Require header field of the SIP 200 (OK) response;

3) shall include the g.3gpp.mcptt media feature tag in the Contact header field of the SIP 200 (OK) response;

4) shall include the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP 200 (OK) response;

5) shall include the Session-Expires header field in the SIP 200 (OK) response and start the SIP session timer according to IETF RFC 4028 [7]. The "refresher" parameter in the Session-Expires header field shall be set to "uas";

6) shall, if the incoming SIP INVITE request contains a Replaces header field, include in the SDP answer in the SIP 200 (OK) response to the SDP offer the parameters used for the pre-established session identified by the contents of the Replaces header field;

7) shall, if the incoming SIP INVITE request does not contain a Replaces header field, include an SDP answer in the SIP 200 (OK) response to the SDP offer in the incoming SIP INVITE request according to 3GPP TS 24.229 [4] with the clarifications given in subclause 6.2.2;

NOTE: In the case of a new emergency call where the terminating client is using a pre-established session, the SIP INVITE request containing a Replaces header is used to replace the pre-established session.

8) shall send the SIP 200 (OK) response towards the MCPTT server according to rules and procedures of 3GPP TS 24.229 [4];

9) shall, if the incoming SIP INVITE request contains a Replaces header field, release the pre-established session identified by the contents of the Replaces header field; and

10) shall interact with the media plane as specified in 3GPP TS 24.380 [5] subclause 6.2.

When NAT traversal is supported by the MCPTT client and when the MCPTT client is behind a NAT, generation of SIP responses is done as specified in this subclause and as specified in IETF RFC 5626 [15].

[TS 24.379, clause 6.2.3.2.1]

The MCPTT client:

1) shall accept the SIP INVITE request and generate a SIP 180 (Ringing) response according to rules and procedures of 3GPP TS 24.229 [4];

2) shall include the option tag "timer" in a Require header field of the SIP 180 (Ringing) response;

3) shall include the g.3gpp.mcptt media feature tag in the Contact header field of the SIP 180 (Ringing) response;

4) shall include the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP 180 (Ringing) response; and

5) shall send the SIP 180 (Ringing) response to the MCPTT server.

When sending the SIP 200 (OK) response to the incoming SIP INVITE request, the MCPTT client shall follow the procedures in subclause 6.2.3.1.1.

When NAT traversal is supported by the MCPTT client and when the MCPTT client is behind a NAT, generation of SIP responses is done as specified in this subclause and as specified in IETF RFC 5626 [15].

[TS 24.379, clause 6.2.6]

Upon receiving a SIP BYE request, the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5]; and

2) shall send SIP 200 (OK) response towards MCPTT server according to 3GPP TS 24.229 [4].

[TS 24.379, clause 11.1.1.2.1.2]

Upon receipt of an initial SIP INVITE request, the MCPTT client shall follow the procedures for termination of multimedia sessions in the IM CN subsystem as specified in 3GPP TS 24.229 [4] with the clarifications below.

The MCPTT client:

...

4) if the SDP offer of the SIP INVITE request contains an "a=key-mgmt" attribute field with a "mikey" attribute value containing a MIKEY-SAKKE I_MESSAGE:

   a) shall extract the MCPTT ID of the originating MCPTT from the initiator field (IDRi) of the I_MESSAGE as described in 3GPP TS 33.179 [46];

   b) shall convert the MCPTT ID to a UID as described in 3GPP TS 33.179 [46];

   c) shall use the UID to validate the signature of the MIKEY-SAKKE I_MESSAGE as described in 3GPP TS 33.179 [46];

   d) if authentication verification of the MIKEY-SAKKE I_MESSAGE fails, shall reject the SIP INVITE request with a SIP 488 (Not Acceptable Here) response as specified in IETF RFC 4567 [47], and include warning text set to "136 authentication of the MIKEY-SAKE I_MESSAGE failed" in a Warning header field as specified in subclause 4.4; and

   e) if the signature of the MIKEY-SAKKE I_MESSAGE was successfully validated:

      i) shall extract and decrypt the encapsulated PCK using the terminating user's (KMS provisioned) UID key as described in 3GPP TS 33.179 [46]; and

      ii) shall extract the PCK-ID, from the payload as specified in 3GPP TS 33.179 [46];

NOTE: With the PCK successfully shared between the originating MCPTT client and the terminating MCPTT client, both clients are able to use SRTP/SRTCP to create an end-to-end secure session.

...

8) shall perform the manual commencement procedures specified in subclause 6.2.3.2.1 if either of the following conditions are met:

   a) SIP INVITE request contains an Answer-Mode header field with the value "Manual" and the MCPTT service setting at the invited MCPTT client for answering the call is set to manual commencement mode; or

[TS 24.379, clause 11.1.1.2.2.2]

The MCPTT client shall follow the procedures for termination of multimedia sessions as specified in subclause 11.1.1.2.1.2 with the following clarifications:

...

2) if the MCPTT client is targeted for a new normal priority private call, the MCPTT client receives a SIP re-INVITE request rather than a SIP INVITE request.

[TS 24.379, clause 11.1.2.2]

Upon receipt of an initial SIP INVITE request for the private call with an SDP offer not including a media-level section for a media-floor control entity, the MCPTT client shall consider it as the request for private call without floor control and shall follow the procedures as specified in subclause 11.1.1.2.1.2 for on-demand session and subclause 11.1.1.2.2.2 for pre-established session.

[TS 24.380, clause 4.1.2.1]

A pre-established session can be used when initiating a pre-arranged group call, a chat group call or a private call. Similarly a pre-established session can be released for reuse after the termination of a pre-arranged group call, chat group call and private call.

The media plane control messages related to call setup over a pre-established session are sent over the channel used for media plane control. The media plane control messages related to the release of a call which was setup over a pre-established session, without terminating the pre-established session, are sent over the channel used for media plane control. The unicast channel for media plane control is over the MCPTT-4 reference point.

[TS 24.380, clause 4.1.2.3]

A call setup over a pre-established session can also be released by using the specifications in 3GPP TS 24.379 [2] (without the use of Disconnect message) as a result the pre-established session, which has been used for this call, is also released.

[TS 24.380, clause 9.2.2.3.2]

Upon reception of a Connect message:

1. if the MCPTT client accepts the incoming call the MCPTT client:

   a. shall send the Acknowledgement message with Reason Code field set to 'Accepted';

   b. shall use only the media streams of the pre-established session which are indicated as used in the associated call session Media Streams field, if the Connect contains a Media Streams field;

   c. shall create an instance of the 'Floor participant state transition diagram for basic operation' as specified in subclause 6.2.11; and

   d. shall enter the 'U: Pre-established session in use' state; or

6.2.11.3 Test description

6.2.11.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)
- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT pre-established session establishment CO as specified in TS 36.579-1 [2], subclause 5.3.3.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.2.11.3.2 Test procedure sequence

Table 6.2.11.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCPTT client) successfully complete a CT MCPTT private call, on-demand Manual Commencement Mode and no floor control call setup, using the pre-established in the preamble session, as per the step sequence specified in TS 36.579-1 [2], subclause 5.3.6, Generic Test Procedure for MCPTT CT private call establishment, manual commencement? Note: The session has been established by the UE (MCPTT Client) and the request is for manual answer mode, therefore INVITE is used for establishing the call as specified in TS 24.380 [10], clause 9.3.2.3.3 and TS 24.379 [9] clause 11.1.1.2.2.2.	-	-	1	-
2-3	Void.	-	-	-	-
4	The SS (MCPTT server) sends a Connect message.	<--	Connect	-	-
5	Check: Does the UE (MCPTT Client) send an Acknowledge?	-->	Acknowledge	2	P
6	Void.	-	-	-	-
7	Make the UE (MCPTT User) request the Floor (NOTE 1).	-	-	-	-
7A	Check: Does the UE (MCPTT client) send a Floor Request message in the next 5 sec?	-->	Floor Request	1	F
8	Check: Is the Generic Test Procedure for MCPTT CT call release as described in TS 36.579-1 [2] Table 5.3.12.3-1 to end the On-demand Pre-arranged Group Call correctly performed? NOTE: This way of release is used to trigger not only release of the call but also release of the pre-established session, see TS 24.380 [10], clause 4.1.2.3. Whether the session was released is then verified with the step 12.	-	-	3	P
9	Void	-	-	-	-
10	Check: Does the UE (MCPTT client) notify the user that the call has been terminated? (NOTE 2)	-	-	3	P
11	Void	-	-	-	-
12	Make the UE (MCPTT User) request the establishment of an MCPTT private call, manual commencement mode without floor control. (NOTE 2)	-	-	-	-
13	Check: Does the UE (MCPTT client) successfully complete a CO MCPTT private call, manual commencement mode, and no floor control as per the step sequence specified in TS 36.579-1 [2], subclause 5.3.8, Generic Test Procedure for MCPTT CO private call establishment, manual commencement, option a of NOTE1 applied? Note: If the session was not terminated then the UE (MCPTT client) will send a REFER.	-	-	2	-
14-16	Void.	-	-	-	-
17	Make the UE (MCPTT User) request termination of the MCPTT private call. (NOTE 2)	-	-	-	-
18	The step sequence specified in TS 36.579-1 [2], subclause 5.3.10, Generic Test Procedure for MCPTT CO call release takes place.	-	-	-	-
19	Void	-	-	-	-

NOTE 1: The media plane control messages related to call setup/release over a pre-established session are sent over the channel used for media plane control.
NOTE 2: This is expected to be done via a suitable implementation dependent MMI.

6.2.11.3.3 Specific message contents

Table 6.2.11.3.3-1: SIP re-INVITE (Step 1, Table 6.2.11.3.2-1; Step 2, TS 36.579-1 [2], Table 5.3.6.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.5.1-1, conditions PRIVATE-CALL, re-INVITE, MANUAL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		SDP message		
MIME-part-body	SDP message as described in Table 6.2.11.3.3-2			

Table 6.2.11.3.3-2: SDP Message in SIP re-INVITE (Table 6.2.11.3.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.2-1, conditions PRIVATE-CALL, SDP_OFFER, WITHOUT_SECURITY

Table 6.2.11.3.3-3: SIP 200 (OK) (Step 3, Table 6.2.11.3.2-1; Step 6, TS 36.579-1 [2], Table 5.3.6.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.17.1.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Content-Type				
media-type	"application/sdp"			
Message-body				
SDP Message	As described in Table 6.2.11.3.3-4			

Table 6.2.11.3.3-4: SDP Message in SIP 200 (OK) (Table 6.2.11.3.3-3)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.1-1 conditions PRIVAT-CALL, SDP_ANSWER

Table 6.2.11.3.3-5: Void

Table 6.2.11.3.3-6: Connect (Step 4, Table 6.2.11.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.12-1, conditions PRIVATE-CALL, WITHOUT_FLOORCONTROL

Table 6.2.11.3.3-7: Void

Table 6.2.11.3.3-8: SIP INVITE (Step 13, Table 6.2.11.3.2-1; step 2, TS 36.579-1 [2], Table 5.3.8.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.5.1-1, conditions PRIVATE-CALL, MANUAL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		SDP message		
MIME-part-body	SDP-Message as described in Table 6.2.11.3.3-9			

Table 6.2.11.3.3-9: SDP Message in SIP INVITE (Table 6.2.11.3.3-8)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.1-1, conditions PRIVATE-CALL, SDP_OFFER

Table 6.2.11.3.3-9A: SIP 200 (OK) (step 13 Table 6.2.11.3.2-1; step 5, TS 36.579-1 [2] Table 5.3.8.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.17.1.2-1 conditions INVITE_RSP, PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Content-Type				
media-type	"application/sdp"			
Message-body				
SDP Message	As described in Table 6.2.11.3.3-9B			

Table 6.2.11.3.3-9B: SDP in SIP 200 (OK) (Table 6.2.11.3.3-3A)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.1.2-1 conditions PRIVATE-CALL, SDP_ANSWER

6.2.12 On-network / Private Call / Private Call Call-Back Request / Private Call Call-Back Cancel Request / Client Originated (CO) / Private call call-back fulfilment

6.2.12.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service and authorized to initiate and
receive private calls with manual commencement and to request and cancel private call call-back }
ensure that {
  when { the MCPTT User requests sending a private call call-back request to a targeted user }
    then { UE (MCPTT Client) sends a SIP MESSAGE message requesting the call-back and including the
MCPTT ID of the targeted MCPTT user, and, upon receiving a SIP MESSAGE request for private call
call-back response for terminating client with an <mcptt-calling-user-id> element in the
application/vnd.3gpp.mcptt-info+xml MIME body set to an MCPTT-ID matching a "PCCB requesting client
entry" stored on the client then the MCPTT client sets the private call call-back requesting client
state to "PCCB-I3: confirmed" }
            }
```

(2)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service and authorized to initiate and
receive private calls with manual commencement and to request and cancel private call call-back,
and, the MCPTT client private call call-back requesting client state equal to "PCCB-I3: confirmed" }
ensure that {
  when { the MCPTT User wants to cancel the private call call-back }
    then { UE (MCPTT Client) sends a SIP MESSAGE message cancelling the call-back and including the
MCPTT ID of the targeted MCPTT user, and, upon receiving a SIP MESSAGE request for private call
call-back cancel response for terminating client with an <mcptt-calling-user-id> element in the
application/vnd.3gpp.mcptt-info+xml MIME body set to an MCPTT-ID matching a "PCCB requesting client
entry" stored on the client then the MCPTT client sets the private call call-back requesting client
state to "PCCB-I1: no-call-back" }
            }
```

(3)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service and authorized to initiate and
receive private calls with manual commencement and to request and cancel private call call-back,
and, the MCPTT client private call call-back requesting client state equal to "PCCB-I3: confirmed" }
ensure that {
  when { the UE (MCPTT Client) receives a request for private call establishment from the target for
a call-back MCPTT User (MCPTT-ID matching a "PCCB requesting client entry") }
    then { UE (MCPTT Client) upon sending a SIP 200 (OK) response to the request for establishment
of a private call, sets the private call call-back requesting client state to "PCCB-I1: no-call-
back" and shall delete the "PCCB requesting client entry" associated with the target MCPTT user }
            }
```

6.2.12.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: TS 24.379 clauses 11.1.5.2.1, 11.1.5.2.3. Unless otherwise stated these are Rel-14 requirements.

[TS 24.379, clause 11.1.5.2.1]

Upon receiving a request from the requesting MCPTT user to send a private call call-back request or to send a private call call-back cancel request, that has been authorised successfully by the requesting MCPTT client, the MCPTT client shall generate a SIP MESSAGE request in accordance with 3GPP TS 24.229 [4] and IETF RFC 3428 [33] with the clarifications given below.

The MCPTT client:

1) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP MESSAGE request;

2) shall include an Accept-Contact header field with the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

3) may include a P-Preferred-Identity header field in the SIP MESSAGE request containing a public user identity as specified in 3GPP TS 24.229 [4];

4) shall set the Request-URI to the public service identity identifying the participating MCPTT function serving the MCPTT user;

5) shall include in an application/resource-lists+xml MIME body, the MCPTT ID of the targeted MCPTT user, according to rules and procedures of IETF RFC 5366 [20];

6) shall include an application/vnd.3gpp.mcptt-info+xml MIME body as specified in clause F.1 with the <mcpttinfo> element containing the <mcptt-Params> element with the <anyExt> element containing:

   a) if the request is a private call call-back request:

      i) the <request-type> set to a value of "private-call-call-back-request>;

      ii) the <urgency-ind> set to a value of "low", "normal" or "high" to indicate the urgency of the call-back request; and

      iii) the <time-of-request> set to the date and time of the request using the format specified in clause F.1.3; and

   b) if the request is a private call call-back cancel request, the <request-type> set to a value of "private-call-call-back-cancel-request";

7) shall store a "PCCB requesting client entry" containing the MCPTT ID of the targeted user and:

   a) if the request is a private call call-back request, shall set the private call call-back requesting client state to "PCCB-I2: confirm-pending"; and

   b) if the request is a private call call-back cancel request, shall set the private call call-back requesting client state to "PCCB-I4: cancel-pending"; and

8) shall send the SIP MESSAGE request according to rules and procedures of 3GPP TS 24.229 [4].

....

Upon receiving a "SIP MESSAGE request for private call call-back response for terminating client" with an <mcptt-calling-user-id> element in the application/vnd.3gpp.mcptt-info+xml MIME body set to an MCPTT-ID matching a "PCCB requesting client entry" stored on the client, if the private call call-back requesting client state is set to "PCCB-I2: confirm-pending", then the MCPTT client shall set the private call call-back requesting client state to "PCCB-I3: confirmed".

Upon receiving a "SIP MESSAGE request for private call call-back cancel response for terminating client" with an <mcptt-calling-user-id> element in the application/vnd.3gpp.mcptt-info+xml MIME body set to the an MCPTT-ID

matching a "PCCB requesting client entry" entry stored on the client, if the private call call-back requesting client state is set to "PCCB-I4: cancel-pending", then the MCPTT client set the private call call-back requesting client state to "PCCB-I1: no-call-back" and shall delete the "PCCB requesting client entry" associated with the target MCPTT user.

[TS 24.379, clause 11.1.5.2.3]

When the target MCPTT user wants to make a private call call-back, the target MCPTT client shall initiate a private call in manual commencement mode towards the requesting MCPTT client using the MCPTT ID of the requesting MCPTT user as found in the "PCCB target client entry" stored on the UE, by following the procedures in:

...

2) subclause 11.1.2.2 for private call without floor control;

Upon sending a SIP 200 (OK) response to the request for establishment of a private call as specified in subclause 11.1.1.2.1.1, subclause 11.1.1.2.2.1 or subclause 11.1.2.2, if the "PCCB requesting client entry" of the target MCPTT user contains a private call call-back requesting client state set to "PCCB-I3: confirmed", then the requesting MCPTT client shall set the private call call-back requesting client state to "PCCB-I1: no-call-back" and shall delete the "PCCB requesting client entry" associated with the target MCPTT user.

6.2.12.3 Test description

6.2.12.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)
- For the underlining "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
  - The MCPTT User is authorized to request private call call-back: the <allow-request-private-call-call-back> element of the <ruleset> element is present in the MCPTT user profile document and is set to "true"
  - The MCPTT User is authorized to cancel private call call-back: the <allow-cancel-private-call-call-back> element of the <ruleset> element is present in the MCPTT user profile document and is set to "true"
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.2.12.3.2 Test procedure sequence

Table 6.2.12.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the UE (MCPTT User) request sending a private call call-back request. (NOTE 1)	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.3 'Generic Test Procedure for MCPTT CO communication in E-UTRA'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
2	Check: Does the UE (MCPTT client) send a SIP MESSAGE message requesting a private call call-back providing the MCPTT ID of the targeted MCPTT user?	-->	SIP MESSAGE	1	P
2A	The SS (MCPTT server) responds with a SIP 200 (OK)	<--	SIP 200 (OK)	-	-
3	The SS (MCPTT server) sends SIP MESSAGE accepting the request.	<--	SIP MESSAGE	-	-
3A	Check: Does the UE (MCPTT Client) respond with a SIP 200 (OK) message?	-->	SIP 200 (OK)	1	P
4	Make the UE (MCPTT User) request cancelling of the private call call-back request (based on the MCPTT ID of the targeted MCPTT user). (NOTE 1)	-	-	-	-
5	Check: Does the UE (MCPTT client) send a SIP MESSAGE message cancelling the private call call-back providing the MCPTT ID of the targeted MCPTT user?	-->	SIP MESSAGE	2	P
5A	The SS (MCPTT server) responds with a SIP 200 (OK)	<--	SIP 200 (OK)	-	-
6	The SS (MCPTT server) sends SIP MESSAGE accepting the cancellation.	<--	SIP MESSAGE	-	-
6A	Check: Does the UE (MCPTT Client) respond with a SIP 200 (OK) message?	-->	SIP 200 (OK)	2	P
7	Make the UE (MCPTT User) request cancelling of the private call call-back request (based on the MCPTT ID of the same targeted MCPTT user as in step 5). (NOTE 1) NOTE: Depending on the implementation the User may not be provided with an entry for pending call-back.	-	-	-	-
8	Check: Does, in the next 5 sec, the UE (MCPTT client) send a SIP MESSAGE message cancelling the private call call-back providing the MCPTT ID of the targeted MCPTT user?	-->	SIP MESSAGE	2	F
-	EXCEPTION: SS releases the E-UTRA connection.	-	-	-	-
9	Make the UE (MCPTT User) request sending a private call call-back request. (NOTE 1)	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.3 'Generic Test Procedure for MCPTT CO communication in E-UTRA'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
10	Check: Does the UE (MCPTT client) send a SIP MESSAGE message requesting a private call call-back providing the MCPTT ID of the targeted MCPTT user?	-->	SIP MESSAGE	1	P
10A	The SS (MCPTT server) responds with a SIP 200 (OK)	<--	SIP 200 (OK)	-	-

11	The SS (MCPTT server) sends SIP MESSAGE. The SS (MCPTT server) sends SIP MESSAGE accepting the request.	<--	SIP MESSAGE	-	-
11A	Check: Does the UE (MCPTT Client) respond with a SIP 200 (OK) message?	-->	SIP 200 (OK)	1	P
-	EXCEPTION: SS releases the E-UTRA connection.	-	-	-	-
12	Wait for 5 sec (randomly chosen value to simulate realistic behaviour at the targeted side).	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC related actions which are related to the call establishment are described in TS 36.579-1 [2], subclause 5.4.4 'Generic Test Procedure for MCPTT CT communication in E-UTRA'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
13	Check: Does the UE (MCPTT client) successfully perform Generic Test Procedure for MCPTT CT private call establishment, manual commencement as described in TS 36.579-1 [2], subclause 5.3.6 to establish an MCPTT private call (Private call call back fulfilment)?	-	-	3	P
14-16	Void	-	-	-	-
17	The SS (MCPTT server) sends a SIP BYE request.	<--	SIP BYE	-	-
18	The UE (MCPTT client) send a SIP 200 (OK)?	-->	SIP 200 (OK)	-	-
19	Make the UE (MCPTT User) request cancelling of the private call call-back request (based on the MCPTT ID of the same targeted MCPTT user as in step 10). (NOTE 1) NOTE: Depending on the implementation the User may not be provided with an entry for pending call-back.	-	-	-	-
20	Check: Does, in the next 5 sec, the UE (MCPTT client) send a SIP MESSAGE message cancelling the private call call-back providing the MCPTT ID of the targeted MCPTT user?	-->	SIP MESSAGE	3	F
-	EXCEPTION: SS releases the E-UTRA connection.	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI.					

6.2.12.3.3 Specific message contents

Table 6.2.12.3.3-1: SIP MESSAGE (Steps 2, 10, Table 6.2.12.3.2-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.7.1-1, condition RESOURCE_LISTS				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		MCPTT-Info		
MIME-part-body	MCPTT-Info as described in Table 6.2.12.3.3-2			

Table 6.2.12.3.3-2: MCPTT-Info in SIP MESSAGE (Table 6.2.12.3.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.3.2.1-1, condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
anyExt		The anyExt field may contain other values - these need not be checked		
request-type	"private-call-call-back-request"			
urgency-ind	"low", "normal" or "high"			
time-of-request	"YYYY-MM-DDThh:mm:ss"	set to the date and time of the request		

Table 6.2.12.3.3-3: SIP MESSAGE (Steps 3, 11, Table 6.2.12.3.2-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.7.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		MCPTT-Info		
MIME-part-body	MCPTT-Info as described in Table 6.2.12.3.3-4			

Table 6.2.12.3.3-4: MCPTT-Info in SIP MESSAGE (Table 6.2.12.3.3-3)

Derivation Path: TS 36.579-1 [2], table 5.5.3.2.2-1, condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
anyExt		The anyExt field may contain other values - these need not be checked		
response-type	"private-call-call-back-response"			

Table 6.2.12.3.3-5: Void

Table 6.2.12.3.3-6: SIP MESSAGE (Step 5, Table 6.2.12.3.2-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.7.1-1, condition RESOURCE_LISTS				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		MCPTT-Info		
MIME-part-body	MCPTT-Info as described in Table 6.2.12.3.3-7			

Table 6.2.12.3.3-7: MCPTT-Info in SIP MESSAGE (Table 6.2.12.3.3-6)

Derivation Path: TS 36.579-1 [2], table 5.5.3.2.1-1, condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
anyExt		The anyExt field may contain other values - these need not be checked		
request-type	"private-call-call-back-cancel-request"			

Table 6.2.12.3.3-8: SIP MESSAGE (Step 6, Table 6.2.12.3.2-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.7.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		MCPTT-Info		
MIME-part-body	MCPTT-Info as described in Table 6.2.12.3.3-9			

Table 6.2.12.3.3-9: MCPTT-Info in SIP MESSAGE (Table 6.2.12.3.3-8)

Derivation Path: TS 36.579-1 [2], table 5.5.3.2.2-1, condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
anyExt		The anyExt field may contain other values - these need not be checked		
response-type	"private-call-call-back-cancel-response"			

Table 6.2.12.3.3-10: Void

Table 6.2.12.3.3-11: SIP INVITE (Step 13, Table 6.2.12.3.2-1; Step 2, TS 36.579-1 [2], Table 5.3.6.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.5.2-1, conditions PRIVATE-CALL, MANUAL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		SDP-Message		
MIME-part-body	SDP Message as described in Table 6.2.12.3.3-12			

Table 6.2.12.3.3-12: SDP Message in SIP INVITE (Table 6.2.12.3.3-11)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.2-1, conditions PRIVATE-CALL, WITHOUT_MEDIACONTROL

Table 6.2.12.3.3-13: SIP 200 (OK) (Step 16, Table 6.2.12.3.2-1; Step 6, TS 36.579-1 [2], Table 5.3.6.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.17.1.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Content-Type				
media-type	"application/sdp"			
Message-body				
SDP Message	As described in Table 6.2.12.3.3-14			

Table 6.2.12.3.3-14: SDP Message in SIP 200 (OK) (Table 6.2.12.3.3-13)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.1-1 conditions PRIVATE-CALL, WITHOUT_MEDIACONTROL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
media attribute	Not included	a= line attribute = fmtp No Floor control requested		

Table 6.2.12.3.3-15: Void

6.2.13 On-network / Private Call / Private Call Call-Back Request / Private Call Call-Back Cancel Request / Client Terminated (CT) / Private call call-back fulfilment

6.2.13.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service and authorized to initiate and
receive private calls with manual commencement and to request and cancel private call call-back }
ensure that {
  when { the UE (MCPTT Client) receives a SIP MESSAGE message request for a private call call-back
request for terminating client }
    then { UE (MCPTT Client) shall store a "PCCB target client entry" and notify the user of the
stored information related to the private call call back request, and, send a SIP MESSAGE message
response acknowledging the request, including in an application/resource-lists+xml MIME body, the
MCPTT ID contained in the <mcptt-calling-user-id> element in the application/ vnd.3gpp.mcptt-
info+xml MIME body of the received SIP MESSAGE request }
            }
```

(2)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service and authorized to initiate and
receive private calls with manual commencement and to request and cancel private call call-back,
and, the MCPTT client having responded positively to a private call call-back request and set the
private call call-back receiving client state set to "PCCB-R2: private-call-pending" }
ensure that {
  when { the UE (MCPTT Client) receives a SIP MESSAGE message request for private call call-back
cancel request for terminating client where the "PCCB target client entry" associated with the MCPTT
ID in the <mcptt-calling-user-id> element in the application/vnd.3gpp.mcptt-info+xml MIME body
contains a private call call-back requesting client state set to "PCCB-R2: private-call-pending" }
    then { UE (MCPTT Client) the MCPTT client shall set the private call call-back requesting client
state to "PCCB-R1: no-call-back" and shall delete the "PCCB target client entry" associated with the
requesting MCPTT user and sends a SIP MESSAGE message acknowledging the cancelling of the call-back
}
            }
```

(3)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service and authorized to initiate and
receive private calls with manual commencement and to request and cancel private call call-back,
and, the MCPTT client having responded positively to a private call call-back request and set the
private call call-back receiving client state set to "PCCB-R2: private-call-pending" }
```

```
ensure that {
  when { the target MCPTT user wants to make a private call call-back using the MCPTT ID of the
requesting MCPTT user as found in the "PCCB target client entry" stored on the UE }
    then { UE (MCPTT Client), the target MCPTT client, shall initiate a private call in manual
commencement mode towards the requesting MCPTT client, and, upon receiving a SIP 2xx response to the
SIP INVITE request for establishment of the private call shall set the private call call-back target
client state to "PCCB-R1: no-call-back" and shall delete the "PCCB target client entry" associated
with the requesting MCPTT user }
           }
```

6.2.13.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: TS 24.379 clauses 11.1.5.2.2, 11.1.5.2.3. Unless otherwise stated these are Rel-14 requirements.

[TS 24.379, clause 11.1.5.2.2]

Upon receiving a "SIP MESSAGE request for private call call-back request for terminating client", the MCPTT client:

1) shall store a "PCCB target client entry" entry with:

   a) the MCPTT ID set to the MCPTT ID contained in the <mcptt-calling-user-id> element in the application/vnd.3gpp.mcptt-info+xml MIME body;

   b) the private call call-back receiving client state set to "PCCB-I2: private-call-pending";

   c) the urgency set to the value of the <urgency-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body; and

   d) the time-of-request set to the value of the <time-of-request> element in the application/vnd.3gpp.mcptt-info+xml MIME body; and

2) shall notify the user of the stored information related to the private call call back request.

Upon receiving a "SIP MESSAGE request for private call call-back cancel request for terminating client" where the "PCCB target client entry" associated with the MCPTT ID in the <mcptt-calling-user-id> element in the application/vnd.3gpp.mcptt-info+xml MIME body contains a private call call-back requesting client state set to "PCCB-R2: private-call-pending", the MCPTT client shall set the private call call-back requesting client state to "PCCB-R1: no-call-back" and shall delete the "PCCB target client entry" associated with the requesting MCPTT user.

The MCPTT client:

1) shall generate a SIP MESSAGE request in accordance with 3GPP TS 24.229 [4] and IETF RFC 3428 [33]:

2) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP MESSAGE request;

3) shall include an Accept-Contact header field with the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6] in the SIP MESSAGE request

4) may include a P-Preferred-Identity header field in the SIP MESSAGE request containing a public user identity as specified in 3GPP TS 24.229 [4];

5) shall set the Request-URI in the SIP MESSAGE request to the public service identity identifying the participating MCPTT function serving the MCPTT user;

6) shall include in an application/resource-lists+xml MIME body, the MCPTT ID contained in the <mcptt-calling-user-id> element in the application/ vnd.3gpp.mcptt-info+xml MIME body of the received SIP MESSAGE request;

7) shall include an application/vnd.3gpp.mcptt-info+xml MIME body as specified in clause F.1 with the <mcpttinfo> element containing the <mcptt-Params> element with the <anyExt> element containing:

   a) if the received SIP MESSAGE was a "SIP MESSAGE request for private call call-back request for terminating MCPTT client", the <response-type> element set to a value of "private-call-call-back-response"; and

b) if the received SIP MESSAGE was a "SIP MESSAGE request for private call call-back cancel request for terminating MCPTT client", the <response-type> element set to a value of "private-call-call-back-cancel-response"; and

8) shall send the SIP MESSAGE request according to rules and procedures of 3GPP TS 24.229 [4].

[TS 24.379, clause 11.1.5.2.3]

When the target MCPTT user wants to make a private call call-back, the target MCPTT client shall initiate a private call in manual commencement mode towards the requesting MCPTT client using the MCPTT ID of the requesting MCPTT user as found in the "PCCB target client entry" stored on the UE, by following the procedures in:

...

2) subclause 11.1.2.2 for private call without floor control;

...

Upon receiving a SIP 2xx response to the SIP INVITE request or SIP REFER request for establishment of the private call, as specified in subclause 11.1.1.2.1.1, subclause 11.1.1.2.2.1 or subclause 11.1.2.2, if the "PCCB target client entry" of the requesting MCPTT user contains a private call call-back target client state set to "PCCB-R2: private-call-pending", then the target MCPTT client shall set the private call call-back target client state to "PCCB-R1: no-call-back" and shall delete the "PCCB target client entry" associated with the requesting MCPTT user.

6.2.13.3 Test description

6.2.13.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)
- For the underlining "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.2.13.3.2 Test procedure sequence

Table 6.2.13.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
-	EXCEPTION: The E-UTRA/EPC related actions which are related to the call establishment are described in TS 36.579-1 [2], subclause 5.4.4 'Generic Test Procedure for MCPTT CT communication in E-UTRA'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
1	The SS (MCPTT server) sends SIP MESSAGE message requesting a private call call-back providing the MCPTT ID of the UE (MCPTT User).	<--	SIP MESSAGE	-	-
1A	Check: Does the UE (MCPTT Client) respond with a SIP 200 (OK) message?	-->	SIP 200 (OK)	1	P
-	EXCEPTION: In parallel to the events described in step 2 the step specified in Table 6.2.13.3.2-2 takes place.	-	-	-	-
2	Check: Does the UE (MCPTT client) send SIP MESSAGE accepting the request?	-->	SIP MESSAGE	1	P
2A	The SS (MCPTT server) responds with a SIP 200 (OK)	<--	SIP 200 (OK)	-	-
3	The SS (MCPTT server) sends SIP MESSAGE message cancelling the private call call-back providing the MCPTT ID of the UE (MCPTT User).	<--	SIP MESSAGE	-	-
3A	Check: Does the UE (MCPTT Client) respond with a SIP 200 (OK) message?	-->	SIP 200 (OK)	2	P
4	Check: Does the UE (MCPTT client) send SIP MESSAGE accepting the cancellation?	-->	SIP MESSAGE	2	P
4A	The SS (MCPTT server) responds with a SIP 200 (OK)	<--	SIP 200 (OK)	-	-
5	Make the UE (MCPTT User) request cancelling of the private call call-back request (based on the MCPTT ID of the MCPTT user provided in step 1 and shown to the User in step 1 in Table 6.2.13.3.2-2). (NOTE 1) NOTE: Depending on the implementation the User may not be provided with an entry for pending call-back.	-	-	-	-
6	Check: Does, in the next 5 sec, the UE (MCPTT client) send a SIP MESSAGE message cancelling the private call call-back providing the MCPTT ID of the MCPTT user provided in step 1 and shown to the User in step 1 in Table 6.2.13.3.2-1?	-->	SIP MESSAGE	2	F
-	EXCEPTION: SS releases the E-UTRA connection.	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC related actions which are related to the call establishment are described in TS 36.579-1 [2], subclause 5.4.4 'Generic Test Procedure for MCPTT CT communication in E-UTRA'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
7	The SS (MCPTT server) sends SIP MESSAGE message requesting a private call call-back providing the MCPTT ID of the UE (MCPTT User).	<--	SIP MESSAGE	-	-
7A	Check: Does the UE (MCPTT Client) respond with a SIP 200 (OK) message?	-->	SIP 200 (OK)	1	P
-	EXCEPTION: In parallel to the events described in step 8 the step specified in Table 6.2.13.3.2-1 takes place.	-	-	-	-
8	Check: Does the UE (MCPTT client) send SIP MESSAGE accepting the request?	-->	SIP MESSAGE	1	P

8A	The SS (MCPTT server) responds with a SIP 200 (OK)	<--	SIP 200 (OK)	-	-
-	EXCEPTION: SS releases the E-UTRA connection.	-	-	-	-
9	Make the UE (MCPTT User) request private call call-back to the requesting MCPTT client (Private call call-back fulfilment) using the MCPTT ID of the requesting MCPTT user provided in step 7 and shown to the User in step 1 in Table 6.2.13.3.2-1. (NOTE 1)	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.3 'Generic Test Procedure for MCPTT CO communication in E-UTRA'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
10	Check: Does the UE (MCPTT Client) perform Generic Test Procedure for MCPTT CO private call establishment, manual commencement to establish an MCPTT private call with manual commencement mode as described in TS 36.579.1 [2] Table 5.3.8.3-1 with option a of NOTE 1 applied?	-	-	3	P
11-13	Void	-	-	-	-
14	Make the UE (MCPTT User) request termination of the MCPTT private call. (NOTE 1)	-	-	-	-
15	The UE (MCPTT client) sends a SIP BYE request.	-->	SIP BYE	-	-
16	The SS (MCPTT server) sends SIP 200 (OK).	<--	SIP 200 (OK)	-	-
17	Make the UE (MCPTT User) request cancelling of the private call call-back request (based on the MCPTT ID of the MCPTT user provided in step 7 and shown to the User in step 1 in Table 6.2.13.3.2-1). (NOTE 1) NOTE: Depending on the implementation the User may not be provided with an entry for pending call-back.	-	-	-	-
18	Check: Does, in the next 5 sec, the UE (MCPTT client) send a SIP MESSAGE message cancelling the private call call-back providing the MCPTT ID of the MCPTT user provided in step 7 and shown to the User in step 1 in Table 6.2.13.3.2-1?	-->	SIP MESSAGE	3	F
-	EXCEPTION: SS releases the E-UTRA connection.	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI.					

Table 6.2.13.3.2-2: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCPTT client) notify the user about the stored information related to the private call call back request (mcptt-calling-user-id, the call back urgency, time-of-request)? (NOTE 1 in Table 6.2.13.3.2-1)	-	-	1	P

6.2.13.3.3 Specific message contents

Table 6.2.13.3.3-1: SIP MESSAGE (Steps 1, 7, Table 6.2.13.3.2-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.7.2-1,				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part **MIME-Content-Type**	"application/vnd.3gpp.mcptt-info+xml"	MCPTT-Info		
MIME-part-body MCPTT-Info	MCPTT-Info aAs described in Table 6.2.13.3.3-2			

Table 6.2.13.3.3-2: MCPTT-Info in SIP MESSAGE (Table 6.2.13.3.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.3.2.2-1, condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
anyExt		The anyExt field may contain other values - these need not be checked		
request-type	"private-call-call-back-request"			
urgency-ind	"normal"			
time-of-request	"YYYY-MM-DDThh:mm:ss"	set to the date and time of the request		

Table 6.2.13.3.3-3: SIP MESSAGE (Steps 2, 8, Table 6.2.13.3.2-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.7.2-1, condition RESOURCE_LISTS				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		MCPTT-Info		
MIME-part-body	MCPTT-INFO as described in Table 6.2.13.3.3-4			
MIME body part		Resource-Lists		
MIME-part-body	Resource-lists as described in Table 6.2.13.3.3-5			

Table 6.2.13.3.3-4: MCPTT-Info in SIP MESSAGE (Table 6.2.13.3.3-3)

Derivation Path: TS 36.579-1 [2], table 5.5.3.2.2-1, condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
anyExt		The anyExt field may contain other values - these need not be checked		
response-type	"private-call-call-back-response"			

Table 6.2.13.3.3-5: Resource-lists in SIP MESSAGE (Table 6.2.13.3.3-3)

Derivation Path: TS 36.579-1 [2], table 5.5.3.3.2-1 condition MSG_RSP

Table 6.2.13.3.3-6: SIP MESSAGE (Step 3, Table 6.2.13.3.2-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.7.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		MCPTT-Info		
MIME-part-body	MCPTT-Info as described in Table 6.2.13.3.3-7			

Table 6.2.13.3.3-7: MCPTT-Info in SIP MESSAGE (Table 6.2.13.3.3-6)

Derivation Path: TS 36.579-1 [2], table 5.5.3.2.2-1, condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
anyExt		The anyExt field may contain other values - these need not be checked		
request-type	"private-call-call-back-cancel-request"			

Table 6.2.13.3.3-8: SIP MESSAGE (Step 4, Table 6.2.13.3.2-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.7.1-1, condition RESOURCE_LISTS				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		MCPTT-Info		
MIME-part-body	MCPTT-Info as described in Table 6.2.13.3.3-9			
MIME body part		Resource-Lists		
MIME-part-body	Resource-lists as described in Table 6.2.13.3.3-10			

Table 6.2.13.3.3-9: MCPTT-Info in SIP MESSAGE (Table 6.2.13.3.3-8)

Derivation Path: TS 36.579-1 [2], table 5.5.3.2.1-1, condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
anyExt		The anyExt field may contain other values - these need not be checked		
response-type	"private-call-call-back-cancel-response"			

Table 6.2.13.3.3-10: Resource-lists in SIP MESSAGE (Table 6.2.13.3.3-8)

Derivation Path: TS 36.579-1 [2], table 5.5.3.3.1-1 condition MSG_RSP

Table 6.2.13.3.3-11: SIP INVITE (Step 10, Table 6.2.13.3.2-1; Step 2, TS 36.579-1 [2], Table 5.3.8.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.5.1-1, conditions PRIVATE-CALL, MANUAL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
MIME body part		SDP-Message		
MIME-part-body	SDP-Message as described in Table 6.2.13.3.3-12			

Table 6.2.13.3.3-12: SDP Message in SIP INVITE (Table 6.2.13.3.3-11)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.1-1, condition PRIVATE-CALL, WITHOUT_MEDIACONTROL

Table 6.2.13.3.3-13: SIP 200 (OK) (Step 10, Table 6.2.13.3.2-1; Step 5, TS 36.579-1 [2], Table 5.3.8.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.17.1.2-1, condition INVITE-RSP				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
SDP Message	As described in Table 6.2.13.3.3-14			

Table 6.2.13.3.3-14: SDP Message in SIP 200 (OK) (Table 6.2.13.3.3-13)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.2-1, conditions SDP_ANSWER, WITHOUT_MEDIACONTROL

Table 6.2.13.3.3-15: Void

6.2.14 On-network / Private Call / Ambient listening call / Remotely initiated Ambient listening call / Remotely initiated ambient listening call release / Success / Client Originated (CO) / Server initiated ambient call release

6.2.14.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including authorized to
initiate Remotely initiated ambient listening }
ensure that {
  when { UE (MCPTT User) requests the establishment of a remotely initiated ambient listening call }
    then { UE (MCPTT Client) sends a SIP INVITE message (end-to-end security context provided)
requesting the establishment of a remotely initiated ambient listening call, and, after indication
from the MCPTT Server that the call was established notifies the MCPTT user, and does not do any
floor request }
            }
```

(2)

```
with { UE (MCPTT Client) having initiated a remotely initiated ambient listening call, and, having
been notified by the server that the MCPTT server is capable of receiving a SIP BYE from an MCPTT
client to release an ambient-listening call }
ensure that {
  when { UE (MCPTT User) wants to release the MCPTT remotely initiated ambient listening call }
    then { UE (MCPTT Client) sends a SIP BYE request and after receiving a SIP 200 (OK) terminates
the call }
            }
```

(3)

```
with { UE (MCPTT Client) having initiated a remotely initiated ambient listening call }
ensure that {
  when { UE (MCPTT client) receives a SIP BYE message including a <release-reason> element set to
"administrator-action" }
    then { UE (MCPTT Client) sends a SIP 200 (OK) response and terminates the call }
           }
```

6.2.14.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: TS 24.379 clauses 11.1.6.2.1.1, 11.1.6.2.1.3, 11.1.6.2.1.4, 6.2.1, 6.4, F.1.3. Unless otherwise stated these are Rel-14 requirements.

[TS 24.379, clause 11.1.6.2.1.1]

Upon receiving a request from an MCPTT user to establish an MCPTT ambient listening call that has been authorised successfully by the requesting MCPTT client, the MCPTT client shall generate an initial SIP INVITE request by following the UE originating session procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

1) shall set the Request-URI of the SIP INVITE request to a public service identity of the participating MCPTT function serving the MCPTT user;

2) may include a P-Preferred-Identity header field in the SIP INVITE request containing a public user identity as specified in 3GPP TS 24.229 [4];

3) shall include the g.3gpp.mcptt media feature tag and the g.3gpp.icsi-ref media feature tag with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP INVITE request according to IETF RFC 3840 [16];

4) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

5) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP INVITE request;

6) shall include an Accept-Contact header field with the media feature tag g.3gpp.icsi-ref contain with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with parameters "require" and "explicit" according to IETF RFC 3841 [6];

7) shall include an application/vnd.3gpp.mcptt-info+xml MIME body with the <session-type> element set to a value of "ambient-listening";

8) shall include in the application/vnd.3gpp.mcptt-info+xml MIME body an <ambient-listening-type> element set to a value of:

   ...

   b) "remote-init", if the MCPTT user has requested a remotely initiated ambient listening call;

9) shall insert in the SIP INVITE request a MIME resource-lists body with the MCPTT ID of the targeted MCPTT user, according to rules and procedures of IETF RFC 5366 [20];

NOTE 1: the targeted MCPTT user is the listened-to MCPTT user in the case of a remotely initiated ambient listening call or the listening MCPTT user in the case of a locally initiated listening call.

10) if an end-to-end security context needs to be established then:

   a) if necessary, shall instruct the key management client to request keying material from the key management server as described in 3GPP TS 33.180 [78];

   b) shall use the keying material to generate a PCK as described in 3GPP TS 33.180 [78];

c) shall use the PCK to generate a PCK-ID with the four most significant bits set to "0001" to indicate that the purpose of the PCK is to protect private call communications and with the remaining twenty eight bits being randomly generated as described in 3GPP TS 33.180 [78];

d) shall encrypt the PCK to a UID associated to the MCPTT client using the MCPTT ID and KMS URI of the invited user and a time related parameter as described in 3GPP TS 33.180 [78];

e) shall generate a MIKEY-SAKKE I_MESSAGE using the encapsulated PCK and PCK-ID as specified in 3GPP TS 33.180 [78];

f) shall add the MCPTT ID of the originating MCPTT to the initiator field (IDRi) of the I_MESSAGE as described in 3GPP TS 33.180 [78]; and

g) shall sign the MIKEY-SAKKE I_MESSAGE using the originating MCPTT user's signing key provided in the keying material together with a time related parameter, and add this to the MIKEY-SAKKE payload, as described in 3GPP TS 33.180 [78];

11) shall include an SDP offer according to 3GPP TS 24.229 [4] with the clarification given in subclause 6.2.1 and with a media stream of the offered media-floor control entity;

...

13) if this is a remotely initiated ambient listening call, shall comply with the conditions for an implicit request to grant the floor to the terminating MCPTT client as specified in subclause 6.4;

14) shall include in the SIP INVITE request a Priv-Answer-Mode header field with the value "Auto" according to the rules and procedures of IETF RFC 5373 [18]; and

15) shall send the SIP INVITE request towards the participating MCPTT function according to 3GPP TS 24.229 [4].

...

Upon receiving a SIP 200 (OK) response to the SIP INVITE request the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

2) if this is a remotely initiated ambient listening call, shall notify the user that the call has been successfully established;

[TS 24.379, clause 11.1.6.2.1.3]

Upon receiving a request from an MCPTT user to release an MCPTT ambient listening call:

The MCPTT client:

...

2) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

3) shall generate a SIP BYE request according to rules and procedures of 3GPP TS 24.229 [4] and IETF RFC 6086 [64]; and

4) shall send the SIP BYE request within the dialog of the MCPTT ambient call session as specified in 3GPP TS 24.229 [4].

Upon receipt of the SIP 200 (OK) response to the SIP BYE request the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

[TS 24.379, clause 11.1.6.2.1.4]

Upon receipt of a SIP BYE request in the dialog of an ambient listening session, the MCPTT client:

1) shall comply with the procedures of subclause 6.2.6;

[TS 24.379, clause 6.2.1]

The SDP offer shall contain only one SDP media-level section for MCPTT speech according to 3GPP TS 24.229 [4] and, if floor control shall be used during the session, shall contain one SDP media-level section for a media-floor control entity according to 3GPP TS 24.380 [5].

When composing an SDP offer according to 3GPP TS 24.229 [4] the MCPTT client:

...

2) shall include an "m=audio" media-level section for the MCPTT media stream consisting of:

...

c) if the SDP offer is for an ambient listening call:

i) if this is a remotely initiated ambient listening call, include an "a=recvonly" attribute; or

[TS 24.379, clause 6.4]

An initial SIP INVITE request fulfilling the following criteria shall be regarded by the MCPTT server as an implicit request to grant the floor to the terminating MCPTT client when the originating MCPTT client:

1) initiates a remotely initiated MCPTT ambient listening call; and

2) includes the "mc_implicit_request" 'fmtp' attribute in the associated UDP stream for the floor control in the SDP offer/answer as specified in 3GPP TS 24.380 [5] clause 12.

[TS 24.379, clause F.1.3]

If the <mcpttinfo> contains the <mcptt-Params> element then:

...

2) the <session-type> can be included with:

...

e) a value of "ambient-listening" to indicate the MCPTT client wants to make an ambient listening call;

...

19) the <anyExt> can be included with the following elements not declared in the XML schema:

a) an <ambient-listening-type> of type "xs:string":

i) set to a value of "remote-init" when the listening MCPTT user of an ambient listening call initiates the call; or

6.2.14.3 Test description

6.2.14.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)
- For the underlining "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
  - The MCPTT User is authorized to initiate Remotely initiated ambient listening: the <allow-request-remote-initiated-ambient-listening> element of the <ruleset> element is present in the MCPTT user profile document and is set to "true"
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.2.14.3.2 Test procedure sequence

Table 6.2.14.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the UE (MCPTT User) request the establishment of an MCPTT remotely initiated ambient listening call. (NOTE 1)	-	-	-	-
2	Check: Does the UE (MCPTT client) perform the Generic Test Procedure for MCPTT CO establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.7.3-1 for) the establishment of an MCPTT remotely initiated ambient listening call? Option a in TS 36.579-1 [2] Table 5.3.7.3-1 is used.	-	-	1	P
3	Void	-	-	-	-
4	The SS (MCPTT server) sends a Floor Taken message, the Permission to Request the Floor field set to '0'.	<--	Floor Taken	-	-
5	Check: Does the UE (MCPTT client) notify the user that the remotely initiated ambient listening call has been successfully established? (NOTE 1)	-	-	1	P
6	Make the UE (MCPTT User) request to speak (e.g. pressing the PTT button) (NOTE 1)	-	-	-	-
6A	Check: Does the UE (MCPTT client) send a Floor Request message in the next 5 sec?	-->	Floor Request	1	F
7	Make the UE (MCPTT User) request the release of the Remotely initiated ambient listening call. (NOTE 1)	-	-	-	-
8	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO call release as described in TS 36.579-1 [2] Table 5.3.10.3-1 to end the call?	-	-	2	P
9-10	Void	-	-	-	-
11	Make the UE (MCPTT User) request the establishment of an MCPTT remotely initiated ambient listening call. (NOTE 1)	-	-	-	-
12	Check: Does the UE (MCPTT client) perform the Generic Test Procedure for MCPTT CO establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.7.3-1 for the establishment of an MCPTT remotely initiated ambient listening call? Option a in TS 36.579-1 [2] Table 5.3.7.3-1 is used.		-	1	P
13	Void	-	-	-	-
14	The SS (MCPTT server) sends a Floor Taken message, the Permission to Request the Floor field set to '0'.	<--	Floor Taken	-	-
15	Void	-	-	-	-
16	Check: Is the Generic Test Procedure for MCPTT CT call release as described in TS 36.579-1 [2] Table 5.3.12.3-1 to end the call correctly performed?	-	-	3	P
17-18	Void	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI.					

6.2.14.3.3 Specific message contents

Table 6.2.14.3.3-1: SIP INVITE (Steps 2, 12, Table 6.2.14.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.7.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.5.1-1, condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Answer-Mode	**not present**			
Priv-Answer-Mode				
answer-mode-value	"Auto"			
answer-mode-param	“require”			
Message-body				
MIME body part		**SDP Message**		
MIME-part-body	SDP Message as described in Table 6.2.14.3.3-3			
MIME body part		**MCPTT-Info**		
MIME-part-body	MCPTT-Info as described in Table 6.2.14.3.3-2			

Table 6.2.14.3.3-2: MCPTT-Info in SIP INVITE (Table 6.2.14.3.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.3.2.1-1, condition PRIVATE-CALL, INVITE_REFER				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
session-type	"ambient-listening"			
anyExt				
ambient-listening-type	"remote-init"	The anyExt field may contain other values - these need not be checked		

Table 6.2.14.3.3-3: SDP Message in SIP INVITE (Table 6.2.14.3.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.1-1, conditions PRIVATE-CALL, INITIAL_SDP_OFFER				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
media attribute		a=line attribute=recvonly		
recvonly				

Table 6.2.14.3.3-4: SIP 200 (OK) (Steps 2, 12, Table 6.2.14.3.2-1; step 4, TS 36.579-1 [2] Table 5.3.7.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.17.1.2-1 condition INVITE_RSP				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Feature-Caps				
fcap-name	"g.3gpp.mcptt.ambient-listening-call-release"	Indicates that the MCPTT server is capable of receiving a SIP BYE from an MCPTT client to release an ambient-listening call		
Message-body				
SDP message	SDP message as described in Table 6.2.14.3.3-4A			

Table 6.2.14.3.3-4A: SDP Message in SIP 200 OK (Table 6.2.14.3.3-4)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.1-1, conditions PRIVATE-CALL, SDP_ANSWER				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
media attribute		a=line attribute=sendonly		
sendonly				

Table 6.2.14.3.3-5: Floor Taken (Steps 4, 14, Table 6.2.14.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.7-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Permission to Request the Floor			
Permission to Request the Floor	"0"	The receiver is NOT permitted to request floor	

Table 6.2.14.3.3-6: Void

Table 6.2.14.3.3-7: SIP BYE (Step 16, Table 6.2.14.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.12.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.2.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Content-Type				
media-type	"multipart/mixed"			
Message-body				
MIME body part		MCPTT-Info		
MIME-part-headers				
Content-Type	"application/vnd.3gpp. mcptt-info+xml"			
MIME-part-body	MCPTT-Info as described in Table 6.2.14.3.3-8			

Table 6.2.14.3.3-8: MCPTT-Info in SIP BYE (Table 6.2.14.3.3-7)

Derivation Path: TS 36.579-1 [2], table 5.5.3.2.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
anyExt				
release-reason	"administrator-action"			

6.2.15 On-network / Private Call / Ambient listening call / Remotely initiated Ambient listening call / Remotely initiated ambient listening call release / Success / Client Terminated (CT)

6.2.15.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including authorized to
receive private calls }
ensure that {
  when { the UE (MCPTT Client) receives a request for establishment of an MCPTT remotely initiated
ambient listening call the SDP offer of the SIP INVITE request contains an "a=key-mgmt" attribute
field with a "mikey" attribute value containing a MIKEY-SAKKE I_MESSAGE }
```

```
    then { UE (MCPTT Client) sends a SIP 200 (OK) accepting the establishment of the MCPTT remotely
initiated ambient listening call applying End-to-end communication security, and, does not notify
the user for the call establishment }
            }
```

(2)

```
with { UE (MCPTT Client) having accepted a remotely initiated ambient listening call }
ensure that {
  when { the UE (MCPTT Client) receives a SIP BYE request for release of the MCPTT remotely
initiated ambient listening call }
    then { UE (MCPTT Client) sends a SIP 200 (OK) response and terminates the call, and, does not
notify the user for the call release }
            }
```

6.2.15.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: TS 24.379 clauses 11.1.6.2.1.2, 11.1.6.2.1.4, 6.2.3.1.1, 6.2.6. Unless otherwise stated these are Rel-14 requirements.

[TS 24.379, clause 11.1.6.2.1.2]

Upon receipt of an initial SIP INVITE request, the MCPTT client shall follow the procedures for termination of multimedia sessions in the IM CN subsystem as specified in 3GPP TS 24.229 [4] with the clarifications below.

The MCPTT client:

...

3) if the SDP offer of the SIP INVITE request contains an "a=key-mgmt" attribute field with a "mikey" attribute value containing a MIKEY-SAKKE I_MESSAGE:

   a) shall extract the MCPTT ID of the originating MCPTT from the initiator field (IDRi) of the I_MESSAGE as described in 3GPP TS 33.180 [78];

   b) shall convert the MCPTT ID to a UID as described in 3GPP TS 33.180 [78];

   c) shall use the UID to validate the signature of the MIKEY-SAKKE I_MESSAGE as described in 3GPP TS 33.180 [78];

   d) if authentication verification of the MIKEY-SAKKE I_MESSAGE fails, shall reject the SIP INVITE request with a SIP 488 (Not Acceptable Here) response as specified in IETF RFC 4567 [47], and include warning text set to "136 authentication of the MIKEY-SAKKE I_MESSAGE failed" in a Warning header field as specified in subclause 4.4; and

   e) if the signature of the MIKEY-SAKKE I_MESSAGE was successfully validated:

      i) shall extract and decrypt the encapsulated PCK using the terminating user's (KMS provisioned) UID key as described in 3GPP TS 33.180 [78]; and

      ii) shall extract the PCK-ID, from the payload as specified in 3GPP TS 33.180 [78];

NOTE 1: With the PCK successfully shared between the originating MCPTT client and the terminating MCPTT client, both clients are able to use SRTP/SRTCP to create an end-to-end secure session.

...

6) shall perform the automatic commencement procedures specified in subclause 6.2.3.1.1;

...

8) if the received SIP INVITE request includes an alert-info header field as specified in IETF RFC 3261 [24] and as updated by IETF RFC 7462 [77] set to a value of "<file:///dev/null>" shall not give any indication of the progress of the call to the MCPTT user;

NOTE 3: The alert-info header field having the value of "<file:///dev/null>" is intended to result in having a "null" alert, i.e. an alert with no content or physical manifestation of any kind.

[TS 24.379, clause 11.1.6.2.1.4]

Upon receipt of a SIP BYE request in the dialog of an ambient listening session, the MCPTT client:

1) shall comply with the procedures of subclause 6.2.6;

2) if the cached ambient listening client role is equal to "listened-to MCPTT user", shall provide no indication that an ambient listening call has been terminated;

[TS 24.379, clause 6.2.3.1.1]

When performing the automatic commencement mode procedures, the MCPTT client:

1) shall accept the SIP INVITE request and generate a SIP 200 (OK) response according to rules and procedures of 3GPP TS 24.229 [4];

2) shall include the option tag "timer" in a Require header field of the SIP 200 (OK) response;

3) shall include the g.3gpp.mcptt media feature tag in the Contact header field of the SIP 200 (OK) response;

4) shall include the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP 200 (OK) response;

...

8) shall send the SIP 200 (OK) response towards the MCPTT server according to rules and procedures of 3GPP TS 24.229 [4];

...

10) shall interact with the media plane as specified in 3GPP TS 24.380 [5] subclause 6.2.

[TS 24.379, clause 6.2.6]

Upon receiving a SIP BYE request, the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5]; and

2) shall send SIP 200 (OK) response towards MCPTT server according to 3GPP TS 24.229 [4].

6.2.15.3 Test description

6.2.15.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

- For the underlining "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)

- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

- UE States at the end of the preamble

  - The UE is in E-UTRA Registered, Idle Mode state.

  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.2.15.3.2 Test procedure sequence

Table 6.2.15.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Is the Generic Test Procedure for MCPTT CT session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.4.3-1 to establish an MCPTT remotely initiated ambient listening call correctly performed?	-	-	1	P
2	Void	-	-	-	-
3	SS (MCPTT server) sends a Floor Granted message	<--	Floor Granted	-	-
4	Check: Does the UE (MCPTT client) notify the user that the remotely initiated ambient listening call has been successfully established? (NOTE 1)	-	-	1	F
5	Void	-	-	-	-
6	Check: Is the Generic Test Procedure for MCPTT CT call release as described in TS 36.579-1 [2] Table 5.3.12.3-1 to end the call correctly performed?	-	-	2	P
7	Void	-	-	-	-
8	Check: Does the UE (MCPTT client) notify the user that the remotely initiated ambient listening call has been successfully released? (NOTE 1)	-	-	2	F
NOTE 1: This is expected to be done via a suitable implementation dependent MMI.					

6.2.15.3.3 Specific message contents

Table 6.2.15.3.3-1: SIP INVITE (Step 1, Table 6.2.15.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.5.2-1, condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Answer-Mode	**not present**			
Priv-Answer-Mode				
answer-mode-value	"Auto"			
answer-mode-param	“require”			
Alert-Info				
value	"<file:///dev/null>"			
Message-body				
MIME body part		**SDP Message**		
MIME-part-body	SDP Message as described in Table 6.2.15.3.3-3			
MIME body part		**MCPTT-Info**		
MIME-part-body	MCPTT-Info as described in Table 6.2.15.3.3-2			

Table 6.2.15.3.3-2: MCPTT-Info in SIP INVITE (Table 6.2.15.3.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.3.2.2-1, condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
session-type	"ambient-listening"			
anyExt				
ambient-listening-type	"remote-init"			

Table 6.2.15.3.3-3: SDP Message in SIP INVITE (Table 6.2.15.3.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.2-1, condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
media attribute		a=line attribute=recvonly		
recvonly				

Table 6.2.15.3.3-3A: SIP 200 (OK) (Step 2, Table 6.2.15.3.2-1; step 4, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.17.1.1-1 condition INVITE-RSP				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
SDP Message	As described in Table 6.2.15.3.3-3B			

Table 6.2.15.3.3-3B: SDP Message in SIP 200 OK (Table 6.2.15.3.3-3A)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.1-1, condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
media attribute		a=line attribute=sendonly		
sendonly				

Table 6.2.15.3.3-4: Floor Granted (Step 3, Table 6.2.15.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition ON-NETWORK.

