

# ETSI TS 101 597-2 V2.1.1 (2019-01)



TECHNICAL SPECIFICATION

**Core Network and Interoperability Testing (INT);  
Closed User Group (CUG) using IP Multimedia (IM) Core  
Network (CN) subsystem;  
Conformance Test Specification (3GPP™ Release 12);  
Part 2: Test Suite Structure and Test Purposes (TSS&TP)**

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**Reference**

RTS/INT-00150-2

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**Keywords**

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**ETSI**

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650 Route des Lucioles  
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C  
Association à but non lucratif enregistrée à la  
Sous-Préfecture de Grasse (06) N° 7803/88

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# Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Core Network and Interoperability Testing (INT).

The present document is part 2 of a multi-part deliverable covering the Conformance Test Specification of Closed User Group (CUG) using IP Multimedia (IM) Core Network (CN) subsystem, as identified below:

Part 1: "Protocol Implementation Conformance Statement (PICS)";

**Part 2: "Test Suite Structure and Test Purposes (TSS&TP)".**

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# Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

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# 1 Scope

The present document provides the Test Suite Structure and Test Purposes for the Closed User Group (CUG) using IP Multimedia (IM) Core Network (CN) subsystem [1] in compliance with the relevant requirements.

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## 2 References

### 2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <https://docbox.etsi.org/Reference>.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are necessary for the application of the present document.

- [1] ETSI TS 124 654: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Closed User Group (CUG) using IP Multimedia (IM) Core Network (CN) subsystem, Protocol Specification (3GPP TS 24.654 Release 12)".
- [2] ETSI TS 101 597-1: "Core Network and Interoperability Testing (INT); Closed User Group (CUG) using IP Multimedia (IM) Core Network (CN) subsystem; Conformance Test Specification (3GPPTM Release 12); Part 1: Protocol Implementation Conformance Statement (PICS)".

### 2.2 Informative references

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The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

Not applicable.

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## 3 Definition of terms, symbols and abbreviations

### 3.1 Terms

For the purposes of the present document, the terms given in ETSI TS 124 654 [1] apply.

## 3.2 Symbols

For the purposes of the present document, the symbols given in ETSI TS 124 654 [1] and the following apply:

Gm	Reference point: supports the communication between UE and IMS
Mw	Reference point allows the communication and forwarding of signalling messaging between CSCFs

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in ETSI TS 124 654 [1] and the following apply:

AS	Application Server
CD	Communication Deflection
CDIV	Communication DIVersion service
CFB	Communication Forwarding on Busy
CFNL	Communication Forwarding on Not Logged-in
CFNR	Communication Forwarding on No Reply
CFU	Communication Forwarding Unconditional
CN	Core Network
CONF	CONFerence calling
CSCF	Call Session Control Function
CUG	Closed User Group
ECT	Explicit Communication Transfer
IA	Incoming Access
ICB	Incoming Communication Barring within a CUG
IM	IP Multimedia
IMS	IP Multimedia Subsystem
IP	Internet Protocol
ISC	Reference point between Serving CSCF and Application Server
IUT	Implementation Under Test
NNI	Network-to-Network Interface
OA	Outgoing Access
OAE	Outgoing Access, Explicit request required
OAI	Outgoing Access, Implicit outgoing access for all communications
OCB	Outgoing Communication Barring within a CUG
PIXIT	Protocol Implementation eXtra Information for Testing
SIP	Session Initiation Protocol
SS	Supplementary Services
SUT	System Under Test
TP	Test Purposes
TSS	Test Suite Structure
UA	User Agent
URI	Universal Resource Identifier
UE	User Equipment
XML	eXtensible Markup Language

## 4 Test Suite Structure (TSS)

### 4.0 Test Suite Structure table

**Table 4.0-1: Test suite structure**

CUG				
	originating_UE		CUG_U01_xxx	
	originating_AS			
	terminating_AS	CUG without preference		CUG_N01_xxx
		CUG without preference + OAE		CUG_N02_xxx
		CUG without preference + OAI		CUG_N03_xxx
		CUG with preference		CUG_N04_xxx
		CUG with preference + OAE		CUG_N05_xxx
		CUG with preference + OAI		CUG_N06_xxx
		No CUG		CUG_N07_xxx
	Services	CUG with OA not allowed		CUG_N08_xxx
		CUG with OA allowed		CUG_N09_xxx
		No CUG		CUG_N10_xxx
	CONF		CUG_N11_xxx	
	CDIV		CUG_N12_xxx	
	ECT		CUG_N13_xxx	

## 4.1 Configuration

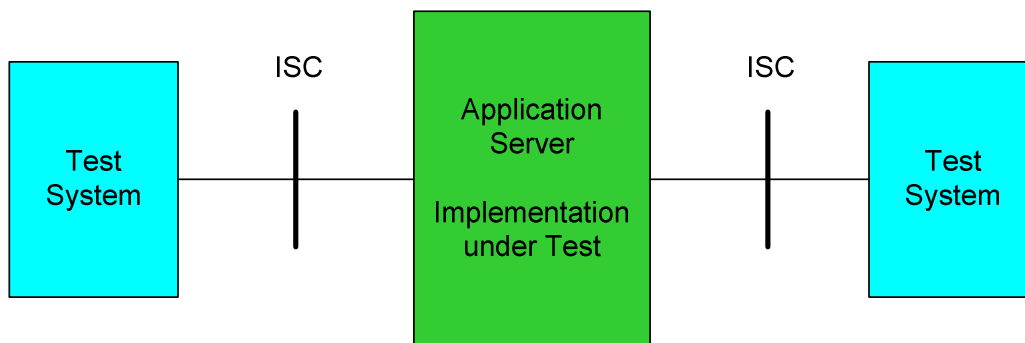
### 4.1.0 Introduction

The scope of the present document is to test the signalling and procedural aspects of the stage 3 requirements as described in ETSI TS 124 654 [1]. The stage 3 description describes the requirements for several network entities and also the requirements regarding terminal devices. Therefore several interfaces (reference points) are addressed to satisfy the test of the different entities.

Therefore to test the appropriate entities the configurations below are applicable.

#### 4.1.1 Testing of the AS

The AS entity is responsible for performing and managing services. The ISC interface is the appropriate access point for testing.



**Figure 4.1.1-1: Applicable interface to test AS functionalities**

If the ISC interface is not accessible it is also possible to perform the test of the AS using any NNI (Mw, Mg, Mx) interface (see figure 4.1.1-2). In case only the Gm interface is accessible this interface can be used instead for testing, but the verification of all requirements may not be possible.

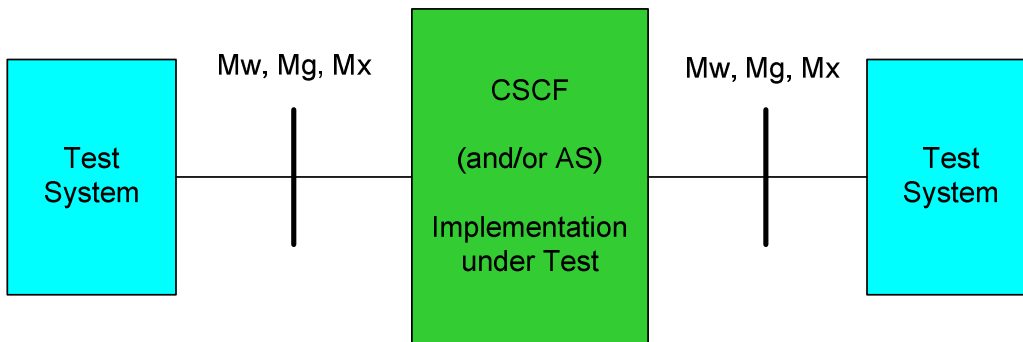


Figure 4.1.1-2: Applicable interfaces for tests using a (generic) NNI interface

### 4.1.2 Testing of the UE

There are special clauses in the protocol standard describing the procedures that apply at the originating and terminating user equipment. Therefore the test configuration in figure 4.1.2-1 has been chosen.

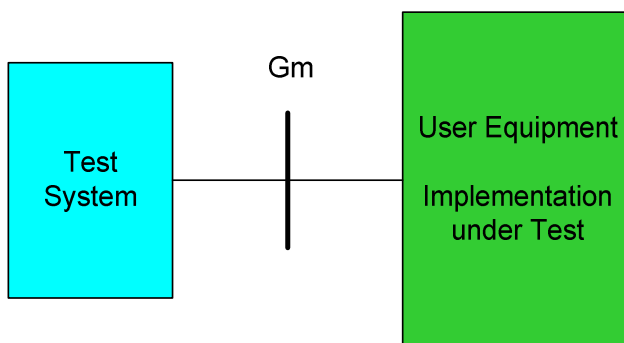


Figure 4.1.2-1: Applicable configuration to test UE functionalities

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## 5 Test Purposes (TP)

### 5.1 Introduction

#### 5.1.1 TP naming convention

Tps are numbered, starting at 001, within each group. Groups are organized according to the TSS. Additional references are added to identify the actual test suite and whether it applies to the network or the user (see table 1).



**Table 1: TP identifier naming convention scheme**

Identifier:	<b>&lt;ss&gt;_&lt;iut&gt;&lt;group&gt;_&lt;nnn&gt;</b>		
<ss>	=	supplementary service:	e.g. "CUG"
<iut>	=	type of IUT:	U            User equipment N            Network entity
<group>	=	group	2 digit field representing group reference according to TSS
<nnn>	=	sequential number	(001-999)

## 5.1.2 Test strategy

As the base standard ETSI TS 124 654 [1] contains no explicit requirements for testing, the TPs were generated as a result of an analysis of the base standard and the PICS specification ETSI TS 101 597-1 [2]. The criteria applied include the following:

- Whether or not a test case can be built from the TP is not considered.

