TSG-RAN meeting #18 **RP-020833**

New Orleans, US 3-6 December 2002

INTERNATIONAL TELECOMMUNICATION UNION

TELECOMMUNICATION STANDARDIZATION SECTOR

STUDY PERIOD 2001-2004

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Original: English

Question(s): 15/11 Geneva, 11 - 22 November 2002

LIAISON STATEMENT

Source: ITU-T SG 11

Title: Revision of Q15/11 to explicitly include RAN support

LIAISON STATEMENT

To: **ETSI (for 3GPP RAN WG)**

Approval: **ITU-T SG 11 (Geneva, 22 November 2002)**

For: **Information**

Deadline: -

Contact: Ian Rytina
Ericsson Ltd
UK
Tel: +44 1444 234848
Fax: +44 1444 234234
Email: ian.rytina@ericsson.com

ITU-T SG 11 is pleased to inform you that at its November 2002 meeting the participants approved a revision of Q15/11 to explicitly include support for Radio Access Networks as part of the subject of that question. A copy of the revised question is reflected in Attachment 1 to this liaison.

Consistent with this expanded scope of study, work has been initiated on a new draft ITU-T Recommendation concerning the interworking between the AAL Type 2 Signalling Protocol and the IPALCAP Signalling Protocol. Attachment 2 to this liaison presents the current baseline text of that new recommendation.

ATTACHMENT 1 - Revised Text of Q15/11

Question 15/11 - Protocol for the support and Interworking of AAL Type 2 and IP bearers

Reasons for the question

The desire to support new and existing network services and their enhancements employing AAL type 2 and IP bearer transport technology, will require the specification of bearer transport technology control protocols which support both fixed and mobile network applications. It is also required to develop solutions for interworking between AAL Type 2 signalling protocols and other signalling protocols controlling bearer technologies, such as IP.

Question

What new recommendations and what enhancements to existing recommendations are required to support the evolution of AAL type 2 and IP bearer transport control protocols?

Task objectives

The major focus of this question is to develop AAL type 2 bearer transport control protocol recommendations to be used to support both fixed and mobile network based services. The task objectives for the question are:

1) Develop the signalling protocol recommendations for extension of AAL type 2-bearer control signalling protocols in response to the requirements from the question responsible for the Signalling requirements for the support of Bearer Independent Call Control Applications.
2) Develop the signalling protocol recommendations for IP-bearer control signalling protocols for use in Radio Access Networks, in response to the requirements from the question responsible for the Signalling requirements for the support of Bearer Independent Call Control Applications.
3) Develop signalling protocol interworking recommendations for interworking between AAL Type 2 bearers, IP bearers and other bearer technologies.
4) Participate in the development of any interworking supplements between AAL type 2 and IP bearer control signalling and high layer signalling protocols.
5) Produce the necessary information for Protocol Implementation Conformance Statements (PICS) with the support of the testing question (Question 14/11), if required. To assist the test generation the extensive usage of formal description techniques (e.g. SDL, ASN.1) is encouraged.

   Estimated completion: Ongoing.

The outputs of this question will be recorded as ITU-T recommendations. For task items 1, 2 and 3 completion dates will be set by requirements from the question responsible for the Signalling requirements for the support of Bearer Independent Call Control Applications.

Relationships

The development of these recommendations will require close coordination activities with:

- Requirements from the question responsible for the Signalling requirements for the support of Bearer Independent Call Control Applications.
- High Layer Signalling protocol questions (e.g. BICC).
- ITU-T Study Groups 13 and 17
- Signalling transport protocol questions, Integrated call and bearer protocol questions (e.g. DSS 1, DSS 2, ISUP, B-ISUP, H.323).
- External organisations, such as IETF, ETSI (3GPP) and TIA (3GPP2).

Attachment 2 - Draft Recommendation Q.AAL2IPiw.CS1

INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

Draft Q.AAL2IPIW.CS1

(xx/03)

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

SERIES Q: SWITCHING AND SIGNALLING

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

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Interworking between AAL type 2 Signalling Protocol Capability Set 2 and IPALCAP Signalling Protocol Capability Set 1

ITU-T Recommendation Q.AAL2IPIW.CS1

(Previously CCITT Recommendation)

ITU-T RECOMMENDATION Q.AAL2IPIW.CS1

INTERWORKING BETWEEN AAL TYPE 2 SIGNALLING PROTOCOL CAPABILITY SET 2 AND IPALCAP SIGNALLING PROTOCOL CAPABILITY SET 1

Summary

This Recommendation describes the interworking between the AAL Type 2 Signalling Protocol and the IPALCAP 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.AAL2IPIW.CS1 was revised by ITU-T Study Group 11 (2001-2004) and was approved under the WTSC Resolution No. 1 procedure on xxxxxxxxxxxxxx.

CONTENTS

Page

Recommendation Q.AAL2IPIW.CS1

INTERWORKING BETWEEN AAL TYPE 2 SIGNALLING PROTOCOL CAPABILITY SET 2 AND IPALCAP SIGNALLING PROTOCOL CAPABILITY SET 1

Editor's Note: The content of this draft recommendation is to be regarded under the working assumption that a Q.2630.2 based connection control protocol is used in the IP network portion.

1 Scope

This ITU-T Recommendation defines the interworking relationship between the AAL Type 2 Signalling Protocol Capability Set 2 and the IPALCAP Signalling Protocol. For the purpose of this interworking, AAL Type 2 Signalling is defined in ITU-T Recommendation Q.2630.2 [1] and subject to restrictions stated in TRQ.AAL2IP.iw [2]. For the purpose of this interworking, IPALCAP signalling is defined in ITU-T Recommendation Q.IPALCAP.1 [3].

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 IPALCAP 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 IPALCAP protocol messages and parameters on the other hand.

