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Supplement 9

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SERIES Q: SWITCHING AND SIGNALLING

Broadband ISDN

**Technical report TRQ.2000: Roadmap for the
TRQ.2xxx-series technical reports**

ITU-T Q-series Recommendations – Supplement 9

(Formerly CCITT Recommendations)

ITU-T Q-SERIES RECOMMENDATIONS
SWITCHING AND SIGNALLING

SIGNALLING IN THE INTERNATIONAL MANUAL SERVICE	Q.1–Q.3
INTERNATIONAL AUTOMATIC AND SEMI-AUTOMATIC WORKING	Q.4–Q.59
FUNCTIONS AND INFORMATION FLOWS FOR SERVICES IN THE ISDN	Q.60–Q.99
CLAUSES APPLICABLE TO ITU-T STANDARD SYSTEMS	Q.100–Q.119
SPECIFICATIONS OF SIGNALLING SYSTEMS No. 4 AND No. 5	Q.120–Q.249
SPECIFICATIONS OF SIGNALLING SYSTEM No. 6	Q.250–Q.309
SPECIFICATIONS OF SIGNALLING SYSTEM R1	Q.310–Q.399
SPECIFICATIONS OF SIGNALLING SYSTEM R2	Q.400–Q.499
DIGITAL EXCHANGES	Q.500–Q.599
INTERWORKING OF SIGNALLING SYSTEMS	Q.600–Q.699
SPECIFICATIONS OF SIGNALLING SYSTEM No. 7	Q.700–Q.799
Q3 INTERFACE	Q.800–Q.849
DIGITAL SUBSCRIBER SIGNALLING SYSTEM No. 1	Q.850–Q.999
PUBLIC LAND MOBILE NETWORK	Q.1000–Q.1099
INTERWORKING WITH SATELLITE MOBILE SYSTEMS	Q.1100–Q.1199
INTELLIGENT NETWORK	Q.1200–Q.1699
SIGNALLING REQUIREMENTS AND PROTOCOLS FOR IMT-2000	Q.1700–Q.1799
BROADBAND ISDN	Q.2000–Q.2999

For further details, please refer to the list of ITU-T Recommendations.

Supplement 9 to ITU-T Q-series Recommendations

Technical report TRQ.2000: Roadmap for the TRQ.2xxx-series technical reports

Summary

This Supplement specifies the index for the TRQ.2xxx-series Technical Reports.

Source

Supplement 9 to ITU-T Q.2000-series Recommendations was revised by ITU-T Study Group 11 (2001-2004) and approved under the WTSA Resolution 5 procedure on 6 December 2000.

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this publication, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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CONTENTS

	Page
1 Scope.....	1
2 References.....	1
3 Definitions	1
4 Abbreviations.....	1
5 Overview.....	1
6 Roadmap	2
7 Signalling capabilities to Supplement cross-reference	3
7.1 Coordinated call control and bearer control signalling requirements – Root-party coordinated call and bearer control.....	3
7.2 Coordinated call control and bearer control signalling requirements – Leaf-party coordinated call and bearer control.....	4
7.3 Coordinated call control and bearer control signalling requirements – Third-party coordinated call and bearer control.....	5
7.4 Coordinated call control and bearer control signalling requirements – Leaf-initiated join coordinated call and bearer control.....	6
7.5 Signalling requirements for the support of narrowband services via broadband transport technologies (CS1)	6
7.6 Signalling requirements for the support of narrowband services via broadband transport technologies – General requirements and information flows (CS2)	7
7.7 Call control signalling requirements – Party call control	8
7.8 Call control signalling requirements – Join call control	8
7.9 Bearer control signalling requirements – Root-party bearer control	9
7.10 Bearer control signalling requirements – Leaf-party bearer control.....	10
7.11 Bearer control signalling requirements – Third-party bearer control	10
7.12 Transport control signalling requirements – Signalling requirements for AAL type 2 link control Capability Set 1	11
7.13 Transport control signalling requirements – Signalling requirements for AAL type 2 link control Capability Set 2	11
7.14 Transport control signalling requirements – Signalling requirements Capability Set 1 for the support of IP bearer control in BICC networks	12
7.15 Vertical inter control domain signalling requirements – Signalling requirements for the support of the Call-Bearer Control Interface (CS1).....	12

Supplement 9 to ITU-T Q-series Recommendations

Technical report TRQ.2000: Roadmap for the TRQ.2xxx-series technical reports

1 Scope

The scope of this Supplement is to provide an overall index for the TRQ.2xxx-series of Technical Reports which will be published as supplements to the Q series.