## 5.2 Test Purposes for Closed User Group (CUG)

### 5.2.1 Actions at the originating UA

TSS	TP	CUG reference	Selection expression
CUG/originating_UE	CUG_U01_001	clause 4.5.2.1	PICS 4.5.1/1 AND PICS 4.6.1/1
<b>Test purpose</b> <i>Explicit request of CUG service Outgoing Access.</i> The originating user requests explicitly the CUG service by including in the initial INVITE an xml CUGrequestType containing the preferred CUG and an outgoing access request set to "true".			
<b>Preconditions:</b>			
<b>SIP header values:</b> INVITE: <pre>&lt;cug&gt;   &lt;cugCallOperation&gt;     &lt;outgoingAccessRequest&gt;TRUE&lt;/outgoingAccessRequest&gt;     &lt;cugIndex&gt;[PIXIT]&lt;/cugIndex&gt;   &lt;/cugCallOperation&gt; &lt;/cug&gt;</pre>			
<b>Comments:</b> <b>User equipment</b>			
		<b>Test equipment</b> → INVITE requesting CUG explicitly	

TSS CUG/originating_UE	TP CUG_U01_002	CUG reference clause 4.5.2.1	Selection expression PICS 4.5.1/1 AND PICS 4.6.1/1
<b>Test purpose</b> <i>Explicit request of CUG service without Outgoing Access.</i> The originating user requests explicitly the CUG service by including in the initial INVITE an xml CUGrequestType containing the preferred CUG and an outgoing access request set to "false".			
<b>Preconditions:</b>			
<b>SIP header values:</b> INVITE: <pre data-bbox="151 472 893 636">&lt;cug&gt;   &lt;cugCallOperation&gt;     &lt;outgoingAccessRequest&gt;FALSE&lt;/outgoingAccessRequest&gt;     &lt;cugIndex&gt;[PIXIT]&lt;/cugIndex&gt;   &lt;/cugCallOperation&gt; &lt;/cug&gt;</pre>			
<b>Comments:</b> <b>User equipment</b> <span style="float: right;"><b>Test equipment</b> → INVITE requesting CUG explicitly</span>			

TSS CUG/originating_UE	TP CUG_U01_003	CUG reference clause 4.5.2.1	Selection expression PICS 4.5.1/1 AND PICS 4.6.1/1 AND PICS 4.6.1/2
<b>Test purpose</b> <i>Explicit request of CUG service without CUG index.</i> The originating user requests explicitly the CUG service by including in the initial INVITE an xml CUGrequestType containing the preferred CUG and no 'cugIndex' element is present.			
<b>Preconditions:</b>			
<b>SIP header values:</b> INVITE: <pre data-bbox="151 1088 893 1252">&lt;cug&gt;   &lt;cugCallOperation&gt;     &lt;outgoingAccessRequest&gt;FALSE&lt;/outgoingAccessRequest&gt;     &lt;cugIndex&gt;[PIXIT]&lt;/cugIndex&gt;   &lt;/cugCallOperation&gt; &lt;/cug&gt;</pre>			
<b>Comments:</b> <b>User equipment</b> <span style="float: right;"><b>Test equipment</b> → INVITE requesting CUG explicitly</span>			

## 5.2.2 Actions at the AS of the originating User

### 5.2.2.1 CUG without preference

TSS CUG/originating_AS/CUG without preference	TP CUG_N01_001	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/1
<p><b>Test purpose</b>  <i>CUG without preference: INVITE with CUG index, successful.</i>                      Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing registered CUGIndex, forwards an INVITE request containing an xml element cug with cugInterlockBinaryCode related to registered CUG index, networkIndicator (PIXIT) and cugCommunicationIndicator set to "11" (CUG without outgoing access).</p>			
<p><b>Preconditions:</b> Originating user has subscribed to CUG  <b>Options for registered CUG index:</b>                      Intra CUG restrictions: None designated (-OCB)  <b>Options for public identity in use:</b>                      Preferential CUG: None designated                      Outgoing access: not allowed</p>			
<p><b>SIP header values:</b>                      INVITE1:  <pre>&lt;cug&gt;   &lt;cugCallOperation&gt;     &lt;outgoingAccessRequest&gt;FALSE&lt;/outgoingAccessRequest&gt;     &lt;cugIndex&gt;[registered CUG index]&lt;/cugIndex&gt;   &lt;/cugCallOperation&gt; &lt;/cug&gt;</pre>                     INVITE2:                      Content-Disposition: ...;handling=required  <pre>&lt;cug&gt;   &lt;networkIndicator &gt;[PIXIT]&lt;/ networkIndicator&gt;   &lt;cugInterlockBinaryCode&gt;[related to registered CUG index]&lt;/cugInterlockBinaryCode&gt;   &lt;cugCommunicationIndicator&gt;11&lt;/cugCommunicationIndicator&gt; &lt;/cug&gt;</pre></p>			
<p><b>Comments:</b>  <b>Test equipment (Gm)</b> → <b>AS</b> → <b>Test equipment (ISC, Mw)</b>                      INVITE1 → INVITE2</p>			

TSS CUG/originating_AS/CUG without preference	TP CUG_N01_002	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/1 AND PICS 4.7.1/10									
<b>Test purpose</b> <i>CUG without preference + OCB: INVITE with CUG index, unsuccessful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing registered CUGIndex, rejects the INVITE request by sending a 603 Decline due to Outgoing Communication Barring.												
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered CUG index:</b> Intra CUG restrictions: OCB <b>Options for public identity in use:</b> Preferential CUG: None designated Outgoing access: not allowed												
<b>SIP header values:</b> INVITE: <pre> &lt;cug&gt;   &lt;cugCallOperation&gt;     &lt;outgoingAccessRequest&gt;FALSE&lt;/outgoingAccessRequest&gt;     &lt;cugIndex&gt;[registered CUG index]&lt;/cugIndex&gt;   &lt;/cugCallOperation&gt; &lt;/cug&gt;                     </pre>												
<b>Comments:</b> <b>Test equipment (Gm)</b> <table style="margin-left: 100px;"> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td>AS</td> </tr> <tr> <td>603 Decline</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>ACK</td> <td style="text-align: center;">→</td> <td></td> </tr> </table>				INVITE	→	AS	603 Decline	←		ACK	→	
INVITE	→	AS										
603 Decline	←											
ACK	→											

TSS CUG/originating_AS/CUG without preference	TP CUG_N01_003	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/1									
<b>Test purpose</b> <i>CUG without preference: INVITE with unallocated CUG index, unsuccessful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing unregistered CUGIndex, rejects the INVITE request by sending a 403 Forbidden due to not allocated CUG index.												
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered CUG index:</b> Intra CUG restrictions: None designated (-OCB) <b>Options for public identity in use:</b> Preferential CUG: None designated Outgoing access: not allowed												
<b>SIP header values:</b> INVITE: <pre> &lt;cug&gt;   &lt;cugCallOperation&gt;     &lt;outgoingAccessRequest&gt;FALSE&lt;/outgoingAccessRequest&gt;     &lt;cugIndex&gt;[unregistered CUG]&lt;/cugIndex&gt;   &lt;/cugCallOperation&gt; &lt;/cug&gt;                     </pre> 403 Forbidden Reason: Q.850;cause=62												
<b>Comments:</b> <b>Test equipment (Gm)</b> <table style="margin-left: 100px;"> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td>AS</td> </tr> <tr> <td>403 Forbidden</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>ACK</td> <td style="text-align: center;">→</td> <td></td> </tr> </table>				INVITE	→	AS	403 Forbidden	←		ACK	→	
INVITE	→	AS										
403 Forbidden	←											
ACK	→											



TSS CUG/originating_AS/CUG without preference	TP CUG_N01_005	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/1 AND PICS 4.7.1/10												
<b>Test purpose</b> <i>CUG without preference +OCB: INVITE with CUG index and outgoingAccessRequest = true, unsuccessful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing outgoingAccessRequest = true and registered CUGIndex, rejects the INVITE request by sending a 603 Decline due to Outgoing Communication Barring.															
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered CUG index:</b> Intra CUG restrictions: OCB <b>Options for public identity in use:</b> Preferential CUG: None designated Outgoing access: not allowed															
<b>SIP header values:</b> INVITE: <pre> &lt;cug&gt;   &lt;cugCallOperation&gt;     &lt;outgoingAccessRequest&gt;TRUE&lt;/outgoingAccessRequest&gt;     &lt;cugIndex&gt;[registered CUG index]&lt;/cugIndex&gt;   &lt;/cugCallOperation&gt; &lt;/cug&gt;                     </pre>															
<b>Comments:</b> <b>Test equipment (Gm)</b> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;"></td> <td style="width: 20%; text-align: center;">→</td> <td style="width: 20%; text-align: center;">AS</td> </tr> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td></td> </tr> <tr> <td>603 Decline</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>ACK</td> <td style="text-align: center;">→</td> <td></td> </tr> </table>					→	AS	INVITE	→		603 Decline	←		ACK	→	
	→	AS													
INVITE	→														
603 Decline	←														
ACK	→														

TSS CUG/originating_AS/CUG without preference	TP CUG_N01_006	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/1												
<b>Test purpose</b> <i>CUG without preference: INVITE with unallocated CUG index and outgoingAccessRequest = true, unsuccessful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing outgoingAccessRequest = true and unregistered CUGIndex, rejects the INVITE request by sending a 403 Forbidden due to not allocated CUG index.															
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered CUG index:</b> Intra CUG restrictions: None designated (-OCB) <b>Options for public identity in use:</b> Preferential CUG: None designated Outgoing access: not allowed															
<b>SIP header values:</b> INVITE: <pre> &lt;cug&gt;   &lt;cugCallOperation&gt;     &lt;outgoingAccessRequest&gt;TRUE&lt;/outgoingAccessRequest&gt;     &lt;cugIndex&gt;[unregistered CUG]&lt;/cugIndex&gt;   &lt;/cugCallOperation&gt; &lt;/cug&gt;                     </pre> 403 Forbidden Reason: Q.850;cause=62															
<b>Comments:</b> <b>Test equipment (Gm)</b> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;"></td> <td style="width: 20%; text-align: center;">→</td> <td style="width: 20%; text-align: center;">AS</td> </tr> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td></td> </tr> <tr> <td>403 Forbidden</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>ACK</td> <td style="text-align: center;">→</td> <td></td> </tr> </table>					→	AS	INVITE	→		403 Forbidden	←		ACK	→	
	→	AS													
INVITE	→														
403 Forbidden	←														
ACK	→														



<b>TSS</b> CUG/originating_AS/CUG without preference	<b>TP</b> CUG_N01_009	<b>CUG reference</b> clause 4.5.2.4	<b>Selection expression</b> PICS 4.5.1/2 AND PICS 4.7.1/1
<b>Test purpose</b> <i>CUG without preference: INVITE for non-CUG communication, unsuccessful.</i> Ensure that the SUT on receipt of an INVITE request containing no xml element cug, rejects the INVITE request by sending a 403 Forbidden due to missing cug XML element.			
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered CUG index:</b> Intra CUG restrictions: None designated (-OCB) <b>Options for public identity in use:</b> Preferential CUG: None designated Outgoing access: not allowed			
<b>SIP header values:</b> INVITE: No xml element <cug> 403 Forbidden Reason: Q.850;cause=50			
<b>Comments:</b> <b>Test equipment (Gm)</b>			
INVITE	→	AS	
403 Forbidden	←		
ACK	→		