Tables are provided for each AAL Type 2 message that maps onto an IPALCAP 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 IPALCAP. The working inside of the exchanges will not be shown, but rather the external stimulus to the exchange only. (see Figures 1 and 2)

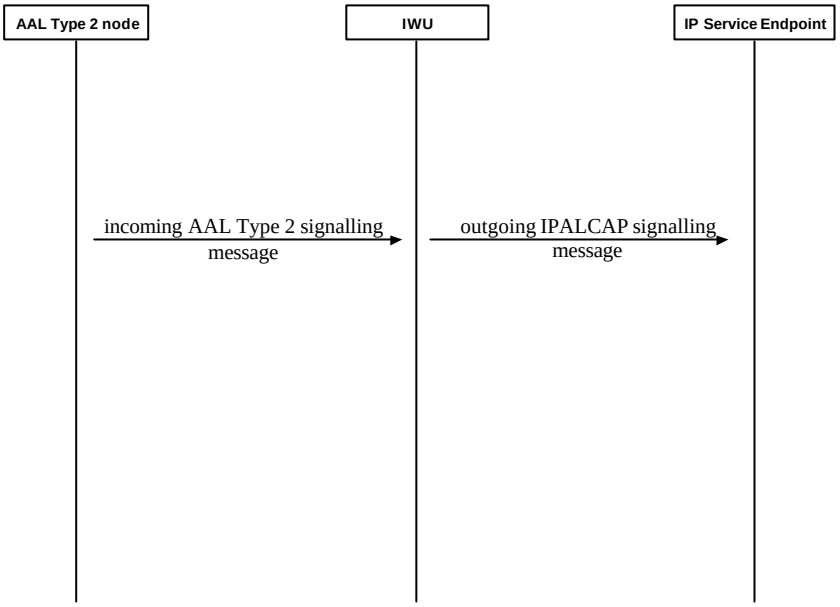

Figure 1/Q.AAL2IPIW.CS1 – AAL Type 2 to IPALCAP interworking

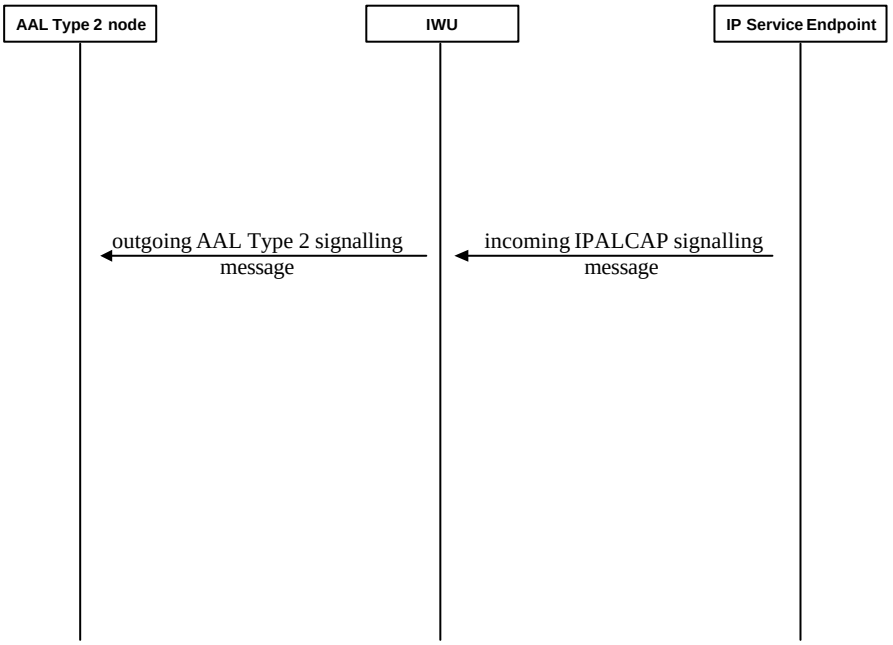

Figure 2/Q.AAL2IPIW.CS1 – IPALCAP to AAL Type 2 interworking

2 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; all 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.

[1] ITU-T Recommendation Q.2630.2 (2001) - AAL type 2 Signalling Protocol Capability Set 2

[2] ITU-T Technical Report TRQ.AAL2IP.iw - Transport Control Signalling Requirements – Signalling Requirements For AAL Type 2 to IP Interworking Capability Set 1

[3] ITU-T Recommendation Q.IPALCAP.1 (2003) - IP Signalling Protocol Capability Set 1

3 Abbreviations

This Recommendation uses the following abbreviations:

3GPP	3rd Generation Partnership Project
A2EA	AAL type 2 Service Endpoint Address
AAL	ATM Adaptation Layer
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
ECF	Establish Confirm Message
ERQ	Establish Request Message
ESEA	Destination E.164 Service Endpoint Address Parameter
IP	Internet Protocol
IPALCAP	IP Access Link Control Application Part
IPLC	IP Link Characteristics 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
MSIPLC	Modify Support for IP Link Characteristics Parameter
MSLC	Modify Support for Link Characteristics Parameter
MSSSI	Modify Support for SSCS Information Parameter
NSEA	Destination NSAP Service Endpoint Address Parameter
PIPLC	Preferred IP Link Characteristics 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
QOS	Quality of Service Parameter
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
TCI	Test Connection Indication Parameter
TED	Transmission Error Detection
TT	Transport Type Parameter
UBC	Unblock Confirm Message
UBL	Unblock Request Message

4 General statements on interworking

- No ATM or AAL Type 2 specific parameters defined for AAL Type 2 signalling will be carried in the IPALCAP signalling.
- No IP specific parameters defined for IPALCAP signalling will be carried in the AAL Type 2 signalling.
- All AAL Type 2 and all IPALCAP messages carry message compatibility information.
- All AAL Type 2 and all IPALCAP parameters carry parameter compatibility information.
- Through connection in the IWU will occur immediately after either the AAL Type 2 or the IPALCAP signalling sends the Establish Request Message (ERQ).
- According to TRQ.AAL2IP.iw [2] 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.

Table 1/Q.AAL2IPIW.CS1 – List of not supported AAL Type 2 parameters

AAL Type 2 parameter	Action on Reception	
	AAL Type 2 side	IP side
MSSSI in ERQ and ECF messages	Discard parameter, do not send notification	As specified in clauses 5.1.1 and 5.2
PSSIAE in ERQ message	Discard parameter, do not send notification	As specified in clause 5.1.1
PSSIME in ERQ message	Discard parameter, do not send notification	As specified in clause 5.1.1
SSIAE in ERQ message	Release connection, do not send notification	-
SSIA in ERQ message	Release connection, do not send notification	-
SSIME in ERQ message	Release connection, do not send notification	-
SSIM in ERQ message	Release connection, do not send notification	-
SSISA in ERQ message	Release connection, do not send notification	-
SUCI in MOD and MOA messages	Discard parameter, do not send notification	As specified in clauses 8.1.1 and 8.2

NOTE – These parameters are not shown in the mapping tables.

