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SERIES Q: SWITCHING AND SIGNALLING

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

Interworking between signalling system No. 7 broadband ISDN user part (B-ISUP) and digital subscriber signalling system No. 2 (DSS2)

ITU-T Recommendation Q.2650

(Formerly CCITT Recommendation)

ITU-T Q-SERIES RECOMMENDATIONS

SWITCHING AND SIGNALLING

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

ITU-T Recommendation Q.2650

**Interworking between signalling system No. 7 broadband ISDN user part (B-ISUP)
and digital subscriber signalling system No. 2 (DSS2)**

Summary

This Recommendation describes the interworking between the DSS2 access interface protocol and the Broadband ISDN User Part protocol. It is part of a set of interlocking B-ISDN service and signalling Recommendations that comprise Broadband signalling capabilities. This Recommendation describes the mapping tables and diagrams which support interworking between the two protocols for call set-up and clear down.

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 Conference (WTSC), 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 WTSC 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.

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.

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ITU-T Recommendation Q.2650

**Interworking between signalling system No. 7 broadband ISDN user part (B-ISUP)
and digital subscriber signalling system No. 2 (DSS2)**

1 Scope

This ITU-T Recommendation defines the interworking relationship between the layer 3 functions and protocol of the B-ISDN DSS2 Access Interface and the B-ISDN User Part functions and protocol of Signalling System No. 7. For the purpose of this interworking, B-ISUP is defined in ITU-T Recommendations Q.2761-4 and Q.2730. For the purpose of this interworking, DSS2 is defined in ITU-T Recommendations Q.2931, Q.2933, Q.2961.1-6, Q.2962, Q.2963.1-3, Q.2951, Q.2951.9 and Q.2957.

The interworking between the above two signalling protocols typically may occur in a B-ISDN local exchange and is specified in the context of a typical call in a pure B-ISDN environment. Support of 64 kbit/s narrow-band emulation services is included.

The objective of this ITU-T Recommendation is to specify the interworking between the Broadband ISDN User Part protocol and the DSS2 protocol.

Interworking is shown as message arrow diagrams. Due to the multiplicity of optional possibilities in both the B-ISDN User Part and the DSS2 protocol, not all possible cases are shown in arrow diagrams. The diagrams included represent a sample of typical situations. Mapping tables are provided to define the relationship between DSS2 protocol messages and information elements, on the one hand, and B-ISDN User Part messages and parameters on the other hand.

Tables are provided for each DSS2 protocol message that maps onto a B-ISDN User Part message. These tables also specify the mapping of elements of information which are carried by the concerned messages.

The elements of information that are of local significance only, i.e. are not mapped onto elements of information in the other signalling system, are not shown.

The arrow diagrams used in this Recommendation show the message movement for interworking the call control protocols of DSS2 and B-ISUP. The working inside of the exchanges will not be shown, but rather the external stimulus to the exchange only.

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 E.164 (1997), *The international public telecommunication numbering plan*.

[2]   ITU-T Recommendation E.191 (2000), *B-ISDN addressing*.

[3]   ITU-T Recommendation Q.2931 (1995), *Digital Subscriber Signalling System No. 2 (DSS 2) – User-Network Interface (UNI) – Layer 3 specification for basic call/connection control*.

[4]   ITU-T Recommendation Q.2763 (1999), *Signalling System No. 7 B-ISDN User Part (B-ISUP) – Formats and Codes.*

[5]   ITU-T Recommendation Q.2764 (1999), *Signalling System No. 7 B-ISDN User Part (B-ISUP) – Basic Call Procedures.*

[6]   ITU-T Recommendation I.371 (2000), *Traffic control and congestion control in B-ISDN.*

[7]   ITU-T Recommendation I.356 (2000), *B-ISDN ATM layer cell transfer performance.*

[8]   ITU-T Recommendation X.213 (1995) | ISO/IEC 8348:1996, *Information Technology – Open Systems Interconnection – Network service definition.*

[9]   ITU-T Recommendation Q.2761 (1999), *Functional description of the B-ISDN user part (B-ISUP) of signalling system No. 7.*

[10]   ITU-T Recommendation Q.2762 (1999), *General functions of messages and signals of the B-ISDN user part (B-ISUP) of signalling system No. 7.*

[11]   ITU-T Recommendation Q.2730 (1999), *Signalling system No. 7 B-ISDN user part (B-ISUP) – Supplementary services.*

[12]   ITU-T Recommendation Q.2933 (1996), *Digital subscriber signalling system No. 2 – Signalling specification for frame relay service.*

[13]   ITU-T Recommendation Q.2961.1 (1995), *Digital subscriber signalling system No. 2 – Additional traffic parameters: Additional signalling capabilities to support traffic parameters for the tagging option and the sustainable cell rate parameter set.*

[14]   ITU-T Recommendation Q.2961.2 (1997), *Digital subscriber signalling system No. 2 – Additional traffic parameters: Support of ATM transfer capability in the broadband bearer capability information element.*