5.2.2.2 CUG without preference + OAE

<b>TSS</b> CUG/originating_AS/CUG without preference + OAE	<b>TP</b> CUG_N02_001	<b>CUG reference</b> clause 4.5.2.4	<b>Selection expression</b> PICS 4.5.1/2 AND PICS 4.7.1/2
<b>Test purpose</b> <i>CUG without preference + OAE: INVITE with CUG index, successful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing registered CUGIndex, forwards an INVITE request containing an xml element cug with cugInterlockBinaryCode related to registered CUG index, networkIndicator (PIXIT) and cugCommunicationIndicator set to "11" (CUG without outgoing access).			
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered CUG index:</b> Intra CUG restrictions: None designated (-OCB) <b>Options for public identity in use:</b> Preferential CUG: None designated Outgoing access: allowed per communication			
<b>SIP header values:</b> INVITE1: <cug> <cugCallOperation> <outgoingAccessRequest>FALSE</outgoingAccessRequest> <cugIndex>[registered CUG index]</cugIndex> </cugCallOperation> </cug>  INVITE2: Content-Disposition: ...;handling=required <cug> <networkIndicator >[PIXIT]</ networkIndicator> <cugInterlockBinaryCode>[related to registered CUG index]</cugInterlockBinaryCode> <cugCommunicationIndicator>11</cugCommunicationIndicator> </cug>			
<b>Comments:</b> <b>Test equipment (Gm)</b>			
INVITE1	→	AS	→ Test equipment (ISC, Mw) INVITE2



TSS CUG/originating_AS/CUG without preference + OAE	TP CUG_N02_002	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/2 AND PICS 4.7.1/10									
<b>Test purpose</b> <i>CUG without preference + OAE + OCB: INVITE with CUG index, unsuccessful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing registered CUGIndex, rejects the INVITE request by sending a 603 Decline due to Outgoing Communication Barring.												
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered CUG index:</b> Intra CUG restrictions: OCB <b>Options for public identity in use:</b> Preferential CUG: None designated Outgoing access: allowed per communication												
<b>SIP header values:</b> INVITE: <pre> &lt;cug&gt;   &lt;cugCallOperation&gt;     &lt;outgoingAccessRequest&gt;FALSE&lt;/outgoingAccessRequest&gt;     &lt;cugIndex&gt;[registered CUG index]&lt;/cugIndex&gt;   &lt;/cugCallOperation&gt; &lt;/cug&gt;           </pre>												
<b>Comments:</b> <b>Test equipment (Gm)</b> <table style="margin-left: 100px; border: none;"> <tr> <td style="padding-right: 20px;">INVITE</td> <td style="text-align: center;">→</td> <td style="padding-left: 20px;">AS</td> </tr> <tr> <td>603 Decline</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>ACK</td> <td style="text-align: center;">→</td> <td></td> </tr> </table>				INVITE	→	AS	603 Decline	←		ACK	→	
INVITE	→	AS										
603 Decline	←											
ACK	→											

TSS CUG/originating_AS/CUG without preference + OAE	TP CUG_N02_003	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/2									
<b>Test purpose</b> <i>CUG without preference + OAE: INVITE with unallocated CUG index, unsuccessful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing unregistered CUGIndex, rejects the INVITE request by sending a 403 Forbidden due to not allocated CUG index.												
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered CUG index:</b> Intra CUG restrictions: None designated (-OCB) <b>Options for public identity in use:</b> Preferential CUG: None designated Outgoing access: allowed per communication												
<b>SIP header values:</b> INVITE: <pre> &lt;cug&gt;   &lt;cugCallOperation&gt;     &lt;outgoingAccessRequest&gt;FALSE&lt;/outgoingAccessRequest&gt;     &lt;cugIndex&gt;[unregistered CUG]&lt;/cugIndex&gt;   &lt;/cugCallOperation&gt; &lt;/cug&gt;           </pre> 403 Forbidden Reason: Q.850;cause=62												
<b>Comments:</b> <b>Test equipment (Gm)</b> <table style="margin-left: 100px; border: none;"> <tr> <td style="padding-right: 20px;">INVITE</td> <td style="text-align: center;">→</td> <td style="padding-left: 20px;">AS</td> </tr> <tr> <td>403 Forbidden</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>ACK</td> <td style="text-align: center;">→</td> <td></td> </tr> </table>				INVITE	→	AS	403 Forbidden	←		ACK	→	
INVITE	→	AS										
403 Forbidden	←											
ACK	→											



<b>TSS</b> CUG/originating_AS/CUG without preference + OAE	<b>TP</b> CUG_N02_005	<b>CUG reference</b> clause 4.5.2.4	<b>Selection expression</b> PICS 4.5.1/2 AND PICS 4.7.1/2
<p><b>Test purpose</b>  <i>CUG without preference + OAE + OCB within CUG: INVITE with CUG index and outgoingAccessRequest = true, successful.</i>                  Ensure that the SUT on receipt of an INVITE request containing an xml element cug with                  cugCallOperation containing                  outgoingAccessRequest = true and                  registered CUGIndex,                  forwards the INVITE request containing no xml element cug.</p>			
<p><b>Preconditions:</b> Originating user has subscribed to CUG  <b>Options for registered CUG index:</b>                  Intra CUG restrictions: <b>OCB</b> within CUG  <b>Options for public identity in use:</b>                  Preferential CUG: None designated                  Outgoing access: allowed per communication</p>			
<p><b>SIP header values:</b>                  INVITE1:                  &lt;cug&gt;                  &lt;cugCallOperation&gt;                  &lt;outgoingAccessRequest&gt;TRUE&lt;/outgoingAccessRequest&gt;                  &lt;cugIndex&gt;[registered CUG index]&lt;/cugIndex&gt;                  &lt;/cugCallOperation&gt;                  &lt;/cug&gt;                   INVITE2:                  No xml element &lt;cug&gt;</p>			
<p><b>Comments:</b>  <b>Test equipment (Gm)</b> → <b>AS</b> → <b>Test equipment (ISC, Mw)</b>                  INVITE1 → INVITE2</p>			

<b>TSS</b> CUG/originating_AS/CUG without preference + OAE	<b>TP</b> CUG_N02_006	<b>CUG reference</b> clause 4.5.2.4	<b>Selection expression</b> PICS 4.5.1/2 AND PICS 4.7.1/2
<p><b>Test purpose</b>  <i>CUG without preference + OAE: INVITE with unallocated CUG index and outgoingAccessRequest = true, unsuccessful.</i>                  Ensure that the SUT on receipt of an INVITE request containing an xml element cug with                  cugCallOperation containing                  outgoingAccessRequest = true and                  unregistered CUGIndex,                  rejects the INVITE request by sending a 403 Forbidden due to non allocated CUG index.</p>			
<p><b>Preconditions:</b> Originating user has subscribed to CUG  <b>Options for registered CUG index:</b>                  Intra CUG restrictions: None designated (-OCB)  <b>Options for public identity in use:</b>                  Preferential CUG: None designated                  Outgoing access: allowed per communication</p>			
<p><b>SIP header values:</b>                  INVITE:                  &lt;cug&gt;                  &lt;cugCallOperation&gt;                  &lt;outgoingAccessRequest&gt;TRUE&lt;/outgoingAccessRequest&gt;                  &lt;cugIndex&gt;[unregistered CUG]&lt;/cugIndex&gt;                  &lt;/cugCallOperation&gt;                  &lt;/cug&gt;                   403 Forbidden                  Reason: Q.850;cause=62</p>			
<p><b>Comments:</b>  <b>Test equipment (Gm)</b> → <b>AS</b>                  INVITE →                  403 Forbidden ←                  ACK →</p>			



TSS CUG/originating_AS/CUG without preference + OAE	TP CUG_N02_009	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/2												
<b>Test purpose</b> <i>CUG without preference + OAE: INVITE for non-CUG communication, unsuccessful.</i> Ensure that the SUT on receipt of an INVITE request containing no xml element cug, rejects the INVITE request by sending a 403 Forbidden.															
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered CUG index:</b> Intra CUG restrictions: None designated (-OCB) <b>Options for public identity in use:</b> Preferential CUG: None designated Outgoing access: allowed per communication															
<b>SIP header values:</b> INVITE: No xml element <cug>  403 Forbidden Reason: Q.850;cause=50															
<b>Comments:</b> <table border="0" style="width: 100%;"> <tr> <td style="width: 30%;"><b>Test equipment (ISC)</b></td> <td style="width: 30%;"></td> <td style="width: 30%; text-align: center;"><b>AS</b></td> </tr> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td></td> </tr> <tr> <td>403 Forbidden</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>ACK</td> <td style="text-align: center;">→</td> <td></td> </tr> </table>				<b>Test equipment (ISC)</b>		<b>AS</b>	INVITE	→		403 Forbidden	←		ACK	→	
<b>Test equipment (ISC)</b>		<b>AS</b>													
INVITE	→														
403 Forbidden	←														
ACK	→														

5.2.2.3 CUG without preference + OAI

TSS CUG/originating_AS/CUG without preference + OAI	TP CUG_N03_001	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/3												
<b>Test purpose</b> <i>CUG without preference + OAI: INVITE with CUG index, successful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing registered CUGIndex, forwards an INVITE request containing an xml element cug with cugInterlockBinaryCode related to registered CUG index, networkIndicator (PIXIT) and cugCommunicationIndicator set to "10" (CUG with outgoing access).															
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered CUG index:</b> Intra CUG restrictions: None designated (-OCB) <b>Options for public identity in use:</b> Preferential CUG: None designated Outgoing access: allowed permanent															
<b>SIP header values:</b> INVITE1: <pre>&lt;cug&gt;   &lt;cugCallOperation&gt;     &lt;outgoingAccessRequest&gt;FALSE&lt;/outgoingAccessRequest&gt;     &lt;cugIndex&gt;[registered CUG index]&lt;/cugIndex&gt;   &lt;/cugCallOperation&gt; &lt;/cug&gt;</pre> INVITE2: <pre>&lt;cug&gt;   &lt;networkIndicator &gt;[PIXIT]&lt;/ networkIndicator&gt;   &lt;cugInterlockBinaryCode&gt;[related to registered CUG index]&lt;/cugInterlockBinaryCode&gt;   &lt;cugCommunicationIndicator&gt;10&lt;/cugCommunicationIndicator&gt; &lt;/cug&gt;</pre>															
<b>Comments:</b> <table border="0" style="width: 100%;"> <tr> <td style="width: 30%;"><b>Test equipment (Gm)</b></td> <td style="width: 30%;"></td> <td style="width: 30%; text-align: center;"><b>AS</b></td> <td style="width: 30%;"></td> <td style="width: 30%;"></td> <td style="width: 30%; text-align: center;"><b>Test equipment (ISC, Mw)</b></td> </tr> <tr> <td>INVITE1</td> <td style="text-align: center;">→</td> <td></td> <td style="text-align: center;">→</td> <td></td> <td>INVITE2</td> </tr> </table>				<b>Test equipment (Gm)</b>		<b>AS</b>			<b>Test equipment (ISC, Mw)</b>	INVITE1	→		→		INVITE2
<b>Test equipment (Gm)</b>		<b>AS</b>			<b>Test equipment (ISC, Mw)</b>										
INVITE1	→		→		INVITE2										