Table 6.2.15.3.3-5: Void

6.2.16 On-network / Private Call / Ambient listening call / Locally initiated Ambient listening call / Locally initiated ambient listening call release / Success / Client Originated (CO) / Server initiated ambient call release

6.2.16.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including authorized to
initiate Locally initiated ambient listening }
ensure that {
  when { the MCPTT User requests the establishment of a MCPTT Locally initiated ambient listening
call }
```

```
    then { UE (MCPTT Client) sends a SIP INVITE message requesting the establishment of a locally
initiated ambient listening call, and, upon indication from the MCPTT Server for the call progress
and that the call was established does not notify the user }
            }
```

(2)

```
with { UE (MCPTT Client) having initiated a locally initiated ambient listening call, and, having
been notified by the server that the MCPTT server is capable of receiving a SIP BYE from an MCPTT
client to release an ambient-listening call }
ensure that {
  when { the MCPTT User wants to release the MCPTT locally initiated ambient listening call }
    then { UE (MCPTT Client) sends a SIP BYE request and after receiving a SIP 200 (OK) terminates
the call }
            }
```

(3)

```
with { UE (MCPTT Client) having initiated a locally initiated ambient listening call }
ensure that {
  when { the UE (MCPTT client) receives a SIP BYE message including a <release-reason> element set
to "administrator-action" }
    then { UE (MCPTT Client) sends a SIP 200 (OK) response and terminates the call }
            }
```

6.2.16.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: TS 24.379 clauses 11.1.6.2.1.1, 11.1.6.2.1.3, 11.1.6.2.1.4, 6.2.1, 6.2.4.2.2, 6.4, F.1.3, TS 24.380, clause 12.1.2.2. Unless otherwise stated these are Rel-14 requirements.

[TS 24.379, clause 11.1.6.2.1.1]

Upon receiving a request from an MCPTT user to establish an MCPTT ambient listening call that has been authorised successfully by the requesting MCPTT client, the MCPTT client shall generate an initial SIP INVITE request by following the UE originating session procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

1) shall set the Request-URI of the SIP INVITE request to a public service identity of the participating MCPTT function serving the MCPTT user;

2) may include a P-Preferred-Identity header field in the SIP INVITE request containing a public user identity as specified in 3GPP TS 24.229 [4];

3) shall include the g.3gpp.mcptt media feature tag and the g.3gpp.icsi-ref media feature tag with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP INVITE request according to IETF RFC 3840 [16];

4) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

5) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP INVITE request;

6) shall include an Accept-Contact header field with the media feature tag g.3gpp.icsi-ref contain with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with parameters "require" and "explicit" according to IETF RFC 3841 [6];

7) shall include an application/vnd.3gpp.mcptt-info+xml MIME body with the <session-type> element set to a value of "ambient-listening";

8) shall include in the application/vnd.3gpp.mcptt-info+xml MIME body an <ambient-listening-type> element set to a value of:

   a) "local-init", if the MCPTT user has requested a locally initiated ambient listening call; or

   ...

9) shall insert in the SIP INVITE request a MIME resource-lists body with the MCPTT ID of the targeted MCPTT user, according to rules and procedures of IETF RFC 5366 [20];

NOTE 1: the targeted MCPTT user is the listened-to MCPTT user in the case of a remotely initiated ambient listening call or the listening MCPTT user in the case of a locally initiated listening call.

10) if an end-to-end security context needs to be established then:

a) if necessary, shall instruct the key management client to request keying material from the key management server as described in 3GPP TS 33.180 [78];

b) shall use the keying material to generate a PCK as described in 3GPP TS 33.180 [78];

c) shall use the PCK to generate a PCK-ID with the four most significant bits set to "0001" to indicate that the purpose of the PCK is to protect private call communications and with the remaining twenty eight bits being randomly generated as described in 3GPP TS 33.180 [78];

d) shall encrypt the PCK to a UID associated to the MCPTT client using the MCPTT ID and KMS URI of the invited user and a time related parameter as described in 3GPP TS 33.180 [78];

e) shall generate a MIKEY-SAKKE I_MESSAGE using the encapsulated PCK and PCK-ID as specified in 3GPP TS 33.180 [78];

f) shall add the MCPTT ID of the originating MCPTT to the initiator field (IDRi) of the I_MESSAGE as described in 3GPP TS 33.180 [78]; and

g) shall sign the MIKEY-SAKKE I_MESSAGE using the originating MCPTT user's signing key provided in the keying material together with a time related parameter, and add this to the MIKEY-SAKKE payload, as described in 3GPP TS 33.180 [78];

11) shall include an SDP offer according to 3GPP TS 24.229 [4] with the clarification given in subclause 6.2.1 and with a media stream of the offered media-floor control entity;

12) if this is a locally initiated ambient listening call, shall comply with the conditions for implicit floor control as specified in subclause 6.4;

...

14) shall include in the SIP INVITE request a Priv-Answer-Mode header field with the value "Auto" according to the rules and procedures of IETF RFC 5373 [18]; and

15) shall send the SIP INVITE request towards the participating MCPTT function according to 3GPP TS 24.229 [4].

Upon receiving a SIP 183(Session Progress) response to the SIP INVITE request the MCPTT client:

1) if the SIP 183(Session Progress) response includes an alert-info header field as specified in IETF RFC 3261 [24] and as updated by IETF RFC 7462 [77] set to a value of "<D:\dev\nullC:\dev\nullfile:///dev/null>" shall not give any indication of the progress of the call setup to the MCPTT user; and

NOTE 2: The alert-info header field having the value of "<D:\dev\nullC:\dev\nullfile:///dev/null>" is intended to result in having a "null" alert, i.e. an alert with no content or physical manifestation of any kind.

...

Upon receiving a SIP 200 (OK) response to the SIP INVITE request the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

...

3) if this is a locally initiated ambient listening call, shall not provide any indication to the user that the call has been successfully established;

[TS 24.379, clause 11.1.6.2.1.3]

Upon receiving a request from an MCPTT user to release an MCPTT ambient listening call:

The MCPTT client:

...

2) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

3) shall generate a SIP BYE request according to rules and procedures of 3GPP TS 24.229 [4] and IETF RFC 6086 [64]; and

4) shall send the SIP BYE request within the dialog of the MCPTT ambient call session as specified in 3GPP TS 24.229 [4].

Upon receipt of the SIP 200 (OK) response to the SIP BYE request the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

...

3) if the cached ambient listening client role is equal to "listening MCPTT user", may provide an indication to the MCPTT user that the ambient listening call has been terminated; and

[TS 24.379, clause 11.1.6.2.1.4]

Upon receipt of a SIP BYE request in the dialog of an ambient listening session, the MCPTT client:

1) shall comply with the procedures of subclause 6.2.6;

...

3) if the cached ambient listening client role is equal to "listening MCPTT user", may provide an indication to the MCPTT user that the ambient listening call has been terminated; and

[TS 24.379, clause 6.2.1]

The SDP offer shall contain only one SDP media-level section for MCPTT speech according to 3GPP TS 24.229 [4] and, if floor control shall be used during the session, shall contain one SDP media-level section for a media-floor control entity according to 3GPP TS 24.380 [5].

When composing an SDP offer according to 3GPP TS 24.229 [4] the MCPTT client:

...

2) shall include an "m=audio" media-level section for the MCPTT media stream consisting of:

...

c) if the SDP offer is for an ambient listening call:

...

ii) if this is a locally initiated ambient listening call, include an "a=sendonly" attribute; and

[TS 24.379, clause 6.2.4.2.2]

When a call is initiated as described in 3GPP TS 24.379 [2], the floor participant:

1. shall create an instance of the 'Floor participant state transition diagram for basic operation';

...

4. if for the established MCPTT call the SIP INVITE request is an implicit floor request:

a. shall start timer T101 (Floor Request) and initialise counter C101 (Floor Request) to 1;

b. shall enter the 'U: pending Request' state; and

[TS 24.379, clause 6.4]

An initial SIP INVITE request fulfilling the following criteria shall be regarded by the MCPTT server as an implicit floor request by the originating MCPTT client when the MCPTT client:

1) initiates an MCPTT speech session or initiates a pre-established session that is not used for a remotely initiated MCPTT ambient listening call; and

2) includes the "mc_implicit_request" 'fmtp' attribute in the associated UDP stream for the floor control in the SDP offer/answer as specified in 3GPP TS 24.380 [5] clause 12.

[TS 24.380, clause 12.1.2.2]

In an SDP offer, the "mc_granted" fmtp attribute parameter indicates that the offerer supports the procedure where the answerer indicates, using the fmtp attribute in the associated SDP answer, that the floor has been granted to the offerer.

NOTE 2: When the "mc_granted" fmtp attribute is used in an SDP offer, it does not indicate an actual request for the floor. The SDP "mc_implicit_request" fmtp attribute can be used to request the floor. In an SDP answer, the attribute indicates that the floor has been granted to the offerer.

NOTE 3: Once the offerer has been granted the floor, the offerer has the floor until it receives a Floor Revoke message, or until the offerer itself releases the floor by sending a Floor Release message, as described in the present specification.

In an SDP offer, the "mc_implicit_request" fmtp attribute indicates that the offerer implicitly requests the floor (without the need to send a Floor Request message). In an SDP answer, the attribute parameter indicates that the answerer has accepted the implicit floor request. Once the answerer grants the floor to the offerer, the answerer will send a Floor Granted message.

NOTE 4: The usage of the "mc_implicit_request" fmtp attribute in an SDP answer does not mean that the answerer has granted the floor to the offerer, only that the answerer has accepted the implicit floor request.

[TS 24.379, clause F.1.3]

If the <mcpttinfo> contains the <mcptt-Params> element then:

...

2) the <session-type> can be included with:

...

e) a value of "ambient-listening" to indicate the MCPTT client wants to make an ambient listening call;

...

19) the <anyExt> can be included with the following elements not declared in the XML schema:

a) an <ambient-listening-type> of type "xs:string":

...

ii) set to a value of "local-init" when the listened-to MCPTT user of an ambient listening call initiates the call; and

6.2.16.3 Test description

6.2.16.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

- For the underlining "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
  - The MCPTT User is authorized to initiate locally initiated ambient listening call: the <allow-request-locally-initiated-ambient-listening> element of the <ruleset> element is present in the MCPTT user profile document and is set to "true"
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.2.16.3.2 Test procedure sequence

Table 6.2.16.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the UE (MCPTT User) request the establishment of an MCPTT locally initiated ambient listening call. (NOTE 1)	-	-	-	-
2	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.7.3-1 to establish an MCPTT locally initiated ambient listening call with. Option b.i in TS 36.579.1 [2] Table 5.3.7.3-1 applied?	-	-	1	P
3	Void	-	-	-	-
4-6	Void	-	-	-	-
7	Check: Does the UE (MCPTT client) notify the user that the locally initiated ambient listening call has been successfully established? (NOTE 1)	-	-	1	F
8	Void	-	-	-	-
9	Make the UE (MCPTT User) request the release of the Locally initiated ambient listening call. (NOTE 1)	-	-	-	-
9A	Void	-	-	-	-
10	Check: Does the UE (MCPTT client)) perform Generic Test Procedure for MCPTT CO call release as described in TS 36.579-1 [2] Table 5.3.10.3-1 to end the call ?	-	-	2	P
11-12	Void	-	-	-	-
13	Make the UE (MCPTT User) request the establishment of an MCPTT locally initiated ambient listening call. (NOTE 1)	-	-	-	-
14	Check: Does the UE (MCPTT client) perform Generic Test Procedure for MCPTT CO session establishment/modification without provisional responses other than 100 Trying as described in TS 36.579-1 [2] Table 5.3.7.3-1 for the establishment of an MCPTT locally initiated ambient listening call? Option b.i in TS 36.579.1 [2] Table 5.3.7.3-1 is applied.	-	-	1	P
15-18	Void	-	-	-	-
19	Check: Is the Generic Test Procedure for MCPTT CT call release as described in TS 36.579-1 [2] Table 5.3.12.3-1 to end the call correctly performed?	-	-	-	-
20-21	Void	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI. NOTE 2: Void					

6.2.16.3.3 Specific message contents

Table 6.2.16.3.3-1: SIP INVITE (Steps 2, 14, Table 6.2.16.3.2-1; step 2, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.5.1-1, condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Answer-Mode	**not present**			
Priv-Answer-Mode				
answer-mode-value	"Auto"			
answer-mode-param	“require”			
Message-body				
MIME body part		SDP message		
MIME-part-body	SDP message as described in Table 6.2.16.3.3-3			
MIME body part		MCPTT-Info		
MIME-part-body	MCPTT-Info as described in Table 6.2.16.3.3-2			

Table 6.2.16.3.3-2: MCPTT-Info in SIP INVITE (Table 6.2.16.3.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.3.2.1-1, condition PRIVATE-CALL, INVITE_RFEER				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
session-type	"ambient-listening"			
anyExt		The anyExt field may contain other values - these need not be checked		
ambient-listening-type	"local-init"			

Table 6.2.16.3.3-3: SDP Message in SIP INVITE (Table 6.2.16.3.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.1-1, conditions PRIVATE-CALL, INITIAL_SDP_OFFER, IMPLICIT_GRANT_REQUESTED				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
media attribute		a=line attribute=sendonly		
sendonly				

Table 6.2.16.3.3-4: SIP 200 (OK) (Steps 2, 14, Table 6.2.16.3.2-1; Step 4, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.17.1.2-1 condition INVITE-RSP				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Feature-Caps				
fcap-name	"g.3gpp.mcptt.ambient-listening-call-release"	Indicates that the MCPTT server is capable of receiving a SIP BYE from an MCPTT client to release an ambient-listening call		
Message-body				
SDP Message	As described in Table 6.2.16.3.3-4A			

Table 6.2.15.3.3-4A: SDP in SIP 200 (OK) (Table 6.2.16.3.3-4)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.1.2-1 conditions SDP_ANSWER, IMPLICIT_GRANT_REQUESTED and IMPLICIT_FLOOR_GRANTED				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
media attribute		a=line attribute=recvonly		
recvonly				

Table 6.2.16.3.3-5: Void

Table 6.2.16.3.3-6: Void

Table 6.2.16.3.3-7: SIP BYE (Step 19, Table 6.2.16.3.2-1; step 1, TS 36.579-1 [2] Table 5.3.12.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.2.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Content-Type				
media-type	"multipart/mixed"			
Message-body				
MIME body part		**MCPTT-Info**		
MIME-part-headers				
Content-Type	"application/vnd.3gpp. mcptt-info+xml"			
MIME-part-body	MCPTT-Info as described in Table 6.2.16.3.3-8			

Table 6.2.16.3.3-8: MCPTT-Info in SIP BYE (Table 6.2.16.3.3-7)

Derivation Path: TS 36.579-1 [2], table 5.5.3.2.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
anyExt				
release-reason	"administrator-action"			

6.2.17 On-network / Private Call / Ambient listening call / Locally initiated Ambient listening call / Locally initiated ambient listening call release / Success / Client Terminated (CT)

6.2.17.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including authorized to
receive private calls }
ensure that {
  when { the UE (MCPTT Client) receives a request for establishment of an MCPTT locally initiated
ambient listening call the SDP offer of the SIP INVITE request contains an "a=key-mgmt" attribute
field with a "mikey" attribute value containing a MIKEY-SAKKE I_MESSAGE }
    then { UE (MCPTT Client) sends a SIP 200 (OK) accepting the establishment of the MCPTT locally
initiated ambient listening call applying End-to-end communication security and does not do any
floor request }
            }
```

(2)

```
with { UE (MCPTT Client) having accepted a locally initiated ambient listening call }
```

```
ensure that {
  when { the UE (MCPTT Client) receives a SIP BYE request for release of the MCPTT locally initiated
ambient listening call }
    then { UE (MCPTT Client) sends a SIP 200 (OK) response and terminates the call }
          }
```

6.2.17.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: TS 24.379 clauses 11.1.6.2.1.2, 11.1.6.2.1.4, 6.2.3.1.1, 6.2.6. Unless otherwise stated these are Rel-14 requirements.

[TS 24.379, clause 11.1.6.2.1.2]

Upon receipt of an initial SIP INVITE request, the MCPTT client shall follow the procedures for termination of multimedia sessions in the IM CN subsystem as specified in 3GPP TS 24.229 [4] with the clarifications below.

The MCPTT client:

...

3) if the SDP offer of the SIP INVITE request contains an "a=key-mgmt" attribute field with a "mikey" attribute value containing a MIKEY-SAKKE I_MESSAGE:

   a) shall extract the MCPTT ID of the originating MCPTT from the initiator field (IDRi) of the I_MESSAGE as described in 3GPP TS 33.180 [78];

   b) shall convert the MCPTT ID to a UID as described in 3GPP TS 33.180 [78];

   c) shall use the UID to validate the signature of the MIKEY-SAKKE I_MESSAGE as described in 3GPP TS 33.180 [78];

   d) if authentication verification of the MIKEY-SAKKE I_MESSAGE fails, shall reject the SIP INVITE request with a SIP 488 (Not Acceptable Here) response as specified in IETF RFC 4567 [47], and include warning text set to "136 authentication of the MIKEY-SAKKE I_MESSAGE failed" in a Warning header field as specified in subclause 4.4; and

   e) if the signature of the MIKEY-SAKKE I_MESSAGE was successfully validated:

      i) shall extract and decrypt the encapsulated PCK using the terminating user's (KMS provisioned) UID key as described in 3GPP TS 33.180 [78]; and

      ii) shall extract the PCK-ID, from the payload as specified in 3GPP TS 33.180 [78];

NOTE 1: With the PCK successfully shared between the originating MCPTT client and the terminating MCPTT client, both clients are able to use SRTP/SRTCP to create an end-to-end secure session.

...

6) shall perform the automatic commencement procedures specified in subclause 6.2.3.1.1;

[TS 24.379, clause 11.1.6.2.1.4]

Upon receipt of a SIP BYE request in the dialog of an ambient listening session, the MCPTT client:

1) shall comply with the procedures of subclause 6.2.6;

[TS 24.379, clause 6.2.3.1.1]

When performing the automatic commencement mode procedures, the MCPTT client:

1) shall accept the SIP INVITE request and generate a SIP 200 (OK) response according to rules and procedures of 3GPP TS 24.229 [4];

2) shall include the option tag "timer" in a Require header field of the SIP 200 (OK) response;

3) shall include the g.3gpp.mcptt media feature tag in the Contact header field of the SIP 200 (OK) response;

4) shall include the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP 200 (OK) response;

...

8) shall send the SIP 200 (OK) response towards the MCPTT server according to rules and procedures of 3GPP TS 24.229 [4];

...

10) shall interact with the media plane as specified in 3GPP TS 24.380 [5] subclause 6.2.

[TS 24.379, clause 6.2.4.2.3]

When an MCPTT call is established, the terminating floor participant:

1. shall create an instance of a 'Floor participant state transition diagram for basic operation'; and
2. shall enter the 'U: has no permission' state.

NOTE: From a floor participant perspective the MCPTT call is established when the application and signalling plane sends the SIP 200 (OK) response.

[TS 24.379, clause 6.2.6]

Upon receiving a SIP BYE request, the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5]; and
2) shall send SIP 200 (OK) response towards MCPTT server according to 3GPP TS 24.229 [4].

6.2.17.3 Test description

6.2.17.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)
- For the underlining "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- UE States at the end of the preamble
  - The UE is in E-UTRA Registered, Idle Mode state.
  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.2.17.3.2 Test procedure sequence

Table 6.2.17.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Check: Does the UE (MCPTT client) successfully complete a CT MCPTT locally initiated ambient listening call as per the step sequence specified in TS 36.579-1 [2], subclause 5.3.4, Generic Test Procedure for MCPTT CT session establishment/modification without provisional responses other than 100 Trying?	-	-	1	P
2	Void.	-	-	-	-
3	SS (MCPTT server) sends a Floor Taken message, the Permission to Request the Floor field set to '0'. (NOTE 1)	<--	Floor Taken	-	-
3A	Check: Does the UE (MCPTT client) notify the user that the locally initiated ambient listening call has been successfully established? (NOTE 2)	-	-	1	P
4	Make the UE (MCPTT User) request to speak (e.g. pressing the PTT button) (NOTE 2)	-	-	-	-
4A	Check: Does the UE (MCPTT client) send a Floor Request message in the next 5 sec?	-->	Floor Request	1	F
5	Check: Is the Generic Test Procedure for MCPTT CT call release as described in TS 36.579-1 [2] Table 5.3.12.3-1 to end the call correctly performed?	-	-	2	P
6-7	Void	-	-	-	-
NOTE 1: The test scenario simulates the floor being given to the originating Client. The floor control server informs all other Clients (including the UE (MCPTT client)) that the floor is taken. NOTE 2: This is expected to be done via a suitable implementation dependent MMI.					

6.2.17.3.3 Specific message contents

Table 6.2.17.3.3-1: SIP INVITE (Step 1, Table 6.2.17.3.2-1; step 2, TS 36.579-1 [2], Table 5.3.4.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.5.2-1, condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Answer-Mode	**not present**			
Priv-Answer-Mode				
answer-mode-value	"Auto"			
answer-mode-param	“require”			
Message-body				
MIME body part		**SDP Message**		
MIME-part-body	SDP Message as described in Table 6.2.17.3.3-3			
MIME body part		**MCPTT-Info**		
MIME-part-body	MCPTT-Info as described in Table 6.2.17.3.3-2			

Table 6.2.17.3.3-2: MCPTT-Info in SIP INVITE (Table 6.2.17.3.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.3.2.2-1, condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcpttinfo				
mcptt-Params				
session-type	"ambient-listening"			
anyExt				
ambient-listening-type	"local-init"			

Table 6.2.17.3.3-3: SDP Message in SIP INVITE (Table 6.2.17.3.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.2-1, condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
media attribute		a=line attribute=sendonly		
sendonly				

Table 6.2.17.3.3-3A: SIP 200 (OK) (Step 2, Table 6.2.17.3.2-1; step 4, TS 36.579-1 [2] Table 5.3.4.3-1)

Derivation Path: TS 36.579-1 [2], table 5.5.2.17.1.1-1 condition INVITE-RSP				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body				
SDP Message	As described in Table 6.2.17.3.3-3B			

Table 6.2.17.3.3-3B: SDP Message in SIP 200 OK (Table 6.2.17.3.3-3A)

Derivation Path: TS 36.579-1 [2], table 5.5.3.1.1-1, condition PRIVATE-CALL				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
media attribute		a=line attribute=recvonly		
recvonly				

Table 6.2.17.3.3-4: Floor Taken (Step 3, Table 6.2.17.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-7 condition ON-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
Permission to Request the Floor			
Permission to Request the Floor	"0"	The receiver is NOT permitted to request floor	

Table 6.2.17.3.3-5: Void

6.3 Location

6.3.1 On-network / Location / Event Triggered Location Information report

6.3.1.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client)registered and authorized for MCPTT service and not in an emergency state
and having received a location information configuration message providing configuration parameters
```

```
for NonEmergencyLocationInformation requesting indication of ESGIs and location information, and,
TriggeringCriteria set to Cell change, and, a none zero minimumReportInterval timer }
ensure that {
  when { UE moves to a different cell }
    then { UE (MCPTT Client) sends location report obeying the set in the location configuration
parameters for NonEmergencyLocationInformation including waiting for the expiry of
minimumIntervalLength timer for before reporting }
            }
```

(2)

```
with { UE (MCPTT Client)registered and authorized for MCPTT service and not in an emergency state
and having received a location information configuration message providing configuration parameters
for NonEmergencyLocationInformation requesting indication of ESGIs and location information, and,
TriggeringCriteria set to PLMN change and PERIODIC, and, a none zero minimumReportInterval timer }
ensure that {
  when { UE moves to a cell belonging to different however allowed for communication PLMN }
    then { UE (MCPTT Client) sends location report obeying the set in the location configuration
parameters for NonEmergencyLocationInformation and resets all triggers }
            }
```

(3)

```
with { UE (MCPTT Client) registered and authorized for MCPTT service and having received a location
information configuration message providing configuration parameters for
NonEmergencyLocationInformation requesting indication of ESGIs and location information, and,
TriggeringCriteria set to PLMN change and PERIODIC, and, a none zero minimumReportInterval timer }
ensure that {
  when { when the PERIODIC trigger fires up }
    then { UE (MCPTT Client) sends location report obeying the set in the location configuration
parameters for NonEmergencyLocationInformation }
            }
```

6.3.1.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.379, clause 13.3.2, 13.3.4.1, 13.3.4.2. Unless otherwise stated, these are Rel-13 requirements.

[TS24.379 clause 13.3.2]

Upon receiving a SIP MESSAGE request containing:

1) an Accept-Contact header field with the media feature tag g.3gpp.icsi-ref set to the value "urn:urn-7:3gpp-service.ims.icsi.mcptt";

2) a Content-Type header field set to "application/vnd.3gpp.mcptt-location-info+xml"; and

3) an application/vnd.3gpp.mcptt-location-info+xml MIME body with a <Configuration> root element included in the <location-info> root element;

then the MCPTT client:

1) shall store the contents of the <Configuration> elements;

2) shall set the location reporting triggers accordingly; and

3) shall start the minimumReportInterval timer.

[TS 24.379 clause 13.3.4.1]

If a location reporting trigger fires the MCPTT client checks if the minimumReportInterval timer is running. If the timer is running the MCPTT client waits until the timer expires. When the minimumReportInterval timer fires, the MCPTT client:

1) shall, if any of the reporting triggers are still true, send a location information report as specified in subclause 13.3.4.2.

[TS 24.379 clause 13.3.4.2]

If the MCPTT client does not need to send a SIP request for other reasons, the MCPTT client shall generate a SIP MESSAGE request in accordance with 3GPP TS 24.229 [4] and IETF RFC 3428 [33]. The MCPTT client;

1) shall include in the Request-URI, the SIP URI received in the P-Asserted-Identity header field in the received SIP MESSAGE request for location report configuration;

2) shall include a Content-Type header field set to "application/vnd.3gpp.mcptt-location-info+xml";

3) shall include an application/vnd.3gpp.mcptt-location-info+xml MIME body and in the <location-info> root element include:

   a) a <Report> element and if the Report was triggered by a location request include the <ReportID> attribute set to the value of the <RequestID> attribute in the received Request;

   b) a <TriggerId> child element set to the value of each <Trigger-Id> value of the triggers that have fired; and

   c) the location reporting elements corresponding to the triggers that have fired;

4) shall include an Accept-Contact header field with the media feature tag g.3gpp.mcptt along with parameters "require" and "explicit" in accordance with IETF RFC 3841 [6];

5) shall set the minimumReportInterval timer to the minimumReportInterval time and start the timer;

6) shall reset all triggers; and

7) shall send the SIP MESSAGE request as specified in 3GPP TS 24.229 [4].

6.3.1.3 Test description

6.3.1.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

  - For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 and Cell 2 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document). The simulated Cell 4 shall belong to PLMN2. Which cell is simulated at which time and with what power is described in TS 36.579-1 [2], subclause 5.4.9 'Generic Test Procedure for MCPTT communication in E-UTRA / Change of cells' which is called during the test sequence.

- GNSS simulator to simulate a location.

IUT:

- UE (MCPTT client)

- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

- The GNSS simulator is configured to simulate a location in the centre of Geographical area #1 to provide a location, as defined in TS 36.508 [24] Table 4.11.2-2, step 1 of scenario #4.

- UE States at the end of the preamble

- The UE is in E-UTRA Registered, Idle Mode state.
- The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.3.1.3.2 Test procedure sequence

Table 6.3.1.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
0	Trigger the UE to reset UTC time and location. NOTE: The UTC time and location reset may be performed by MMI or AT command (+CUTCR).	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.4 'Generic Test Procedure for MCPTT CT communication in E-UTRA'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
1	The SS sends a location reporting configuration containing the cell change trigger criteria and the minimum report interval to the UE (MCPTT Client). Provision of serving and neighbouring cells ECGIs is requested in addition to the Location Information. The *minimumReportInterval* time is set to 25 sec.	<---	SIP MESSAGE	-	-
1A	SS starts timer=25 sec (the non-emergency *minimumReportInterval* interval length defined in the SIP MESSAGE sent in step 1).	-	-	-	-
-	EXCEPTION: SS releases the E-UTRA connection	-	-	-	-
1B	Trigger the GNSS simulator to start step 2 of Scenario #4 to simulate the UE moving to location #7 inside Geographical area #1 as defined in TS 36.508 [24] Table 4.11.2-2.	-	-	-	-
1C	Wait 10 sec to allow the simulated location to move approximately 100 m from the original location to location #7.	-	-	-	-
2	Make the SS simulate cell change (same PLMN). The related E-UTRA/EPC actions are described in TS 36.579-1 [2], subclause 5.4.9 'Generic Test Procedure for MCPTT communication in E-UTRA / Change of cells' steps 1 and 2. The test sequence below shows only the MCPTT relevant messages exchanged. NOTE: Cell 2 and Cell 1 will be active.	-	-	-	-
2A	Timer=25 sec expires.	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.3 'Generic Test Procedure for MCPTT CO communication in E-UTRA'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
3	Check: Does the UE (MCPTT Client) send a SIP MESSAGE containing the Cell change trigger identification along with the location information report, the current location coordinates as specified in step 1B, and, the ECGIs of Cells 1 and 2?	--->	SIP MESSAGE	1	P
4-8	Void	-	-	-	-
9	The SS sends a location reporting configuration containing the PLMN change trigger criteria, and, periodic trigger criteria with *PeriodicReport* reporting interval set to 60 sec and the minimum report interval to the UE (MCPTT Client). Provision of cells ECGIs is requested in addition to the Location Information. The minimumReportInterval time is set to 10 sec.	<---	SIP MESSAGE	-	-

9A	SS starts timer=60 sec (the *PeriodicReport* interval defined in the SIP MESSAGE sent in step 9). NOTE: The value of 60 sec has been chosen arbitrary however if the behaviour described in steps 9B-11 takes longer than 60 sec then this value needs to be adjusted.	-	-	-	-
-	EXCEPTION: SS releases the E-UTRA connection	-	-	-	-
9B	Trigger the GNSS simulator to start step 4 of Scenario #4 to simulate the UE moving to location #8 inside Geographical area #1 as defined in TS 36.508 [24] Table 4.11.2-2.	-	-	-	-
9C	Wait 10 sec to allow the simulated location to move approximately 100 m from the original location to location #8.	-	-	-	-
10	Make the SS simulate PLMN change. The related E-UTRA/EPC actions are described in TS 36.579-1 [2], subclause 5.4.9 'Generic Test Procedure for MCPTT communication in E-UTRA / Change of cells' steps 3 and 4. The test sequence below shows only the MCPTT relevant messages exchanged. NOTE: Cell 4 only will be active.	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.3 'Generic Test Procedure for MCPTT CO communication in E-UTRA'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
11	Check: Does the UE (MCPTT Client) send (NOTE) a SIP MESSAGE containing the PLMN change trigger identification along with the location information report, the current location coordinates as specified in step 9B, and the ECGI of cell 4 (the only cell being active at this moment of time)? NOTE: The *minimumReportInterval* time (set in step 9) has already expired latest at the end of step 9B.	--->	SIP MESSAGE	2	P
11A	SS cancels Timer=60.	-	-	-	-
11B	SS starts Timer=60.	-	-	-	-
-	EXCEPTION: SS releases the E-UTRA connection	-	-	-	-
12	Void.	-	-	-	-
13	Timer=60 sec expires	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.3 'Generic Test Procedure for MCPTT CO communication in E-UTRA'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
14	Check: Does the UE (MCPTT Client) send a SIP MESSAGE containing the periodic trigger identification along with location information report after the non-emergency minimum interval length expired? NOTE: The *minimumReportInterval* time (set in step 9) has already expired before step 13.	--->	SIP MESSAGE	3	P
-	EXCEPTION: SS releases the E-UTRA connection	-	-	-	-

6.3.1.3.3 Specific message contents

Table 6.3.1.3.3-1: SIP MESSAGE (Step 1, Table 6.3.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.7.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body	MIME body not including MCPTT-Info and not including MCPPT-Affiliation-Command	not including any MIME body part with Content-Type being "application/vnd.3gpp.mcptt-info+xml" or "application/vnd.3gpp.mcptt-affiliation-command+xml"		
MIME body part		Location info		
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-location-info+xml"			
MIME-part-body	Location-info as described in Table 6.3.1.3.3-2			

Table 6.3.1.3.3-2: Location-Info in SIP MESSAGE (Table 6.3.1.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.4.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
location-info				
Configuration				
NonEmergencyLocationInformation				
ServingEcgi	present	Provision of information in the report is requested.		
NeighbouringEcgi	present	Provision of information in the report is requested.		
MbmsSaId	not present	Provision of information in the report is not requested.		
MbsfnArea	not present	Provision of information in the report is not requested.		
GeographicalCoordinate	present			
minimumIntervalLength	"25"	the value in seconds		
EmergencyLocationInformation"				
ServingEcgi	present	Provision of information in the report is requested.		
NeighbouringEcgi	present	Provision of information in the report is requested.		
MbmsSaId	not present	Provision of information in the report is not requested.		
MbsfnArea	not present	Provision of information in the report is not requested.		
GeographicalCoordinate	present	Provision of information in the report is requested.		
minimumIntervalLength	"30"	the value in seconds		
TriggeringCriteria				
CellChange				
AnyCellChange				
TriggerID	"CELLCHANGE"			

Table 6.3.1.3.3-3: SIP MESSAGE (Step 3, Table 6.3.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.7.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body	MIME body not including MCPTT-Info and not including MCPPT-Affiliation-Command	not including any MIME body part with Content-Type being "application/vnd.3gpp.mcptt-info+xml" or "application/vnd.3gpp.mcptt-affiliation-command+xml"		
MIME body part		Location info	TS 24.379 [9] clause F.3	
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-location-info+xml"			
MIME-part-body	Location-info as described in Table 6.3.1.3.3-4			

Table 6.3.1.3.3-4: Location-Info in SIP MESSAGE (Table 6.3.1.3.3-3)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.4.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
location-info				
Report				
TriggerID	"CELLCHANGE"			
CurrentLocation				
CurrentServingEcgi	The E-UTRAN Cell Global Identification (ECGI) of Cell 2			
NeighbouringEcgi	The ECGI of Cell 1			
CurrentCoordinate		The location simulated by the GNSS simulator at the time of transmission of the message.		
longitude	The longitude value as specified for location number #7 defined in TS 36.508 [24] Table 4.11.2-3 +/- 0.00016 degrees.			
latitude	The latitude value as specified for location number #7 defined in TS 36.508 [24] Table 4.11.2-3 +/- 0.00013 degrees.			
ReportType	"NonEmergency"			

Table 6.3.1.3.3-5: Void

Table 6.3.1.3.3-6: Void

Table 6.3.1.3.3-7: Void

Table 6.3.1.3.3-8: Void

Table 6.3.1.3.3-9: SIP MESSAGE (Step 9, Table 6.3.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.7.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body	MIME body not including MCPTT-Info and not including MCPPT-Affiliation-Command	not including any MIME body part with Content-Type being "application/vnd.3gpp.mcptt-info+xml" or "application/vnd.3gpp.mcptt-affiliation-command+xml"		
MIME body part		Location info	TS 24.379 [9] clause F.3	
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-location-info+xml"			
MIME-part-body	Location-info as described in Table 6.3.1.3.3-10			

Table 6.3.1.3.3-10: Location-Info in SIP MESSAGE (Table 6.3.1.3.3-9)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.4.2-1.				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
location-info				
Configuration				
NonEmergencyLocationInformation				
ServingEcgi	present	Provision of information in the report is requested.		
NeighbouringEcgi	present	Provision of information in the report is requested.		
MbmsSaId	not present	Provision of information in the report is not requested.		
MbsfnArea	not present	Provision of information in the report is not requested.		
GeographicalCoordinate	present	Provision of information in the report is requested.		
minimumIntervalLength	"10"	the value in seconds		
EmergencyLocationInformation"				
ServingEcgi	present	Provision of information in the report is requested.		
NeighbouringEcgi	present	Provision of information in the report is requested.		
MbmsSaId	not present	Provision of information in the report is not requested.		
MbsfnArea	not present	Provision of information in the report is not requested.		
GeographicalCoordinate	present	Provision of information in the report is requested.		
minimumIntervalLength	"70"	the value in seconds		
TriggeringCriteria				
PLMNChange				
AnyPLMNChange				
TriggerID	"ANY PLMN"			
PeriodicReport				
extension base	"60"	the value in seconds of the time which determines the periodic provision of the report		
TiggerID	"PERIODIC"			

Table 6.3.1.3.3-11: SIP MESSAGE (Step 11, Table 6.3.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.7.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Content-Type	"multipart/mixed;boundary="any allowed value			
Content-Length	length of message body			
Message-body				
MIME-Content-Type	not present	"application/vnd.3gpp.mcptt-info+xml"		
MIME-Content-Type	not present	"application/vnd.3gpp.mcptt-affiliation-command+xml"		
MIME-Content-Type	"application/vnd.3gpp.mcptt-location-info+xml"	"application/vnd.3gpp.mcptt-affiliation-command+xml"	TS 24.379 [9] clause F.3	
Location-Info	As described in Table 6.3.1.3.3-12			

Table 6.3.1.3.3-12: Location-Info in SIP MESSAGE (Table 6.3.1.3.3-11)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.4.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
location-info				
Report				
TriggerID	"ANY PLMN"			
CurrentLocation				
CurrentServingEcgi	The ECGI of Cell 4			
NeighbouringEcgi	not present	Only Cell 4 is active at this moment of time (see TS 36.579-1 [2], subclause 5.4.9)		
CurrentCoordinate		The location simulated by the GNSS simulator at the time of transmission of the message.		
longitude	The longitude value as specified for location number #8 defined in TS 36.508 [24] Table 4.11.2-3 +/- 0.00016 degrees.			
latitude	The latitude value as specified for location number #8 defined in TS 36.508 [24] Table 4.11.2-3 +/- 0.00013 degrees.			
ReportType	"NonEmergency"			

Table 6.3.1.3.3-13: SIP MESSAGE (Step 14, Table 6.3.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.7.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Content-Type	"multipart/mixed;boundary="any allowed value			
Content-Length	length of message body			
Message-body				
MIME-Content-Type	not present	"application/vnd.3gpp.mcptt-info+xml"		
MIME-Content-Type	not present	"application/vnd.3gpp.mcptt-affiliation-command+xml"		
MIME-Content-Type	"application/vnd.3gpp.mcptt-location-info+xml"	"application/vnd.3gpp.mcptt-affiliation-command+xml"	TS 24.379 [9] clause F.3	
Location-Info	As described in Table 6.3.1.3.3-14			

Table 6.3.1.3.3-14: Location-Info in SIP MESSAGE (Table 6.3.1.3.3-13)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.4.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
location-info				
Report				
TriggerID	"PERIODIC"			
CurrentLocation				
CurrentServingEcgi	The ECGI of Cell 4			
NeighbouringEcgi	not present			
CurrentCoordinate		The location simulated by the GNSS simulator at the time of transmission of the message.		
longitude	The longitude value as specified for location number #8 defined in TS 36.508 [24] Table 4.11.2-3 +/- 0.00016 degrees.			
latitude	The latitude value as specified for location number #8 defined in TS 36.508 [24] Table 4.11.2-3 +/- 0.00013 degrees.			
ReportType	"NonEmergency"			

6.3.2 On-network / Location/ On-demand Location Information Request

6.3.2.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client)registered and authorized for MCPTT service and not in an emergency state
and having received a location information configuration message providing configuration parameters
for both NonEmergencyLocationInformation and EmergencyLocationInformation }
ensure that {

  when { UE (MCPTT Client) receives a location information requestbefore the minimumReportInterval
timer has expired  }
    then { UE (MCPTT Client)does not wait for the minimumReportInterval timer to expire, and,
sends"immediately"  a SIP MESSAGE containing location information report including information in
```

```
accordance with the NonEmergencyLocationInformation configuration and the <ReportID> attribute set
to the value of the <RequestID> attribute in the received Request, and, resets the
minimumReportInterval timer }
            }
```

(2)

```
with { UE (MCPTT Client)registered and authorized for MCPTT service and not in an emergency state
and having received a location information configuration message }
ensure that {
  when { UE (MCPTT Client) receives a new location information configuration message and ConfigScope
set to 'Full' }
    then { UE (MCPTT Client) stores the contents of the <Configuration> elements thereby overriding
the previous configuration }
            }
```

6.3.2.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.379, clauses 13.3.1, 13.3.2, 13.3.3, 13.3.4.2, F.3.3. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.379 clause 13.3.2]

The MCPTT client sends a location report when one of the trigger criteria is fulfilled or when it receives a request from the participating MCPTT function to send a location report. To send the location report the MCPTT client can use an appropriate SIP message that it needs to send for other reasons, or it can include the location report in a SIP MESSAGE request.

To send a location report, the MCPTT client includes in the SIP MESSAGE request an application/vnd.3gpp.mcptt-location-info+xml MIME body as specified in clause F.3. The MCPTT client populates the elements in accordance with its reporting configuration. Further location information may also be included in the P-Access-Network-Info header field.

[TS 24.379 clause 13.3.2]

Upon receiving a SIP MESSAGE request containing:

1) an Accept-Contact header field with the media feature tag g.3gpp.icsi-ref set to the value "urn:urn-7:3gpp-service.ims.icsi.mcptt";

2) a Content-Type header field set to "application/vnd.3gpp.mcptt-location-info+xml"; and

3) an application/vnd.3gpp.mcptt-location-info+xml MIME body with a <Configuration> root element included in the <location-info> root element;

then the MCPTT client:

1) shall store the contents of the <Configuration> elements;

…

3) shall start the minimumReportInterval timer.

[TS 24.379 clause 13.3.3]

Upon receiving a SIP MESSAGE request containing

1) an Accept-Contact header field with the media feature tag g.3gpp.icsi-ref set to the value "urn:urn-7:3gpp-service.ims.icsi.mcptt";

2) a Content-Type header field set to "application/vnd.3gpp.mcptt-location-info+xml"; and

3) an application/vnd.3gpp.mcptt-location-info+xml MIME body with a <Request> element included in the <location-info> root element;

then the MCPTT client:

1) shall send a location report as specified in subclause 13.3.4; and

2) shall reset the minimumReportInterval timer.

[TS 24.379 clause 13.3.4.2]

If the MCPTT client does not need to send a SIP request for other reasons, the MCPTT client shall generate a SIP MESSAGE request in accordance with 3GPP TS 24.229 [4] and IETF RFC 3428 [33]. The MCPTT client;

1) shall include in the Request-URI, the SIP URI received in the P-Asserted-Identity header field in the received SIP MESSAGE request for location report configuration;

2) shall include a Content-Type header field set to "application/vnd.3gpp.mcptt-location-info+xml";

3) shall include an application/vnd.3gpp.mcptt-location-info+xml MIME body and in the <location-info> root element include:

   a) a <Report> element and if the Report was triggered by a location request include the <ReportID> attribute set to the value of the <RequestID> attribute in the received Request;

   …

4) shall include an Accept-Contact header field with the media feature tag g.3gpp.mcptt along with parameters "require" and "explicit" in accordance with IETF RFC 3841 [6];

5) shall set the minimumReportInterval timer to the minimumReportInterval time and start the timer;

…

7) shall send the SIP MESSAGE request as specified in 3GPP TS 24.229 [4].

[TS 24.379 clause F.3.3]

<Configuration> element has a <ConfigScope> attribute that can assume the values "Full" and "Update". The value "Full" means that the Configuration> element contains the full location configuration which replaces any previous location configuration. The value "Update" means that the location configuration is in addition to any previous location configuration. To remove configuration elements a "Full" configuration is needed. The <Configuration> element contains the following child elements:

6.3.2.3 Test description

6.3.2.3.1 Pre-test conditions

System Simulator:

- SS (MCPTT server)

  - For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 and Cell 2 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

- GNSS simulator to simulate a location.

IUT:

- UE (MCPTT client)

- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

Preamble:

- 2 cells are simulated by the SS. Cell 1=Serving cell, Cell 2 = Suitable neighbour intra-frequency cell in accordance with TS 36.508 [24].

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

- The GNSS simulator is configured to simulate a location in the centre of Geographical area #1 to provide a location, as defined in TS 36.508 [24] Table 4.11.2-2 scenario #1.

- UE States at the end of the preamble

  - The UE is in E-UTRA Registered, Idle Mode state on Cell 1 (Serving cell).

  - The MCPTT Client Application has been activated and User has registered-in as the MCPTT User with the Server as active user at the Client.

6.3.2.3.2 Test procedure sequence

Table 6.3.2.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
0	Trigger the UE to reset UTC time and location. NOTE: The UTC time and location reset may be performed by MMI or AT command (+CUTCR).	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the connection establishment for the purpose of MCPTT sending the message(s) below are described in TS 36.579-1 [2], subclause 5.4.4 'Generic Test Procedure for MCPTT CT communication in E-UTRA'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
1	The SS sends a location reporting configuration containing configuration parameters for both NonEmergencyLocationInformation and EmergencyLocationInformation, and, *minimumReportInterval* timer set to 20 sec and, periodic trigger criteria with *PeriodicReport* reporting interval set to 15 sec. NOTE: The handling of the *PeriodicReport* is not tested in this test. It is added here for the purpose of verifying that the UE restarts the *minimumReportInterval* - when the Periodic report trigger fires before the expiration of the *minimumReportInterval* the UE needs to wait for its expiry before sending the periodic report.	<---	SIP MESSAGE	-	-
1A	Start timer=20 sec (*minimumReportInterval* timer set in step 1).	-	-	-	-
1B	Start timer=15 sec (*PeriodicReport* timer set in step 1).	-	-	-	-
-	EXCEPTION: SS releases the E-UTRA connection	-	-	-	-
1C	Wait for 10 sec. NOTE: The value is arbitrary chose. However, it needs to be long enough to ensure that if the UE did not reset the *minimumReportInterval* after it sent the message in step 3 the UE will send the SIP MESSAGE for the periodic reporting before step 3D and will fail, and, it needs to be short enough so that step 2 happens reasonably before *PeriodicReport* fires up.	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the connection establishment for the purpose of MCPTT sending the message(s) below are described in TS 36.579-1 [2], subclause 5.4.4 'Generic Test Procedure for MCPTT CT communication in E-UTRA'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
2	The SS sends an on-demand location reporting request.	<---	SIP MESSAGE	-	-
3	Check: Does the UE (MCPTT Client) send a SIP MESSAGE containing the location information report with the correct ReportID providing only the parameters set in the NonEmergencyLocationInformation configuration provided in step 1?	--->	SIP MESSAGE	1	P
3A	Re-start timer=20 sec (*minimumReportInterval*).	-	-	-	-
3B	Re-start timer=15 sec (*PeriodicReport*).	-	-	-	-
-	EXCEPTION: SS releases the E-UTRA connection	-	-	-	-

3C	Timer=15 sec expires (*PeriodicReport*).	-	-	-	-
3D	Timer=20 sec expires (*minimumReportInterval*).	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the connection establishment for the purpose of MCPTT sending the message(s) below are described in TS 36.579-1 [2], subclause 5.4.3 'Generic Test Procedure for MCPTT CO communication in E-UTRA'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
3E	Check: Does the UE (MCPTT Client) send a SIP MESSAGE containing the periodic trigger identification along with location information report after the non-emergency minimum interval length expired?	--->	SIP MESSAGE	1	P
4	The SS sends a location reporting configuration with new configuration changing some of the parameters and not including periodic trigger criteria, and, ConfiScope set to 'Full'.	<---	SIP MESSAGE	-	-
5	The SS sends on-demand location reporting request.	<---	SIP MESSAGE	-	-
6	Check: Does the UE (MCPTT Client) send a SIP MESSAGE containing the location information report with the correct ReportID and in accordance with the latest configuration parameters provided in step 4?	--->	SIP MESSAGE	2	P
7	Start timer=15 sec (*PeriodicReport* timer set in step 1).	-	-	-	-
-	EXCEPTION: SS releases the E-UTRA connection.	-	-	-	-
8	Timer=15 sec expires (*PeriodicReport*).	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the connection establishment for the purpose of MCPTT sending the message(s) below are described in TS 36.579-1 [2], subclause 5.4.3 'Generic Test Procedure for MCPTT CO communication in E-UTRA'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
9	Check: Does the UE (MCPTT Client) send in the next 10 sec a SIP MESSAGE containing the periodic trigger identification along with location information report after the non-emergency minimum interval length expired?	--->	SIP MESSAGE	2	F

6.3.2.3.3 Specific message contents

Table 6.3.2.3.3-1: SIP MESSAGE (Step 1, Table 6.3.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.7.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body	MIME body not including MCPTT-Info and not including MCPPT-Affiliation-Command	not including any MIME body part with Content-Type being "application/vnd.3gpp.mcptt-info+xml" or "application/vnd.3gpp.mcptt-affiliation-command+xml"		
MIME body part		Location info	TS 24.379 [9] clause F.3	
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-location-info+xml"			
MIME-part-body	Location-info as described in Table 6.3.1.3.3-2			

Table 6.3.2.3.3-2: Location-Info in SIP MESSAGE (Table 6.3.2.3.3-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.4.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
location-info				
Configuration				
NonEmergencyLocationInformation				
ServingEcgi	present	Provision of information in the report is requested.		
NeighbouringEcgi	not present	Provision of information in the report is not requested.		
MbmsSaId	not present	Provision of information in the report is not requested.		
MbsfnArea	not present	Provision of information in the report is not requested.		
GeographicalCoordinate	present	Provision of information in the report is requested.		
minimumIntervalLength	"20"			
EmergencyLocationInformation				
NeighbouringEcgi	present	Provision of information in the report is requested.		
TriggeringCriteria				
PeriodicReport				
extension base	"15"	the value in seconds of the time which determines the periodic provision of the report		
TiggerID	"PERIODIC"			

Table 6.3.2.3.3-3: SIP MESSAGE (Step 2, Table 6.3.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.7.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body	MIME body not including MCPTT-Info and not including MCPPT-Affiliation-Command	not including any MIME body part with Content-Type being "application/vnd.3gpp.mcptt-info+xml" or "application/vnd.3gpp.mcptt-affiliation-command+xml"		
MIME body part		Location info	TS 24.379 [9] clause F.3	
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-location-info+xml"			
MIME-part-body	Location-info as described in Table 6.3.1.3.3-4			

Table 6.3.2.3.3-4: Location-Info in SIP MESSAGE (Table 6.3.2.3.3-3)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.4.3-1.

Table 6.3.2.3.3-5: SIP MESSAGE (Step 3, Table 6.3.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.7.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body	MIME body not including MCPTT-Info and not including MCPPT-Affiliation-Command	not including any MIME body part with Content-Type being "application/vnd.3gpp.mcptt-info+xml" or "application/vnd.3gpp.mcptt-affiliation-command+xml"		
MIME body part		Location info	TS 24.379 [9] clause F.3	
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-location-info+xml"			
MIME-part-body	Location-info as described in Table 6.3.1.3.3-6			

Table 6.3.2.3.3-6: Location-Info in SIP MESSAGE (Table 6.3.2.3.3-5)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.4.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
location-info				
Report				
CurrentLocation				
CurrentServingEcgi	The ECGI of Cell 1	The serving cell		
NeighbouringEcgi	not present	The report shall include parameters requested only for NonEmergencyLocationInformation in table 6.3.2.3.3-2		
MbmsSaId	not present	The report shall include parameters requested only for NonEmergencyLocationInformation in table 6.3.2.3.3-2		
MbsfnArea	not present	The report shall include parameters requested only for NonEmergencyLocationInformation in table 6.3.2.3.3-2		
CurrentCoordinate		The location simulated by the GNSS simulator at the time of transmission of the message.		
longitude	The longitude value as specified for location number #1 defined in TS 36.508 [24] Table 4.11.2-3 +/- 0.00016 degrees.			
latitude	The latitude value as specified for location number #1 defined in TS 36.508 [24] Table 4.11.2-3 +/- 0.00013 degrees.			
ReportID	"1"	The same as the ID in the request message.		
ReportType	"NonEmergency"			

Table 6.3.2.3.3-6A: SIP MESSAGE (Step 3E, Table 6.3.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.7.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body	MIME body not including MCPTT-Info and not including MCPPT-Affiliation-Command	not including any MIME body part with Content-Type being "application/vnd.3gpp.mcptt-info+xml" or "application/vnd.3gpp.mcptt-affiliation-command+xml"		
MIME body part		Location info	TS 24.379 [9] clause F.3	
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-location-info+xml"			
MIME-part-body	Location-info as described in Table 6.3.1.3.3-6B			

Table 6.3.2.3.3-6B: Location-Info in SIP MESSAGE (Table 6.3.2.3.3-6A)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.4.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
location-info				
Report				
TriggerID	"PERIODIC"			
CurrentLocation				
CurrentServingEcgi	The ECGI of Cell 1			
NeighbouringEcgi	not present	The report shall include parameters requested only for NonEmergencyLocationInformation in table 6.3.2.3.3-2		
MbmsSaId	not present	The report shall include parameters requested only for NonEmergencyLocationInformation in table 6.3.2.3.3-2		
MbsfnArea	not present	The report shall include parameters requested only for NonEmergencyLocationInformation in table 6.3.2.3.3-2		
CurrentCoordinate		The location simulated by the GNSS simulator at the time of transmission of the message.		
longitude	The longitude value as specified for location number #1 defined in TS 36.508 [24] Table 4.11.2-3 +/- 0.00016 degrees.			
latitude	The latitude value as specified for location number #1 defined in TS 36.508 [24] Table 4.11.2-3 +/- 0.00013 degrees.			
ReportType	"NonEmergency"			

Table 6.3.2.3.3-7: SIP MESSAGE (Step 4, Table 6.3.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.7.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body	MIME body not including MCPTT-Info and not including MCPPT-Affiliation-Command	not including any MIME body part with Content-Type being "application/vnd.3gpp.mcptt-info+xml" or "application/vnd.3gpp.mcptt-affiliation-command+xml"		
MIME body part		Location info	TS 24.379 [9] clause F.3	
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-location-info+xml"			
MIME-part-body	Location-info as described in Table 6.3.1.3.3-8			

Table 6.3.2.3.3-8: Location-Info in SIP MESSAGE (Table 6.3.2.3.3-7)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.4.2-1.				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
location-info				
Configuration				
ConfigureScope	"Update"			
NonEmergencyLocationInformation	not present			
ServingEcgi	not present	Provision of information in the report is not requested.		
NeighbouringEcgi	present	Provision of information in the report is requested.		
MbmsSaId	not present	Provision of information in the report is not requested.		
MbsfnArea	not present	Provision of information in the report is not requested.		
GeographicalCoordinate	not present	Provision of information in the report is not requested.		
minimumIntervalLength	not present			
EmergencyLocationInformation"				
ServingEcgi	present	Provision of information in the report is requested.		
NeighbouringEcgi	not present	Provision of information in the report is not requested.		
MbmsSaId	not present	Provision of information in the report is not requested.		
MbsfnArea	not present	Provision of information in the report is not requested.		
GeographicalCoordinate	not present	Provision of information in the report is not requested.		
minimumIntervalLength	"5"			
TriggeringCriteria	not present			

Table 6.3.2.3.3-9: SIP MESSAGE (Step 5, Table 6.3.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.7.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body	MIME body not including MCPTT-Info and not including MCPPT-Affiliation-Command	not including any MIME body part with Content-Type being "application/vnd.3gpp.mcptt-info+xml" or "application/vnd.3gpp.mcptt-affiliation-command+xml"		
MIME body part		Location info	TS 24.379 [9] clause F.3	
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-location-info+xml"			
MIME-part-body	Location-info as described in Table 6.3.1.3.3-10			

Table 6.3.2.3.3-10: Location-Info in SIP MESSAGE (Table 6.3.2.3.3-9)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.4.3-1.				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
location-info				
Request				
RequestID	"2"	The RequestID that the MCPTT Client shall reference in the Report		

Table 6.3.2.3.3-11: SIP MESSAGE (Step 6, Table 6.3.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.7.1-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Message-body	MIME body not including MCPTT-Info and not including MCPPT-Affiliation-Command	not including any MIME body part with Content-Type being "application/vnd.3gpp.mcptt-info+xml" or "application/vnd.3gpp.mcptt-affiliation-command+xml"		
MIME body part		Location info	TS 24.379 [9] clause F.3	
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-location-info+xml"			
MIME-part-body	Location-info as described in Table 6.3.1.3.3-12			

Table 6.3.2.3.3-12: Location-Info in SIP MESSAGE (Table 6.3.2.3.3-11)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.4.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
location-info	present			
Report	present			
CurrentLocation	present			
CurrentServingEcgi	not present	The report shall include parameters requested only for NonEmergencyLocationInformation in table 6.3.2.3.3-8		
NeighbouringEcgi	The ECGI of Cell 2	The neighbouring (non-srving) cell		
MbmsSaId	not present	The report shall include parameters requested only for NonEmergencyLocationInformation in table 6.3.2.3.3-8		
MbsfnArea	not present	The report shall include parameters requested only for NonEmergencyLocationInformation in table 6.3.2.3.3-8		
CurrentCoordinate	not present	The report shall include parameters requested only for NonEmergencyLocationInformation in table 6.3.2.3.3-8		
ReportID	"2"	The same as the ID in the request message.		
ReportType	"NonEmergency"			

6.4 MBMS

6.4.1 On-network / MBMS / MBMS Bearer Announcement / MBMS Bearer Listening Status / Transition to MBMS from Unicast / MBMS Floor Control / Transition to Unicast from MBMS

6.4.1.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) having established an MCPTT On-demand Pre-arranged Group Call with
Automatic Commencement Mode }
ensure that {
  when { the UE (MCPTT Client) receives MBMS bearer announcements via SIP MESSAGE messages }
    then { UE (MCPTT Client) responds by sending a SIP 200 (OK) to the SIP MESSAGE message and the
UE (MCPTT Client) sends an MBMS listening status message via SIP MESSAGE }
            }
```

(2)

```
with { UE (MCPTT Client) having established an MCPTT On-demand Pre-arranged Group Call with
Automatic Commencement Mode }
ensure that {
  when { the UE (MCPTT Client) receives MBMS subchannel control messages }
    then { UE (MCPTT Client) responds by sending an MBMS listening status message via SIP MESSAGE }
            }
```

(3)

```
with { UE (MCPTT Client) listening to the MBMS subchannel during an ongoing MCPTT On-demand Pre-
arranged Group Call }
ensure that {
  when { the MCPTT User (MCPTT Client) engages in communication with the invited MCPTT User(s) }
    then { UE (MCPTT Client) respects the floor control imposed by the MCPTT Server on the MBMS
subchannel (Floor Taken and Floor Idle) and continues to respect floor control imposed by the MCPTT
Server via unicast (Floor Ack and Floor Release)}
            }
```

(4)

```
with { UE (MCPTT Client) no longer listening to the MBMS subchannel during an ongoing MCPTT On-
demand Pre-arranged Group Call }
ensure that {
  when { the MCPTT User (MCPTT Client) engages in communication with the invited MCPTT User(s) }
    then { UE (MCPTT Client) respects floor control imposed by the MCPTT Server via unicast (Floor
Idle)}
            }
```

(5)

