



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

Q.2632.1

(10/2003)

SERIES Q: SWITCHING AND SIGNALLING

Broadband ISDN – Common aspects of B-ISDN
application protocols for access signalling and network
signalling and interworking

**Interworking between AAL type 2 signalling
protocol Capability Set 2 and IP connection
control signalling protocol Capability Set 1**

ITU-T Recommendation Q.2632.1

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, 5, 6, R1 AND R2	Q.120–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
SPECIFICATIONS OF SIGNALLING RELATED TO BEARER INDEPENDENT CALL CONTROL (BICC)	Q.1900–Q.1999
BROADBAND ISDN	Q.2000–Q.2999
General aspects	Q.2000–Q.2099
Signalling ATM adaptation layer (SAAL)	Q.2100–Q.2199
Signalling network protocols	Q.2200–Q.2299
Common aspects of B-ISDN application protocols for access signalling and network signalling and interworking	Q.2600–Q.2699
B-ISDN application protocols for the network signalling	Q.2700–Q.2899
B-ISDN application protocols for access signalling	Q.2900–Q.2999

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

ITU-T Recommendation Q.2632.1

Interworking between AAL type 2 signalling protocol Capability Set 2 and IP connection control signalling protocol Capability Set 1

Summary

This Recommendation describes the interworking between the AAL type 2 signalling protocol and the IP connection control signalling protocol. This Recommendation describes the mapping tables and diagrams which support interworking between the two protocols for call set-up, modification and clear down.

Source

ITU-T Recommendation Q.2632.1 was approved by ITU-T Study Group 11 (2001-2004) under the ITU-T Recommendation A.8 procedure on 14 October 2003.

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

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure e.g. interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

INTELLECTUAL PROPERTY RIGHTS

ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

© ITU 2004

All rights reserved. No part of this publication may be reproduced, by any means whatsoever, without the prior written permission of ITU.

CONTENTS

Page

1	Scope	1
2	References.....	2
2.1	Normative References	2
2.2	Informative references.....	2
3	Abbreviations.....	2
4	General statements on interworking	4
5	Successful connection set-up	5
5.1	Mapping of the establish request message	5
5.2	Mapping of the establish confirm message	7
6	Unsuccessful connection set-up.....	8
6.1	Mapping of the RLC message	8
7	Connection release.....	9
7.1	Mapping of the REL message	9
7.2	Mapping of the RLC message	10
8	Successful modification.....	10
8.1	Mapping of the MOD message.....	10
8.2	Mapping of the MOA message.....	11
9	Unsuccessful modification	12
9.1	Mapping of the MOR message.....	12
10	Reset	13
10.1	Reset initiated in AAL type 2/IP network	13
10.2	Reset initiated by the IWU	15
11	Messages requiring no interworking	16
11.1	AAL type 2 messages.....	16
11.2	IPC messages.....	17
Appendix I – Interworking of AAL type 2 link characteristics and SSISU parameters with IPC IP transfer capabilities		17
I.0	Guidelines and definitions	17
I.1	Interworking for AAL type 2 to IP	19
I.2	Interworking for IP to AAL type 2.....	21

ITU-T Recommendation Q.2632.1

Interworking between AAL type 2 signalling protocol Capability Set 2 and IP connection control signalling protocol Capability Set 1

1 Scope

This Recommendation defines the interworking relationship between the AAL type 2 signalling protocol Capability Set 2 and the IP connection control signalling protocol. For the purpose of this interworking, AAL type 2 signalling is defined in ITU-T Rec. Q.2630.2 [1] and subject to restrictions stated in TRQ.2800 [3]. For the purpose of this interworking, IP Connection Control signalling is defined in ITU-T Rec. Q.2631.1 [2].

The interworking between the above two signalling protocols typically may occur in 3GPP UTRANs with AAL type 2 and IP network portions connected via an Interworking Unit.