5 Successful connection set-up

5.1 Mapping of the Establish Request Message

5.1.1 Connection Establishment initiated from the AAL Type 2 Network

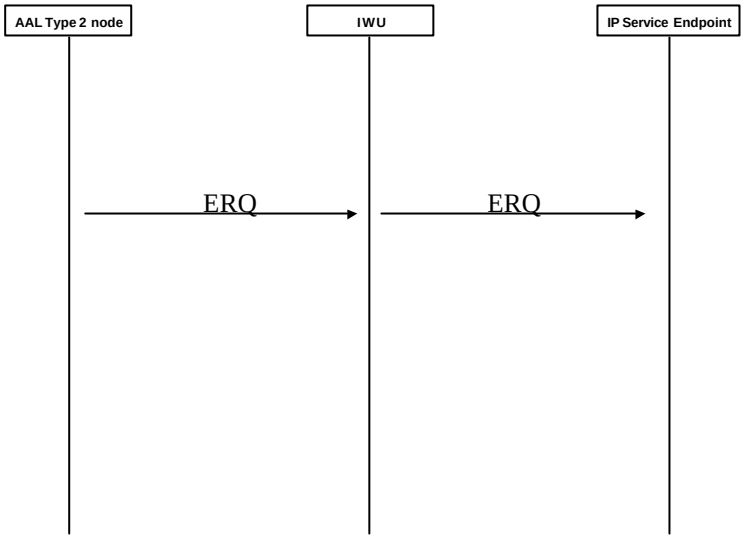

Figure 3/Q.AAL2IPIW.CS1 – ERQ from AAL Type 2 network

Table ~~1~~2/Q.AAL2IPIW.CS1 – Mapping of ERQ parameters (ERQ initiated from AAL2)

Incoming AAL Type 2 ERQ	Outgoing IPALCAP ERQ
ESEA (Note 1)	ESEA (Note 2)
NSEA (Note 1)	NSEA (Note 2)
LC	IPLC (Note 3)
PLC	PIPLC (Note 3)
MSLC	MSIPLC
SSISU	(Note 3)
SUGR	SUGR
SUT	SUT
TCI	Not carried
PT	Not carried (Note 4)
	QOS (Note 4)
	TT (Note 5)

Incoming AAL Type 2 ERQ	Outgoing IPALCAP ERQ
NOTE 1 – Only one of these parameters is present. NOTE 2 – Only one of these parameters is present. Values may be taken unchanged or with format conversion (E.164 to NSAP, NSAP to E.164) or derived by address translation with and without format change from the received ESEA or NSEA parameter. NOTE 3 – See Annex A, A.1.1 and A.1.2 NOTE 4 – The PT value may be taken into account to derive the value of this parameter. NOTE 5 – The value of this parameter may de determined from administrative settings and/or routing decisions.	

5.1.2 Connection Establishment initiated from the IP Network

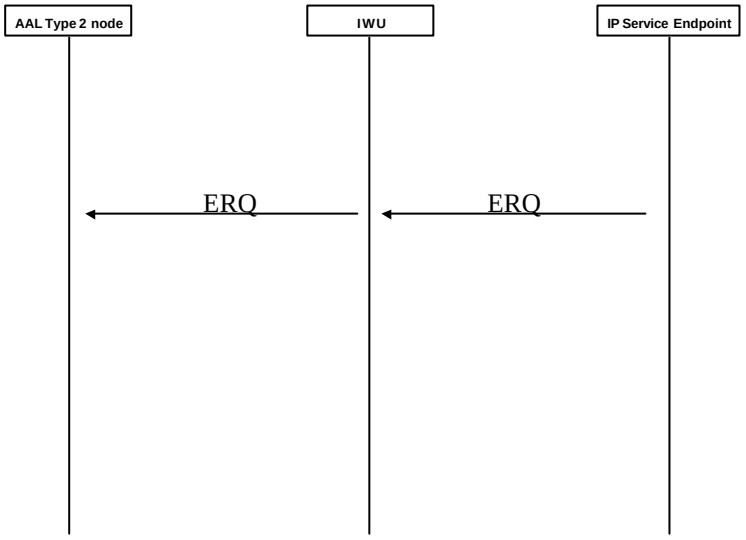

Figure 4/Q.AAL2IPIW.CS1 – ERQ from IP network

Table ~~2~~3/Q.AAL2IPIW.CS1 – Mapping of ERQ parameters (ERQ initiated from IP)

Outgoing AAL Type 2 ERQ	Incoming IPALCAP ERQ
ESEA (Note 2)	ESEA (Note 1)
NSEA (Note 2)	NSEA (Note 1)
LC (Note 3)	IPLC
PLC (Note 3)	PIPLC
MSLC	MSIPLC
SSISU (Note 3)	Not carried
SUGR	SUGR
SUT	SUT
TCI (Note 5)	

PT (Note 4)	
Not carried	QOS
Not carried	TT

NOTE 1 – Only one of these parameters is present.

NOTE 2 – Only one of these parameters is present. Values may be taken unchanged or with format conversion (E.164 to NSAP, NSAP to E.164) or derived by address translation with and without format change from the received ESEA or NSEA parameter.

NOTE 3 – See Annex A, A.2.1, A.2.2 and A.2.3

NOTE 4 – The QOS value may be taken into account to derive the value of this parameter.

NOTE 5 – TCI shall not be generated by the IWU. Only listed for completeness.