<b>TSS</b> CUG/originating_AS/CUG without preference + OAI	<b>TP</b> CUG_N03_002	<b>CUG reference</b> clause 4.5.2.4	<b>Selection expression</b> PICS 4.5.1/2 AND PICS 4.7.1/3
<b>Test purpose</b> <i>CUG without preference + OAI and OCB within CUG: INVITE with CUG index, successful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing registered CUGIndex, forwards an INVITE request containing no xml element cug.			
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered CUG index:</b> Intra CUG restrictions: OCB within CUG <b>Options for public identity in use:</b> Preferential CUG: None designated Outgoing access: allowed permanent			
<b>SIP header values:</b> INVITE1: <pre>&lt;cug&gt;   &lt;cugCallOperation&gt;     &lt;outgoingAccessRequest&gt;FALSE&lt;/outgoingAccessRequest&gt;     &lt;cugIndex&gt;[registered CUG index]&lt;/cugIndex&gt;   &lt;/cugCallOperation&gt; &lt;/cug&gt;</pre> INVITE2: No xml element <cug>			
<b>Comments:</b> <b>Test equipment (Gm)</b> → <b>AS</b> → <b>Test equipment (ISC, Mw)</b> INVITE1 → INVITE2			

<b>TSS</b> CUG/originating_AS/CUG without preference + OAI	<b>TP</b> CUG_N03_003	<b>CUG reference</b> clause 4.5.2.4	<b>Selection expression</b> PICS 4.5.1/2 AND PICS 4.7.1/3
<b>Test purpose</b> <i>CUG without preference + OAI: INVITE with unregistered CUG index, unsuccessful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing unregistered CUGIndex, rejects the INVITE request by sending a 403 Forbidden due to non allocated CUG index.			
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered CUG index:</b> Intra CUG restrictions: None designated (-OCB) <b>Options for public identity in use:</b> Preferential CUG: None designated Outgoing access: allowed permanent			
<b>SIP header values:</b> INVITE: <pre>&lt;cug&gt;   &lt;cugCallOperation&gt;     &lt;outgoingAccessRequest&gt;FALSE&lt;/outgoingAccessRequest&gt;     &lt;cugIndex&gt;[unregistered CUG]&lt;/cugIndex&gt;   &lt;/cugCallOperation&gt; &lt;/cug&gt;</pre> 403 Forbidden Reason: Q.850;cause=62			
<b>Comments:</b> <b>Test equipment (Gm)</b> → <b>AS</b> INVITE → 403 Forbidden ← ACK →			









<b>TSS</b> CUG/originating_AS/CUG without preference + OAI	<b>TP</b> CUG_N03_009	<b>CUG reference</b> clause 4.5.2.4	<b>Selection expression</b> PICS 4.5.1/2 AND PICS 4.7.1/3
<b>Test purpose</b> <i>CUG without preference + OAI: INVITE for non-CUG communication, successful.</i> Ensure that the SUT on receipt of an INVITE request containing no xml element cug, forwards an INVITE request containing no xml element cug.			
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered CUG index:</b> Intra CUG restrictions: None designated (-OCB) <b>Options for public identity in use:</b> Preferential CUG: None designated Outgoing access: allowed permanent			
<b>SIP header values:</b> INVITE1: No xml element <cug>  INVITE2: No xml element <cug>			
<b>Comments:</b> <b>Test equipment (Gm)</b> → <b>AS</b> → <b>Test equipment (ISC, Mw)</b> INVITE1 → INVITE2			

### 5.2.2.4 CUG with preference

<b>TSS</b> CUG/originating_AS/CUG with preference	<b>TP</b> CUG_N04_001	<b>CUG reference</b> clause 4.5.2.4	<b>Selection expression</b> PICS 4.5.1/2 AND PICS 4.7.1/4
<b>Test purpose</b> <i>CUG with preference: INVITE with CUG index, successful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing registered CUGIndex, forwards an INVITE request containing an xml element cug with cugInterlockBinaryCode related to registered CUG index, networkIndicator (PIXIT) and cugCommunicationIndicator set to "11" (CUG without outgoing access).			
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered and preferred CUG index:</b> Intra CUG restrictions: None designated (-OCB) <b>Options for public identity in use:</b> Preferential CUG: registered CUG Outgoing access: not allowed			
<b>SIP header values:</b> INVITE1: <cug> <cugCallOperation> <outgoingAccessRequest>FALSE</outgoingAccessRequest> <cugIndex>[registered CUG index]</cugIndex> </cugCallOperation> </cug>  INVITE2: Content-Disposition: ...;handling=required <cug> <networkIndicator >[PIXIT]</ networkIndicator> <cugInterlockBinaryCode>[related to registered CUG index]</cugInterlockBinaryCode> <cugCommunicationIndicator>11</cugCommunicationIndicator> </cug>			
<b>Comments:</b> <b>Test equipment (Gm)</b> → <b>AS</b> → <b>Test equipment (ISC, Mw)</b> INVITE1 → INVITE2			

TSS CUG/originating_AS/CUG with preference	TP CUG_N04_002	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/4 AND PICS 4.7.1/10									
<b>Test purpose</b> <i>CUG with preference + OCB: INVITE with CUG index, unsuccessful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing registered CUGIndex, rejects the INVITE request by sending a 603 Decline due to Outgoing Communication Barring.												
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered and preferred CUG index:</b> Intra CUG restrictions: OCB <b>Options for public identity in use:</b> Preferential CUG: registered CUG Outgoing access: not allowed												
<b>SIP header values:</b> INVITE: <pre> &lt;cug&gt;   &lt;cugCallOperation&gt;     &lt;outgoingAccessRequest&gt;FALSE&lt;/outgoingAccessRequest&gt;     &lt;cugIndex&gt;[registered CUG index]&lt;/cugIndex&gt;   &lt;/cugCallOperation&gt; &lt;/cug&gt;                     </pre>												
<b>Comments:</b> <b>Test equipment (Gm)</b> <table style="margin-left: 100px;"> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td>AS</td> </tr> <tr> <td>603 Decline</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>ACK</td> <td style="text-align: center;">→</td> <td></td> </tr> </table>				INVITE	→	AS	603 Decline	←		ACK	→	
INVITE	→	AS										
603 Decline	←											
ACK	→											

TSS CUG/originating_AS/CUG with preference	TP CUG_N04_003	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/4									
<b>Test purpose</b> <i>CUG with preference: INVITE with unregistered CUG index, unsuccessful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing unregistered CUGIndex, rejects the INVITE request by sending a 403 Forbidden due to non allocated CUG index.												
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered and preferred CUG index:</b> Intra CUG restrictions: None designated (-OCB) <b>Options for public identity in use:</b> Preferential CUG: registered CUG Outgoing access: not allowed												
<b>SIP header values:</b> INVITE: <pre> &lt;cug&gt;   &lt;cugCallOperation&gt;     &lt;outgoingAccessRequest&gt;FALSE&lt;/outgoingAccessRequest&gt;     &lt;cugIndex&gt;[unregistered CUG]&lt;/cugIndex&gt;   &lt;/cugCallOperation&gt; &lt;/cug&gt;                     </pre> <p>403 Forbidden Reason: Q.850;cause=62</p>												
<b>Comments:</b> <b>Test equipment (Gm)</b> <table style="margin-left: 100px;"> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td>AS</td> </tr> <tr> <td>403 Forbidden</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>ACK</td> <td style="text-align: center;">→</td> <td></td> </tr> </table>				INVITE	→	AS	403 Forbidden	←		ACK	→	
INVITE	→	AS										
403 Forbidden	←											
ACK	→											



TSS CUG/originating_AS/CUG with preference	TP CUG_N04_005	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/4 AND PICS 4.7.1/10												
<b>Test purpose</b> <i>CUG with preference +OCB: INVITE with CUG index and outgoingAccessRequest = true, unsuccessful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing outgoingAccessRequest = true and registered CUGIndex, rejects the INVITE request by sending a 603 Decline due to Outgoing Communication Barring.															
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered and preferred CUG index:</b> Intra CUG restrictions: OCB <b>Options for public identity in use:</b> Preferential CUG: registered CUG Outgoing access: not allowed															
<b>SIP header values:</b> INVITE: <pre> &lt;cug&gt;   &lt;cugCallOperation&gt;     &lt;outgoingAccessRequest&gt;TRUE&lt;/outgoingAccessRequest&gt;     &lt;cugIndex&gt;[registered CUG index]&lt;/cugIndex&gt;   &lt;/cugCallOperation&gt; &lt;/cug&gt;                     </pre>															
<b>Comments:</b> <b>Test equipment (Gm)</b> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;"></td> <td style="width: 10%; text-align: center;">→</td> <td style="width: 30%; text-align: center;">AS</td> </tr> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td></td> </tr> <tr> <td>603 Decline</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>ACK</td> <td style="text-align: center;">→</td> <td></td> </tr> </table>					→	AS	INVITE	→		603 Decline	←		ACK	→	
	→	AS													
INVITE	→														
603 Decline	←														
ACK	→														

TSS CUG/originating_AS/CUG with preference	TP CUG_N04_006	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/4												
<b>Test purpose</b> <i>CUG with preference: INVITE with unregistered CUG index and outgoingAccessRequest = true, unsuccessful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing outgoingAccessRequest = true and unregistered CUGIndex, rejects the INVITE request by sending a 403 Forbidden due to non allocated CUG index.															
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered and preferred CUG index:</b> Intra CUG restrictions: None designated (-OCB) <b>Options for public identity in use:</b> Preferential CUG: registered CUG Outgoing access: not allowed															
<b>SIP header values:</b> INVITE: <pre> &lt;cug&gt;   &lt;cugCallOperation&gt;     &lt;outgoingAccessRequest&gt;TRUE&lt;/outgoingAccessRequest&gt;     &lt;cugIndex&gt;[unregistered CUG]&lt;/cugIndex&gt;   &lt;/cugCallOperation&gt; &lt;/cug&gt;                     </pre> <p>403 Forbidden Reason: Q.850;cause=62</p>															
<b>Comments:</b> <b>Test equipment (Gm)</b> <table style="width: 100%; border: none;"> <tr> <td style="width: 60%;"></td> <td style="width: 10%; text-align: center;">→</td> <td style="width: 30%; text-align: center;">AS</td> </tr> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td></td> </tr> <tr> <td>403 Forbidden</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>ACK</td> <td style="text-align: center;">→</td> <td></td> </tr> </table>					→	AS	INVITE	→		403 Forbidden	←		ACK	→	
	→	AS													
INVITE	→														
403 Forbidden	←														
ACK	→														