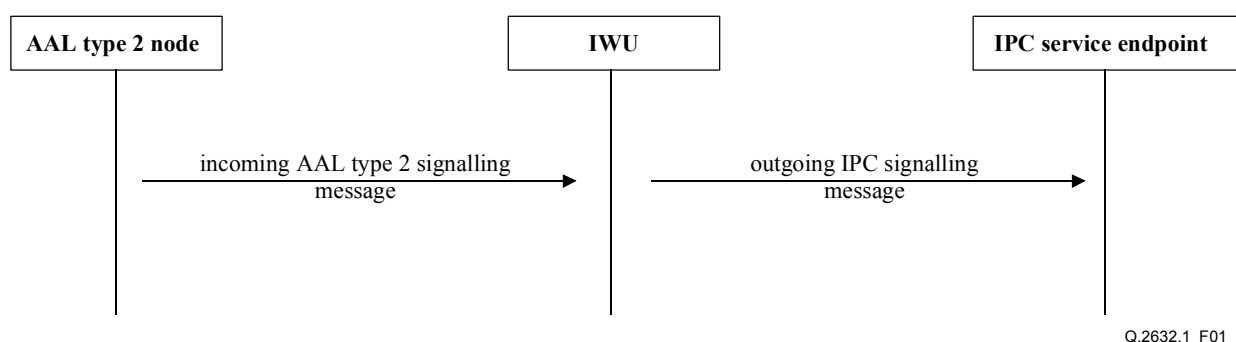
The objective of this ITU-T Recommendation is to specify the interworking between the AAL type 2 protocol and the IP Connection Control signalling protocol.

Interworking is shown as message arrow diagrams. The diagrams included represent a sample of typical situations. Mapping tables are provided to define the relationship between AAL type 2 protocol messages and parameters, on the one hand, and IP Connection Control signalling protocol messages and parameters on the other hand.

Tables are provided for each AAL type 2 message that maps onto an IP Connection Control message. These tables also specify the mapping of parameters, which are carried by the concerned messages.

Parameters that are of local significance only, i.e. are not mapped onto parameters in the other signalling system, are not shown.

The arrow diagrams used in this Recommendation show the message movement for interworking the bearer control protocols of AAL type 2 signalling and IP Connection Control signalling. The working inside of the exchanges will not be shown, but rather the external stimulus to the exchange only (see Figures 1 and 2).



Q.2632.1_F01

Figure 1/Q.2632.1 – AAL type 2 to IPC signalling interworking

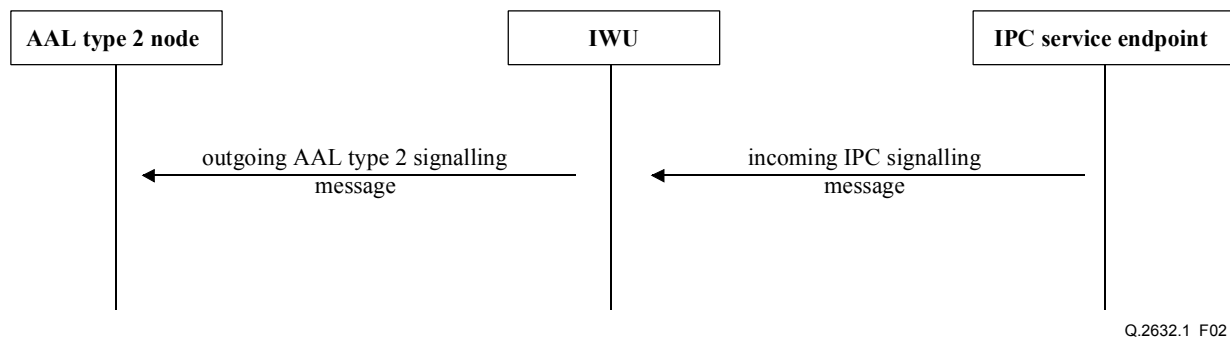


Figure 2/Q.2632.1 – IPC to AAL type 2 signalling interworking

2 References

2.1 Normative References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

- [1] ITU-T Recommendation Q.2630.2 (2001), *AAL type 2 signalling protocol – Capability Set 2*.
- [2] ITU-T Recommendation Q.2631.1 (2003), *IP connection control signalling protocol – Capability Set 1*.