5.2 Mapping of the Establish Confirm Message

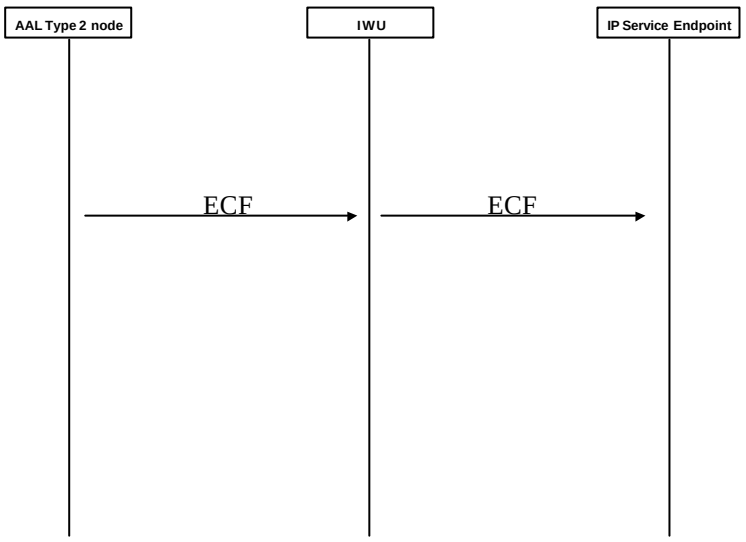

Figure 5/Q.AAL2IPIW.CS1 – ECF from AAL Type 2 network

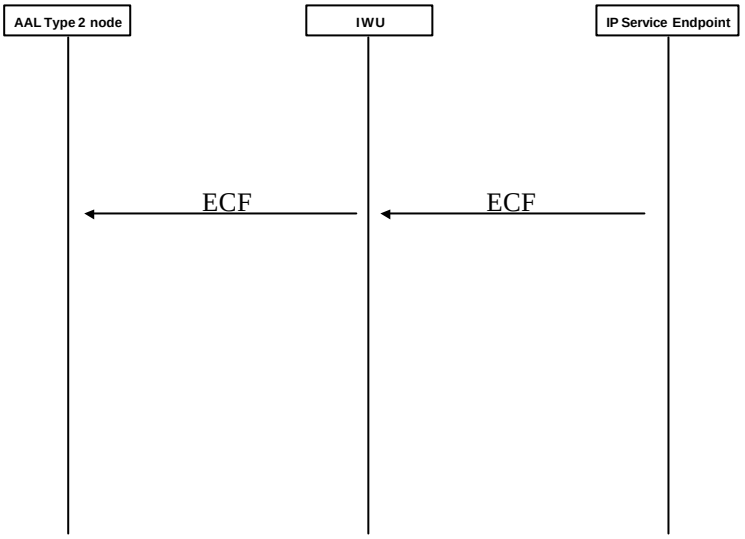

Figure 6/Q.AAL2IPIW.CS1 – ECF from IP network

Table ~~3~~4/Q.AAL2IPIW.CS1 – Mapping of ECF parameters

Incoming/Outgoing AAL Type 2 ECF	Outgoing/Incoming IPALCAP ECF
MSLC	MSIPLC

6 Unsuccessful Connection set-up

6.1 Mapping of the RLC message

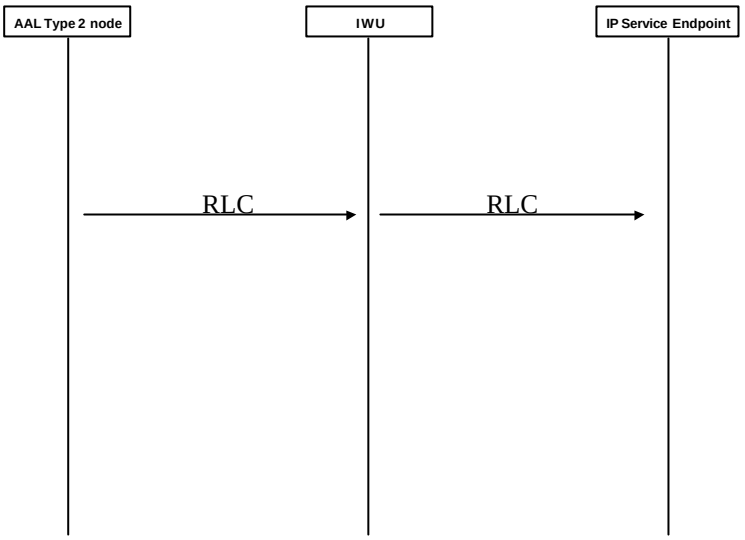

Figure 7/Q.AAL2IPIW.CS1 – RLC from AAL Type 2 network

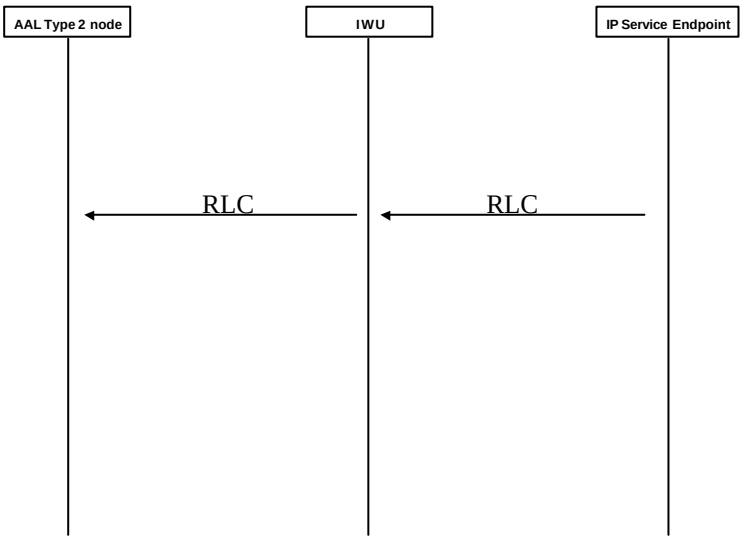

Figure 8/Q.AAL2IPIW.CS1 – RLC from IP network

Table 54/Q.AAL2IPIW.CS1 – Mapping of RLC parameters

Incoming/Outgoing AAL Type 2 RLC	Outgoing/Incoming IPALCAP RLC
CAU (Note 1, Note 2)	CAU (Note 1, Note 2)
NOTE 1 – Cause values received at the IWU that are unique to the network portion where they are generated, i.e. unknown in the other network portion, shall be mapped to "Normal, unspecified". NOTE 2 – If Cause parameters are received containing compatibility information the cause value shall be mapped to "Normal unspecified" and the diagnostics shall be discarded.	

Editor's Note: Diagnostics may possibly not be present in IP Control signalling.

7 Connection release

Editor's Note: Contributions are invited on the subject of the interworking of REL and RLC messages in order to show the appropriate characterization of the REL and RLC as link-by-link messages at connection release.