```
with { UE (MCPTT Client) having established an MCPTT On-demand Pre-arranged Group Call with
Automatic Commencement Mode }
ensure that {
  when { the UE (MCPTT Client) receives an explicit MuSiK download message }
    then { UE (MCPTT Client) sends a 200 OK response to accept the key and associates the key with
the group}
            }
```

6.4.1.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.379, clause 14.3.3.2, TS 24.380, clauses 10.3.2, 10.3.3, 10.3.4, 6.2.4.3.5, 6.2.4.5.3, 6.2.4.4.2, 6.2.4.3.2. Unless otherwise stated, these are Rel-13 requirements.

[TS 24.379, clause 14.3.3.2]

When the MCPTT client wants to report the MBMS bearer listening status, the MCPTT client:

NOTE 1: The application/vnd.3gpp.mcptt-mbms-usage-info+xml can contain both the listening status "listening" and "not listening" at the same time.

1) shall generate a SIP MESSAGE request in accordance with 3GPP TS 24.229 [4] and IETF RFC 3428 [33]; and

2) the SIP MESSAGE request:

   a) shall include in the Request-URI the MBMS public service identity of the participating MCPTT function received in the P-Asserted-Identity header field of the announcement message;

   b) shall include an Accept-Contact header field with the g.3gpp.icsi-ref media-feature tag with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with parameters "require" and "explicit" according to IETF RFC 3841 [6];

   c) should include a public user identity in the P-Preferred-Identity header field as specified in 3GPP TS 24.229 [4];

   d) shall include a P-Preferred-Service header field with the value "urn:urn-7:3gpp-service.ims.icsi.mcptt";

   e) shall include an application/vnd.3gpp.mcptt-mbms-usage-info+xml MIME body with the <version> element set to "1";

   f) if the MCPTT client is listening to the MBMS bearer, the application/vnd.3gpp.mcptt-mbms-usage-info+xml MIME body:

      i) shall include an <mbms-listening-status> element set to "listening";

ii) if the intention is to report that the MCPTT client is listening to the MBMS subchannel for an ongoing conversation in a session (e.g. as the response to the Map Group To Bearer message), shall include the MCPTT session identity of the ongoing conversation in <session-identity> element;

iii) shall include one or more <TGMI> elements for which the listening status applies; and

iv) if the intention is to report that the MCPTT client is listening to the general purpose MBMS subchannel, shall include the <general-purpose> element set to "true";

g) if the MCPTT client is not listening, the application/vnd.3gpp.mcptt-mbms-usage-info+xml MIME body:

i) shall include an <mbms-listening-status> element set to "not-listening";

iii) shall include one or more <TGMI> elements for which the listening status applies;

iii) if the intention is to report that the MCPTT client is no longer listening to the MBMS subchannel in an ongoing session (e.g. as the response to Unmap Group to Bearer message), shall include the MCPTT session identity in <session-identity> elements; and

iv) if the intention is to report that the MCPTT client is no longer listening to general purpose MBMS subchannel, shall include the <general-purpose> element set to "false"; and

NOTE 2: If the MCPTT client reports that the MCPTT client is no longer listening to the general purpose MBMS subchannel, it is implicitly understood that the MCPTT client no longer listens to any MBMS subchannel in ongoing conversations that the MCPTT client previously reported status "listening".

h) shall include an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcptt-request-uri> set to the MCPTT ID; and

3) shall send the SIP MESSAGE request according to 3GPP TS 24.229 [4].

[TS 24.380, clause 10.3.2]

When receiving a Map Group To Bearer message over the general purpose MBMS subchannel, the MBMS interface in the MCPTT client:

1. shall associate the TMGI in the TMGI field, the MBMS subchannel for audio and for floor control with the MCPTT group identity in the MCPTT Group ID field.

[TS 24.380, clause 10.3.3]

If the MBMS interface receives RTP media packets or floor control messages over the MBMS subchannel, the MBMS interface in the MCPTT client:

1. if there is an association between the TMGI, the MBMS subchannel for audio and for floor control to an ongoing conversation in a group session:

   a. shall forward the received floor control messages to the floor participant in the conversation; and

   b. if the received RTP medias contains a different SSRC value than the SSRC value used by the MCPTT client, shall forward the received RTP packets to the media mixer in the conversation; and

2. if there is no such association:

   a. shall ignore the received floor control message or received RTP media packet.

[TS 24.380, clause 10.3.4]

When receiving the Unmap Group To Bearer message over a MBMS subchannel, the MBMS interface in the MCPTT client:

1. shall remove the association between the TMGI, the MBMS subchannel for audio and for floor control from the conversation in the group session identified by the MCPTT Group ID field, if such an association exists.

[TS 24.380, clause 6.2.4.3.5]

Upon receiving an indication from the user to request permission to send media, the floor participant:

1. shall send the Floor Request message toward the floor control server; The Floor Request message:

    a. if a different priority than the normal priority is required, shall include the Floor Priority field with the priority not higher than negotiated with the floor control server as specified in subclause 14.3.3; and

    b. if the floor request is a broadcast group call, system call, emergency call or an imminent peril call, shall include a Floor Indicator field indicating the relevant call types;

2. shall start timer T101 (Floor Request) and initialise counter C101 (Floor Request) to 1; and

3. shall enter the 'U: pending Request' state.

[TS 24.380, clause 6.2.4.5.3]

Upon receiving an indication from the user to release the permission to send RTP media, the floor participant:

1. shall send a Floor Release message towards the floor control server The Floor Release message:

    a. may include the first bit in the subtype of the Floor Release message set to '1' (acknowledgement is required) as specified in subclause 8.2.2;

NOTE: It is an implementation option to handle the receipt of the Floor Ack message and what action to take if the Floor Ack message is not received.

    b. if the session is a broadcast call and if the session was established as a normal call, shall include the Floor Indicator with the A-bit set to '1' (Normal call); and

    c. if the Floor Granted message included the G-bit set to '1' (Dual floor), shall include the Floor Indicator with the G-bit set to '1' (Dual floor);

2. shall remove the indication that the participant is overriding without revoke if this indication is stored;

3. shall remove the indication that the participant is overridden without revoke if this indication is stored;

4. shall start timer T100 (Floor Release) and initialize counter C100 (Floor Release) to 1; and

5. shall enter the 'U: pending Release' state.

[TS 24.380, clause 6.2.4.4.2]

Upon receiving a Floor Granted message from the floor control server or a floor granted indication in an SIP 200 (OK) response in the application and signalling layer, the floor participant:

1. if the first bit in the subtype of the Floor Granted message is set to '1' (Acknowledgment is required) as described in subclause 8.3.2, shall send a Floor Ack message. The Floor Ack message:

    a. shall include the Message Type field set to '1' (Floor Granted); and

    b. shall include the Source field set to '0' (the floor participant is the source);

2. shall provide floor granted notification to the user, if not already done;

NOTE: Providing the floor granted notification to the user prior to receiving the Floor Granted message is an implementation option.

3. if the Floor Indicator field is included and the B-bit is set to '1' (Broadcast group call), shall provide a notification to the user indicating the type of call;

4. if the G-bit in the Floor Indicator is set to '1' (Dual floor) shall store an indication that the participant is overriding without revoke;

5. shall stop the optional timer T103 (End of RTP media), if running;

6. shall stop timer T101 (Floor Request); and

7. shall enter the 'U: has permission' state.

[TS 24.380, clause 6.2.4.3.2]

Upon receiving a Floor Idle message, the participant:

1. if the first bit in the subtype of the Floor Idle message is set to '1' (Acknowledgment is required) as described in subclause 8.3.2, shall send a Floor Ack message. The Floor Ack message:
   a. shall include the Message Type field set to '5' (Floor Idle); and
   b. shall include the Source field set to '0' (the floor participant is the source);
2. may provide floor idle notification to the user, if it has not already done so;
3. shall stop the optional timer T103 (End of RTP media), if it is running; and
4. shall remain in the 'U: has no permission' state.

6.4.1.3 Test description

6.4.1.3.1 Pre-test conditions

System Simulator:

- Void

IUT:

- Void

Preamble:

- A pre-activated MBMS bearer exists

6.4.1.3.2 Test procedure sequence

Table 6.4.1.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Make the MCPTT User request the establishment of an MCPTT on-demand pre-arranged group call, automatic commencement mode, with explicit request for floor control (implicit floor control). NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.3 'Generic Test Procedure for MCPTT CO communication in E-UTRA'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
2	The UE (MCPTT client) sends an initial SIP INVITE request requesting the establishment of an MCPTT on-demand pre-arranged group call, automatic commencement mode, applying End-to-end communication security with Floor Control	-->	SIP INVITE	-	-
3	The SS sends SIP 100 Trying	<--	SIP 100 Trying	-	-
4	The SS sends SIP 180 Ringing	<--	SIP 180 Ringing	-	-
5	The SS sends a SIP 200 (OK) message indicating that it has accepted the SIP INVITE request	<--	SIP 200 (OK)	-	-
6	The UE (MCPTT client) sends a SIP ACK in response to the SIP 200 (OK)	-->	SIP ACK	-	-
7	The UE (MCPTT client) notifies the user that the call has been successfully established NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	-	-
8	Make the MCPTT User request to speak (e.g. pressing the PTT button). NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	-	-
9	The UE (MCPTT client) sends a Floor Release message	-->	Floor Release	-	-
-	EXCEPTION: Step 10a1 describes behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place if the UE requests an acknowledgement to the Floor Release message.	-	-	-	-
10a1	The SS sends a Floor Ack message in response to the Floor Release message	<--	Floor Ack	-	-
11	The SS sends a Floor Idle message with no acknowledgement required	<--	Floor Idle	-	-
12	The SS pre-activates an MBMS bearer and sends an MBMS bearer announcement message via SIP MESSAGE to announce the availability of an MBMS bearer. NOTE: The related E-UTRA/EPC actions are described in TS 36.579-1 [2], subclause 5.4.12 Generic Test Procedure for MCPTT communication over MBMS'. The test sequence below shows only the MCPTT relevant messages exchanged.	<--	SIP MESSAGE	-	-
13	Check: Does the UE (MCPTT client) send a SIP 200 (OK) message in response to the SIP MESSAGE message?	-->	SIP 200 (OK)	1	P
14	Check: Does the UE (MCPTT Client) send an MBMS Bearer listening status report via a SIP MESSAGE message to the SS?	-->	SIP MESSAGE	1	P
15	The SS responds to the SIP MESSAGE message with a SIP 200 (OK) message	<--	SIP 200 (OK)	-	-

16	Make the MCPTT User request to speak (e.g. pressing the PTT button). NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	-	-
17	The UE (MCPTT client) sends a Floor Request message	-->	Floor Request	-	-
18	The SS decides that a MBMS subchannel shall be used for a conversation and sends a Map Group To Bearer message over the general purpose MBMS subchannel. NOTE: The related E-UTRA/EPC actions are described in TS 36.579-1 [2], subclause 5.4.12 Generic Test Procedure for MCPTT communication over MBMS'. The test sequence below shows only the MCPTT relevant messages exchanged.	<--	Map Group To Bearer	-	-
19	Check: Does the UE (MCPTT Client) respond to the Map Group To Bearer message by sending an MBMS Bearer listening status report via a SIP MESSAGE message?	-->	SIP MESSAGE	2	P
20	The SS responds to the SIP MESSAGE message with a SIP 200 (OK) message	<--	SIP 200 (OK)	-	-
21	The SS sends a Floor Granted message with an acknowledgement required using unicast messaging to the MCPTT Client	<--	Floor Granted	-	-
22	Check: Does the UE (MCPTT client) send a Floor Ack message in response to the Floor Granted message?	-->	Floor Ack	3	P
22a1	The SS sends a MuSiK download message via SIP MESSAGE to set the explicit MuSiK key to be used for the floor control encryption over the MBMS subchannel.	<--	SIP MESSAGE	-	-
22a2	Check: Does the UE (MCPTT client) send a SIP 200 (OK) message in response to the SIP MESSAGE message?	-->	SIP 200 (OK)	5	P
23	The SS sends a Floor Taken (by client A) message with no acknowledgement required over the MBMS subchannel	<--	Floor Taken	-	-
24	Make the MCPTT User indicate end of talking (e.g. releasing the PTT button). NOTE: This is expected to be done via a suitable implementation dependent MMI.				
25	Check: Does the UE (MCPTT client) send a Floor Release message?	-->	Floor Release	3	P
-	EXCEPTION: Step 26a1 describes behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place if the UE requests an acknowledgement to the Floor Release message.	-	-	-	-
26a1	The SS sends a Floor Ack message in response to the Floor Release message using unicast messaging	<--	Floor Ack	-	-
27	The SS sends a Floor Idle message with acknowledgement required over the MBMS subchannel	<--	Floor Idle	-	-
28	Check: Does the UE (MCPTT Client) respond to the Floor Idle message over the MBMS subchannel with a Floor Ack message?	-->	Floor Ack	3	P
29	The SS sends a Floor Taken message with no acknowledgement required over the MBMS subchannel	<--	Floor Taken	-	-

-	EXCEPTION: Step 30a1 describes behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place if the UE (MCPTT Client) notifies the user of the status of the floor; i.e. if the UE (MCPTT Client) notifies the user when the floor is idle or who currently has the floor.	-	-	-	-
30a1	Check: Does the UE (MCPTT Client) notify the user that the floor is taken? NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	3	P
31	The SS sends a Floor Idle message with acknowledgement required over the MBMS subchannel	<--	Floor Idle	-	-
32	Check: Does the UE (MCPTT Client) respond to the Floor Idle message over the MBMS subchannel with a Floor Ack message?	-->	Floor Ack	3	P
33	The SS ends the conversation on the MBMS subchannel and sends an Unmap Group to Bearer message on the MBMS subchannel. NOTE: The related E-UTRA/EPC actions are described in TS 36.579-1 [2], subclause 5.4.12 Generic Test Procedure for MCPTT communication over MBMS'. The test sequence below shows only the MCPTT relevant messages exchanged.	<--	Unmap Group to Bearer		
34	Check: does the UE (MCPTT Client) respond to the Unmap Group TO Bearer message with a MBMS bearer listening status report via a SIP MESSAGE message?	-->	SIP MESSAGE	2	P
35	The SS responds to the SIP MESSAGE message with a SIP 200 (OK) message	<--	SIP 200 (OK)	-	-
36	The SS cancels the MBMS bearer announcement and sends a SIP MESSAGE message	<--	SIP MESSAGE	-	-
37	Check: Does the UE (MCPTT client) send a SIP 200 (OK) message in response to the SIP MESSAGE message?	-->	SIP 200 (OK)	1	P
38	Check: Does the UE (MCPTT Client) send an MBMS Bearer listening status report via a SIP MESSAGE message to the SS?	-->	SIP MESSAGE	1	P
38a	The SS responds to the SIP MESSAGE message with a SIP 200 (OK) message	<--	SIP 200 (OK)	-	-
39	The SS sends a Floor Idle message with an acknowledgement required over the unicast channel	<--	Floor Idle	-	-
40	Check: Does the UE respond to the Floor Idle message with a Floor Ack message	-->	Floor Ack	4	P
41	Make the MCPTT User end the on-demand group call. NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	-	-
42	The UE (MCPTT Client) sends a SIP BYE message to end the on-demand group call.	-->	SIP BYE	-	-
43	The SS sends a SIP 200 (OK)	<--	SIP 200 (OK)	-	-
-	EXCEPTION: SS releases the E-UTRA connection.	-	-	-	-

6.4.1.3.3 Specific message contents

Table 6.4.1.3.3-1: SIP INVITE (step 2, Table 6.4.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.5.1-1 condition GROUP-CALL

Table 6.4.1.3.3-2: SIP MESSAGE (step 12, Table 6.4.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.7.2-1 condition MCPTT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Accept-Contact				
ac-value	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt"			
req-param	"require"			
explicit-param	"explicit"			
P-Asserted-Service				
Service-ID	"urn:urn-7:3gpp-service.ims.icsi.mcptt"			
P-Asserted-Identity				
addr-spec				
Message-body	MIME body not including MCPTT-Affiliation-Command	not including any MIME body part with Content-Type "application/vnd.3gpp.mcptt-affiliation-command+xml"		
MIME body part		SDP message		
MIME-part-headers				
Content-Type	"application/sdp"			
Content-Disposition	"render"			
MIME-part-body	SDP message as described in Table 6.4.1.3.3-3			
MIME body part		MCPTT MBMS usage info		
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-mbms-usage-info+xml"			
MIME-part-body	MCPTT-MBMS-Usage-Info as described in Table 6.4.1.3.3-4			

Table 6.4.1.3.3-3: SDP in SIP MESSAGE (6.4.1.3.3-2)

Derivation Path: TS 36.579-1 [2], Table 5.5.3.1.2-1				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Media descriptions				
media description		m= line media = audio		
media	"audio"			
port	"9"			
proto	"RTP/AVP"			
fmt	"99"			
Connection Data		c= line		
nettype	"IN"			
addrtype	"IP4" or “IP6” depending on IP address			
connection-address	"0.0.0.0" (IPv4) or domain name within “.invalid” DNS top level domain (IPv6)			
media description		m= line media = application		
media	"application"			
port	"9"			
proto	"udp"			
fmt	"MCPTT"			
Connection Data		c= line		
nettype	"IN"			
addrtype	"IP4" or “IP6” depending on IP address			
connection-address	"0.0.0.0" (IPv4) or domain name within “.invalid” DNS top level domain (IPv6)			
media description		m= line media = application		
media	"application"			
port	port number assigned by the SS			
proto	"udp"			
fmt	"MCPTT"			
Connection Data		c= line		
nettype	"IN"			
addrtype	"IP4"			
connection-address	multicast IP assigned by the SS			
media attribute		a= line attribute = key-mgmt		
key-mgmt			TS 24.379 [9] subclause 14.2.2.2	
mikey	MIKEY-SAKKE I_MESSAGE as specified in TS 36.579-1 [2], Table 5.5.9.1-x.	MSCCK distribution as specified in TS 33.180 [33] Annex H	RFC 4567 [44]	

Table 6.4.1.3.3-4: MCPTT-MBMS-Usage-Info in SIP MESSAGE (6.4.1.3.3-2)

Derivation Path: TS 24.379 [9] Clause F.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcptt-mbms-usage-info				
mbms-listening-status	not present			
announcement				
TMGI				
MBMS Service ID	"0F0F0F"	The selected value is randomly chosen - a 6 digit hexadecimal number between 000000 and FFFFFF (see TS 23.003 [X] clause 15.2. The coding of the MBMS Service ID is the responsibility of each administration		
MCC	The same value as for PLMN1 specified in Table 5.5.8.1-x	Mobile Country Code		
MNC	The same value as for PLMN1 specified in Table 5.5.8.1-x	Mobile Network Code		
QCI	"65"	Mission Critical user plane Push To Talk voice		
mbms-service-areas	"0"	The selected value is randomly chosen. The value 0 has a special meaning; it shall denote the whole PLMN as the MBMS Service Area		
GPMS	"2"	The number of the "m=application" media line in the application/sdp MIME		
version	"1"			

Table 6.4.1.3.3-5: SIP MESSAGE (step 14, Table 6.4.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.7.1-1 condition MCPTT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line				
Request-URI	The value received in the P-Asserted-Identity header field of the announcement message (px_MBMS_Service_ID)			
Accept-Contact				
ac-value	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt"			
req-param	"require"			
explicit-param	"explicit"			
P-Preferred-Identity				
PPreferredID-value	px_MCPTT_User_A_ID			
P-Asserted-Service				
Service-ID	"urn:urn-7:3gpp-service.ims.icsi.mcptt"			
Message-body	MIME body not including MCPTT-Affiliation-Command	not including any MIME body part with Content-Type "application/vnd.3gpp.mcptt-affiliation-command+xml"		
MIME body part		MCPTT MBMS usage info		
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-mbms-usage-info+xml"			
MIME-part-body	MCPTT-MBMS-Usage-Info as described in Table 6.4.1.3.3-6			

Table 6.4.1.3.3-6: MCPTT-MBMS-Usage-Info in SIP MESSAGE (6.4.1.3.3-5)

Derivation Path: TS 24.379 [9] Clause F.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcptt-mbms-usage-info				
mbms-listening-status				
mbms-listening-status	"listening"			
session-id	not present			
general-purpose	"true"			
TMGI	same value as the announcement in the SIP MESSAGE			
announcement	not present			
version	"1"			

Table 6.4.1.3.3-7: SIP MESSAGE (step 19, Table 6.4.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.7.1-1 condition MCPTT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line				
Request-URI	The value received in the P-Asserted-Identity header field of the announcement message (px_MBMS_Service_ID)			
Accept-Contact				
ac-value	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt"			
req-param	"require"			
explicit-param	"explicit"			
P-Preferred-Identity				
PPreferredID-value	px_MCPTT_User_A_ID			
P-Asserted-Service				
Service-ID	"urn:urn-7:3gpp-service.ims.icsi.mcptt"			
Message-body	MIME body not including MCPTT-Affiliation-Command	not including any MIME body part with Content-Type "application/vnd.3gpp.mcptt-affiliation-command+xml"		
MIME body part		MCPTT MBMS usage info		
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-mbms-usage-info+xml"			
MIME-part-body	MCPTT-MBMS-Usage-Info as described in Table 6.4.1.3.3-8			

Table 6.4.1.3.3-8: MCPTT-MBMS-Usage-Info in SIP MESSAGE (6.4.1.3.3-7)

Derivation Path: TS 24.379 [9] Clause F.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcptt-mbms-usage-info				
mbms-listening-status				
mbms-listening-status	"listening"			
session-id	px_sesson_A_ID			
general-purpose	not present			
TMGI	same value as the announcement in the SIP MESSAGE			
announcement	not present			
version	"1"			

Table 6.4.1.3.3-9: SIP MESSAGE (step 34, Table 6.4.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.7.1-1 condition MCPTT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line				
Request-URI	The value received in the P-Asserted-Identity header field of the announcement message (px_MBMS_Service_ID)			
Accept-Contact				
ac-value	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt"			
req-param	"require"			
explicit-param	"explicit"			
P-Preferred-Identity				
PPreferredID-value	px_MCPTT_User_A_ID			
P-Asserted-Service				
Service-ID	"urn:urn-7:3gpp-service.ims.icsi.mcptt"			
Message-body	MIME body not including MCPTT-Affiliation-Command	not including any MIME body part with Content-Type "application/vnd.3gpp.mcptt-affiliation-command+xml"		
MIME body part		MCPTT MBMS usage info		
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-mbms-usage-info+xml"			
MIME-part-body	MCPTT-MBMS-Usage-Info as described in Table 6.4.1.3.3-10			

Table 6.4.1.3.3-10: MCPTT-MBMS-Usage-Info in SIP MESSAGE (6.4.1.3.3-10)

Derivation Path: TS 24.379 [9] Clause F.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcptt-mbms-usage-info				
mbms-listening-status				
mbms-listening-status	"not-listening"			
session-id	px_sesson_A_ID			
general-purpose	not present			
TMGI	same value as the announcement in the SIP MESSAGE			
announcement	not present			
version	"1"			

Table 6.4.1.3.3-11: SIP MESSAGE (step 36, Table 6.4.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.7.1-1 condition MCPTT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Accept-Contact				
ac-value	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt"			
req-param	"require"			
explicit-param	"explicit"			
P-Asserted-Service				
Service-ID	"urn:urn-7:3gpp-service.ims.icsi.mcptt"			
P-Asserted-Identity				
addr-spec				
user-info and host	px_MBMS_Service_ID	The MBMS public service identity of the participating MCPTT function		
port	not present			
Message-body	MIME body not including MCPTT-Affiliation-Command	not including any MIME body part with Content-Type "application/vnd.3gpp.mcptt-affiliation-command+xml"		
MIME body part		MCPTT MBMS usage info		
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-mbms-usage-info+xml"			
MIME-part-body	MCPTT-MBMS-Usage-Info as described in Table 6.4.1.3.3-12			

Table 6.4.1.3.3-12: MCPTT-MBMS-Usage-Info in SIP MESSAGE (6.4.1.3.3-11)

Derivation Path: TS 24.379 [9] Clause F.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcptt-mbms-usage-info				
mbms-listening-status	not present			
announcement				
TMGI				
MBMS Service ID	"0F0F0F"	The selected value is randomly chosen - a 6 digit hexadecimal number between 000000 and FFFFFF (see TS 23.003 [X] clause 15.2. The coding of the MBMS Service ID is the responsibility of each administration		
MCC	The same value as for PLMN1 specified in Table 5.5.8.1-x	Mobile Country Code		
MNC	The same value as for PLMN1 specified in Table 5.5.8.1-x	Mobile Network Code		
QCI	"65"	Mission Critical user plane Push To Talk voice		
mbms-service-areas	not present			
GPMS	not present			
version	"1"			

Table 6.4.1.3.3-13: SIP MESSAGE (step 38, Table 6.4.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.7.1-1 condition MCPTT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Request-Line				
Request-URI	The value received in the P-Asserted-Identity header field of the announcement message (px_MBMS_Service_ID)			
Accept-Contact				
ac-value	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt"			
req-param	"require"			
explicit-param	"explicit"			
P-Preferred-Identity				
PPreferredID-value	px_MCPTT_User_A_ID			
P-Asserted-Service				
Service-ID	"urn:urn-7:3gpp-service.ims.icsi.mcptt"			
Message-body	MIME body not including MCPTT-Affiliation-Command	not including any MIME body part with Content-Type "application/vnd.3gpp.mcptt-affiliation-command+xml"		
MIME body part		MCPTT MBMS usage info		
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-mbms-usage-info+xml"			
MIME-part-body	MCPTT-MBMS-Usage-Info as described in Table 6.4.1.3.3-14			

Table 6.4.1.3.3-13a: SIP MESSAGE (step 22a1, Table 6.4.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.7.2-1 condition MCPTT				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
Accept-Contact				
ac-value	"+g.3gpp.icsi-ref=urn:urn-7:3gpp-service.ims.icsi.mcptt"			
req-param	"require"			
explicit-param	"explicit"			
P-Asserted-Service				
Service-ID	"urn:urn-7:3gpp-service.ims.icsi.mcptt"			
P-Asserted-Identity				
addr-spec				
Message-body	MIME body not including MCPTT-Affiliation-Command	not including any MIME body part with Content-Type "application/vnd.3gpp.mcptt-affiliation-command+xml"		
MIME body part		MCPTT MBMS usage info		
MIME-part-headers				
Content-Type	"application/vnd.3gpp.mcptt-mbms-usage-info+xml"			
MIME-part-body	MCPTT-MBMS-Usage-Info as described in Table 6.4.1.3.3-13b			
MIME body part		MIKEY message		
MIME-part-headers				
Content-Type	"application/mikey"			
MIME-part-body	As described in TS 36.579-1 [2], Table 5.5.9.1-x.	MIKEY message containing the MuSiK		

Table 6.4.1.3.3-13b: MCPTT-MBMS-Usage-Info in SIP MESSAGE (6.4.1.3.3-13a)

Derivation Path: TS 24.379 [9] Clause F.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcptt-mbms-usage-info				
mbms-listening-status	not present			
announcement	not present			
version	"1"			
anyExt				
mbms-explicitMuSiK-download				
group	px_MCPTT_Group_A_ID			

Table 6.4.1.3.3-14: MCPTT-MBMS-Usage-Info in SIP MESSAGE (6.4.1.3.3-13)

Derivation Path: TS 24.379 [9] Clause F.2				
Information Element	**Value/remark**	**Comment**	**Reference**	**Condition**
mcptt-mbms-usage-info				
mbms-listening-status				
mbms-listening-status	"not-listening"			
session-id	not present			
general-purpose	"false"			
TMGI	same value as the announcement in the SIP MESSAGE			
announcement	not present			
version	"1"			

Table 6.4.1.3.3-15: SIP 200 (OK) (steps 13, 37, Table 6.4.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.17.1.1-1

Table 6.4.1.3.3-16: SIP 200 (OK) (steps 15, 20, 35, 38a, Table 6.4.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.2.17.1.2-1

Table 6.4.1.3.3-17: Floor Release (steps 9, 25, Table 6.4.1.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.5-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"10000X0000000000"	bit A=1 (Normal call) bit F=X (Queueing supported) any value	

Table 6.4.1.3.3-18: Floor Idle (step 11, Table 6.4.1.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.6-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Subtype	"00101"	Acknowledgment not required for Floor Idle message	
Floor Indicator			
Floor Indicator	"1000010000000000"	bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 6.4.1.3.3-19: Floor Idle (steps 27, 31, 39, Table 6.4.1.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.6-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Subtype	"10101"	Acknowledgment required for Floor Idle message	
Floor Indicator			
Floor Indicator	"1000010000000000"	bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 6.4.1.3.3-20: Floor Request (step 17, Table 6.4.1.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.2-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"10000X0000000000"	bit A=1 (Normal call) bit F=X (Queueing supported) any value	

Table 6.4.1.3.3-21: Floor Granted (step 21, Table 6.4.1.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Subtype	"10001"	Acknowledgment is required for Floor Granted message	
Floor Indicator			
Floor Indicator	"0001010000000000"	bit D=1 (Emergency call) bit F=1 (Queueing supported)	

Table 6.4.1.3.3-21: Floor Ack (step 22, Table 6.4.1.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.11-1			
Information Element	**Value/remark**	**Comment**	**Condition**
SSRC of floor participant	"10000000 11111111 00000000 00000001"		
Source			
Source	"0"	The floor participant is the source	
Message Type			
Message Type	"10001"	Floor Ack message for Floor Granted message which requested acknowledgment	

Table 6.4.1.3.3-22: Floor Ack (steps 28, 32, 40, Table 6.4.1.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.11-1			
Information Element	**Value/remark**	**Comment**	**Condition**
SSRC of floor participant	"10000000 11111111 00000000 00000001"		
Source			
Source	"0"	The floor participant is the source	
Message Type			
Message Type	"10101"	Floor Ack message for Floor Idle message which requested acknowledgment	

Table 6.4.1.3.3-23: Floor Taken (step 23, Table 6.4.1.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.7-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Subtype	"00010"	Acknowledgment not required for Floor Taken message	
Granted Party's Identity			
Granted Party's Identity	Px_MCPTT_User_A_ID		
Floor Indicator			
Floor Indicator	"1000010000000000"	bit A=1 (Normal call) bit F=1 (Queueing supported)	
SSRC of granted floor participant	"10000000 11111111 00000000 00000001"		

Table 6.4.1.3.3-24: Floor Taken (step 29, Table 6.4.1.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.7-1 condition ON-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Subtype	"00010"	Acknowledgment not required for Floor Taken message	
Floor Indicator			
Floor Indicator	"1000010000000000"	bit A=1 (Normal call) bit F=1 (Queueing supported)	

7 MCPTT Client off-network operation

7.1 Off-network Group Calls

7.1.1 Off-network / Group Call / Floor Control / Upgrade to Emergency Call / Downgrade from Emergency / Upgrade to Imminent Peril / Downgrade from Imminent Peril / Release Call / Client Originated (CO)

7.1.1.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service, including authorised to
initiate/cancel group calls in off-network environment, and the UE (MCPTT Client) is in an off-
network environment }
ensure that {
  when { the MCPTT User requests the establishment of an MCPTT pre-arranged group call }
    then { UE (MCPTT Client) requests a pre-arranged group call by sending a GROUP CALL PROBE
message and, upon not receiving a response to the GROUP CALL PROBE, sends a GROUP CALL ANNOUNCEMENT
message }
            }
```

(2)

```
with { UE (MCPTT Client) having established an off-network MCPTT Pre-arranged Group Call }
ensure that {
```

```
  when { the MCPTT User (MCPTT Client) engages in communication with the invited MCPTT User(s) }
    then { UE (MCPTT Client) respects the floor control imposed by the floor control
entity/arbitrator (Floor Request during a talk burst, Floor granting/release, Floor idle, Floor
deny, Floor taken/revoked, Floor request queued and queue handling) }
            }
```

(3)

```
with { UE (MCPTT Client) having established an off-network group call and the MCPTT User being
authorised for initiating an MCPTT emergency group call }
ensure that {
  when { the MCPTT User requests to upgrade the ongoing off-network MCPTT group call to an MCPTT
emergency group call }
    then { UE (MCPTT Client) sends a GROUP CALL ANNOUNCEMENT message and enters the T1: in-progress
emergency group call state}
            }
```

(4)

```
with { UE (MCPTT Client) having upgraded to an off-network emergency group call }
ensure that {
  when { the MCPTT User (MCPTT Client) continues communication with the invited MCPTT User(s) }
    then { UE (MCPTT Client) respects the floor control imposed by the floor control
entity/arbitrator }
            }
```

(5)

```
with { UE (MCPTT Client) having upgraded to an off-network emergency group call and the MCPTT User
being authorised for cancelling an MCPTT emergency state }
ensure that {
  when { the MCPTT User requests to cancel the ongoing MCPTT Emergency state }
    then { UE (MCPTT Client) sends a GROUP CALL EMERGENCY END message and enters the T2: in-
progress basic group call state }
            }
```

(6)

```
with { UE (MCPTT Client) having established an off-network group call and the MCPTT User being
authorised for initiating an MCPTT imminent peril group call }
ensure that {
  when { the MCPTT User requests to upgrade the ongoing off-network MCPTT group call to an MCPTT
imminent peril group call with floor control }
    then { UE (MCPTT Client) sends a GROUP CALL ANNOUNCEMENT message and enters the T3: in-progress
imminent peril group call state}
            }
```

(7)

```
with { UE (MCPTT Client) having upgraded to an off-network imminent peril group call }
ensure that {
  when { the MCPTT User (MCPTT Client) continues communication with the invited MCPTT User(s) }
    then { UE (MCPTT Client) respects the floor control imposed by the floor control
entity/arbitrator }
            }
```

(8)

```
with { UE (MCPTT Client) having upgraded to an off-network imminent peril group call and the MCPTT
User being authorised for cancelling an MCPTT imminent peril state }
ensure that {
  when { the MCPTT User requests to cancel the ongoing MCPTT imminent peril state }
    then { UE (MCPTT Client) sends a GROUP CALL IMMINENT PERIL END message and enters the T2:
in-progress basic group call state }
            }
```

7.1.1.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.379 clauses 10.2.2.4.2.1, 10.2.2.4.3.1, 10.2.3.4.2, 10.2.3.4.7.1, 10.2.3.4.8.1, 10.2.3.4.8.4, 10.2.2.4.5.1, 10.2.2.4.5.4, 10.2.3.4.10, TS 24.380 clauses 7.2.3.2.2, 7.2.3.5.5, 7.2.3.3.2, 7.2.3.6.7, 7.2.3.5.4, 7.2.3.5.8, 7.2.3.5.6, 7.2.3.7.3, 7.2.3.7.5, 7.2.3.3.4, 7.2.3.4.3,

7.2.3.3.6, 7.2.3.4.2, 7.2.3.6.4, 7.2.3.6.3, 7.2.3.8.11, 7.2.3.8.3, 7.2.3.8.6, 7.2.3.5.7, 7.2.3.6.9, 7.2.3.6.6. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 10.2.2.4.2.1]

When in the "S1: start-stop" state, upon an indication from an MCPTT user to initiate a group call for an MCPTT group ID, the MCPTT client:

…

3) shall generate a GROUP CALL PROBE message as specified in subclause 15.1.2. In the GROUP CALL PROBE message, the MCPTT client:

   a) shall set the MCPTT group ID IE to the stored MCPTT group ID of the call;

4) shall send the GROUP CALL PROBE message as specified in subclause 10.2.1.1.1;

5) shall start timer TFG3 (call probe retransmission);

6) shall start timer TFG1 (wait for call announcement); and

[TS 24.379, clause 10.2.2.4.3.1]

When in the "S2: waiting for call announcement" state, upon expiry of timer TFG1 (wait for call announcement), the MCPTT client:

1) shall stop timer TFG3 (call probe retransmission), if running;

…

7) shall generate a GROUP CALL ANNOUNCEMENT message as specified in subclause 15.1.3. In the GROUP CALL ANNOUNCEMENT message, the MCPTT client:

   a) shall set the Call identifier IE to the stored call identifier of the call;

   b) shall set the Call type IE to the stored current call type associated with the call type control state machine;

   c) shall set the Refresh interval IE to the stored refresh interval of the call;

   d) shall set the SDP IE to the stored SDP body of the call;

   e) shall set the Originating MCPTT user ID IE to the stored originating MCPTT user ID of the call;

   f) shall set the MCPTT group ID IE to the stored MCPTT group ID of the call;

   g) shall set the Call start time IE to the stored call start time of the call;

   h) shall set the Last call type change time IE to the stored last call type change time of the call associated with call type control state machine;

   i) shall set the Last user to change call type IE to last user to change call type associated with call type control state machine; and

   j) may include the Confirm mode indication IE;

8) shall send the GROUP CALL ANNOUNCEMENT message as specified in subclause 10.2.1.1.1;

9) shall establish a media session based on the stored SDP body of the call;

10) shall start floor control as originating floor participant as specified in subclause 7.2 in 3GPP TS 24.380 [5];

[TS 24.379, clause 10.2.3.4.2]

When in the "T0: waiting for the call to establish " state, upon an indication from an MCPTT user to initiate a group call probe for an MCPTT group, the MCPTT client:

1) if the stored emergency state associated with emergency alert state machine described in 12.2.2.2 is set to "true" and the value of "/<*x*>/<x>/Common/AllowedEmergencyCall" leaf node present in group configuration as specified in 3GPP TS 24.383 [45] is set to "true":

   a) shall set the stored current call type to "EMERGENCY GROUP CALL"; and

   b) shall set the stored current ProSe per-packet priority to value corresponding to MCPTT off-network emergency group call as described in 3GPP TS 24.383 [45];

2) if the stored emergency state associated with emergency alert state machine described in 12.2.2.2 is set to "false", and:

   a) if the user initiates an MCPTT emergency call and the values of "/<*x*>/<*x*>/Common/MCPTTGroupCall/EmergencyCall/Enabled" leaf node present in the user profile and "/<*x*>/<x>/Common/AllowedEmergencyCall" leaf node present in group configuration as specified in 3GPP TS 24.383 [45] are set to "true":

      i) shall set the stored current call type to "EMERGENCY GROUP CALL"; and

      ii) shall set the stored current ProSe per-packet priority to value corresponding to MCPTT off-network emergency group call as described in 3GPP TS 24.383 [45];

   b) if the user initiates an MCPTT imminent peril group call and the values of "/<*x*>/<*x*>/Common/MCPTTGroupCall/ImminentPerilCall/Authorised" leaf node present in the user profile "/<*x*>/<x>/Common/AllowedImminentPerilCall " leaf node present in group configuration as specified in 3GPP TS 24.383 [45] are set to "true":

      i) shall set the stored current call type to "IMMINENT PERIL GROUP CALL"; and

      ii) shall set the stored current ProSe per-packet priority to value corresponding to MCPTT off-network imminent peril group call as described in 3GPP TS 24.383 [45]; and

   c) if the user initiates an MCPTT group call which is not an MCPTT emergency call and which is not an MCPTT imminent peril group call:

      i) shall set the stored current call type to "BASIC GROUP CALL"; and

      ii) shall set the stored current ProSe per-packet priority to value corresponding to MCPTT off-network basic group call as described in 3GPP TS 24.383 [45];

[TS 24.379, clause 10.2.3.4.7.1]

When in the "T2: in-progress basic group call" state, upon receiving an indication from the user to upgrade the call to "IMMINENT PERIL GROUP CALL" or "EMERGENCY GROUP CALL" or when in the "T3: in-progress imminent peril group call" state, upon receiving an indication from the user to upgrade the call to "EMERGENCY GROUP CALL", the MCPTT client:

1) if the user request is to upgrade the call to "EMERGENCY GROUP CALL" and the value of "/<*x*>/<*x*>/OffNetwork/EmergencyCallChange" leaf node present in the user profile as specified in 3GPP TS 24.383 [45] is set to "true":

   a) shall set the stored current call type to "EMERGENCY GROUP CALL";

   b) shall set the stored current ProSe per-packet priority to value corresponding to MCPTT off-network emergency group call as described in 3GPP TS 24.383 [45];

   c) shall store the current UTC time as last call type change time of the call;

   d) shall store own MCPTT user ID as last user to change call type of the call;

   e) shall start timer TFG13 (implicit downgrade emergency) with value as specified in subclause 10.2.3.4.1.1;

   f) shall stop timer TFG11 (emergency end retransmission), if running;

   g) shall stop timer TFG14 (implicit downgrade imminent peril), if running; and

   h) shall enter "T1: in-progress emergency group call" state;

2) if the user request is to upgrade the call to "IMMINENT PERIL GROUP CALL" and the value of "/<*x*>/<*x*>/OffNetwork/ ImminentPerilCallChange" leaf node present in the user profile as specified in 3GPP TS 24.383 [45] set to "true":

   a) shall set the stored current call type to "IMMINENT PERIL GROUP CALL";

   b) shall set the stored current ProSe per-packet priority to value corresponding to MCPTT off-network imminent peril group call as described in 3GPP TS 24.383 [45];

   c) shall store the current UTC time as last call type change time of the call;

   d) shall store own MCPTT user ID as last user to change call type of the call;

   e) shall start timer TFG14 (implicit downgrade imminent peril) with value as specified in subclause 10.2.3.4.1.2;

   f) shall stop timer TFG12 (imminent peril end retransmission), if running; and

   g) shall enter "T3: in-progress imminent peril group call" state;

3) shall generate a GROUP CALL ANNOUNCEMENT message as specified in subclause 15.1.3. In the GROUP CALL ANNOUNCEMENT message, the MCPTT client:

   a) shall set the Call identifier IE to the stored call identifier of the call associated with the basic call control state machine;

   b) shall set the Call type IE to the stored current call type;

   c) shall set the Refresh interval IE to the stored refresh interval of the call associated with the basic call control state machine;

   d) shall set the SDP IE to the stored SDP body of the call associated with the basic call control state machine;

   e) shall set the Originating MCPTT user ID IE to the stored originating MCPTT user ID of the call associated with the basic call control state machine;

   f) shall set the MCPTT group ID IE to the stored MCPTT group ID of the call associated with the basic call control state machine;

   g) shall set the call start time IE to the stored call start time of the call;

   h) shall set the Last call type change time IE to the stored last call type change time of the call; and

   i) shall set the Last user to change call type IE to the stored last user to change call type of the call; and

4) shall send the GROUP CALL ANNOUNCEMENT message as specified in subclause 10.2.1.1.1;

[TS 24.379, clause 10.2.3.4.8.1]

When in the "T1: in-progress emergency group call" state, upon receiving an indication from:

1) the MCPTT user who upgraded the MCPTT group call; or

2) an authorized MCPTT user with the value of "/<*x*>/<*x*>/Common/MCPTTGroupCall/EmergencyCall/CancelMCPTTGroup" leaf node present in the user profile as specified in 3GPP TS 24.383 [45] is set to "true",

to downgrade "EMERGENCY GROUP CALL", the MCPTT client:

…

5) shall generate a GROUP CALL EMERGENCY END message as specified in subclause 15.1.15. In the GROUP CALL EMERGENCY END message, the MCPTT client:

   a) shall set the Call identifier IE to the stored call identifier of the call associated with the basic call control state machine;

b) shall set the Originating MCPTT user ID IE to the stored originating MCPTT user ID of the call associated with the basic call control state machine;

c) shall set the MCPTT group ID IE to the stored MCPTT group ID of the call associated with the basic call control state machine;

d) shall set the Last call type change time IE to the stored last call type change time of the call; and

e) shall set the Last user to change call type IE to the stored last user to change call type of the call;

6) shall send the GROUP CALL EMERGENCY END message as specified in subclause 10.2.1.1.1;

[TS 24.379, clause 10.2.3.4.8.4]

When in the "T3: in-progress imminent peril group call" state, upon receiving an indication from:

1) the MCPTT user who upgraded the call; or

2) an authorized with the value of "/<*x*>/<*x*>/Common/MCPTTGroupCall/ImminentPerilCall/Cancel" leaf node present in the user profile as specified in 3GPP TS 24.383 [45] is set to "true",

to downgrade "IMMINENT PERIL GROUP CALL", the MCPTT client:

…

5) shall generate a GROUP CALL IMMINENT PERIL END message as specified in subclause 15.1.14. In the GROUP CALL IMMINENT PERIL END message, the MCPTT client:

a) shall set the Call identifier IE to the stored call identifier of the call associated with the basic call control state machine;

b) shall set the Originating MCPTT user ID IE to the stored originating MCPTT user ID of the call associated with the basic call control state machine;

c) shall set the MCPTT group ID IE to the stored MCPTT group ID of the call associated with the basic call control state machine;

d) shall set the Last call type change time IE to the stored last call type change time of the call; and

e) shall set the Last user to change call type IE to the stored last user to change call type of the call;

6) shall send the GROUP CALL IMMINENT PERIL END message as specified in subclause 10.2.1.1.1;

[TS 24.379, clause 10.2.2.4.5.1]

When in the "S3: part of ongoing call" state, the "S5: pending user action with confirm indication" state, or the "S4: pending user action without confirm indication" state, upon an indication from the MCPTT user to release the group call, the MCPTT client:

1) shall release the media session, if established;

[TS 24.379, clause 10.2.2.4.5.4]

When in the "S6: ignoring incoming call announcements" state, upon expiration of timer TFG5 (not present incoming call announcements), the MCPTT client:

1) shall release the stored SDP body of the call;

2) shall release the stored call identifier of the call;

3) shall release the stored originating MCPTT user ID of the call;

4) shall release the stored refresh interval of the call;

5) shall release the stored MCPTT group ID of the call;

6) shall release the call start time of the call;

7) shall destroy the call type control state machine; and

8) shall enter the "S1: start-stop" state.

[TS 24.379, clause 10.2.3.4.10]

When in state T1: in-progress emergency group call" or "T2: in-progress basic group call" or "T3: in-progress imminent peril group call" or upon receiving an indication from MCPTT user to release the call, the MCPTT client:

1) shall release stored current call type;

2) shall release stored ProSe per-packet priority;

3) shall release Last call type change time;

4) shall release Last user to change call type; and

5) shall enter "T0: waiting for the call to establish" state.

[TS 24.380, clause 7.2.3.2.2]

When an MCPTT call is established with session announcement including an explicit floor request, the originating floor participant:

1. shall create an instance of a floor participant state transition diagram for basic operation state machine;

2. shall send Floor Granted message towards other floor participants. The Floor Granted message:

   a. shall include the granted priority in the Floor priority field;

   b. shall include the MCPTT user's own MCPTT ID in the User ID field; and

   c. if the floor request is a broadcast group call, system call, emergency call or an imminent peril call, shall include a Floor Indicator field indicating the relevant call types;

3. shall set the stored SSRC of the current floor arbitrator to its own SSRC; and

4. shall enter 'O: has permission' state.

[TS 24.380, clause 7.2.3.5.5]

Upon receiving an indication from the MCPTT user to release permission to send RTP media, the floor participant:

1. shall stop timer T206 (Stop talking warning), if running;

2. shall stop timer T207 (Stop talking), if running;

3. shall send a Floor Release message towards other floor participants, if no queued requests exist: The Floor Release message:

   a. shall include the MCPTT ID of the MCPTT user in the User ID field; and

   b. if the session is not initiated as a broadcast group call with the B-bit set to '1' (Broadcast group call), shall include a Floor Indicator field set to '0' (normal call);

4. shall start timer T230 (Inactivity);

5. shall clear the stored SSRC of the current arbitrator; and

6. shall enter 'O: silence' state.

[TS 24.380, clause 7.2.3.3.2]

If the floor participant receives an indication from the MCPTT user to send media, the floor participant:

1. shall send the Floor Request message to other floor participants. The Floor Request message:

a. if a priority different than the default floor priority is required, shall include the Floor Priority field with the requested priority in the <Floor Priority> element;

b. shall include the MCPTT ID of the MCPTT user in the <User ID> value of the User ID field; and

c. if the floor request is a broadcast group call, system call, emergency call or an imminent peril call, shall include a Floor Indicator field indicating the relevant call types;

2. shall initialize the counter C201 (Floor request) with value set to 1;

3. shall stop timer T230 (Inactivity);

4. shall start timer T201 (Floor Request); and

5. shall enter 'O: pending request' state.

[TS 24.380, clause 7.2.3.6.7]

Upon receiving Floor Granted message and if the <User ID> value in the User ID field matches its own MCPTT ID and SSRC of floor participant sending the Floor Granted message matches the stored SSRC of current arbitrator, the floor participant:

1. shall request the MCPTT client to stop rendering received RTP media packets;

2. shall set the stored SSRC of the current floor arbitrator to its own SSRC;

3. shall stop timer T203 (End of RTP media), if running;

4. shall stop timer T201 (Floor Request);

5. may provide a floor granted notification to the MCPTT user;

6. if the Floor Indicator field is included and the B bit is set to '1' (Broadcast group call), shall provide a notification to the user indicating the type of call; and

7. shall enter 'O: has permission' state.

Otherwise, if the <User ID> value in the User ID field matches its own MCPTT ID and there is no stored SSRC of the current arbitrator, the floor participant:

1. shall set the stored SSRC of the current arbitrator to its own SSRC;

2. shall stop timer T203 (End of RTP media);

3. shall stop timer T201 (Floor Request);

4. may provide a floor granted notification to the MCPTT user;

5. if the Floor Indicator field is included and the B bit is set to '1' (Broadcast group call), shall provide a notification to the user indicating the type of call; and

6. shall enter 'O: has permission' state.

Otherwise, if the <User ID> value in the User ID field matches its own MCPTT ID and SSRC of floor participant sending the Floor Granted message matches the stored SSRC of candidate arbitrator, the floor participant:

1. shall set the stored SSRC of the current arbitrator to its own SSRC;

2. shall stop timer T203 (End of RTP media);

3. shall stop timer T201 (Floor Request);

4. may provide a floor granted notification to the MCPTT user;

5. shall clear the stored SSRC of the candidate arbitrator;

6. if the Floor Indicator field is included and the B bit is set to '1' (Broadcast group call), shall provide a notification to the user indicating the type of call; and

7. shall enter 'O: has permission' state.

[TS 24.380, clause 7.2.3.5.4]

Upon receiving a Floor Request message which is not pre-emptive as determined by subclause 4.1.1.5, in a session where:

1. the value of "/<x>/<x>/OffNetwork/QueueUsage" leaf node present in the group configuration as specified in 3GPP TS 24.383 [4] is set to "false"; or
2. the value of "/<x>/<x>/OffNetwork/QueueUsage" leaf node present in the group configuration as specified in 3GPP TS 24.383 [4] is set to "true" but the F-bit in the Floor Indicator field is set to '0' (i.e. indicating that queuing of floor requests is not supported) or the Floor Indicator field is not included in the Floor Request message;

then the floor participant:

1. shall send the Floor Deny message. The Floor Deny message:
   a. shall include in the Reject Cause field the <Reject Cause> value cause #1 (Another MCPTT client has permission);
   b. may include in the Reject Cause field an additional text string explaining the reason for rejecting the floor request in the <Reject Phrase> value; and
   c. shall include the User ID field received in the Floor Request message; and
2. shall remain in 'O: has permission' state.

Upon receiving a Floor Request message which is not pre-emptive as determined by subclause 4.1.1.5, and the value of "/<x>/<x>/OffNetwork/QueueUsage" leaf node present in the group configuration as specified in 3GPP TS 24.383 [4] is set to "true" and the F-bit in the Floor Indicator field is set to '1' (i.e. indicating that queuing of the floor requests is supported) in the Floor Request message, the floor participant:

1. shall store the received Floor Request messages;
2. if the pending request queue is not full, shall send the Floor Queue Position Info message. The Floor Queue Position Info message:
   a. shall include in the User ID field the MCPTT ID of the floor participant sending the Floor Request message;
   b. shall include the SSRC of the floor participant in the SSRC of queued floor participant field;
   c. shall include the position in the floor request queue in the Queue Info field; and
   d. shall include the floor priority in the Queue Info field;
3. if the pending request queue is full, shall send the Floor Deny message. The Floor Deny message:
   a. shall include in the Reject Cause field the <Reject Cause> value cause #7 (Queue full);
   b. may include in the Reject Cause field an additional text string explaining the reason for rejecting the floor request in the <Reject Phrase> value; and
   c. shall include the User ID field received in the Floor Request message; and
4. shall remain in 'O: has permission' state.

[TS 24.380, clause 7.2.3.5.8]

Upon receiving a Floor Queue Position Request message, the floor participant:

1. shall send the Floor Queue Position Info message. The Floor Queue Position Info message:
   a. shall include the MCPTT ID of the queued floor participant in the Queued User ID field;
   b. shall include the queue position and floor priority in the Queue Info field;

c. shall include the SSRC of floor participant sending Floor Queue Position Request message in SSRC of queue floor participant field; and

d. shall include the User ID of floor participant sending Floor Queue Position Request message in User ID field; and

2. remain in the 'O: has permission' state.

[TS 24.380, clause 7.2.3.5.6]

When no more encoded media is received from the user and if at least one Floor Request message is stored (i.e. queuing mode is used in the session), the floor participant:

1. shall stop timer T206 (Stop talking warning), if running;
2. shall stop timer T207 (Stop talking), if running;
3. shall request the MCPTT client to stop sending RTP media packets towards other MCPTT clients;
4. shall send the Floor Granted message toward the other floor participants. The Floor Granted message:
   a. shall include the MCPTT ID of the first floor participant in the queue in the User ID field;
   b. shall include the SSRC of the first floor participant in the queue in the SSRC of the granted floor participant field;
   c. shall remove the first floor participant from the queue;
   d for the remaining floor participants in the queue:
      i. shall include the MCPTT ID of the floor participant in the Queued User ID field;
      ii. shall include the SSRC of the floor participant in the SSRC of queued floor participant field;
      iii. shall include the queue position of the floor participant in the Queue Info field; and
      iv. shall include the priority of the floor participant in the Queue Info field; and
   e. if the floor request is a broadcast group call, system call, emergency call or an imminent peril call, shall include a Floor Indicator field indicating the relevant call types;
5. shall set the stored SSRC of the current arbitrator to the SSRC of user to whom the floor was granted in the Floor Granted message;
6. shall start timer T205 (Floor Granted) and shall initiate counter C205 (Floor Granted) to 1; and
7 shall enter the 'O: pending granted' state.

[TS 24.380, clause 7.2.3.7.3]

On expiry of timer T205 (Floor Granted) and counter C205 (Floor Granted) is less than the upper limit, the floor participant:

1. shall send again the Floor Granted message toward the other floor participants. For each participant in the queue the Floor Granted message:
   a. shall include the MCPTT ID of the floor participant in the Queued User ID field;
   b. shall include the SSRC of the floor participant in the SSRC of queued floor participant field;
   c. shall include the queue position of the floor participant in the Queue Info field; and
   d. shall include the priority of the floor participant in the Queue Info field;
2. shall restart timer T205 (Floor Granted) and shall increment counter C205 (Floor Granted) by 1; and
3. shall remain in 'O: pending granted' state.

[TS 24.380, clause 7.2.3.7.5]

On the expiry of timer T205 (Floor Granted) for the configured upper limit of counter C205 (Floor Granted) with no request pending in the queue, the floor participant:

1. shall reset the value of counter C205 (Floor Granted) to 1;
2. shall start timer T230 (Inactivity);
3. shall clear the stored SSRC of the current arbitrator; and
4. shall enter 'O: silence' state.

[TS 24.380, clause 7.2.3.3.4]

When a Floor Granted message is received and if the User ID in the Floor Granted message does not match its own User ID, the floor participant:

1. may provide a floor taken notification to the MCPTT user;
2. if the Floor Indicator field is included and the B-bit is set to '1' (Broadcast group call), shall provide a notification to the user indicating that this is a broadcast group call;
3. shall set the stored SSRC of the candidate arbitrator to the SSRC of user to whom the floor was granted in the Floor Granted message;
4. shall stop timer T230 (Inactivity);
5. shall start timer T203 (End of RTP media); and
6. shall enter 'O: has no permission' state.

[TS 24.380, clause 7.2.3.4.3]

When a Floor Release message is received and if the SSRC in the Floor Release message matches with the stored SSRC of the current arbitrator or with the stored SSRC of the candidate arbitrator, the floor participant:

1. may provide floor idle notification to the MCPTT user.
2. shall request the MCPTT client to stop rendering received RTP media packets;
3. shall stop timer T203 (End of RTP media);
4. shall start timer T230 (Inactivity);
5. shall clear the stored SSRC of the candidate arbitrator;
6. shall clear the stored SSRC of the current arbitrator; and
7. shall enter 'O: silence' state;

[TS 24.380, clause 7.2.3.3.6]

When a Floor Taken message is received, the floor participant:

1. may provide a floor taken notification to the MCPTT user;
2. shall set the stored SSRC of the current arbitrator to the SSRC of granted floor participant field in the Floor Taken message;
3. shall stop timer T230 (Inactivity);
4. shall start timer T203 (End of RTP media); and
5. shall enter 'O: has no permission' state.

[TS 24.380, clause 7.2.3.4.2]

If the floor participant receives an indication from the MCPTT user that the MCPTT user wants to send media, the floor participant:

1. shall send the Floor Request message to other clients. The Floor Request message:
   a. if a priority different than the default floor priority is required, shall include the Floor Priority field with the requested priority in the <Floor Priority> element;
   b. shall include the MCPTT ID of the MCPTT user in the User ID field; and
   c. if the floor request is a broadcast group call, system call, emergency call or an imminent peril call, shall include a Floor Indicator field indicating the relevant call types;
2. shall initialize the counter C201 (Floor request) with value set to 1;
3. shall start timer T201 (Floor Request); and
4. shall enter 'O: pending request' state.

[TS 24.380, clause 7.2.3.6.4]

Upon receiving Floor Deny message, if the <User ID> value in the User ID field matches its own MCPTT ID and SSRC of floor participant sending the Floor Deny message matches the stored SSRC of current arbitrator, the floor participant:

1. shall stop the timer T201 (Floor Request);
2. shall provide floor deny notification to the user;
3. shall restart the timer T203 (End of RTP media);
4. may display the floor deny reason to the user using information in the Reject Cause field; and
5. shall enter 'O: has no permission' state.

Otherwise, if the <User ID> value in the User ID field matches its own MCPTT ID and there is no stored SSRC of the current arbitrator, the floor participant:

1. shall stop the timer T201 (Floor Request);
2. shall set the stored SSRC of the current arbitrator to the SSRC of the floor control server as received in the Floor Deny message;
3. shall restart the timer T203 (End of RTP media);
4. shall provide floor deny notification to the user;
5. may display the floor deny reason to the user using information in the Reject Cause field; and
6. shall enter 'O: has no permission' state.

Otherwise, if the <User ID> value in the User ID field matches its own MCPTT ID and SSRC of floor participant sending the Floor Deny message matches the stored SSRC of candidate arbitrator, the floor participant:

1. shall stop the timer T201 (Floor Request);
2. shall set the stored SSRC of the current arbitrator to the SSRC of the floor control server as received in the Floor Deny message;
3. shall clear the stored SSRC of the candidate arbitrator;
4. shall restart the timer T203 (End of RTP media);
5. shall provide floor deny notification to the user;
6. may display the floor deny reason to the user using information in the Reject Cause field; and
7. shall enter 'O: has no permission' state.

[TS 24.380, clause 7.2.3.6.3]

Upon receiving Floor Queue Position Info message, if the <User ID> value in the Queued User ID field matches its own MCPTT ID and the value in the SSRC of floor control server field as received in the Floor Queue Position Info message matches the stored SSRC of current arbitrator, the floor participant:

1. shall update the queue status;
2. may notify the MCPTT user about the queue position received in the <Queue position info> value in the Queue Info field;
3. shall stop timer T201 (Floor Request); and
4. shall enter 'O: queued' state.

Otherwise, if the <User ID> value in the Queued User ID field matches its own MCPTT ID and there is no stored SSRC of the current arbitrator, the floor participant:

1. shall update the queue status;
2. shall set the stored SSRC of the current arbitrator to the SSRC of the floor control server as received in the Floor Queue Position Info message;
3. may notify the MCPTT user about the queue position received in the <Queue position info> value in the Queue Info field;
4. shall stop timer T201 (Floor Request); and
5. shall enter 'O: queued' state.

Otherwise, if the <User ID> value in the Queued User ID field matches its own MCPTT ID and the value in the SSRC of floor control server field as received in the Floor Queue Position Info message matches the stored SSRC of candidate arbitrator, the floor participant:

1. shall update the queue status;
2. shall set the stored SSRC of the current arbitrator to the value in the SSRC of the floor control server field as received in the Floor Queue Position Info message;
3. shall clear the stored SSRC of the candidate arbitrator;
4. may notify the MCPTT user about the queue position received in the <Queue position info> value in the Queue Info field;
5. shall stop timer T201 (Floor Request); and
6. shall enter 'O: queued' state.

[TS 24.380, clause 7.2.3.8.11]

Upon receipt of an indication from the MCPTT client to request the queue position information, the floor participant:

1. shall send the Floor Queue Position Request message; The Floor Queue Position Request message:
   a. shall include the SSRC of sent Floor Request message in SSRC of floor participant field; and
   b. shall include the own MCPTT User ID in User ID field;
2. shall initialize the counter C204 (Floor Queue Position request) with value set to 1;
3. shall start timer T204 (Floor Queue Position request); and
4. remain in the 'O: queued' state.

[TS 24.380, clause 7.2.3.8.3]

Upon receiving Floor Queue Position Info message, if the <User ID> value in the User ID field matches its own MCPTT ID and SSRC of floor participant sending the Floor Queue Position Info message matches the stored SSRC of current arbitrator, the floor participant:

1. shall update the queue position;
2. shall notify the MCPTT user about the queue position received in the <Queue position info> value in the Queue Info field;
3. shall stop timer T204 (Floor Queue Position request); and
4. shall remain in 'O: queued' state.

Otherwise, if the <User ID> value in the User ID field matches its own MCPTT ID and SSRC of floor participant sending the Floor Queue Position Info message matches the stored SSRC of candidate arbitrator, the floor participant:

1. shall update the queue position;
2. shall set the stored SSRC of the current arbitrator to the SSRC of the floor control server as received in the Floor Queue Position Info message;
3. shall clear the stored SSRC of the candidate arbitrator;
4. shall notify the MCPTT user about the queue position received in the <Queue position info> value in the Queue Info field;
5. shall stop timer T204 (Floor Queue Position request); and
6. shall remain in 'O: queued' state.

[TS 24.380, clause 7.2.3.8.6]

Upon receiving Floor Granted message and if the <User ID> value in the User ID field matches its own MCPTT ID and SSRC of floor participant sending the Floor Granted message matches the stored SSRC of current arbitrator, the floor participant:

1. shall request the MCPTT client to stop rendering received RTP media packets;
2. shall start timer T233(Pending user action), if not running already;
3. shall notify the MCPTT user about of the floor grant;
4. if the Floor Indicator field is included, and the B bit is set to '1' (Broadcast group call), shall provide a notification to the user indicating the type of call; and
5. shall remain in 'O: queued' state.

Otherwise, if the <User ID> value in the User ID field matches its own MCPTT ID and SSRC of floor participant sending the Floor Granted message matches the stored SSRC of candidate arbitrator, the floor participant:

1. shall request the MCPTT client to stop rendering received RTP media packets;
2. shall start timer T233(Pending user action), if not running already;
3. shall notify the MCPTT user about of the floor grant;
4. shall set the stored SSRC of the current arbitrator to its own SSRC;
5. shall clear the stored SSRC of the candidate arbitrator;
6. if the Floor Indicator field is included, and the B bit is set to '1' (Broadcast group call), shall provide a notification to the user indicating the type of call; and
7. shall remain in 'O: queued' state.

[TS 24.380, clause 7.2.3.8.8]

If the floor participant receives an indication from the user that the user wants to send media and the timer T233 (pending user action) is running, the floor participant:

1. shall stop the timer T233 (Pending user action);
2. shall set the stored SSRC of the current floor arbitrator to its own SSRC; and
3. shall enter 'O: has permission' state.

[TS 24.380, clause 7.2.3.5.7]

Upon receiving a Floor Request message which is pre-emptive as determined by subclause 4.1.1.5, the floor participant:

1. shall stop timer T206 (Stop talking warning), if running;
2. shall stop timer T207 (Stop talking), if running;
3. shall request the MCPTT client to stop sending RTP media packets towards other MCPTT clients;
4. shall send a Floor Granted message towards the other floor participants. The Floor Granted message:
    a. shall include the MCPTT ID of the Floor Request message received in the User ID field;
    b. shall include the SSRC of floor participant sending the Floor Request message in the SSRC of floor control server field; and
    c. if the value of "/<x>/<x>/OffNetwork/QueueUsage" leaf node present in the group configuration as specified in 3GPP TS 24.483 [4] is set to "true", for each floor participant in the queue:
        i. shall include the MCPTT ID of the floor participant in the Queued User ID field;
        ii. shall include the SSRC of the floor participant in the SSRC of queued floor participant field;
        iii. shall include the queue position of the floor participant in the Queue Info field; and
        iv. shall include the priority of the floor participant in the Queue Info field;
5. shall start timer T205 (Floor Granted) and shall initiate counter C205 (Floor Granted) to 1;
6. shall set the stored SSRC of the current floor arbitrator to the SSRC of the user to whom the floor was granted in the Floor Granted message; and
7. shall enter the 'O: pending granted' state.

[TS 24.380, clause 7.2.3.6.9]

On expiry of timer T201 (Floor Request) if the counter C201 (Floor Request) has not reached its upper limit, the floor participant:

1. shall send the Floor Request message to other floor participants. The Floor Request message:
    a. if a priority different than the default floor priority is required, shall include the Floor Priority field with the requested priority in the <Floor Priority> element;
    b. shall include the MCPTT ID of the own MCPTT user in the User ID field; and
    c. if the floor request is a broadcast group call, system call, emergency call or an imminent peril call, shall include a Floor Indicator field indicating the relevant call types;
2. shall restart the timer T201 (Floor Request) and increment counter C201 (Floor Request) by 1; and
3. shall remain in the 'O: pending request' state.

[TS 24.380, clause 7.2.3.6.6]

When timer T201 (Floor Request) expires and counter C201 (Floor Request) reaches its upper limit, the floor participant:

1. shall send the Floor Taken message toward the other floor participants. The Floor Taken message:
   a. shall include the floor participant's own SSRC in the SSRC of the granted floor participant field;
   b. shall include the floor participant's own MCPTT ID in the User ID field; and
   c. if the floor request is a broadcast group call, system call, emergency call or an imminent peril call, shall include a Floor Indicator field indicating the relevant call types;
2. shall set the stored SSRC of the current floor arbitrator to its own SSRC;
3. shall stop timer T203 (End of RTP media), if running; and
4. shall enter 'O: has permission' state.

7.1.1.3 Test description

7.1.1.3.1 Pre-test conditions

System Simulator:

- SS-UE1 (MCPTT client)
  - For the underlying "transport bearer" over which the SS and the UE will communicate, the SS is behaving as SS-UE1 as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.
- GNSS simulator to simulate a location and provide a timing reference for the assistance of E-UTRAN off-network testing.

NOTE 1: For operation in off-network environment, it needs be ensured that after the UE is powered up it considers the Geographical area #1 that is simulated by the GNSS simulator as being one of the geographical areas set in the USIM for operation when UE is "not served by E-UTRAN".

- SS-NW (MCPTT server)
  - For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

NOTE 2: The SS operation as NW (MCPTT server) is needed only for the Preamble if the UE has to perform the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.
- For the underlying "transport bearer" over which the SS and the UE will communicate, the UE is behaving as a ProSe enabled UE as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

Preamble:

-- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

- The GNSS simulator is configured to simulate a location in the centre of Geographical area #1 and provide a timing reference, as defined in TS 36.508 [24] Table 4.11.2-2 scenario #1.
- The UE is switched-off.
- UE States at the end of the preamble
  - The UE is in state 'switched-off'.

7.1.1.3.2 Test procedure sequence

Table 7.1.1.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Power up the UE	-	-	-	-
1A	Trigger the UE to reset UTC time and location. NOTE: The UTC time and location reset may be performed by MMI or AT command (+CUTCR).	-	-	-	-
2	Activate the MCPTT Client Application and register User A as the MCPTT User (TS 36.579-5 [5], px_MCPTT_User_A_username, px_MCPTT_User_A_password). (NOTE 1)	-	-	-	-
3	Make the UE (MCPTT Client) initiate an off-network basic group call (NOTE 1)	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT off-network call establishment are described in TS 36.579-1 [2], subclause 5.4.11 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-many communication out of E-UTRA coverage / Monitoring/Discoverer procedure for group member discovery / One-to-many communication'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
4	Check: Does the UE (MCPTT client) send a GROUP CALL PROBE message to determine the current call status of the group? (NOTE 2)	-->	GROUP CALL PROBE	1	P
-	EXCEPTION: Step 5 is executed a total of 3 times				
5	Check: At the expiration of timer TFG3 (call probe retransmission), does the UE (MCPTT Client) send a retransmission of the GROUP CALL PROBE sent in step 4?	-->	GROUP CALL PROBE	1	P
6	Check: At the expiration of timer TFG1 (wait for call announcement), and after receiving no response to the GROUP CALL PROBE, does the UE (MCPTT Client) send a GROUP CALL ANNOUNCEMENT message to initiate an off-network basic group call?	-->	GROUP CALL ANNOUNCEMENT	1	P
7	The SS-UE1 (MCPTT client) sends a GROUP CALL ACCEPT accepting the GROUP CALL ANNOUNCEMENT	<--	GROUP CALL ACCEPT	-	-
8	Check: Does the UE (MCPTT Client) send a Floor Granted message towards the other floor participants?	-->	Floor Granted	2	P
9	Make the UE (MCPTT User) release the floor (NOTE 1), (NOTE 3)	-	-	-	-
10	Check: Does the UE (MCPTT Client) send a Floor Release message to the other floor participants?	-->	Floor Release	2	P
11	Make the UE (MCPTT User) request the floor (NOTE 1), (NOTE 4)	-	-	-	-
12	Check: Does the UE (MCPTT Client) send a Floor Request message to the floor participants?	-->	Floor Request	2	P
13	The SS-UE1 (MCPTT client) sends a Floor Granted message granting the floor to the UE (MCPTT Client)	<--	Floor Granted	-	-
14	The SS-UE1 (MCPTT client), having the same priority as the UE (MCPTT Client), sends a Floor Request message to the UE (MCPTT Client) with the F bit in the Floor Indication field set to '0' indicating that the requesting UE does not support queueing	<--	Floor Request	-	-

15	Check: Does the UE (MCPTT Client) send a Floor Deny message to the sender of the Floor Request message with the Reject Cause field set to #1 (Another MCPTT client has permission)?	-->	Floor Deny	2	P
16	The SS-UE1 (MCPTT client), having the same priority as the UE (MCPTT Client), sends a Floor Request message to the UE (MCPTT Client) with the F bit in the Floor Indication field set to '1'	<--	Floor Request	-	-
17	Check: Does the UE (MCPTT Client) add the requester to the queue and send a Floor Queue Position Info message to the sender of the Floor Request message?	-->	Floor Queue Position Info	2	P
18	The SS-UE1 (MCPTT client) sends a Floor Queue Position Request message to the UE (MCPTT Client)	<--	Floor Queue Position Request	-	-
19	Check: Does the UE (MCPTT Client) respond to the Floor Queue Position Request message with e a Floor Queue Position Info message?	-->	Floor Queue Position Info	2	P
20	Make the UE (MCPTT User) release the floor (NOTE 1), (NOTE 5)	-	-	-	-
21	Check: Does the UE (MCPTT Client) send a Floor Granted message to the floor participants indicating the queued participant now has the floor? (NOTE 6)	-->	Floor Granted	2	P
-	EXCEPTION: Step 22 is executed a total of 3 times	-	-	-	-
22	Check: Upon expiry of timer T205 (Floor Granted) and while counter C205 (Floor Granted) is less than its maximum value, does the UE (MCPTT Client) retransmit the Floor Granted message send in step 21?	-->	Floor Granted	2	P
23	Void	-	-	2	P
24	The SS-UE1 (MCPTT client) sends a Floor Taken message to the UE (MCPTT Client)	<--	Floor Taken	-	-
25	Make the UE (MCPTT User) request the floor (NOTE 1)	-	-	-	-
26	Check: Does the UE (MCPTT Client) send a Floor Request message to the floor participants?	-->	Floor Request	2	P
27	The SS-UE1 (MCPTT client) responds with a Floor Deny message	<--	Floor Deny	-	-
28	Make the UE (MCPTT User) request the floor (NOTE 1)	-	-	-	-
29	Check: Does the UE (MCPTT Client) send a Floor Request message to the floor participants?	-->	Floor Request	2	P
30	The SS-UE1 (MCPTT client) responds with a Floor Queue Position Info message and places the UE (MCPTT Client) in the queue	<--	Floor Queue Position Info	-	-
31	Make the UE (MCPTT User) request the queue position of the UE (MCPTT Client) (NOTE 1)	-	-	-	-
32	Check: Does the UE (MCPTT Client) send a Floor Queue Position Request message?	-->	Floor Queue Position Request	2	P
33	The SS-UE1 (MCPTT client) responds with a Floor Queue Position Info message	<--	Floor Queue Position Info	-	-
34	The SS-UE1 (MCPTT client) sends a Floor Granted message to the UE (MCPTT Client) granting the floor to the UE (MCPTT Client)	<--	Floor Granted	-	-
35	Check: Does the UE (MCPTT Client) notify the user (MCPTT User) of the floor grant? (NOTE 1)	-	-	2	P

36	Make the UE (MCPTT User) accept the floor grant (NOTE 1)	-	-	-	-
37	The SS-UE1 (MCPTT client), with a higher priority than the UE (MCPTT Client), sends a Floor Request message with preemption	<--	Floor Request	-	-
38	Check: Does the UE (MCPTT Client) respond by sending a Floor Granted message? (NOTE 6)	-->	Floor Granted	2	P
-	EXCEPTION: Step 39 is executed a total of 3 times	-	-	-	-
39	Check: Upon expiry of timer T205 (Floor Granted) and while counter C205 (Floor Granted) is less than its maximum value, does the UE (MCPTT Client) retransmit the Floor Granted message send in step 38?	-->	Floor Granted	2	P
40	Void	-	-	2	P
41	Make the UE (MCPTT User) request the floor (NOTE 1)	-	-	-	-
42	Check: Does the UE (MCPTT Client) send a Floor Request message to the floor participants? (NOTE 7)	-->	Floor Request	2	P
-	EXCEPTION: Step 43 is executed a total of 2 times	-	-	-	-
43	Check: Upon expiry of timer T201 (Floor Request) and while counter C201 (Floor Request) is less than its maximum value, does the UE (MCPTT Client) retransmit the Floor Request message send in step 42?	-->	Floor Request	2	P
44	Check: Upon expiry of timer T201 (Floor Request) and with counter C201 (Floor Request) equal to its maximum value, does the UE (MCPTT Client) send a Floor Taken message?	-->	Floor Taken	2	P
45	Make the UE (MCPTT User) release the floor (NOTE 1)	-	-	-	-
46	Check: Does the UE (MCPTT Client) send a Floor Release message to the other floor participants?	-->	Floor Release	2	P
47	Make the UE (MCPTT Client) upgrade the off-network group call to an emergency call (NOTE 1)	-	-	-	-
48	Check: Does the UE (MCPTT Client) send a GROUP CALL ANNOUNCEMENT to upgrade the call to an emergency call?	-->	GROUP CALL ANNOUNCEMENT	3	P
49	Check: Does the UE (MCPTT Client) send a Floor Granted message towards the other floor participants?	-->	Floor Granted	4	P
50	Make the UE (MCPTT User) release the floor (NOTE 1)	-	-	-	-
51	Check: Does the UE (MCPTT Client) send a Floor Release message to the other floor participants?	-->	Floor Release	4	P
52	Make the UE (MCPTT Client) downgrade the off-network group call from an emergency call (NOTE 1)	-	-	-	-
53	Check: Does the UE (MCPTT Client) send a GROUP CALL EMERGENCY END to downgrade the emergency call?	-->	GROUP CALL EMERGENCY END	5	P
54	Make the UE (MCPTT Client) upgrade the off-network group call to an imminent peril call (NOTE 1)				
55	Check: Does the UE (MCPTT Client) send a GROUP CLL ANNOUNCEMENT to upgrade the call to an imminent peril call?	-->	GROUP CALL ANNOUNCEMENT	6	P

56	Check: Does the UE (MCPTT Client) send a Floor Granted message towards the other floor participants?	-->	Floor Granted	7	P
57	Make the UE (MCPTT User) release the floor (NOTE 1)	-	-	-	-
58	Check: Does the UE (MCPTT Client) send a Floor Release message to the other floor participants?	-->	Floor Release	7	P
59	Make the UE (MCPTT Client) downgrade the off-network group call from an imminent peril call (NOTE 1)	-	-	-	-
60	Check: Does the UE (MCPTT Client) send a GROUP CALL IMMINENT PERIL END to downgrade the imminent peril call?	-->	GROUP CALL IMMINENT PERIL END	8	P
61	Make the UE (MCPTT Client) release the group call (NOTE 1)	-	-	-	-

NOTE 1: This is expected to be done via a suitable implementation dependent MMI.
NOTE 2: Timer TFG3 (call probe retransmission)=40ms as defined in TS 36.579-1 [2], Table 5.5.8.1-1 and TFG1 (wait for call announcement)=150ms as defined in TS 36.579-1 [2], Table 5.5.8.1-1 are started upon the sending of the GROUP CALL PROBE message
NOTE 3: If the MCPTT User does not release the floor before timer T207 (Stop talking) expires, then the MCPTT Client will enter the 'O: silence' state per TS 24.380 [10] and the remaining steps will not be valid. Timer T206 (Stop talking warning) is started upon the sending of the Floor Granted message. Timer T207 (Stop talking) starts upon the expiration of Timer T206 (Stop talking warning). Timer T206 (Stop talking warning)=10s is set to TransmitTimeout=60s, as defined in TS 36.579-1 [2], Table 5.5.8.4-1, minus TransmissionWarning=50s, as defined in TS 36.579-1 [2], Table 5.5.8.4-1. Timer T207 (Stop talking)=50s is set to TransmissionWarning=50s, as defined in TS 36.579-1 [2], Table 5.5.8.4-1. If during test execution it is found that the specified timer(s) value(s) are not large enough, then new value(s) need to be specified.
NOTE 4: If the MCPTT User does not perform an action before timer T230 (Inactivity) expires, then the MCPTT Client will enter the 'O: 'Start-stop" state per 24.380 [10] and the remaining steps will not be valid. Timer T230 (Inactivity) is started upon the sending of the Floor Release message. Timer T230 (Inactivity)=10s, as defined in TS 36.579-1 [2], Table 5.5.8.1-1. If during test execution it is found that the specified timer value is not large enough, then a new value needs to be specified.
NOTE 5: If the MCPTT User does not release the floor before timer T207 (Stop talking) expires, then the MCPTT Client will enter the 'O: silence' state per 24.380 [10] and the remaining steps will not be valid. Timer T206 (Stop talking warning) is started upon the receiving of the Floor Granted message in step 13. Timer T207 (Stop talking) starts upon the expiration of Timer T206 (Stop talking warning). Timer T206 (Stop talking warning)=10s is set to TransmitTimeout=60s, as defined in TS 36.579-1 [2], Table 5.5.8.4-1, minus TransmissionWarning=50s, as defined in TS 36.579-1 [2], Table 5.5.8.4-1. Timer T207 (Stop talking)=50s is set to TransmissionWarning=50s, as defined in TS 36.579-1 [2], Table 5.5.8.4-1. If during test execution it is found that the specified timer(s) value(s) are not large enough, then new value(s) need to be specified.
NOTE 6: Timer T205 (Floor Granted) and Counter C205 (Floor Granted) are started upon the sending of the Floor Granted message. Timer T205 (Floor Granted)=1s, as defined in TS 36.579-1 [2], Table 5.5.8.1-1. Counter C205 (Floor Granted) is set to 1 and the maximum value of C205 (Floor Granted)=4, as defined in TS 36.579-1 [2], Table 5.5.8.1-1.
NOTE 7: Timer T201 (Floor Request) and Counter C201 (Floor Request) are started upon the sending of the Floor Request message. Timer T201 (Floor Request)=1s, as defined in TS 36.579-1 [2], Table 5.5.8.1-1. Counter 201 (Floor Request) is set to 1 and the maximum value of Counter C201 (Floor Request)=3, as defined in TS 36.579-1 [2], Table 5.5.8.1-1.