TSS CUG/originating_AS/CUG with preference	TP CUG_N04_008	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/4												
<b>Test purpose</b> <i>CUG with preference: INVITE without CUG index and with outgoingAccessRequest = true, unsuccessful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing outgoingAccessRequest = true, rejects the INVITE request by sending a 403 Forbidden due to outgoing access not allowed.															
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered and preferred CUG index:</b> Intra CUG restrictions: None designated <b>Options for public identity in use:</b> Preferential CUG: registered CUG Outgoing access: not allowed															
<b>SIP header values:</b> INVITE: <pre> &lt;cug&gt;   &lt;cugCallOperation&gt;     &lt;outgoingAccessRequest&gt;TRUE&lt;/outgoingAccessRequest&gt;   &lt;/cugCallOperation&gt; &lt;/cug&gt;                     </pre> 403 Forbidden Reason: Q.850;cause=62															
<b>Comments:</b> <b>Test equipment (Gm)</b> <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;"></td> <td style="width: 30%; text-align: center;">→</td> <td style="width: 30%; text-align: center;">AS</td> </tr> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td></td> </tr> <tr> <td>403 Forbidden</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>ACK</td> <td style="text-align: center;">→</td> <td></td> </tr> </table>					→	AS	INVITE	→		403 Forbidden	←		ACK	→	
	→	AS													
INVITE	→														
403 Forbidden	←														
ACK	→														

TSS CUG/originating_AS/CUG with preference	TP CUG_N04_009	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/4																
<b>Test purpose</b> <i>CUG with preference: INVITE for non-CUG communication, successful.</i> Ensure that the SUT on receipt of an INVITE request containing no xml element cug, forwards an INVITE request containing an xml element cug with cugInterlockBinaryCode related to preferred CUG index, networkIndicator (PIXIT) and cugCommunicationIndicator set to "11" (CUG without outgoing access).																			
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered and preferred CUG index:</b> Intra CUG restrictions: None designated (-OCB) <b>Options for public identity in use:</b> Preferential CUG: registered CUG Outgoing access: not allowed																			
<b>SIP header values:</b> INVITE1: No xml element <cug>  INVITE2: Content-Disposition: ...;handling=required <pre> &lt;cug&gt;   &lt;networkIndicator &gt;[registered CUG index]&lt;/ networkIndicator&gt;   &lt;cugInterlockBinaryCode&gt;[related to preferred CUG index]&lt;/cugInterlockBinaryCode&gt;   &lt;cugCommunicationIndicator&gt;11&lt;/cugCommunicationIndicator&gt; &lt;/cug&gt;                     </pre>																			
<b>Comments:</b> <b>Test equipment (Gm)</b> <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;"></td> <td style="width: 30%; text-align: center;">→</td> <td style="width: 30%; text-align: center;">AS</td> <td style="width: 30%;"></td> </tr> <tr> <td>INVITE1</td> <td style="text-align: center;">→</td> <td></td> <td style="text-align: center;">→</td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: center;">Test equipment (ISC, Mw)</td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align: center;">INVITE2</td> </tr> </table>					→	AS		INVITE1	→		→				Test equipment (ISC, Mw)				INVITE2
	→	AS																	
INVITE1	→		→																
			Test equipment (ISC, Mw)																
			INVITE2																





TSS CUG/originating_AS/CUG with preference + OAE	TP CUG_N05_002	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/5 AND PICS 4.7.1/10									
<b>Test purpose</b> <i>CUG with preference + OAE + OCB: INVITE with CUG index, unsuccessful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing registered CUGIndex, rejects the INVITE request by sending a 603 Decline to Outgoing Communication Barring.												
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered and preferred CUG index:</b> Intra CUG restrictions: OCB <b>Options for public identity in use:</b> Preferential CUG: registered CUG Outgoing access: allowed per communication												
<b>SIP header values:</b> INVITE: <pre>                     &lt;cug&gt;                     &lt;cugCallOperation&gt;                     &lt;outgoingAccessRequest&gt;FALSE&lt;/outgoingAccessRequest&gt;                     &lt;cugIndex&gt;[registered CUG index]&lt;/cugIndex&gt;                     &lt;/cugCallOperation&gt;                     &lt;/cug&gt;                     </pre>												
<b>Comments:</b> <b>Test equipment (Gm)</b> <table style="margin-left: 100px;"> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td>AS</td> </tr> <tr> <td>603 Decline</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>ACK</td> <td style="text-align: center;">→</td> <td></td> </tr> </table>				INVITE	→	AS	603 Decline	←		ACK	→	
INVITE	→	AS										
603 Decline	←											
ACK	→											

TSS CUG/originating_AS/CUG with preference + OAE	TP CUG_N05_003	CUG reference clause 4.5.2.4	Selection expression PICS 4.5.1/2 AND PICS 4.7.1/5									
<b>Test purpose</b> <i>CUG with preference + OAE: INVITE with unregistered CUG index, unsuccessful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing unregistered CUGIndex, rejects the INVITE request by sending a 403 Forbidden due to not allocated CUG index.												
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered and preferred CUG index:</b> Intra CUG restrictions: None designated (-OCB) <b>Options for public identity in use:</b> Preferential CUG: registered CUG Outgoing access: allowed per communication												
<b>SIP header values:</b> INVITE: <pre>                     &lt;cug&gt;                     &lt;cugCallOperation&gt;                     &lt;outgoingAccessRequest&gt;FALSE&lt;/outgoingAccessRequest&gt;                     &lt;cugIndex&gt;[unregistered CUG]&lt;/cugIndex&gt;                     &lt;/cugCallOperation&gt;                     &lt;/cug&gt;                     </pre> 403 Forbidden Reason: Q.850;cause=62												
<b>Comments:</b> <b>Test equipment (Gm)</b> <table style="margin-left: 100px;"> <tr> <td>INVITE</td> <td style="text-align: center;">→</td> <td>AS</td> </tr> <tr> <td>403 Forbidden</td> <td style="text-align: center;">←</td> <td></td> </tr> <tr> <td>ACK</td> <td style="text-align: center;">→</td> <td></td> </tr> </table>				INVITE	→	AS	403 Forbidden	←		ACK	→	
INVITE	→	AS										
403 Forbidden	←											
ACK	→											



















<b>TSS</b> CUG/originating_AS/CUG with preference + OAI	<b>TP</b> CUG_N06_006	<b>CUG reference</b> clause 4.5.2.4	<b>Selection expression</b> PICS 4.5.1/2 AND PICS 4.7.1/6 AND PICS 4.7.1/10																
<b>Test purpose</b> <i>CUG with preference + OAI and OCB: INVITE with CUG index and outgoingAccessRequest = true, unsuccessful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing outgoingAccessRequest = true and registered CUGIndex, rejects the INVITE request by sending a 603 Decline due to Outgoing Communication Barring.																			
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered and preferred CUG index:</b> Intra CUG restrictions: OCB <b>Options for public identity in use:</b> Preferential CUG: registered CUG Outgoing access: allowed permanent																			
<b>SIP header values:</b> INVITE1: <pre>&lt;cug&gt;   &lt;cugCallOperation&gt;     &lt;outgoingAccessRequest&gt;TRUE&lt;/outgoingAccessRequest&gt;     &lt;cugIndex&gt;[registered CUG]&lt;/cugIndex&gt;   &lt;/cugCallOperation&gt; &lt;/cug&gt;</pre>																			
<b>Comments:</b> <table border="0"> <tr> <td><b>Test equipment (Gm)</b></td> <td></td> <td><b>AS</b></td> <td><b>Test equipment (ISC, Mw)</b></td> </tr> <tr> <td>INVITE</td> <td>→</td> <td></td> <td></td> </tr> <tr> <td>603 Decline</td> <td>←</td> <td></td> <td></td> </tr> <tr> <td>ACK</td> <td>→</td> <td></td> <td></td> </tr> </table>				<b>Test equipment (Gm)</b>		<b>AS</b>	<b>Test equipment (ISC, Mw)</b>	INVITE	→			603 Decline	←			ACK	→		
<b>Test equipment (Gm)</b>		<b>AS</b>	<b>Test equipment (ISC, Mw)</b>																
INVITE	→																		
603 Decline	←																		
ACK	→																		

<b>TSS</b> CUG/originating_AS/CUG with preference + OAI	<b>TP</b> CUG_N06_007	<b>CUG reference</b> clause 4.5.2.4	<b>Selection expression</b> PICS 4.5.1/2 AND PICS 4.7.1/6								
<b>Test purpose</b> <i>CUG with preference + OAI and OCB within CUG: INVITE with CUG index and outgoingAccessRequest = true, successful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing outgoingAccessRequest = true and registered CUGIndex, forwards an INVITE request containing no xml element cug is present											
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered and preferred CUG index:</b> Intra CUG restrictions: OCB within CUG <b>Options for public identity in use:</b> Preferential CUG: registered CUG Outgoing access: allowed permanent											
<b>SIP header values:</b> INVITE1: <pre>&lt;cug&gt;   &lt;cugCallOperation&gt;     &lt;outgoingAccessRequest&gt;TRUE&lt;/outgoingAccessRequest&gt;     &lt;cugIndex&gt;[registered CUG]&lt;/cugIndex&gt;   &lt;/cugCallOperation&gt; &lt;/cug&gt;</pre> INVITE2: No xml element <cug>											
<b>Comments:</b> <table border="0"> <tr> <td><b>Test equipment (Gm)</b></td> <td></td> <td><b>AS</b></td> <td><b>Test equipment (ISC, Mw)</b></td> </tr> <tr> <td>INVITE1</td> <td>→</td> <td></td> <td>→ INVITE2</td> </tr> </table>				<b>Test equipment (Gm)</b>		<b>AS</b>	<b>Test equipment (ISC, Mw)</b>	INVITE1	→		→ INVITE2
<b>Test equipment (Gm)</b>		<b>AS</b>	<b>Test equipment (ISC, Mw)</b>								
INVITE1	→		→ INVITE2								





5.2.2.7 No CUG

TSS	TP	CUG reference	Selection expression
CUG/originating_AS/No CUG	CUG_N07_001	clause 4.5.2.4	PICS 4.5.1/2
<b>Test purpose</b> <i>No CUG: INVITE with CUG index, unsuccessful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing any CUGIndex, rejects the INVITE request by sending a 403 Forbidden.			
<b>Preconditions:</b> Originating user has <b>not</b> subscribed to CUG			
<b>SIP header values:</b> INVITE: <pre>&lt;cug&gt;   &lt;cugCallOperation&gt;     &lt;outgoingAccessRequest&gt;FALSE&lt;/outgoingAccessRequest&gt;     &lt;cugIndex&gt;[any CUG index]&lt;/cugIndex&gt;   &lt;/cugCallOperation&gt; &lt;/cug&gt;</pre> 403 Forbidden Reason: Q.850;cause=50			
<b>Comments:</b> <b>Test equipment (Gm)</b>			
INVITE	→	AS	
403 Forbidden	←		
ACK	→		

TSS	TP	CUG reference	Selection expression
CUG/originating_AS/No CUG	CUG_N07_002	clause 4.5.2.4	PICS 4.5.1/2
<b>Test purpose</b> <i>No CUG: INVITE with CUG index and outgoingAccessRequest = true, unsuccessful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing outgoingAccessRequest = true and any CUGIndex, rejects the INVITE request by sending a 403 Forbidden.			
<b>Preconditions:</b> Originating user has <b>not</b> subscribed to CUG			
<b>SIP header values:</b> INVITE: <pre>&lt;cug&gt;   &lt;cugCallOperation&gt;     &lt;outgoingAccessRequest&gt;TRUE&lt;/outgoingAccessRequest&gt;     &lt;cugIndex&gt;[ any CUG index]&lt;/cugIndex&gt;   &lt;/cugCallOperation&gt; &lt;/cug&gt;</pre> 403 Forbidden Reason: Q.850;cause=50			
<b>Comments:</b> <b>Test equipment (Gm)</b>			
INVITE	→	AS	
403 Forbidden	←		
ACK	→		