2 References

The following Technical Reports and other references contain provisions which, through reference in this text, constitute provisions of this Supplement. At the time of publication, the editions indicated were valid. All Supplements and other references are subject to revision; users of this Supplement are therefore encouraged to investigate the possibility of applying the most recent edition of the Supplements and other references listed below. A list of the currently valid ITU-T Recommendations and Supplements is regularly published.

- ITU-T Q-series Recommendations – Supplement 7 (1999), *Technical Report TRQ.2001: General aspects for the development of unified signalling requirements.*

3 Definitions

For the purposes of this Supplement, the following definitions apply:

3.1 call: An end-to-end communications service between two or more call party end points, or between one call party end point and its serving node.

3.2 network connection: An ATM network connection of topology types 1 to 6 as defined in Table A.1 of Annex A of Supplement 7 to ITU-T Q-series Recommendations, Technical Report TRQ.2001.

3.3 transport connection: An AAL type 2 connection of topology type 1 as defined in Table A.1 of Annex A of Supplement 7 to ITU-T Q-series Recommendations, Technical Report TRQ.2001.

4 Abbreviations

This Supplement uses the following abbreviations:

AAL	ATM Adaptation Layer
ATM	Asynchronous Transfer Mode

5 Overview

This Supplement acts as an index or roadmap for the TRQ.2xxx series of Technical Reports. In addition, this Supplement provides a cross-index of supported capabilities against signalling requirement supplements.

6 Roadmap

The organization of the Technical Report supplements within the scope of the TRQ.2xxx series are as follows:

TRQ. 200x General documents that are used to specify the common signalling requirement elements that are referenced in other TRQ-series reports.

TRQ.201x Interworking requirements between various signalling applications

TRQ.21xx Coordinated call control and bearer control signalling requirements

TRQ.22xx Call control signalling requirements

TRQ.23xx Bearer control signalling requirements

TRQ.24xx Transport control signalling requirements

TRQ.25xx Vertical inter control domain signalling requirements

The detailed roadmap of the TRQ Supplements series is contained in Table 6-1.

Table 6-1 – Roadmap of Technical Reports

TRQ series No.	Title of Supplement
TRQ.2000	Roadmap for the TRQ.2xxx-series technical reports
TRQ.2001	General aspects for the development of unified signalling requirements
TRQ.2002	Information flow elements
TRQ.2010	B-ISDN signalling interworking requirements
TRQ.210x	Coordinated call control and bearer control signalling requirements – Root-party coordinated call and bearer control
TRQ.211x	Coordinated call control and bearer control signalling requirements – Leaf-party coordinated call and bearer control
TRQ.212x	Coordinated call control and bearer control signalling requirements – Third-party coordinated call and bearer control
TRQ.213x	Coordinated call control and bearer control signalling requirements for leaf-initiated join service
TRQ.214x	Coordinated call control and bearer control signalling requirements for the support of narrowband services via broadband transport technologies – Originating party call and bearer coordinated call and bearer control
TRQ.220x	Call control signalling requirements – Party call control
TRQ.223x	Call control signalling requirements – Join Call service
TRQ.230x	Bearer control signalling requirements – Root-party bearer control
TRQ.231x	Bearer control signalling requirements – Leaf-party bearer control
TRQ.232x	Bearer control signalling requirements – Third-party bearer control
TRQ.240x	Transport control signalling requirements – Signalling requirements for AAL type 2 link control
TRQ.241x	Transport control signalling requirements – Signalling requirements for IP bearer control
TRQ.250x	Vertical inter control domain signalling requirements – Signalling requirements for Call Bearer Control Interface

7 Signalling capabilities to Supplement cross-reference

Mapping of Signalling Capabilities to TRQ Supplements of the 2000 series technical reports are as follows.

7.1 Coordinated call control and bearer control signalling requirements – Root-party coordinated call and bearer control

Table 7-1 describes the signalling capabilities that are contained in TRQ.2100.