7.1.1.3.3 Specific message contents

Table 7.1.1.3.3-1: GROUP CALL ANNOUNCEMENT (step 48, Table 7.1.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.5.2.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call type	"00000011"	Emergency group call	

Table 7.1.1.3.3-2: GROUP CALL ANNOUNCEMENT (step 55, Table 7.1.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.5.2.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call type	"00000100"	Imminent peril group call	

Table 7.1.1.3.3-3: Floor Granted (step 8, Table 7.1.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Duration			
Duration	any allowed value		
Floor priority	"0"		
Floor Indicator			
Floor Indicator	"10000X0000000000"	bit A=1 (Normal call) bit F=X (Queueing supported) any value	

Table 7.1.1.3.3-4: Floor Granted (steps 13, 34, Table 7.1.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	‘1000010000000000’	bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 7.1.1.3.3-5: Floor Granted (steps 21, 22, 38, 39, Table 7.1.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Duration			
Duration	any allowed value	128 sec (an arbitrary value)	
SSRC of granted floor participant	"10000000 11111111 00000000 10000000"	The SSRC of the floor participant being granted the floor, in this case the SSRC of MCPTT-client-B	
User ID			
User ID	Px_MCPTT_User_B_ID		
Floor Indicator			
Floor Indicator	"10000X0000000000"	bit A=1 (Normal call) bit F=X (Queueing supported) any value	

Table 7.1.1.3.3-6: Floor Granted (step 49, Table 7.1.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Duration			
Duration	any allowed value	128 sec (an arbitrary value)	
Floor priority	"0"		
Floor Indicator			
Floor Indicator	'00010X0000000000'	bit D=1 (Emergency call) bit F=X (Queueing supported) any value	

Table 7.1.1.3.3-7: Floor Granted (step 56, Table 7.1.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Duration			
Duration	any allowed value	128 sec (an arbitrary value)	
Floor priority	"0"		
Floor Indicator			
Floor Indicator	'00001X0000000000'	bit E=1 (Imminent Peril call) bit F=X (Queueing supported) any value	

Table 7.1.1.3.3-8: Floor Release (steps 10, 46, Table 7.1.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.5-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"10000X0000000000"	bit A=1 (Normal call) bit F=X (Queueing supported) any value	

Table 7.1.1.3.3-9: Floor Release (step 51, Table 7.1.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.5-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'00010X0000000000'	bit D=1 (Emergency call) bit F=X (Queueing supported) any value	

Table 7.1.1.3.3-10: Floor Release (step 58, Table 7.1.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.5-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'00001X0000000000'	bit E=1 (Imminent Peril call) bit F=X (Queueing supported) any value	

Table 7.1.1.3.3-11: Floor Request (steps 12, 26, 29, 42, 43, Table 7.1.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.2-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"10000X0000000000"	bit A=1 (Normal call) bit F=X (Queueing supported) any value	

Table 7.1.1.3.3-12: Floor Request (step 14, Table 7.1.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.2-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	Px_MCPTT_User_B_ID		
Floor Indicator			
Floor Indicator	"10000000000000000"	bit A=1 (Normal call) bit F=0 (Queueing not supported)	

Table 7.1.1.3.3-13: Floor Request (step 16, Table 7.1.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.2-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	Px_MCPTT_User_B_ID		
Floor Indicator			
Floor Indicator	"10000100000000000"	bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 7.1.1.3.3-14: Floor Request (step 37, Table 7.1.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.2-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Priority	"12"	Priority is higher than mcptt-client-A	
User ID			
User ID	Px_MCPTT_User_B_ID		
Floor Indicator			
Floor Indicator	"10000100000000000"	bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 7.1.1.3.3-15: Floor Deny (step 15, Table 7.1.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.4-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Reject Cause			
Reject Cause	any allowed value		
Reject Phrase	not present or any allowed value		
User ID			
User ID	Px_MCPTT_User_B_ID		
Floor Indicator			
Floor Indicator	"10000X0000000000"	bit A=1 (Normal call) bit F=X (Queueing supported) any value	

Table 7.1.1.3.3-16: Floor Deny (step 27, Table 7.1.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.4-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"10000100000000000"	bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 7.1.1.3.3-17: Floor Queue Position Info (steps 17, 19, Table 7.1.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.10-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	Px_MCPTT_User_A_ID		
Queued User ID			
Queued User ID	Px_MCPTT_User_B_ID		
Queue Info			
Queue Position Info	"1"		
Queue Priority Level	any allowed value		
Floor Indicator			
Floor Indicator	"10000X0000000000"	bit A=1 (Normal call) bit F=X (Queueing supported) any value	

Table 7.1.1.3.3-18: Floor Queue Position Info (steps 30, 33, Table 7.1.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.10-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	Px_MCPTT_User_B_ID		
Queued User ID			
Queued User ID	Px_MCPTT_User_A_ID		
Queue Info			
Queue Position Info	"1"		
Queue Priority Level	"0"		
Floor Indicator			
Floor Indicator	‘1000010000000000’	bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 7.1.1.3.3-19: Floor Queue Position Request (step 18, Table 7.1.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.9-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	Px_MCPTT_User_B_ID		

Table 7.1.1.3.3-20: Floor Taken (step 24, Table 7.1.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.7-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	Px_MCPTT_User_B_ID		
Granted Party's Identity			
Granted Party's Identity	Px_MCPTT_User_B_ID		
Floor Indicator			
Floor Indicator	'1000010000000000'	bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 7.1.1.3.3-21: Floor Taken (step 44, Table 7.1.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.7-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Granted Party's Identity			
Granted Party's Identity	Px_MCPTT_User_A_ID		
Floor Indicator			
Floor Indicator	"10000X0000000000"	bit A=1 (Normal call) bit F=X (Queueing supported) any value	
SSRC of granted floor participant	"10000000 11111111 00000000 00000001"		

7.1.2 Off-network / Group Call / Floor Control / Upgrade to Emergency Call / Downgrade from Emergency / Upgrade to Imminent Peril / Downgrade from Imminent Peril / Release Call / Client Terminated (CT)

7.1.2.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service, including authorised to
receive group calls in off-network environment, and the UE configured that user acknowledgement is
not required, and the UE (MCPTT Client) is in an off-network environment }
ensure that {
  when { UE (MCPTT Client) receives a GROUP CALL ANNOUNCEMENT message with Confirm mode indication
present }
    then { UE (MCPTT Client) enters the "S3: part of ongoing call" state and sends a GROUP CALL
ACCEPT message}
            }
```

(2)

```
with { UE (MCPTT Client) being in an off-network MCPTT Pre-arranged Group Call }
ensure that {
  when { the MCPTT User (MCPTT Client) engages in communication with the invited MCPTT User(s) }
```

```
    then { UE (MCPTT Client) respects the floor control imposed by the floor control
entity/arbitrator (Floor Request during a talk burst, Floor granting/release, Floor idle, Floor
deny, Floor taken/revoked, Floor request queued and queue handling) }
            }
```

(3)

```
with { UE (MCPTT Client) being in an upgraded off-network emergency group call }
ensure that {
  when { the MCPTT User (MCPTT Client) continues communication with the invited MCPTT User(s) }
    then { UE (MCPTT Client) respects the floor control imposed by the floor control
entity/arbitrator }
            }
```

(4)

```
with { UE (MCPTT Client) being in an upgraded off-network imminent peril group call }
ensure that {
  when { the MCPTT User (MCPTT Client) continues communication with the invited MCPTT User(s) }
    then { UE (MCPTT Client) respects the floor control imposed by the floor control
entity/arbitrator }
            }
```

7.1.2.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.379 clauses 10.2.2.4.3.3, 10.2.3.4.5, 10.2.3.4.7.2, 10.2.3.4.8.3, 10.2.3.4.8.6, 10.2.2.4.5.4, TS 24.380 clauses 7.2.3.2.7, 7.2.3.5.5, 7.2.3.3.2, 7.2.3.6.7, 7.2.3.5.4, 7.2.3.5.8, 7.2.3.5.6, 7.2.3.7.3, 7.2.3.7.5, 7.2.3.3.4, 7.2.3.4.3, 7.2.3.3.6, 7.2.3.4.2, 7.2.3.6.4, 7.2.3.6.3, 7.2.3.8.11, 7.2.3.8.3, 7.2.3.8.6, 7.2.3.5.7, 7.2.3.6.9, 7.2.3.6.6. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 10.2.2.4.3.3]

When in the "S1: start-stop" state, upon receiving a GROUP CALL ANNOUNCEMENT message with the MCPTT group ID IE not matching MCPTT group ID of the call stored for other state machines, the MCPTT client:

1) shall store the value of the SDP IE of the GROUP CALL ANNOUNCEMENT message as the SDP body of the call;

2) shall store the value of the Call identifier IE of the GROUP CALL ANNOUNCEMENT message as the call identifier of the call;

3) shall store the value of the Originating MCPTT user ID IE of the GROUP CALL ANNOUNCEMENT message as the originating MCPTT user ID of the call;

4) shall store the value of the Refresh interval IE of the GROUP CALL ANNOUNCEMENT message as the refresh interval of the call;

5) shall store the value of the MCPTT group ID IE of the GROUP CALL ANNOUNCEMENT message as the MCPTT group ID of the call;

6) shall store the value of the Call start time IE of the GROUP CALL ANNOUNCEMENT message as the call start time of the call;

7) shall create a call type control state machine as described in subclause 10.2.3.2;

…

9) if the terminating UE is configured that the terminating MCPTT user acknowledgement is not required upon a terminating call request reception:

   a) shall establish a media session based on the stored SDP body of the call;

   b) shall start floor control as terminating floor participant as specified in subclause 7.2 in 3GPP TS 24.380 [5];

   c) if the GROUP CALL ANNOUNCEMENT message contains the Confirm mode indication IE:

      i) shall generate a GROUP CALL ACCEPT message as specified in subclause 15.1.4. In the GROUP CALL ACCEPT message, the MCPTT client:

A) shall set the Call identifier IE to the stored call identifier of the call;

B) shall set the Sending MCPTT user ID IE to own MCPTT user id;

C) shall set the Call type IE to the stored current call type associated with the call type control state machine; and

D) shall set the MCPTT group ID IE to the stored MCPTT group ID of the call; and

ii) shall send the GROUP CALL ACCEPT message as specified in subclause 10.2.1.1.1;

d) shall start timer TFG6 (max duration) with value as specified in subclause 10.2.2.4.1.2;

e) shall start timer TFG2 (call announcement) with value as specified in subclause 10.2.2.4.1.1.1; and

f) shall enter the "S3: part of ongoing call" state.

[TS 24.379, clause 10.2.3.4.5]

When in the "T0: waiting for the call to establish" state, upon receipt of a GROUP CALL ANNOUNCEMENT message by an idle MCPTT client when MCPTT user acknowledgement is not required, the MCPTT client:

1) shall set the stored last call type change time to the Last call type change time IE of the GROUP CALL ANNOUNCEMENT message;

2) shall set the last user to change call type to the Last user to change call type IE of the GROUP CALL ANNOUNCEMENT message;

3) if the Call type IE of the received GROUP CALL ANNOUNCEMENT message is set to "EMERGENCY GROUP CALL":

   a) shall set the stored current call type to "EMERGENCY GROUP CALL";

   b) shall set the stored current ProSe per-packet priority to value corresponding to MCPTT off-network emergency group call as described in 3GPP TS 24.383 [45];

   c) shall start timer TFG13 (implicit downgrade emergency) with value as specified in subclause 10.2.3.4.1.1; and

   d) shall enter "T1: in-progress emergency group call" state;

4) if the Call type IE of the received GROUP CALL ANNOUNCEMENT message is set to "IMMINENT PERIL GROUP CALL":

   a) shall set the stored current call type to "IMMINENT PERIL GROUP CALL";

   b) shall set the stored current ProSe per-packet priority to value corresponding to MCPTT off-network imminent peril group call as described in3GPP TS 24.383 [45];

   c) shall start timer TFG14 (implicit downgrade imminent peril) with value as specified in subclause 10.2.3.4.1.2; and

   d) shall enter "T3: in-progress imminent peril group call" state; and

5) if the Call type IE of the received GROUP CALL ANNOUNCEMENT message is set to "BASIC GROUP CALL":

   a) shall set the stored current call type to "BASIC GROUP CALL";

   b) shall set the stored current ProSe per-packet priority to value corresponding to MCPTT off-network basic group call as described in 3GPP TS 24.383 [45]; and

   c) shall enter "T2: in-progress basic group call" state.

[TS 24.379, clause 10.2.3.4.7.2]

When in the "T1: in-progress emergency group call" state or "T2: in-progress basic group call" state or "T3: in-progress imminent peril group call" state, upon receiving a GROUP CALL ANNOUNCEMENT message with the MCPTT group ID IE matching with MCPTT group ID of the ongoing call and the Call Identifier IE being the same as the stored call identifier of the call, the MCPTT client:

1) if the stored last user to change call type of the call is same as the Last user to change call type IE of the GROUP CALL ANNOUNCEMENT message and the stored last call type change time is smaller than Last call type change time IE of the GROUP CALL ANNOUNCEMENT message:

   a) shall set the stored last call type change time of the call to Last call type change time IE of the GROUP CALL ANNOUNCEMENT message;

   b) if the Call type IE of the received GROUP CALL ANNOUNCEMENT message is set to "EMERGENCY GROUP CALL" and the stored call type is other than "EMERGENCY GROUP CALL":

      i) shall set the stored current call type to "EMERGENCY GROUP CALL";

      ii) shall set the stored current ProSe per-packet priority to value corresponding to MCPTT off-network emergency group call as described in 3GPP TS 24.383 [45];

      iii) shall stop timer TFG14 (implicit downgrade imminent peril), if running;

      iv) shall start timer TFG13 (implicit downgrade emergency) with value as specified in subclause 10.2.3.4.1.1; and

      v) shall enter "T1: in-progress emergency group call" state;

   c) if the Call type IE of the received GROUP CALL ANNOUNCEMENT message is set to "IMMINENT PERIL GROUP CALL" and the stored call type is other than "IMMINENT PERIL GROUP CALL":

      i) shall set the stored current call type to "IMMINENT PERIL GROUP CALL";

      ii) shall set the stored current ProSe per-packet priority to value corresponding to MCPTT off-network imminent peril group call as described in 3GPP TS 24.383 [45];

      iii) shall stop timer TFG13 (implicit downgrade emergency), if running;

      iv) shall start timer TFG14 (implicit downgrade imminent peril) with value as specified in subclause 10.2.3.4.1.2; and

      v) shall enter "T3: in-progress imminent peril group call" state; and

   d) if the Call type IE of the received GROUP CALL ANNOUNCEMENT message is set to "BASIC GROUP CALL" and the stored call type is other than "BASIC GROUP CALL":

      i) shall set the stored current call type to "BASIC GROUP CALL";

      ii) shall set the stored current ProSe per-packet priority to value corresponding to MCPTT off-network basic group call as described in 3GPP TS 24.383 [45];

      iii) shall stop timer TFG13 (implicit downgrade emergency), if running;

      iv) shall stop timer TFG14 (implicit downgrade imminent peril), if running; and

      v) shall enter "T2: in-progress basic group call" state; and

2) if the stored last user to change call type of the call is different from the Last user to change call type IE of the GROUP CALL ANNOUNCEMENT message and:

   a) if the stored call type is same as Call type IE in the received GROUP CALL ANNOUNCEMENT message and the stored last call type change time is smaller than Last call type change time IE of the GROUP CALL ANNOUNCEMENT message:

      i) shall set the stored last call type change time of the call to Last call type change time IE of the GROUP CALL ANNOUNCEMENT message; and

ii) shall set the stored last user to change call type of the call to Last user to change call type IE of the GROUP CALL ANNOUNCEMENT message;

b) if the Call type IE of the received GROUP CALL ANNOUNCEMENT message is set to "EMERGENCY GROUP CALL" and the stored call type is other than "EMERGENCY GROUP CALL":

i) shall set the stored last call type change time of the call to Last call type change time IE of the GROUP CALL ANNOUNCEMENT message;

ii) shall set the stored last user to change call type of the call to Last user to change call type IE of the GROUP CALL ANNOUNCEMENT message;

iii) shall set the stored current call type to "EMERGENCY GROUP CALL";

iv) shall set the stored current ProSe per-packet priority to value corresponding to MCPTT off-network emergency group call as described in 3GPP TS 24.383 [45];

v) shall stop timer TFG14 (implicit downgrade imminent peril), if running;

vi) shall start timer TFG13 (implicit downgrade emergency) with value as specified in subclause 10.2.3.4.1.1; and

vii) shall enter "T1: in-progress emergency group call" state; and

c) if the Call type IE of the received GROUP CALL ANNOUNCEMENT message is set to "IMMINENT PERIL GROUP CALL" and the stored call type is "BASIC GROUP CALL":

i) shall set the stored last call type change time of the call to Last call type change time IE of the GROUP CALL ANNOUNCEMENT message;

ii) shall set the stored last user to change call type of the call to Last user to change call type IE of the GROUP CALL ANNOUNCEMENT message;

iii) shall set the stored current call type to "IMMINENT PERIL GROUP CALL ";

iv) shall set the stored current ProSe per-packet priority to value corresponding to MCPTT off-network imminent peril group call as described in 3GPP TS 24.383 [45];

v) shall start timer TFG14 (implicit downgrade imminent peril) with value as specified in subclause 10.2.3.4.1.2; and

vi) shall enter "T3: in-progress imminent peril group call" state; and

d) if the Call type IE of the received GROUP CALL ANNOUNCEMENT message is set to "BASIC GROUP CALL" and the stored call type is other than "BASIC GROUP CALL":

i) shall set the stored current call type to "BASIC GROUP CALL";

ii) shall set the stored current ProSe per-packet priority to value corresponding to MCPTT off-network basic group call as described in 3GPP TS 24.483 [45];

iii) shall stop timer TFG13 (implicit downgrade emergency), if running;

iv) shall stop timer TFG14 (implicit downgrade imminent peril), if running; and

v) shall enter "T2: in-progress basic group call" state.

[TS 24.379, clause 10.2.3.4.8.3]

When in the "T1: in-progress emergency group call" state, upon receiving GROUP CALL EMERGENCY END message, the MCPTT client:

1) shall set the stored last call type change time to the Last call type change time IE of the received GROUP CALL EMERGENCY END message;

2) shall set the stored last user to change call type to the Last user to change call type IE of the received GROUP CALL EMERGENCY END message;

3) shall set the stored current call type to "BASIC GROUP CALL";

4) shall set the stored current ProSe per-packet priority to value corresponding to MCPTT off-network basic group call as described in 3GPP TS 24.383 [45];

5) shall stop timer TFG13 (implicit downgrade emergency); and

6) shall enter the "T2: in-progress basic group call" state.

[TS 24.379, clause 10.2.3.4.8.6]

When in the "T3: in-progress imminent peril group call" state, upon receiving GROUP CALL IMMINENT PERIL END message, the MCPTT client:

1) shall set the stored last call type change time to the Last call type change time IE of the received GROUP CALL IMMINENT PERIL END message;

2) shall set the stored last user to change call type to the Last user to change call type IE of the received GROUP CALL IMMINENT PERIL END message;

3) shall set the stored current call type to "BASIC GROUP CALL";

4) shall set the stored current ProSe per-packet priority to value corresponding to MCPTT off-network basic group call as described in 3GPP TS 24.383 [45];

5) shall stop timer TFG14 (implicit downgrade imminent peril); and

6) shall enter the "T2: in-progress basic group call" state.

[TS 24.379, clause 10.2.2.4.5.4]

When in the "S6: ignoring incoming call announcements" state, upon expiration of timer TFG5 (not present incoming call announcements), the MCPTT client:

1) shall release the stored SDP body of the call;

2) shall release the stored call identifier of the call;

3) shall release the stored originating MCPTT user ID of the call;

4) shall release the stored refresh interval of the call;

5) shall release the stored MCPTT group ID of the call;

6) shall release the call start time of the call;

7) shall destroy the call type control state machine as specified in subclause 10.2.3.4.10 or 10.2.3.4.11; and

8) shall enter the "S1: start-stop" state.

[TS 24.380, clause 7.2.3.2.7]

When a Floor Granted message is received and if the User ID in the Floor Granted message does not match its own User ID, the floor participant:

1. shall create an instance of a floor participant state transition diagram for basic operation state machine;

2. may provide a floor taken notification to the MCPTT user;

3. shall set the stored SSRC of the candidate arbitrator to the SSRC of user to whom the floor was granted in the Floor Granted message;

4. shall start timer T203 (End of RTP media); and

5. shall enter 'O: has no permission' state.

[TS 24.380, clause 7.2.3.5.5]

Upon receiving an indication from the MCPTT user to release permission to send RTP media, the floor participant:

1. shall stop timer T206 (Stop talking warning), if running;
2. shall stop timer T207 (Stop talking), if running;
3. shall send a Floor Release message towards other floor participants, if no queued requests exist: The Floor Release message:
    a. shall include the MCPTT ID of the MCPTT user in the User ID field; and
    b. if the session is not initiated as a broadcast group call with the B-bit set to '1' (Broadcast group call), shall include a Floor Indicator field set to '0' (normal call);
4. shall start timer T230 (Inactivity);
5. shall clear the stored SSRC of the current arbitrator; and
6. shall enter 'O: silence' state.

[TS 24.380, clause 7.2.3.3.2]

If the floor participant receives an indication from the MCPTT user to send media, the floor participant:

1. shall send the Floor Request message to other floor participants. The Floor Request message:
    a. if a priority different than the default floor priority is required, shall include the Floor Priority field with the requested priority in the <Floor Priority> element;
    b. shall include the MCPTT ID of the MCPTT user in the <User ID> value of the User ID field; and
    c. if the floor request is a broadcast group call, system call, emergency call or an imminent peril call, shall include a Floor Indicator field indicating the relevant call types;
2. shall initialize the counter C201 (Floor request) with value set to 1;
3. shall stop timer T230 (Inactivity);
4. shall start timer T201 (Floor Request); and
5. shall enter 'O: pending request' state.

[TS 24.380, clause 7.2.3.6.7]

Upon receiving Floor Granted message and if the <User ID> value in the User ID field matches its own MCPTT ID and SSRC of floor participant sending the Floor Granted message matches the stored SSRC of current arbitrator, the floor participant:

1. shall request the MCPTT client to stop rendering received RTP media packets;
2. shall set the stored SSRC of the current floor arbitrator to its own SSRC;
3. shall stop timer T203 (End of RTP media), if running;
4. shall stop timer T201 (Floor Request);
5. may provide a floor granted notification to the MCPTT user;
6. if the Floor Indicator field is included and the B bit is set to '1' (Broadcast group call), shall provide a notification to the user indicating the type of call; and
7. shall enter 'O: has permission' state.

Otherwise, if the <User ID> value in the User ID field matches its own MCPTT ID and there is no stored SSRC of the current arbitrator, the floor participant:

1. shall set the stored SSRC of the current arbitrator to its own SSRC;

2. shall stop timer T203 (End of RTP media);
3. shall stop timer T201 (Floor Request);
4. may provide a floor granted notification to the MCPTT user;
5. if the Floor Indicator field is included and the B bit is set to '1' (Broadcast group call), shall provide a notification to the user indicating the type of call; and
6. shall enter 'O: has permission' state.

Otherwise, if the <User ID> value in the User ID field matches its own MCPTT ID and SSRC of floor participant sending the Floor Granted message matches the stored SSRC of candidate arbitrator, the floor participant:

1. shall set the stored SSRC of the current arbitrator to its own SSRC;
2. shall stop timer T203 (End of RTP media);
3. shall stop timer T201 (Floor Request);
4. may provide a floor granted notification to the MCPTT user;
5. shall clear the stored SSRC of the candidate arbitrator;
6. if the Floor Indicator field is included and the B bit is set to '1' (Broadcast group call), shall provide a notification to the user indicating the type of call; and
7. shall enter 'O: has permission' state.

[TS 24.380, clause 7.2.3.5.4]

Upon receiving a Floor Request message which is not pre-emptive as determined by subclause 4.1.1.5, in a session where:

1. the value of "/<x>/<x>/OffNetwork/QueueUsage" leaf node present in the group configuration as specified in 3GPP TS 24.383 [4] is set to "false"; or
2. the value of "/<x>/<x>/OffNetwork/QueueUsage" leaf node present in the group configuration as specified in 3GPP TS 24.383 [4] is set to "true" but the F-bit in the Floor Indicator field is set to '0' (i.e. indicating that queuing of floor requests is not supported) or the Floor Indicator field is not included in the Floor Request message;

then the floor participant:

1. shall send the Floor Deny message. The Floor Deny message:
   a. shall include in the Reject Cause field the <Reject Cause> value cause #1 (Another MCPTT client has permission);
   b. may include in the Reject Cause field an additional text string explaining the reason for rejecting the floor request in the <Reject Phrase> value; and
   c. shall include the User ID field received in the Floor Request message; and
2. shall remain in 'O: has permission' state.

Upon receiving a Floor Request message which is not pre-emptive as determined by subclause 4.1.1.5, and the value of "/<x>/<x>/OffNetwork/QueueUsage" leaf node present in the group configuration as specified in 3GPP TS 24.383 [4] is set to "true" and the F-bit in the Floor Indicator field is set to '1' (i.e. indicating that queuing of the floor requests is supported) in the Floor Request message, the floor participant:

1. shall store the received Floor Request messages;
2. if the pending request queue is not full, shall send the Floor Queue Position Info message. The Floor Queue Position Info message:
   a. shall include in the User ID field the MCPTT ID of the floor participant sending the Floor Request message;

b. shall include the SSRC of the floor participant in the SSRC of queued floor participant field;

c. shall include the position in the floor request queue in the Queue Info field; and

d. shall include the floor priority in the Queue Info field;

3. if the pending request queue is full, shall send the Floor Deny message. The Floor Deny message:

a. shall include in the Reject Cause field the <Reject Cause> value cause #7 (Queue full);

b. may include in the Reject Cause field an additional text string explaining the reason for rejecting the floor request in the <Reject Phrase> value; and

c. shall include the User ID field received in the Floor Request message; and

4. shall remain in 'O: has permission' state.

[TS 24.380, clause 7.2.3.5.8]

Upon receiving a Floor Queue Position Request message, the floor participant:

1. shall send the Floor Queue Position Info message. The Floor Queue Position Info message:

a. shall include the MCPTT ID of the queued floor participant in the Queued User ID field;

b. shall include the queue position and floor priority in the Queue Info field;

c. shall include the SSRC of floor participant sending Floor Queue Position Request message in SSRC of queue floor participant field; and

d. shall include the User ID of floor participant sending Floor Queue Position Request message in User ID field; and

2. remain in the 'O: has permission' state.

[TS 24.380, clause 7.2.3.5.6]

When no more encoded media is received from the user and if at least one Floor Request message is stored (i.e. queuing mode is used in the session), the floor participant:

1. shall stop timer T206 (Stop talking warning), if running;

2. shall stop timer T207 (Stop talking), if running;

3. shall request the MCPTT client to stop sending RTP media packets towards other MCPTT clients;

4. shall send the Floor Granted message toward the other floor participants. The Floor Granted message:

a. shall include the MCPTT ID of the first floor participant in the queue in the User ID field;

b. shall include the SSRC of the first floor participant in the queue in the SSRC of the granted floor participant field;

c. shall remove the first floor participant from the queue;

d for the remaining floor participants in the queue:

i. shall include the MCPTT ID of the floor participant in the Queued User ID field;

ii. shall include the SSRC of the floor participant in the SSRC of queued floor participant field;

iii. shall include the queue position of the floor participant in the Queue Info field; and

iv. shall include the priority of the floor participant in the Queue Info field; and

e. if the floor request is a broadcast group call, system call, emergency call or an imminent peril call, shall include a Floor Indicator field indicating the relevant call types;

5. shall set the stored SSRC of the current arbitrator to the SSRC of user to whom the floor was granted in the Floor Granted message;

6. shall start timer T205 (Floor Granted) and shall initiate counter C205 (Floor Granted) to 1; and

7 shall enter the 'O: pending granted' state.

[TS 24.380, clause 7.2.3.7.3]

On expiry of timer T205 (Floor Granted) and counter C205 (Floor Granted) is less than the upper limit, the floor participant:

1. shall send again the Floor Granted message toward the other floor participants. For each participant in the queue the Floor Granted message:

   a. shall include the MCPTT ID of the floor participant in the Queued User ID field;

   b. shall include the SSRC of the floor participant in the SSRC of queued floor participant field;

   c. shall include the queue position of the floor participant in the Queue Info field; and

   d. shall include the priority of the floor participant in the Queue Info field;

2. shall restart timer T205 (Floor Granted) and shall increment counter C205 (Floor Granted) by 1; and

3. shall remain in 'O: pending granted' state.

[TS 24.380, clause 7.2.3.7.5]

On the expiry of timer T205 (Floor Granted) for the configured upper limit of counter C205 (Floor Granted) with no request pending in the queue, the floor participant:

1. shall reset the value of counter C205 (Floor Granted) to 1;

2. shall start timer T230 (Inactivity);

3. shall clear the stored SSRC of the current arbitrator; and

4. shall enter 'O: silence' state.

[TS 24.380, clause 7.2.3.3.4]

When a Floor Granted message is received and if the User ID in the Floor Granted message does not match its own User ID, the floor participant:

1. may provide a floor taken notification to the MCPTT user;

2. if the Floor Indicator field is included and the B-bit is set to '1' (Broadcast group call), shall provide a notification to the user indicating that this is a broadcast group call;

3. shall set the stored SSRC of the candidate arbitrator to the SSRC of user to whom the floor was granted in the Floor Granted message;

4. shall stop timer T230 (Inactivity);

5. shall start timer T203 (End of RTP media); and

6. shall enter 'O: has no permission' state.

[TS 24.380, clause 7.2.3.4.3]

When a Floor Release message is received and if the SSRC in the Floor Release message matches with the stored SSRC of the current arbitrator or with the stored SSRC of the candidate arbitrator, the floor participant:

1. may provide floor idle notification to the MCPTT user.

2. shall request the MCPTT client to stop rendering received RTP media packets;

3. shall stop timer T203 (End of RTP media);
4. shall start timer T230 (Inactivity);
5. shall clear the stored SSRC of the candidate arbitrator;
6. shall clear the stored SSRC of the current arbitrator; and
7. shall enter 'O: silence' state;

[TS 24.380, clause 7.2.3.3.6]

When a Floor Taken message is received, the floor participant:

1. may provide a floor taken notification to the MCPTT user;
2. shall set the stored SSRC of the current arbitrator to the SSRC of granted floor participant field in the Floor Taken message;
3. shall stop timer T230 (Inactivity);
4. shall start timer T203 (End of RTP media); and
5. shall enter 'O: has no permission' state.

[TS 24.380, clause 7.2.3.4.2]

If the floor participant receives an indication from the MCPTT user that the MCPTT user wants to send media, the floor participant:

1. shall send the Floor Request message to other clients. The Floor Request message:
   a. if a priority different than the default floor priority is required, shall include the Floor Priority field with the requested priority in the <Floor Priority> element;
   b. shall include the MCPTT ID of the MCPTT user in the User ID field; and
   c. if the floor request is a broadcast group call, system call, emergency call or an imminent peril call, shall include a Floor Indicator field indicating the relevant call types;
2. shall initialize the counter C201 (Floor request) with value set to 1;
3. shall start timer T201 (Floor Request); and
4. shall enter 'O: pending request' state.

[TS 24.380, clause 7.2.3.6.4]

Upon receiving Floor Deny message, if the <User ID> value in the User ID field matches its own MCPTT ID and SSRC of floor participant sending the Floor Deny message matches the stored SSRC of current arbitrator, the floor participant:

1. shall stop the timer T201 (Floor Request);
2. shall provide floor deny notification to the user;
3. shall restart the timer T203 (End of RTP media);
4. may display the floor deny reason to the user using information in the Reject Cause field; and
5. shall enter 'O: has no permission' state.

Otherwise, if the <User ID> value in the User ID field matches its own MCPTT ID and there is no stored SSRC of the current arbitrator, the floor participant:

1. shall stop the timer T201 (Floor Request);

2. shall set the stored SSRC of the current arbitrator to the SSRC of the floor control server as received in the Floor Deny message;
3. shall restart the timer T203 (End of RTP media);
4. shall provide floor deny notification to the user;
5. may display the floor deny reason to the user using information in the Reject Cause field; and
6. shall enter 'O: has no permission' state.

Otherwise, if the <User ID> value in the User ID field matches its own MCPTT ID and SSRC of floor participant sending the Floor Deny message matches the stored SSRC of candidate arbitrator, the floor participant:

1. shall stop the timer T201 (Floor Request);
2. shall set the stored SSRC of the current arbitrator to the SSRC of the floor control server as received in the Floor Deny message;
3. shall clear the stored SSRC of the candidate arbitrator;
4. shall restart the timer T203 (End of RTP media);
5. shall provide floor deny notification to the user;
6. may display the floor deny reason to the user using information in the Reject Cause field; and
7. shall enter 'O: has no permission' state.

[TS 24.380, clause 7.2.3.6.3]

Upon receiving Floor Queue Position Info message, if the <User ID> value in the Queued User ID field matches its own MCPTT ID and the value in the SSRC of floor control server field as received in the Floor Queue Position Info message matches the stored SSRC of current arbitrator, the floor participant:

1. shall update the queue status;
2. may notify the MCPTT user about the queue position received in the <Queue position info> value in the Queue Info field;
3. shall stop timer T201 (Floor Request); and
4. shall enter 'O: queued' state.

Otherwise, if the <User ID> value in the Queued User ID field matches its own MCPTT ID and there is no stored SSRC of the current arbitrator, the floor participant:

1. shall update the queue status;
2. shall set the stored SSRC of the current arbitrator to the SSRC of the floor control server as received in the Floor Queue Position Info message;
3. may notify the MCPTT user about the queue position received in the <Queue position info> value in the Queue Info field;
4. shall stop timer T201 (Floor Request); and
5. shall enter 'O: queued' state.

Otherwise, if the <User ID> value in the Queued User ID field matches its own MCPTT ID and the value in the SSRC of floor control server field as received in the Floor Queue Position Info message matches the stored SSRC of candidate arbitrator, the floor participant:

1. shall update the queue status;
2. shall set the stored SSRC of the current arbitrator to the value in the SSRC of the floor control server field as received in the Floor Queue Position Info message;

3. shall clear the stored SSRC of the candidate arbitrator;
4. may notify the MCPTT user about the queue position received in the <Queue position info> value in the Queue Info field;
5. shall stop timer T201 (Floor Request); and
6. shall enter 'O: queued' state.

[TS 24.380, clause 7.2.3.8.11]

Upon receipt of an indication from the MCPTT client to request the queue position information, the floor participant:

1. shall send the Floor Queue Position Request message; The Floor Queue Position Request message:
   a. shall include the SSRC of sent Floor Request message in SSRC of floor participant field; and
   b. shall include the own MCPTT User ID in User ID field;
2. shall initialize the counter C204 (Floor Queue Position request) with value set to 1;
3. shall start timer T204 (Floor Queue Position request); and
4. remain in the 'O: queued' state.

[TS 24.380, clause 7.2.3.8.3]

Upon receiving Floor Queue Position Info message, if the <User ID> value in the User ID field matches its own MCPTT ID and SSRC of floor participant sending the Floor Queue Position Info message matches the stored SSRC of current arbitrator, the floor participant:

1. shall update the queue position;
2. shall notify the MCPTT user about the queue position received in the <Queue position info> value in the Queue Info field;
3. shall stop timer T204 (Floor Queue Position request); and
4. shall remain in 'O: queued' state.

Otherwise, if the <User ID> value in the User ID field matches its own MCPTT ID and SSRC of floor participant sending the Floor Queue Position Info message matches the stored SSRC of candidate arbitrator, the floor participant:

1. shall update the queue position;
2. shall set the stored SSRC of the current arbitrator to the SSRC of the floor control server as received in the Floor Queue Position Info message;
3. shall clear the stored SSRC of the candidate arbitrator;
4. shall notify the MCPTT user about the queue position received in the <Queue position info> value in the Queue Info field;
5. shall stop timer T204 (Floor Queue Position request); and
6. shall remain in 'O: queued' state.

[TS 24.380, clause 7.2.3.8.6]

Upon receiving Floor Granted message and if the <User ID> value in the User ID field matches its own MCPTT ID and SSRC of floor participant sending the Floor Granted message matches the stored SSRC of current arbitrator, the floor participant:

1. shall request the MCPTT client to stop rendering received RTP media packets;
2. shall start timer T233(Pending user action), if not running already;
3. shall notify the MCPTT user about of the floor grant;

4. if the Floor Indicator field is included, and the B bit is set to '1' (Broadcast group call), shall provide a notification to the user indicating the type of call; and

5. shall remain in 'O: queued' state.

Otherwise, if the <User ID> value in the User ID field matches its own MCPTT ID and SSRC of floor participant sending the Floor Granted message matches the stored SSRC of candidate arbitrator, the floor participant:

1. shall request the MCPTT client to stop rendering received RTP media packets;

2. shall start timer T233(Pending user action), if not running already;

3. shall notify the MCPTT user about of the floor grant;

4. shall set the stored SSRC of the current arbitrator to its own SSRC;

5. shall clear the stored SSRC of the candidate arbitrator;

6. if the Floor Indicator field is included, and the B bit is set to '1' (Broadcast group call), shall provide a notification to the user indicating the type of call; and

7. shall remain in 'O: queued' state.

[TS 24.380, clause 7.2.3.8.8]

If the floor participant receives an indication from the user that the user wants to send media and the timer T233 (pending user action) is running, the floor participant:

1. shall stop the timer T233 (Pending user action);

2. shall set the stored SSRC of the current floor arbitrator to its own SSRC; and

3. shall enter 'O: has permission' state.

[TS 24.380, clause 7.2.3.5.7]

Upon receiving a Floor Request message which is pre-emptive as determined by subclause 4.1.1.5, the floor participant:

1. shall stop timer T206 (Stop talking warning), if running;

2. shall stop timer T207 (Stop talking), if running;

3. shall request the MCPTT client to stop sending RTP media packets towards other MCPTT clients;

4. shall send a Floor Granted message towards the other floor participants. The Floor Granted message:

   a. shall include the MCPTT ID of the Floor Request message received in the User ID field;

   b. shall include the SSRC of floor participant sending the Floor Request message in the SSRC of floor control server field; and

   c. if the value of "/<x>/<x>/OffNetwork/QueueUsage" leaf node present in the group configuration as specified in 3GPP TS 24.483 [4] is set to "true", for each floor participant in the queue:

      i. shall include the MCPTT ID of the floor participant in the Queued User ID field;

      ii. shall include the SSRC of the floor participant in the SSRC of queued floor participant field;

      iii. shall include the queue position of the floor participant in the Queue Info field; and

      iv. shall include the priority of the floor participant in the Queue Info field;

5. shall start timer T205 (Floor Granted) and shall initiate counter C205 (Floor Granted) to 1;

6. shall set the stored SSRC of the current floor arbitrator to the SSRC of the user to whom the floor was granted in the Floor Granted message; and

7. shall enter the 'O: pending granted' state.

[TS 24.380, clause 7.2.3.6.9]

On expiry of timer T201 (Floor Request) if the counter C201 (Floor Request) has not reached its upper limit, the floor participant:

1. shall send the Floor Request message to other floor participants. The Floor Request message:
   a. if a priority different than the default floor priority is required, shall include the Floor Priority field with the requested priority in the <Floor Priority> element;
   b. shall include the MCPTT ID of the own MCPTT user in the User ID field; and
   c. if the floor request is a broadcast group call, system call, emergency call or an imminent peril call, shall include a Floor Indicator field indicating the relevant call types;
2. shall restart the timer T201 (Floor Request) and increment counter C201 (Floor Request) by 1; and
3. shall remain in the 'O: pending request' state.

[TS 24.380, clause 7.2.3.6.6]

When timer T201 (Floor Request) expires and counter C201 (Floor Request) reaches its upper limit, the floor participant:

1. shall send the Floor Taken message toward the other floor participants. The Floor Taken message:
   a. shall include the floor participant's own SSRC in the SSRC of the granted floor participant field;
   b. shall include the floor participant's own MCPTT ID in the User ID field; and
   c. if the floor request is a broadcast group call, system call, emergency call or an imminent peril call, shall include a Floor Indicator field indicating the relevant call types;
2. shall set the stored SSRC of the current floor arbitrator to its own SSRC;
3. shall stop timer T203 (End of RTP media), if running; and
4. shall enter 'O: has permission' state.

7.1.2.3 Test description

7.1.2.3.1 Pre-test conditions

System Simulator:

- SS-UE1 (MCPTT client)
  - For the underlying "transport bearer" over which the SS and the UE will communicate, the SS is behaving as SS-UE1 as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.
- GNSS simulator to simulate a location and provide a timing reference for the assistance of E-UTRAN off-network testing.

NOTE 1: For operation in off-network environment, it needs be ensured that after the UE is powered up it considers the Geographical area #1 that is simulated by the GNSS simulator as being one of the geographical areas set in the USIM for operation when UE is "not served by E-UTRAN".

- SS-NW (MCPTT server)
  -- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

NOTE 2: The SS operation as NW (MCPTT server) is needed only for the Preamble if the UE has to perform the MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.
- For the underlying "transport bearer" over which the SS and the UE will communicate, the UE is behaving as a ProSe enabled UE as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- The GNSS simulator is configured to simulate a location in the centre of Geographical area #1 and provide a timing reference, as defined in TS 36.508 [24] Table 4.11.2-2 scenario #1.
- The UE is switched-off.
- UE States at the end of the preamble
  - The UE is in state 'switched-off'.

7.1.2.3.2 Test procedure sequence

Table 7.1.2.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Power up the UE.	-	-	-	-
1A	Trigger the UE to reset UTC time and location. NOTE: The UTC time and location reset may be performed by MMI or AT command (+CUTCR).	-	-	-	-
2	Activate the MCPTT Client Application and register User A as the MCPTT User (TS 36.579-5 [5], px_MCPTT_User_A_username, px_MCPTT_User_A_password). (NOTE 1)	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.10 'Generic Test Procedure for MCPTT CT communication over ProSe direct one-to-many communication out of E-UTRA coverage / Announcing/Discoveree procedure for group member discovery / One-to-many communication'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
3	SS-UE1 (MCPTT client) sends a GROUP CALL ANNOUNCEMENT	<--	GROUP CALL ANNOUNCEMENT	-	-
4	Check: Does the UE (MCPTT Client) send a GROUP CALL ACCEPT message?	-->	GROUP CALL ACCEPT	1	P
5	SS-UE1 (MCPTT client) sends a Floor Granted message notifying the recipients that it now has the floor	<--	Floor Granted	-	-
6	Make the UE (MCPTT User) request the floor (NOTE 1), (NOTE 2)	-	-	-	-
7	Check: Does the UE (MCPTT Client) send a Floor Request message to the floor participants?	-->	Floor Request	2	P
8	The SS-UE1 (MCPTT client) sends a Floor Granted message granting the floor to the UE (MCPTT Client)	<--	Floor Granted	-	-
9	The SS-UE1 (MCPTT client), having the same priority as the UE (MCPTT Client), sends a Floor Request message to the UE (MCPTT Client) with the F bit in the Floor Indication field set to '0'	<--	Floor Request	-	-
10	Check: Does the UE (MCPTT Client) send a Floor Deny message to the sender of the Floor Request message with the Reject Cause field set to #1 (Another MCPTT client has permission)?	-->	Floor Deny	2	P
11	The SS-UE1 (MCPTT client), having the same priority as the UE (MCPTT Client), sends a Floor Request message to the UE (MCPTT Client) with the F bit in the Floor Indication field set to '1'	<--	Floor Request	-	-
12	Check: Does the UE (MCPTT Client) add the requester to the queue and send a Floor Queue Position Info message to the sender of the Floor Request message?	-->	Floor Queue Position Info	2	P
13	The SS-UE1 (MCPTT client) sends a Floor Queue Position Request message to the UE (MCPTT Client)	<--	Floor Queue Position Request	-	-
14	Check: Does the UE (MCPTT Client) respond to the Floor Queue Position Request message with e a Floor Queue Position Info message?	-->	Floor Queue Position Info	2	P
15	Make the UE (MCPTT User) release the floor.(NOTE 1)	-	-	-	-

16	Check: Does the UE (MCPTT Client) send a Floor Granted message to the floor participants indicating the queued participant now has the floor? (NOTE 4)	-->	Floor Granted	2	P
-	EXCEPTION: Step 17 is executed a total of 3 times	-	-	-	-
17	Check: Upon expiry of timer T205 (Floor Granted) and while counter C205 (Floor Granted) is less than its maximum value, does the UE (MCPTT Client) retransmit the Floor Granted message send in step 16?	-->	Floor Granted	2	P
18	Void	-	-	-	-
19	The SS-UE1 (MCPTT client) sends a Floor Taken message to the UE (MCPTT Client)	<--	Floor Taken	-	-
20	Make the UE (MCPTT User) request the floor (NOTE 1)	-	-	-	-
21	Check: Does the UE (MCPTT Client) send a Floor Request message to the floor participants?	-->	Floor Request	2	P
22	The SS-UE1 (MCPTT client) responds with a Floor Deny message	<--	Floor Deny	-	-
23	Make the UE (MCPTT User) request the floor (NOTE 1)	-	-	-	-
24	Check: Does the UE (MCPTT Client) send a Floor Request message to the floor participants?	-->	Floor Request	2	P
25	The SS-UE1 (MCPTT client) responds with a Floor Queue Position Info message and places the UE (MCPTT Client) in the queue	<--	Floor Queue Position Info	-	-
26	Make the UE (MCPTT User) request the queue position of the UE (MCPTT Client) (NOTE 1)	-	-	-	-
27	Check: Does the UE (MCPTT Client) send a Floor Queue Position Request message?	-->	Floor Queue Position Request	2	P
28	The SS-UE1 (MCPTT client) responds with a Floor Queue Position Info message	<--	Floor Queue Position Info	-	-
29	The SS-UE1 (MCPTT client) sends a Floor Granted message to the UE (MCPTT Client) granting the floor to the UE (MCPTT Client)	<--	Floor Granted	-	-
30	Check: Does the UE (MCPTT Client) notify the user (MCPTT User) of the floor grant? (NOTE 1)	-	-	2	P
31	Make the UE (MCPTT User) accept the floor grant (NOTE 1)	-	-	-	-
32	The SS-UE1 (MCPTT client), with a higher priority than the UE (MCPTT Client), sends a Floor Request message with preemption	<--	Floor Request	-	-
33	Check: Does the UE (MCPTT Client) respond by sending a Floor Granted message? (NOTE 4)	-->	Floor Granted	2	P
-	EXCEPTION: Step 34 is executed a total of 3 times	-	-	-	-
34	Check: Upon expiry of timer T205 (Floor Granted) and while counter C205 (Floor Granted) is less than its maximum value, does the UE (MCPTT Client) retransmit the Floor Granted message send in step 33?	-->	Floor Granted	2	P
35	Void	-	-	-	-
36	Make the UE (MCPTT User) request the floor (NOTE 1)	-	-	-	-
37	Check: Does the UE (MCPTT Client) send a Floor Request message to the floor participants? (NOTE 5)	-->	Floor Request	2	P

-	EXCEPTION: Step 38 is executed a total of 2 times	-	-	-	-
38	Check: Upon expiry of timer T201 (Floor Request) and while counter C201 (Floor Request) is less than its maximum value, does the UE (MCPTT Client) retransmit the Floor Request message send in step 37?	-->	Floor Request	2	P
39	Check: Upon expiry of timer T201 (Floor Request) and with counter C201 (Floor Request) equal to its maximum value, does the UE (MCPTT Client) send a Floor Taken message?	-->	Floor Taken	2	P
40	Make the UE (MCPTT User) release the floor (NOTE 1)	-	-	-	-
41	Check: Does the UE (MCPTT Client) send a Floor Release message to the other floor participants?	-->	Floor Release	2	P
42	The SS-UE1 (MCPTT client) sends a GROUP CALL ANNOUNCEMENT to upgrade the call to an emergency call	<--	GROUP CALL ANNOUNCEMENT	-	-
43	SS-UE1 (MCPTT client) sends a Floor Granted message notifying the recipients that it now has the floor	<--	Floor Granted	-	-
44	Void	-	-	3	P
45	Make the UE (MCPTT User) request the floor (NOTE 1)	-	-	-	-
46	Check: Does the UE (MCPTT Client) send a Floor Request message to the floor participants?	-->	Floor Request	3	P
47	The SS-UE1 (MCPTT client) responds with a Floor Deny message	<--	Floor Deny	-	-
48	SS-UE1 (MCPTT client) sends a Floor Release message	<--	Floor Release	-	-
49	The SS-UE1 (MCPTT client) sends a GROUP CALL EMERGENCY END to downgrade the emergency call	<--	GROUP CALL EMERGENCY END		
50	Void	-	-	-	-
51	The SS-UE1 (MCPTT client) sends a GROUP CALL ANNOUNCEMENT to upgrade the call to an imminent peril call	<--	GROUP CALL ANNOUNCEMENT	-	-
52	SS-UE1 (MCPTT client) sends a Floor Granted message notifying the recipients that it now has the floor	<--	Floor Granted	-	-
53	Void	-	-	-	-
54	Make the UE (MCPTT User) request the floor (NOTE 1)	-	-	-	-
55	Check: Does the UE (MCPTT Client) send a Floor Request message to the floor participants?	-->	Floor Request	4	P
56	The SS-UE1 (MCPTT client) responds with a Floor Deny message	<--	Floor Deny	-	-
57	SS-UE1 (MCPTT client) sends a Floor Release message	<--	Floor Release	-	-
58	The SS-UE1 (MCPTT client) sends a GROUP CALL IMMINENT PERIL END to downgrade the imminent peril call	<--	GROUP CALL IMMINENT PERIL END		
59	Void	-	-	8	P
60	Make the UE (MCPTT Client) release the group call (NOTE 1)	-	-	-	-

NOTE 1: This is expected to be done via a suitable implementation dependent MMI.
NOTE 2: If the user does not request the floor before timer T203 (End of RTP media) expires, then the MCPTT Client will enter 'O: silence' state per 24.380 [10] and the remaining steps will not be valid. Timer T203 (End of RTP media)=5s as defined in TS 36.579-1 [2], Table 5.5.8.1-1 and is started upon the reception of the Floor Granted message in step 5. If during test execution it is found that the specified timer value is not large enough, then a new value needs to be specified.
NOTE 3: If the MCPTT User does not release the floor before timer T207 (Stop talking) expires, then the MCPTT Client will enter the 'O: silence' state per TS 24.380 [10] and the remaining steps will not be valid. Timer T206 (Stop talking warning) is started upon the receiving of the Floor Granted message in step 8. Timer T207 (Stop talking) starts upon the expiration of Timer T206 (Stop talking warning). Timer T206 (Stop talking warning)=10s is set to TransmitTimeout=60s, as defined in TS 36.579-1 [2], Table 5.5.8.4-1, minus TransmissionWarning=50s, as defined in TS 36.579-1 [2], Table 5.5.8.4-1. Timer T207 (Stop talking)=50s is set to TransmissionWarning=50s, as defined in TS 36.579-1 [2], Table 5.5.8.4-1. If during test execution it is found that the specified timer(s) value(s) are not large enough, then new value(s) need to be specified.
NOTE 4: Timer T205 (Floor Granted) and Counter C205 (Floor Granted) are started upon the sending of the Floor Granted message. Timer T205 (Floor Granted)=1s, as defined in TS 36.579-1 [2], Table 5.5.8.1-1. Counter C205 (Floor Granted) is set to 1 and the maximum value of C205 (Floor Granted)=4, as defined in TS 36.579-1 [2], Table 5.5.8.1-1.
NOTE 5: Timer T201 (Floor Request) and Counter C201 (Floor Request) are started upon the sending of the Floor Request message. Timer T201 (Floor Request)=1s, as defined in TS 36.579-1 [2], Table 5.5.8.1-1. Counter 201 (Floor Request) is set to 1 and the maximum value of Counter C201 (Floor Request)=3, as defined in TS 36.579-1 [2], Table 5.5.8.1-1.

7.1.2.3.3 Specific message contents

Table 7.1.2.3.3-1: GROUP CALL ANNOUNCEMENT (step 42, Table 7.1.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.5.2.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call type	"00000011"	Emergency group call	

Table 7.1.2.3.3-2: GROUP CALL ANNOUNCEMENT (step 51, Table 7.1.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.5.2.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call type	"00000100"	Imminent peril group call	

Table 7.1.2.3.3-3: Floor Granted (step 5, Table 7.1.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Duration			
Duration	any allowed value		
Floor priority	"0"		
User ID			
User ID	Px_MCPTT_User_B_ID		
Floor Indicator			
Floor Indicator	"1000010000000000"	bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 7.1.2.3.3-4: Floor Granted (steps 8, 29, Table 7.1.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"1000010000000000"	bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 7.1.2.3.3-5: Floor Granted (steps 16, 17, 33, 34, Table 7.1.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Duration			
Duration	any allowed value	128 sec (an arbitrary value)	
User ID			
User ID	Px_MCPTT_User_B_ID		
Floor Indicator			
Floor Indicator	"10000X0000000000"	bit A=1 (Normal call) bit F=X (Queueing supported) any value	

Table 7.1.2.3.3-6: Floor Granted (step 43, Table 7.1.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Duration			
Duration	any allowed value	128 sec (an arbitrary value)	
Floor priority	"0"		
User ID			
User ID	Px_MCPTT_User_B_ID		
Floor Indicator			
Floor Indicator	"0001010000000000"	bit D=1 (Emergency call) bit F=1 (Queueing supported)	

Table 7.1.2.3.3-7: Floor Granted (step 52, Table 7.1.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Duration			
Duration	any allowed value	128 sec (an arbitrary value)	
Floor priority	"0"		
User ID			
User ID	Px_MCPTT_User_B_ID		
Floor Indicator			
Floor Indicator	"0000110000000000"	bit E=1 (Imminent Peril call) bit F=1 (Queueing supported)	

Table 7.1.2.3.3-8: Floor Request (steps 7, 21, 37, 38, 46, 55, Table 7.1.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.2-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"10000X0000000000"	bit A=1 (Normal call) bit F=X (Queueing supported) any value	

Table 7.1.2.3.3-9: Floor Request (step 9, Table 7.1.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.2-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	Px_MCPTT_User_B_ID		
Floor Indicator			
Floor Indicator	"10000000000000000"	bit A=1 (Normal call) bit F=0 (Queueing not supported)	

Table 7.1.2.3.3-10: Floor Request (step 11, Table 7.1.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.2-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	Px_MCPTT_User_B_ID		
Floor Indicator			
Floor Indicator	"10000100000000000"	bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 7.1.2.3.3-11: Floor Request (step 32, Table 7.1.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.2-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Priority	"12"	Priority is higher than mcptt-client-A	
User ID			
User ID	Px_MCPTT_User_B_ID		
Floor Indicator			
Floor Indicator	"10000100000000000"	bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 7.1.2.3.3-12: Floor Deny (step 10, Table 7.1.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.4-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Reject Cause			
..Reject Cause	any allowed value		
Reject Phrase	not present or any allowed value		
User ID			
User ID	Px_MCPTT_User_B_ID		
Floor Indicator			
Floor Indicator	"10000X0000000000"	bit A=1 (Normal call) bit F=X (Queueing supported) any value	

Table 7.1.2.3.3-13: Floor Deny (step 22, Table 7.1.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.4-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	Px_MCPTT_User_A_ID		
Floor Indicator			
Floor Indicator	"10000100000000000"	bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 7.1.2.3.3-14: Floor Deny (step 47, Table 7.1.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.4-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	Px_MCPTT_User_A_ID		
Floor Indicator			
Floor Indicator	"00010100000000000"	bit D=1 (Emergency call) bit F=1 (Queueing supported)	

Table 7.1.2.3.3-15: Floor Deny (step 56, Table 7.1.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.4-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	Px_MCPTT_User_A_ID		
Floor Indicator			
Floor Indicator	"00001100000000000"	bit E=1 (Imminent Peril call) bit F=1 (Queueing supported)	

Table 7.1.2.3.3-16: Floor Queue Position Info (steps 12, 14, Table 7.1.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.10-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	Px_MCPTT_User_A_ID		
Queued User ID			
Queued User ID	Px_MCPTT_User_B_ID		
Queue Info			
Queue Position Info	"1"		
Queue Priority Level	any allowed value		
Floor Indicator			
Floor Indicator	"10000X0000000000"	bit A=1 (Normal call) bit F=X (Queueing supported) any value	

Table 7.1.2.3.3-17: Floor Queue Position Info (steps 25, 28, Table 7.1.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.10-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"1000010000000000"	bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 7.1.2.3.3-18: Floor Queue Position Request (step 13, Table 7.1.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.9-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	Px_MCPTT_User_B_ID		

Table 7.1.2.3.3-19: Floor Taken (step 19, Table 7.1.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.7-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	Px_MCPTT_User_B_ID		
Floor Indicator			
Floor Indicator	"1000010000000000"	bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 7.1.2.3.3-20: Floor Taken (step 39, Table 7.1.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.7-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Granted Party's Identity			
Granted Party's Identity	Px_MCPTT_User_A_ID		
Floor Indicator			
Floor Indicator	"10000X0000000000"	bit A=1 (Normal call) bit F=X (Queueing supported) any value	

Table 7.1.2.3.3-21: Floor Release (step 41, Table 7.1.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.5-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	"10000X0000000000"	bit A=1 (Normal call) bit F=X (Queueing supported) any value	

Table 7.1.2.3.3-22: Floor Release (step 48, Table 7.1.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.5-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	Px_MCPTT_User_B_ID		
Floor Indicator			
Floor Indicator	"0001010000000000"	bit D=1 (Emergency call) bit F=1 (Queueing supported)	

Table 7.1.2.3.3-23: Floor Release (step 57, Table 7.1.2.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.5-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	Px_MCPTT_User_B_ID		
Floor Indicator			
Floor Indicator	"0000110000000000"	bit E=1 (Imminent Peril call) bit F=1 (Queueing supported)	

7.1.3 Off-network / Group Call / Leave Group Call when GROUP CALL PROBE sent / Initiate Group Call for Released Call / Receive GROUP CALL ANNOUNCEMENT for Released call / No GROUP CALL ANNOUNCEMENT for Released Call / Receive Response to GROUP CALL PROBE

7.1.3.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service, including authorised to
initiate/cancel group calls in off-network environment, and the UE (MCPTT Client) is in an off-
network environment }
ensure that {
  when { the MCPTT User requests the establishment of an MCPTT pre-arranged group call and UE (MCPTT
Client) requests a pre-arranged group call by sending a GROUP CALL PROBE message and the MCPTT User
requests the release of the call before the expiration of the TFG3 (call probe retransmission)timer
}
    then { the UE (MCPTT Client) releases the call and enters the "S7: Waiting for call announcement
after call release" state and does not send a GROUP CALL PROBE at the expiry of the TFG3 (call probe
retransmission)timer }
            }
```

(2)

```
with { UE (MCPTT Client) in the "S7: Waiting for call announcement after call release" state }
```

```
ensure that {
  when { the MCPTT User requests the establishment of an MCPTT pre-arranged group call }
    then { the UE (MCPTT Client) sends a GROUP CALL PROBE message and enters the "S2: waiting for
call announcement" state }
            }
```

(3)

```
with { UE (MCPTT Client) in the "S2: waiting for call announcement" state }
ensure that {
  when { the UE (MCPTT Client receives a GROUP CALL ANNOUNCEMENT message }
    then { the UE (MCPTT Client) enters the "S3: part of ongoing call" state as a terminating floor
participant and respects the floor control imposed by the floor control entity/arbitrator }
            }
```

7.1.3.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.379 clauses 10.2.2.4.2.1, 10.2.2.4.5.5, 10.2.2.4.5.6, 10.2.2.4.5.7, 10.2.2.4.5.4, 10.2.2.4.5.8, 10.2.2.4.3.2, TS 24.380 clause 7.2.3.2.3. The following represents a copy/paste extraction of the requirements relevant to the test purpose; any references within the copy/paste text should be understood within the scope of the core spec they have been copied from. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 10.2.2.4.2.1]

When in the "S1: start-stop" state, upon an indication from an MCPTT user to initiate a group call for an MCPTT group ID, the MCPTT client:

1) shall store the MCPTT group ID as the MCPTT group ID of the call;

2) shall create a call type control state machine as described in subclause 10.2.3.2;

3) shall generate a GROUP CALL PROBE message as specified in subclause 15.1.2. In the GROUP CALL PROBE message, the MCPTT client:

   a) shall set the MCPTT group ID IE to the stored MCPTT group ID of the call;

4) shall send the GROUP CALL PROBE message as specified in subclause 10.2.1.1.1;

5) shall start timer TFG3 (call probe retransmission);

6) shall start timer TFG1 (wait for call announcement); and

7) shall enter the "S2: waiting for call announcement" state.

[TS 24.379, clause 10.2.2.4.5.5]

When in the "S2: waiting for call announcement" state, upon an indication from the MCPTT user to release the group call, the MCPTT client:

1) shall stop timer TFG3 (call probe retransmission); and

2) shall enter the "S7: Waiting for call announcement after call release" state.

[TS 24.379, clause 10.2.2.4.5.6]

When in the "S7: Waiting for call announcement after call release" state, upon an indication from the MCPTT user to initiate a group call for an MCPTT group ID matching the stored MCPTT group ID of the call, the MCPTT client:

1) shall stop timer TFG1 (wait for call announcement);

2) shall generate a GROUP CALL PROBE message as specified in subclause 15.1.2. In the GROUP CALL PROBE message, the MCPTT client:

   a) shall set the MCPTT group ID IE to the stored MCPTT group ID of the call; and

3) shall send the GROUP CALL PROBE message as specified in subclause 10.2.1.1.1;

4) shall start timer TFG3 (call probe retransmission);

5) shall start timer TFG1 (wait for call announcement); and

6) shall enter the "S2: waiting for call announcement" state.

[TS 24.379, clause 10.2.2.4.5.7]

When in the "S7: Waiting for call announcement after call release" state, upon receiving a GROUP CALL ANNOUNCEMENT message with the MCPTT group ID IE matching the stored MCPTT group ID of the call, the MCPTT client:

1) shall store the value of the SDP IE of the GROUP CALL ANNOUNCEMENT message as the SDP body of the call;

2) shall store the value of the Call identifier IE of the GROUP CALL ANNOUNCEMENT message as the call identifier of the call;

3) shall store the value of the Originating MCPTT user ID IE of the GROUP CALL ANNOUNCEMENT message as the originating MCPTT user ID of the call;

4) shall store the value of the Refresh interval IE of the GROUP CALL ANNOUNCEMENT message as the refresh interval of the call;

5) shall store the value of the Call start time IE of the GROUP CALL ANNOUNCEMENT message as the call start time of the call;

6) shall stop timer TFG1 (wait for call announcement);

7) shall start timer TFG5 (not present incoming call announcements); and

8) shall enter the "S6: ignoring incoming call announcements" state.

[TS 24.379, clause 10.2.2.4.5.4]

When in the "S6: ignoring incoming call announcements" state, upon expiration of timer TFG5 (not present incoming call announcements), the MCPTT client:

1) shall release the stored SDP body of the call;

2) shall release the stored call identifier of the call;

3) shall release the stored originating MCPTT user ID of the call;

4) shall release the stored refresh interval of the call;

5) shall release the stored MCPTT group ID of the call;

6) shall release the call start time of the call;

7) shall destroy the call type control state machine as specified in subclause 10.2.3.4.10 or 10.2.3.4.11; and

8) shall enter the "S1: start-stop" state.

[TS 24.379, clause 10.2.2.4.5.8]

When in the "S7: Waiting for call announcement after call release" state, upon expiration of timer TFG1 (wait for call announcement), the MCPTT client:

1) shall release the stored MCPTT group ID of the call;

2) shall destroy the call type control state machine as specified in subclause 10.2.3.4.11; and

3) shall enter the "S1: start-stop" state.

[TS 24.379, clause 10.2.2.4.3.2]

When in the "S2: waiting for call announcement" state, upon receiving a GROUP CALL ANNOUNCEMENT message with the MCPTT group ID IE matching the stored MCPTT group ID of the call, the MCPTT client:

1) shall stop timer TFG3 (call probe retransmission);

2) shall stop timer TFG1 (wait for call announcement);

3) shall store the value of the SDP IE of the GROUP CALL ANNOUNCEMENT message as the SDP body of the call;

4) shall store the value of the Call identifier IE of the GROUP CALL ANNOUNCEMENT message as the call identifier of the call;

5) shall store the value of the originating MCPTT user ID IE of the GROUP CALL ANNOUNCEMENT message as the Originating MCPTT user ID of the call;

6) shall store the value of the Refresh interval IE of the GROUP CALL ANNOUNCEMENT message as the refresh interval of the call;

7) shall store the value of the Call start time IE of the GROUP CALL ANNOUNCEMENT message as the call start time of the call;

8) shall establish a media session based on the stored SDP body of the call;

9) shall start floor control as terminating floor participant as specified in subclause 7.2 in 3GPP TS 24.380 [5];

10) shall start timer TFG6 (max duration) with value as specified in subclause 10.2.2.4.1.2;

11) shall start timer TFG2 (call announcement) with value as specified in subclause 10.2.2.4.1.1.1; and

12) shall enter the "S3: part of ongoing call" state.

[TS 24.380, clause 7.2.3.2.3]

When an MCPTT call is established the terminating floor participant:

1. shall create an instance of a floor participant state transition diagram for basic operation state machine;

2. shall start timer T230 (Inactivity); and

3. shall enter 'O: silence' state.

7.1.3.3 Test description

7.1.3.3.1 Pre-test conditions

System Simulator:

- SS-UE1 (MCPTT client)

  - For the underlying "transport bearer" over which the SS and the UE will communicate, the SS is behaving as SS-UE1 as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

- GNSS simulator to simulate a location and provide a timing reference for the assistance of E-UTRAN off-network testing.

NOTE 1: For operation in off-network environment, it needs be ensured that after the UE is powered up it considers the Geographical area #1 that is simulated by the GNSS simulator as being one of the geographical areas set in the USIM for operation when UE is "not served by E-UTRAN".