TSS	TP	CUG reference	Selection expression
CUG/originating_AS/No CUG	CUG_N07_003	clause 4.5.2.4	PICS 4.5.1/2
<b>Test purpose</b> <i>No CUG: INVITE without CUG index, unsuccessful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing outgoingAccessRequest = false, rejects the INVITE request by sending a 403 Forbidden.			
<b>Preconditions:</b> Originating user has <b>not</b> subscribed to CUG			
<b>SIP header values:</b> INVITE: <cug> <cugCallOperation> <outgoingAccessRequest>FALSE</outgoingAccessRequest> </cugCallOperation> </cug>  403 Forbidden Reason: Q.850;cause=50			
<b>Comments:</b> <b>Test equipment (Gm)</b>			
INVITE	→	AS	
403 Forbidden	←		
ACK	→		

TSS	TP	CUG reference	Selection expression
CUG/originating_AS/No CUG	CUG_N07_004	clause 4.5.2.4	PICS 4.5.1/2
<b>Test purpose</b> <i>No CUG: INVITE without CUG index and with outgoingAccessRequest = true, unsuccessful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugCallOperation containing outgoingAccessRequest = true, rejects the INVITE request by sending a 403 Forbidden.			
<b>Preconditions:</b> Originating user has <b>not</b> subscribed to CUG			
<b>SIP header values:</b> INVITE: <cug> <cugCallOperation> <outgoingAccessRequest>TRUE</outgoingAccessRequest> </cugCallOperation> </cug>  403 Forbidden Reason: Q.850;cause=50			
<b>Comments:</b> <b>Test equipment (Gm)</b>			
INVITE	→	AS	
403 Forbidden	←		
ACK	→		









TSS	TP	CUG reference	Selection expression
CUG/ terminating _AS/CUG with OA not allowed	CUG_N08_007	clause 4.5.2.10	PICS 4.5.1/2
<b>Test purpose</b> <i>No CUG: INVITE with interlock code and without outgoing access, unsuccessful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugInterlockBinaryCode, networkIndicator (PIXIT) and cugCommunicationIndicator set to "11" (CUG without outgoing access), rejects the INVITE request by sending a 403 Forbidden due to 'Outgoing access not allowed'.			
<b>Preconditions:</b> Terminating user has not subscribed to CUG			
<b>SIP header values:</b> INVITE: <cug> <networkIndicator >[PIXIT]</ networkIndicator> <cugInterlockBinaryCode>[related to any CUG index]</cugInterlockBinaryCode> <cugCommunicationIndicator>11</cugCommunicationIndicator> </cug>  403 Forbidden Reason: Q.850;cause=87			
<b>Comments:</b> <b>Test equipment (ISC, Mw)</b>			
INVITE	→	AS	
403 Forbidden	←		
ACK	→		

5.2.3.2 CUG with OA allowed

TSS	TP	CUG reference	Selection expression
CUG/ terminating _AS/CUG with OA allowed	CUG_N09_001	clause 4.5.2.10	PICS 4.5.1/2
<b>Test purpose</b> <i>CUG with IA not allowed: INVITE with interlock code matching registered CUG index and with outgoing access, successful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugInterlockBinaryCode related to registered CUG index, networkIndicator (PIXIT) and cugCommunicationIndicator set to "10" (CUG with outgoing access), forwards an INVITE request containing no xml element cug.			
<b>Preconditions:</b> Terminating user has subscribed to CUG <b>Options for registered CUG index:</b> Intra CUG restrictions: None designated (-ICB) <b>Options for public identity in use:</b> Incoming access: not allowed			
<b>SIP header values:</b> INVITE1: <cug> <networkIndicator >[PIXIT]</ networkIndicator> <cugInterlockBinaryCode>[related to registered CUG index]</cugInterlockBinaryCode> <cugCommunicationIndicator>10</cugCommunicationIndicator> </cug>  INVITE2: No XML <cug> element			
<b>Comments:</b> <b>Test equipment (ISC, Mw)</b>			
INVITE1	→	AS	→ Test equipment (Gm)
			INVITE2

TSS	TP	CUG reference	Selection expression
CUG/ terminating _AS/CUG with OA allowed	CUG_N09_002	clause 4.5.2.10	PICS 4.5.1/2
<p><b>Test purpose</b>  <i>CUG with IA not allowed and ICB: INVITE with interlock code matching registered CUG index and with outgoing access, unsuccessful.</i>                      Ensure that the SUT on receipt of an INVITE request containing an xml element cug with                      cugInterlockBinaryCode related to registered CUG index,                      networkIndicator (PIXIT) and                      cugCommunicationIndicator set to "10" (CUG with outgoing access),                      rejects the INVITE request by sending a 603 Decline due to incoming calls barred.</p>			
<p><b>Preconditions:</b> Terminating user has subscribed to CUG  <b>Options for registered CUG index:</b>                      Intra CUG restrictions: ICB  <b>Options for public identity in use:</b>                      Incoming access: not allowed</p>			
<p><b>SIP header values:</b>                      INVITE:                      &lt;cug&gt;                      &lt;networkIndicator &gt;[PIXIT]&lt;/ networkIndicator&gt;                      &lt;cugInterlockBinaryCode&gt;[related to registered CUG index]&lt;/cugInterlockBinaryCode&gt;                      &lt;cugCommunicationIndicator&gt;10&lt;/cugCommunicationIndicator&gt;                      &lt;/cug&gt;                       603 Decline                      Reason: Q.850; cause=55</p>			
<p><b>Comments:</b>  <b>Test equipment (ISC, Mw)</b> AS                      INVITE →                      603 Decline ←                      ACK →</p>			

TSS	TP	CUG reference	Selection expression
CUG/ terminating _AS/CUG with OA allowed	CUG_N09_003	clause 4.5.2.10	PICS 4.5.1/2
<p><b>Test purpose</b>  <i>CUG with IA not allowed: INVITE with interlock code not matching registered CUG index and with outgoing access, unsuccessful.</i>                      Ensure that the SUT on receipt of an INVITE request containing an xml element cug with                      cugInterlockBinaryCode not related to registered CUG index,                      networkIndicator (PIXIT) and                      cugCommunicationIndicator set to "10" (CUG with outgoing access),                      rejects the INVITE request by sending a 403 Forbidden due to not matched CUG index.</p>			
<p><b>Preconditions:</b> Terminating user has subscribed to CUG  <b>Options for public identity in use:</b>                      Incoming access: not allowed</p>			
<p><b>SIP header values:</b>                      INVITE:                      &lt;cug&gt;                      &lt;networkIndicator &gt;[PIXIT]&lt;/ networkIndicator&gt;                      &lt;cugInterlockBinaryCode&gt;[not related to registered CUG index]&lt;/cugInterlockBinaryCode&gt;                      &lt;cugCommunicationIndicator&gt;10&lt;/cugCommunicationIndicator&gt;                      &lt;/cug&gt;                       403 Forbidden                      Reason: Q.850; cause=87</p>			
<p><b>Comments:</b>  <b>Test equipment (ISC, Mw)</b> AS                      INVITE →                      403 Forbidden ←                      ACK →</p>			

<b>TSS</b> CUG/ terminating _AS/CUG with OA allowed	<b>TP</b> CUG_N09_004	<b>CUG reference</b> clause 4.5.2.10	<b>Selection expression</b> PICS 4.5.1/2
<b>Test purpose</b> <i>CUG with IA allowed: INVITE with interlock code matching registered CUG index and with outgoing access, successful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugInterlockBinaryCode related to registered CUG index, networkIndicator (PIXIT) and cugCommunicationIndicator set to "10" (CUG with outgoing access), forwards an INVITE request containing no xml element cug.			
<b>Preconditions:</b> Terminating user has subscribed to CUG <b>Options for registered CUG index:</b> Intra CUG restrictions: None designated (-ICB) <b>Options for public identity in use:</b> Incoming access: allowed			
<b>SIP header values:</b> INVITE1: <pre>&lt;cug&gt;   &lt;networkIndicator &gt;[PIXIT]&lt;/ networkIndicator&gt;   &lt;cugInterlockBinaryCode&gt;[related to registered CUG index]&lt;/cugInterlockBinaryCode&gt;   &lt;cugCommunicationIndicator&gt;10&lt;/cugCommunicationIndicator&gt; &lt;/cug&gt;</pre> INVITE2: No XML <cug> element			
<b>Comments:</b> <b>Test equipment (ISC, Mw)</b> → <b>AS</b> → <b>Test equipment (Gm)</b> INVITE1 → INVITE2			

<b>TSS</b> CUG/ terminating _AS/CUG with OA allowed	<b>TP</b> CUG_N09_005	<b>CUG reference</b> clause 4.5.2.10	<b>Selection expression</b> PICS 4.5.1/2
<b>Test purpose</b> <i>CUG with IA allowed and ICB: INVITE with interlock code matching registered CUG index and with outgoing access, successful.</i> Ensure that the SUT on receipt of an INVITE request containing an xml element cug with cugInterlockBinaryCode related to registered CUG index, networkIndicator (PIXIT) and cugCommunicationIndicator set to "10" (CUG with outgoing access), forwards an INVITE request containing no xml element cug.			
<b>Preconditions:</b> Terminating user has subscribed to CUG <b>Options for registered CUG index:</b> Intra CUG restrictions: ICB <b>Options for public identity in use:</b> Incoming access: allowed			
<b>SIP header values:</b> INVITE1: <pre>&lt;cug&gt;   &lt;networkIndicator &gt;[PIXIT]&lt;/ networkIndicator&gt;   &lt;cugInterlockBinaryCode&gt;[related to registered CUG index]&lt;/cugInterlockBinaryCode&gt;   &lt;cugCommunicationIndicator&gt;10&lt;/cugCommunicationIndicator&gt; &lt;/cug&gt;</pre> INVITE2: No XML <cug> element			
<b>Comments:</b> <b>Test equipment (ISC, Mw)</b> → <b>AS</b> → <b>Test equipment (Gm)</b> INVITE1 → INVITE2			