7.1 Mapping of the REL message

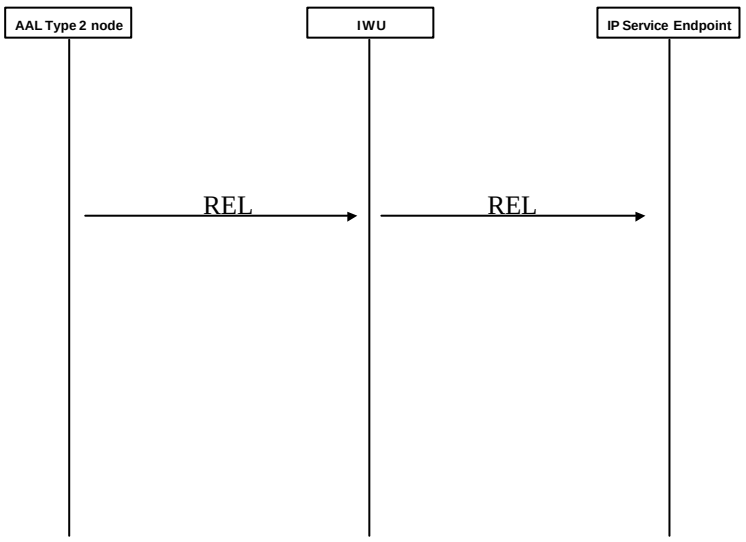

Figure 9/Q.AAL2IPIW.CS1 – REL from AAL Type 2 network

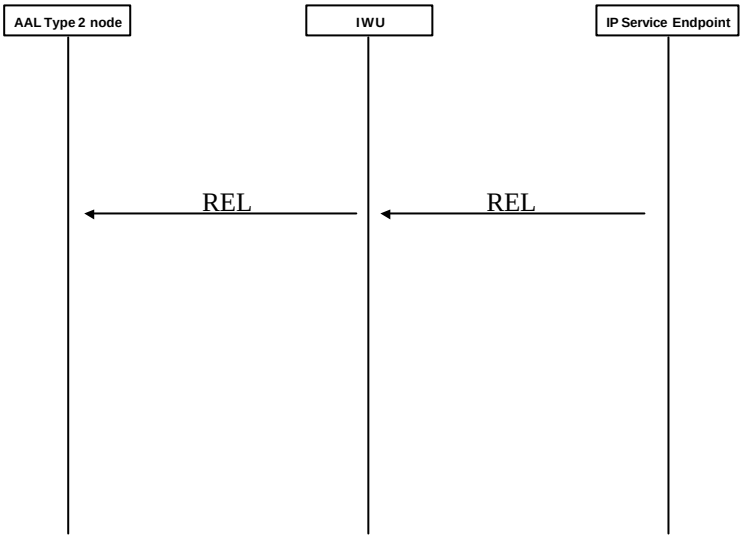

Figure 10/Q.AAL2IPIW.CS1 – REL from IP network

Table ~~65~~/Q.AAL2IPIW.CS1 – Mapping of REL parameters

Incoming/Outgoing AAL Type 2 REL	Outgoing/Incoming IPALCAP REL
CAU (Note 1, Note 2)	CAU (Note 1, Note 2)
NOTE 1 – Cause values received at the IWU that are unique to the network portion where they are generated, i.e. unknown in the other network portion, shall be mapped to "Normal, unspecified". NOTE 2 – If Cause parameters are received containing compatibility information the cause value shall be mapped to "Normal unspecified" and the diagnostics shall be discarded.	

Editor's Note: Diagnostics may possibly not be present in IP Control signalling.

7.2 Mapping of the RLC message

Refer to 6.1.

Note: A RLC message that is received in response to a REL message which has been initiated in the IWU due to a reset procedure in the other network portion (see Section 10) shall not be interworked.

8 Successful Modification

8.1 Mapping of the MOD message

8.1.1 Modification initiated from the AAL Type 2 network

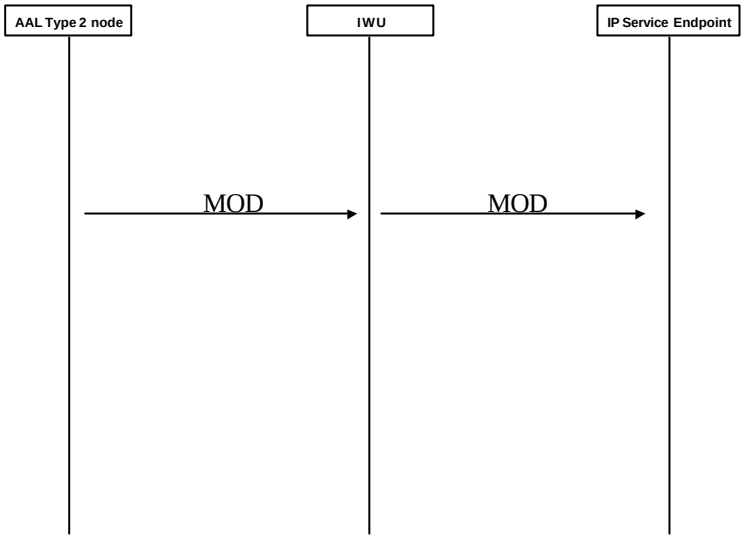

Figure 113/Q.AAL2IPIW.CS1 – MOD from AAL Type 2 network

Table 7/Q.AAL2IPIW.CS1 – Mapping of MOD parameters (MOD initiated from AAL2)

Incoming AAL Type 2 MOD	Outgoing IPALCAP MOD
LC	IPLC (Note 1)
NOTE 1 – See Annex A, A.1.1 and A.1.2	

8.1.2 Modification initiated from the IP network

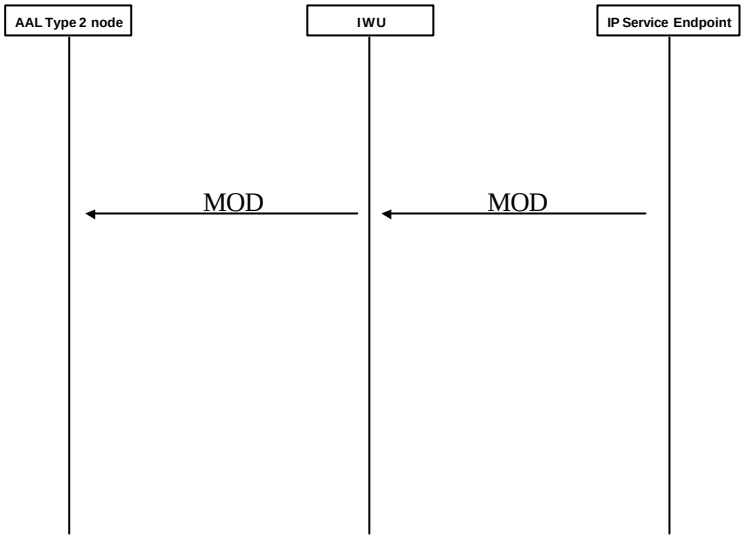

Figure 142/Q.AAL2IPIW.CS1 – MOD from IP network

Table 8/Q.AAL2IPIW.CS1 – Mapping of MOD parameters (MOD initiated from IP)