- SS-NW (MCPTT server)

  -- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24]

clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

NOTE 2: The SS operation as NW (MCPTT server) is needed only for the Preamble if the UE has to perform the MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.
- For the underlying "transport bearer" over which the SS and the UE will communicate, the UE is behaving as a ProSe enabled UE as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
  - TFG1 (wait for call announcement) set to 25 seconds (25,000 ms) ("/<x>/OffNetwork/Timers/TFG1" leaf node present in the UE initial configuration as specified in 3GPP TS 24.483 [13]; related to the D2D Sidelink period)
  - TFG3 (call probe retransmission) set to 15 seconds (15,000 ms) ("/<x>/OffNetwork/Counters/TFG3" leaf node present in the UE initial configuration as specified in 3GPP TS 24.483 [13])
  - TFG5 (not present incoming call announcement) set to 30 seconds ("/<x>/OffNetwork/Timers/TFG5" leaf node present in the UE initial configuration as specified in 3GPP TS 24.483 [13].)
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- The GNSS simulator is configured to simulate a location in the centre of Geographical area #1 and provide a timing reference, as defined in TS 36.508 [24] Table 4.11.2-2 scenario #1.
- The UE is switched-off.
- UE States at the end of the preamble
  - The UE is in state 'switched-off'.

7.1.3.3.2 Test procedure sequence

Table 7.1.3.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Power up the UE	-	-	-	-
1A	Trigger the UE to reset UTC time and location. NOTE: The UTC time and location reset may be performed by MMI or AT command (+CUTCR).	-	-	-	-
2	Activate the MCPTT Client Application and register User A as the MCPTT User (TS 36.579-5 [5], px_MCPTT_User_A_username, px_MCPTT_User_A_password). (NOTE 1)	-	-	-	-
3	Make the UE (MCPTT Client) initiate an off-network basic group call (NOTE 1)	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT off-network call establishment are described in TS 36.579-1 [2], subclause 5.4.11 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-many communication out of E-UTRA coverage / Monitoring/Discoverer procedure for group member discovery / One-to-many communication'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
4	The UE (MCPTT client) sends a GROUP CALL PROBE message to determine the current call status of the group (NOTE 2)	-->	GROUP CALL PROBE	-	-
4A	SS starts Timer=15s (TFG3 (call probe retransmission))	-	-	-	-
5	Make the UE (MCPTT Client) release the off-network basic group call (NOTE 1), (NOTE 3)	-	-	-	-
5A	Timer=15s expires	-	-	-	-
6	Check: Does the UE (MCPTT Client) in the next 5 seconds send a retransmission of the GROUP CALL PROBE sent in step 4?	-->	GROUP CALL PROBE	1	F
6A	Wait 5 seconds GROUP CALL PROBE message	-	-	-	-
7	Make the UE (MCPTT Client) initiate an off-network basic group call (NOTE 1), (NOTE 4)	-	-	-	-
8	Check: Does the UE (MCPTT client) send a GROUP CALL PROBE message to determine the current call status of the group? (NOTE 2)	-->	GROUP CALL PROBE	2	P
9	Make the UE (MCPTT Client) release the off-network basic group call (NOTE 1), (NOTE 3)	-	-	-	-
10	The SS-UE1 (MCPTT client) sends a GROUP CALL ANNOUNCEMENT message to the UE (MCPTT Client) with the MCPTT group ID IE matching the stored MCPTT group ID of the released call	<--	GROUP CALL ANNOUNCEMENT	-	-
11	Void	-	-	-	-
12	Void	-	-	-	-
13	Void	-	-	-	-
14	Make the UE (MCPTT Client) initiate an off-network basic group call (NOTE 1)	-	-	-	-

-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT off-network call establishment are described in TS 36.579-1 [2], subclause 5.4.11 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-many communication out of E-UTRA coverage / Monitoring/Discoverer procedure for group member discovery / One-to-many communication'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
15	The UE (MCPTT client) sends a GROUP CALL PROBE message to determine the current call status of the group (NOTE 2)	-->	GROUP CALL PROBE	-	-
15A	SS starts Timer=25s (TFG1 (wait for call announcement))	-	-	-	-
16	Make the UE (MCPTT Client) release the off-network basic group call (NOTE 1), (NOTE 3)	-	-	-	-
16A	Timer=25s expires	-	-	-	-
17	Void	-	-	4	P
18	Make the UE (MCPTT Client) initiate an off-network basic group call (NOTE 1)	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT off-network call establishment are described in TS 36.579-1 [2], subclause 5.4.11 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-many communication out of E-UTRA coverage / Monitoring/Discoverer procedure for group member discovery / One-to-many communication'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
19	The UE (MCPTT client) sends a GROUP CALL PROBE message to determine the current call status of the group (NOTE 2)	-->	GROUP CALL PROBE	-	-
20	The SS-UE1 (MCPTT client) sends a GROUP CALL ANNOUNCEMENT message to the UE (MCPTT Client) with the MCPTT group ID IE matching the stored MCPTT group ID of the released call (NOTE 5)	<--	GROUP CALL ANNOUNCEMENT	-	-
20A	Make the UE (MCPTT Client) request the floor (NOTE 1)	-	-	-	-
21	Check: Does the UE (MCPTT Client) send a Floor Request message to the floor participants?	-	-	5	P
21A	The SS-UE1 (MCPTT client) responds with a Floor Deny message	<--	Floor Deny	-	-
22	Make the UE (MCPTT Client) release the group call (NOTE 1)	-	-	-	-

NOTE 1: This is expected to be done via a suitable implementation dependent MMI.
NOTE 2: Timer TFG3 (call probe retransmission)=15s as defined in the Pre-test conditions and TFG1 (wait for call announcement)=25s as defined in the Pre-test conditions are started upon the sending of the GROUP CALL PROBE message.
NOTE 3: If the MCPTT User does not release the call before timer TFG3 (call probe retransmission) expires, then the MCPTT Client will resend the GROUP CALL PROBE message per TS 24.379 [9] and the remaining steps will not be valid. If during test execution it is found that the specified timer value is not large enough, then a new value needs to be specified.
NOTE 4: If the MCPTT User does not perform an action before timer TFG1 (wait for call announcement) expires, then the MCPTT Client will enter the "S1: start-stop" state per TS 24.379 [9] and the remaining steps will not be valid. If during test execution it is found that the specified timer value is not large enough, then a new value needs to be specified.
NOTE 5: Timer TFG6 (max duration) and timer TFG2 (call announcement) are started upon the receiving of the GROUP CALL ANNOUNCEMENT message while in the "S2: waiting for call announcement" state. The value of TFG6 (max duration) is a variable equation as defined in TS 36.379 [2], clause 10.2.2.4.1.2. The value of TFG2 (call announcement) is a variable equation as defined in TS 36.379 [2], clause 10.2.2.4.1.1.

7.1.3.3.3 Specific message contents

Table 7.1.3.3.3-1: GROUP CALL ANNOUNCEMENT (step 20, Table 7.1.1.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.5.2.2-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Probe response	present	GROUP CALL ANNOUNCEMENT is in response to a GROUP CALL PROBE	

7.1.4 Off-network / Group Call / MCPTT User Acknowledgement Required / With Confirm Indication / MCPTT User Reject / MCPTT User Accept / Client Terminated (CT)

7.1.4.1 Test Purpose (TP)

(1)

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with { UE (MCPTT Client) registered and authorised for MCPTT Service, including authorised to
receive group calls in off-network environment, and the UE (MCPTT Client) is configured such that
user acknowledgement is required upon a terminating call request reception, and the UE (MCPTT
Client) is in an off-network environment }
ensure that {
  when { the UE (MCPTT Client) receives an off-network group call request via a GROUP CALL
ANNOUNCEMENT message, and the MCPTT User accepts the call}
    then { the UE (MCPTT Client) accepts the call and sends a GROUP CALL ACCEPT message }
          }
```

7.1.4.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.379 clauses 10.2.2.4.3.3, 10.2.2.4.3.7, 10.2.2.4.3.4. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 10.2.2.4.3.3]

When in the "S1: start-stop" state, upon receiving a GROUP CALL ANNOUNCEMENT message with the MCPTT group ID IE not matching MCPTT group ID of the call stored for other state machines, the MCPTT client:

1) shall store the value of the SDP IE of the GROUP CALL ANNOUNCEMENT message as the SDP body of the call;

2) shall store the value of the Call identifier IE of the GROUP CALL ANNOUNCEMENT message as the call identifier of the call;

3) shall store the value of the Originating MCPTT user ID IE of the GROUP CALL ANNOUNCEMENT message as the originating MCPTT user ID of the call;

4) shall store the value of the Refresh interval IE of the GROUP CALL ANNOUNCEMENT message as the refresh interval of the call;

5) shall store the value of the MCPTT group ID IE of the GROUP CALL ANNOUNCEMENT message as the MCPTT group ID of the call;

6) shall store the value of the Call start time IE of the GROUP CALL ANNOUNCEMENT message as the call start time of the call;

7) shall create a call type control state machine as described in subclause 10.2.3.2;

8) if the terminating UE is configured that the terminating MCPTT user acknowledgement is required upon a terminating call request reception:

   a) shall start timer TFG4 (waiting for the user);

   b) if the GROUP CALL ANNOUNCEMENT message contains the Confirm mode indication IE, shall enter the "S5: pending user action with confirm indication" state; and

   c) if the GROUP CALL ANNOUNCEMENT message does not contains the Confirm mode indication IE, shall enter the "S4: pending user action without confirm indication" state; and

9) if the terminating UE is configured that the terminating MCPTT user acknowledgement is not required upon a terminating call request reception:

   a) shall establish a media session based on the stored SDP body of the call;

   b) shall start floor control as terminating floor participant as specified in subclause 7.2 in 3GPP TS 24.380 [5];

   c) if the GROUP CALL ANNOUNCEMENT message contains the Confirm mode indication IE:

      i) shall generate a GROUP CALL ACCEPT message as specified in subclause 15.1.4. In the GROUP CALL ACCEPT message, the MCPTT client:

         A) shall set the Call identifier IE to the stored call identifier of the call;

         B) shall set the Sending MCPTT user ID IE to own MCPTT user id;

         C) shall set the Call type IE to the stored current call type associated with the call type control state machine; and

         D) shall set the MCPTT group ID IE to the stored MCPTT group ID of the call; and

      ii) shall send the GROUP CALL ACCEPT message as specified in subclause 10.2.1.1.1;

   d) shall start timer TFG6 (max duration) with value as specified in subclause 10.2.2.4.1.2;

   e) shall start timer TFG2 (call announcement) with value as specified in subclause 10.2.2.4.1.1.1; and

   f) shall enter the "S3: part of ongoing call" state.

[TS 24.379, clause 10.2.2.4.3.7]

When in the "S5: pending user action with confirm indication" state or the "S4: pending user action without confirm indication" state, upon an indication from the MCPTT user to reject the incoming group call, the MCPTT client:

1) shall stop timer TFG4 (waiting for the user);

2) shall start timer TFG5 (not present incoming call announcements); and

3) shall enter the "S6: ignoring incoming call announcements" state.

[TS 24.379, clause 10.2.2.4.3.4]

When in the "S5: pending user action with confirm indication" state, upon indication from the MCPTT user to accept the incoming group call, the MCPTT client:

1) shall establish a media session based on the stored SDP body of the call;

2) shall start floor control as terminating floor participant as specified in subclause 7.2 in 3GPP TS 24.380 [5];

3) shall generate a GROUP CALL ACCEPT message as specified in subclause 15.1.4. In the GROUP CALL ACCEPT message, the MCPTT client:

   a) shall set the Call identifier IE to the stored call identifier of the call;

   b) shall set the Sending MCPTT user ID IE to own MCPTT user id;

   c) shall set the Call type IE to the stored current call type associated with the call type control state machine; and

   d) shall set the MCPTT group ID IE to the stored MCPTT group ID of the call; and

4) shall send the GROUP CALL ACCEPT message as specified in subclause 10.2.1.1.1;

5) shall start timer TFG6 (max duration) with value as specified in subclause 10.2.2.4.1.2;

6) shall start timer TFG2 (call announcement) with value as specified in subclause 10.2.2.4.1.1.1; and

7) shall enter the "S3: part of ongoing call" state.

7.1.4.3 Test description

7.1.4.3.1 Pre-test conditions

System Simulator:

- SS-UE1 (MCPTT client)

  - For the underlying "transport bearer" over which the SS and the UE will communicate, the SS is behaving as SS-UE1 as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

- GNSS simulator to simulate a location and provide a timing reference for the assistance of E-UTRAN off-network testing.

NOTE 1: For operation in off-network environment, it needs be ensured that after the UE is powered up it considers the Geographical area #1 that is simulated by the GNSS simulator as being one of the geographical areas set in the USIM for operation when UE is "not served by E-UTRAN".

- SS-NW (MCPTT server)

  -- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

NOTE 2: The SS operation as NW (MCPTT server) is needed only for the Preamble if the UE has to perform the MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

IUT:

- UE (MCPTT client)

- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

- For the underlying "transport bearer" over which the SS and the UE will communicate, the UE is behaving as a ProSe enabled UE as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- UE (MCPTT Client) is configured such that user acknowledgement is required upon a terminating call request reception
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- The GNSS simulator is configured to simulate a location in the centre of Geographical area #1 and provide a timing reference, as defined in TS 36.508 [24] Table 4.11.2-2 scenario #1.
- The UE is switched-off.
- UE States at the end of the preamble
  - The UE is in state 'switched-off'.

7.1.4.3.2 Test procedure sequence

Table 7.1.4.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Power up the UE	-	-	-	-
1A	Trigger the UE to reset UTC time and location. NOTE: The UTC time and location reset may be performed by MMI or AT command (+CUTCR).	-	-	-	-
2	Activate the MCPTT Client Application and register User A as the MCPTT User (TS 36.579-5 [5], px_MCPTT_User_A_username, px_MCPTT_User_A_password). (NOTE 1)	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.10 'Generic Test Procedure for MCPTT CT communication over ProSe direct one-to-many communication out of E-UTRA coverage / Announcing/Discoveree procedure for group member discovery / One-to-many communication'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
3	SS-UE1 (MCPTT client) sends a GROUP CALL ANNOUNCEMENT (NOTE 3)	<--	GROUP CALL ANNOUNCEMENT	-	-
4	Void	-	-	-	-
5	While the UE (MCPTT Client) is in the "S5: pending user action with confirm indication" state, make the UE (MCPTT Client) reject the call request (NOTE 1), (NOTE 2)	-	-	-	-
6	Void	-	-	-	-
7	Void	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.10 'Generic Test Procedure for MCPTT CT communication over ProSe direct one-to-many communication out of E-UTRA coverage / Announcing/Discoveree procedure for group member discovery / One-to-many communication'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
8	SS-UE1 (MCPTT client) sends a GROUP CALL ANNOUNCEMENT (NOTE 3)	<--	GROUP CALL ANNOUNCEMENT	-	-
9	Void	-	-	-	-
10	While the UE (MCPTT Client) is in the "S5: pending user action with confirm indication" state, make the UE (MCPTT Client) accept the call request (NOTE 1), (NOTE 2)	-	-	-	-
11	Check: Does the UE (MCPTT Client) send a GROUP CALL ACEEPT message?	-->	GROUP CALL ACCEPT	1	P
12	Void	-	-	-	-
13	Make the UE (MCPTT Client) release the group call (NOTE 1)	-	-	-	-

NOTE 1: This is expected to be done via a suitable implementation dependent MMI.
NOTE 2: If the MCPTT User does not act before the expiration of timer TFG4 (waiting for the user), then the MCPTT Client will enter the "S6: ignoring incoming call announcements" state and the remaining steps will not be valid. Timer TFG4 (waiting for the user)=20s as defined in TS 36.579-1 [2], Table 5.5.8.1-1 and is started upon the receiving of the GROUP CALL ANNOUNCEMENT message. If during test execution it is found that the specified timer value is not large enough, then a new value needs to be specified.
NOTE 3: The UE (MCPTT Client) enters the "S5: pending user action with confirm indication" state

7.1.4.3.3 Specific message contents

None

7.1.5 Off-network / Group Call / MCPTT User Acknowledgement Required / Without Confirm Indication / MCPTT User Reject / MCPTT User Accept / Client Terminated (CT)

7.1.5.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service, including authorised to
receive group calls in off-network environment, and the UE (MCPTT Client) is configured such that
user acknowledgement is required upon a terminating call request reception, and the UE (MCPTT
Client) is in an off-network environment and the UE (MCPTT Client) receives an off-network group
call request via a GROUP CALL ANNOUNCEMENT message that does not contains the Confirm mode
indication IE, and the MCPTT User accepts the call }
ensure that {
  when { the MCPTT User requests the floor }
    then { the UE (MCPTT Client) sends a Floor Request nessage to the floor participants and
respects the floor control imposed by the floor control entity/arbitrator }
            }
```

7.1.5.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.379 clauses 10.2.2.4.3.3, 10.2.2.4.3.7, 10.2.2.4.3.5. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 10.2.2.4.3.3]

When in the "S1: start-stop" state, upon receiving a GROUP CALL ANNOUNCEMENT message with the MCPTT group ID IE not matching MCPTT group ID of the call stored for other state machines, the MCPTT client:

1) shall store the value of the SDP IE of the GROUP CALL ANNOUNCEMENT message as the SDP body of the call;

2) shall store the value of the Call identifier IE of the GROUP CALL ANNOUNCEMENT message as the call identifier of the call;

3) shall store the value of the Originating MCPTT user ID IE of the GROUP CALL ANNOUNCEMENT message as the originating MCPTT user ID of the call;

4) shall store the value of the Refresh interval IE of the GROUP CALL ANNOUNCEMENT message as the refresh interval of the call;

5) shall store the value of the MCPTT group ID IE of the GROUP CALL ANNOUNCEMENT message as the MCPTT group ID of the call;

6) shall store the value of the Call start time IE of the GROUP CALL ANNOUNCEMENT message as the call start time of the call;

7) shall create a call type control state machine as described in subclause 10.2.3.2;

8) if the terminating UE is configured that the terminating MCPTT user acknowledgement is required upon a terminating call request reception:

   a) shall start timer TFG4 (waiting for the user);

   b) if the GROUP CALL ANNOUNCEMENT message contains the Confirm mode indication IE, shall enter the "S5: pending user action with confirm indication" state; and

c) if the GROUP CALL ANNOUNCEMENT message does not contains the Confirm mode indication IE, shall enter the "S4: pending user action without confirm indication" state; and

9) if the terminating UE is configured that the terminating MCPTT user acknowledgement is not required upon a terminating call request reception:

a) shall establish a media session based on the stored SDP body of the call;

b) shall start floor control as terminating floor participant as specified in subclause 7.2 in 3GPP TS 24.380 [5];

c) if the GROUP CALL ANNOUNCEMENT message contains the Confirm mode indication IE:

i) shall generate a GROUP CALL ACCEPT message as specified in subclause 15.1.4. In the GROUP CALL ACCEPT message, the MCPTT client:

A) shall set the Call identifier IE to the stored call identifier of the call;

B) shall set the Sending MCPTT user ID IE to own MCPTT user id;

C) shall set the Call type IE to the stored current call type associated with the call type control state machine; and

D) shall set the MCPTT group ID IE to the stored MCPTT group ID of the call; and

ii) shall send the GROUP CALL ACCEPT message as specified in subclause 10.2.1.1.1;

d) shall start timer TFG6 (max duration) with value as specified in subclause 10.2.2.4.1.2;

e) shall start timer TFG2 (call announcement) with value as specified in subclause 10.2.2.4.1.1.1; and

f) shall enter the "S3: part of ongoing call" state.

[TS 24.379, clause 10.2.2.4.3.7]

When in the "S5: pending user action with confirm indication" state or the "S4: pending user action without confirm indication" state, upon an indication from the MCPTT user to reject the incoming group call, the MCPTT client:

1) shall stop timer TFG4 (waiting for the user);

2) shall start timer TFG5 (not present incoming call announcements); and

3) shall enter the "S6: ignoring incoming call announcements" state.

[TS 24.379, clause 10.2.2.4.3.5]

When in the "S4: pending user action without confirm indication" state, upon an indication from the MCPTT user to accept the incoming group call, the MCPTT client:

1) shall establish a media session based on the stored SDP body of the call;

2) shall start floor control as terminating floor participant as specified in subclause 7.2 in 3GPP TS 24.380 [5];

3) shall start timer TFG6 (max duration) with value as specified in subclause 10.2.2.4.1.2;

4) shall start timer TFG2 (call announcement) with value as specified in subclause 10.2.2.4.1.1.1; and

5) shall enter the "S3: part of ongoing call" state.

7.1.5.3 Test description

7.1.5.3.1 Pre-test conditions

System Simulator:

- SS-UE1 (MCPTT client)

    - For the underlying "transport bearer" over which the SS and the UE will communicate, the SS is behaving as SS-UE1 as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

- GNSS simulator to simulate a location and provide a timing reference for the assistance of E-UTRAN off-network testing.

NOTE 1: For operation in off-network environment, it needs be ensured that after the UE is powered up it considers the Geographical area #1 that is simulated by the GNSS simulator as being one of the geographical areas set in the USIM for operation when UE is "not served by E-UTRAN".

- SS-NW (MCPTT server)

    - For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

NOTE 2: The SS operation as NW (MCPTT server) is needed only for the Preamble if the UE has to perform the MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

IUT:

- UE (MCPTT client)

- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

- For the underlying "transport bearer" over which the SS and the UE will communicate, the UE is behaving as a ProSe enabled UE as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.

- UE (MCPTT Client) is configured such that user acknowledgement is required upon a terminating call request reception

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

- The GNSS simulator is configured to simulate a location in the centre of Geographical area #1 and provide a timing reference, as defined in TS 36.508 [24] Table 4.11.2-2 scenario #1.

- The UE is switched-off.

- UE States at the end of the preamble

    - The UE is in state 'switched-off'.

7.1.5.3.2 Test procedure sequence

Table 7.1.5.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Power up the UE.	-	-	-	-
1A	Trigger the UE to reset UTC time and location. NOTE: The UTC time and location reset may be performed by MMI or AT command (+CUTCR).	-	-	-	-
2	Activate the MCPTT Client Application and register User A as the MCPTT User (TS 36.579-5 [5], px_MCPTT_User_A_username, px_MCPTT_User_A_password). (NOTE 1)	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.10 'Generic Test Procedure for MCPTT CT communication over ProSe direct one-to-many communication out of E-UTRA coverage / Announcing/Discoveree procedure for group member discovery / One-to-many communication'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
3	SS-UE1 (MCPTT client) sends a GROUP CALL ANNOUNCEMENT (NOTE 2)	<--	GROUP CALL ANNOUNCEMENT	-	-
4	Void	-	-	-	-
5	While the UE (MCPTT Client) is in the "S4: pending user action without confirm indication" state, make the UE (MCPTT Client) reject the call request (NOTE 1), (NOTE 3)	-	-	-	-
6	Void	-	-	-	-
7	Void	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.10 'Generic Test Procedure for MCPTT CT communication over ProSe direct one-to-many communication out of E-UTRA coverage / Announcing/Discoveree procedure for group member discovery / One-to-many communication'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
8	SS-UE1 (MCPTT client) sends a GROUP CALL ANNOUNCEMENT (NOTE 2)	<--	GROUP CALL ANNOUNCEMENT	-	-
9	Void	-	-	-	-
10	While the UE (MCPTT Client) is in the "S4: pending user action without confirm indication" state, make the UE (MCPTT Client) accept the call request (NOTE 1), (NOTE 3)	-	-	-	-
10A	Make the UE (MCPTT Client) request the floor (NOTE 1)	-->	Floor Request		
11	Check: Does the UE (MCPTT Client) send a Floor Request message to the floor participants?	-	-	1	P
11A	The SS-UE1 (MCPTT client) responds with a Floor Deny message	<--	Floor Deny	-	-
12	Make the UE (MCPTT Client) release the group call (NOTE 1)	-	-	-	-

NOTE 1: This is expected to be done via a suitable implementation dependent MMI. NOTE 2: The UE (MCPTT Client) enters the "S4: pending user action without confirm indication" state NOTE 3: If the MCPTT User does not act before the expiration of timer TFG4 (waiting for the user), then the MCPTT Client will enter the "S6: ignoring incoming call announcements" state and the remaining steps will not be valid. Timer TFG4 (waiting for the user)=20s as defined in TS 36.579-1 [2], Table 5.5.8.1-1 and is started upon the receiving of the GROUP CALL ANNOUNCEMENT message. If during test execution it is found that the specified timer value is not large enough, then a new value needs to be specified.

7.1.5.3.3 Specific message contents

Table 7.1.5.3.3-1: GROUP CALL ANNOUNCEMENT (steps 3, 8, Table 7.1.5.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.5.2.2-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Confirm mode indication	Not present	The terminating MCPTT client is expected to confirm call acceptance	

7.1.6 Off-network / Group Call / Merge Two Calls

7.1.6.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) having established an off-network MCPTT Pre-arranged Group Call }
ensure that {
  when { the UE (MCPTT Client) receives a GROUP CALL ANNOUNCEMENT message with the same call type as
the current call, the same start time as the current call, but with a lower Call identifier IE }
    then { UE (MCPTT Client) merges the two calls and restarts floor control as a terminating floor
participant and respects the floor control imposed by the floor control entity/arbitrator }
            }
```

7.1.6.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.379 clause 10.2.2.4.6.1, TS 24.380 clause 7.2.3.2.3. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 10.2.2.4.6.1]

When in the "S3: part of ongoing call" state, upon receiving a GROUP CALL ANNOUNCEMENT message with the MCPTT group ID IE matching the stored MCPTT group ID of the call and:

1) the Originating MCPTT user ID IE is different from the stored originating MCPTT user ID of the call; or

2) the Call identifier IE is different from the stored call identifier of the call;

then:

1) if the stored current call type associated with the call type control state machine is "BASIC GROUP CALL" and the value of the Call type IE of GROUP CALL ANNOUNCEMENT message is either "IMMINENT PERIL GROUP CALL" or "EMERGENCY GROUP CALL";

2) if the stored current call type associated with the call type control state machine is "IMMINENT PERIL GROUP CALL" and the value of the Call type IE of GROUP CALL ANNOUNCEMENT message is "EMERGENCY GROUP CALL";

3) if the stored current call type associated with the call type control state machine being equal to the Call type IE of the GROUP CALL ANNOUNCEMENT message and the Call start time IE of the GROUP CALL ANNOUNCEMENT message being lower than the stored call start time of the call; or

4) if the stored current call type associated with the call type control state machine being equal to the Call type IE of the GROUP CALL ANNOUNCEMENT message and the Call start time IE of the GROUP CALL ANNOUNCEMENT message being equal to the stored call start time of the call and the Call identifier IE of the GROUP CALL ANNOUNCEMENT message being lower than the stored call identifier of the call;

the MCPTT client:

1) shall store the value of the SDP IE of the GROUP CALL ANNOUNCEMENT message as the SDP body of the call;

2) shall store the value of the Call identifier IE of the GROUP CALL ANNOUNCEMENT message as the call identifier of the call;

3) shall store the value of the Originating MCPTT user ID IE of the GROUP CALL ANNOUNCEMENT message as the originating MCPTT user ID of the call;

4) shall store the value of the Refresh interval IE of the GROUP CALL ANNOUNCEMENT message as the refresh interval of the call;

5) shall store the value of the Call start time IE of the GROUP CALL ANNOUNCEMENT message as the call start time of the call;

6) shall adjust the media session based on the stored SDP body of the call and restart floor control as terminating floor participant as specified in subclause 7.2 in 3GPP TS 24.380 [5];

7) shall stop timer TFG6 (max duration);

8) shall start timer TFG6 (max duration) with value as specified in subclause 10.2.2.4.1.2;

9) shall stop timer TFG2 (call announcement); and

10) shall start timer TFG2 (call announcement) with value according to rules and procedures as specified in subclause 10.2.2.4.1.1.1; and

11) shall remain in the "S3: part of ongoing call" state.

[TS 24.380, clause 7.2.3.2.3]

When an MCPTT call is established the terminating floor participant:

1. shall create an instance of a floor participant state transition diagram for basic operation state machine;

2. shall start timer T230 (Inactivity); and

3. shall enter 'O: silence' state.

7.1.6.3 Test description

7.1.6.3.1 Pre-test conditions

System Simulator:

- SS-UE1 (MCPTT client)

  - For the underlying "transport bearer" over which the SS and the UE will communicate, the SS is behaving as SS-UE1 as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

- GNSS simulator to simulate a location and provide a timing reference for the assistance of E-UTRAN off-network testing.

NOTE 1: For operation in off-network environment, it needs be ensured that after the UE is powered up it considers the Geographical area #1 that is simulated by the GNSS simulator as being one of the geographical areas set in the USIM for operation when UE is "not served by E-UTRAN".

- SS-NW (MCPTT server)

  -- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

NOTE 2: The SS operation as NW (MCPTT server) is needed only for the Preamble if the UE has to perform the MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.
- For the underlying "transport bearer" over which the SS and the UE will communicate, the UE is behaving as a ProSe enabled UE as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- The GNSS simulator is configured to simulate a location in the centre of Geographical area #1 and provide a timing reference, as defined in TS 36.508 [24] Table 4.11.2-2 scenario #1.
- The UE is switched-off.
- UE States at the end of the preamble
  - The UE is in state 'switched-off'.

7.1.6.3.2 Test procedure sequence

Table 7.1.6.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Power up the UE	-	-	-	-
1A	Trigger the UE to reset UTC time and location. NOTE: The UTC time and location reset may be performed by MMI or AT command (+CUTCR).	-	-	-	-
2	Activate the MCPTT Client Application and register User A as the MCPTT User (TS 36.579-5 [5], px_MCPTT_User_A_username, px_MCPTT_User_A_password). (NOTE 1)	-	-	-	-
3	Make the UE (MCPTT Client) initiate an off-network basic group call (NOTE 1)	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT off-network call establishment are described in TS 36.579-1 [2], subclause 5.4.11 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-many communication out of E-UTRA coverage / Monitoring/Discoverer procedure for group member discovery / One-to-many communication'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
4	Check: Does the UE (MCPTT client) send a GROUP CALL PROBE message to determine the current call status of the group? (NOTE 2)	-->	GROUP CALL PROBE	-	-
-	EXCEPTION: Step 5 is executed a total of 3 times	-	-	-	-
5	At the expiration of TFG3 (call probe retransmission), the UE (MCPTT Client) sends a retransmission of the GROUP CALL PROBE sent in step 4	-->	GROUP CALL PROBE	-	-
6	At the expiration of TFG1 (wait for call announcement), and after receiving no response to the GROUP CALL PROBE, the UE (MCPTT Client) sends a GROUP CALL ANNOUNCEMENT message to initiate an off-network basic group call	-->	GROUP CALL ANNOUNCEMENT	-	-
7	The SS-UE1 (MCPTT client) sends a GROUP CALL ACCEPT accepting the GROUP CALL ANNOUNCEMENT	<--	GROUP CALL ACCEPT	-	-
8	The UE (MCPTT Client) sends a Floor Granted message towards the other floor participants	-->	Floor Granted	-	-
9	Void	-	-	-	-
10	The SS-UE1 (MCPTT client) sends a GROUP CALL ANNOUNCEMENT message with the same call type as the current call, the same start time as the current call, but with a lower Call identifier IE	<--	GROUP CALL ANNOUNCEMENT	-	-
11	The SS-UE1 (MCPTT client) sends a Floor Granted message to the UE (MCPTT Client) (NOTE 3)	<--	Floor Granted	-	-
12	Void	-	-	-	-
13	Make the UE (MCPTT User) request the floor (NOTE 4)	-	-	-	-
14	Check: Does the UE (MCPTT Client) send a Floor Request message to the floor participants?	-->	Floor Request	1	P
15	The SS-UE1 (MCPTT client) sends a Floor Granted message granting the floor to the UE (MCPTT Client)	<--	Floor Granted	-	-

16	Make the UE (MCPTT User) release the floor (NOTE 1), (NOTE5)	-	-	-	-
17	Check: Does the UE (MCPTT Client) send a Floor Release message to the other floor participants?	-->	Floor Release	1	P
18	Make the UE (MCPTT Client) release the group call (NOTE 1)	-	-	-	-

NOTE 1: This is expected to be done via a suitable implementation dependent MMI.
NOTE 2: Timer TFG3 (call probe retransmission)=40ms as defined in TS 36.579-1 [2], Table 5.5.8.1-1 and TFG1 (wait for call announcement)=150ms as defined in TS 36.579-1 [2], Table 5.5.8.1-1 are started upon the sending of the GROUP CALL PROBE message
NOTE 3: The UE (MCPTT Client) merges the 2 calls and relinquishes floor control to the sender of the GROUP CALL ANNOUNCEMENT in step 10
NOTE 4: If the MCPTT User does not perform an action before timer T230 (Inactivity) expires, then the MCPTT Client will enter the 'O: 'Start-stop'' state per 24.380 [10] and the remaining steps will not be valid. Timer T230 (Inactivity) is started upon the receiving of the Floor Granted message. Timer T230 (Inactivity)=10s, as defined in TS 36.579-1 [2], Table 5.5.8.1-1. If during test execution it is found that the specified timer value is not large enough, then a new value needs to be specified.
NOTE 5: If the MCPTT User does not release the floor before timer T207 (Stop talking) expires, then the MCPTT Client will enter the 'O: silence' state per TS 24.380 [10] and the remaining steps will not be valid. Timer T206 (Stop talking warning) is started upon the receiving of the Floor Granted message. Timer T207 (Stop talking) starts upon the expiration of Timer T206 (Stop talking warning). Timer T206 (Stop talking warning)=10s is set to TransmitTimeout=60s, as defined in TS 36.579-1 [2], Table 5.5.8.4-1, minus TransmissionWarning=50s, as defined in TS 36.579-1 [2], Table 5.5.8.4-1. Timer T207 (Stop talking)=50s is set to TransmissionWarning=50s, as defined in TS 36.579-1 [2], Table 5.5.8.4-1. If during test execution it is found that the specified timer(s) value(s) are not large enough, then new value(s) need to be specified.

7.1.6.3.3 Specific message contents

Table 7.1.6.3.3-1: GROUP CALL ANNOUNCEMENT (step 10, Table 7.1.6.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.5.2.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	A value less than the Call identifier used in the GROUP CALL ANNOUNCEMENT sent in step 5		
Call start time	The same Call start time used in the GROUP CALL ANNOUNCEMENT sent in step 5		

Table 7.1.6.3.3-2: Floor Granted (step 8, Table 7.1.6.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Duration			
Duration	any allowed value		
Floor priority	"0"		
Floor Indicator			
Floor Indicator	'10000X0000000000'	bit A=1 (Normal call) bit F=X (Queueing supported) any value	

Table 7.1.6.3.3-3: Floor Granted (step 10, Table 7.1.6.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Duration			
Duration	any allowed value		
Floor priority	"0"		
User ID			
User ID	Px_MCPTT_User_B_ID		
Floor Indicator			
Floor Indicator	'1000010000000000'	bit A=1 (Normal call) bit F=1 (Queueing supported) any value	

Table 7.1.6.3.3-4: Floor Granted (step 14, Table 7.1.6.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Duration			
Duration	any allowed value		
Floor priority	"0"		
Floor Indicator			
Floor Indicator	'1000010000000000'	bit A=1 (Normal call) bit F=1 (Queueing supported) any value	

Table 7.1.6.3.3-5: Floor Request (step 13, Table 7.1.6.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.2-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'10000X0000000000'	bit A=1 (Normal call) bit F=X (Queueing supported) any value	

Table 7.1.6.3.3-6: Floor Release (step 16, Table 7.1.6.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.5-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'10000X0000000000'	bit A=1 (Normal call) bit F=X (Queueing supported) any value	

7.1.7 Off-network / Group Call / Emergency Call / Imminent Peril Call / Client Originated (CO)

7.1.7.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service, including authorised to
initiate/cancel emergency group calls in off-network environment, and the UE (MCPTT Client) is in an
off-network environment }
ensure that {
  when { the MCPTT User requests the establishment of an MCPTT emergency group call }
    then { UE (MCPTT Client) requests an MCPTT emergency group call by sending a GROUP CALL
ANNOUNCEMENT message, and respects the floor control imposed by the floor control entity/arbitrator
}
            }
```

(2)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service, including authorised to
initiate/cancel imminent peril group calls in off-network environment, and the UE (MCPTT Client) is
in an off-network environment }
ensure that {
  when { the MCPTT User requests the establishment of an MCPTT imminent peril group call }
    then { UE (MCPTT Client) requests an MCPTT imminent peril group call by sending a GROUP CALL
ANNOUNCEMENT message, and respects the floor control imposed by the floor control entity/arbitrator
}
            }
```

7.1.7.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.379 clauses 10.2.2.4.2.1, 10.2.3.4.2, 10.2.3.4.6, 10.2.2.4.3.1, TS 24.380 clause 7.2.3.2.2. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 10.2.2.4.2.1]

When in the "S1: start-stop" state, upon an indication from an MCPTT user to initiate a group call for an MCPTT group ID, the MCPTT client:

1) shall store the MCPTT group ID as the MCPTT group ID of the call;

2) shall create a call type control state machine as described in subclause 10.2.3.2;

3) shall generate a GROUP CALL PROBE message as specified in subclause 15.1.2. In the GROUP CALL PROBE message, the MCPTT client:

   a) shall set the MCPTT group ID IE to the stored MCPTT group ID of the call;

4) shall send the GROUP CALL PROBE message as specified in subclause 10.2.1.1.1;

5) shall start timer TFG3 (call probe retransmission);

6) shall start timer TFG1 (wait for call announcement); and

7) shall enter the "S2: waiting for call announcement" state.

[TS 24.379, clause 10.2.3.4.2]

When in the "T0: waiting for the call to establish " state, upon an indication from an MCPTT user to initiate a group call probe for an MCPTT group, the MCPTT client:

1) if the stored emergency state associated with emergency alert state machine described in 12.2.2.2 is set to "true" and the value of "/<*x*>/<x>/Common/AllowedEmergencyCall" leaf node present in group configuration as specified in 3GPP TS 24.383 [45] is set to "true":

   a) shall set the stored current call type to "EMERGENCY GROUP CALL"; and

b) shall set the stored current ProSe per-packet priority to value corresponding to MCPTT off-network emergency group call as described in 3GPP TS 24.383 [45];

2) if the stored emergency state associated with emergency alert state machine described in 12.2.2.2 is set to "false", and:

a) if the user initiates an MCPTT emergency call and the values of "/<*x*>/<*x*>/Common/MCPTTGroupCall/EmergencyCall/Enabled" leaf node present in the user profile and "/<*x*>/<x>/Common/AllowedEmergencyCall" leaf node present in group configuration as specified in 3GPP TS 24.383 [45] are set to "true":

i) shall set the stored current call type to "EMERGENCY GROUP CALL"; and

ii) shall set the stored current ProSe per-packet priority to value corresponding to MCPTT off-network emergency group call as described in 3GPP TS 24.383 [45];

b) if the user initiates an MCPTT imminent peril group call and the values of "/<*x*>/<*x*>/Common/MCPTTGroupCall/ImminentPerilCall/Authorised" leaf node present in the user profile "/<*x*>/<x>/Common/AllowedImminentPerilCall " leaf node present in group configuration as specified in 3GPP TS 24.383 [45] are set to "true":

i) shall set the stored current call type to "IMMINENT PERIL GROUP CALL"; and

ii) shall set the stored current ProSe per-packet priority to value corresponding to MCPTT off-network imminent peril group call as described in 3GPP TS 24.383 [45]; and

c) if the user initiates an MCPTT group call which is not an MCPTT emergency call and which is not an MCPTT imminent peril group call:

i) shall set the stored current call type to "BASIC GROUP CALL"; and

ii) shall set the stored current ProSe per-packet priority to value corresponding to MCPTT off-network basic group call as described in 3GPP TS 24.383 [45];

3) shall set the stored last call type change time to current UTC time;

4) shall set the last user to change call type to own MCPTT user ID; and

5) shall remain in "T0: waiting for the call to establish" state.

[TS 24.379, clause 10.2.3.4.6]

When in state "T0: waiting for the call to establish", if:

a) the MCPTT user accepts the call when MCPTT user acknowledgement is required; or

b) the MCPTT client sends a GROUP CALL ANNOUNCEMENT message on expiry of timer TFG1 (wait for call announcement) associated with the basic call control state machine;

the MCPTT client:

1) if the stored current call type is set to "EMERGENCY GROUP CALL"

a) shall start timer TFG13 (implicit downgrade emergency) with value as specified in subclause 10.2.3.4.1.1; and

b) shall enter "T1: in-progress emergency group call" state;

2) if the stored current call type is set to "IMMINENT PERIL GROUP CALL"

a) shall start timer TFG14 (implicit downgrade imminent peril) with value as specified in subclause 10.2.3.4.1.2; and

b) shall enter "T3: in-progress imminent peril group call" state; or

3) if the stored current call type is set to "BASIC GROUP CALL"

a) shall enter "T2: in-progress basic group call" state.

[TS 24.379, clause 10.2.2.4.3.1]

When in the "S2: waiting for call announcement" state, upon expiry of timer TFG1 (wait for call announcement), the MCPTT client:

1) shall stop timer TFG3 (call probe retransmission), if running;

2) shall generate an SDP body as specified in subclause 10.2.1.1.2 and store it as the SDP body of the call;

3) shall generate a random number with uniform distribution between 0 and 65535 and store it as the call identifier of the call;

4) shall select refresh interval value and store it as the refresh interval of the call;

5) shall store own MCPTT user ID as the originating MCPTT user ID of the call;

6) shall store the current UTC time as the call start time of the call;

7) shall generate a GROUP CALL ANNOUNCEMENT message as specified in subclause 15.1.3. In the GROUP CALL ANNOUNCEMENT message, the MCPTT client:

   a) shall set the Call identifier IE to the stored call identifier of the call;

   b) shall set the Call type IE to the stored current call type associated with the call type control state machine;

   c) shall set the Refresh interval IE to the stored refresh interval of the call;

   d) shall set the SDP IE to the stored SDP body of the call;

   e) shall set the Originating MCPTT user ID IE to the stored originating MCPTT user ID of the call;

   f) shall set the MCPTT group ID IE to the stored MCPTT group ID of the call;

   g) shall set the Call start time IE to the stored call start time of the call;

   h) shall set the Last call type change time IE to the stored last call type change time of the call associated with call type control state machine;

   i) shall set the Last user to change call type IE to last user to change call type associated with call type control state machine; and

   j) may include the Confirm mode indication IE;

8) shall send the GROUP CALL ANNOUNCEMENT message as specified in subclause 10.2.1.1.1;

9) shall establish a media session based on the stored SDP body of the call;

10) shall start floor control as originating floor participant as specified in subclause 7.2 in 3GPP TS 24.380 [5];

11) shall start timer TFG6 (max duration) with value as specified in subclause 10.2.2.4.1.2;

12) shall start timer TFG2 (call announcement) with value as specified in subclause 10.2.2.4.1.1.1; and

13) shall enter the "S3: part of ongoing call" state.

NOTE: In this release of the present document, the refresh interval of the call is fixed to 10 seconds.

[TS 24.380, clause 7.2.3.2.2]

When an MCPTT call is established with session announcement including an explicit floor request, the originating floor participant:

1. shall create an instance of a floor participant state transition diagram for basic operation state machine;

2. shall send Floor Granted message towards other floor participants. The Floor Granted message:

a. shall include the granted priority in the Floor priority field;

b. shall include the MCPTT user's own MCPTT ID in the User ID field; and

c. if the floor request is a broadcast group call, system call, emergency call or an imminent peril call, shall include a Floor Indicator field indicating the relevant call types;

3. shall set the stored SSRC of the current florr arbitrator to its own SSRC; and

4. shall enter 'O: has permission' state.

7.1.7.3 Test description

7.1.7.3.1 Pre-test conditions

System Simulator:

- SS-UE1 (MCPTT client)

  - For the underlying "transport bearer" over which the SS and the UE will communicate, the SS is behaving as SS-UE1 as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

- GNSS simulator to simulate a location and provide a timing reference for the assistance of E-UTRAN off-network testing.

NOTE 1: For operation in off-network environment, it needs be ensured that after the UE is powered up it considers the Geographical area #1 that is simulated by the GNSS simulator as being one of the geographical areas set in the USIM for operation when UE is "not served by E-UTRAN".

- SS-NW (MCPTT server)

  -- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

NOTE 2: The SS operation as NW (MCPTT server) is needed only for the Preamble if the UE has to perform the MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

IUT:

- UE (MCPTT client)

- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

- For the underlying "transport bearer" over which the SS and the UE will communicate, the UE is behaving as a ProSe enabled UE as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

- The GNSS simulator is configured to simulate a location in the centre of Geographical area #1 and provide a timing reference, as defined in TS 36.508 [24] Table 4.11.2-2 scenario #1.

- The UE is switched-off.

- UE States at the end of the preamble:
  - The UE is in state 'switched-off'.

7.1.7.3.2 Test procedure sequence

Table 7.1.7.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Power up the UE	-	-	-	-
1A	Trigger the UE to reset UTC time and location. NOTE: The UTC time and location reset may be performed by MMI or AT command (+CUTCR).	-	-	-	-
2	Activate the MCPTT Client Application and register User A as the MCPTT User (TS 36.579-5 [5], px_MCPTT_User_A_username, px_MCPTT_User_A_password). (NOTE 1)	-	-	-	-
3	Make the UE (MCPTT Client) initiate an off-network emergency group call (NOTE 1)	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT off-network call establishment are described in TS 36.579-1 [2], subclause 5.4.11 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-many communication out of E-UTRA coverage / Monitoring/Discoverer procedure for group member discovery / One-to-many communication'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
4	The UE (MCPTT client) sends a GROUP CALL PROBE message to determine the current call status of the group	-->	GROUP CALL PROBE	-	-
-	EXCEPTION: Step 5 is executed a total of 3 times	-	-	-	-
5	At the expiration of TFG3 (call probe retransmission), the UE (MCPTT Client) send a retransmission of the GROUP CALL PROBE sent in step 4	-->	GROUP CALL PROBE	-	-
6	Check: At the expiration of TFG1 (wait for call announcement), and after receiving no response to the GROUP CALL PROBE, does the UE (MCPTT Client) send a GROUP CALL ANNOUNCEMENT message to initiate an off-network emergency group call?	-->	GROUP CALL ANNOUNCEMENT	1	P
7	The SS-UE1 (MCPTT client) sends a GROUP CALL ACCEPT accepting the GROUP CALL ANNOUNCEMENT	<--	GROUP CALL ACCEPT	-	-
8	Check: Does the UE (MCPTT Client) send a Floor Granted message towards the other floor participants?	-->	Floor Granted	1	P
9	Make the UE (MCPTT User) release the floor (NOTE 1), (NOTE 2)	-	-	-	-
10	Check: Does the UE (MCPTT Client) send a Floor Release message to the other floor participants?	-->	Floor Release	1	P
11	Make the UE (MCPTT Client) release the emergency group call (NOTE 1)	-	-	-	-
12	Void	-	-	-	-
13	Void	-	-	-	-
14	Make the UE (MCPTT Client) initiate an off-network imminent peril group call (NOTE 1)	-	-	-	-

-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT off-network call establishment are described in TS 36.579-1 [2], subclause 5.4.11 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-many communication out of E-UTRA coverage / Monitoring/Discoverer procedure for group member discovery / One-to-many communication'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
15	Check: Does the UE (MCPTT client) send a GROUP CALL PROBE message to determine the current call status of the group?	-->	GROUP CALL PROBE	-	-
-	EXCEPTION: Step 16 is executed a total of 3 times	-	-	-	-
16	Check: At the expiration of TFG3 (call probe retransmission), does the UE (MCPTT Client) send a retransmission of the GROUP CALL PROBE sent in step 15?	-->	GROUP CALL PROBE	-	-
17	Check: At the expiration of TFG1 (wait for call announcement), and after receiving no response to the GROUP CALL PROBE, does the UE (MCPTT Client) send a GROUP CALL ANNOUNCEMENT message to initiate an off-network imminent peril group call?	-->	GROUP CALL ANNOUNCEMENT	2	P
18	The SS-UE1 (MCPTT client) sends a GROUP CALL ACCEPT accepting the GROUP CALL ANNOUNCEMENT	<--	GROUP CALL ACCEPT	-	-
19	Check: Does the UE (MCPTT Client) send a Floor Granted message towards the other floor participants?	-->	Floor Granted	2	P
20	Make the UE (MCPTT User) release the floor (NOTE 1), (NOTE 2)	-	-	-	-
21	Check: Does the UE (MCPTT Client) send a Floor Release message to the other floor participants?	-->	Floor Release	2	P
22	Make the UE (MCPTT Client) release the imminent peril group call (NOTE 1)	-	-	-	-

NOTE 1: This is expected to be done via a suitable implementation dependent MMI.
NOTE 2: If the MCPTT User does not perform an action before timer T207 (Stop talking) expires, then the MCPTT Client will enter the 'O: 'Silence' state per 24.380 [10] and the remaining steps will not be valid. Timer T207 (Stop talking) is started upon the expiration of time T206 (Stop talking warning), which is started at the sending of the Floor Granted message. T207 (Stop talking)=3s, as defined in TS 24.380 [10], Table 11.1.2-1. And T206 (Stop talking warning)=27s, as defined in TS 24.380 [10], Table 11.1.2-1. If during test execution it is found that the specified timer(s) value(s) are not large enough, then new value(s) need to be specified.

7.1.7.3.3 Specific message contents

Table 7.1.7.3.3-1: GROUP CALL ANNOUNCEMENT (step 6, Table 7.1.7.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.5.2.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call type	"00000011"	Emergency Group Call	

Table 7.1.7.3.3-2: GROUP CALL ANNOUNCEMENT (step 17, Table 7.1.7.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.5.2.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call type	"00000100"	Imminent Peril Group Call	

Table 7.1.7.3.3-3: GROUP CALL ACCEPT (step 7, Table 7.1.7.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.5.3.2-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call type	"00000011"	Emergency Group Call	

Table 7.1.7.3.3-4: GROUP CALL ACCEPT (step 18, Table 7.1.7.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.5.3.2-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call type	"00000100"	Imminent Peril Group Call	

Table 7.1.7.3.3-5: Floor Granted (step 8, Table 7.1.7.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Duration			
Duration	any allowed value		
Floor Indicator			
Floor Indicator	'00010X0000000000'	bit D=1 (Emergency call) bit F=X (Queueing supported) any value	

Table 7.1.7.3.3-6: Floor Granted (step 19, Table 7.1.7.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Duration			
Duration	any allowed value		
Floor Indicator			
Floor Indicator	'00001X0000000000'	bit E=1 (Imminent peril call) bit F=X (Queueing supported) any value	

Table 7.1.7.3.3-7: Floor Release (step 10, Table 7.1.7.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.5-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'00010X0000000000'	bit D=1 (Emergency call) bit F=X (Queueing supported) any value	

Table 7.1.7.3.3-8: Floor Release (step 21, Table 7.1.7.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.5-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'00001X0000000000'	bit E=1 (Imminent peril call) bit F=X (Queueing supported) any value	

7.1.8 Off-network / Group Call / Emergency Call / Imminent Peril Call / Client Terminated (CT)

7.1.8.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service, including authorised to
receive emergency group calls in off-network environment, and the UE (MCPTT Client) is in an off-
network environment }
ensure that {
  when { the UE (MCPTT Client) receives GROUP CALL ANNOUNCEMENT to initiate an MCPTT emergency group
call }
    then { UE (MCPTT Client) responds by sending a GROUP CALL ACCEPT message, and respects the floor
control imposed by the floor control entity/arbitrator }
            }
```

(2)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service, including authorised to
receive imminent peril group calls in off-network environment, and the UE (MCPTT Client) is in an
off-network environment }
ensure that {
  when { the UE (MCPTT Client) receives GROUP CALL ANNOUNCEMENT to initiate an MCPTT imminent peril
group call }
    then { UE (MCPTT Client) responds by sending a GROUP CALL ACCEPT message, and respects the floor
control imposed by the floor control entity/arbitrator }
            }
```

7.1.8.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.379 clauses 10.2.2.4.3.3, 10.2.3.4.5, 10.2.3.4.6. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 10.2.2.4.3.3]

When in the "S1: start-stop" state, upon receiving a GROUP CALL ANNOUNCEMENT message with the MCPTT group ID IE not matching MCPTT group ID of the call stored for other state machines, the MCPTT client:

1) shall store the value of the SDP IE of the GROUP CALL ANNOUNCEMENT message as the SDP body of the call;

2) shall store the value of the Call identifier IE of the GROUP CALL ANNOUNCEMENT message as the call identifier of the call;

3) shall store the value of the Originating MCPTT user ID IE of the GROUP CALL ANNOUNCEMENT message as the originating MCPTT user ID of the call;

4) shall store the value of the Refresh interval IE of the GROUP CALL ANNOUNCEMENT message as the refresh interval of the call;

5) shall store the value of the MCPTT group ID IE of the GROUP CALL ANNOUNCEMENT message as the MCPTT group ID of the call;

6) shall store the value of the Call start time IE of the GROUP CALL ANNOUNCEMENT message as the call start time of the call;

7) shall create a call type control state machine as described in subclause 10.2.3.2;

8) if the terminating UE is configured that the terminating MCPTT user acknowledgement is required upon a terminating call request reception:

   a) shall start timer TFG4 (waiting for the user);

   b) if the GROUP CALL ANNOUNCEMENT message contains the Confirm mode indication IE, shall enter the "S5: pending user action with confirm indication" state; and

   c) if the GROUP CALL ANNOUNCEMENT message does not contains the Confirm mode indication IE, shall enter the "S4: pending user action without confirm indication" state; and

9) if the terminating UE is configured that the terminating MCPTT user acknowledgement is not required upon a terminating call request reception:

   a) shall establish a media session based on the stored SDP body of the call;

   b) shall start floor control as terminating floor participant as specified in subclause 7.2 in 3GPP TS 24.380 [5];

   c) if the GROUP CALL ANNOUNCEMENT message contains the Confirm mode indication IE:

      i) shall generate a GROUP CALL ACCEPT message as specified in subclause 15.1.4. In the GROUP CALL ACCEPT message, the MCPTT client:

         A) shall set the Call identifier IE to the stored call identifier of the call;

         B) shall set the Sending MCPTT user ID IE to own MCPTT user id;

         C) shall set the Call type IE to the stored current call type associated with the call type control state machine; and

         D) shall set the MCPTT group ID IE to the stored MCPTT group ID of the call; and

      ii) shall send the GROUP CALL ACCEPT message as specified in subclause 10.2.1.1.1;

   d) shall start timer TFG6 (max duration) with value as specified in subclause 10.2.2.4.1.2;

   e) shall start timer TFG2 (call announcement) with value as specified in subclause 10.2.2.4.1.1.1; and

   f) shall enter the "S3: part of ongoing call" state.

[TS 24.379, clause 10.2.3.4.5]

When in the "T0: waiting for the call to establish" state, upon receipt of a GROUP CALL ANNOUNCEMENT message by an idle MCPTT client when MCPTT user acknowledgement is not required, the MCPTT client:

1) shall set the stored last call type change time to the Last call type change time IE of the GROUP CALL ANNOUNCEMENT message;

2) shall set the last user to change call type to the Last user to change call type IE of the GROUP CALL ANNOUNCEMENT message;

3) if the Call type IE of the received GROUP CALL ANNOUNCEMENT message is set to "EMERGENCY GROUP CALL":

   a) shall set the stored current call type to "EMERGENCY GROUP CALL";

   b) shall set the stored current ProSe per-packet priority to value corresponding to MCPTT off-network emergency group call as described in 3GPP TS 24.383 [45];

   c) shall start timer TFG13 (implicit downgrade emergency) with value as specified in subclause 10.2.3.4.1.1; and

d) shall enter "T1: in-progress emergency group call" state;

4) if the Call type IE of the received GROUP CALL ANNOUNCEMENT message is set to "IMMINENT PERIL GROUP CALL":

a) shall set the stored current call type to "IMMINENT PERIL GROUP CALL";

b) shall set the stored current ProSe per-packet priority to value corresponding to MCPTT off-network imminent peril group call as described in3GPP TS 24.383 [45];

c) shall start timer TFG14 (implicit downgrade imminent peril) with value as specified in subclause 10.2.3.4.1.2; and

d) shall enter "T3: in-progress imminent peril group call" state; and

5) if the Call type IE of the received GROUP CALL ANNOUNCEMENT message is set to "BASIC GROUP CALL":

a) shall set the stored current call type to "BASIC GROUP CALL";

b) shall set the stored current ProSe per-packet priority to value corresponding to MCPTT off-network basic group call as described in 3GPP TS 24.383 [45]; and

c) shall enter "T2: in-progress basic group call" state.

[TS 24.379, clause 10.2.3.4.6]

When in state "T0: waiting for the call to establish", if:

a) the MCPTT user accepts the call when MCPTT user acknowledgement is required; or

b) the MCPTT client sends a GROUP CALL ANNOUNCEMENT message on expiry of timer TFG1 (wait for call announcement) associated with the basic call control state machine;

the MCPTT client:

1) if the stored current call type is set to "EMERGENCY GROUP CALL"

a) shall start timer TFG13 (implicit downgrade emergency) with value as specified in subclause 10.2.3.4.1.1; and

b) shall enter "T1: in-progress emergency group call" state;

2) if the stored current call type is set to "IMMINENT PERIL GROUP CALL"

a) shall start timer TFG14 (implicit downgrade imminent peril) with value as specified in subclause 10.2.3.4.1.2; and

b) shall enter "T3: in-progress imminent peril group call" state; or

3) if the stored current call type is set to "BASIC GROUP CALL"

a) shall enter "T2: in-progress basic group call" state.

7.1.8.3 Test description

7.1.8.3.1 Pre-test conditions

System Simulator:

- SS-UE1 (MCPTT client)
  - For the underlying "transport bearer" over which the SS and the UE will communicate, the SS is behaving as SS-UE1 as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

- GNSS simulator to simulate a location and provide a timing reference for the assistance of E-UTRAN off-network testing.

NOTE 1: For operation in off-network environment, it needs be ensured that after the UE is powered up it considers the Geographical area #1 that is simulated by the GNSS simulator as being one of the geographical areas set in the USIM for operation when UE is "not served by E-UTRAN".

- SS-NW (MCPTT server)

  - For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

NOTE 2: The SS operation as NW (MCPTT server) is needed only for the Preamble if the UE has to perform the MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

IUT:

- UE (MCPTT client)

- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

- For the underlying "transport bearer" over which the SS and the UE will communicate, the UE is behaving as a ProSe enabled UE as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.

  - UE is configured that the terminating MCPTT user acknowledgement is not required upon a terminating call request reception

  - TFG1 (wait for call announcement) set to 150 ms (default value) ("/<x>/OffNetwork/Counters/TFG1" leaf node present in the UE initial configuration as specified in 3GPP TS 24.483 [13])

  - TFG3 (call probe retransmission) set to 40 ms (default value) ("/<x>/OffNetwork/Counters/TFG3" leaf node present in the UE initial configuration as specified in 3GPP TS 24.483 [13])

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

- The GNSS simulator is configured to simulate a location in the centre of Geographical area #1 and provide a timing reference, as defined in TS 36.508 [24] Table 4.11.2-2 scenario #1.

- The UE is switched-off.

- UE States at the end of the preamble:

  - The UE is in state 'switched-off'.

7.1.8.3.2 Test procedure sequence

Table 7.1.8.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Power up the UE	-	-	-	-
1A	Trigger the UE to reset UTC time and location. NOTE: The UTC time and location reset may be performed by MMI or AT command (+CUTCR).	-	-	-	-
2	Activate the MCPTT Client Application and register User A as the MCPTT User (TS 36.579-5 [5], px_MCPTT_User_A_username, px_MCPTT_User_A_password). (NOTE 1)	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.10 'Generic Test Procedure for MCPTT CT communication over ProSe direct one-to-many communication out of E-UTRA coverage / Announcing/Discoveree procedure for group member discovery / One-to-many communication'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
3	SS-UE1 (MCPTT client) sends a GROUP CALL ANNOUNCEMENT for the initiation of an emergency group call	<--	GROUP CALL ANNOUNCEMENT	-	-
4	Check: Does the UE (MCPTT Client) send a GROUP CALL ACEEPT message? (NOTE 2)	-->	GROUP CALL ACCEPT	1	P
5	Void	-	-	1	P
6	SS-UE1 (MCPTT client) sends a Floor Granted message	<--	Floor Granted	-	-
7	Make the UE (MCPTT User) request the floor (NOTE 1)	-	-	-	-
8	Check: Does the UE (MCPTT Client) send a Floor Request message to the floor participants?	--->	Floor Request	1	P
9	SS-UE1 (MCPTT client) sends a Floor Deny message	<--	Floor Deny	-	-
10	SS-UE1 (MCPTT client) sends a Floor Release message	<--	Floor Release	-	-
11	Make the UE (MCPTT Client) release the group call (NOTE 1)	-	-	-	-
12	Void	-	-	-	-
13	Void	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.10 'Generic Test Procedure for MCPTT CT communication over ProSe direct one-to-many communication out of E-UTRA coverage / Announcing/Discoveree procedure for group member discovery / One-to-many communication'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
14	SS-UE1 (MCPTT client) sends a GROUP CALL ANNOUNCEMENT for the initiation of an imminent peril group call	<--	GROUP CALL ANNOUNCEMENT	-	-
15	Check: Does the UE (MCPTT Client) send a GROUP CALL ACEEPT message? (NOTE 2)	-->	GROUP CALL ACCEPT	2	P
16	Void	-	-	2	P
17	SS-UE1 (MCPTT client) sends a Floor Granted message	<--	Floor Granted	-	-

18	Make the UE (MCPTT User) request the floor (NOTE 1)	-	-	-	-
19	Check: Does the UE (MCPTT Client) send a Floor Request message to the floor participants?	--->	Floor Request	2	P
20	SS-UE1 (MCPTT client) sends a Floor Deny message	<--	Floor Deny	-	-
21	SS-UE1 (MCPTT client) sends a Floor Release message	<--	Floor Release	-	-
22	Make the UE (MCPTT Client) release the group call (NOTE 1)	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI. NOTE 2: The UE (MCPTT Client) enters the "S3: part of ongoing call" state as a terminating floor participant					

7.1.8.3.3 Specific message contents

Table 7.1.8.3.3-1: GROUP CALL ANNOUNCEMENT (step 3, Table 7.1.8.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.5.2.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call type	"00000011"	Emergency Group Call	
Originating MCPTT user ID	"sip:mcptt-client-B@mcptt-op.gov"	pre-set MCPTT user ID	

Table 7.1.8.3.3-2: GROUP CALL ANNOUNCEMENT (step 14, Table 7.1.8.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.5.2.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call type	"00000100"	Imminent Peril Group Call	
Originating MCPTT user ID	"sip:mcptt-client-B@mcptt-op.gov"	pre-set MCPTT user ID	

Table 7.1.8.3.3-3: GROUP CALL ACCEPT (step 4, Table 7.1.8.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.5.3.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call type	"00000011"	Emergency Group Call	

Table 7.1.8.3.3-4: GROUP CALL ACCEPT (step 15, Table 7.1.8.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.5.3.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call type	"00000100"	Imminent Peril Group Call	

Table 7.1.8.3.3-5: Floor Granted (step 6, Table 7.1.8.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Duration			
Duration	any allowed value		
Floor priority	any allowed value		
User ID			
User ID	"sip:mcptt-client-B@mcptt-op.gov"		
Queue Size			
Queue Size	"0"	the numbers of queued MCPTT clients in the MCPTT call	
SSRC of queued floor participant	Not present		
Queued User ID	Not present		
Queued User ID	Not present		
Queue Info	Not present		
Queue Position Info	Not present		
Queue Priority Level	Not present		
Floor Indicator			
Floor Indicator	'0001000000000000'	bit D=1 (Emergency call)	

Table 7.1.8.3.3-6: Floor Granted (step 17, Table 7.1.8.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Duration			
Duration	any allowed value		
Floor priority	any allowed value		
User ID			
User ID	"sip:mcptt-client-B@mcptt-op.gov"		
Queue Size			
Queue Size	"0"	the numbers of queued MCPTT clients in the MCPTT call	
SSRC of queued floor participant	Not present		
Queued User ID	Not present		
Queued User ID	Not present		
Queue Info	Not present		
Queue Position Info	Not present		
Queue Priority Level	Not present		
Floor Indicator			
Floor Indicator	'0000100000000000'	bit E=1 (Imminent peril call)	

Table 7.1.8.3.3-7: Floor Request (step 8, Table 7.1.8.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.2-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	"sip:mcptt-client-A@mcptt-op.gov"		
Floor Indicator			
Floor Indicator	'00010X0000000000'	bit D=1 (Emergency call) bit F=X (Queueing supported) any value	

Table 7.1.8.3.3-8: Floor Request (step 19, Table 7.1.8.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.2-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	"sip:mcptt-client-A@mcptt-op.gov"		
Floor Indicator			
Floor Indicator	'00001X0000000000'	bit E=1 (Imminent peril call) bit F=X (Queueing supported) any value	

Table 7.1.8.3.3-9: Floor Deny (step 9, Table 7.1.8.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.4-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Reject Cause			
Reject Phrase	"Another MCPTT client has permission"		
User ID			
User ID	"sip:mcptt-client-A@mcptt-op.gov"		
Floor Indicator			
Floor Indicator	'0001000000000000'	bit D=1 (Emergency call)	

Table 7.1.8.3.3-10: Floor Deny (step 20, Table 7.1.8.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.4-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
Reject Cause			
Reject Phrase	"Another MCPTT client has permission"		
User ID			
User ID	"sip:mcptt-client-A@mcptt-op.gov"		
Floor Indicator			
Floor Indicator	'0000100000000000'	bit E=1 (Imminent peril call)	

Table 7.1.8.3.3-11: Floor Release (step 10, Table 7.1.8.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.5-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	"sip:mcptt-client-B@mcptt-op.gov"		
Floor Indicator			
Floor Indicator	'0001000000000000'	bit D=1 (Emergency call)	

Table 7.1.8.3.3-12: Floor Release (step 21, Table 7.1.8.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.6.5-1 condition OFF-NETWORK			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	"sip:mcptt-client-B@mcptt-op.gov"		
Floor Indicator			
Floor Indicator	'0000100000000000'	bit E=1 (Imminent peril call)	

7.1.9 Off-network / Group Call / Emergency Alert / Emergency Alert Retransmission / Cancel Emergency Alert / Client Originated (CO)

7.1.9.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service, including authorised to
initiate emergency alerts in off-network environment, and the UE (MCPTT Client) is in an off-network
environment }
ensure that {
  when { the MCPTT User requests to initiate an MCPTT emergency alert }
    then { UE (MCPTT Client) sends a GROUP EMERGENCY ALERT message and enters the "E2: Emergency
state" state }
            }
```

(2)

```
with { UE (MCPTT Client) in the "E2: Emergency state" state, and the UE (MCPTT Client) is in an off-
network environment }
ensure that {
  when { the timer TFE2 (emergency alert retransmission) expires }
    then { UE (MCPTT Client) retransmits the MCPTT emergency alert by sending a GROUP EMERGENCY
ALERT message}
            }
```

(3)

```
with { UE (MCPTT Client) in the "E2: Emergency state" state, and the UE (MCPTT Client) is in an off-
network environment }
ensure that {
  when { the MCPTT User requests to cancel the MCPTT emergency alert }
    then { UE (MCPTT Client) sends a GROUP EMERGENCY ALERT CANCEL message and enters the "E1: Not in
emergency state" state }
            }
```

7.1.9.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.379 clauses 12.2.3.1, 12.2.3.2, 12.2.3.5. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 12.2.3.1]

When in state "E1: Not in emergency state", upon receiving an indication from the MCPTT user to transmit an emergency alert for an MCPTT group ID, and the values of "/<*x*>/<*x*>/Common/MCPTTGroupCall/EmergencyAlert/Authorised" leaf node present in the user profile and "/<*x*>/<x>/Common/AllowedEmergencyAlert" present in group configuration as specified in 3GPP TS 24.383 [45] are set to "true", the MCPTT client:

1) shall set the stored emergency state as "true";

2) shall set the stored MCPTT group ID to the indicated MCPTT group ID;

3) shall generate a GROUP EMERGENCY ALERT message as specified in subclause 15.1.16. In the GROUP EMERGENCY ALERT message, the MCPTT client:

   a) shall set the MCPTT group ID IE to the stored MCPTT group ID;

   b) shall set the Originating MCPTT user ID IE to own MCPTT user ID;

   c) shall set the Organization name IE to own organization name; and

   d) may set the User location IE with client's current location, if requested;

4) shall send the GROUP EMERGENCY ALERT message as specified in subclause 10.2.1.1.1;

5) shall start timer TFE2 (emergency alert retransmission); and

6) shall enter "E2: Emergency state" state.

