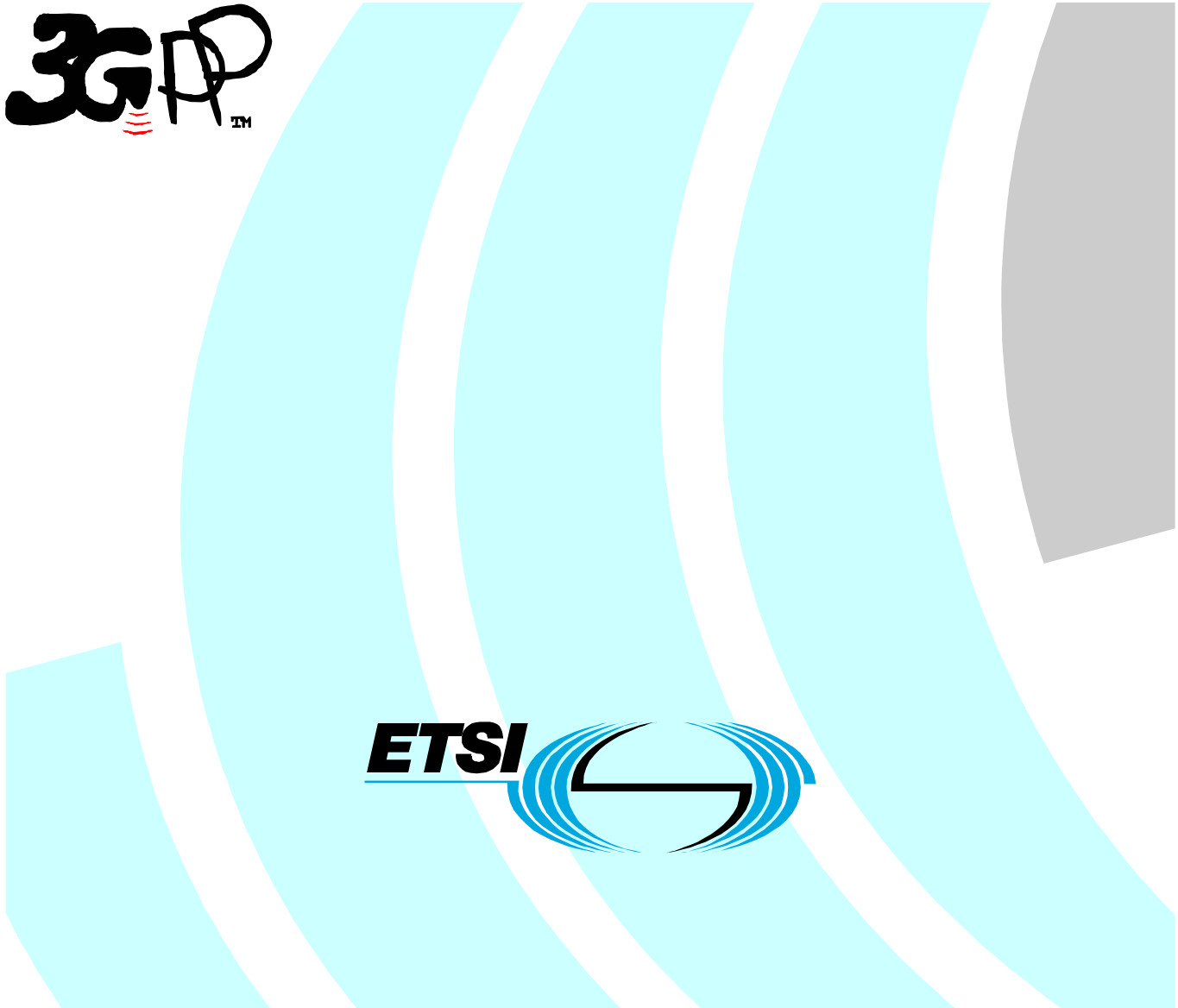
ETSI TS 129 205 V5.0.0 (2002-06)

Technical Specification

**Universal Mobile Telecommunications System (UMTS);
Application of Q.1900 series to bearer-independent circuit-switched core network architecture;
Stage 3
(3GPP TS 29.205 version 5.0.0 Release 5)**



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Foreword

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

The present document may refer to technical specifications or reports using their 3GPP identities, UMTS identities or GSM identities. These should be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between GSM, UMTS, 3GPP and ETSI identities can be found under www.etsi.org/key .