Outgoing AAL Type 2 MOD	Incoming IPALCAP MOD
LC (Note 1)	IPLC
NOTE 1 – See Annex A, A.2.1 and A.2.2	

8.2 Mapping of the MOA message

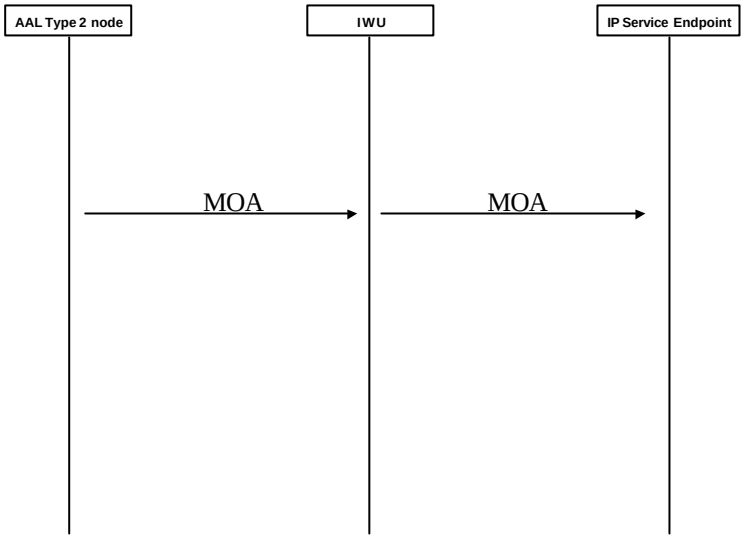

Figure 135/Q.AAL2IPIW.CS1 – MOA from AAL Type 2 network

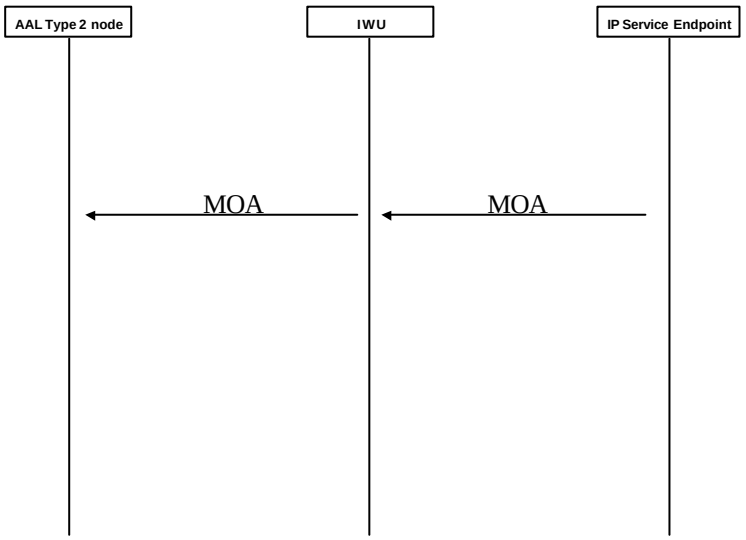

Figure 146/Q.AAL2IPIW.CS1 – MOA from IP network

Table 9/Q.AAL2IPIW.CS1 – Mapping of MOA parameters

Incoming/Outgoing AAL Type 2 MOA	Outgoing/Incoming MOA
- (Note 1)	- (Note 1)
NOTE 1 – MOA messages carry no parameters requiring interworking.	

9 Unsuccessful Modification

9.1 Mapping of the MOR message

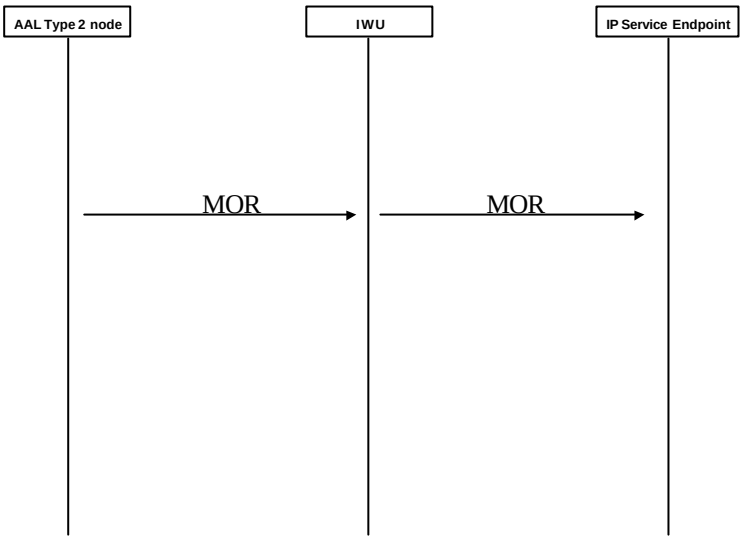

Figure 157/Q.AAL2IPIW.CS1 – MOR from AAL Type 2 network

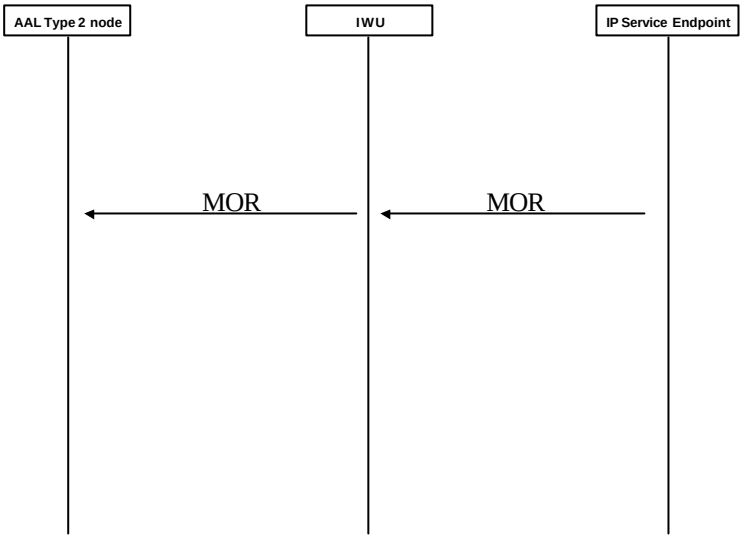

Figure 168/Q.AAL2IPIW.CS1 – MOR from IP network

Table 10/Q.AAL2IPIW.CS1 – Mapping of MOR parameters

Incoming/Outgoing AAL Type 2 MOR	Outgoing/Incoming MOR
CAU (Note 1, Note 2)	CAU (Note 1, Note 2)
NOTE 1 – Cause values received at the IWU that are unique to the network portion where they are generated, i.e. unknown in the other network portion, shall be mapped to "Normal, unspecified". NOTE 2 – If Cause parameters are received containing compatibility information the cause value shall be mapped to "Normal unspecified" and the diagnostics shall be discarded.	