Table 7-1 – Root-party Call Control Capabilities

	Network connection type
<p>Coordinated call and network connection establishment</p> <p>Two-party call establishment with one or more network connections</p> <p>Three- or more-party call establishment with one or more network connections</p> <p>Multicast address establishment with one or more network connections</p> <p>Any-cast address establishment with one or more network connections</p>	<p>Types 1, 2, 3 and 5</p> <p>Types 2, 3, and 5</p> <p>Types 2, 3 and 5</p> <p>Type 1</p>
<p>Addition of one or more new parties to an existing call with attachment to existing or new network connections</p> <p>Addition of one or more new parties with attachment to one or more existing connections</p> <p>Addition of one or more new parties with attachment to one or more new network connections</p>	<p>Types 2, 3 and 5</p> <p>Types 2, 3 and 5</p>
<p>Release one or more parties and their associated network connection branches from the call</p> <p>Release a party and its associated network connection branches from a two-party call</p> <p>Release one or more parties and their associated network connection branches from a three- or more-party call</p>	<p>Types 1, 2, 3 and 5</p> <p>Types 1, 2, 3 and 5</p>
<p>Call release with one or more parties and their associated network connection</p> <p>Release of a single-party call and its associated connections, requested by call owner</p> <p>Release of a two-party call and its associated connections, requested by call owner</p> <p>Release of a multi-party call and its associated connections, requested by the call owner</p> <p>Release of a two-party call and its associated connections requested by a non-call owner party</p> <p>Release of a multi-party call and its associated connections, requested by a non-call owner party</p>	<p>Types 1, 2, 3 and 5</p>

7.2 Coordinated call control and bearer control signalling requirements – Leaf-party coordinated call and bearer control

Table 7-2 describes the signalling capabilities that are contained in TRQ.2110.

Table 7-2 – Leaf-party Call Control Capabilities

	Network connection type
<p>Coordinated call and network connection establishment</p> <p>Two-party call establishment with one or more network connections</p> <p>Three- or more-party call establishment with one or more network connections</p> <p>Multicast address establishment with one or more network connections</p>	<p>Types 1, 2, 3 and 5</p> <p>Types 2, 3, and 5</p> <p>Types 2, 3 and 5</p>
<p>Addition of one or more new parties to an existing call with attachment to existing or new network connections</p> <p>Addition of one or more new parties with attachment to one or more existing connections</p> <p>Addition of one or more new parties with attachment to one or more new network connections</p>	<p>Types 2, 3 and 5</p> <p>Types 2, 3 and 5</p>
<p>Release one or more parties and their associated network connection branches from the call</p> <p>Release a party and its associated network connection branches from a two-party call</p> <p>Release one or more parties and their associated network connection branches from a three- or more-party call</p>	<p>Types 1, 2, 3 and 5</p> <p>Types 1, 2, 3 and 5</p>
<p>Call release with one or more parties and their associated network connection</p> <p>Release of a single-party call and its associated connections, requested by the call owner</p> <p>Release of a two-party call and its associated connections, requested by the call owner</p> <p>Release of a multi-party call and its associated connections, requested by the call owner</p> <p>Release of a two-party call and its associated connections requested by a non-call owner party</p> <p>Release of a multi-party call and its associated connections, requested by a non-call owner party</p>	<p>Types 1, 2, 3 and 5</p>

7.3 Coordinated call control and bearer control signalling requirements – Third-party coordinated call and bearer control

Table 7-3 describes the signalling capabilities that are contained in TRQ.2120.

Table 7-3 – Third-party Call Control Capabilities

	Network connection type
<p>Coordinated call and network connection establishment</p> <p>Two-party call establishment with one or more network connections</p> <p>Three- or more-party call establishment with one or more network connections</p> <p>Multicast address establishment with one or more network connections</p>	<p>Types 1, 2, 3 and 5</p> <p>Types 2, 3 and 5</p> <p>Types 2, 3 and 5</p>
<p>Addition of one or more new parties to an existing call with attachment to existing or new network connections</p> <p>Addition of one or more new parties with attachment to one or more existing connections</p> <p>Addition of one or more new parties with attachment to one or more new network connections</p>	<p>Types 2, 3 and 5</p> <p>Types 2, 3 and 5</p>
<p>Release one or more parties and their associated network connection branches from the call</p> <p>Release a party and its associated network connection branches from a two-party call</p> <p>Release one or more parties and their associated network connection branches from a three- or more-party call</p>	<p>Types 1, 2, 3 and 5</p> <p>Types 1, 2, 3 and 5</p>
<p>Call release with one or more parties and their associated network connection</p> <p>Release of a single-party call and its associated connections, requested by the call owner</p> <p>Release of a two-party call and its associated connections, requested by the call owner</p> <p>Release of a multi-party call and its associated connections, requested by the call owner</p> <p>Release of a two-party call and its associated connections requested by a non-call owner party</p> <p>Release of a multi-party call and its associated connections, requested by a non-call owner party</p>	<p>Types 1, 2, 3 and 5</p>

7.4 Coordinated call control and bearer control signalling requirements – Leaf-initiated join coordinated call and bearer control

Table 7-4 describes the signalling capabilities that are contained in TRQ.2130.