[TS 24.379, clause 12.2.3.2]

When in state "E2: Emergency state", upon expiry of timer TFE2 (emergency alert retransmission), the MCPTT client:

1) shall generate a GROUP EMERGENCY ALERT message as specified in subclause 15.1.16. In the GROUP EMERGENCY ALERT message, the MCPTT client:

   a) shall set the MCPTT group ID IE to the stored MCPTT group ID;

   b) shall set the originating MCPTT user ID IE to own MCPTT user ID;

   c) shall set the Organization name IE to own organization name; and

   d) may set the Location IE with client's current location, if requested; and

2) shall send the GROUP EMERGENCY ALERT message as specified in subclause 10.2.1.1.1;

3) shall start the timer TFE2 (emergency alert retransmission); and

4) shall remain in the current state.

[TS 24.379, clause 12.2.3.5]

When in "E2: Emergency state", upon receiving an indication from the MCPTT user to cancel an emergency alert and the value of "/<*x*>/<*x*>/Common/MCPTTGroupCall/EmergencyAlert/Cancel" leaf node present in the user profile as specified in 3GPP TS 24.383 [45] set to "true", the MCPTT client:

1) shall set the stored emergency state as "false";

2) shall generate a GROUP EMERGENCY ALERT CANCEL message as specified in subclause 15.1.18. In the GROUP EMERGENCY ALERT CANCEL message, the MCPTT client:

   a) shall set the MCPTT group ID IE to the stored MCPTT group ID;

   b) shall set the Originating MCPTT user ID IE to own MCPTT user ID; and

   c) shall set the Sending MCPTT user ID IE to own MCPTT user ID;

3) shall send the GROUP EMERGENCY ALERT CANCEL message as specified in subclause 10.2.1.1.1;

4) shall stop timer TFE2 (emergency alert retransmission); and

5) shall enter "E1: Not in emergency state" state.

7.1.9.3 Test description

7.1.9.3.1 Pre-test conditions

System Simulator:

- SS-UE1 (MCPTT client)
  - For the underlying "transport bearer" over which the SS and the UE will communicate, the SS is behaving as SS-UE1 as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.
- GNSS simulator to simulate a location and provide a timing reference for the assistance of E-UTRAN off-network testing.

NOTE 1: For operation in off-network environment, it needs be ensured that after the UE is powered up it considers the Geographical area #1 that is simulated by the GNSS simulator as being one of the geographical areas set in the USIM for operation when UE is "not served by E-UTRAN".

- SS-NW (MCPTT server)
  - For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

NOTE 2: The SS operation as NW (MCPTT server) is needed only for the Preamble if the UE has to perform the MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.
- For the underlying "transport bearer" over which the SS and the UE will communicate, the UE is behaving as a ProSe enabled UE as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- The GNSS simulator is configured to simulate a location in the centre of Geographical area #1 and provide a timing reference, as defined in TS 36.508 [24] Table 4.11.2-2 scenario #1.
- The UE is switched-off.
- UE States at the end of the preamble
  - The UE is in state 'switched-off'.

7.1.9.3.2 Test procedure sequence

Table 7.1.9.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Power up the UE	-	-	-	-
1A	Trigger the UE to reset UTC time and location. NOTE: The UTC time and location reset may be performed by MMI or AT command (+CUTCR).	-	-	-	-
2	Activate the MCPTT Client Application and register User A as the MCPTT User (TS 36.579-5 [5], px_MCPTT_User_A_username, px_MCPTT_User_A_password). (NOTE 1)	-	-	-	-
3	Make the UE (MCPTT Client) initiate an off-network emergency alert (NOTE 1)	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT off-network call establishment are described in TS 36.579-1 [2], subclause 5.4.11 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-many communication out of E-UTRA coverage / Monitoring/Discoverer procedure for group member discovery / One-to-many communication'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
4	Check: Does the UE (MCPTT client) send a GROUP EMERGENCY ALERT message? (NOTE 2)	-->	GROUP EMERGENCY ALERT	1	P
4A	SS starts Timer=10s (TFE2 (emergency alert retransmission))	-	-	-	-
5	The SS-UE1 (MCPTT client) responds to the GROUP EMERGENCY ALERT by sending a GROUP EMERGENCY ALERT ACK	<--	GROUP EMERGENCY ALERT ACK	-	-
6	Timer=10s expires	-	-	-	-
7	Check: Does the UE (MCPTT client) send a GROUP EMERGENCY ALERT message? (NOTE 2)	-->	GROUP EMERGENCY ALERT	2	P
8	Make the UE (MCPTT Client) cancel the emergency alert (NOTE 1), (NOTE 3)	-	-	-	-
9	Check: Does the UE (MCPTT client) send a GROUP EMERGENCY ALERT CANCEL message? (NOTE	-->	GROUP EMERGENCY ALERT CANCEL	3	P
10	The SS-UE1 (MCPTT client) responds to the GROUP EMERGENCY ALERT CANCEL by sending a GROUP EMERGENCY ALERT CANCEL ACK	<--	GROUP EMERGENCY ALERT CANCEL ACK	-	-

NOTE 1: This is expected to be done via a suitable implementation dependent MMI.
NOTE 2: Timer TFE2 (emergency alert retransmission) is started upon the sending of the GROUP EMERGENCY ALERT message. Timer TFE2 (emergency alert retransmission)=10s, as defined in TS 36.579-1 [2], Table 5.5.8.1-1. At the expire of TFE2, the MCPTT Client retransmits the GROUP EMERGENCY ALERT message.
NOTE 3: If the MCPTT User does not perform an action before the expiry of timer TFE2 (emergency alert retransmission), then the MCPTT Client will retransmit the GROUP EMERGENCY ALERT message and the remaining steps will not be valid. Timer TFE2 (emergency alert retransmission) is started upon the sending of the GROUP EMERGENCY ALERT message. Timer TFE2 (emergency alert retransmission)=10s, as defined in TS 36.579-1 [2], Table 5.5.8.1-1. At the expire of TFE2, the MCPTT Client retransmits the GROUP EMERGENCY ALERT message. If during test execution it is found that the specified timer value is not large enough, then a new value needs to be specified.
NOTE 4: The MCPP Client stops the TFE2 (emergency alert retransmission) timer upon the sending of the GROUP EMERGENCY ALERT CANCEL message.

7.1.9.3.3 Specific message contents

None

7.1.10 Off-network / Group Call / Emergency Alert / Emergency Alert Retransmission / Cancel Emergency Alert / Client Terminated (CT)

7.1.10.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service, including authorised to
receive emergency alerts in off-network environment, and the UE (MCPTT Client) is in an off-network
environment }
ensure that {
  when { UE (MCPTT Client) receives an MCPTT emergency alert via a GROUP EMERGENCY ALERT message }
    then { UE (MCPTT Client) responds by sending a GROUP EMERGENCY ALERT ACK }
            }
```

(2)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service, having received an MCPTT
emergency alert, and the UE (MCPTT Client) is in an off-network environment }
ensure that {
  when { UE (MCPTT Client) receives a GROUP EMERGENCY ALERT message from the same MCPTT Client that
sent the previous GROUP EMERGENCY ALERT message, and the timer TFE1 (Emergency Alert) has yet to
expire }
    then { UE (MCPTT Client) shall not send a GROUP EMERGENCY ALERT ACK in response }
            }
```

(3)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service, having received an MCPTT
emergency alert, and the UE (MCPTT Client) is in an off-network environment }
ensure that {
  when { UE (MCPTT Client) receives a GROUP EMERGENCY ALERT message from the same MCPTT Client that
sent the previous GROUP EMERGENCY ALERT message, and the timer TFE1 (Emergency Alert) expired }
    then { UE (MCPTT Client) responds by sending a GROUP EMERGENCY ALERT ACK }
            }
```

(4)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service, having received an MCPTT
emergency alert, and the UE (MCPTT Client) is in an off-network environment }
ensure that {
  when { UE (MCPTT Client) receives a GROUP EMERGENCY ALERT CANCEL message from the same MCPTT
Client that sent the previous GROUP EMERGENCY ALERT message }
    then { UE (MCPTT Client) responds by sending a GROUP EMERGENCY ALERT CANCEL ACK }
            }
```

7.1.10.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.379 clauses 12.2.3.3, 12.2.3.4, 12.2.3.6, 12.2.3.7. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 12.2.3.3]

When in state "E1: Not in emergency state" or in "E2: Emergency state", upon receiving a GROUP EMERGENCY ALERT message with the Originating MCPTT user ID IE not stored in the list of users in emergency, the MCPTT client:

1) shall store the Originating MCPTT user ID IE and location IE in the list of users in emergency;

2) shall generate a GROUP EMERGENCY ALERT ACK message as specified in subclause 15.1.17. In the GROUP EMERGENCY ALERT ACK message, the MCPTT client:

a) shall set the MCPTT group ID IE to the MCPTT group ID IE of the received GROUP EMERGENCY ALERT message;

b) shall set the Sending MCPTT user ID IE to own MCPTT user ID; and

c) shall set the Originating MCPTT user ID IE to the Originating MCPTT user ID IE of the received GROUP EMERGENCY ALERT message; and

3) shall send the GROUP EMERGENCY ALERT ACK message as specified in subclause 10.2.1.1.1;

4) shall start timer TFE1 (Emergency Alert); and

5) shall remain in the current state.

NOTE: Each instance of timer TFE1 is per MCPTT user ID.

[TS 24.379, clause 12.2.3.4]

When in state "E1: Not in emergency state" or in "E2: Emergency state", upon receiving a GROUP EMERGENCY ALERT message with the Originating MCPTT user ID IE stored in the list of users in emergency, the MCPTT client:

1) may update the stored location of the user with the received Location IE;

2) shall restart the associated timer TFE1 (Emergency Alert); and

3) shall remain in the current state.

[TS 24.379, clause 12.2.3.6]

When in state "E1: Not in emergency state" or in "E2: Emergency state", upon receiving a GROUP EMERGENCY ALERT CANCEL message with the Originating MCPTT user ID IE stored in the list of users in emergency, the MCPTT client:

1) shall remove the MCPTT user ID and associated location information from the stored list of users in emergency;

2) shall generate a GROUP EMERGENCY ALERT CANCEL ACK message as specified in subclause 15.1.19. In the GROUP EMERGENCY ALERT CANCEL ACK message, the MCPTT client:

a) shall set the MCPTT group ID IE to the MCPTT group ID IE of the received GROUP EMERGENCY ALERT CANCEL message; and

b) shall set the Sending MCPTT user ID IE to own MCPTT user ID; and

c) shall set the Originating MCPTT user ID IE to the Originating MCPTT user ID IE of the received GROUP EMERGENCY ALERT message;

3) shall send the GROUP EMERGENCY ALERT CANCEL ACK message as specified in subclause 10.2.1.1.1;

4) shall stop the associated timer TFE1 (Emergency Alert); and5) shall remain in the current state.

[TS 24.379, clause 12.2.3.7]

When in state "E1: Not in emergency state" or in "E2: Emergency state", upon expiry of timer TFE1 (Emergency Alert) associated with a stored MCPTT user ID, the MCPTT client:

1) shall remove the MCPTT user ID and associated location information from the stored list of users in emergency; and

2) shall remain in the current state.

7.1.10.3 Test description

7.1.10.3.1 Pre-test conditions

System Simulator:

- SS-UE1 (MCPTT client)
  - For the underlying "transport bearer" over which the SS and the UE will communicate, the SS is behaving as SS-UE1 as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.
- GNSS simulator to simulate a location and provide a timing reference for the assistance of E-UTRAN off-network testing.

NOTE 1: For operation in off-network environment, it needs be ensured that after the UE is powered up it considers the Geographical area #1 that is simulated by the GNSS simulator as being one of the geographical areas set in the USIM for operation when UE is "not served by E-UTRAN".

- SS-NW (MCPTT server)
  - For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

NOTE 2: The SS operation as NW (MCPTT server) is needed only for the Preamble if the UE has to perform the MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.
- For the underlying "transport bearer" over which the SS and the UE will communicate, the UE is behaving as a ProSe enabled UE as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- TFE1(emergency alert) set to 15 seconds ("/<x>/OffNetwork/Timers/TFE1" leaf node present in the UE initial configuration as specified in 3GPP TS 24.483 [13])
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- The GNSS simulator is configured to simulate a location in the centre of Geographical area #1 and provide a timing reference, as defined in TS 36.508 [24] Table 4.11.2-2 scenario #1.
- The UE is switched-off.
- UE States at the end of the preamble
  - The UE is in state 'switched-off'.

7.1.10.3.2 Test procedure sequence

Table 7.1.10.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Power up the UE	-	-	-	-
1A	Trigger the UE to reset UTC time and location. NOTE: The UTC time and location reset may be performed by MMI or AT command (+CUTCR).	-	-	-	-
2	Activate the MCPTT Client Application and register User A as the MCPTT User (TS 36.579-5 [5], px_MCPTT_User_A_username, px_MCPTT_User_A_password). (NOTE 1)	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.10 'Generic Test Procedure for MCPTT CT communication over ProSe direct one-to-many communication out of E-UTRA coverage / Announcing/Discoveree procedure for group member discovery / One-to-many communication'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
3	SS-UE1 (MCPTT client) sends a GROUP EMERGENCY ALERT (NOTE 2), (NOTE 3), (NOTE 4)	<--	GROUP EMERGENCY ALERT	-	-
3A	SS starts Timer=10s (TFE2 (emergency alert retransmission))	-	-	-	-
3B	SS starts Timer=15s (TFE1 (Emergency Alert))				
4	Void	-	-	-	-
5	Check: Does the UE (MCPTT Client) respond to the GROUP EMERGENCY ALERT by sending a GROUP EMERGENCY ALERT ACK?	-->	GROUP EMERGENCY ALERT ACK	1	P
5A	Timer=10s expires (TFE2 (emergency alert retransmission))	-	-	-	-
6	Upon expiry of the timer TFE2 (emergency alert retransmission), the SS-UE1 (MCPTT client) retransmits the emergency alert by sending a GROUP EMERGENCY ALERT	<--	GROUP EMERGENCY ALERT	-	-
6A	SS starts Timer=10s (TFE2 (emergency alert retransmission))	-	-	-	-
7	Check: Does the UE (MCPTT Client) respond to the GROUP EMERGENCY ALERT by sending in the next 5 seconds a GROUP EMERGENCY ALERT ACK?	-->	GROUP EMERGENCY ALERT ACK	2	F
7A	Wait 5 seconds for GROUP EMERGENCY ALERT ACK	-	-	-	-
8	Timer=15s expires (TFE1 (Emergency Alert)) (NOTE 5)	-	-	-	-
8A	Wait 5 seconds for expiration of timer TFE2 (emergency alert retransmission)				
8B	Timer=10s expires (TFE2 (emergency alert retransmission))	-	-	-	-
9	SS-UE1 (MCPTT client) sends a GROUP EMERGENCY ALERT (NOTE 4)	<--	GROUP EMERGENCY ALERT	-	-
10	Void	-	-	-	-
11	Check: Does the UE (MCPTT Client) respond to the GROUP EMERGENCY ALERT by sending a GROUP EMERGENCY ALERT ACK?	-->	GROUP EMERGENCY ALERT ACK	3	P
12	SS-UE1 (MCPTT client) sends a GROUP EMERGENCY ALERT	<--	GROUP EMERGENCY ALERT CANCEL	-	-
13	Void	-	-	-	-

14	Check: Does the UE (MCPTT Client) respond to the GROUP EMERGENCY ALERT CANCEL by sending a GROUP EMERGENCY ALERT CANCEL ACK?	-->	GROUP EMERGENCY ALERT CANCEL ACK	4	P

NOTE 1: This is expected to be done via a suitable implementation dependent MMI.
NOTE 2: Timer TFE1(emergency alert) is started by the MCPTT Client upon the receiving of the GROUP EMERGENCY ALERT message. Timer TFE1 (emergency alert)=15s, as defined as defined in the Pre-test conditions. At the expire of TFE1, the MCPTT Client assumes the end of the emergency state and removes the associated user from the list.
NOTE 3: Timer TFE2 (emergency alert retransmission) is started by the SS upon the sending of the GROUP EMERGENCY ALERT message. Timer TFE2 (emergency alert retransmission)=10s, as defined in TS 36.579-1 [2], Table 5.5.8.1-1. At the expire of TFE2, the SS retransmits the GROUP EMERGENCY ALERT message.
NOTE 4: The UE (MCPTT Client) stores the Originating MCPTT user ID IE in the list of users in emergency.
NOTE 5: Upon expiry of the timer TFE1 (Emergency Alert), the UE (MCPTT Client) removes the MCPTT user ID from the stored list of users in emergency

7.1.10.3.3 Specific message contents

None

7.1.11 Off-network / Group Call / Broadcast Group Call / Broadcast Group Call Retransmitting / Broadcast Group Call Release / Client Originated (CO)

7.1.11.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service, including authorised to
initiate broadcast calls in off-network environment, and the UE (MCPTT Client) is in an off-network
environment }
ensure that {
  when { the MCPTT User requests to initiate an MCPTT broadcast call }
    then { UE (MCPTT Client) sends a GROUP CALL BROADCAST message and enters the "B2: in-progress
broadcast group call" state }
            }
```

(2)

```
with { UE (MCPTT Client) in the "B2: in-progress broadcast group call" state, and the UE (MCPTT
Client) is in an off-network environment }
ensure that {
  when { the timer TFB2 (broadcast retransmission) expires }
    then { UE (MCPTT Client) retransmits the GROUP CALL BROADCAST message }
            }
```

(3)

```
with { UE (MCPTT Client) in the "B2: in-progress broadcast group call" state, and the UE (MCPTT
Client) is in an off-network environment }
ensure that {
  when { the MCPTT User requests to end the MCPTT broadcast call }
    then { UE (MCPTT Client) sends a GROUP CALL BROADCAST END message and enters the "B1: start-
stop" state }
            }
```

7.1.11.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.379 clauses 10.3.2.4.1, 10.3.2.4.9, 10.3.2.4.7, TS 24.380 clause 7.2.3.2.2. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 10.3.2.4.1]

When in the "B1: start-stop" state, upon the indication from MCPTT user to initiate the broadcast group call, the MCPTT client:

1) shall generate an SDP body as specified in subclause 10.2.1.1.2 and store it as the SDP body of the call;
2) shall generate a random number with uniform distribution between 0 and 65535 and store it as the call identifier of the call;
3) shall store own MCPTT user ID as the originating MCPTT user ID of the call;
4) shall store "BROADCAST GROUP CALL" as the current call type;
5) shall generate a GROUP CALL BROADCAST message as specified in subclause 15.1.20. In the GROUP CALL BROADCAST message, the MCPTT client:
    a) shall set the Call identifier IE to the stored call identifier of the call;
    b) shall set the Call type IE to the stored current call type;
    c) shall set the Originating MCPTT user ID IE to the stored originating MCPTT user ID of the call;
    d) shall set the MCPTT group ID IE to the stored MCPTT group ID of the call; and
    e) shall set the SDP IE to the stored SDP body of the call;
6) shall set the ProSe per-packet priority to the value corresponding to MCPTT off-network broadcast callas described in 3GPP TS 24.383 [45];
7) shall start floor control as originating floor participant as described specified in subclause 7.2 in 3GPP TS 24.380 [5];
8) shall send the GROUP CALL BROADCAST message as specified in subclause 10.2.1.1.1;
9) shall establish a media session based on the stored SDP body of the call;
10) shall start timer TFB2 (broadcast retransmission); and
11) shall enter the "B2: in-progress broadcast group call" state.

[TS 24.379, clause 10.3.2.4.9]

When in the "B2: in-progress broadcast group call" state, upon expiry of timer TFB2 (broadcast retransmission), the MCPTT client:

1) shall generate a GROUP CALL BROADCAST message as specified in subclause 15.1.20. In the GROUP CALL BROADCAST message, the MCPTT client:
    a) shall set the Call identifier IE to the stored call identifier of the call;
    b) shall set the Call type IE to the stored current call type;
    c) shall set the Originating MCPTT user ID IE to the stored originating MCPTT user ID of the call;
    d) shall set the MCPTT group ID IE to the stored MCPTT group ID of the call; and
    e) shall set the SDP IE to the stored SDP body of the call;
2) shall send the GROUP CALL BROADCAST message as specified in subclause 10.2.1.1.1;
3) shall restart timer TFB2 (broadcast retransmission); and
4) shall remain in the "B2: in-progress broadcast group call" state.

[TS 24.379, clause 10.3.2.4.7]

When in the "B2: in-progress broadcast group call" state, upon an indication from the originating MCPTT user to release the in-progress broadcast group call, the MCPTT client:

1) shall release the media session;

2) shall generate a GROUP CALL BROADCAST END message as specified in subclause 15.1.21. In the GROUP CALL BROADCAST END message, the MCPTT client:

   a) shall set the Call identifier IE to the stored call identifier of the call;

   b) shall set the Originating MCPTT user ID IE to the stored originating MCPTT user ID of the call; and

   c) shall set the MCPTT group ID IE to the stored MCPTT group ID of the call;

3) shall send the GROUP CALL BROADCAST END message as specified in subclause 10.2.1.1.1;

4) shall stop timer TFB2 (broadcast retransmission);

5) shall clear the stored call identifier;

6) shall stop floor control; and

7) shall enter the "B1: start-stop" state.

[TS 24.380, clause 7.2.3.2.2]

When an MCPTT call is established with session announcement including an explicit floor request, the originating floor participant:

1. shall create an instance of a floor participant state transition diagram for basic operation state machine;

2. shall send Floor Granted message towards other floor participants. The Floor Granted message:

   a. shall include the granted priority in the Floor priority field;

   b. shall include the MCPTT user's own MCPTT ID in the User ID field; and

   c. if the floor request is a broadcast group call, system call, emergency call or an imminent peril call, shall include a Floor Indicator field indicating the relevant call types;

3. shall set the stored SSRC of the current florr arbitrator to its own SSRC; and

4. shall enter 'O: has permission' state.

7.1.11.3 Test description

7.1.11.3.1 Pre-test conditions

System Simulator:

- SS-UE1 (MCPTT client)

  - For the underlying "transport bearer" over which the SS and the UE will communicate, the SS is behaving as SS-UE1 as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

- GNSS simulator to simulate a location and provide a timing reference for the assistance of E-UTRAN off-network testing.

NOTE 1: For operation in off-network environment, it needs be ensured that after the UE is powered up it considers the Geographical area #1 that is simulated by the GNSS simulator as being one of the geographical areas set in the USIM for operation when UE is "not served by E-UTRAN".

- SS-NW (MCPTT server)

  - For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

NOTE 2: The SS operation as NW (MCPTT server) is needed only for the Preamble if the UE has to perform the MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.
- For the underlying "transport bearer" over which the SS and the UE will communicate, the UE is behaving as a ProSe enabled UE as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- The GNSS simulator is configured to simulate a location in the centre of Geographical area #1 and provide a timing reference, as defined in TS 36.508 [24] Table 4.11.2-2 scenario #1.
- The UE is switched-off.
- UE States at the end of the preamble
  - The UE is in state 'switched-off'.

7.1.11.3.2 Test procedure sequence

Table 7.1.11.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Power up the UE	-	-	-	-
1A	Trigger the UE to reset UTC time and location. NOTE: The UTC time and location reset may be performed by MMI or AT command (+CUTCR).	-	-	-	-
2	Activate the MCPTT Client Application and register User A as the MCPTT User (TS 36.579-5 [5], px_MCPTT_User_A_username, px_MCPTT_User_A_password). (NOTE 1)	-	-	-	-
3	Make the UE (MCPTT Client) initiate an off-network broadcast call (NOTE 1)	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT off-network call establishment are described in TS 36.579-1 [2], subclause 5.4.11 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-many communication out of E-UTRA coverage / Monitoring/Discoverer procedure for group member discovery / One-to-many communication'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
4	Check: Does the UE (MCPTT client) send a GROUP CALL BROADCAST message? (NOTE 2)	-->	GROUP CALL BROADCAST	1	P
4A	SS starts Timer=10s (Timer TFB2 (broadcast retransmission))				
5	Check: Does the UE (MCPTT Client) send a Floor Granted message towards the other floor participants?	-->	Floor Granted	1	P
6	Timer=10s expires	-	-	-	-
7	Check: Does the UE (MCPTT client) send a GROUP CALL BROADCAST message using the same Call identifier IE as used in step 4?	-->	GROUP CALL BROADCAST	2	P
8	Make the UE (MCPTT Client) cancel the broadcast call (NOTE 1), (NOTE 3)	-	-	-	-
9	Check: Does the UE (MCPTT client) send a GROUP CALL BROADCAST END message and enter the "B1: start-stop" state? (NOTE 4)	-->	GROUP CALL BROADCAST END	3	P

NOTE 1: This is expected to be done via a suitable implementation dependent MMI.
NOTE 2: Timer TFB2 (broadcast retransmission) is started by the MCPTT Client upon the sending of the GROUP CALL BROADCAST message. Timer TFB2 (broadcast retransmission)=10s, as defined in TS 36.579-1 [2], Table 5.5.8.1-1. At the expire of timer TFB2 (broadcast retransmission), the MCPTT Client resends the GROUP CALL BROADCAST message.
NOTE 3: If the MCPTT User does not cancel the broadcast call before timer TFB2 (broadcast retransmission) expires, then the MCPTT Client will resend the GROUP CALL BROADCAST message per TS 24.379 [9] and the remaining steps will not be valid. If during test execution it is found that the specified timer value is not large enough, then a new value needs to be specified.
NOTE 4: Timer TFB2 (broadcast retransmission) is stopped by the MCPTT Client upon the sending of the GROUP CALL BROADCAST END message.

7.1.11.3.3 Specific message contents

Table 7.1.11.3.3-1: GROUP CALL BROADCAST (step 7, Table 7.1.11.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.5.6.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	Use the same Call identifier as used in the GROUP CALL BROADCAST message sent in step 3		

7.1.12 Off-network / Group Call / Broadcast Group Call / MCPTT User Ack Not Required / Originator Releases Call / Client Terminated (CT)

7.1.12.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service, including authorised to
receive broadcast calls in off-network environment, and the UE (MCPTT Client) is in an off-network
environment, and the UE (MCPTT Client) has received a GROUP CALL BROADCAST message }
ensure that {
  when { MCPTT User requests the floor }
    then { UE (MCPTT Client) does not send a Floor Request message }
           }
```

7.1.12.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.379 clauses 10.3.2.4.2, 10.3.2.4.8, TS 24.380 clause 7.2.3.2.9. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 10.3.2.4.2]

When in the "B1: start-stop" state, upon receiving a GROUP CALL BROADCAST message with the Call identifier IE not matching any in-progress broadcast group call, the MCPTT client:

1) shall store the value of the Call identifier IE of the GROUP CALL BROADCAST message as the call identifier of the call;

2) shall store the value of the Call type IE of the GROUP CALL BROADCAST message as the received current call type;

3) shall store the value of the SDP IE of the GROUP CALL BROADCAST message as the SDP body of the call;

4) shall store the value of the Originating MCPTT user ID IE of the GROUP CALL BROADCAST message as the originating MCPTT user ID of the call;

5) shall store the value of the MCPTT group ID IE of the GROUP CALL BROADCAST message as the MCPTT group ID of the call;

6) if the terminating UE is configured that the terminating MCPTT user acknowledgement is required upon a terminating call request reception:

   i) shall start timer TFB3 (waiting for the user); and

   ii) shall enter the "B3: pending user action" state; and

7) if the terminating UE is configured that the terminating MCPTT user acknowledgement is not required upon a terminating call request reception:

   i) shall establish a media session based on the stored SDP body of the call;

   ii) shall start floor control as terminating floor participant as specified in subclause 7.2 in 3GPP TS 24.380 [5];

iii) shall start timer TFB1 (max duration); and

iv) shall enter the "B2: in-progress broadcast group call" state.

[TS 24.379, clause 10.3.2.4.8]

When in the "B2: in-progress broadcast group call" state or "B4: ignoring same call ID" state, upon receiving GROUP CALL BROADCAST END message with the same Call identifier IE as the stored call identifier, the MCPTT client:

1) shall release media session;

2) shall stop timer TFB1 (max duration);

3) shall clear the stored call identifier;

4) shall stop floor control, if running; and

5) shall enter the "B1: start-stop" state.

[TS 24.380, clause 7.2.3.2.9]

When an MCPTT broadcast call is established the terminating floor participant:

1. shall create an instance of a floor participant state transition diagram for basic operation state machine;

2. shall start timer T203 (End of RTP media); and

3. shall enter 'O: has no permission' state.

NOTE: In MCPTT broadcast call, only originating MCPTT user is allowed to request floor and transmit media. A Floor Request message is locally denied to terminating MCPTT user, if requested.

7.1.12.3 Test description

7.1.12.3.1 Pre-test conditions

System Simulator:

- SS-UE1 (MCPTT client)

  - For the underlying "transport bearer" over which the SS and the UE will communicate, the SS is behaving as SS-UE1 as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

- GNSS simulator to simulate a location and provide a timing reference for the assistance of E-UTRAN off-network testing.

NOTE 1: For operation in off-network environment, it needs be ensured that after the UE is powered up it considers the Geographical area #1 that is simulated by the GNSS simulator as being one of the geographical areas set in the USIM for operation when UE is "not served by E-UTRAN".

- SS-NW (MCPTT server)

  - For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

NOTE 2: The SS operation as NW (MCPTT server) is needed only for the Preamble if the UE has to perform the MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

IUT:

- UE (MCPTT client)

- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

- For the underlying "transport bearer" over which the SS and the UE will communicate, the UE is behaving as a ProSe enabled UE as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.

- TFG4 (waiting for the user) set to 0 (a value to suit the test case sequence) ("/<x>/OffNetwork/Timers/TFB1" leaf node present in the UE initial configuration as specified in 3GPP TS 24.483 [13])

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

- The GNSS simulator is configured to simulate a location in the centre of Geographical area #1 and provide a timing reference, as defined in TS 36.508 [24] Table 4.11.2-2 scenario #1.

- The UE is switched-off.

- UE States at the end of the preamble

  - The UE is in state 'switched-off'.

7.1.12.3.2 Test procedure sequence

Table 7.1.12.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Power up the UE	-	-	-	-
1A	Trigger the UE to reset UTC time and location. NOTE: The UTC time and location reset may be performed by MMI or AT command (+CUTCR).	-	-	-	-
2	Activate the MCPTT Client Application and register User A as the MCPTT User (TS 36.579-5 [5], px_MCPTT_User_A_username, px_MCPTT_User_A_password). (NOTE 1)	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.10 'Generic Test Procedure for MCPTT CT communication over ProSe direct one-to-many communication out of E-UTRA coverage / Announcing/Discoveree procedure for group member discovery / One-to-many communication'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
3	SS-UE1 (MCPTT client) sends a GROUP CALL BROADCAST (NOTE 2)	<--	GROUP CALL BROADCAST	-	-
3A	Make the UE (MCPTT User) request the floor (NOTE 1), (NOTE 3)				
4	Check: Does the UE (MCPTT Client) send in the next 5 seconds a Floor Request message to the floor participants?	-->	Floor Request	1	F
5	Wait 5 seconds for the Floor Request message				
6	SS-UE1 (MCPTT client) sends a GROUP CALL BROADCAST END (NOTE 4)	<--	GROUP CALL BROADCAST END	-	-

NOTE 1: This is expected to be done via a suitable implementation dependent MMI.
NOTE 2: Timer TFB1 (max duration) is started by the MCPTT Client upon the receiving of the GROUP CALL BROADCAST message. Timer TFB1 (max duration)=300s, as defined in TS 36.579-1 [2], Table 5.5.8.1-1. At the expire of TFB1 (max duration), the MCPTT Client will terminate participation in the broadcast call.
NOTE 3: It is possible that the MCPTT Client may not allow the MCPTT User to request the floor.
NOTE 4: Timer TFB1 (max duration) is stopped by the MCPTT Client upon the receiving of the GROUP CALL BROADCAST END message.

7.1.12.3.3 Specific message contents

None

7.1.13 Off-network / Group Call / Broadcast Group Call / MCPTT User Ack Required / MCPTT User Reject / MCPTT User Accept / MCPTT User Releases Call / Client Terminated (CT)

7.1.13.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorised for MCPTT Service, including authorised to
receive broadcast calls in off-network environment, and the UE (MCPTT Client) configured that MCPTT
```

```
user acknowledgement is required upon a terminating call request reception, and the UE (MCPTT
Client) is in an off-network environment }
ensure that {
  when { UE (MCPTT Client) receives a GROUP CALL BROADCAST message with a Call identifier that has
not been previously received}
    then { UE (MCPTT Client) enters the "B3: pending user action" state and requests the user to
reject or accept the incoming broadcast call }
            }
```

(2)

```
with { UE (MCPTT Client) having received a GROUP CALL BROADCAST message }
ensure that {
  when { the MCPTT User rejects the incoming off-network broadcast call}
    then { UE (MCPTT Client) enters the "B4: ignoring same call ID" state and ignores subsequent
GROUP CALL BROADCAST messages that match with the stored Call identifier }
            }
```

7.1.13.2 Conformance requirements

References: The conformance requirements covered in the current TC are specified in: TS 24.379 clauses 10.3.2.4.2, 10.3.2.4.4, 10.3.2.4.8, 10.3.2.4.3, 10.3.2.4.6, 10.3.2.4.10, 10.3.2.4.11. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 10.3.2.4.2]

When in the "B1: start-stop" state, upon receiving a GROUP CALL BROADCAST message with the Call identifier IE not matching any in-progress broadcast group call, the MCPTT client:

1) shall store the value of the Call identifier IE of the GROUP CALL BROADCAST message as the call identifier of the call;

2) shall store the value of the Call type IE of the GROUP CALL BROADCAST message as the received current call type;

3) shall store the value of the SDP IE of the GROUP CALL BROADCAST message as the SDP body of the call;

4) shall store the value of the Originating MCPTT user ID IE of the GROUP CALL BROADCAST message as the originating MCPTT user ID of the call;

5) shall store the value of the MCPTT group ID IE of the GROUP CALL BROADCAST message as the MCPTT group ID of the call;

6) if the terminating UE is configured that the terminating MCPTT user acknowledgement is required upon a terminating call request reception:

   i) shall start timer TFB3 (waiting for the user); and

   ii) shall enter the "B3: pending user action" state; and

7) if the terminating UE is configured that the terminating MCPTT user acknowledgement is not required upon a terminating call request reception:

   i) shall establish a media session based on the stored SDP body of the call;

   ii) shall start floor control as terminating floor participant as specified in subclause 7.2 in 3GPP TS 24.380 [5];

   iii) shall start timer TFB1 (max duration); and

   iv) shall enter the "B2: in-progress broadcast group call" state.

[TS 24.379, clause 10.3.2.4.4]

When in the "B3: pending user action" state, upon an indication from the MCPTT user to reject the incoming broadcast group call, the MCPTT client:

1) shall stop timer TFB3 (waiting for the user);

2) shall start timer TFB1 (max duration); and

3) shall enter the "B4: ignoring same call ID" state.

[TS 24.379, clause 10.3.2.4.8]

When in the "B2: in-progress broadcast group call" state or "B4: ignoring same call ID" state, upon receiving GROUP CALL BROADCAST END message with the same Call identifier IE as the stored call identifier, the MCPTT client:

1) shall release media session;

2) shall stop timer TFB1 (max duration);

3) shall clear the stored call identifier;

4) shall stop floor control, if running; and

5) shall enter the "B1: start-stop" state.

[TS 24.379, clause 10.3.2.4.3]

When in the "B3: pending user action" state, upon indication from the MCPTT user to accept the incoming broadcast group call, the MCPTT client:

1) shall establish a media session based on the stored SDP body of the call;

2) shall start floor control as terminating floor participant as described specified in subclause 7.2 in 3GPP TS 24.380 [5];

3) shall stop timer TFB3 (waiting for the user);

4) shall start timer TFB1 (max duration); and

5) shall enter the "B2: in-progress broadcast group call" state.

[TS 24.379, clause 10.3.2.4.6]

When in the "B2: in-progress broadcast group call" state, upon an indication from the terminating MCPTT user to release the in-progress broadcast group call, the MCPTT client:

1) shall release the media session;

2) shall stop floor control; and

3) shall enter the "B4: ignoring same call ID" state.

[TS 24.379, clause 10.3.2.4.10]

When in the "B4: ignoring same call ID" state, upon receiving GROUP CALL BROADCAST message and if the call identifier in GROUP CALL BROADCAST message matches with the stored call identifier the MCPTT client:

1) shall restart timer TFB1 (max duration); and

2) shall remain in "B4: ignoring same call ID" state.

[TS 24.379, clause 10.3.2.4.11]

When in the "B2: in-progress broadcast group call" state or "B4: ignoring same call ID" state, upon expiry of timer TFB1 (max duration) the MCPTT client:

1) shall release the media session;

2) shall clear the stored call identifier;

3) shall stop floor control, if running; and

4) shall enter the "B1: start-stop" state.

7.1.13.3 Test description

7.1.13.3.1 Pre-test conditions

System Simulator:

- SS-UE1 (MCPTT client)
  - For the underlying "transport bearer" over which the SS and the UE will communicate, the SS is behaving as SS-UE1 as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.
- GNSS simulator to simulate a location and provide a timing reference for the assistance of E-UTRAN off-network testing.

NOTE 1: For operation in off-network environment, it needs be ensured that after the UE is powered up it considers the Geographical area #1 that is simulated by the GNSS simulator as being one of the geographical areas set in the USIM for operation when UE is "not served by E-UTRAN".

- SS-NW (MCPTT server)
  - For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

NOTE 2: The SS operation as NW (MCPTT server) is needed only for the Preamble if the UE has to perform the MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.
- For the underlying "transport bearer" over which the SS and the UE will communicate, the UE is behaving as a ProSe enabled UE as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

Preamble:

- The UE has performed the Generic Test Procedure for MCPTT UE registration as specified in TS 36.579-1 [2], subclause 5.4.2.
  - UE (MCPTT Client) is configured such that user acknowledgement is required upon a terminating call request reception
- TFB1 (max duration) set to 60 seconds ("/<x>/OffNetwork/Timers/TFB1" leaf node present in the UE initial configuration as specified in 3GPP TS 24.483 [13])
- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- The GNSS simulator is configured to simulate a location in the centre of Geographical area #1 and provide a timing reference, as defined in TS 36.508 [24] Table 4.11.2-2 scenario #1.
- The UE is switched-off.
- UE States at the end of the preamble
  - The UE is in state 'switched-off'.

7.1.13.3.2 Test procedure sequence

Table 7.1.13.3.2-1: Main Behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Power up the UE.	-	-	-	-
1A	Trigger the UE to reset UTC time and location. NOTE: The UTC time and location reset may be performed by MMI or AT command (+CUTCR).	-	-	-	-
2	Activate the MCPTT Client Application and register User A as the MCPTT User (TS 36.579-5 [5], px_MCPTT_User_A_username, px_MCPTT_User_A_password). (NOTE 1)	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.10 'Generic Test Procedure for MCPTT CT communication over ProSe direct one-to-many communication out of E-UTRA coverage / Announcing/Discoveree procedure for group member discovery / One-to-many communication'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
3	SS-UE1 (MCPTT client) sends a GROUP CALL BROADCAST (NOTE 2)	<--	GROUP CALL BROADCAST	-	-
4	Check: Does the UE (MCPTT Client) enter the "B3: pending user action" state and notifies the MCPTT User of an incoming broadcast call? (NOTE 3).	-	-	1	P
5	Make the UE (MCPTT Client) reject the incoming off-network broadcast call (NOTE 1), (NOTE 4)	-	-	-	-
6	Void	-	-	-	-
7	SS-UE1 (MCPTT client) sends a GROUP CALL BROADCAST with the same Call identifier as used in step 3	<--	GROUP CALL BROADCAST	-	-
8	Check: Does the UE (MCPTT Client) notify the MCPTT User in the next 60 seconds of an incoming broadcast call? (NOTE 3)	-	-	2	F
9	Wait 60 seconds (TFB1 (max duration))	-	-	-	-
10	Void	-	-	3	P
11	SS-UE1 (MCPTT client) sends a GROUP CALL BROADCAST with a different Call identifier as used in step 3	<--	GROUP CALL BROADCAST	-	-
12	Check: Does the UE (MCPTT Client) notify the MCPTT User of an incoming broadcast call? (NOTE 3)	-	-	1	P
13	Make the UE (MCPTT Client) accept the incoming off-network broadcast call (NOTE 1), (NOTE 5)	-	-	-	-
14	Void	-	-	4	P
15	Void	-	-	-	-
16	Void	-	-	-	-
17	SS-UE1 (MCPTT client) sends a GROUP CALL BROADCAST END (NOTE 6)	<--	GROUP CALL BROADCAST END	-	-
18	Void	-	-	3	P

NOTE 1: This is expected to be done via a suitable implementation dependent MMI.
NOTE 2: Timer TFB3 (waiting for the user) is started by the MCPTT Client upon the receiving of the GROUP CALL BROADCAST message. Timer TFB3 (waiting for the user)=20s, as defined in TS 36.579-1 [2], Table 5.5.8.1-1. At the expire of TFB3 (waiting for the user), the MCPTT Client will terminate the incoming call notification.
NOTE 3: Notification to the MCPTT User that there is an incoming call requiring user approval or rejection is expected to be done via a suitable implementation dependent MMI
NOTE 4: If the MCPTT User does not perform an action before timer TFB3 (waiting for the user) expires, then, the MCPTT Client will terminate the incoming call notification. Timer TFB1 (max duration) is started upon the MCPTT User rejecting the terminating call. Timer TFB1 (max duration)=60s, as defined in the Pre-test conditions. The MCPTT Client stops timer TFB3 (waiting for the user) upon rejecting the call. If during test execution it is found that the specified timer(s) value(s) are not large enough, then new value(s) need to be specified.
NOTE 5: Timer TFB1 (max duration) is started upon the MCPTT User accepting the terminating call. Timer TFB1 (max duration)=60s, as defined in the Pre-test conditions. The MCPTT Client stops timer TFB3 (waiting for the user).
NOTE 6: The MCPTT Client stops stop timer TFB1 (max duration).

7.1.13.3.3 Specific message contents

Table 7.1.13.3.3-1: GROUP CALL BROADCAST (steps 7, 11, Table 7.1.13.3.2-1)

Derivation Path: TS 36.579-1 [2], Table 5.5.5.6.1-1			
Information Element	**Value/remark**	**Comment**	**Condition**
Call identifier	Use the same Call identifier as used in the GROUP CALL BROADCAST message sent in step 2		

7.2 Off-network Private Calls

7.2.1 Off-network / Private Call / On-demand / Automatic Commencement Mode / No Response to Private Call Setup Request / Private call setup success / With Floor Control / Upgrade to Emergency Call / Cancellation of Emergency on User request / Client Originated (CO)

7.2.1.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including authorized to
initiate/cancel private and private emergency calls with automatic commencement in off-network
environment, and, the UE is in an off-network environment }
ensure that {
  when { the MCPTT User requests the establishment of an MCPTT private call, on-demand Automatic
Commencement Mode }
    then { UE (MCPTT Client) sends a PRIVATE CALL SETUP REQUEST message requesting establishment of
a private call on-demand Automatic Commencement Mode }
            }
```

(2)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including authorized to
initiate/cancel private and private emergency calls with automatic commencement in off-network
environment, and, the UE is in an off-network environment, and, UE (MCPTT Client) having sent a
PRIVATE CALL SETUP REQUEST message requesting establishment of a private call }
ensure that {
  when { the UE (MCPTT Client) does not receive response to the request until the timer TFP1
(private call request retransmission) expires }
    then { UE (MCPTT Client) retransmits the PRIVATE CALL SETUP REQUEST message requesting private
call if the counter CFP1 (private call request retransmission) has not reached its max value and
```

increments the counter CFP1 with one, **and**, stops re-transmitting if the counter CFP1 (private call request retransmission) has reached its max value }
}

(3)

with { UE (MCPTT Client) registered and authorized for MCPTT Service, including authorized to initiate/cancel private and private emergency calls with automatic commencement in off-network environment, and, the UE is in an off-network environment, and, UE (MCPTT Client) having sent a PRIVATE CALL SETUP REQUEST message requesting establishment of a private call }
ensure that {
when { the UE (MCPTT Client) receives a PRIVATE CALL ACCEPT message }
then { UE (MCPTT Client) transmits a PRIVATE CALL ACCEPT ACK message **and** considers the call as being established }
}

(4)

with { UE (MCPTT Client) having established an MCPTT private call in off-network environment }
ensure that {
when { the MCPTT User engages in communication with the invited MCPTT User }
then { UE (MCPTT Client) respects the floor control procedures in off-network environment imposed by Client having the floor (Floor request/grant/release/deny) }
}

(5)

with { UE (MCPTT Client) having established an MCPTT private call in off-network environment }
ensure that {
when { the MCPTT User wants to upgrade the ongoing MCPTT private call to an MCPTT emergency private call }
then { UE (MCPTT Client) sends a PRIVATE CALL SETUP REQUEST message requesting private emergency call on-demand Automatic Commencement Mode, **and**, after receiving a PRIVATE CALL ACCEPT message the UE (MCPTT Client) sends a PRIVATE CALL ACCEPT ACK message **and** considers the emergency call as being established }
}

(6)

with { UE (MCPTT Client) having established an MCPTT private call in off-network environment, and, having successfully upgraded it to an MCPTT Private Emergency call }
ensure that {
when { the MCPTT User wants to downgrade the ongoing MCPTT private emergency call to a normal MCPTT private call }
then { UE (MCPTT Client) sends a PRIVATE CALL EMERGENCY CANCEL message, **and**, after receiving a PRIVATE CALL EMERGENCY CANCEL ACK message, the UE (MCPTT Client) considers the call downgraded to a Private normal call }
}

(7)

with { UE (MCPTT Client) having established an MCPTT private call in off-network environment }
ensure that {
when { the MCPTT User wants to terminate the ongoing MCPTT private call }
then { UE (MCPTT Client) sends a PRIVATE CALL RELEASE request and after receiving a PRIVATE CALL RELEASE ACK messages, leaves the MCPTT session }
}

7.2.1.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: TS 24.379 clauses 11.2.1.1.1, 11.2.1.1.2, 11.2.2.4.2.1, 11.2.2.4.2.2, 11.2.2.4.2.4, 11.2.2.4.2.8, 11.2.2.4.5.7, TS 24.380 clauses 7.1, 7.2.3.2.2, 7.2.3.5.2, 7.2.3.4.2, 7.2.3.5.4, 7.2.3.5.5, 7.2.3.4.3, 7.2.3.3.2, 7.2.3.3.5, 7.2.3.7.2, 11.2.3.4.5.1, 11.2.3.4.6.1, 11.2.3.4.6.3, 11.2.2.4.5.1, 11.2.2.4.5.5. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 11.2.1.1.1]

In order to participate in a private call, the MCPTT client:

1) shall send the MONP message as a UDP message to the local IP address of the MCPTT user, on UDP port TBD, with an IP time-to-live set to 255; and

Editor's note [CT1#95, C1-160392]: Port number for the message is FFS.

2) shall treat UDP messages received on the port TBD as received MONP messages.

NOTE: An MCPTT client that supports IPv6 is supposed to listen to the IPv6 addresses.

[TS 24.379, clause 11.2.1.1.2]

For an off-network MCPTT session, only MCPTT speech is used.

One off-network MCPTT session includes one media-floor control entity.

The MCPTT client shall generate an SDP body for a private call in accordance with rules and procedures of IETF RFC 4566 [12] and IETF RFC 3264 [44].

The MCPTT client:

1) shall include in the session-level section:

   a) the "o=" field with the <username> portion set to a dash;

   b) the "s=" field with the <session name> portion set to a dash; and

   c) the "c=" field with the <nettype> portion set to "IN", the <addrtype> portion set to the IP version of the unicast IP address of the MCPTT client and the <connection-address> portion set to the unicast IP address of the MCPTT client;

2) shall include the media-level section for MCPTT speech consisting of:

   a) the "m=" field with the <media> portion set to "audio", the <port> portion set to a port number for MCPTT speech of the MCPTT group, the <proto> field set to "RTP/AVP" and <fmt> portion set indicating RTP payload type numbers;

   b) the "i=" field with the <session description> portion set to "speech";

   c) the "a=fmtp:" attribute(s), the "a=rtpmap:" attribute(s) or both, indicating the codec(s) and media parameters of the MCPTT speech; and

   d) the "a=rtcp:" attribute indicating port number to be used for RTCP at the MCPTT client selected according to the rules and procedures of IETF RFC 3605 [13], if the media steam uses other than the default IP address;

3) shall include the media-level section for media-floor control entity consisting of:

   a) an "m=" line, with the <media> portion set to "application", the <port> portion set to a port number for media-floor control entity of the MCPTT group, the <proto> field set to "udp" and <fmt> portion set to "MCPTT"; and

   b) the "a=fmtp:MCPTT" attribute indicating the parameters of the media-floor control entity as specified 3GPP TS 24.380 [5]; and

4) shall include the MIKEY-SAKKE I_MESSAGE, if generated by the MCPTT client, in an "a=key-mgmt" attribute as a "mikey" attribute value in the SDP offer as specified in IETF RFC 4567 [47].

[TS 24.379, clause 11.2.2.4.2.1]

When in the "P0: start-stop" state or "P1: ignoring same call id", upon an indication from MCPTT User to initiate a private call and the value of "/<x>/<x>/Common/PrivateCall/Authorised" leaf node present in the user profile as specified in 3GPP TS 24.383 [45] is set to "true", the MCPTT client:

1) shall generate and store the call identifier as a random number uniformly distributed between (0, 65536);

2) shall store own MCPTT user ID as caller ID;

3) shall store MCPTT user ID of the callee as callee ID;

4) shall store "AUTOMATIC COMMENCEMENT MODE" as commencement mode, if requested and the value of "/<x>/<x>/Common/PrivateCall/AutoCommence" leaf node present in the user profile as specified in

3GPP TS 24.383 [45] is set to "true". Otherwise if the value of "/<x>/<x>/Common/PrivateCall/ManualCommence" leaf node present in the user profile as specified in 3GPP TS 24.383 [45] is set to "true", store "MANUAL COMMENCEMENT MODE" as commencement mode;

5) shall create a call type control state machine as described in subclause 11.2.3.2;

6) if an end-to-end security context needs to be established then:

   a) shall use keying material provided by the key management server to generate a PCK as described in 3GPP TS 33.179 [46];

   b) shall use the PCK to generate a PCK-ID with the four most significant bits set to "0001" to indicate that the purpose of the PCK is to protect private call communications and with the remaining twenty eight bits being randomly generated as described in 3GPP TS 33.179 [46];

   c) shall encrypt the PCK to a UID associated to the MCPTT client using the MCPTT ID of the invited user and a time related parameter as described in 3GPP TS 33.179 [46];

   d) shall generate a MIKEY-SAKKE I_MESSAGE using the encapsulated PCK and PCK-ID as specified in 3GPP TS 33.179 [46];

   e) shall add the MCPTT ID of the originating MCPTT to the initiator field (IDRi) of the I_MESSAGE as described in 3GPP TS 33.179 [46];

   f) shall sign the MIKEY-SAKKE I_MESSAGE using the originating MCPTT user's signing key provided in the keying material together with a time related parameter, and add this to the MIKEY-SAKKE payload, as described in 3GPP TS 33.179 [46] and;

   g) shall store the MIKEY-SAKKE I_MESSAGE for later inclusion in an SDP body;

7) may store current user location as user location;

8) shall generate and store offer SDP, as defined in subclause 11.2.1.1.2;

9) shall generate a PRIVATE CALL SETUP REQUEST message as specified in subclause 15.1.5. In the PRIVATE CALL SETUP REQUEST message, the MCPTT client:

   a) shall set the Call identifier IE with the stored call identifier;

   b) shall set the MCPTT user ID of the caller IE with the stored caller ID;

   c) shall set the MCPTT user ID of the callee IE with the stored callee ID;

   d) shall set the Commencement mode IE with the stored commencement mode;

   e) shall set the Call type IE with the stored current call type associated with the call type control state machine;

   f) shall set the SDP offer IE with the stored offer SDP; and

   g) may set the User location IE with the stored user location if the stored current call type associated with the call type control state machine is "EMERGENCY PRIVATE CALL".

10) shall send the PRIVATE CALL SETUP REQUEST message towards other MCPTT client according to rules and procedures as specified in subclause 11.2.1.1.1;

11) shall initialize the counter CFP1 (private call request retransmission) with the value set to 1;

12) shall start timer TFP1 (private call request retransmission); and

13) shall enter the "P2: waiting for call response" state.

[TS 24.379, clause 11.2.2.4.2.2]

When in the "P2: waiting for call response" state, upon expiry of timer TFP1 (private call request retransmission), the MCPTT client:

1) may update the stored user location with current user location;

2) shall increment the value of counter CFP1 (private call request retransmission) by 1;

3) shall generate a PRIVATE CALL SETUP REQUEST message as specified in subclause 15.1.5. In the PRIVATE CALL SETUP REQUEST message, the MCPTT client:

   a) shall set the Call identifier IE with the stored call identifier;

   b) shall set the MCPTT user ID of the caller IE with the stored caller ID;

   c) shall set the MCPTT user ID of the callee IE with the stored callee ID;

   d) shall set the Commencement mode IE with the stored commencement mode;

   e) shall set the Call type IE with the stored current call type associated with the call type control state machine;

   f) shall set the SDP offer IE with the stored offer SDP; and

   g) may set the User location IE with stored user location if the stored current call type is "EMERGENCY PRIVATE CALL" associated with the call type control state machine.

4) shall send the PRIVATE CALL SETUP REQUEST message towards other MCPTT client according to rules and procedures as specified in subclause 11.2.1.1.1;

5) shall start timer TFP1 (private call request retransmission); and

6) shall remain in the "P2: waiting for call response" state.

[TS 24.379, clause 11.2.2.4.2.4]

In the "P2: waiting for call response" state, when timer TFP1 (private call request retransmission) expires and the value of the counter CFP1 (private call request retransmission) is equal to the upper limit and the stored commencement mode is "AUTOMATIC COMMENCEMENT MODE", the MCPTT client:

1) shall start timer TFP7 (waiting for any message with same call identifier); and

2) shall enter the "P1: ignoring same call id" state.

[TS 24.379, clause 11.2.2.4.2.8]

When in the "P2: waiting for call response" state, upon receiving a PRIVATE CALL ACCEPT message response to PRIVATE CALL SETUP REQUEST message with the same call identifier, the MCPTT client:

1) shall store the SDP answer IE received in the PRIVATE CALL ACCEPT message as answer SDP;

2) shall generate a PRIVATE CALL ACCEPT ACK message as specified in subclause 15.1.11:

   a) shall set the Call identifier IE to the stored call identifier;

   b) shall set the MCPTT user ID of the caller IE with the stored caller ID; and

   c) shall set the MCPTT user ID of the callee IE with the stored callee ID.

3) shall send the PRIVATE CALL ACCEPT ACK message in response to the request message according to rules and procedures as specified in subclause 11.2.1.1.1;

4) shall stop timer TFP1 (call setup retransmission), if running;

5) shall stop timer TFP2 (waiting for call response message), if running;

6) shall establish a media session based on the SDP body of the stored answer SDP;

7) shall start floor control as terminating floor participant as specified in subclause 7.2 in 3GPP TS 24.380 [5];

8) shall start timer TFP5 (max duration); and

9) shall enter the "P4: part of ongoing call" state.

[TS 24.379, clause 11.2.2.4.5.7]

When in the "P1: ignoring same call id" state, upon expiry of timer TFP7 (waiting for any message with same call identifier) the MCPTT client:

1) shall clear the stored call identifier; and

2) shall enter the "P0: start-stop" state.

[TS 24.380, clause 7.1]

In off-network, floor control is performed using floor control messages among the MCPTT clients without a centralized floor arbitrator. When off-network, if a floor control session is active, the floor arbitrator and the floor participant are co-located in the MCPTT client (see 3GPP TS 23.179 [5]). During a floor control session the MCPTT client currently speaking serves as the temporary floor arbitrator. All other MCPTT clients in the call play the role of floor participant. When the floor arbitrator grants the floor to another MCPTT client, that new MCPTT client, when starts to send media, becomes the new floor arbitrator and the former (the MCPTT client which granted the floor) becomes a floor participant.

...

It is assumed that the MCPTT user presses the PTT for requesting talk permission and it keeps it pressed until the request is resolved. If queuing of floor requests is not supported, this request is either granted or rejected or no answer is received. If the request is granted the user is notified with talk permission tone (or equivalent) and the user continues to press the PTT until it finishes the talk burst. If the request is rejected or no answer is received the user is notified and releases the PTT button.

[TS 24.380, clause 7.2.3.2.2]

When an MCPTT call is established with session announcement including an explicit floor request, the originating floor participant:

1. shall create an instance of a floor participant state transition diagram for basic operation state machine;

2. shall send Floor Granted message towards other floor participants. The Floor Granted message:

   a. shall include the granted priority in the Floor priority field;

   b. shall include the MCPTT user's own MCPTT ID in the User ID field; and

   c. if the floor request is a broadcast group call, system call, emergency call or an imminent peril call, shall include a Floor Indicator field indicating the relevant call types;

3. shall set the stored SSRC of the current floor arbitrator to its own SSRC; and

4. shall enter 'O: has permission' state.

[TS 24.380, clause 7.2.3.5.2]

Upon receiving encoded media from the user or if encoded media is already buffered the floor participant:

1. shall start timer T206 (Stop talking warning), if not running;

2. shall request the MCPTT client to start sending RTP media packets towards other MCPTT clients; and

3. shall remain in 'O: has permission' state.

[TS 24.380, clause 7.2.3.4.2]

If the floor participant receives an indication from the MCPTT user that the MCPTT user wants to send media, the floor participant:

1. shall send the Floor Request message to other clients. The Floor Request message:

   a. if a priority different than the default floor priority is required, shall include the Floor Priority field with the requested priority in the <Floor Priority> element;

   b. shall include the MCPTT ID of the MCPTT user in the User ID field; and

c. if the floor request is a broadcast group call, system call, emergency call or an imminent peril call, shall include a Floor Indicator field indicating the relevant call types;

2. shall initialize the counter C201 (Floor request) with value set to 1;

3. shall start timer T201 (Floor Request); and

4. shall enter 'O: pending request' state.

[TS 24.380, clause 7.2.3.5.4]

Upon receiving a Floor Request message which is not pre-emptive as determined by subclause 4.1.1.5, in a session where:

1. the value of "/<x>/<x>/OffNetwork/QueueUsage" leaf node present in the group configuration as specified in 3GPP TS 24.383 [4] is set to "false"; or

2. the value of "/<x>/<x>/OffNetwork/QueueUsage" leaf node present in the group configuration as specified in 3GPP TS 24.383 [4] is set to "true" but the F-bit in the Floor Indicator field is set to '0' (i.e. indicating that queuing of floor requests is not supported) or the Floor Indicator field is not included in the Floor Request message;

then the floor participant:

1. shall send the Floor Deny message. The Floor Deny message:

   a. shall include in the Reject Cause field the <Reject Cause> value cause #1 (Another MCPTT client has permission);

   b. may include in the Reject Cause field an additional text string explaining the reason for rejecting the floor request in the <Reject Phrase> value; and

   c. shall include the User ID field received in the Floor Request message; and

2. shall remain in 'O: has permission' state.

[TS 24.380, clause 7.2.3.5.5]

Upon receiving an indication from the MCPTT user to release permission to send RTP media, the floor participant:

1. shall stop timer T206 (Stop talking warning), if running;

2. shall stop timer T207 (Stop talking), if running;

3. shall send a Floor Release message towards other floor participants, if no queued requests exist: The Floor Release message:

   a. shall include the MCPTT ID of the MCPTT user in the User ID field; and

   b. if the session is not initiated as a broadcast group call with the B-bit set to '1' (Broadcast group call), shall include a Floor Indicator field set to '0' (normal call);

4. shall start timer T230 (Inactivity);

5. shall clear the stored SSRC of the current arbitrator; and

6. shall enter 'O: silence' state.

[TS 24.380, clause 7.2.3.4.3]

When a Floor Release message is received and if the SSRC in the Floor Release message matches with the stored SSRC of the current arbitrator or with the stored SSRC of the candidate arbitrator, the floor participant:

1. may provide floor idle notification to the MCPTT user.

2. shall request the MCPTT client to stop rendering received RTP media packets;

3. shall stop timer T203 (End of RTP media);

4. shall start timer T230 (Inactivity);
5. shall clear the stored SSRC of the candidate arbitrator;
6. shall clear the stored SSRC of the current arbitrator; and
7. shall enter 'O: silence' state;

[TS 24.380, clause 7.2.3.3.2]

If the floor participant receives an indication from the MCPTT user to send media, the floor participant:

1. shall send the Floor Request message to other floor participants. The Floor Request message:
   a. if a priority different than the default floor priority is required, shall include the Floor Priority field with the requested priority in the <Floor Priority> element;
   b. shall include the MCPTT ID of the MCPTT user in the <User ID> value of the User ID field; and
   c. if the floor request is a broadcast group call, system call, emergency call or an imminent peril call, shall include a Floor Indicator field indicating the relevant call types;
2. shall initialize the counter C201 (Floor request) with value set to 1;
3. shall stop timer T230 (Inactivity);
4. shall start timer T201 (Floor Request); and
5. shall enter 'O: pending request' state.

[TS 24.380, clause 7.2.3.3.5]

The transition is used in private call only. When a Floor Request message is received, the floor participant:

1. shall send a Floor Granted message toward the other floor participant. The Floor Granted message:
   a. shall include the MCPTT ID of the Floor Request message received in User ID value of the User ID field;
   b. shall include the SSRC of the Floor Request message received in the SSRC of floor control server field;
   c. shall include the max duration as configured in the MCPTT client in the OffNetwork/MaxDuration parameter in the <Duration> value of the Duration field; and
   d. shall include the priority of the Floor Request message received in the <Floor Priority> value of the Floor Priority field;
2. shall stop timer T230 (Inactivity);
3. shall start timer T205 (Floor Granted); and
4. shall enter 'O: pending granted' state.

[TS 24.380, clause 7.2.3.7.2]

Upon receiving the RTP media and the SSRC of RTP media packet matches with the stored SSRC of current arbitrator, the floor participant:

1. shall request the MCPTT client to render the received RTP media packets;
2. shall stop timer T205 (Floor Granted), if running;
3. shall stop timer T233 (Pending user action), if running;
4. shall start timer T203 (End of RTP media); and
5. shall enter 'O: has no permission' state.

[TS 24.379, clause 11.2.3.4.5.1]

When in the "Q1: in-progress private call" state, upon an indication from MCPTT User to upgrade the call to emergency and the value of "/<*x*>/<*x*>/Common/PrivateCall/EmergencyCall/Authorised" leaf node present in the user profile as specified in 3GPP TS 24.383 [45] is set to "true", the MCPTT client:

1) shall generate and store emergency offer SDP as defined in subclause 11.2.1.1.2;
2) shall update caller ID as own MCPTT user ID;
3) shall update callee ID as MCPTT user ID of the other user;
4) shall store current user location as user location;
5) shall set the stored current call type to "EMERGENCY PRIVATE CALL";
6) shall generate a PRIVATE CALL SETUP REQUEST message as specified in subclause 15.1.5. In the PRIVATE SETUP REQUEST message, the MCPTT client:
   a) shall set the Call identifier IE with the stored call identifier;
   b) shall set the MCPTT user ID of the caller IE with stored caller ID;
   c) shall set the MCPTT user ID of the callee IE with the stored callee ID;
   d) shall set the Commencement mode IE as "AUTOMATIC COMMENCEMENT MODE";
   e) shall set the Call type IE to the stored current call type;
   f) shall set the SDP offer IE with emergency offer SDP; and
   g) may set the User location IE with user location.
7) shall set the ProSe per-packet priority to the value corresponding to MCPTT off-network emergency private call as described in 3GPP TS 24.383 [45];
8) shall send the PRIVATE CALL SETUP REQUEST message towards other MCPTT client according to rules and procedures as specified in subclause 11.2.1.1.1;
9) shall initialize the counter CFP1 (private call request retransmission) with value set to 1;
10) shall start timer TFP1 (private call request retransmission); and
11) shall enter the "Q2: in-progress emergency private call" state.

[TS 24.379, clause 11.2.3.4.6.1]

When in the "Q2: in-progress emergency private call" state, upon an indication from:

1) the caller of the emergency private call; or

...

to cancel the emergency private call, the MCPTT client:

1) shall generate a PRIVATE CALL EMERGENCY CANCEL message as specified in subclause 15.1.12. In the PRIVATE CALL EMERGENCY CANCEL message, the MCPTT client:
   a) shall set the Call identifier IE to the stored call identifier;
   b) shall set the MCPTT user ID of the caller IE with the stored caller; and
   c) shall set the MCPTT user ID of the callee IE with the stored callee.
2) shall send the PRIVATE CALL EMERGENCY CANCEL message according to rules and procedures as specified in subclause 11.2.1.1.1;
3) shall stop TFP8 (implicit downgrade) timer;
4) shall initialize the counter CFP6 (emergency private call cancel retransmission) with the value set to 1;

5) shall start timer TFP6 (emergency private call cancel retransmission);

6) shall set the stored current call type to "PRIVATE CALL"; and

7) shall enter the "Q1: in-progress private call" state.

[TS 24.379, clause 11.2.3.4.6.3]

When in the "Q1: in-progress private call" state, upon receiving a PRIVATE CALL EMERGENCY CANCEL ACK message response to PRIVATE CALL EMERGENCY CANCEL message with the same "call identifier", the MCPTT client:

1) shall stop timer TFP6 (emergency private call cancel retransmission), if running;

2) shall establish a media session based on the SDP body of the stored answer SDP;

3) shall set the ProSe per-packet priority to the value corresponding to MCPTT off-network private call as described in 3GPP TS 24.383 [45]; and

4) shall remain in the "Q1: in-progress private call" state.

[TS 24.379, clause 11.2.2.4.5.1]

When in the "P4: part of ongoing call" state, upon an indication from MCPTT User to release a private call, the MCPTT client:

1) shall generate a PRIVATE CALL RELEASE message as specified in subclause 15.1.9. In the PRIVATE CALL RELEASE message, the MCPTT client:

   a) shall set the Call identifier IE to the stored call identifier;

   b) shall set the MCPTT user ID of the caller IE with stored caller ID; and

   c) shall set the MCPTT user ID of the callee IE with stored callee ID.

2) shall send the PRIVATE CALL RELEASE message in response to the request message according to rules and procedures as specified in subclause 11.2.1.1.1;

3) shall initialize the counter CFP3 (private call release retransmission) with the value set to 1;

4) shall start timer TFP3 (private call release retransmission); and

5) shall enter the "P3: waiting for release response" state.

[TS 24.379, clause 11.2.2.4.5.5]

When in the "P3: waiting for release response" state, upon receiving a PRIVATE CALL RELEASE ACK to PRIVATE CALL RELEASE message, the MCPTT client:

1) shall stop timer TFP3 (private call release retransmission), if running;

2) shall terminate the media session;

3) shall start timer TFP7 (waiting for any message with same call identifier);

4) shall release the call type control state machine; and

5) shall enter the "P1: ignoring same call id" state.

7.2.1.3 Test description

7.2.1.3.1 Pre-test conditions

System Simulator:

- SS-UE1 (MCPTT client)

- For the underlying "transport bearer" over which the SS and the UE will communicate, the SS is behaving as SS-UE1 as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

- GNSS simulator to simulate a location and provide a timing reference for the assistance of E-UTRAN off-network testing.

NOTE 1: For operation in off-network environment, it needs be ensured that after the UE is powered up it considers the Geographical area #1 that is simulated by the GNSS simulator as being one of the geographical areas set in the USIM for operation when UE is "not served by E-UTRAN".

- SS-NW (MCPTT server) in the Preamble

  - For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

NOTE 2: The SS operation as NW (MCPTT server) is needed only for the Preamble if the UE has to perform the MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2..

IUT:

- UE (MCPTT client)

  - The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.

  - For the underlying "transport bearer" over which the SS and the UE will communicate, the UE is behaving as a ProSe enabled UE as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

Preamble:

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

- The GNSS simulator is configured to simulate a location in the centre of Geographical area #1 and provide a timing reference, as defined in TS 36.508 [24] Table 4.11.2-2 scenario #1.

- The UE is Switched OFF (state 1) according to TS 36.508 [24].

7.2.1.3.2 Test procedure sequence

Table 7.2.1.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Power up the UE.	-	-	-	-
1A	Trigger the UE to reset UTC time and location. NOTE: The UTC time and location reset may be performed by MMI or AT command (+CUTCR).	-	-	-	-
2	Activate the MCPTT Client Application and register User A as the MCPTT User (TS 36.579-5 [5], px_MCPTT_User_A_username, px_MCPTT_User_A_password). (NOTE 1)	-	-	-	-
3	Make the UE (MCPTT User) request the establishment of an MCPTT private call, on-demand Automatic Commencement Mode, with Floor Control. (NOTE 1)	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.5 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
-	EXCEPTION: Steps 4-6 are repeated CFP1=3 times (CFP1 defined in 36.579-1 [2] Table 5.5.8.1-1)	-	-	-	-
4	Check: Does the UE (MCPTT client) send a PRIVATE CALL SETUP REQUEST, Commencement mode set to AUTOMATIC COMMENCEMENT MODE, Call type set to Private Call? NOTE: It is expected that the UE - shall initialize the counter CFP1 (private call request retransmission) with the value set to 1 on the first transmission, and, increase it by 1 with each re-transmission. - shall start timer TFP1 (private call request retransmission)	-->	PRIVATE CALL SETUP REQUEST	1,2	P
5	Start TFP1 (private call request retransmission) 2000 milliseconds as defined in 36.579-1 [2] Table 5.5.8.1-1.	-	-	-	-
6	TFP1 expires.	-	-	-	-
13	Start TFP7 (waiting for any message with same call identifier) 6 sec (value chosen to facilitate the test sequence in steps 14-16) and defined in 36.579-1 [2] Table 5.5.8.1-1. NOTE: TFP7 is expected to be started after TFP1 expires and CFP1 is equal to the upper limit. NOTE: It is expected that the UE considers at this moment of time the Private call establishment attempt as failed	-	-	-	-
14	SS-UE1 (MCPTT Client) sends a PRIVATE CALL ACCEPT message,	<--	PRIVATE CALL ACCEPT	-	-
-	EXCEPTION: Steps 15a1-15b1 depend on UE complience; the "lower case letter" identifies a step sequence that takes place depending on UE behaviour.	-	-	-	-
15a 1	Check: Does the UE (MCPTT client) send a PRIVATE CALL ACCEPT ACK?	-->	PRIVATE CALL ACCEPT ACK	2	F
15b 1	Check: Does the TFP7 (waiting for any message with same call identifier) expire?	-	-	2	P
16	Void.	-	-	-	-

-	EXCEPTION: UE releases the E-UTRA connection. The E-UTRA/EPC actions which are related to the MCPTT call release are described in TS 36.579-1 [2], subclause 5.4.8, 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-release by the UE'.	-	-	-	-
17	Make the UE (MCPTT User) request the establishment of an MCPTT private call, on-demand Automatic Commencement Mode, with Floor Control. (NOTE 1)	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.5 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
18	Check: Does the UE (MCPTT client) send a PRIVATE CALL SETUP REQUEST, Commencement mode set to AUTOMATIC COMMENCEMENT MODE, Call type set to Private Call?	-->	PRIVATE CALL SETUP REQUEST	1	P
19	SS-UE1 (MCPTT Client) sends a PRIVATE CALL ACCEPT message,	<--	PRIVATE CALL ACCEPT	-	-
20	Check: Does the UE (MCPTT client) send a PRIVATE CALL ACCEPT ACK?	-->	PRIVATE CALL ACCEPT ACK	3	P
21	Make the UE (MCPTT User) press the PTT button requesting permission to talk. NOTE 1: Depending on UE implementation the PTT button may already been pressed in step 17. NOTE 2: The UE (MCPTT User) shall keep the button pressed until otherwise written.	-	-	-	-
22	Check: Does the UE (MCPTT client) send Floor Granted message, Floor Indicator set to Normal call?	-->	Floor Granted	4	P
23	SS-UE1 (MCPTT Client) sends a Floor Request message	<--	Floor Request	-	-
24	Check: Does the UE (MCPTT client) send Floor Deny message?	-->	Floor Deny	4	P
25	Make the UE (MCPTT User) release the PTT button.	-	-	-	-
26	Check: Does the UE (MCPTT client) send Floor Release message?	-->	Floor Release	4	P
27	SS-UE1 (MCPTT Client) sends a Floor Request message	<--	Floor Request	-	-
28	Check: Does the UE (MCPTT client) send Floor Granted message?	-->	Floor Granted	4	P
29	SS continuously sends RTP media until step 34 below. NOTE: The UE (Client) needs to receive RTP media because otherwise the sending of Floor Deny in step 32 will not be a valid behaviour.	-	-	-	-
30	Make the UE (MCPTT User) press the PTT button requesting permission to talk. NOTE: The UE (MCPTT User) shall keep the button pressed until otherwise written.	-	-	-	-
31	Check: Does the UE (MCPTT client) send Floor Request message?	-->	Floor Request	4	P
32	SS-UE1 (MCPTT Client) sends a Floor Deny message.	<--	Floor Deny	-	-
33	Make the UE (MCPTT User) release the PTT button.	-	-	-	-

34	SS-UE1 (MCPTT Client) sends a Floor Release message.	<--	Floor Release	-	-
35	Make the UE (MCPTT User) press the PTT button requesting permission to talk. NOTE: The UE (MCPTT User) shall keep the button pressed until otherwise written.	-	-	-	-
36	Check: Does the UE (MCPTT client) send Floor Request message?	-->	Floor Request	4	P
37	SS-UE1 (MCPTT Client) sends a Floor Granted message.	<--	Floor Granted	-	-
38	Make the UE (MCPTT User) release the PTT button.	-	-	-	-
39	Check: Does the UE (MCPTT client) send Floor Release message?	-->	Floor Release	4	P
40	Make the UE (MCPTT User) request upgrade of the ongoing call to Emergency call. (NOTE 1)	-	-	-	-
41	Check: Does the UE (MCPTT client) send PRIVATE CALL SETUP REQUEST message, Call type set to EMERGENCY PRIVATE CALL?	-->	PRIVATE CALL SETUP REQUEST	5	P
42	SS-UE1 (MCPTT Client) sends a PRIVATE CALL ACCEPT message.	<--	PRIVATE CALL ACCEPT	-	-
43	Check: Does the UE (MCPTT client) send PRIVATE CALL ACCEPT ACK message?	-->	PRIVATE CALL ACCEPT ACK	5	P
44	Make the UE (MCPTT User) to press the PTT button requesting permission to talk. NOTE 1: Depending on UE implementation the PTT button may already been pressed in step 40. NOTE 2: The UE (MCPTT User) shall keep the button pressed until otherwise written.	-	-	-	-
45	Check: Does the UE (MCPTT client) send Floor Request message?	-->	Floor Granted	5,4	P
46	Void	-	-	-	-
47	Make the UE (MCPTT User) to release the PTT button.	-	-	-	-
48	Check: Does the UE (MCPTT client) send Floor Release message?	-->	Floor Release	5,4	P
49	Make the UE (MCPTT User) request downgrade of the ongoing Emergency call. (NOTE 1)	-	-	-	-
50	Check: Does the UE (MCPTT client) send PRIVATE CALL EMERGENCY CANCEL message?	-->	PRIVATE CALL EMERGENCY CANCEL	6	P
51	SS-UE1 (MCPTT Client) sends a PRIVATE CALL EMERGENCY CANCEL ACK message.	<--	PRIVATE CALL EMERGENCY CANCEL ACK	-	-
52	Make the UE (MCPTT User) press the PTT button requesting permission to talk. NOTE: The UE (MCPTT User) shall keep the button pressed until otherwise written.	-	-	-	-
53	Check: Does the UE (MCPTT client) send Floor Request message?	-->	Floor Request	6,4	P
54	SS-UE1 (MCPTT Client) sends a Floor Granted message.	<--	Floor Granted	-	-
55	Make the UE (MCPTT User) to release the PTT button.	-	-	-	-
56	Check: Does the UE (MCPTT client) send Floor Release message?	-->	Floor Release	6,4	P
57	Make the UE (MCPTT User) request termination of the MCPTT private call. (NOTE 1)	-	-	-	-
58	Check: Does the UE (MCPTT client) send PRIVATE CALL RELEASE message?	-->	PRIVATE CALL RELEASE	7	P
59	SS-UE1 (MCPTT Client) sends a PRIVATE CALL RELEASE ACK message.	<--	PRIVATE CALL RELEASE ACK	-	-

-	EXCEPTION: UE releases the E-UTRA connection. The E-UTRA/EPC actions which are related to the MCPTT call release are described in TS 36.579-1 [2], subclause 5.4.8, 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-release by the UE'.	-	-	-	-
NOTE 1: This is expected to be done via a suitable implementation dependent MMI.					

7.2.1.3.3 Specific message contents

Table 7.2.1.3.3-1: PRIVATE CALL SETUP REQUEST (Step 41 Table 7.2.1.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.8.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Call type	'00000110'B	EMERGENCY PRIVATE CALL	
User location	Nor present or Any value		

Table 7.2.1.3.3-2: Floor Granted (Step 28, Table 7.2.1.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	px_MCPTT_User_B_ID	The MCPTT User ID of the one simulated by the SS	
Floor Indicator			
Floor Indicator	'10000x00 0000000	Bit A=1 (Normal call) bit F=x (Queueing supported) any value	

Table 7.2.1.3.3-2A: Floor Granted (Step 22, Table 7.2.1.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
SSRC of granted floor participant	UE (MCPTT client) SSRC		
Floor Indicator			
Floor Indicator	'10000x00 0000000	Bit A=1 (Normal call) bit F=x (Queueing supported) any value	

Table 7.2.1.3.3-3: Floor Granted (Steps 37, 54, Table 7.2.1.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'10000100 0000000	Bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 7.2.1.3.3-4: Floor Request (Steps 23, 27, Table 7.2.1.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.2-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	px_MCPTT_User_B_ID	The MCPTT User ID of the one simulated by the SS	
Floor Indicator			
Floor Indicator	'10000100 0000000	Bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 7.2.1.3.3-5: Floor Request (Step 31, 36, 53, Table 7.2.1.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.2-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'10000x00 0000000	Bit A=1 (Normal call) bit F=x (Queueing supported) any value	

Table 7.2.1.3.3-6: Floor Deny (Step 24, Table 7.2.1.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.4-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	px_MCPTT_User_B_ID	The MCPTT User ID of the one simulated by the SS	
Floor Indicator			
Floor Indicator	'10000x00 0000000	Bit A=1 (Normal call) bit F=x (Queueing supported) any value	

Table 7.2.1.3.3-7: Floor Deny (Step 32, Table 7.2.1.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.4-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'10000100 0000000	Bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 7.2.1.3.3-8: Floor Release (Steps 26, 39, 56, Table 7.2.1.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.5-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'10000x00 0000000	Bit A=1 (Normal call) bit F=x (Queueing supported) any value	

Table 7.2.1.3.3-9: Floor Release (Step 34, Table 7.2.1.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.5-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	px_MCPTT_User_B_ID	The MCPTT User ID of the one simulated by the SS	
Floor Indicator			
Floor Indicator	'10000100 0000000	Bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 7.2.1.3.3-10: Floor Request (Step 45, Table 7.2.1.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.2-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'00010x00 0000000	Bit D=1 (Emergency call) bit F=x (Queueing supported) any value	

Table 7.2.1.3.3-11: Floor Granted (Step 46, Table 7.2.1.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'00010100 0000000	Bit D=1 (Emergency call) bit F=1 (Queueing supported)	

Table 7.2.1.3.3-12: Floor Release (Step 48, Table 7.2.1.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.5-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'00010x00 0000000	Bit D=1 (Emergency call) bit F=x (Queueing supported) any value	

7.2.2 Off-network / Private Call / On-demand / Automatic Commencement Mode / No Response to Private Call Setup Accept / Private call setup success / With Floor Control / Upgrade to Emergency Call / Cancellation of Emergency on User request / Client Terminated (CT)

7.2.2.1 Test Purpose (TP)

(1)

with { UE (MCPTT Client) registered and authorized for MCPTT Service, including authorized to receive private and private emergency calls with automatic commencement, and, the UE is in an off-network environment }
ensure that {
  when { the UE (MCPTT Client) receives a request for establishment of an MCPTT private call, on-demand Automatic Commencement Mode }
    then { UE (MCPTT Client) sends a PRIVATE CALL ACCEPT message accepting the establishment of a private call on-demand Automatic Commencement Mode }
            }

(2)

with { UE (MCPTT Client) registered and authorized for MCPTT Service, including authorized to receive private and private emergency calls with automatic commencement, and, the UE is in an off-network environment, and, UE (MCPTT Client) having sent a PRIVATE CALL ACCEPT message accepting the establishment of a private call }
ensure that {
  when { the UE (MCPTT Client) does not receive response from the calling Client until the timer TFP4 (private call accept retransmission) expires }
    then { UE (MCPTT Client) retransmits the PRIVATE CALL ACCEPT message if the counter CFP4 (private call accept retransmission) has not reached its max value and increments the counter CFP4 with one, **and**, stops re-transmitting if the counter CFP4 (private call accept retransmission) has reached its max value }
            }

(3)

with { UE (MCPTT Client) registered and authorized for MCPTT Service, including authorized to receive private and private emergency calls with automatic commencement, and, the UE is in an off-network environment, and, UE (MCPTT Client) having sent a PRIVATE CALL ACCEPT message accepting the establishment of a private call }
ensure that {
  when { the UE (MCPTT Client) receives a PRIVATE CALL ACCEPT ACK message }
    then { UE (MCPTT Client) considers the private call as established }
            }

(4)

with { UE (MCPTT Client) having established an MCPTT private call in off-network environment }
ensure that {
  when { the MCPTT User engages in communication with the inviting MCPTT User }
    then { UE (MCPTT Client) respects the floor control procedures in off-network environment imposed by Client having the floor (Floor request/grant/release/deny) }
            }

(5)

with { UE (MCPTT Client) having established an MCPTT private call in off-network environment }
ensure that {
  when { the UE (MCPTT Client) receives a request from the remote Client to upgrade the ongoing MCPTT private call to an MCPTT emergency private call }
    then { UE (MCPTT Client) sends a PRIVATE CALL ACCEPT message accepting the upgrade, **and**, after receiving a PRIVATE CALL ACCEPT ACK message, UE (MCPTT Client) considers the emergency private call as established }
            }

(6)

with { UE (MCPTT Client) having established an MCPTT private call, in off-network environment, and, having successfully upgraded it to an MCPTT Private Emergency call }

