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Supplement 9

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SERIES Q: SWITCHING AND SIGNALLING

**Technical Report TRQ.2000: Roadmap for the
TRQ.2xxx-series Technical Reports**

ITU-T Q-series Recommendations – Supplement 9

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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-series Recommendations was agreed on 12 September 2003 by ITU-T Study Group 11 (2001-2004).

FOREWORD

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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

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

3 Definitions

This Supplement defines the following terms:

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/Supplement 7, 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/Supplement 7, 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.

TRQ.27xx Access Network Control Signalling Requirements.

TRQ.28xx Requirements for Signalling Interworking with IP Networks.

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.2003	Roadmap to the BICC protocol Recommendations, BICC interworking Recommendations, and BICC requirement Supplements
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	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
TRQ.270x	BICC Access Network Requirements
TRQ.280x	Requirements for Signalling Interworking with IP Networks

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 of one or more parties and their associated network connection branches from the call</p> <p>Release of a party and its associated network connection branches from a two-party call</p> <p>Release of 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 of one or more parties and their associated network connection branches from the call</p> <p>Release of a party and its associated network connection branches from a two-party call</p> <p>Release of 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 of one or more parties and their associated network connection branches from the call</p> <p>Release of a party and its associated network connection branches from a two-party call</p> <p>Release of 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 Leaf-Initiated Joint (LIJ) call and bearer	Types 2, 3 and 5
Release of 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 (CS-1)

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 (CS-2)

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 Bearer Interworking Function (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	
Establishment of a call with two parties	NA
Establishment of a call with three or more parties	NA
Addition of one or more parties without network connections to an existing call	
Addition of one new party to an existing call requested by any party already associated with that call	NA
Addition of 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
<p>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)</p> <p>Addition of one new network connection to an existing call</p> <p>Addition of one or more new network connections to an existing call</p>	<p>Types 1, 2, 3 and 5</p> <p>Types 1, 2, 3 and 5</p>
<p>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</p> <p>Attachment of one or more existing parties to one or more existing connections</p> <p>Attachment of one or more existing parties to one or more new connections</p>	<p>Types 1, 2, 3 and 5</p> <p>Types 1, 2, 3 and 5</p>
<p>Detachment of one or more parties from one or more connections by either the call owner, network connection owner or the party owner</p> <p>Detachment of a party from its associated network connection branches in a two-party call</p> <p>Detachment of one or more parties from their associated network connection branches in a three- or more-party call</p>	<p>Types 1, 2, 3 and 5</p> <p>Types 1, 2, 3 and 5</p>
<p>Removal of one or more connections from a call requested by the network requested by either the connection owner or call owner</p> <p>Removal of one or more network connections from a two-party call</p> <p>Removal of one or more network connections from a three- or more-party call</p>	<p>Types 1, 2, 3 and 5</p> <p>Types 1, 2, 3 and 5</p>

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
<p>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)</p> <p>Addition of one new network connection to an existing call</p> <p>Addition of one or more new network connections to an existing call</p>	<p>Types 1, 2, 3 and 5</p> <p>Types 1, 2, 3 and 5</p>
<p>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</p> <p>Attachment of one or more existing parties to one or more existing connections</p> <p>Attachment of one or more existing parties to one or more new connections</p>	<p>Types 1, 2, 3 and 5</p> <p>Types 1, 2, 3 and 5</p>
<p>Detachment of one or more parties from one or more connections by either the call owner, network connection owner or the party owner</p> <p>Detachment of a party from its associated network connection branches in a two-party call</p> <p>Detachment of one or more parties from their associated network connection branches in a three- or more-party call</p>	<p>Types 1, 2, 3 and 5</p> <p>Types 1, 2, 3 and 5</p>
<p>Removal of one or more connections from a call requested by the network requested by either the connection owner or call owner</p> <p>Removal of one or more network connections from a two-party call</p> <p>Removal of one or more network connections from a three- or more-party call</p>	<p>Types 1, 2, 3 and 5</p> <p>Types 1, 2, 3 and 5</p>

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 connection 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 Attachment of one or more existing parties to one or more existing connections Attachment of 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 Detachment of a party from its associated network connection branches in a two-party call Detachment of 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 (CS-1)

	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 (CS-2)

	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 for AAL type 2 link control (Capability Set 3)

Table 7-14 describes the signalling capabilities that are contained in TRQ.2402.

Table 7-14 – AAL type 2 link control capabilities (CS-3)

	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

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

Table 7-15 describes the signalling capabilities that are contained in TRQ.2410.

Table 7-15 – IP Bearer Control Capabilities (CS-1)

	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
IP connection release IP connection implicit release without any direct bearer control commands	Type 1

7.16 Transport control signalling requirements – signalling requirements for IP connection control in radio access networks (Capability Set 1)

Table 7-16 describes the signalling capabilities that are contained in TRQ.2415.

Table 7-16 – IP connection control in radio access networks capabilities (CS-1)

	Transport connection type
IP connection establishment IP connection establishment	Type 1
IP connection modification IP connection modification of bandwidth characteristics	Type 1
IP connection release IP connection release	Type 1

7.17 Vertical inter control domain signalling requirements – Signalling requirements for the support of the call-bearer control interface (CS-1)

Table 7-17 describes the signalling capabilities that are contained in TRQ.2500.

Table 7-17 – Call-bearer control capabilities (CS-1)

	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 and 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 7-17 – Call-bearer control capabilities (CS-1)

	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

7.18 BICC access network requirements

TRQ.2700 is a technical report on the procedures, information flows and information elements needed for supporting Access Networks in Bearer Independent Call Control (BICC). It defines the requirements for signalling to control connections across the Access Network.

7.19 Transport control signalling requirements – Signalling requirements for AAL type 2 to IP interworking capability set 1

The signalling capabilities that TRQ.2800 requires to be interworked are given in the following list:

- 1) Addressing;
- 2) Mapping of AAL type 2 link characteristics to IP Connection Characteristics;
- 3) Control of AAL type 2 to IP Connection Conversion;
- 4) Served user information;
- 5) Support of AAL type 2 Service Specific Convergence Sublayers;
- 6) Connection Resource Modification;
- 7) QoS;
- 8) Delay and Efficiency Requirements.

7.20 Requirements for interworking BICC/ISUP network with originating/destination networks based on session initiation protocol and session description protocol

The signalling capabilities that TRQ.2815 requires to be supported by an interworking serving node are:

SIP profiles for interworking between SIP and BICC/ISUP:

- 1) Profile A: Mapping of call and bearer control protocols;
- 2) Profile B: Mapping of call and bearer control protocols;
- 3) Sip profile C (interworking between SIP with MIME encoding of ISUP and BICC/ISUP): Mapping of call and bearer control protocols.

7.21 ATM-MPLS network interworking signalling requirements

The signalling capabilities that TRQ.2830 requires to be supported are:

Table 7-18 – ATM-MPLS network interworking capabilities

	Transport connection type
ATM connection establishment Connection establishment	Type 1
ATM connection release Connection release	Type 1

7.22 Roadmap to the BICC protocol Recommendations, BICC interworking Recommendations, and BICC requirement Supplements

TRQ.2003 presents an overview of the ITU-T Recommendations and Supplements that have been produced in the context of the Bearer Independent Call Control (BICC) protocol. Included is an index of Recommendations, which provide the detailed protocol descriptions.

SERIES OF ITU-T RECOMMENDATIONS

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Series B	Means of expression: definitions, symbols, classification
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