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:

Version x.y.z

where:

- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
  - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

1 Scope

The present document describes the protocols to be used when ITU-T Q.1902 "Bearer Independent Call Control" is used as call control protocol in a 3GPP Bearer Independent CS core network 3GPP TS 23.205 [1] The Q.1902 operates between (G)MSC servers .The BICC architecture as described in ITU-T Q.1902 [6]-[10] consists of a number of protocols. The following types of protocols are described: call control protocol, bearer control protocols and a resource control protocol for this architecture. The architecture complies with the requirements imposed by 3GPP TS 23.205 [1] and TS 23.153 [2].

The present document is valid for a 3rd generation PLMN (UMTS) complying with Release 4 and later.

Note: Q.1902 can be used in other network architectures than the one defined in 3GPP TS 23.205 [1]

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 TS 23.205: "Bearer Independent CS Core Network – Stage 2"

[2] 3GPP TS 23153 "Out of Band Transcoder Control - Stage 2"

[3] 3GPP TS 29.232 "Media Gateway Controller (MGC) – Media Gateway (MGW) Interface; Stage 3"

[4] 3GGP TS 29.414 "Core Network Nb Data Transport and Signalling Transport"

[5] ITU-T Q.765.5: "Application Transport Mechanism"

[6] ITU-T Q.1902.1: "Bearer Independent Call Control CS2 Functional Description"

[7] ITU-T Q.1902.2: "Bearer Independent Call Control CS2 General Functions of Messages and Signals"

[8] ITU-T Q.1902.3: "Bearer Independent Call Control CS2 Formats and Codes"

[9] ITU-T Q.1902.4: "Bearer Independent Call Control CS2 Basic Call Procedures"

[10] ITU-T Q.1902.5: "Exceptions to the Application Transport Mechanism in the Context of Bearer Independent Call Control"

[11] ITU-T Q.1902.5: “Generic Signalling Procedures and Support of the ISDN User Part Supplementary Services with the Bearer Independent Call Control Protocol

[12] ITU-T Q.1950 "Call Bearer Control Protocol"

[13] ITU-T Q.2630.1-2: "AAL type 2 signalling protocol”

[14] ITU-T Q.1990 "BICC tunnelling control protocol"

[15] ITU-T Q.1970 "IP Bearer Control protocol"

[16] ITU-T Q.1912.1 "ISUP-BICC Interworking"

[17] ITU-T Q.1912.2 "Interworking between selected Signalling System (PSTN Access DSS1, C5, R1, R2, TUP) AND THE Bearer Independent Call Control Protocol"

[18] ITU-T Q.2150.0 "Generic Signalling Transport Service"

[19] ITU-T Q.2150.1 "Signalling Transport Converter MTP and MTP3 B".

[20] ITU-T Recommendation Q.2150.3 "Signalling Transport Converter on SCTP".

[21] ITU-T H.248: "Media Gateway Control Protocol" (06/00)

[22] 3GPP TS 29.202: "SS7 signalling transport in core network"

Editors note: The references to the Q.19XX and Q.2150.X recommendations will be replaced by an URL pointing to the 3GPP web. These references will become dated references to those specifications when decided.

3 Definitions, symbols and abbreviations

3.1 Definitions

3.2 Symbols

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

Nc	Interface between the(G)MSC servers.
Mc	Interface between the server and the media gateway.
Nb	Interface between media gateways (MGW).

3.3 Abbreviations

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

BICC	Bearer Independent Call Control
MGC	Media Gateway Controller
AAL	ATM Adaptation layer
STC	Signalling Transport Converter
SCTP	Stream Control Transmission Protocol
MTP	Message Transfer Part
DSS 1	Digital Signalling System number 1
R1	Regional Signalling System 1
R2	Regional Signalling System 2
TUP	Telephony User Part
C5	CCITT signalling system number 5
M3UA	MTP3 – User Adaptation Layer

4 Protocols

Implementations providing any of the interfaces or protocols identified in the subclauses below shall implement the requirements of the specifications identified in those subclauses.