```
ensure that {
  when { the UE (MCPTT Client) receives a request from the remote Client to downgrade the ongoing
MCPTT private emergency call to a normal MCPTT private call }
    then { UE (MCPTT Client) sends a PRIVATE CALL EMERGENCY CANCEL ACK message, and, considers the
call downgraded to a Private normal call }
            }
```

(7)

```
with { UE (MCPTT Client) having established an MCPTT private call in off-network environment }
ensure that {
  when { the MCPTT User receives a request from the remote Client to release the ongoing MCPTT
private call }
    then { UE (MCPTT Client) sends a PRIVATE CALL RELEASE ACK message and leaves the MCPTT session }
            }
```

7.2.2.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: TS 24.379 clauses 11.2.1.1.1, 11.2.1.1.2, 11.2.2.4.3.2, 11.2.2.4.3.3, 11.2.2.4.3.5, 11.2.2.4.3.4, TS 24.380 clauses 7.1, 7.2.3.4.2, 7.2.3.5.4, 7.2.3.5.5, 7.2.3.4.3, 7.2.3.3.2, 7.2.3.3.5, 7.2.3.5.2, 7.2.3.7.2, 11.2.3.4.5.6, 11.2.3.4.6.5, 11.2.2.4.5.4. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 11.2.1.1.1]

In order to participate in a private call, the MCPTT client:

1) shall send the MONP message as a UDP message to the local IP address of the MCPTT user, on UDP port TBD, with an IP time-to-live set to 255; and

Editor's note [CT1#95, C1-160392]: Port number for the message is FFS.

2) shall treat UDP messages received on the port TBD as received MONP messages.

NOTE: An MCPTT client that supports IPv6 is supposed to listen to the IPv6 addresses.

[TS 24.379, clause 11.2.1.1.2]

For an off-network MCPTT session, only MCPTT speech is used.

One off-network MCPTT session includes one media-floor control entity.

The MCPTT client shall generate an SDP body for a private call in accordance with rules and procedures of IETF RFC 4566 [12] and IETF RFC 3264 [44].

The MCPTT client:

1) shall include in the session-level section:

   a) the "o=" field with the <username> portion set to a dash;

   b) the "s=" field with the <session name> portion set to a dash; and

   c) the "c=" field with the <nettype> portion set to "IN", the <addrtype> portion set to the IP version of the unicast IP address of the MCPTT client and the <connection-address> portion set to the unicast IP address of the MCPTT client;

2) shall include the media-level section for MCPTT speech consisting of:

   a) the "m=" field with the <media> portion set to "audio", the <port> portion set to a port number for MCPTT speech of the MCPTT group, the <proto> field set to "RTP/AVP" and <fmt> portion set indicating RTP payload type numbers;

   b) the "i=" field with the <session description> portion set to "speech";

   c) the "a=fmtp:" attribute(s), the "a=rtpmap:" attribute(s) or both, indicating the codec(s) and media parameters of the MCPTT speech; and

d) the "a=rtcp:" attribute indicating port number to be used for RTCP at the MCPTT client selected according to the rules and procedures of IETF RFC 3605 [13], if the media steam uses other than the default IP address;

3) shall include the media-level section for media-floor control entity consisting of:

a) an "m=" line, with the <media> portion set to "application", the <port> portion set to a port number for media-floor control entity of the MCPTT group, the <proto> field set to "udp" and <fmt> portion set to "MCPTT"; and

b) the "a=fmtp:MCPTT" attribute indicating the parameters of the media-floor control entity as specified 3GPP TS 24.380 [5]; and

4) shall include the MIKEY-SAKKE I_MESSAGE, if generated by the MCPTT client, in an "a=key-mgmt" attribute as a "mikey" attribute value in the SDP offer as specified in IETF RFC 4567 [47].

[TS 24.379, clause 11.2.2.4.3.2]

When in the "P0: start-stop" or "P1: ignoring same call id" state, upon receiving a PRIVATE CALL SETUP REQUEST message with Commencement mode IE set to "AUTOMATIC COMMENCEMENT MODE" and Call identifier IE different than stored call identifier and media session declared in SDP body of PRIVATE CALL SETUP REQUEST message can be established, the MCPTT client:

1) shall store the Call identifier IE in the received message as call identifier;

2) shall create the call type control state machine as described in subclause 11.2.3.2;

3) shall store the MCPTT user ID of the caller IE in the received PRIVATE CALL SETUP REQUEST message as caller ID;

4) shall store own MCPTT user ID as callee ID;

5) if the SDP offer contains an "a=key-mgmt" attribute field with a "mikey" attribute value containing a MIKEY-SAKKE I_MESSAGE:

a) shall extract the MCPTT ID of the originating MCPTT user from the initiator field (IDRi) of the I_MESSAGE as described in 3GPP TS 33.179 [46];

b) shall convert the MCPTT ID to a UID as described in 3GPP TS 33.179 [46];

c) shall use the UID to validate the signature of the MIKEY-SAKKE I_MESSAGE as described in 3GPP TS 33.179 [46];

...

e) if the validation of the signature was successful:

i) shall extract and decrypt the encapsulated PCK using the terminating user's (KMS provisioned) UID key as described in 3GPP TS 33.179 [46];

ii) shall extract the PCK-ID, from the payload as specified in 3GPP TS 33.179 [46];

iii) shall generate and store answer SDP based on received SDP offer IE in PRIVATE CALL SETUP REQUEST message, as defined in subclause 11.2.1.1.2;

iv) shall generate a PRIVATE CALL ACCEPT message as specified in subclause 15.1.7. In the PRIVATE CALL ACCEPT message, the MCPTT client:

A) shall set the Call identifier IE to the stored call identifier; and

B) shall set the MCPTT user ID of the caller IE with stored caller ID.

C) shall set the MCPTT user ID of the callee IE with stored callee ID; and

D) shall set the SDP answer IE with the stored answer SDP;

v) shall send PRIVATE CALL ACCEPT message in response to the request message according to rules and procedures as specified in subclause 11.2.1.1.1;

vi) shall establish a media session based on the SDP body of the stored answer SDP;

vii) shall initialize the counter CFP4 with value set to 1;

viii) shall start timer TFP4 (private call accept retransmission); and

ix) shall enter the "P5: pending" state; and

NOTE: With the PCK successfully shared between the originating MCPTT client and the terminating MCPTT client, both clients are able to use SRTP/SRTCP to create an end-to-end secure session.

6) if the SDP offer does not contain an "a=key-mgmt" attribute, the MCPTT client:

a) shall generate and store answer SDP based on received SDP offer IE in PRIVATE CALL SETUP REQUEST message, as defined in subclause 11.2.1.1.2;

b) shall generate a PRIVATE CALL ACCEPT message as specified in subclause 15.1.7:

i) shall set the Call identifier IE to the stored call identifier;

ii) shall set the MCPTT user ID of the caller IE with stored caller ID.

iii) shall set the MCPTT user ID of the callee IE with stored callee ID; and

iv) shall set the SDP answer IE with the stored answer SDP;

c) shall send PRIVATE CALL ACCEPT message in response to the request message according to rules and procedures as specified in subclause 11.2.1.1.1;

d) shall establish a media session based on the SDP body of the stored answer SDP;

e) shall initialize the counter CFP4 with value set to 1;

f) shall start timer TFP4 (private call accept retransmission); and

g) shall enter the "P5: pending" state.

[TS 24.379, clause 11.2.2.4.3.3]

When in the "P5: pending" state, upon expiry of timer TFP4 (private call accept retransmission), the MCPTT client:

1) shall generate a PRIVATE CALL ACCEPT message as specified in subclause 15.1.7. In the PRIVATE CALL ACCEPT message, the MCPTT client:

a) shall set the Call identifier IE to the stored call identifier;

b) shall set the MCPTT user ID of the caller IE with the stored caller ID;

c) shall set the MCPTT user ID of the callee IE with the stored callee ID; and

d) shall set the SDP answer IE with the stored answer SDP;

2) shall send PRIVATE CALL ACCEPT message in response to the request message according to rules and procedures as specified in subclause 11.2.1.1.1;

3) shall increment the value of the counter CFP4 (private call accept retransmission) by 1;

4) shall start timer TFP4 (private call accept retransmission); and

5) shall remain in the "P5: pending" state.

[TS 24.379, clause 11.2.2.4.3.5]

In the "P5: pending" state, when timer TFP4 (private call accept retransmission) expires and the value of the counter CFP4 (private call accept retransmission) is equal to the upper limit, the MCPTT client:

1) shall start timer TFP7 (waiting for any message with same call identifier);

2) shall release the call type control state machine; and

3) shall enter the "P1: ignoring same call id" state.

[TS 24.379, clause 11.2.2.4.3.4]

When in the "P5: pending" state, upon receiving a PRIVATE CALL ACCEPT ACK message or RTP media from originating user, the MCPTT client:

1) shall stop timer TFP4(private call accept retransmission);

2) shall start floor control as terminating MCPTT client as specified in subclause 7.2 in 3GPP TS 24.380 [5];

3) shall start timer TFP5 (max duration); and

4) shall enter the "P4: part of ongoing call" state.

[TS 24.379, clause 11.2.2.4.5.7]

When in the "P1: ignoring same call id" state, upon expiry of timer TFP7 (waiting for any message with same call identifier) the MCPTT client:

1) shall clear the stored call identifier; and

2) shall enter the "P0: start-stop" state.

[TS 24.380, clause 7.1]

In off-network, floor control is performed using floor control messages among the MCPTT clients without a centralized floor arbitrator. When off-network, if a floor control session is active, the floor arbitrator and the floor participant are co-located in the MCPTT client (see 3GPP TS 23.179 [5]). During a floor control session the MCPTT client currently speaking serves as the temporary floor arbitrator. All other MCPTT clients in the call play the role of floor participant. When the floor arbitrator grants the floor to another MCPTT client, that new MCPTT client, when starts to send media, becomes the new floor arbitrator and the former (the MCPTT client which granted the floor) becomes a floor participant.

...

It is assumed that the MCPTT user presses the PTT for requesting talk permission and it keeps it pressed until the request is resolved. If queuing of floor requests is not supported, this request is either granted or rejected or no answer is received. If the request is granted the user is notified with talk permission tone (or equivalent) and the user continues to press the PTT until it finishes the talk burst. If the request is rejected or no answer is received the user is notified and releases the PTT button.

[TS 24.380, clause 7.2.3.4.2]

If the floor participant receives an indication from the MCPTT user that the MCPTT user wants to send media, the floor participant:

1. shall send the Floor Request message to other clients. The Floor Request message:

   a. if a priority different than the default floor priority is required, shall include the Floor Priority field with the requested priority in the <Floor Priority> element;

   b. shall include the MCPTT ID of the MCPTT user in the User ID field; and

   c. if the floor request is a broadcast group call, system call, emergency call or an imminent peril call, shall include a Floor Indicator field indicating the relevant call types;

2. shall initialize the counter C201 (Floor request) with value set to 1;

3. shall start timer T201 (Floor Request); and

4. shall enter 'O: pending request' state.

[TS 24.380, clause 7.2.3.5.4]

Upon receiving a Floor Request message which is not pre-emptive as determined by subclause 4.1.1.5, in a session where:

1. the value of "/<x>/<x>/OffNetwork/QueueUsage" leaf node present in the group configuration as specified in 3GPP TS 24.383 [4] is set to "false"; or

2. the value of "/<x>/<x>/OffNetwork/QueueUsage" leaf node present in the group configuration as specified in 3GPP TS 24.383 [4] is set to "true" but the F-bit in the Floor Indicator field is set to '0' (i.e. indicating that queuing of floor requests is not supported) or the Floor Indicator field is not included in the Floor Request message;

then the floor participant:

1. shall send the Floor Deny message. The Floor Deny message:

   a. shall include in the Reject Cause field the <Reject Cause> value cause #1 (Another MCPTT client has permission);

   b. may include in the Reject Cause field an additional text string explaining the reason for rejecting the floor request in the <Reject Phrase> value; and

   c. shall include the User ID field received in the Floor Request message; and

2. shall remain in 'O: has permission' state.

[TS 24.380, clause 7.2.3.5.5]

Upon receiving an indication from the MCPTT user to release permission to send RTP media, the floor participant:

1. shall stop timer T206 (Stop talking warning), if running;

2. shall stop timer T207 (Stop talking), if running;

3. shall send a Floor Release message towards other floor participants, if no queued requests exist: The Floor Release message:

   a. shall include the MCPTT ID of the MCPTT user in the User ID field; and

   b. if the session is not initiated as a broadcast group call with the B-bit set to '1' (Broadcast group call), shall include a Floor Indicator field set to '0' (normal call);

4. shall start timer T230 (Inactivity);

5. shall clear the stored SSRC of the current arbitrator; and

6. shall enter 'O: silence' state.

[TS 24.380, clause 7.2.3.4.3]

When a Floor Release message is received and if the SSRC in the Floor Release message matches with the stored SSRC of the current arbitrator or with the stored SSRC of the candidate arbitrator, the floor participant:

1. may provide floor idle notification to the MCPTT user.

2. shall request the MCPTT client to stop rendering received RTP media packets;

3. shall stop timer T203 (End of RTP media);

4. shall start timer T230 (Inactivity);

5. shall clear the stored SSRC of the candidate arbitrator;

6. shall clear the stored SSRC of the current arbitrator; and

7. shall enter 'O: silence' state;

[TS 24.380, clause 7.2.3.3.2]

If the floor participant receives an indication from the MCPTT user to send media, the floor participant:

1. shall send the Floor Request message to other floor participants. The Floor Request message:

   a. if a priority different than the default floor priority is required, shall include the Floor Priority field with the requested priority in the <Floor Priority> element;

   b. shall include the MCPTT ID of the MCPTT user in the <User ID> value of the User ID field; and

   c. if the floor request is a broadcast group call, system call, emergency call or an imminent peril call, shall include a Floor Indicator field indicating the relevant call types;

2. shall initialize the counter C201 (Floor request) with value set to 1;

3. shall stop timer T230 (Inactivity);

4. shall start timer T201 (Floor Request); and

5. shall enter 'O: pending request' state.

[TS 24.380, clause 7.2.3.3.5]

The transition is used in private call only. When a Floor Request message is received, the floor participant:

1. shall send a Floor Granted message toward the other floor participant. The Floor Granted message:

   a. shall include the MCPTT ID of the Floor Request message received in User ID value of the User ID field;

   b. shall include the SSRC of the Floor Request message received in the SSRC of floor control server field;

   c. shall include the max duration as configured in the MCPTT client in the OffNetwork/MaxDuration parameter in the <Duration> value of the Duration field; and

   d. shall include the priority of the Floor Request message received in the <Floor Priority> value of the Floor Priority field;

2. shall stop timer T230 (Inactivity);

3. shall start timer T205 (Floor Granted); and

4. shall enter 'O: pending granted' state.

[TS 24.380, clause 7.2.3.5.2]

Upon receiving encoded media from the user or if encoded media is already buffered the floor participant:

1. shall start timer T206 (Stop talking warning), if not running;

2. shall request the MCPTT client to start sending RTP media packets towards other MCPTT clients; and

3. shall remain in 'O: has permission' state.

[TS 24.380, clause 7.2.3.7.2]

Upon receiving the RTP media and the SSRC of RTP media packet matches with the stored SSRC of current arbitrator, the floor participant:

1. shall request the MCPTT client to render the received RTP media packets;

2. shall stop timer T205 (Floor Granted), if running;

3. shall stop timer T233 (Pending user action), if running;

4. shall start timer T203 (End of RTP media); and

5. shall enter 'O: has no permission' state.

[TS 24.379, clause 11.2.3.4.5.6]

When in the "Q1: in-progress private call" state or "Q2: in-progress emergency private call" state, upon receiving a PRIVATE CALL SETUP REQUEST message with the Call identifier IE same as the stored call identifier of the call, the Call type IE set as "EMERGENCY PRIVATE CALL", the MCPTT client:

1) if the media session declared in SDP body of PRIVATE CALL SETUP REQUEST message can be established:

   a) shall generate and store emergency answer SDP based on received SDP offer IE in PRIVATE CALL SETUP REQUEST message, as defined in subclause 11.2.1.1.2;

   b) shall update the caller ID with the MCPTT user ID of the caller IE as received in the PRIVATE CALL SETUP REQUEST message;

   c) shall update the callee ID with own MCPTT user ID;

   d) shall generate a PRIVATE CALL ACCEPT message as specified in subclause 15.1.7:

      i) shall set the Call identifier IE to the stored call identifier;

      ii) shall set the MCPTT user ID of the callee IE with stored callee ID;

      iii) shall set the MCPTT user ID of the caller IE with stored caller ID; and

      iv) shall set the SDP answer IE with the stored emergency answer SDP;

   e) shall set the ProSe per-packet priority to the value corresponding to MCPTT off-network emergency private call as described in 3GPP TS 24.383 [45];

   f) shall start TFP8 (implicit downgrade) timer;

   g) shall send PRIVATE CALL ACCEPT message in response to the request message according to rules and procedures as specified in subclause 11.2.1.1.1;

   h) shall set the stored current call type to "EMERGENCY PRIVATE CALL"; and

   i) shall enter the "Q2: in-progress emergency private call" state;

[TS 24.379, clause 11.2.3.4.6.5]

When in the "Q1: in-progress private call" state or "Q2: in-progress emergency private call" state, upon receiving a PRIVATE CALL EMERGENCY CANCEL message with the same "call identifier" IE, the MCPTT client:

1) shall generate a PRIVATE CALL EMERGENCY CANCEL ACK as specified in subclause 15.1.13:

   a) shall set the Call identifier IE to the stored call identifier;

   b) shall set the MCPTT user ID of the callee IE with own MCPTT user ID; and

   c) shall set the MCPTT user ID of the caller IE with MCPTT user ID of the caller IE in received message;

2) shall send PRIVATE CALL EMERGENCY CANCEL ACK message according to rules and procedures as specified in subclause 11.2.1.1.1;

3) shall stop TFP8 (implicit downgrade) timer;

4) shall establish a media session based on the SDP body of the stored answer SDP;

5) shall set the ProSe per-packet priority to the value corresponding to MCPTT off-network private call as described in 3GPP TS 24.383 [45]; and

6) shall enter the "Q1: in-progress private call" state and set the stored current call type to "PRIVATE CALL", if current state is the "Q2: in-progress emergency private call" state.

[TS 24.379, clause 11.2.2.4.5.4]

When in the "P4: part of ongoing call" state, upon receiving a PRIVATE CALL RELEASE message, the MCPTT client:

1) shall generate a PRIVATE CALL RELEASE ACK message as specified in subclause 15.1.10;

a) shall set the Call identifier IE to the stored call identifier;

b) shall set the MCPTT user ID of the caller IE the stored caller ID; and

c) shall set the MCPTT user ID of the callee IE with the stored callee ID.

2) shall send the PRIVATE CALL RELEASE ACK message in response to the request message according to rules and procedures as specified in subclause 11.2.1.1.1;

3) shall terminate the media session for private call;

4) shall start timer TFP7 (waiting for any message with same call identifier);

5) shall release the call type control state machine; and

6) shall enter the "P1: ignoring same call id" state.

7.2.2.3 Test description

7.2.2.3.1 Pre-test conditions

System Simulator:

- SS-UE1 (MCPTT client)
  - For the underlying "transport bearer" over which the SS and the UE will communicate, the SS is behaving as SS-UE1 as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.
- GNSS simulator to simulate a location and provide a timing reference for the assistance of E-UTRAN off-network testing.

NOTE 1: For operation in off-network environment, it needs be ensured that after the UE is powered up it considers the Geographical area #1 that is simulated by the GNSS simulator as being one of the geographical areas set in the USIM for operation when UE is "not served by E-UTRAN".

- SS-NW (MCPTT server) in the Preamble
  - For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

NOTE 2: The SS operation as NW (MCPTT server) is needed only for the Preamble if the UE has to perform the MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2..

IUT:

- UE (MCPTT client)
  - The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.
  - For the underlying "transport bearer" over which the SS and the UE will communicate, the UE is behaving as a ProSe enabled UE as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

Preamble:

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- The GNSS simulator is configured to simulate a location in the centre of Geographical area #1 and provide a timing reference, as defined in TS 36.508 [24] Table 4.11.2-2 scenario #1.

- The UE is Switched OFF (state 1) according to TS 36.508 [24].

7.2.2.3.2 Test procedure sequence

Table 7.2.2.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Power up the UE.	-	-	-	-
1A	Trigger the UE to reset UTC time and location. NOTE: The UTC time and location reset may be performed by MMI or AT command (+CUTCR).	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.6 'Generic Test Procedure for MCPTT CT communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
2	Activate the MCPTT Client Application and register User A as the MCPTT User (TS 36.579-5 [5], px_MCPTT_User_A_username, px_MCPTT_User_A_password). NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	-	-
3	SS-UE1 (MCPTT Client) sends a PRIVATE CALL SETUP REQUEST, Commencement mode set to AUTOMATIC COMMENCEMENT MODE, Call type set to Private Call.	<--	PRIVATE CALL SETUP REQUEST	-	-
-	EXCEPTION: Steps 4-6 are repeated CFP4=2 times (CFP4 defined in 36.579-1 [2] Table 5.5.8.1-1)	-	-	-	-
4	Check: Does the UE (MCPTT client) send a PRIVATE CALL ACCEPT? NOTE: It is expected that the UE - shall initialize the counter CFP4 (private call accept retransmission) with value set to 1 on the first transmission, and, increase it by 1 with each re-transmission - shall start timer TFP4 (private call accept retransmission).	-->	PRIVATE CALL ACCEPT	1,2	P
5	Start TFP4 (private call accept retransmission) 50 milliseconds as defined in 36.579-1 [2] Table 5.5.8.1-1.	-	-	-	-
6	TFP4 expires.	-	-	-	-
10-12	Void	-	-	-	-
13	Start TFP7 (waiting for any message with same call identifier) 6 sec (value chosen to facilitate the test sequence in steps 14-17) and defined in 36.579-1 [2] Table 5.5.8.1-1. NOTE: TFP7 is expected to be started after TFP4 expires and CFP4 is equal to the upper limit. NOTE: It is expected that the UE considers at this moment of time the Private call establishment attempt as failed.	-	-	-	-
14	SS-UE1 (MCPTT Client) sends a PRIVATE CALL ACCEPT message.	<--	PRIVATE CALL ACCEPT ACK	-	-
15	Make the UE (MCPTT User) press the PTT button requesting permission to talk. NOTE: The UE (MCPTT User) shall keep the button pressed until otherwise written.	-	-	-	-
-	EXCEPTION: Steps 16a1-16b1 depend on UE complience; the "lower case letter" identifies a step sequence thats take place depending on UE behaviour.	-	-	-	-
16a1	Check: Does the UE (MCPTT client) sends a Floor Request message	-->	Floor Request	2	F

16b 1	Check: Does the TFP7 (waiting for any message with same call identifier) expire?	-	-	2	P
17	Make the UE (MCPTT User) release the PTT button.	-	-	-	-
-	EXCEPTION: SS releases the E-UTRA connection. The E-UTRA/EPC actions which are related to the MCPTT call release are described in TS 36.579-1 [2], subclause 5.4.7, 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-release by the SS'.	-	-	-	-
18	Wait for 5 sec to ensure the UE is in stable state - scanning for incoming ProSe messages.	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.6 'Generic Test Procedure for MCPTT CT communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
19	SS-UE1 (MCPTT Client) sends a PRIVATE CALL SETUP REQUEST.	<--	PRIVATE CALL SETUP REQUEST	-	-
20	Check: Does the UE (MCPTT client) send a PRIVATE CALL ACCEPT?	-->	PRIVATE CALL ACCEPT	1	P
21	SS-UE1 (MCPTT Client) sends a PRIVATE CALL ACCEPT ACK.	<--	PRIVATE CALL ACCEPT ACK	-	-
22	SS-UE1 (MCPTT Client) sends Floor Granted message.	<--	Floor Granted	-	-
23	SS-UE1 (MCPTT Client) continuously sends RTP media until step 28 below. NOTE: The UE (Client) needs to receive RTP media because otherwise the sending of Floor Deny below will not be a valid behaviour.	-	-	-	-
24	Make the UE (MCPTT User) press the PTT button requesting permission to talk. NOTE: The UE (MCPTT User) shall keep the button pressed until otherwise written.	-	-	-	-
25	Check: Does the UE (MCPTT client) send a Floor Request message?	-->	Floor Request	3,4	P
26	SS-UE1 (MCPTT Client) sends Floor Deny message.	<--	Floor Deny	-	-
27	Make the UE (MCPTT User) release the PTT button.	-	-	-	-
28	SS-UE1 (MCPTT Client) sends Floor Release message.	<--	Floor Release	-	-
29	Make the UE (MCPTT User) press the PTT button requesting permission to talk. NOTE: The UE (MCPTT User) shall keep the button pressed until otherwise written.	-	-	-	-
30	Check: Does the UE (MCPTT client) send a Floor Request message?	-->	Floor Request	4	P
31	SS-UE1 (MCPTT Client) sends Floor Granted message.	<--	Floor Granted	-	-
32	SS-UE1 (MCPTT Client) sends a Floor Request message.	<--	Floor Request	-	-
33	Check: Does the UE (MCPTT client) send Floor Deny message?	-->	Floor Deny	4	P
34	Make the UE (MCPTT User) release the PTT button.	-	-	-	-
35	Check: Does the UE (MCPTT client) send a Floor Release message?	-->	Floor Release	4	P
36	SS-UE1 (MCPTT Client) sends a Floor Request message.	<--	Floor Request	-	-

37	Check: Does the UE (MCPTT client) send Floor Granted message?	-->	Floor Granted	4	P
38	SS-UE1 (MCPTT Client) sends Floor Release message.	<--	Floor Release	-	-
39	SS-UE1 (MCPTT Client) sends a PRIVATE CALL SETUP REQUEST message with Call type IE, call type = "EMERGENCY PRIVATE CALL.	<--	PRIVATE CALL SETUP REQUEST	-	-
40	Check: Does the UE (MCPTT client) send a PRIVATE CALL ACCEPT?	-->	PRIVATE CALL ACCEPT	5	P
41	SS-UE1 (MCPTT Client) sends a PRIVATE CALL ACCEPT ACK.	<--	PRIVATE CALL ACCEPT ACK	-	-
42	SS-UE1 (MCPTT Client) sends Floor Granted message.	<--	Floor Granted	-	-
43	SS-UE1 (MCPTT Client) sends Floor Release message.	<--	Floor Release	-	-
44	Make the UE (MCPTT User) press the PTT button requesting permission to talk. NOTE: The UE (MCPTT User) shall keep the button pressed until otherwise written.	-	-	-	-
45	Check: Does the UE (MCPTT client) send a Floor Request message?	-->	Floor Request	5,4	P
46	SS-UE1 (MCPTT Client) sends Floor Granted message.	<--	Floor Granted	-	-
47	Make the UE (MCPTT User) release the PTT button.	-	-	-	-
48	Check: Does the UE (MCPTT client) send a Floor Release message?	-->	Floor Release	5,4	P
49	SS-UE1 (MCPTT Client) sends a PRIVATE CALL EMERGENCY CANCEL message.	<--	PRIVATE CALL EMERGENCY CANCEL	-	-
50	Check: Does the UE (MCPTT client) send a PRIVATE CALL EMERGENCY CANCEL ACK message?	-->	PRIVATE CALL EMERGENCY CANCEL ACK	6	P
51	SS-UE1 (MCPTT Client) sends Floor Granted message.	<--	Floor Granted	-	-
52	SS-UE1 (MCPTT Client) sends Floor Release message.	<--	Floor Release	-	-
53	Make the UE (MCPTT User) press the PTT button requesting permission to talk. NOTE: The UE (MCPTT User) shall keep the button pressed until otherwise written.	-	-	-	-
54	Check: Does the UE (MCPTT client) send a Floor Request message?	-->	Floor Request	6,4	P
55	SS-UE1 (MCPTT Client) sends Floor Granted message.	<--	Floor Granted	-	-
56	Make the UE (MCPTT User) release the PTT button.	-	-	-	-
57	Check: Does the UE (MCPTT client) send a Floor Release message?	-->	Floor Release	6,4	P
58	SS-UE1 (MCPTT Client) sends PRIVATE CALL RELEASE message.	<--	PRIVATE CALL RELEASE	-	-
59	Check: Does the UE (MCPTT client) send a PRIVATE CALL RELEASE ACK message	-->	PRIVATE CALL RELEASE ACK	7	P
-	EXCEPTION: SS releases the E-UTRA connection. The E-UTRA/EPC actions which are related to the MCPTT call release are described in TS 36.579-1 [2], subclause 5.4.7, 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-release by the SS'.	-	-	-	-

7.2.2.3.3 Specific message contents

Table 7.2.2.3.3-1: PRIVATE CALL SETUP REQUEST (Step 39 Table 7.2.2.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.5.8.2-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Call type	'00000110'B	EMERGENCY PRIVATE CALL	

Table 7.2.2.3.3-2: Floor Granted (Step 37, Table 7.2.2.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
SSRC of granted floor participant	SS-UE1 (MCPTT Client) SSRC		
User ID			
User ID	px_MCPTT_User_B_ID	The MCPTT User ID of the one simulated by the SS	
Floor Indicator			
Floor Indicator	'10000x00 0000000	Bit A=1 (Normal call) bit F=x (Queueing supported) any value	

Table 7.2.2.3.3-3: Floor Granted (Steps 22, 51, Table 7.2.2.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
SSRC of granted floor participant	SS-UE1 (MCPTT Client) SSRC		
User ID			
User ID	px_MCPTT_User_B_ID	The MCPTT User ID of the one simulated by the SS	
Floor Indicator			
Floor Indicator	'10000100 0000000	Bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 7.2.2.3.3-3A: Floor Granted (Steps 31, 55, Table 7.2.2.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'10000100 0000000	Bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 7.2.2.3.3-4: Floor Request (Steps 32, 36, Table 7.2.2.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.2-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	px_MCPTT_User_B_ID	The MCPTT User ID of the one simulated by the SS	
Floor Indicator			
Floor Indicator	'10000100 0000000	Bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 7.2.2.3.3-5: Floor Request (Step 25, 30, 54, Table 7.2.2.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.2-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'10000x00 0000000	Bit A=1 (Normal call) bit F=x (Queueing supported) any value	

Table 7.2.2.3.3-6: Floor Deny (Step 33, Table 7.2.2.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.4-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	px_MCPTT_User_B_ID	The MCPTT User ID of the one simulated by the SS	
Floor Indicator			
Floor Indicator	'10000x00 0000000	Bit A=1 (Normal call) bit F=x (Queueing supported) any value	

Table 7.2.2.3.3-7: Floor Deny (Step 26, Table 7.2.2.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.4-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'10000100 0000000	Bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 7.2.2.3.3-8: Floor Release (Steps 35, 57, Table 7.2.2.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.5-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'10000x00 0000000	Bit A=1 (Normal call) bit F=x (Queueing supported) any value	

Table 7.2.2.3.3-9: Floor Release (Steps 28, 38, 52, Table 7.2.2.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.5-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	px_MCPTT_User_B_ID	The MCPTT User ID of the one simulated by the SS	
Floor Indicator			
Floor Indicator	'10000100 0000000	Bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 7.2.2.3.3-10: Floor Request (Step 45, Table 7.2.2.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.2-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'00010x00 0000000	Bit D=1 (Emergency call) bit F=x (Queueing supported) any value	

Table 7.2.2.3.3-11: Floor Granted (Step 42, Table 7.2.2.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
SSRC of granted floor participant	SS-UE1 (MCPTT Client) SSRC		
User ID			
User ID	px_MCPTT_User_B_ID	The MCPTT User ID of the one simulated by the SS	
Floor Indicator			
Floor Indicator	'00010100 0000000	Bit D=1 (Emergency call) bit F=1 (Queueing supported)	

Table 7.2.2.3.3-11A: Floor Granted (Step 46, Table 7.2.2.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'00010100 0000000	Bit D=1 (Emergency call) bit F=1 (Queueing supported)	

Table 7.2.2.3.3-12: Floor Release (Step 48, Table 7.2.2.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.5-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'00010x00 0000000	Bit D=1 (Emergency call) bit F=x (Queueing supported) any value	

Table 7.2.2.3.3-13: Floor Release (Step 43, Table 7.2.2.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.5-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	px_MCPTT_User_B_ID	The MCPTT User ID of the one simulated by the SS	
Floor Indicator			
Floor Indicator	'00010100 0000000	Bit D=1 (Emergency call) bit F=1 (Queueing supported)	

7.2.3 Off-network / Private Call / On-demand / Automatic Commencement Mode / Upgrade to Emergency Call Reject / Downgrade from Emergency Call Failure / Client Originated (CO)

7.2.3.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including authorized to
initiate/cancel private and private emergency calls with automatic commencement in off-network
environment, and, the UE is in an off-network environment, and, upon User request the UE (MCPTT
Client) has requested upgrade of an established Private Call to an Emergency Private call }
ensure that {
  when { the called Client rejects the upgrade requests }
    then { UE (MCPTT Client) continues with the established Private call }
            }
```

(2)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including authorized to
initiate/cancel private and private emergency calls with automatic commencement in off-network
environment, and, the UE is in an off-network environment, and, upon User request the UE (MCPTT
Client) has requested downgrade of an Emergency Private call to a Private call }
ensure that {
  when { the UE (MCPTT Client) does not receive response to the request until the timer TFP6
(emergency private call cancel retransmission) expires }
```

```
    then { UE (MCPTT Client) retransmits the PRIVATE CALL EMERGENCY CANCEL message requesting the
downgrade of the emergency private call if the counter CFP6 (emergency private call cancel
retransmission) has not reached its max value and increments the counter CFP6 with one, and, stops
re-transmitting if the counter CFP1 (emergency private call cancel retransmission) has reached its
max value and considers the private call as terminated }
            }
```

7.2.3.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: TS 24.379 clauses 11.2.3.4.5.4, 11.2.3.4.6.1, 11.2.3.4.6.2, 11.2.3.4.6.4, 11.2.2.4.5.9, 11.2.2.4.5.9. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 11.2.3.4.5.4]

When in the "Q2: in-progress emergency private call" state, upon receiving a PRIVATE CALL REJECT message in response to PRIVATE CALL SETUP REQUEST message with Call identifier IE same as stored call identifier, the MCPTT client:

1) shall stop timer TFP1 (call setup retransmission), if running;

2) shall set the ProSe per-packet priority to the value corresponding to the MCPTT off-network private call as described in 3GPP TS 24.383 [45];

3) shall set the stored current call type to "PRIVATE CALL"; and

4) shall enter the "Q1: in-progress private call" state.

[TS 24.379, clause 11.2.3.4.6.1]

When in the "Q2: in-progress emergency private call" state, upon an indication from:

1) the caller of the emergency private call; or

...

to cancel the emergency private call, the MCPTT client:

1) shall generate a PRIVATE CALL EMERGENCY CANCEL message as specified in subclause 15.1.12. In the PRIVATE CALL EMERGENCY CANCEL message, the MCPTT client:

   a) shall set the Call identifier IE to the stored call identifier;

   b) shall set the MCPTT user ID of the caller IE with the stored caller; and

   c) shall set the MCPTT user ID of the callee IE with the stored callee.

2) shall send the PRIVATE CALL EMERGENCY CANCEL message according to rules and procedures as specified in subclause 11.2.1.1.1;

3) shall stop TFP8 (implicit downgrade) timer;

4) shall initialize the counter CFP6 (emergency private call cancel retransmission) with the value set to 1;

5) shall start timer TFP6 (emergency private call cancel retransmission);

6) shall set the stored current call type to "PRIVATE CALL"; and

7) shall enter the "Q1: in-progress private call" state.

[TS 24.379, clause 11.2.3.4.6.2]

When in the "Q1: in-progress private call" state, upon expiry of timer TFP6 (emergency private call cancel retransmission), the MCPTT client:

1) shall generate a PRIVATE CALL EMERGENCY CANCEL message as specified in subclause 15.1.12. In the PRIVATE CALL EMERGENCY CANCEL message, the MCPTT client:

   a) shall set the Call identifier IE to the stored call identifier;

b) shall set the MCPTT user ID of the caller IE with the stored caller ID; and

c) shall set the MCPTT user ID of the callee IE with store callee ID.

2) shall send the PRIVATE CALL EMERGENCY CANCEL message according to rules and procedures as specified in subclause 11.2.1.1.1;

3) shall increment the value of the timer CFP6 (emergency private call cancel retransmission) by 1;

4) shall start timer TFP6 (emergency private call cancel retransmission); and

5) shall remain in the "Q1: in-progress private call" state.

[TS 24.379, clause 11.2.3.4.6.4]

In the "Q1: in-progress private call" state, when timer TFP6 (emergency private call cancel retransmission) expires and the value of the counter CFP6 (emergency private call cancel retransmission) is equal to the upper limit, the MCPTT client:

1) shall release the stored current call type;

2) shall release the stored Prose per-packet priority; and

3) shall enter "Q0: waiting for the call to be established".

[TS 24.379, clause 11.2.2.4.5.9]

In the "P4: part of ongoing call" state, when timer TFP6 (emergency private call cancel retransmission) expires and the value of the counter CFP6 (emergency private call cancel retransmission) is equal to the upper limit, the MCPTT client:

1) shall start timer TFP7 (waiting for any message with same call identifier);

2) shall release the call type control state machine; and

3) shall enter the "P1: ignoring same call id" state.

[TS 24.379, clause 11.2.2.4.5.9]

When in the "P1: ignoring same call id" state, upon expiry of timer TFP7 (waiting for any message with same call identifier) the MCPTT client:

1) shall clear the stored call identifier; and

2) shall enter the "P0: start-stop" state.

7.2.3.3 Test description

7.2.3.3.1 Pre-test conditions

System Simulator:

- SS-UE1 (MCPTT client)
  - For the underlying "transport bearer" over which the SS and the UE will communicate, the SS is behaving as SS-UE1 as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.
- GNSS simulator to simulate a location and provide a timing reference for the assistance of E-UTRAN off-network testing.

NOTE 1: For operation in off-network environment, it needs be ensured that after the UE is powered up it considers the Geographical area #1 that is simulated by the GNSS simulator as being one of the geographical areas set in the USIM for operation when UE is "not served by E-UTRAN".

- SS-NW (MCPTT server) in the Preamble

- For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

NOTE 2: The SS operation as NW (MCPTT server) is needed only for the Preamble if the UE has to perform the MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.
- For the underlying "transport bearer" over which the SS and the UE will communicate, the UE is behaving as a ProSe enabled UE as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

Preamble:

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- The GNSS simulator is configured to simulate a location in the centre of Geographical area #1 and provide a timing reference, as defined in TS 36.508 [24] Table 4.11.2-2 scenario #1.
- The UE is Switched OFF (state 1) according to TS 36.508 [24].

7.2.3.3.2 Test procedure sequence

Table 7.2.3.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Power up the UE.	-	-	-	-
1A	Trigger the UE to reset UTC time and location. NOTE: The UTC time and location reset may be performed by MMI or AT command (+CUTCR).	-	-	-	-
2	Activate the MCPTT Client Application and register User A as the MCPTT User (TS 36.579-5 [5], px_MCPTT_User_A_username, px_MCPTT_User_A_password). NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	-	-
3	Make the UE (MCPTT User) request the establishment of an MCPTT private call, on-demand Automatic Commencement Mode, with Floor Control. NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.5 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
4	The UE (MCPTT client) sends a PRIVATE CALL SETUP REQUEST, Commencement mode set to AUTOMATIC COMMENCEMENT MODE, Call type set to Private Call.	-->	PRIVATE CALL SETUP REQUEST	-	-
5	SS-UE1 (MCPTT Client) sends a PRIVATE CALL ACCEPT message.	<--	PRIVATE CALL ACCEPT	-	-
6	The UE (MCPTT client) send a PRIVATE CALL ACCEPT ACK.	-->	PRIVATE CALL ACCEPT ACK	-	-
7	Make the UE (MCPTT User) press the PTT button requesting permission to talk. NOTE 1: Depending on UE implementation the PTT button may already been pressed in step 3. NOTE 2: The UE (MCPTT User) shall keep the button pressed until otherwise written.	-	-	-	-
8	The UE (MCPTT client) sends Floor Granted message.	-->	Floor Granted	-	-
9	Make the UE (MCPTT User) to release the PTT button.	-	-	-	-
10	The UE (MCPTT client) send Floor Release message.	-->	Floor Release	-	-
11	Make the MCPTT UE (MCPTT User) request upgrade of the ongoing call to Emergency call. NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	-	-
12	The UE (MCPTT client) sends PRIVATE CALL SETUP REQUEST message, Call type set to EMERGENCY PRIVATE CALL.	-->	PRIVATE CALL SETUP REQUEST	1	-
13	SS-UE1 (MCPTT Client) sends a PRIVATE CALL REJECT message.	<--	PRIVATE CALL REJECT		
14	Make the UE (MCPTT User) to press the PTT button requesting permission to talk. NOTE: The UE (MCPTT User) shall keep the button pressed until otherwise written.	-	-	-	-

15	Check: Does the UE (MCPTT client) send Floor Request message, Floor Indicator set to Normal call? NOTE: The UE continues operating in the normal Private call.	-->	Floor Request	1	P
16	SS-UE1 (MCPTT Client) sends a Floor Granted message.	<--	Floor Granted	-	-
17	Make the UE (MCPTT User) to release the PTT button.	-	-	-	-
18	The UE (MCPTT client) send Floor Release message.	-->	Floor Release	-	-
19	Make the MCPTT UE (MCPTT User) request upgrade of the ongoing call to Emergency call. NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	-	-
20	The UE (MCPTT client) send PRIVATE CALL SETUP REQUEST message, Call type set to EMERGENCY PRIVATE CALL.	-->	PRIVATE CALL SETUP REQUEST	-	-
21	SS-UE1 (MCPTT Client) sends a PRIVATE CALL ACCEPT message.	<--	PRIVATE CALL ACCEPT	-	-
22	The UE (MCPTT client) send PRIVATE CALL ACCEPT ACK message.	-->	PRIVATE CALL ACCEPT ACK	-	-
23	Make the UE (MCPTT User) to press the PTT button requesting permission to talk. NOTE 1: Depending on UE implementation the PTT button may already been pressed in step 19. NOTE 2: The UE (MCPTT User) shall keep the button pressed until otherwise written.	-	-	-	-
24	The UE (MCPTT client) send Floor Granted message, Floor Indicator set to Emergency call.	-->	Floor Granted	-	-
25	Void.	-	-	-	-
26	Make the UE (MCPTT User) to release the PTT button.	-	-	-	-
27	The UE (MCPTT client) send Floor Release message.	-->	Floor Release	-	-
28	Make the UE (MCPTT User) request downgrade of the ongoing Emergency call. NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	-	-
-	EXCEPTION: Steps 29-31 are repeated CFP6=3 times.	-	-	-	-
29	Check: Does the UE (MCPTT client) send PRIVATE CALL EMERGENCY CANCEL message? NOTE: It is expected that the UE - shall initialize the counter CFP6 (emergency private call cancel retransmission) with the value set to 1 - shall start timer TFP6 (emergency private call cancel retransmission)	-->	PRIVATE CALL EMERGENCY CANCEL	2	P
30	Start TFP6 (private call request retransmission) 40 milliseconds.	-	-	-	-
31	TFP6 expires. NOTE: It is expected that the UE considers at this moment of time the Private call being terminated.	-	-	-	-
38	Start TFP7 (waiting for any message with same call identifier) 6 sec (value chosen to facilitate the test sequence in steps 39-43). NOTE 1: TFP7 is expected to be started after TFP6 expires and CFP6 is equal to the upper limit. NOTE 2: Step numbering to reflect that steps 29-31 are repeated CFP6=3 times.	-	-	-	-
39	SS-UE1 (MCPTT Client) sends a PRIVATE CALL EMERGENCY CANCEL ACK message	<--	PRIVATE CALL EMERGENCY CANCEL ACK	-	-

40	Make the UE (MCPTT User) to press the PTT button requesting permission to talk. NOTE: The UE (MCPTT User) shall keep the button pressed until otherwise written.	-	-	-	-
41	Check: Does the UE (MCPTT client) send Floor Request message in the next 2/3 TFP7 sec?	-->	Floor Request	2	F
42	Make the UE (MCPTT User) to release the PTT button.	-	-	-	-
43	TFP7 (waiting for any message with same call identifier) expires.	-	-	-	-
-	EXCEPTION: SS releases the E-UTRA connection. The E-UTRA/EPC actions which are related to the MCPTT call release are described in TS 36.579-1 [2], subclause 5.4.8, 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-release by the SS'. NOTE: Depending on UE implementation the UE may start independently ProSe release procedure.	-	-	-	-

7.2.3.3.3 Specific message contents

Table 7.2.3.3.3-1: PRIVATE CALL SETUP REQUEST (Steps 12, 20, Table 7.2.3.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.5.8.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Call type	'00000110'B	EMERGENCY PRIVATE CALL	
User location	Nor present or Any value		

Table 7.2.3.3.3-2: PRIVATE CALL REJECT (Step 13, Table 7.2.3.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.5.11.2-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Reason	'00000001'B	MEDIA FAILURE	

Table 7.2.3.3.3-3: Floor Granted (Step 8, Table 7.2.3.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
SSRC of granted floor participant	UE (MCPTT client) SSRC		
Floor Indicator			
Floor Indicator	'10000x00 0000000	Bit A=1 (Normal call) bit F=x (Queueing supported) any value	

Table 7.2.3.3.3-4: Floor Request (Step 15, Table 7.2.3.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.2-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'10000x00 0000000	Bit A=1 (Normal call) bit F=x (Queueing supported) any value	

Table 7.2.3.3.3-5: Floor Granted (Step 16, Table 7.2.3.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
SSRC of granted floor participant	The UE (MCPTT client) SSRC (received in the corresponding Floor Request)		
Floor priority	The same as the priority included in the corresponding Floor Request, Not Present if there was no priority included		
Floor Indicator			
Floor Indicator	'10000100 0000000	Bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 7.2.3.3.3-6: Floor Release (Steps 10, 18, Table 7.2.3.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.5-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'10000x00 0000000	Bit A=1 (Normal call) bit F=x (Queueing supported) any value	

Table 7.2.3.3.3-7: Floor Request (Step 24, Table 7.2.3.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.2-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'00010x00 0000000	Bit D=1 (Emergency call) bit F=x (Queueing supported) any value	

Table 7.2.3.3.3-8: Floor Release (Step 27, Table 7.2.3.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.5-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'00010x00 0000000	Bit D=1 (Emergency call) bit F=x (Queueing supported) any value	

7.2.4 Off-network / Private Call / On-demand / Manual Commencement Mode / Call Released before establishment completion / Call request Rejected / Call establishment successful / Client Originated (CO)

7.2.4.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including authorized to
initiate/cancel private calls with manual commencement, and, the UE is in an off-network environment
}
ensure that {
  when { the MCPTT User requests the establishment of an MCPTT private call, on-demand Manual
Commencement Mode }
    then { UE (MCPTT Client) sends a PRIVATE CALL SETUP REQUEST message requesting the establishment
of an MCPTT private call, on-demand Manual Commencement Mode }
            }
```

(2)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including authorized to
initiate/cancel private calls with manual commencement, and, the UE is in an off-network
environment, and, UE (MCPTT Client) having sent a PRIVATE CALL SETUP REQUEST message requesting
establishment of an MCPTT private call, on-demand Manual Commencement Mode }
ensure that {
  when { the User requests termination of the call after a PRIVATE CALL RINGING message has been
received but before the completion of the call establishment }
    then { UE (MCPTT Client) sends a PRIVATE CALL RELEASE message and terminates the call
establishment }
            }
```

(3)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including authorized to
initiate/cancel private calls with manual commencement, and, the UE is in an off-network
environment, and, UE (MCPTT Client) having sent a PRIVATE CALL SETUP REQUEST message requesting
establishment of an MCPTT private call, on-demand Manual Commencement Mode }
ensure that {
  when { the UE (MCPTT Client) receives a PRIVATE CALL REJECT message after a PRIVATE CALL RINGING
message has been received but before the completion of the call establishment }
    then { UE (MCPTT Client) terminates the call establishment }
            }
```