2.2 Informative references

- [3] ITU-T Q-series Recommendations – Supplement 44 (2003), *Technical Report TRQ.2800: Transport control signalling requirements – Signalling requirements for AAL type 2 to IP interworking Capability Set 1*.

3 Abbreviations

This Recommendation uses the following abbreviations:

3GPP	3rd Generation Partnership Project
A2EA	AAL type 2 Service Endpoint Address
A2IP	AAL type 2 – IP
AAL	ATM Adaptation Layer
AAL2	AAL type 2
ATM	Asynchronous Transfer Mode
BLC	Block Confirm Message
BLO	Block Request Message
CAU	Cause Parameter
CEID	AAL type 2 Connection Element Identifier

CFN	ConFusioN message
CPS	(AAL type 2) Common Part Sublayer
DEAE	Destination Endpoint E.164 Address
DEAX	Destination Endpoint X.213 Address
ECF	Establish Confirm Message
ERQ	Establish Request Message
ESEA	Destination E.164 Service Endpoint Address parameter
HBx	Header bit rate associated with x
IP	Internet Protocol
IPC	IP Connection Control
IPHL	Total length of the header of an IP packet
IPQOS	IP Quality of Service parameter
IPTT	IP Transport Type parameter
IWU	InterWorking Unit
LC	(AAL type 2) Link Characteristics parameter
MAX	Maximum function
MIN	Minimum function
MOA	Modification Acknowledge message
MOD	Modification Request message
MOR	Modification Reject message
MSLC	Modify Support for Link Characteristics parameter
MSSSI	Modify Support for SSCS Information parameter
MSTC	Modify Support for IP Transfer Capability parameter
NSEA	Destination NSAP Service Endpoint Address parameter
PLC	Preferred Link Characteristics parameter
PSSCS	Preferred SSCS Information parameter
PSSIAE	Preferred Service Specific Information (Audio Extended) parameter
PSSIME	Preferred Service Specific Information (Multirate Extended) parameter
PT	Path Type parameter
PTC	Preferred IP Transfer Capability
PTC-DBW	Dedicated Bandwidth Preferred IP Transfer Capability
PTC-SBW	Statistical Bandwidth Preferred IP Transfer Capability
REL	Release Request Message
RES	Reset Request Message
RLC	Release Confirm Message
RSC	Reset Confirm Message
SAR	Segmentation and Reassembly (Sublayer)



SDU	Service Data Unit
SSCS	Service Specific Convergence Sublayer
SSIA	Service Specific Information (Audio) parameter
SSIAE	Service Specific Information (Audio Extended) parameter
SSIM	Service Specific Information (Multirate) parameter
SSIME	Service Specific Information (Multirate Extended) parameter
SSISA	Service Specific Information (SAR-assured) parameter
SSISU	Service Specific Information (SAR-unassured) parameter
SSSAR	Segmentation and Reassembly Service Specific Convergence Sublayer
SUCI	Served User Correlation ID parameter
SUGR	Served User Generated Reference parameter
SUT	Served User Transport parameter
TC	(IP) Transfer Capability
TC-DBW	Dedicated Bandwidth IP Transfer Capability
TC-SBW	Statistical Bandwidth IP Transfer Capability
TCI	Test Connection Indication parameter
UBC	Unblock Confirm Message
UBL	Unblock Request Message
UTRAN	UMTS Terrestrial Radio Access Network

4 General statements on interworking

- No ATM or AAL type 2 specific parameters defined for AAL type 2 signalling will be carried in the IP connection control signalling.
- No IP specific parameters defined for IP connection control signalling will be carried in the AAL type 2 signalling.
- All AAL type 2 and all IP connection control messages carry message compatibility information.
- All AAL type 2 and all IP connection control parameters carry parameter compatibility information.
- Through-connection in the IWU will occur immediately after either the AAL type 2 or the IP connection control signalling sends the Establish Request Message (ERQ).
- According to TRQ.2800 [3] interworking is specified for AAL type 2 signalling with SSCS support restricted to SSSAR unassured. Therefore, reception of any of the parameters listed in Table 1 at the IWU shall lead to the behaviour as specified there. Furthermore, none of these parameters shall be generated at the IWU in AAL type 2 signalling messages.