Call control protocol (Nc interface)

Q.1902.1	BICC PROTOCOL (CS2) FUNCTIONAL DESCRIPTION [6]
Q.1902.2	BICC PROTOCOL (CS2) AND SIGNALLING SUSTEM NO 7 ISUP GENERAL FUNCTIONS OF MESSAGES AND PARAMETERS [7]
Q.1902.3	BICC PROTOCOL (CS2) AND SINGALLING SYSTEM NO 7 ISUP FORMATS AND CODES [8]
Q.1902.4	BICC BASIC CALL PROCEDURES [9]
Q.1902.5	EXCEPTIONS TO THE APM IN THE CONTEXT OF BICC AMENDMENT TO Q.765.5 FOR BICC CS2 [10]
Q.1902.6	GENERIC SIGNALLING PROCEDURES AND SUPPORT OF THE ISDN USER PART SUPPLEMENTARY SERVICES WITH THE BEARER INDEPENDENT CALL CONTROL PROTOCOL [11]

4.2 Interworking with other protocols

Q.1912.1	ISUP-BICC INTERWORKING[16]
Q.19.12.2	INTERWORKING BETWEEN SELECTED SIGNALLING SYSTEMS (PSTN ACCESS DSS1 C5 R1 R2 TUP) AND THE BEARER INDEPENDENT CALL CONTROL PROTOCOL[17]

4.3 Resource control protocol (G)MSC and MGW (Mc Interface)

3GGP TS.29232.	Media Gateway Controller (MGC) – Media Gateway (MGW) Interface;Stage 3 [3]

4.3 Bearer control protocol between MGWs (Nb interface)

3GPP TS.29.414	IP bearer control protocol [15] , BICC tunneling protocol [14] , "AAL type 2 signalling protocol (Q.2630.1-2) [13].

4.5 Signalling Transport

4.5.1 Call Control protocols

Q.2150.0	Generic Signalling Transport Service [18]
Q.2150.1	Signalling Transport Converter on MTP3 and MTP3b[19]
Q.2150.3	Signalling Transport Converter on SCTP. [20] **Note: Q.2150.3 has failed approval in ITU SG 11.**
3GPP TS 29.202	SS7 signalling transport in core network . [22] Annex A: SS7 MTP3-User Adaption Layer (M3UA).

4.5.2 Resource control protocol (G)MSC and MGW (Mc Interface)

3GGP TS.29232.	**Media Gateway Controller (MGC) – Media Gateway (MGW) Interface;Stage 3 [3] including H.248 [21] Annex H "Transport over SCTP", H.248 [21] Annex I "Transport over ATM" , and 3GPP TS 29.202 "SS7 signalling transport in core network" [22]. Annex A: SS7 MTP3-User Adaption Layer (M3UA).**

4.5.3 Bearer control protocol between MGWs (Nb interface)

3GPP TS.29.414	Core Network Nb Data Transport and signalling transport. [4] including ITU-T Q.2630.1-2: AAL type 2 signalling protocol **[**13] and the tunnel-up and tunnel-down procedure in 29.232 [31

Annex A (informative): Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
17/1/01	CN3/CN4 #66 Beijing			0.1.	New Document approved	-	0.1.0
15/2/01	Ad hoc CN 4#6 in Madrid			0.2	Revised Document approved	0.1.0	0.2.0
01/3/01	CN 4 #7 Sophia—Antopolis			0.3	Forwarded to TSG CN Plenary meeting #11 for approval	0.2.0	2.0.0
03/2001	CN#11	NP-010083			Modifications made during CN#11	2.0.0	2.1.0
03/2001	CN#11	NP-010214			Approved in CN#11	2.1.0	4.0.0
06/2001	CN#12	NP-010285	001	1	Changes to provide interworking between signalling tansport	4.0.0	4.1.0
09/2001	CN#13				Editorial clean up	4.1.0	4.2.0
09/2001	CN#13	NP-010452	002		Mc signalling transport in IP environment	4.1.0	4.2.0
09/2001	CN#13	NP-010452	003	1	BICC signalling transport in IP enviroment	4.1.0	4.2.0
09/2001	CN#13	NP-010452	004		Status of ITU recommendation Q.2150.3	4.1.0	4.2.0
06/2002	CN#16				Rel-5 created after CN#16	4.2.0	5.0.0

History

Document history		
V5.0.0	June 2002	Publication