Table 7-4 – Leaf-Initiated Join Call Control Capabilities

	Network connection type
Coordinated call and network connection establishment Leaf-initiated call registration Leaf-initiated call creation	Types 1, 2, 3 and 5 Types 2, 3 and 5
Addition of one or more new parties to an existing call with attachment to existing connections Leaf Party Request to join active LIJ call and bearer	Types 2, 3 and 5
Release one or more parties and their associated network connection branches from the call Removal of leaf party requested by root party Leaf party requests to be released from the LIJ call	Types 1, 2, 3 and 5 Types 1, 2, 3 and 5
Call release with one or more parties and their associated network connection LIJ call and bearer clearing by root party	Types 1, 2, 3 and 5

7.5 Signalling requirements for the support of narrowband services via broadband transport technologies (CS1)

Table 7-5 describes the signalling capabilities that are contained in TRQ.2140.

Table 7-5 – Originating-party Call Control Capabilities

	Network connection type
Coordinated call and network connection establishment Two-party call establishment with one network connection. Establishment mode: Backwards and Forwards establishment of a new network connection or reuse of idle previously established connection	Type 1 (AAL Type 1, AAL Type 2 Bearer Transport)
Connection Codec Negotiation During call establishment with one network connection	Type 1 (AAL Type 1, AAL Type 2 Bearer Transport)
Connection Codec Modification After call and network connection have been established	Type 1 (AAL Type 1, AAL Type 2 Bearer Transport)
Call release and its associated network connection Release of a two-party call and its associated connection, requested by either party. Release of transport connection conditional on idle timer time-out. Idle timer time-out can be provisioned to have a value from zero to infinity	Type 1 (AAL Type 1, AAL Type 2, Bearer Transport)

7.6 Signalling requirements for the support of narrowband services via broadband transport technologies – General requirements and information flows (CS2)

Table 7-6 describes the signalling capabilities that are contained in TRQ.2141. These requirements are contained in two documents: TRQ.2141.0 contains the General requirements while the Information flows are contained in TRQ.2141.1.

Table 7-6 – Originating-party Call Control Capabilities

	Network connection type
<p>Coordinated call and network connection establishment</p> <p>Two-party call establishment with one network connection. Establishment mode: Backwards and Forwards establishment of a new network connection or reuse of idle previously established connection</p>	Type 1 (AAL Type 1, AAL Type 2, Structured AAL Type 1, IP Bearer Transport)
<p>Connection Codec Negotiation</p> <p>During call establishment with one network connection</p> <p>After call and network connection have been established including capability of modifying the network connection characteristics</p>	Type 1 (AAL Type 1, AAL Type 2, Structured AAL Type 1, IP Bearer Transport)
<p>Connection Codec Modification</p> <p>After call and network connection have been established including capability of modifying the network connection characteristics</p>	Type 1 (AAL Type 1, AAL Type 2, Structured AAL Type 1, IP Bearer Transport)
<p>Mid Connection Re-direction</p> <p>After call and connection have been completed, the connection may be re-routed to the same or a different Serving Node within the network</p> <p>After call and connection have been completed, the call and connection may be re-routed to a different party</p>	Type 1 (AAL Type 1, AAL Type 2, Structured AAL Type 1, IP Bearer Transport)
<p>Call release and its associated network connection</p> <p>Release of a two-party call and its associated connection, requested by either party. Release of transport connection conditional on idle timer time-out. Idle timer time-out can be provisioned to have a value from zero to infinity.</p>	Type 1 (AAL Type 1, AAL Type 2, Structured AAL Type 1, IP Bearer Transport)
<p>Creation of an open interface between call control and bearer control</p> <p>Bearer transport independent requests, notification, and responses associated with the implementation of the call and bearer services listed above</p> <p>Multiple Call Control Entities interaction with a single BIWF called a shared BIWF capability</p> <p>Delayed BIWF selection when Forward establishment is used</p>	NA

7.7 Call control signalling requirements – Party call control

Table 7-7 describes the signalling capabilities that are contained in TRQ.2200.