(4)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including authorized to
initiate/cancel private calls with manual commencement, and, the UE is in an off-network
environment, and, UE (MCPTT Client) having sent a PRIVATE CALL SETUP REQUEST message requesting
establishment of an MCPTT private call, on-demand Manual Commencement Mode }
ensure that {
  when { the UE (MCPTT Client) receives a PRIVATE CALL RINGING message followed by a PRIVATE CALL
ACCEPT message }
    then { UE (MCPTT Client) transmits a PRIVATE CALL ACCEPT ACK message and considers the call as
being established }
            }
```

7.2.4.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: TS 24.379 clauses 11.2.1.1.1, 11.2.1.1.2, 11.2.2.4.4.1, 11.2.2.4.2.7, 11.2.2.4.2.8, 11.2.2.4.4.8. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 11.2.1.1.1]

In order to participate in a private call, the MCPTT client:

1) shall send the MONP message as a UDP message to the local IP address of the MCPTT user, on UDP port TBD, with an IP time-to-live set to 255; and

Editor's note [CT1#95, C1-160392]: Port number for the message is FFS.

2) shall treat UDP messages received on the port TBD as received MONP messages.

NOTE: An MCPTT client that supports IPv6 is supposed to listen to the IPv6 addresses.

[TS 24.379, clause 11.2.1.1.2]

For an off-network MCPTT session, only MCPTT speech is used.

One off-network MCPTT session includes one media-floor control entity.

The MCPTT client shall generate an SDP body for a private call in accordance with rules and procedures of IETF RFC 4566 [12] and IETF RFC 3264 [44].

The MCPTT client:

1) shall include in the session-level section:

   a) the "o=" field with the <username> portion set to a dash;

   b) the "s=" field with the <session name> portion set to a dash; and

   c) the "c=" field with the <nettype> portion set to "IN", the <addrtype> portion set to the IP version of the unicast IP address of the MCPTT client and the <connection-address> portion set to the unicast IP address of the MCPTT client;

2) shall include the media-level section for MCPTT speech consisting of:

   a) the "m=" field with the <media> portion set to "audio", the <port> portion set to a port number for MCPTT speech of the MCPTT group, the <proto> field set to "RTP/AVP" and <fmt> portion set indicating RTP payload type numbers;

   b) the "i=" field with the <session description> portion set to "speech";

   c) the "a=fmtp:" attribute(s), the "a=rtpmap:" attribute(s) or both, indicating the codec(s) and media parameters of the MCPTT speech; and

   d) the "a=rtcp:" attribute indicating port number to be used for RTCP at the MCPTT client selected according to the rules and procedures of IETF RFC 3605 [13], if the media steam uses other than the default IP address;

3) shall include the media-level section for media-floor control entity consisting of:

   a) an "m=" line, with the <media> portion set to "application", the <port> portion set to a port number for media-floor control entity of the MCPTT group, the <proto> field set to "udp" and <fmt> portion set to "MCPTT"; and

   b) the "a=fmtp:MCPTT" attribute indicating the parameters of the media-floor control entity as specified 3GPP TS 24.380 [5]; and

4) shall include the MIKEY-SAKKE I_MESSAGE, if generated by the MCPTT client, in an "a=key-mgmt" attribute as a "mikey" attribute value in the SDP offer as specified in IETF RFC 4567 [47].

[TS 24.379, clause 11.2.2.4.4.1]

When in the "P0: start-stop" state or "P1: ignoring same call id", upon an indication from MCPTT User to initiate a private call and the value of "/<x>/<x>/Common/PrivateCall/Authorised" leaf node present in the user profile as specified in 3GPP TS 24.383 [45] is set to "true", the MCPTT client:

1) shall generate and store the call identifier as a random number uniformly distributed between (0, 65536);

2) shall store own MCPTT user ID as caller ID;

3) shall store MCPTT user ID of the callee as callee ID;

4) shall store "AUTOMATIC COMMENCEMENT MODE" as commencement mode, if requested and the value of "/<x>/<x>/Common/PrivateCall/AutoCommence" leaf node present in the user profile as specified in 3GPP TS 24.383 [45] is set to "true". Otherwise if the value of "/<x>/<x>/Common/PrivateCall/ManualCommence" leaf node present in the user profile as specified in 3GPP TS 24.383 [45] is set to "true", store "MANUAL COMMENCEMENT MODE" as commencement mode;

5) shall create a call type control state machine as described in subclause 11.2.3.2;

6) if an end-to-end security context needs to be established then:

   a) shall use keying material provided by the key management server to generate a PCK as described in 3GPP TS 33.179 [46];

   b) shall use the PCK to generate a PCK-ID with the four most significant bits set to "0011" to indicate that the purpose of the PCK is to protect private call communications and with the remaining twenty eight bits being randomly generated as described in 3GPP TS 33.179 [46];

   c) shall encrypt the PCK to a UID associated to the MCPTT client using the MCPTT ID of the invited user and a time related parameter as described in 3GPP TS 33.179 [46];

   d) shall generate a MIKEY-SAKKE I_MESSAGE using the encapsulated PCK and PCK-ID as specified in 3GPP TS 33.179 [46];

   e) shall add the MCPTT ID of the originating MCPTT to the initiator field (IDRi) of the I_MESSAGE as described in 3GPP TS 33.179 [46];

   f) shall sign the MIKEY-SAKKE I_MESSAGE using the originating MCPTT user's signing key provided in the keying material together with a time related parameter, and add this to the MIKEY-SAKKE payload, as described in 3GPP TS 33.179 [46] and;

   g) shall store the MIKEY-SAKKE I_MESSAGE for later inclusion in an SDP body;

7) may store current user location as user location;

8) shall generate and store offer SDP, as defined in subclause 11.2.1.1.2;

9) shall generate a PRIVATE CALL SETUP REQUEST message as specified in subclause 15.1.5. In the PRIVATE CALL SETUP REQUEST message, the MCPTT client:

   a) shall set the Call identifier IE with the stored call identifier;

   b) shall set the MCPTT user ID of the caller IE with the stored caller ID;

   c) shall set the MCPTT user ID of the callee IE with the stored callee ID;

   d) shall set the Commencement mode IE with the stored commencement mode;

   e) shall set the Call type IE with the stored current call type associated with the call type control state machine;

   f) shall set the SDP offer IE with the stored offer SDP; and

   g) may set the User location IE with the stored user location if the stored current call type associated with the call type control state machine is "EMERGENCY PRIVATE CALL".

10) shall send the PRIVATE CALL SETUP REQUEST message towards other MCPTT client according to rules and procedures as specified in subclause 11.2.1.1.1;

11) shall initialize the counter CFP1 (private call request retransmission) with the value set to 1;

12) shall start timer TFP1 (private call request retransmission); and

13) shall enter the "P2: waiting for call response" state.

[TS 24.379, clause 11.2.2.4.2.7]

When in the "P2: waiting for call response" state, upon receiving a PRIVATE CALL REJECT message in response to PRIVATE CALL SETUP REQUEST message with Call identifier IE same as the stored call identifier, the MCPTT client:

1) shall stop timer TFP1 (call setup retransmission), if running;

2) shall stop timer TFP2 (waiting for call response message), if running;

3) shall start timer TFP7 (waiting for any message with same call identifier);

4) shall release the call control state machine; and

5) shall enter the "P1: ignoring same call id" state.

[TS 24.379, clause 11.2.2.4.2.8]

When in the "P2: waiting for call response" state, upon receiving a PRIVATE CALL ACCEPT message response to PRIVATE CALL SETUP REQUEST message with the same call identifier, the MCPTT client:

1) shall store the SDP answer IE received in the PRIVATE CALL ACCEPT message as answer SDP;

2) shall generate a PRIVATE CALL ACCEPT ACK message as specified in subclause 15.1.11:

   a) shall set the Call identifier IE to the stored call identifier;

   b) shall set the MCPTT user ID of the caller IE with the stored caller ID; and

   c) shall set the MCPTT user ID of the callee IE with the stored callee ID.

3) shall send the PRIVATE CALL ACCEPT ACK message in response to the request message according to rules and procedures as specified in subclause 11.2.1.1.1;

4) shall stop timer TFP1 (call setup retransmission), if running;

5) shall stop timer TFP2 (waiting for call response message), if running;

6) shall establish a media session based on the SDP body of the stored answer SDP;

7) shall start floor control as terminating floor participant as specified in subclause 7.2 in 3GPP TS 24.380 [5];

8) shall start timer TFP5 (max duration); and

9) shall enter the "P4: part of ongoing call" state.

[TS 24.379, clause 11.2.2.4.4.8]

When in the "P5: pending" state or "P1: ignoring same call id" state, upon receiving a PRIVATE CALL RELEASE message, the MCPTT client:

1) shall generate a PRIVATE CALL RELEASE ACK message as specified in subclause 15.1.10. In the PRIVATE CALL RELEASE ACK message, the MCPTT client:

   a) shall set the Call identifier IE to the stored call identifier;

   b) shall set the MCPTT user ID of the caller IE with the stored caller ID; and.

   c) shall set the MCPTT user ID of the callee IE with the stored callee ID.

2) shall send the PRIVATE CALL RELEASE ACK message in response to the request message according to rules and procedures as specified in subclause 11.2.1.1.1;

3) shall start timer TFP7 (waiting for any message with same call identifier);

4) shall stop timer TFP4 (private call accept retransmission) if running;

5) shall release the call type control state machine, if the current state is "P5: pending" state; and

6) shall enter the "P1: ignoring same call id" state, if the current state is "P5: pending" state.

7.2.4.3 Test description

7.2.4.3.1 Pre-test conditions

System Simulator:

- SS-UE1 (MCPTT client)
  - For the underlying "transport bearer" over which the SS and the UE will communicate, the SS is behaving as SS-UE1 as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.
- GNSS simulator to simulate a location and provide a timing reference for the assistance of E-UTRAN off-network testing.

NOTE 1: For operation in off-network environment, it needs be ensured that after the UE is powered up it considers the Geographical area #1 that is simulated by the GNSS simulator as being one of the geographical areas set in the USIM for operation when UE is "not served by E-UTRAN".

- SS-NW (MCPTT server) in the Preamble
  - For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

NOTE 2: The SS operation as NW (MCPTT server) is needed only for the Preamble if the UE has to perform the MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2..

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.
- For the underlying "transport bearer" over which the SS and the UE will communicate, the UE is behaving as a ProSe enabled UE as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

Preamble:

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- The GNSS simulator is configured to simulate a location in the centre of Geographical area #1 and provide a timing reference, as defined in TS 36.508 [24] Table 4.11.2-2 scenario #1.
- The UE is Switched OFF (state 1) according to TS 36.508 [24].

7.2.4.3.2 Test procedure sequence

Table 7.2.4.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Power up the UE.	-	-	-	-
1A	Trigger the UE to reset UTC time and location. NOTE: The UTC time and location reset may be performed by MMI or AT command (+CUTCR).	-	-	-	-
2	Activate the MCPTT Client Application and register User A as the MCPTT User (TS 36.579-5 [5], px_MCPTT_User_A_username, px_MCPTT_User_A_password). NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	-	-
3	Make the UE (MCPTT User) request the establishment of an MCPTT private call, on-demand Manual Commencement Mode, with Floor Control. NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.5 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
4	Check: Does the UE (MCPTT client) send a PRIVATE CALL SETUP REQUEST, Commencement mode set to MANUAL COMMENCEMENT MODE?	-->	PRIVATE CALL SETUP REQUEST	1	P
5	SS-UE1 (MCPTT Client) sends a PRIVATE CALL RINGING message.	<--	PRIVATE CALL RINGING	-	-
6	Make the MCPTT UE (MCPTT User) request termination of the MCPTT private call. NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	-	-
7	Check: Does the UE (MCPTT client) send PRIVATE CALL RELEASE message?	-->	PRIVATE CALL RELEASE	2	P
8	SS-UE1 (MCPTT Client) sends a PRIVATE CALL RELEASE ACK message	<--	PRIVATE CALL RELEASE ACK	-	-
-	EXCEPTION: UE releases the E-UTRA connection. The E-UTRA/EPC actions which are related to the MCPTT call release are described in TS 36.579-1 [2], subclause 5.4.8, 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-release by the UE'.	-	-	-	-
9	Wait for 5 sec to ensure the UE is in stable state - scanning for incoming ProSe messages.	-	-	-	-
10	Make the MCPTT UE (MCPTT User) request the establishment of an MCPTT private call, on-demand Manual Commencement Mode, with Floor Control. NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	-	-

-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.5 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
11	Check: Does the UE (MCPTT client) send a PRIVATE CALL SETUP REQUEST, Commencement mode set to MANUAL COMMENCEMENT MODE?	-->	PRIVATE CALL SETUP REQUEST	1	P
12	SS-UE1 (MCPTT Client) sends a PRIVATE CALL RINGING message.	<--	PRIVATE CALL RINGING	-	-
12A	Wait for 3 sec to ensure that the UE receives the message sent in step 12 before the one sent in step 13.	-	-	-	-
13	SS-UE1 (MCPTT Client) sends a PRIVATE CALL ACCEPT message.	<--	PRIVATE CALL REJECT	-	-
13A	Wait for 3 sec to ensure that the UE receives the message sent in step 13 before the one sent in step 14.	-	-	-	-
14	SS-UE1 (MCPTT Client) sends a PRIVATE CALL ACCEPT message.	<--	PRIVATE CALL ACCEPT	-	-
15	Check: Does the UE (MCPTT client) send a PRIVATE CALL ACCEPT ACK in the next 1 sec? NOTE: It is expected that upon receipt of the message sent in step 13 the UE has entered the "P1: ignoring same call id" state and therefore it shall ignore the message sent in step 14.	-->	PRIVATE CALL ACCEPT ACK	3	F
-	EXCEPTION: UE releases the E-UTRA connection. The E-UTRA/EPC actions which are related to the MCPTT call release are described in TS 36.579-1 [2], subclause 5.4.8, 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-release by the UE'.	-	-	-	-
16	Wait for 5 sec to ensure the UE is in stable state - scanning for incoming ProSe messages.	-	-	-	-
17	Make the MCPTT UE (MCPTT User) request the establishment of an MCPTT private call, on-demand Manual Commencement Mode, with Floor Control. NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.5 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
18	Check: Does the UE (MCPTT client) send a PRIVATE CALL SETUP REQUEST, Commencement mode set to MANUAL COMMENCEMENT MODE?	-->	PRIVATE CALL SETUP REQUEST	1	P
19	SS-UE1 (MCPTT Client) sends a PRIVATE CALL RINGING message.	<--	PRIVATE CALL RINGING	-	-
19A	Wait for 3 sec to ensure that the UE receives the message sent in step 19 before the one sent in step 20.	-	-	-	-

20	SS-UE1 (MCPTT Client) sends a PRIVATE CALL ACCEPT message.	<--	PRIVATE CALL ACCEPT	-	-
21	Check: Does the UE (MCPTT client) send a PRIVATE CALL ACCEPT ACK?	-->	PRIVATE CALL ACCEPT ACK	4	P
22	Make the UE (MCPTT User) press the PTT button requesting permission to talk. NOTE 1: Depending on UE implementation the PTT button may already been pressed in step 17. NOTE 2: The UE (MCPTT User) shall keep the button pressed until otherwise written.	-	-	-	-
23	Does the UE (MCPTT client) send a Floor Granted message?	-->	Floor Granted	4	P
24	Make the UE (MCPTT User) release the PTT button.	-	-	-	-
25	Check: Does the UE (MCPTT client) sends a Floor Release message?	-->	Floor Release	4	P
26	Make the MCPTT UE (MCPTT User) request termination of the MCPTT private call. NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	-	-
27	The UE (MCPTT client) send PRIVATE CALL RELEASE message.	-->	PRIVATE CALL RELEASE	-	-
28	SS-UE1 (MCPTT Client) sends a PRIVATE CALL RELEASE ACK message.	<--	PRIVATE CALL RELEASE ACK	-	-
-	EXCEPTION: SS releases the E-UTRA connection. The E-UTRA/EPC actions which are related to the MCPTT call release are described in TS 36.579-1 [2], subclause 5.4.8, 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-release by the SS'.	-	-	-	-

7.2.4.3.3 Specific message contents

Table 7.2.4.3.3-1: PRIVATE CALL SETUP REQUEST (Steps 4, 11, 18, Table 7.2.4.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.5.8.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Commencement mode	'00000001'B	MANUAL COMMENCEMENT MODE	
User location	Nor present or Any value		

Table 7.2.4.3.3-2: Floor Granted (Step 23, Table 7.2.4.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
SSRC of granted floor participant	UE (MCPTT client) SSRC		
Floor Indicator			
Floor Indicator			
Floor Indicator	'10000x00 0000000	Bit A=1 (Normal call) bit F=x (Queueing supported) any value	

Table 7.2.4.3.3-3: Floor Release (Step 25, Table 7.2.4.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.5-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
Floor Indicator			
Floor Indicator	'10000x00 0000000	Bit A=1 (Normal call) bit F=x (Queueing supported) any value	

7.2.5 Off-network / Private Call / On-demand / Manual Commencement Mode / Call Released before establishment completion / User does not answer to Ringing / User Rejects call request / Call establishment successful / Client Terminated (CT)

7.2.5.1 Test Purpose (TP)

(1)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including the MCPTT user being
authorized to receive private calls in manual commencement mode, and, the UE is in an off-network
environment }
ensure that {
  when { the UE (MCPTT Client) receives a request for establishment of an MCPTT private call, On-
demand Manual Commencement Mode }
    then { UE (MCPTT Client) sends a PRIVATE CALL RINGING message and provides indication to the
user for the incoming call request }
            }
```

(2)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including the MCPTT user being
authorized to receive private calls in manual commencement mode, and, the UE is in an off-network
environment, and, the UE (MCPTT Client) has responded to a request for establishment of an MCPTT
private call, On-demand Manual Commencement Mode by sending a PRIVATE CALL RINGING message }
ensure that {
  when { the originating Client requests release of the call establishment before the terminating
user has accepted the call }
    then { UE (MCPTT Client) sends a PRIVATE CALL RELEASE ACK message and terminates the call
establishment }
            }
```

(3)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including the MCPTT user being
authorized to receive private calls in manual commencement mode, and, the UE is in an off-network
environment, and, the UE (MCPTT Client) has informed the User for an incoming MCPTT private call
request }
ensure that {
  when { the terminating User does not answer before the expiry of timer TFP2 (waiting for call
response message) }
    then { UE (MCPTT Client) rejects the call establishment }
            }
```

(4)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including the MCPTT user being
authorized to receive private calls in manual commencement mode, and, the UE is in an off-network
environment, and, the UE (MCPTT Client) has informed the User for an incoming MCPTT private call
request }
ensure that {
  when { the terminating User rejects the call request }
    then { UE (MCPTT Client) rejects the call establishment }
            }
```

(5)

```
with { UE (MCPTT Client) registered and authorized for MCPTT Service, including the MCPTT user being
authorized to receive private calls in manual commencement mode, and, the UE is in an off-network
environment, and, the UE (MCPTT Client) has responded to a request for establishment of an MCPTT
private call, On-demand Manual Commencement Mode by sending a PRIVATE CALL RINGING message }
ensure that {
  when { the terminating User accepts the incoming call }
    then { UE (MCPTT Client) sends a PRIVATE CALL ACCEPT message, and, after receiving a PRIVATE
CALL ACCEPT ACK message considers the call as being established }
            }
```

(6)

```
with { UE (MCPTT Client) having established an MCPTT private call, Manual Commencement Mode in off-
network environment }
ensure that {
  when { (MCPTT Client) receives a requests from the calling Client for release of the call }
    then { UE (MCPTT Client) sends a PRIVATE CALL RELEASE ACK message and leaves the MCPTT session }
            }
```

7.2.5.2 Conformance requirements

References: The conformance requirements covered in the present TC are specified in: TS 24.379 clauses 11.2.1.1.1, 11.2.1.1.2, 11.2.2.4.4.1, 11.2.2.4.4.2, 11.2.2.4.4.3, 11.2.2.4.4.5, 11.2.2.4.4.7, 11.2.2.4.4.8. Unless otherwise stated these are Rel-13 requirements.

[TS 24.379, clause 11.2.1.1.1]

In order to participate in a private call, the MCPTT client:

1) shall send the MONP message as a UDP message to the local IP address of the MCPTT user, on UDP port TBD, with an IP time-to-live set to 255; and

Editor's note [CT1#95, C1-160392]: Port number for the message is FFS.

2) shall treat UDP messages received on the port TBD as received MONP messages.

NOTE: An MCPTT client that supports IPv6 is supposed to listen to the IPv6 addresses.

[TS 24.379, clause 11.2.1.1.2]

For an off-network MCPTT session, only MCPTT speech is used.

One off-network MCPTT session includes one media-floor control entity.

The MCPTT client shall generate an SDP body for a private call in accordance with rules and procedures of IETF RFC 4566 [12] and IETF RFC 3264 [44].

The MCPTT client:

1) shall include in the session-level section:

   a) the "o=" field with the <username> portion set to a dash;

   b) the "s=" field with the <session name> portion set to a dash; and

   c) the "c=" field with the <nettype> portion set to "IN", the <addrtype> portion set to the IP version of the unicast IP address of the MCPTT client and the <connection-address> portion set to the unicast IP address of the MCPTT client;

2) shall include the media-level section for MCPTT speech consisting of:

   a) the "m=" field with the <media> portion set to "audio", the <port> portion set to a port number for MCPTT speech of the MCPTT group, the <proto> field set to "RTP/AVP" and <fmt> portion set indicating RTP payload type numbers;

   b) the "i=" field with the <session description> portion set to "speech";

c) the "a=fmtp:" attribute(s), the "a=rtpmap:" attribute(s) or both, indicating the codec(s) and media parameters of the MCPTT speech; and

d) the "a=rtcp:" attribute indicating port number to be used for RTCP at the MCPTT client selected according to the rules and procedures of IETF RFC 3605 [13], if the media steam uses other than the default IP address;

3) shall include the media-level section for media-floor control entity consisting of:

a) an "m=" line, with the <media> portion set to "application", the <port> portion set to a port number for media-floor control entity of the MCPTT group, the <proto> field set to "udp" and <fmt> portion set to "MCPTT"; and

b) the "a=fmtp:MCPTT" attribute indicating the parameters of the media-floor control entity as specified 3GPP TS 24.380 [5]; and

4) shall include the MIKEY-SAKKE I_MESSAGE, if generated by the MCPTT client, in an "a=key-mgmt" attribute as a "mikey" attribute value in the SDP offer as specified in IETF RFC 4567 [47].

[TS 24.379, clause 11.2.2.4.4.1]

When in the "P0: start-stop" or "P1: ignoring same call id" state, upon receiving a PRIVATE CALL SETUP REQUEST message with Commencement mode IE set to "MANUAL COMMENCEMENT MODE" and Call identifier IE different from stored call identifier, the MCPTT client:

1) shall store the Call identifier IE in the received message as call identifier;

2) shall create the call type control state machine as described in subclause 11.2.3.2;

3) shall store the MCPTT user ID of the caller IE as received in the PRIVATE CALL SETUP REQUEST as caller ID;

4) shall store own MCPTT user ID as callee ID;

5) shall generate a PRIVATE CALL RINGING message as specified in subclause 15.1.6;

a) shall set the Call identifier IE to the stored call identifier;

b) shall set the MCPTT user ID of the caller IE with the stored caller ID; and

c) shall set the MCPTT user ID of the callee IE with the stored callee ID;

6) shall send PRIVATE CALL RINGING message in response to the request message according to rules and procedures as specified in subclause 11.2.1.1.1;

7) shall start timer TFP2 (waiting for call response message); and

8) shall enter the "P5: pending" state.

[TS 24.379, clause 11.2.2.4.4.2]

When in the "P5: pending" state, upon expiry of timer TFP2 (waiting for call response message), the MCPTT client:

1) shall generate a PRIVATE CALL REJECT message as specified in subclause 15.1.8:

a) shall set the Call identifier IE to the stored call identifier;

b) shall set the MCPTT user ID of the caller IE with the stored caller ID;

c) shall set the MCPTT user ID of the callee IE with the stored callee ID; and

d) shall set the Reason IE as "FAILED".

2) shall send the PRIVATE CALL REJECT message in response to the request message according to rules and procedures as specified in subclause 11.2.1.1.1;

3) shall start timer TFP7 (waiting for any message with same call identifier);

4) shall release the call type control state machine; and

5) shall enter the "P1: ignoring same call id" state.

[TS 24.379, clause 11.2.2.4.4.3]

When in the "P5: pending" state, upon an indication from MCPTT User to accept the incoming private call, the MCPTT client:

1) if the SDP offer contains an "a=key-mgmt" attribute field with a "mikey" attribute value containing a MIKEY-SAKKE I_MESSAGE:

   a) shall extract the MCPTT ID of the originating MCPTT user from the initiator field (IDRi) of the I_MESSAGE as described in 3GPP TS 33.179 [46];

   b) shall convert the MCPTT ID to a UID as described in 3GPP TS 33.179 [46];

   c) shall use the UID to validate the signature of the MIKEY-SAKKE I_MESSAGE as described in 3GPP TS 33.179 [46];

   ...

   e) if the validation of the signature was successful:

      i) shall extract and decrypt the encapsulated PCK using the terminating user's (KMS provisioned) UID key as described in 3GPP TS 33.179 [46];

      ii) shall extract the PCK-ID, from the payload as specified in 3GPP TS 33.179 [46];

      iii) shall generate and store answer SDP based on received SDP offer IE in PRIVATE CALL SETUP REQUEST message, as defined in subclause 11.2.1.1.2;

      iv) shall generate a PRIVATE CALL ACCEPT message as specified in subclause 15.1.7. In the PRIVATE CALL ACCEPT message, the MCPTT client:

         A) shall set the Call identifier IE to the stored call identifier;

         B) shall set the MCPTT user ID of the caller IE with the stored caller ID;

         C) shall set the MCPTT user ID of the callee IE with the stored callee ID; and

         D) shall set the SDP answer IE with the stored answer SDP;

      v) shall send the PRIVATE CALL ACCEPT message in response to the request message according to rules and procedures as specified in subclause 11.2.1.1.1;

      vi) shall establish a media session based on the SDP body of the private call;

      vii)shall stop timer TFP2 (waiting for call response message);

      viii) shall initialize the counter CFP4 with value set to 1;

      ix) shall start timer TFP4 (private call accept retransmission); and

      x) shall remain in the "P5: pending" state; and

NOTE: With the PCK successfully shared between the originating MCPTT client and the terminating MCPTT client, both clients are able to use SRTP/SRTCP to create an end-to-end secure session.

2) if the SDP offer does not contain an "a=key-mgmt" attribute, the MCPTT client:

   a) shall generate and store answer SDP based on received SDP offer IE in PRIVATE CALL SETUP REQUEST message, as defined in subclause 11.2.1.1.2;

   b) shall generate a PRIVATE CALL ACCEPT message as specified in subclause 15.1.7. In the PRIVATE CALL ACCEPT message, the MCPTT client:

      i) shall set the Call identifier IE to the stored call identifier;

      ii) shall set the MCPTT user ID of the caller IE with the stored caller ID;

iii) shall set the MCPTT user ID of the callee IE with the stored callee ID; and

iv) shall set the SDP answer IE with the stored answer SDP;

c) shall send the PRIVATE CALL ACCEPT message in response to the request message according to rules and procedures as specified in subclause 11.2.1.1.1;

d) shall establish a media session based on the SDP body of the private call;

e) shall stop timer TFP2 (waiting for call response message);

f) shall initialize the counter CFP4 with value set to 1;

g) shall start timer TFP4 (private call accept retransmission); and

h) shall remain in the "P5: pending" state.

[TS 24.379, clause 11.2.2.4.4.5]

When in the "P5: pending" state, upon receiving a PRIVATE CALL ACCEPT ACK message or RTP media from originating user, the MCPTT client:

1) shall stop timer TFP4 (private call accept retransmission);

2) shall start floor control as terminating MCPTT client as specified in subclause 7.2 in 3GPP TS 24.380 [5];

3) shall start timer TFP5 (max duration); and

4) shall enter the "P4: part of ongoing call" state.

[TS 24.379, clause 11.2.2.4.4.7]

When in the "P5: pending" state, upon an indication from MCPTT User to reject the incoming private call, the MCPTT client:

1) shall generate a PRIVATE CALL REJECT message as specified in subclause 15.1.8:

a) shall set the Call identifier IE to the stored call identifier;

b) shall set the MCPTT user ID of the caller IE with the stored caller ID;

c) shall set the MCPTT user ID of the callee IE with stored callee ID; and

d) shall set the Reason IE as "FAILED", if requested to restrict notification of call failure and the value of "/<x>/<x>/Common/PrivateCall/FailRestrict" leaf node present in the user profile as specified in 3GPP TS 24.383 [45] is set to "true". Otherwise, shall set the Reason IE as "REJECT";

2) shall send the PRIVATE CALL REJECT message in response to the request message according to rules and procedures as specified in subclause 11.2.1.1.1;

3) shall start timer TFP7 (waiting for any message with same call identifier);

4) shall release the call type control state machine; and

5) shall enter the "P1: ignoring same call id" state.

[TS 24.379, clause 11.2.2.4.4.8]

When in the "P5: pending" state or "P1: ignoring same call id" state, upon receiving a PRIVATE CALL RELEASE message, the MCPTT client:

1) shall generate a PRIVATE CALL RELEASE ACK message as specified in subclause 15.1.10. In the PRIVATE CALL RELEASE ACK message, the MCPTT client:

a) shall set the Call identifier IE to the stored call identifier;

b) shall set the MCPTT user ID of the caller IE with the stored caller ID; and.

c) shall set the MCPTT user ID of the callee IE with the stored callee ID.

2) shall send the PRIVATE CALL RELEASE ACK message in response to the request message according to rules and procedures as specified in subclause 11.2.1.1.1;

3) shall start timer TFP7 (waiting for any message with same call identifier);

4) shall stop timer TFP4 (private call accept retransmission) if running;

5) shall release the call type control state machine, if the current state is "P5: pending" state; and

6) shall enter the "P1: ignoring same call id" state, if the current state is "P5: pending" state.

7.2.5.3 Test description

7.2.5.3.1 Pre-test conditions

System Simulator:

- SS-UE1 (MCPTT client)
  - For the underlying "transport bearer" over which the SS and the UE will communicate, the SS is behaving as SS-UE1 as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.
- GNSS simulator to simulate a location and provide a timing reference for the assistance of E-UTRAN off-network testing.

NOTE 1: For operation in off-network environment, it needs be ensured that after the UE is powered up it considers the Geographical area #1 that is simulated by the GNSS simulator as being one of the geographical areas set in the USIM for operation when UE is "not served by E-UTRAN".

- SS-NW (MCPTT server) in the Preamble
  - For the underlying "transport bearer" over which the SS and the UE will communicate Parameters are set to the default parameters for the basic E-UTRA Single cell network scenarios, as defined in TS 36.508 [24] clause 4.4. The simulated Cell 1 shall belong to PLMN1 (the PLMN specified for MCPTT operation in the MCPTT configuration document).

NOTE 2: The SS operation as NW (MCPTT server) is needed only for the Preamble if the UE has to perform the MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2..

IUT:

- UE (MCPTT client)
- The test USIM set as defined in TS 36.579-1 [2], subclause 5.5.10 is inserted.
- For the underlying "transport bearer" over which the SS and the UE will communicate, the UE is behaving as a ProSe enabled UE as defined in TS 36.508 [24], configured for and operating as ProSe Direct Communication transmitting and receiving device.

Preamble:

- The MCPTT User performs the Generic Test Procedure for MCPTT Authorization/Configuration and Key Generation as specified in TS 36.579-1 [2], subclause 5.3.2.
- The GNSS simulator is configured to simulate a location in the centre of Geographical area #1 and provide a timing reference, as defined in TS 36.508 [24] Table 4.11.2-2 scenario #1.
- The UE is Switched OFF (state 1) according to TS 36.508 [24].

7.2.5.3.2 Test procedure sequence

Table 7.2.5.3.2-1: Main behaviour

St	Procedure	Message Sequence		TP	Verdict
		U - S	Message		
1	Power up the UE.	-	-	-	-
1A	Trigger the UE to reset UTC time and location. NOTE: The UTC time and location reset may be performed by MMI or AT command (+CUTCR).	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.6 'Generic Test Procedure for MCPTT CT communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
2	Activate the MCPTT Client Application and register User A as the MCPTT User (TS 36.579-5 [5], px_MCPTT_User_A_username, px_MCPTT_User_A_password). NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	-	-
3	SS-UE1 (MCPTT Client) sends a PRIVATE CALL SETUP REQUEST, Commencement mode set to MANUAL COMMENCEMENT MODE.	<--	PRIVATE CALL SETUP REQUEST	-	-
4	Check: Does the UE (MCPTT client) send a PRIVATE CALL RINGING message?	-->	PRIVATE CALL RINGING	1	P
5	Check: Does the UE (MCPTT client) notifies the User for the incoming call request? NOTE: Make the UE (MCPTT User) not to respond.	-	-	1	P
6	SS-UE1 (MCPTT Client) sends a PRIVATE CALL RELEASE message.	<--	PRIVATE CALL RELEASE	-	-
7	Check: Does the UE (MCPTT client) send a PRIVATE CALL RELEASE ACK message?	-->	PRIVATE CALL RELEASE ACK	2	P
-	EXCEPTION: SS releases the E-UTRA connection. The E-UTRA/EPC actions which are related to the MCPTT call release are described in TS 36.579-1 [2], subclause 5.4.7, 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-release by the SS'.	-	-	-	-
8	Wait for 5 sec to ensure the UE is in stable state - scanning for incoming ProSe messages.	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.6 'Generic Test Procedure for MCPTT CT communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
9	SS-UE1 (MCPTT Client) sends a PRIVATE CALL SETUP REQUEST, Commencement mode set to MANUAL COMMENCEMENT MODE.	<--	PRIVATE CALL SETUP REQUEST	-	-
10	Check: Does the UE (MCPTT client) send a PRIVATE CALL RINGING message?	-->	PRIVATE CALL RINGING	1	P
11	Check: Does the UE (MCPTT client) notifies the User for the incoming call request?	-	-	1	P
12	Start timer TFP2 (waiting for call response message).	-	-	-	-

13	Make the UE (MCPTT User) not to respond.	-	-	-	-
14	Timer TFP2 (waiting for call response message) expires.	-	-	-	-
15	Check: Does the UE (MCPTT client) send a PRIVATE CALL ACCEPT message?	-->	PRIVATE CALL REJECT	3	P
-	EXCEPTION: SS releases the E-UTRA connection. The E-UTRA/EPC actions which are related to the MCPTT call release are described in TS 36.579-1 [2], subclause 5.4.7, 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-release by the SS'.	-	-	-	-
16	Wait for 5 sec to ensure the UE is in stable state - scanning for incoming ProSe messages.	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.6 'Generic Test Procedure for MCPTT CT communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
17	SS-UE1 (MCPTT Client) sends a PRIVATE CALL SETUP REQUEST, Commencement mode set to MANUAL COMMENCEMENT MODE.	<--	PRIVATE CALL SETUP REQUEST	-	-
18	Check: Does the UE (MCPTT client) send a PRIVATE CALL RINGING message?	-->	PRIVATE CALL RINGING	1	P
19	Check: Does the UE (MCPTT client) notifies the User for the incoming call request?	-	-	1	P
20	Make the UE (MCPTT User) reject the establishment of an MCPTT private call, on-demand Manual Commencement Mode. NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	-	-
21	Check: Does the UE (MCPTT client) send a PRIVATE CALL ACCEPT message?	-->	PRIVATE CALL REJECT	4	P
-	EXCEPTION: SS releases the E-UTRA connection. The E-UTRA/EPC actions which are related to the MCPTT call release are described in TS 36.579-1 [2], subclause 5.4.7, 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-release by the SS'.	-	-	-	-
22	Wait for 5 sec to ensure the UE is in stable state - scanning for incoming ProSe messages.	-	-	-	-
-	EXCEPTION: The E-UTRA/EPC actions which are related to the MCPTT call establishment are described in TS 36.579-1 [2], subclause 5.4.6 'Generic Test Procedure for MCPTT CT communication over ProSe direct one-to-one communication out of E-UTRA coverage-establishment'. The test sequence below shows only the MCPTT relevant messages exchanged.	-	-	-	-
23	SS-UE1 (MCPTT Client) sends a PRIVATE CALL SETUP REQUEST, Commencement mode set to MANUAL COMMENCEMENT MODE.	<--	PRIVATE CALL SETUP REQUEST	-	-
24	Check: Does the UE (MCPTT client) send a PRIVATE CALL RINGING message?	-->	PRIVATE CALL RINGING	1	P
25	Check: Does the UE (MCPTT client) notifies the User for the incoming call request?	-	-	1	P

26	Make the UE (MCPTT User) accept the establishment of an MCPTT private call, on-demand Manual Commencement Mode. NOTE: This is expected to be done via a suitable implementation dependent MMI.	-	-	-	-
27	Check: Does the UE (MCPTT client) send a PRIVATE CALL ACCEPT message?	-->	PRIVATE CALL ACCEPT	5	P
28	SS-UE1 (MCPTT Client) sends a PRIVATE CALL ACCEPT ACK.	<--	PRIVATE CALL ACCEPT ACK	-	-
28 A	Wait for 3 sec to ensure that the UE receives the message sent in step 28 before the one sent in step 29.	-	-	-	-
29	SS-UE1 (MCPTT Client) sends a Floor Granted message.	<--	Floor Granted	-	-
29 A	Wait for 3 sec to ensure that the UE receives the message sent in step 29 before the one sent in step 30.	-	-	-	-
30	SS-UE1 (MCPTT Client) sends a Floor Release message	<--	Floor Release	-	-
30 A	Wait for 3 sec to ensure that the UE receives the message sent in step 30 before the one sent in step 31.	-	-	-	-
31	SS-UE1 (MCPTT Client) sends a PRIVATE CALL RELEASE message.	<--	PRIVATE CALL RELEASE	-	-
32	Check: Does the UE (MCPTT client) send a PRIVATE CALL RELEASE ACK message?	-->	PRIVATE CALL RELEASE ACK	6	P
-	EXCEPTION: SS releases the E-UTRA connection. The E-UTRA/EPC actions which are related to the MCPTT call release are described in TS 36.579-1 [2], subclause 5.4.7, 'Generic Test Procedure for MCPTT CO communication over ProSe direct one-to-one communication out of E-UTRA coverage-release by the SS'.	-	-	-	-

7.2.5.3.3 Specific message contents

Table 7.2.5.3.3-1: PRIVATE CALL SETUP REQUEST (Steps 3, 9, 17, 23, Table 7.2.5.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.5.8.2-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Commencement mode	'00000001'B	MANUAL COMMENCEMENT MODE	

Table 7.2.5.3.3-2: PRIVATE CALL REJECT (Step 15, Table 7.2.5.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.5.11.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Reason	'00000100'B	FAILED	

Table 7.2.5.3.3-3: PRIVATE CALL REJECT (Step 21, Table 7.2.5.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.5.11.1-1.			
Information Element	**Value/remark**	**Comment**	**Condition**
Reason	'00000000'B	REJECT	

Table 7.2.5.3.3-4: Floor Granted (Step 29, Table 7.2.5.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.3-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
SSRC of granted floor participant	SS-UE1 (MCPTT Client) SSRC		
User ID			
User ID	px_MCPTT_User_B_ID	The MCPTT User ID of the one simulated by the SS	
Floor Indicator			
Floor Indicator	'10000100 0000000	Bit A=1 (Normal call) bit F=1 (Queueing supported)	

Table 7.2.5.3.3-5: Floor Release (Step 30, Table 7.2.5.3.2-1)

Derivation Path: 36.579-1 [2], Table 5.5.6.5-1 condition OFF-NETWORK.			
Information Element	**Value/remark**	**Comment**	**Condition**
User ID			
User ID	px_MCPTT_User_B_ID	The MCPTT User ID of the one simulated by the SS	
Floor Indicator			
Floor Indicator	'10000100 0000000	Bit A=1 (Normal call) bit F=1 (Queueing supported)	

Annex A (informative): Change history

Change history

Date	Meeting	TDoc	CR	Rev	Cat	Subject/Comment	New version
2017-02	RAN5#74	R5-171299	-	-	-	Introduction of TS 36.579-2.	0.0.1
2017-05	RAN5#75	R5-172101	-	-	-	Introduced pCR from R5-172080 New MCPTT TC 6.2.1 CO Private Call automatic floor control emergency upgrade R5-172081 New MCPTT TC 6.2.2 CT Private Call automatic floor control emergency upgrade R5-172082 New MCPTT TC 6.2.3 CO Private Call automatic no floor control R5-172083 New MCPTT TC 6.2.4 CT Private Call automatic no floor control R5-172084 New MCPTT TC 6.2.5 CO Private Emergency Call Automatic R5-172085 New MCPTT TC 6.2.6 CT Private Emergency Call Force of automatic commencement R5-172086 New MCPTT TC 6.2.7 CO Private Call Manual R5-172087 New MCPTT TC 6.2.8 CT Private Call Manual R5-172970 New MCPTT TC 5.3 Group Affiliation and De-affilitation R5-172971 New MCPTT TC 5.4 Pre-established Session Establishment Modification and Release R5-172972 New MCPTT TC 6.1.1.1 CO On-Demand Pre-arranged Group Call with Floor Control and Upgrades and Automatic Commencement Mode R5-172973 New MCPTT TC 6.1.1.4 CT On-demand Pre-arranged Group Call with Manual Commencement Mode R5-172974 New MCPTT TC 6.1.2.3 On-network / One MCPTT System / Chat Group Call Using Pre-established Session / Client originated Pre-established Session Release with associated MCPTT session / Client Origination (CO) R5-172975 MCPTT Testing: Introduction of test case 5.1 in 36.579-2 R5-172976 MCPTT Testing: Introduction of test case 5.2 in 36.579-2 R5-172977 MCPTT Testing: Introduction of test case 6.1.2.1 in 36.579-2	0.0.2
2017-06	RAN5#75	-	-	-	-	lifted to v0.1.0 with small editorial changes, because of technical contents	0.1.0

2017-09	RAN5#76	R5-173767				Introduced pCR from R5-173708 Editorial updates of MCPTT TS 36579-2 R5-173709 Update of MCPTT TC 6.2.1 R5-174601 Update of MCPTT TC 6.2.2 R5-173711 Update of MCPTT TC 6.2.3 R5-173712 Update of MCPTT TC 6.2.4 R5-173713 Update of MCPTT TC 6.2.5 R5-173714 Update of MCPTT TC 6.2.6 R5-173715 Update of MCPTT TC 6.2.7 R5-173716 Update of MCPTT TC 6.2.8 R5-173717 New MCPTT TC 6.2.9 Private call pre-established session automatic CO R5-173718 New MCPTT TC 6.2.10 Private call pre-established session automatic CT R5-173719 New MCPTT TC 6.2.11 Private call pre-established session manual CT R5-173720 New MCPTT TC 7.1.2.1 Private call off-network R5-173721 New MCPTT TC 7.1.2.2 Private call off-network R5-173722 New MCPTT TC 7.1.2.3 Private call off-network R5-173723 New MCPTT TC 7.1.2.4 Private call off-network R5-173724 New MCPTT TC 7.1.2.5 Private call off-network R5-174602 Update of MCPTT TC 6.1.2.2 R5-174603 New MCPTT TC 6.1.2.3 On-network / One MCPTT System / Chat Group Call / Late Entry R5-174604 New MCPTT TC 6.1.2.4 On-network / One MCPTT System / Chat Group Call / Rejection Upon Join Attempt / Join Attempt Successful / De-affiliation R5-174605 Update of MCPTT TC 5.3 R5-174606 Update of MCPTT TC 5.4 R5-174607 Update of MCPTT TC 6.1.1.1 R5-174608 Update of MCPTT TC 6.1.1.4 R5-174609 New MCPTT TC 6.1.1.2 Group Call Client Terminated with Floor Control R5-174610 New MCPTT TC 6.1.1.3 Group Call CO Manual Commencement R5-174611 New MCPTT TC 6.1.1.5 Group Call CO pre-established session R5-174612 New MCPTT TC 6.1.1.6 Group Call CT pre-established session with auto R5-174613 New MCPTT TC 6.1.1.7 Group Call CT pre-established session with manual R5-174614 New MCPTT TC 6.1.1.15 Group Call CO Emergency Alerts R5-174615 New MCPTT TC 6.1.1.16 Group Call CT Emergency Alerts R5-174616 New MCPTT TC 7.1.1.1 Off-Network Group Call - basic call with upgrades and downgrades R5-174617 MCPTT Testing: Additions for test case 5.1 in 36.579-2 R5-174043 MCPTT Testing: Additions for test case 6.1.2.1 in 36.579-2 R5-174618 New MCPTT TC 6.1.1.8 On-network / One MCPTT System / Pre-arranged Broadcast Group Call / Client Originated (CO) R5-174619 New MCPTT TC 6.1.1.9 On-network / One MCPTT System / Pre-arranged Broadcast Group Call / Client Terminated (CT) R5-174620 New MCPTT TC 6.1.1.10 On-network / One MCPTT System / Broadcast Group Call with Temporary Group / Client Originated (CO) R5-174621 New MCPTT TC 6.1.1.11 On-network / One MCPTT System / Pre-arranged Emergency Group Call / Client Originated (CO) R5-174622 New MCPTT TC 6.1.1.12 On-network / One MCPTT System / Pre-arranged Emergency Group Call / Client Terminated (CT) R5-174623 New MCPTT TC 6.1.2.5 On-network / One MCPTT System / Chat Group Group-broadcast Broadcast Group Call / Client Originated (CO) R5-174624 New MCPTT TC 6.1.2.6 On-network / One MCPTT System / Chat Group Broadcast Group Call / Client Terminated (CT) R5-174625 New MCPTT TC 6.1.2.7 On-network / One MCPTT System / Chat Group Emergency Group Call / Client Originated (CO) R5-174626 New MCPTT TC 6.1.2.8 On-network / One MCPTT System / Chat Group Emergency Group Call / Client Terminated (CT)	0.2.0

2017-11	RAN5#77	R5-176836	-	-	-	Updated wit pCR R5-177003, R5-177004, R5-177005, R5-177006, R5-177007, R5-177008, R5-177009, R5-176270, R5-176271, R5-176272, R5-176273, R5-176274, R5-176275, R5-176276, R5-176277, R5-176278, R5-176279, R5-176280, R5-176281, R5-177010, R5-177011, R5-177012, R5-177013, R5-177014, R5-177015, R5-177016, R5-177017, R5-177018, R5-177019, R5-177020, R5-177021, R5-177022, R5-177023, R5-177024, R5-177025, R5-177026, R5-177027, R5-177028, R5-177029, R5-177030, R5-177031, R5-177032, R5-177033, R5-177034, R5-177035, R5-177036, R5-177037 Editor's alignments: sections numbering and adding FFS.	0.3.0
2017-12	RAN#78	RP-172183	-	-	-	Draft version for information purposes to the RAN Plenary	1.0.0
2018-03	RAN5#78	R5-180685	-	-	-	Updated with pCR R5-181242, R5-181243, R5-181244, R5-181245, R5-181246, R5-181247, R5-181248, R5-181249, R5-181250, R5-181251, R5-181252, R5-181253, R5-181254, R5-181255, R5-181256, R5-181257, R5-181258, R5-181259, R5-181260, R5-180519, R5-180520, R5-180521, R5-180522, R5-180523, R5-180524, R5-180525, R5-180526, R5-180527, R5-180528, R5-180529, R5-180530, R5-180531, R5-180532, R5-180533, R5-181261, R5-181262, R5-181263, R5-181264, R5-180640, R5-181265, R5-180642, R5-181266, R5-180644, R5-181267, R5-180646, R5-180647, R5-180648, R5-180649, R5-180650, R5-180651, R5-180652, R5-180653, R5-180654, R5-180655, R5-181268	1.1.0
2018-03	RAN#79	RP-180127	-	-	-	Draft version for approval to move the spec under revision control to the RAN Plenary	2.0.0
2018-03	RAN#79	-	-	-	-	Editorial changes and promoted to v13.0.0	13.0.0
2018-06	RAN#80	R5-182418	0001	-	F	Addition and correction of GNSS information	13.1.0
2018-06	RAN#80	R5-182419	0002	-	F	Editorial correction of typos and incorrect references	13.1.0
2018-06	RAN#80	R5-182430	0003	-	F	Editorial Update of 36.579-2 for style H6	13.1.0
2018-06	RAN#80	R5-182431	0004	-	F	Update of TC 5.1 for MCPTT APN	13.1.0
2018-06	RAN#80	R5-182432	0005	-	F	Updates of Location information messages in 36.579-2	13.1.0
2018-06	RAN#80	R5-182489	0008	-	F	Update of MCPTT TC 6.1.1.1	13.1.0
2018-06	RAN#80	R5-182510	0009	-	F	Correction to MCPTT TC of 6.1.1.8, 6.1.1.11, 6.1.2.5 and 6.1.2.7	13.1.0
2018-06	RAN#80	R5-183167	0006	1	F	Updates of TC 6.3.1	13.1.0
2018-06	RAN#80	R5-183168	0007	1	F	Updates of TC 6.3.2	13.1.0
2018-09	RAN#81	R5-184692	0016	-	F	Editorial updates to 36.579-2 Rel-13 TCs	13.2.0
2018-09	RAN#81	R5-184687	0011	-	F	Adding a new Rel-14 TC on Private Call Call-Back Request / Client Terminated (CT) / Private call call-back fulfilment	14.0.0
2018-09	RAN#81	R5-184689	0013	-	F	Adding a new Rel-14 TC on Private Call / Remotely initiated Ambient listening call Client Terminated (CT)	14.0.0
2018-09	RAN#81	R5-184690	0014	-	F	Adding a new Rel-14 TC on Private Call / Locally initiated Ambient listening call / Client Originated (CO)	14.0.0
2018-09	RAN#81	R5-184691	0015	-	F	Adding a new Rel-14 TC on Private Call / Locally initiated Ambient listening call / Client Terminated (CT)	14.0.0
2018-09	RAN#81	R5-185123	0010	1	F	Adding a new Rel-14 TC on Private Call Call-Back Request / Client Originated (CO) / Private call call-back fulfilment	14.0.0
2018-09	RAN#81	R5-185124	0012	1	F	Adding a new Rel-14 TC on Private Call / Remotely initiated Ambient listening call Client Originated (CO)	14.0.0
2018-12	RAN#82	R5-186882	0017	-	F	Update of MCPTT Client off-network operation TCs Core requirements to reflect latest Rel-13 core specs	14.1.0
2018-12	RAN#82	R5-186883	0018	-	F	Update of MCPTT Private Calls with Floor Control TCs Core requirements to reflect latest Rel-13 core specs	14.1.0
2018-12	RAN#82	R5-186884	0019	-	F	Update of MCPTT Private Calls without Floor Control TCs Core requirements to reflect latest Rel-13 core specs	14.1.0
2018-12	RAN#82	R5-186885	0020	-	F	Update of MCPTT Private Calls within a pre-established session TCs Core requirements to reflect latest Rel-13 core specs	14.1.0
2018-12	RAN#82	R5-187718	0021	1	F	Update of TC 5.1 in 36.579-2	14.1.0
2019-03	RAN#83	R5-191903	0022	-	F	Update to MCPTT TC 7.2.1 Off-network / Private Call CO	14.2.0
2019-03	RAN#83	R5-191904	0023	-	F	Update to MCPTT TC 7.2.2 Off-network / Private Call CT	14.2.0
2019-03	RAN#83	R5-191905	0024	-	F	Update to MCPTT TC 7.2.3 Off-network / Private Call CO	14.2.0
2019-03	RAN#83	R5-191907	0026	-	F	Update to MCPTT TC 7.2.5 Off-network / Private Call CT	14.2.0
2019-03	RAN#83	R5-192159	0041	-	F	Update 36.579-2 Typos in Reference and Scope	14.2.0
2019-03	RAN#83	R5-192366	0025	1	F	Update to MCPTT TC 7.2.4 Off-network / Private Call CO	14.2.0
2019-03	RAN#83	R5-192367	0027	1	F	Update to MCPTT TC 7.1.1 Off-network / Group Call	14.2.0
2019-03	RAN#83	R5-192368	0028	1	F	Update to MCPTT TC 7.1.2 Off-network / Group Call	14.2.0
2019-03	RAN#83	R5-192369	0029	1	F	Update to MCPTT TC 7.1.3 Off-network / Group Call	14.2.0
2019-03	RAN#83	R5-192370	0030	1	F	Update to MCPTT TC 7.1.4 Off-network / Group Call	14.2.0
2019-03	RAN#83	R5-192371	0031	1	F	Update to MCPTT TC 7.1.5 Off-network / Group Call	14.2.0
2019-03	RAN#83	R5-192372	0032	1	F	Update to MCPTT TC 7.1.6 Off-network / Group Call	14.2.0
2019-03	RAN#83	R5-192373	0033	1	F	Update to MCPTT TC 7.1.7 Off-network / Group Call	14.2.0
2019-03	RAN#83	R5-192374	0034	1	F	Update to MCPTT TC 7.1.8 Off-network / Group Call	14.2.0
2019-03	RAN#83	R5-192375	0035	1	F	Update to MCPTT TC 7.1.9 Off-network / Group Call	14.2.0

2019-03	RAN#83	R5-192376	0036	1	F	Update to MCPTT TC 7.1.10 Off-network / Group Call	14.2.0
2019-03	RAN#83	R5-192377	0037	1	F	Update to MCPTT TC 7.1.11 Off-network / Group Call	14.2.0
2019-03	RAN#83	R5-192378	0038	1	F	Update to MCPTT TC 7.1.12 Off-network / Group Call	14.2.0
2019-03	RAN#83	R5-192379	0039	1	F	Update to MCPTT TC 7.1.13 Off-network / Group Call	14.2.0
2019-03	RAN#83	R5-192836	0040	1	F	Update 36.579-2 Typo of 36.579-1 reference throughout spec	14.2.0
2019-06	RAN#84	R5-194666	0045	-	F	Typo for MCPTT in 36.579-2	14.3.0
2019-06	RAN#84	R5-195218	0042	1	F	Correction of floor control messages in test case 6.1.1.1	14.3.0
2019-06	RAN#84	R5-195219	0043	1	F	Correction of call setup in test case 6.1.1.2	14.3.0
2019-06	RAN#84	RP-191440	0044	2	F	Correction of call setup in test case 6.1.1.4	14.3.0
2019-09	RAN#85	R5-195969	0046	-	F	Correction of test case 5.3	14.4.0
2019-09	RAN#85	R5-195971	0048	-	F	Correction of test case 6.1.1.1	14.4.0
2019-09	RAN#85	R5-196301	0056	-	F	Correction of test case 6.2.1	14.4.0
2019-09	RAN#85	R5-196302	0057	-	F	Correction of test case 6.2.3	14.4.0
2019-09	RAN#85	R5-196303	0058	-	F	Correction of test case 6.2.5	14.4.0
2019-09	RAN#85	R5-197107	0059	1	F	Update to MCPTT Chat Group TC 6.1.2.1	14.4.0
2019-09	RAN#85	R5-197108	0060	1	F	Update to MCPTT Chat Group TC 6.1.2.3	14.4.0
2019-09	RAN#85	R5-197109	0061	1	F	Update to MCPTT Chat Group TC 6.1.2.4	14.4.0
2019-09	RAN#85	R5-197110	0062	1	F	Update to MCPTT Chat Group TC 6.1.2.5	14.4.0
2019-09	RAN#85	R5-197111	0063	1	F	Update to MCPTT Chat Group TC 6.1.2.6	14.4.0
2019-09	RAN#85	R5-197112	0064	1	F	Update to MCPTT Chat Group TC 6.1.2.7	14.4.0
2019-09	RAN#85	R5-197113	0065	1	F	Update to MCPTT Chat Group TC 6.1.2.8	14.4.0
2019-09	RAN#85	R5-197114	0066	1	F	Update to MCPTT Chat Group TC 6.1.2.9	14.4.0
2019-09	RAN#85	R5-197115	0067	1	F	Update to MCPTT Chat Group TC 6.1.2.10	14.4.0
2019-09	RAN#85	R5-197116	0068	1	F	New MCPTT Chat Group TC 6.1.2.11	14.4.0
2019-09	RAN#85	R5-197117	0069	1	F	New MCPTT Chat Group TC 6.1.2.12	14.4.0
2019-09	RAN#85	R5-197130	0073	1	F	Update to TC 5.4	14.4.0
2019-09	RAN#85	R5-197131	0074	1	F	Update to TC 6.1.1.5	14.4.0
2019-09	RAN#85	R5-197135	0049	1	F	Correction of test case 6.1.1.11	14.4.0
2019-09	RAN#85	R5-197136	0050	1	F	Correction of test case 6.1.1.13	14.4.0
2019-09	RAN#85	R5-197137	0052	1	F	Corrections to references and values in TS 36.579-2	14.4.0
2019-12	RAN#86	R5-198165	0075	-	F	Corrections to MCPTT test case 6.1.1.12	14.5.0
2019-12	RAN#86	R5-199078	0076	2	F	Updates to TC 6.1.1.13	14.5.0
2019-12	RAN#86	R5-199078	0076	2	F	Updates to TC 6.1.1.13	14.5.0
2020-03	RAN#87	R5-200266	0078	-	F	Addition of further references	14.6.0
2020-03	RAN#87	R5-201151	0079	1	F	Corrections to MCPTT test case 5.1	14.6.0
2020-06	RAN#88	R5-201589	0081	-	F	Correction to MCPTT test case 5.2	14.7.0
2020-06	RAN#88	R5-201590	0082	-	F	Correction to MCPTT test case 6.1.1.7	14.7.0
2020-06	RAN#88	R5-201591	0083	-	F	Correction to MCPTT test case 6.1.1.14	14.7.0
2020-06	RAN#88	R5-202383	0084	1	F	Corrections to test case 6.1.1.1	14.7.0
2020-06	RAN#88	R5-202386	0086	1	F	Broadcast calls over pre-established sessions	14.7.0
2020-06	RAN#88	R5-202558	0087	1	F	New MCPTT Test Case - 5.5	14.7.0
2020-06	RAN#88	R5-203075	0080	1	F	Correction to MCPTT test case 5.1	14.7.0
2020-06	RAN#88	R5-203115	0085	2	F	Update to test case 6.1.1.2	14.7.0
2020-09	RAN#89	R5-204536	0089	1	F	Update to MCPTT Test Case 6.1.1.3	14.8.0
2020-09	RAN#89	R5-204537	0090	1	F	Update to MCPTT Test Case 6.1.1.4	14.8.0
2020-09	RAN#89	R5-204538	0091	1	F	Update to MCPTT Test Case 6.1.1.7	14.8.0
2020-09	RAN#89	R5-204539	0092	1	F	Correction to MCPTT Test Case 6.1.1.8	14.8.0
2020-09	RAN#89	R5-204540	0093	1	F	Integration of security features in MBMS procedures	14.8.0
2020-09	RAN#89	R5-204541	0094	1	F	Corrections to Chat Group Calls	14.8.0
2020-12	RAN#90	R5-206452	0095	1	F	Update of MCPTT TC 6.2.8	14.9.0
2020-12	RAN#90	R5-206453	0096	1	F	Update of MCPTT TC 6.2.11	14.9.0
2020-12	RAN#90	R5-206454	0097	1	F	Update of MCPTT TC 6.2.16	14.9.0
2020-12	RAN#90	R5-206455	0098	1	F	Update of MCPTT TC 6.2.17	14.9.0
2020-12	RAN#90	R5-206456	0099	1	F	Update of MCPTT TC 7.2.1	14.9.0
2020-12	RAN#90	R5-206457	0100	1	F	Correction to MCPTT Test Case 6.1.1.1	14.9.0
2020-12	RAN#90	R5-206458	0101	1	F	Correction to MCPTT Test Case 6.1.1.11	14.9.0
2020-12	RAN#90	R5-206459	0102	1	F	Correction to MCPTT Test Case 6.1.1.13	14.9.0
2020-12	RAN#90	R5-206460	0103	1	F	Correction to MCPTT Test Case 6.1.1.2	14.9.0
2020-12	RAN#90	R5-206461	0104	1	F	Correction to MCPTT Test Case 6.1.1.4	14.9.0
2020-12	RAN#90	R5-206462	0105	1	F	Correction to MCPTT Test Case 6.1.1.7	14.9.0
2020-12	RAN#90	R5-206463	0106	1	F	5.3 Test case corrections	14.9.0
2020-12	RAN#90	R5-206464	0107	1	F	Update of MCPTT TC 6.1.1.3	14.9.0
2021-01	RAN#90	-	-	-	-	re-implementation of lost void-ed specific message contents of R5-204536, R5-204537, R5-204538, and R5-204539	14.9.1
2021-01	RAN#90	R5-204540	0093	1	F	re-implementation of lost changes of R5-204540	14.9.1
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2021-03	RAN#91	R5-210222	0108	-	F	Correction to MCPTT Test Case 5.1	14.10.0
2021-03	RAN#91	R5-210227	0113	-	F	Correction to MCPTT Test Case 6.1.1.11	14.10.0
2021-03	RAN#91	R5-210228	0114	-	F	Correction to MCPTT Test Case 6.1.1.12	14.10.0
2021-03	RAN#91	R5-210229	0115	-	F	Correction to MCPTT Test Case 6.1.1.13	14.10.0
2021-03	RAN#91	R5-210230	0116	-	F	Correction to MCPTT Test Case 6.1.1.14	14.10.0

2021-03	RAN#91	R5-210232	0118	-	F	Correction to MCPTT Test Case 6.1.1.3	14.10.0
2021-03	RAN#91	R5-210235	0121	-	F	Correction to MCPTT Test Case 6.1.1.9	14.10.0
2021-03	RAN#91	R5-211521	0109	1	F	Correction to MCPTT Test Case 5.3	14.10.0
2021-03	RAN#91	R5-211522	0110	1	F	Correction to MCPTT Test Case 5.4	14.10.0
2021-03	RAN#91	R5-211523	0111	1	F	Correction to MCPTT Test Case 6.1.1.1	14.10.0
2021-03	RAN#91	R5-211524	0112	1	F	Correction to MCPTT Test Case 6.1.1.10	14.10.0
2021-03	RAN#91	R5-211525	0117	1	F	Correction to MCPTT Test Case 6.1.1.2	14.10.0
2021-03	RAN#91	R5-211526	0119	1	F	Correction to MCPTT Test Case 6.1.1.5	14.10.0
2021-03	RAN#91	R5-211527	0120	1	F	Correction to MCPTT Test Case 6.1.1.8	14.10.0
2021-03	RAN#91	R5-211528	0122	1	F	Correction to MCPTT Test Case 6.1.2.10	14.10.0
2021-03	RAN#91	R5-211529	0123	1	F	Correction to MCPTT Test Case 6.1.2.11	14.10.0
2021-03	RAN#91	R5-211530	0124	1	F	Correction to MCPTT Test Case 6.1.2.12	14.10.0
2021-03	RAN#91	R5-211531	0125	1	F	Correction to MCPTT Test Case 6.1.2.7	14.10.0
2021-03	RAN#91	R5-211532	0126	1	F	Correction to MCPTT Test Case 6.1.2.8	14.10.0
2021-03	RAN#91	R5-211533	0127	1	F	Correction to MCPTT Test Case 6.1.2.9	14.10.0
2021-03	RAN#91	R5-211534	0128	1	F	Correction to MCPTT Test Case 6.2.1	14.10.0
2021-03	RAN#91	R5-211535	0129	1	F	Correction to MCPTT Test Case 6.2.14	14.10.0
2021-03	RAN#91	R5-211536	0130	1	F	Correction to MCPTT Test Case 6.2.15	14.10.0
2021-03	RAN#91	R5-211537	0131	1	F	Correction to MCPTT Test Case 6.2.16	14.10.0
2021-03	RAN#91	R5-211538	0132	1	F	Correction to MCPTT Test Case 6.2.17	14.10.0
2021-03	RAN#91	R5-211539	0133	1	F	Correction to MCPTT Test Case 6.2.2	14.10.0
2021-03	RAN#91	R5-211540	0134	1	F	Correction to MCPTT Test Case 6.2.3	14.10.0
2021-03	RAN#91	R5-211541	0135	1	F	Correction to MCPTT Test Case 6.2.4	14.10.0
2021-03	RAN#91	R5-211542	0136	1	F	Correction to MCPTT Test Case 6.2.5	14.10.0
2021-03	RAN#91	R5-211543	0137	1	F	Correction to MCPTT Test Case 6.2.6	14.10.0
2021-03	RAN#91	R5-211544	0138	1	F	Correction to MCPTT Test Case 6.2.7	14.10.0
2021-06	RAN#92	R5-212310	0151	-	F	Correction to MCPTT Test Case 6.1.1.10	14.11.0
2021-06	RAN#92	R5-212311	0152	-	F	Correction to MCPTT Test Case 6.1.1.14	14.11.0
2021-06	RAN#92	R5-212312	0153	-	F	Correction to MCPTT Test Case 6.1.1.15	14.11.0
2021-06	RAN#92	R5-212313	0154	-	F	Correction to MCPTT Test Case 6.1.1.16	14.11.0
2021-06	RAN#92	R5-212314	0155	-	F	Correction to MCPTT Test Case 6.1.1.17	14.11.0
2021-06	RAN#92	R5-212315	0156	-	F	Correction to MCPTT Test Case 6.1.1.18	14.11.0
2021-06	RAN#92	R5-212318	0159	-	F	Correction to MCPTT Test Case 6.1.1.6	14.11.0
2021-06	RAN#92	R5-212319	0160	-	F	Correction to MCPTT Test Case 6.1.1.7	14.11.0
2021-06	RAN#92	R5-212320	0161	-	F	Correction to MCPTT Test Case 6.1.1.8	14.11.0
2021-06	RAN#92	R5-212321	0162	-	F	Correction to MCPTT Test Case 6.1.1.9	14.11.0
2021-06	RAN#92	R5-212323	0164	-	F	Correction to MCPTT Test Case 6.1.2.12	14.11.0
2021-06	RAN#92	R5-212324	0165	-	F	Correction to MCPTT Test Case 6.1.2.2	14.11.0
2021-06	RAN#92	R5-212325	0166	-	F	Correction to MCPTT Test Case 6.1.2.7	14.11.0
2021-06	RAN#92	R5-212326	0167	-	F	Correction to MCPTT Test Case 6.2.1	14.11.0
2021-06	RAN#92	R5-212328	0169	-	F	Correction to MCPTT Test Case 6.2.11	14.11.0
2021-06	RAN#92	R5-212329	0170	-	F	Correction to MCPTT Test Case 6.2.12	14.11.0
2021-06	RAN#92	R5-212330	0171	-	F	Correction to MCPTT Test Case 6.2.13	14.11.0
2021-06	RAN#92	R5-212331	0172	-	F	Correction to MCPTT Test Case 6.2.14	14.11.0
2021-06	RAN#92	R5-212333	0174	-	F	Correction to MCPTT Test Case 6.2.8	14.11.0
2021-06	RAN#92	R5-213658	0147	1	F	Correction to MCPTT Test Case 5.2	14.11.0
2021-06	RAN#92	R5-213659	0148	1	F	Correction to MCPTT Test Case 5.4	14.11.0
2021-06	RAN#92	R5-213660	0150	1	F	Correction to MCPTT Test Case 6.1.1.1	14.11.0
2021-06	RAN#92	R5-213661	0157	1	F	Correction to MCPTT Test Case 6.1.1.2	14.11.0
2021-06	RAN#92	R5-213662	0158	1	F	Correction to MCPTT Test Case 6.1.1.5	14.11.0
2021-06	RAN#92	R5-213663	0163	1	F	Correction to MCPTT Test Case 6.1.2.11	14.11.0
2021-06	RAN#92	R5-213664	0168	1	F	Correction to MCPTT Test Case 6.2.10	14.11.0
2021-06	RAN#92	R5-213665	0173	1	F	Correction to MCPTT Test Case 6.2.2	14.11.0
2021-06	RAN#92	R5-213666	0175	1	F	Correction to MCPTT Test Case 6.2.9	14.11.0
2021-06	RAN#92	R5-213667	0176	1	F	Correction to MCPTT Test Cases 6.2.3 - 6.2.7	14.11.0
2021-06	RAN#92	R5-213668	0182	1	F	Addition of MCPTT Test Case 6.1.1.21	14.11.0

History

Document history		
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