5.2.3.3 No CUG

TSS	TP	CUG reference	Selection expression												
CUG/ terminating _AS/No CUG	CUG_N10_001	clause 4.5.2.10	PICS 4.5.1/2												
<b>Test purpose</b> <i>CUG with IA not allowed: INVITE without xml element cug, unsuccessful.</i> Ensure that the SUT on receipt of an INVITE request containing no xml element cug, rejects the INVITE request by sending a 403 Forbidden.															
<b>Preconditions:</b> Terminating user has subscribed to CUG <b>Options for public identity in use:</b> Incoming access: not allowed															
<b>SIP header values:</b> INVITE: No xml element <cug>  403 Forbidden Reason: Q.850;cause=87															
<b>Comments:</b> <table style="width:100%; border:none;"> <tr> <td style="width:30%;"><b>Test equipment (ISC)</b></td> <td style="width:30%;"></td> <td style="width:30%; text-align:center;"><b>AS</b></td> </tr> <tr> <td>INVITE</td> <td style="text-align:center;">→</td> <td></td> </tr> <tr> <td>403 Forbidden</td> <td style="text-align:center;">←</td> <td></td> </tr> <tr> <td>ACK</td> <td style="text-align:center;">→</td> <td></td> </tr> </table>				<b>Test equipment (ISC)</b>		<b>AS</b>	INVITE	→		403 Forbidden	←		ACK	→	
<b>Test equipment (ISC)</b>		<b>AS</b>													
INVITE	→														
403 Forbidden	←														
ACK	→														

TSS	TP	CUG reference	Selection expression												
CUG/ terminating _AS/No CUG	CUG_N10_002	clause 4.5.2.10	PICS 4.5.1/2												
<b>Test purpose</b> <i>CUG with IA allowed: INVITE without xml element cug, successful.</i> Ensure that the SUT on receipt of an INVITE request containing no xml element cug, forwards an INVITE request containing no xml element cug.															
<b>Preconditions:</b> Terminating user has subscribed to CUG <b>Options for public identity in use:</b> Incoming access: allowed															
<b>SIP header values:</b> INVITE1: No xml element <cug>  INVITE2: No XML <cug> element															
<b>Comments:</b> <table style="width:100%; border:none;"> <tr> <td style="width:30%;"><b>Test equipment (ISC, Mw)</b></td> <td style="width:30%;"></td> <td style="width:30%; text-align:center;"><b>AS</b></td> <td style="width:30%;"></td> </tr> <tr> <td>INVITE1</td> <td style="text-align:center;">→</td> <td></td> <td style="text-align:center;">→ <b>Test equipment (Gm)</b></td> </tr> <tr> <td></td> <td></td> <td></td> <td style="text-align:center;">INVITE2</td> </tr> </table>				<b>Test equipment (ISC, Mw)</b>		<b>AS</b>		INVITE1	→		→ <b>Test equipment (Gm)</b>				INVITE2
<b>Test equipment (ISC, Mw)</b>		<b>AS</b>													
INVITE1	→		→ <b>Test equipment (Gm)</b>												
			INVITE2												











<b>TSS</b> CUG/Services/CDIV	<b>TP</b> CUG_N12_004	<b>CUG reference</b> clause 4.6.7.2	<b>Selection expression</b> PICS 4.7.1/8																				
<p><b>Test purpose</b>  <i>CUG with OA not allowed: Call setup between originating party and forwarding party, CFB successful.</i>                  Ensure that on receipt of an INVITE request containing an xml element <b>cug</b> with                      cugCallOperation containing                          registered CUGIndex,                  the SUT checks the CUG restrictions for the originating party and the forwarding party and performs the                  Communication Diversion Service CFB.</p>																							
<p><b>Preconditions:</b>                  Originating user has subscribed to CUG                      <b>Options for registered and preferred CUG index:</b>                          Intra CUG restrictions: None designated (-OCB)                      <b>Options for public identity in use:</b>                          Preferential CUG: None designated                          Outgoing access: not allowed                  Forwarding user has subscribed to CUG                      <b>Options for public identity in use:</b>                          Incoming access: not allowed                  Forwarding user has subscribed to CDIV                      Communication Forwarding on Busy user (CFB)                  Originating party and forwarding party are in the same CUG</p>																							
<p><b>SIP header values:</b>                  INVITE1:                  &lt;cug&gt;                      &lt;cugCallOperation&gt;                          &lt;outgoingAccessRequest&gt;FALSE&lt;/outgoingAccessRequest&gt;                          &lt;cugIndex&gt;[registered CUG index]&lt;/cugIndex&gt;                      &lt;/cugCallOperation&gt;                  &lt;/cug&gt;</p>																							
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<b>TSS</b> CUG/Services/CDIV	<b>TP</b> CUG_N12_005	<b>CUG reference</b> clause 4.6.7.2	<b>Selection expression</b> PICS 4.7.1/8																																			
<p><b>Test purpose</b>  <i>CUG with OA not allowed: Call setup between originating party and forwarded-to party, CFB successful.</i>                  Ensure that on receipt of an INVITE request containing an xml element <b>cug</b> with                      cugCallOperation containing                          registered CUGIndex,                  the SUT checks the CUG restrictions for the originating party, the forwarding party and the forwarded-to party (CFB) and the communication to the forwarded-to party is successful.</p>																																						
<p><b>Preconditions:</b>                  Originating user has subscribed to CUG                      <b>Options for registered and preferred CUG index:</b>                          Intra CUG restrictions: None designated (-OCB)                      <b>Options for public identity in use:</b>                          Preferential CUG: None designated                          Outgoing access: not allowed                  Forwarding user has subscribed to CUG                      <b>Options for public identity in use:</b>                          Incoming access: not allowed                  Forwarding user has subscribed to CDIV                      Communication Forwarding on Busy user (CFB)                  Forwarded-to user has subscribed to CUG                      <b>Options for public identity in use:</b>                          Incoming access: not allowed                  Originating party and forwarding party are in the same CUG                  Originating party and forwarded-to party are in the same CUG</p>																																						
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<b>TSS</b> CUG/Services/CDIV	<b>TP</b> CUG_N12_006	<b>CUG reference</b> clause 4.6.7.2	<b>Selection expression</b> PICS 4.7.1/8																														
<p><b>Test purpose</b>  <i>CUG with OA not allowed: Call setup between originating party and forwarded-to party, CFB unsuccessful.</i>                  Ensure that on receipt of an INVITE request containing an xml element <b>cug</b> with                      cugCallOperation containing                      registered CUGIndex,                  the SUT checks the CUG restrictions for the originating party, the forwarding party and the forwarded-to party (CFB) and the communication to the forwarded-to party is unsuccessful. The SUT rejects the INVITE request by sending a 403 Forbidden due to not matched CUG data.</p>																																	
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<b>TSS</b> CUG/Services/CDIV	<b>TP</b> CUG_N12_007	<b>CUG reference</b> clause 4.6.7.3	<b>Selection expression</b> PICS 4.7.1/8																												
<p><b>Test purpose</b>  <i>CUG with OA not allowed: Call setup between originating party and forwarding party, CFNR successful.</i>                  Ensure that on receipt of an INVITE request containing an xml element <b>cug</b> with                      cugCallOperation containing                          registered CUGIndex,                  the SUT checks the CUG restrictions for the originating party and the forwarding party and performs the                  Communication Diversion Service CFNR.</p>																															
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<b>TSS</b> CUG/Services/CDIV	<b>TP</b> CUG_N12_008	<b>CUG reference</b> clause 4.6.7.3	<b>Selection expression</b> PICS 4.7.1/8																												
<p><b>Test purpose</b>  <i>CUG with OA not allowed: Call setup between originating party and forwarded-to party, CFNR successful.</i>                  Ensure that on receipt of an INVITE request containing an xml element <b>cug</b> with                      cugCallOperation containing                      registered CUGIndex,                  the SUT checks the CUG restrictions for the originating party, the forwarding party and the forwarded-to party (CFNR) and the communication to the forwarded-to party is successful.</p>																															
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INVITE1	→			→ INVITE2																											
				← 180 Ringing																											
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TSS CUG/Services/CDIV	TP CUG_N12_009	CUG reference clause 4.6.7.3	Selection expression PICS 4.7.1/8															
<p><b>Test purpose</b>  <i>CUG with OA not allowed: Call setup between originating party and forwarded-to party, CFNR unsuccessful.</i>            Ensure that on receipt of an INVITE request containing an xml element <b>cug</b> with                cugCallOperation containing                registered CUGIndex,            the SUT checks the CUG restrictions for the originating party, the forwarding party and the forwarded-to party (CFNR) and the communication to the forwarded-to party is unsuccessful. The SUT rejects the INVITE request by sending a 403 Forbidden due to not matched CUG data.</p>																		
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<b>TSS</b> CUG/Services/CDIV	<b>TP</b> CUG_N12_013	<b>CUG reference</b> clause 4.6.7.5	<b>Selection expression</b> PICS 4.7.1/8																					
<b>Test purpose</b> CUG with OA not allowed: Call setup between originating party and forwarding party, CNRc successful. Ensure that on receipt of an INVITE request containing an xml element <b>cug</b> with cugCallOperation containing registered CUGIndex, the SUT checks the CUG restrictions for the originating party and the forwarding party and performs the Communication Diversion Service CFNRc.																								
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INVITE1	→		→	INVITE2																				
					→	INVITE3																		

<b>TSS</b> CUG/Services/CDIV	<b>TP</b> CUG_N12_014	<b>CUG reference</b> clause 4.6.7.5	<b>Selection expression</b> PICS 4.7.1/8																					
<b>Test purpose</b> CUG with OA not allowed: Call setup between originating party and forwarded-to party, CFNRc successful. Ensure that on receipt of an INVITE request containing an xml element <b>cug</b> with cugCallOperation containing registered CUGIndex, the SUT checks the CUG restrictions for the originating party, the forwarding party and the forwarded-to party (CFNRc) and the communication to the forwarded-to party is successful.																								
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INVITE1	→			INVITE2																				
					→	INVITE3																		

<b>TSS</b> CUG/Services/CDIV	<b>TP</b> CUG_N12_015	<b>CUG reference</b> clause 4.6.7.5	<b>Selection expression</b> PICS 4.7.1/8																				
<p><b>Test purpose</b>  <i>CUG with OA not allowed: Call setup between originating party and forwarded-to party, CFNRc unsuccessful.</i>                  Ensure that on receipt of an INVITE request containing an xml element <b>cug</b> with                      cugCallOperation containing                      registered CUGIndex,                  the SUT checks the CUG restrictions for the originating party, the forwarding party and the forwarded-to party (CFNRc) and the communication to the forwarded-to party is unsuccessful. The SUT rejects the INVITE request by sending a 403 Forbidden due to not matched CUG data.</p>																							
<p><b>Preconditions:</b>                  Originating user has subscribed to CUG                      <b>Options for registered and preferred CUG index:</b>                      Intra CUG restrictions: None designated (-OCB)                      <b>Options for public identity in use:</b>                      Preferential CUG: None designated                      Outgoing access: not allowed                  Forwarding user has subscribed to CUG                      <b>Options for public identity in use:</b>                      Incoming access: not allowed                  Forwarding user has subscribed to CDIV                      Communication Forwarding on Subscriber Not Reachable (CFNRc)                  Forwarded-to user has subscribed to CUG                      <b>Options for public identity in use:</b>                      Incoming access: not allowed                  Originating party and forwarding party are in the same CUG                  Originating party and forwarded-to party are in different CUG</p>																							
<p><b>SIP header values:</b>                  INVITE1:                  &lt;cug&gt;                      &lt;cugCallOperation&gt;                          &lt;outgoingAccessRequest&gt;FALSE&lt;/outgoingAccessRequest&gt;                          &lt;cugIndex&gt;[registered CUG index]&lt;/cugIndex&gt;                      &lt;/cugCallOperation&gt;                  &lt;/cug&gt;                  403 Forbidden                      Reason: Q.850;cause=87</p>																							
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<b>Test equipment (Gm)</b>		<b>AS</b>	<b>Test equipment (Gm)</b>	<b>Test equipment (Gm)</b>																			
INVITE1	→		INVITE2																				
403 Forbidden	←																						
ACK	→																						