Table 7-7 – Party call control capability

	Network connection type
Call establishment without any network connections	
Establish a call with two parties	NA
Establish a call with three or more parties	NA
Addition of one or more parties without network connections to an existing call	
Add one new party to an existing call requested by any party already associated with that call	NA
Add two or more new parties to an existing call requested by any party already associated with that call	NA
Release of a party without network connections from an existing call	
Release of a party from an existing two party call	NA
Release of a party from an existing three or more party call	NA
Release of a call without Network Connections	
Release of a single-party call requested by the call owner	NA
Release of a two-party call requested by the call owner	NA
Release of a multi-party call requested by the call owner	NA
Release of a two-party call requested by a non-call owner party	NA
Release of a multi-party call requested by a non-call owner party	NA

7.8 Call control signalling requirements – Join call control

Table 7-8 describes the signalling capabilities that are contained in TRQ.2230.

Table 7-8 – Join call control capability

	Network connection type
Call establishment without any network connections	
Creation of a registered call	NA
Join a registered call with no active parties	NA
Join a call with one or more parties	NA
Release of a party without network connections from an existing call	
Release of a party from an existing registered call	NA

7.9 Bearer control signalling requirements – Root-party bearer control

Table 7-9 describes the signalling capabilities that are contained in TRQ.2300.

Table 7-9 – Root-party Call Control Capabilities

	Network connection type
Addition of one or more new network connections to an existing call requested by the party that will be the root of the new network connection(s) Addition of one new network connections to an existing call Addition of one or more new network connections to an existing call	Types 1, 2, 3 and 5 Types 1, 2, 3 and 5
Attachment of one or more existing parties to one or more existing network connections requested by the party associated with the root of the existing network connection Attach one or more existing parties to one or more existing connections Attach one or more existing parties to one or more new connections	Types 1, 2, 3 and 5 Types 1, 2, 3 and 5
Detachment of one or more parties from one or more connections by either the call owner, network connection owner or the party owner Detach a party from its associated network connection branches in a two-party call Detach one or more parties from their associated network connection branches in a three- or more-party call	Types 1, 2, 3 and 5 Types 1, 2, 3 and 5
Removal of one or more connections from a call requested by the network requested by either the connection owner or call owner Removal of one or more network connections from a two-party call Removal of one or more network connections from a three- or more-party call	Types 1, 2, 3 and 5 Types 1, 2, 3 and 5

7.10 Bearer control signalling requirements – Leaf-party bearer control

Table 7-10 describes the signalling capabilities that are contained in TRQ.2310.

Table 7-10 – Leaf-party Call Control Capabilities

	Network connection type
Addition of one or more new network connections to an existing call requested by the party that will be the leaf of the new network connection(s) Addition of one new network connections to an existing call Addition of one or more new network connections to an existing call	Types 1, 2, 3 and 5 Types 1, 2, 3 and 5
Attachment of one or more existing parties to one or more existing network connections requested by the party associated with a leaf of the existing network connection Attach one or more existing parties to one or more existing connections Attach one or more existing parties to one or more new connections	Types 1, 2, 3 and 5 Types 1, 2, 3 and 5
Detachment of one or more parties from one or more connections by either the call owner, network connection owner or the party owner Detach a party from its associated network connection branches in a two-party call Detach one or more parties from their associated network connection branches in a three- or more-party call	Types 1, 2, 3 and 5 Types 1, 2, 3 and 5
Removal of one or more connections from a call requested by the network requested by either the connection owner or call owner Removal of one or more network connections from a two-party call Removal of one or more network connections from a three- or more-party call	Types 1, 2, 3 and 5 Types 1, 2, 3 and 5

7.11 Bearer control signalling requirements – Third-party bearer control

Table 7-11 describes the signalling capabilities that are contained in TRQ.2320.

Table 7-11 – Third-party Call Control Capabilities

	Network connection type
Addition of one or more new network connections to an existing call requested by a party that will not be attached to the new network connection(s) Addition of one new network connections to an existing call Addition of one or more new network connections to an existing call	Types 1, 2, 3 and 5 Types 1, 2, 3 and 5
Attachment of one or more existing parties to one or more existing network connections requested by a party that is not attached to the existing network connection Attach one or more existing parties to one or more existing connections Attach one or more existing parties to one or more new connections	Types 1, 2, 3 and 5 Types 1, 2, 3 and 5

Table 7-11 – Third-party Call Control Capabilities (concluded)

	Network connection type
Detachment of one or more parties from one or more connections by either the call owner, network connection owner or the party owner Detach a party from its associated network connection branches in a two-party call Detach one or more parties from their associated network connection branches in a three- or more-party call	Types 1, 2, 3 and 5 Types 1, 2, 3 and 5
Removal of one or more connections from a call requested by the network requested by either the connection owner or call owner Removal of one or more network connections from a two-party call Removal of one or more network connections from a three- or more-party call	Types 1, 2, 3 and 5 Types 1, 2, 3 and 5

7.12 Transport control signalling requirements – Signalling requirements for AAL type 2 link control Capability Set 1

Table 7-12 describes the signalling capabilities that are contained in TRQ.2400.