Editor's Note: Diagnostics may possibly not be present in IP Control signalling.

10 Reset

Editor's Note: Contributions are invited on the subject of the interworking of RES/RSC and REL/RLC messages in order to show the appropriate characterization of the RES as link-by-link message.

10.1 Reset initiated in AAL Type 2 network

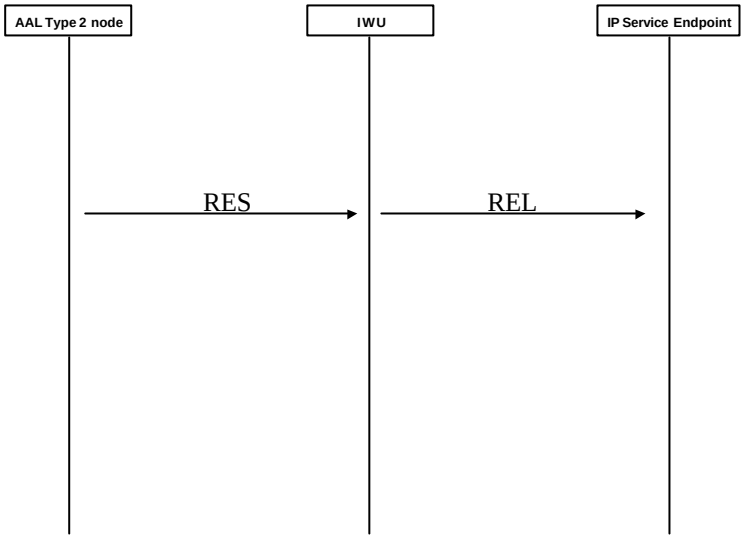

Figure 179/Q.AAL2IPIW.CS1 – RES from AAL Type 2 network

Table 11/Q.AAL2IPIW.CS1 – Mapping of RES parameters

Incoming AAL Type 2 RES	Outgoing IP REL (Note 3)
(Note 1)	CAU (Note 2)
NOTE 1 – RES messages carry no parameters requiring interworking NOTE 2 – Cause value set to "Temporary failure" NOTE 3 – If the RES applies to one or more AAL Type 2 paths affecting several active connections, a REL message for each of these connections shall be generated at the IP side. .	

10.2 Reset initiated in IP network

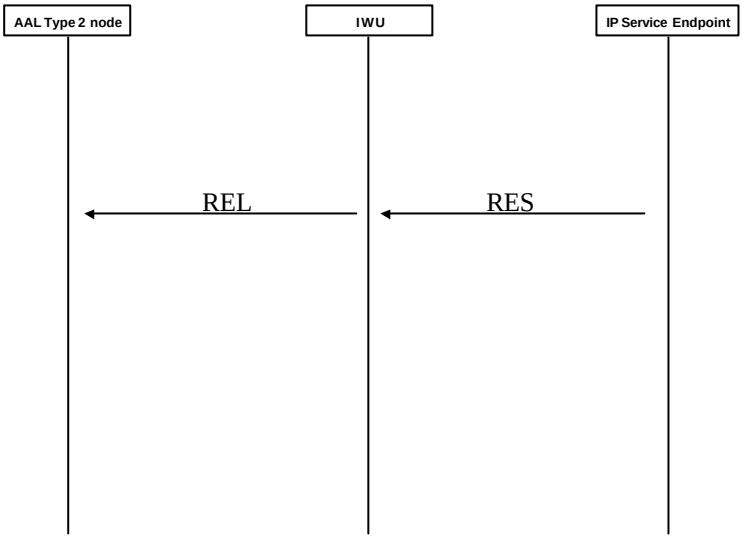

Figure 18~~20~~/Q.AAL2IPIW.CS1 – RES from IP network

Table 12/Q.AAL2IPIW.CS1 – Mapping of RES parameters

Outgoing AAL Type 2 REL	Incoming IP RES (Note 3)
CAU (Note 2)	(Note 1)
NOTE 1 – RES messages carry no parameters requiring interworking NOTE 2 – Cause value set to "Temporary failure" NOTE 3 – If the RES affects several active connections, a REL message for each of these connections shall be generated at the AAL Type 2 side.	

11 Messages requiring no Interworking

11.1 AAL Type 2 messages

The following AAL Type 2 messages are not interworked when received at the IWU: CFN, RSC, BLO, BLC, UBL, and UBC.

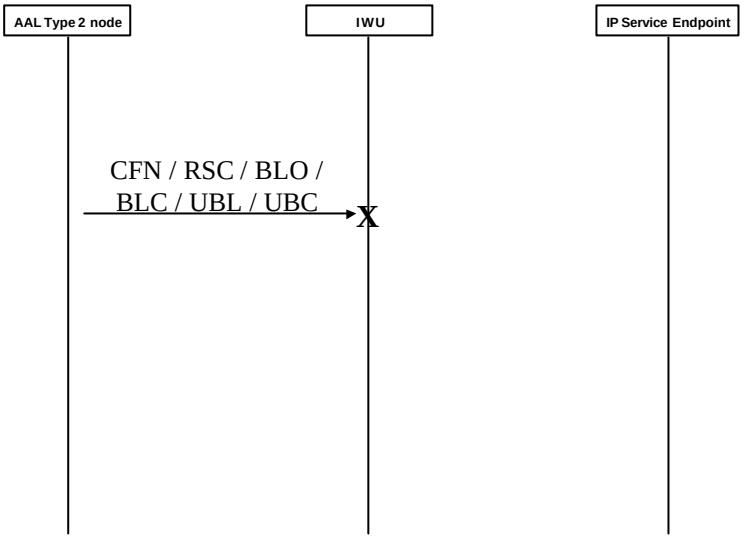

Figure ~~2~~19/Q.AAL2IPIW.CS1 –AAL Type 2 messages without interworking

11.2 IP messages

The following IP messages are not interworked when received at the IWU: CFN, RSC.