<b>TSS</b> CUG/Services/CDIV	<b>TP</b> CUG_N12_016	<b>CUG reference</b> clause 4.6.7.6	<b>Selection expression</b> PICS 4.7.1/8																																				
<b>Test purpose</b> <i>CUG with OA not allowed: Call setup between originating party and deflecting party, CD successful.</i> Ensure that on receipt of an INVITE request containing an xml element <b>cug</b> with cugCallOperation containing registered CUGIndex, the SUT checks the CUG restrictions for the originating party and the deflecting party and performs the Communication Diversion Service CD.																																							
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered and preferred CUG index:</b> Intra CUG restrictions: None designated (-OCB) <b>Options for public identity in use:</b> Preferential CUG: None designated Outgoing access: not allowed Forwarding user has subscribed to CUG <b>Options for public identity in use:</b> Incoming access: not allowed Deflecting user has subscribed to CDIV Communication Deflection (CD) Originating party and deflecting party are in the same CUG																																							
<b>SIP header values:</b> INVITE1: <cug> <cugCallOperation> <outgoingAccessRequest>FALSE</outgoingAccessRequest> <cugIndex>[registered CUG index]</cugIndex> </cugCallOperation> </cug>																																							
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<b>Test equipment (Gm)</b>		<b>AS</b>		<b>Test equipment (Gm)</b>	<b>Test equipment (ISC, Mw)</b>																																		
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				← 180 Ringing																																			
				← 302 Moved Temporarily																																			
				→ ACK																																			
					→ INVITE3																																		

<b>TSS</b> CUG/Services/CDIV	<b>TP</b> CUG_N12_017	<b>CUG reference</b> clause 4.6.7.6	<b>Selection expression</b> PICS 4.7.1/8																																										
<b>Test purpose</b> CUG with OA not allowed: Call setup between originating party and forwarded-to party, CD successful. Ensure that on receipt of an INVITE request containing an xml element <b>cug</b> with cugCallOperation containing registered CUGIndex, the SUT checks the CUG restrictions for the originating party, the deflecting party and the deflected-to party (CD) and the communication to the deflected-to party is successful.																																													
<b>Preconditions:</b> Originating user has subscribed to CUG <b>Options for registered and preferred CUG index:</b> Intra CUG restrictions: None designated (-OCB) <b>Options for public identity in use:</b> Preferential CUG: None designated Outgoing access: not allowed Deflecting user has subscribed to CUG <b>Options for public identity in use:</b> Incoming access: not allowed Deflected-to user has subscribed to CUG <b>Options for public identity in use:</b> Incoming access: not allowed Originating party and deflecting party are in the same CUG Originating party and deflected-to party are in the same CUG																																													
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<b>Test equipment (Gm)</b>	→	<b>AS</b>		<b>Test equipment (Gm)</b>		<b>Test equipment (Gm)</b>																																							
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<b>TSS</b> CUG/Services/CDIV	<b>TP</b> CUG_N12_018	<b>CUG reference</b> clause 4.6.7.6	<b>Selection expression</b> PICS 4.7.1/8																																			
<p><b>Test purpose</b>  <i>CUG with OA not allowed: Call setup between originating party and deflected-to party, CD unsuccessful.</i>                  Ensure that on receipt of an INVITE request containing an xml element <b>cug</b> with                      cugCallOperation containing                          registered CUGIndex,                  the SUT checks the CUG restrictions for the originating party, the deflecting party and the deflected-to party (CD) and the communication to the deflected-to party is unsuccessful. The SUT rejects the INVITE request by sending a 403 Forbidden due to not matched CUG data.</p>																																						
<p><b>Preconditions:</b>                  Originating user has subscribed to CUG                      <b>Options for registered and preferred CUG index:</b>                          Intra CUG restrictions: None designated (-OCB)                      <b>Options for public identity in use:</b>                          Preferential CUG: None designated                          Outgoing access: not allowed                  Deflecting user has subscribed to CUG                      <b>Options for public identity in use:</b>                          Incoming access: not allowed                  deflected-to user has subscribed to CUG                      <b>Options for public identity in use:</b>                          Incoming access: not allowed                  Originating party and deflecting party are in the same CUG                  Originating party and deflected-to party are in different CUG</p>																																						
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### 5.3.3 Explicit Communication Transfer (ECT)

TSS CUG/Services/ECT	TP CUG_N13_001	CUG reference clause 4.6.7.10	Selection expression PICS 4.7.1/9															
<p><b>Test purpose</b>  <i>CUG with OA not allowed: Communication transfer - transferor and transferee in the same CUG, successful.</i>                      Ensure that on receipt of an INVITE request containing an xml element <b>cug</b> with                          cugCallOperation containing                              registered CUGIndex,                      the SUT checks the CUG restrictions for the transferor and the transferee. The communication is successful</p>																		
<p><b>Preconditions:</b>                      Transferor has subscribed to CUG                          <b>Options for registered and preferred CUG index:</b>                              Intra CUG restrictions: None designated (-OCB)                          <b>Options for public identity in use:</b>                              Preferential CUG: None designated                              Outgoing access: not allowed                      Transferee has subscribed to CUG                          <b>Options for registered and preferred CUG index:</b>                              Intra CUG restrictions: None designated (-OCB)                          <b>Options for public identity in use:</b>                              Preferential CUG: None designated                              Outgoing access: not allowed                      Transferor and transferee are in the same CUG</p>																		
<p><b>SIP header values:</b>                      INVITE:                      Request Line &lt;conference URI&gt;                      &lt;cug&gt;                          &lt;cugCallOperation&gt;                              &lt;outgoingAccessRequest&gt;FALSE&lt;/outgoingAccessRequest&gt;                              &lt;cugIndex&gt;[registered CUG index]&lt;/cugIndex&gt;                          &lt;/cugCallOperation&gt;                      &lt;/cug&gt;</p>																		
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<b>TSS</b> CUG/Services/ECT	<b>TP</b> CUG_N13_001	<b>CUG reference</b> clause 4.6.7.10	<b>Selection expression</b> PICS 4.7.1/9																												
<p><b>Test purpose</b>  <i>CUG with OA not allowed: Call Communication transfer transferee and transfer target in the same CUG, successful blind transfer.</i>                  Ensure that on receipt of an INVITE request containing an xml element <b>cug</b> with                      cugCallOperation containing                          registered CUGIndex,                  the SUT checks the CUG restrictions for the transferee and the transfer target and performs the Communication transfer Service (Blind transfer).</p>																															
<p><b>Preconditions:</b>                  Transferor has subscribed to CUG                      <b>Options for registered and preferred CUG index:</b>                      Intra CUG restrictions: None designated (-OCB)                      <b>Options for public identity in use:</b>                      Preferential CUG: None designated                      Outgoing access: not allowed                  Transferee has subscribed to CUG                      <b>Options for registered and preferred CUG index:</b>                      Intra CUG restrictions: None designated (-OCB)                      <b>Options for public identity in use:</b>                      Preferential CUG: None designated                      Outgoing access: not allowed                  Transferor and transferee are in the same CUG</p>																															
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<b>TSS</b> CUG/Services/ECT	<b>TP</b> CUG_N13_001	<b>CUG reference</b> clause 4.6.7.10	<b>Selection expression</b> PICS 4.7.1/9																				
<p><b>Test purpose</b>  <i>CUG with OA not allowed: Call Communication transfer transferee and transfer target in the same CUG, successful assured transfer.</i>                  Ensure that on receipt of an INVITE request containing an xml element <b>cug</b> with                      cugCallOperation containing                          registered CUGIndex,                  the SUT checks the CUG restrictions for the transferee and the transfer target and performs the Communication transfer Service (assured transfer).</p>																							
<p><b>Preconditions:</b>                  Transferor has subscribed to CUG                      <b>Options for registered and preferred CUG index:</b>                      Intra CUG restrictions: None designated (-OCB)                      <b>Options for public identity in use:</b>                      Preferential CUG: None designated                      Outgoing access: not allowed                  Transferee has subscribed to CUG                      <b>Options for registered and preferred CUG index:</b>                      Intra CUG restrictions: None designated (-OCB)                      <b>Options for public identity in use:</b>                      Preferential CUG: None designated                      Outgoing access: not allowed                  Transferor and transferee are in the same CUG</p>																							
<p><b>SIP header values:</b>                  INVITE1:                  Request Line &lt;conference URI&gt;                  &lt;cug&gt;                      &lt;cugCallOperation&gt;                          &lt;outgoingAccessRequest&gt;FALSE&lt;/outgoingAccessRequest&gt;                          &lt;cugIndex&gt;[registered CUG index]&lt;/cugIndex&gt;                      &lt;/cugCallOperation&gt;                  &lt;/cug&gt;</p>																							
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<b>TSS</b> CUG/Services/ECT	<b>TP</b> CUG_N13_001	<b>CUG reference</b> clause 4.6.7.10	<b>Selection expression</b> PICS 4.7.1/9																								
<p><b>Test purpose</b>  <i>CUG with OA not allowed: Call Communication transfer transferee and transfer target in the same CUG, successful consultative transfer.</i>                  Ensure that on receipt of an INVITE request containing an xml element <b>cug</b> with                      cugCallOperation containing                          registered CUGIndex,                  the SUT checks the CUG restrictions for the transferee and the transfer target and performs the Communication transfer Service (assured transfer).</p>																											
<p><b>Preconditions:</b>                  Transferor has subscribed to CUG                      <b>Options for registered and preferred CUG index:</b>                      Intra CUG restrictions: None designated (-OCB)                      <b>Options for public identity in use:</b>                      Preferential CUG: None designated                      Outgoing access: not allowed                  Transferee has subscribed to CUG                      <b>Options for registered and preferred CUG index:</b>                      Intra CUG restrictions: None designated (-OCB)                      <b>Options for public identity in use:</b>                      Preferential CUG: None designated                      Outgoing access: not allowed                  Transferor and transferee are in the same CUG</p>																											
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# History

<b>Document history</b>		
V1.1.1	July 2013	Publication
V2.1.1	January 2019	Publication