Table 7-12 – AAL type 2 Link Control Capabilities CS1

	Transport connection type
AAL type 2 connection establishment AAL type 2 connection establishment	Type 1
AAL type 2 connection release AAL type 2 connection release	Type 1

7.13 Transport control signalling requirements – Signalling requirements for AAL type 2 link control Capability Set 2

Table 7-13 describes the signalling capabilities that are contained in TRQ.2401.

Table 7-13 – AAL type 2 Link Control Capabilities CS2

	Transport connection type
AAL type 2 connection establishment AAL type 2 connection establishment	Type 1
AAL type 2 connection modification AAL type 2 connection modification of bandwidth characteristics	Type 1
AAL type 2 connection release AAL type 2 connection release	Type 1

7.14 Transport control signalling requirements – Signalling requirements Capability Set 1 for the support of IP bearer control in BICC networks

Table 7-14 describes the signalling capabilities that are contained in TRQ.2410.

Table 7-14 – IP Bearer Control Capabilities CS1

	Transport connection type
IP connection establishment IP connection establishment via "tunnel" transported by BICC protocol	Type 1
IP connection modification IP connection modification of bandwidth characteristics via "tunnel" transported by BICC protocol	Type 1
AAL type 2 connection release IP connection implicit release without any direct bearer control commands	Type 1

7.15 Vertical inter control domain signalling requirements – Signalling requirements for the support of the Call-Bearer Control Interface (CS1)

Table 7-15 describes the signalling capabilities that are contained in TRQ.2500.

Table 7-15 – Call-Bearer Control Capabilities CS1

	Network connection type
Successful connection establishment procedures Prepare termination for connection establishment Establish connection between two external terminations Reserve bearer connection between two terminations Place Termination into a send and receive communication configuration Modification of connection characteristics Conveyance of "tunnelled" information between two terminations	NA
Reuse of idle bearer connection Directive to reuse an idle connection in a new call & bearer action	NA
Establishment and modification of communication topologies between internal terminations Capability to isolate a termination from a context Capability to have a termination within a different context to another context Capability to modify the internal context communication arrangement	NA
Miscellaneous capabilities associated with a specified termination Echo Canceller procedures Tone insertion procedures Digit insertion procedures Announcement insertion procedures Digit detection procedures	NA

Table 7-15 – Call-Bearer Control Capabilities CS1 (concluded)

	Network connection type
General BIWF related procedures BIWF service change procedures Call Control Unit service change procedures BIWF or Termination unavailable Auditing of BIWF service capabilities	NA
Network connection release capabilities Release of network connection associated with the originating termination Release of network connection associated with the terminating termination	NA

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Series A	Organization of the work of ITU-T
Series B	Means of expression: definitions, symbols, classification
Series C	General telecommunication statistics
Series D	General tariff principles
Series E	Overall network operation, telephone service, service operation and human factors
Series F	Non-telephone telecommunication services
Series G	Transmission systems and media, digital systems and networks
Series H	Audiovisual and multimedia systems
Series I	Integrated services digital network
Series J	Transmission of television, sound programme and other multimedia signals
Series K	Protection against interference
Series L	Construction, installation and protection of cables and other elements of outside plant
Series M	TMN and network maintenance: international transmission systems, telephone circuits, telegraphy, facsimile and leased circuits
Series N	Maintenance: international sound programme and television transmission circuits
Series O	Specifications of measuring equipment
Series P	Telephone transmission quality, telephone installations, local line networks
Series Q	Switching and signalling
Series R	Telegraph transmission
Series S	Telegraph services terminal equipment
Series T	Terminals for telematic services
Series U	Telegraph switching
Series V	Data communication over the telephone network
Series X	Data networks and open system communications
Series Y	Global information infrastructure and Internet protocol aspects
Series Z	Languages and general software aspects for telecommunication systems