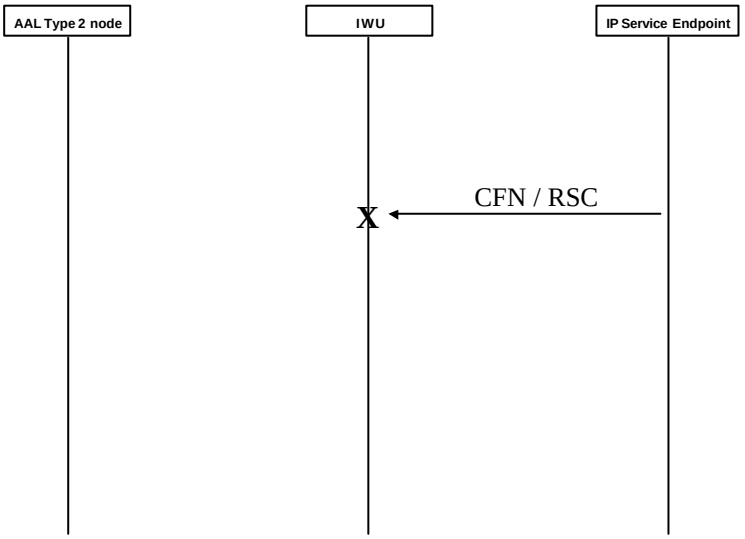

Figure 20~~2~~/Q.AAL2IPIW.CS1 –IP messages without interworking

ANNEX A

Interworking of Link Characteristics and SSISU parameters

(This Annex forms an integral part of this recommendation)

Editor's Note: Following the decision in Q9/11 to introduce IP Transfer Capabilities instead of IP Link Characteristics this Annex has to be re-worked. Contributions are invited on this subject.

A.1 Interworking for AAL type 2 to IP

A.1.1 Bit Rates

Table A-1/Q.AAL2IPIW.CS1 defines the interworking of LC bit rates (AAL type 2) to IPLC bit rates (IP)

Table A-1/Q.AAL2IPIW.CS1

LC to IPLC bit rate interworking

LC bit rate subfields	Interworking	IPLC bit rate subfields
Max. CPS-SDU bit rate in the forward direction	unchanged	Max. SDU bit rate in the forward direction
Max. CPS-SDU bit rate in the backward direction	unchanged	Max. SDU bit rate in the backward direction
Avg. CPS-SDU bit rate in the forward direction	unchanged	Avg. SDU bit rate in the forward direction
Avg. CPS-SDU bit rate in the backward direction	unchanged	Avg. SDU bit rate in the backward direction

The same relation applies for the interworking of PLC and PIPLC parameters.

A.1.2 SDU sizes

Table A-2/Q.AAL2IPIW.CS1 defines the derivation of IPLC SDU sizes from LC CPS-SDU sizes and/or SSISU.

Table A-2/Q.AAL2IPIW.CS1

LC to IPLC SDU size interworking

IPLC SDU size subfields	Value
Max. SDU size in the forward direction	MAX (Max. length of SSSAR-SDU in the forward direction (SSISU), Max.CPS-SDU size in the forward direction (LC))
Max. SDU size in the backward direction	MAX (Max. length of SSSAR-SDU in the backward direction (SSISU), Max. CPS-SDU size in the backward direction (LC))
Avg. SDU size in the forward direction	MAX (Max. length of SSSAR-SDU in the forward direction (SSISU), Avg. CPS-SDU size in the forward direction (LC))
Avg. SDU size in the backward direction	MAX (Max. length of SSSAR-SDU in the backward direction (SSISU), Avg. CPS-SDU size in the backward direction (LC))
NOTE - "0" is assumed as value to guarantee a correct working of the MAXimum function if a certain parameter does not exist.	

The same relation applies for the interworking of PLC, SSISU, and PIPLC parameters.

A.2 Interworking for IP to AAL type 2

A.2.1 Bit Rates

Table A-3/Q.AAL2IPIW.CS1 defines the interworking of IPLC bit rates (IP) to LC bit rates (AAL type 2)

Table A-3/Q.AAL2IPIW.CS1

Interworking of IPLC to LC bit rates

IPLC bit rate subfields	Interworking	LC bit rate subfields
Max. SDU bit rate in the forward direction	unchanged	Max. CPS-SDU bit rate in the forward direction
Max. SDU bit rate in the backward direction	unchanged	Max. CPS-SDU bit rate in the backward direction
Avg. SDU bit rate in the forward direction	unchanged	Avg. CPS-SDU bit rate in the forward direction
Avg. SDU bit rate in the backward direction	unchanged	Avg. CPS-SDU bit rate in the backward direction

The same relation applies for the interworking of PIPLC and PLC parameters.

A.2.2 CPS-SDU sizes

Table A-4/Q.AAL2IPIW.CS1 defines the derivation of IPLC SDU sizes from LC CPS-SDU sizes.

Table A-4/Q.AAL2IPIW.CS1

IPLC to LC CPS-SDU size interworking

LC CPS-SDU size subfields	Value
Max. CPS-SDU size in the forward direction	MIN (Max. SDU size in the forward direction, 45)
Max. CPS-SDU size in the backward direction	MIN (Max. SDU size in the backward direction, 45)
Avg. CPS-SDU size in the forward direction	MIN (Avg. SDU size in the forward direction, 45)
Avg. CPS-SDU size in the backward direction	MIN (Avg. SDU size in the backward direction, 45)

The same relation applies for the interworking of PLC, SSISU, and PIPLC parameters.

A.2.3 SSISU SDU sizes

Table A-5/Q.AAL2IPIW.CS1 defines the derivation of SSISU SDU sizes from IPLC and PIPLC SDU sizes.

Table A-5/Q.AAL2IPIW.CS1

IPLC and PIPLC to SSISU interworking

SSISU subfields	Value
Max. length of SSSAR-SDU in the forward direction	MAX (IPLC (Max. SDU size in the forward direction), PIPLC (Max. SDU size in the forward direction))
Max. length of SSSAR-SDU in the backward direction	MAX (IPLC (Max. SDU size in the backward direction), PIPLC (Max. SDU size in the backward direction))
NOTE 1 - "0" is assumed as value to guarantee a correct working of the MAXimum function if a certain parameter does not exist. NOTE 2 – if the value of all SSISU subfields determined according to these rules does not exceed 45, no SSISU parameter will be present at all.	