[15]   ITU-T Recommendation Q.2961.3 (1997), *Digital subscriber signalling system No. 2 – Additional traffic parameters: Signalling capabilities to support traffic parameters for the available bit rate (ABR) ATM transfer capability.*

[16]   ITU-T Recommendation Q.2961.4 (1997), *Digital subscriber signalling system No. 2 – Additional traffic parameters: Signalling capabilities to support traffic parameters for the ATM Block Transfer (ABT) ATM transfer capability.*

[17]   ITU-T Recommendation Q.2961.5 (1999), *Digital subscriber signalling system No. 2 – Additional traffic parameters for cell delay variation tolerance indication.*

[18]   ITU-T Recommendation Q.2961.6 (1998), *Digital subscriber signalling system No. 2 – Additional traffic parameters: Additional signalling procedures for the support of the SBR2 and SBR3 ATM transfer capabilities.*

[19]   ITU-T Recommendation Q.2962 (1998), *Digital subscriber signalling system No. 2 – Connection characteristics negotiation during call/connection establishment phase.*

[20]   ITU-T Recommendation Q.2963.1 (1999), *Digital subscriber signalling system No. 2 – Connection modification: Peak cell rate modification by the connection owner.*

[21]   ITU-T Recommendation Q.2963.2 (1997), *Digital subscriber signalling system No. 2 – Connection modification: Modification procedures for sustainable cell rate parameters.*

[22]   ITU-T Recommendation Q.2963.3 (1998), *Digital subscriber signalling system No. 2 – Connection modification: ATM traffic descriptor modification with negotiation by the connection owner.*

[23]   ITU-T Recommendation Q.2951 (1995), *Stage 3 description for number identification supplementary services using B-ISDN Digital Subscriber Signalling System No. 2 (DSS2) – Basic Call.*

[24]   ITU-T Recommendation Q.2951.9 (1999), *Stage 3 description for number identification supplementary services using B-ISDN Digital Subscriber Signalling System No. 2 (DSS2) – Basic Cell: Support of ATM end system addressing format by number identification supplementary services.*

[25]   ITU-T Recommendation Q.2957.1 (1995), *Stage 3 description for additional information transfer supplementary services using B-ISDN Digital Subscriber Signalling System No. 2 (DSS2) – Basic Call: User to user signalling (UUS).*

[26]   ITU-T Recommendation Q.2735.1 (1997), *Stage 3 description for community of interest supplementary services for B-ISDN using SS No. 7: Closed User Group (CUG).*

3   Abbreviations

This ITU-T Recommendation uses the following abbreviations:

B-ISUP Messages

ACM	Address Complete Message
ANM	ANswer Message
COA	Connection Available message
CPG	Call Progress message
CTM	Call Transfer Message
IAA	Initial Address Acknowledgement message
IAM	Initial Address message
IAR	Initial Address Reject message
IDR	Identification Request message
IRS	Identification Response message
LOP	Loop Prevention message
MOA	Modify Acknowledgement Message
MOD	Modify Request Message
MOR	Modify Reject Message
REL	RELease message
RES	RESume message
SAM	Subsequent Address Message
SUS	SUSpend message
USR	User-to-User Information Message

DSS2 Messages

ALERT	ALERTING
CALL PROC	CALL PROCEEDING
CONN	CONNECT

CONN ACK   CONNECT ACKNOWLEDGMENT

INFO   INFORMATION

NOT   NOTIFY

PROG   PROGRESS

REL   RELEASE

RLC   RELEASE COMPLETE

SETUP   SETUP

SETUP ACK   SETUP ACKNOWLEDGMENT

General

IE   Information Element (of DSS2)

U/N   User/Network

4   Interworking specification for successful call set-up procedures

4.1   Mapping tables

This subclause contains the mapping tables of successful call set-up messages and associated parameters and information elements. All mapping tables show DSS2 information elements and B-ISUP parameters for both pure B-ISDN service and N-ISDN emulation service. (See Tables 1 to 6c.)

Table 1/Q.2650 – Mapping of set-up procedure parameters for B-ISDN call

Orig. U/N   Network   Term. U/N
SETUP   ————————————→   IAM   ————————————→   SETUP

SETUP	IAM	SETUP
AAL parameters	AAL parameters (Note 22)	AAL parameters
	AAL prime parameters (Note 22)	
Alternative ATM traffic descriptor	Alternative ATM cell rate	Alternative ATM traffic descriptor
ABR setup parameters	ATC setup parameters	ABR setup parameters
ATM traffic descriptor	ATM cell rate (Note 1)	ATM traffic descriptor
	Additional ATM cell rate (Note 1)	
Broadband bearer capability	Broadband bearer capability	Broadband bearer capability
Broadband low layer information	Broadband low layer information (Note 2)	Broadband low layer information (Note 17)
Broadband high layer information	Broadband high layer information	Broadband high layer information
Broadband sending complete	ST (carried in Called party number)	Broadband sending complete

Table 1/Q.2650 – Mapping of set-up procedure parameters for B-ISDN call *(continued)*

Orig. U/N

SETUP ————————————→

Network

IAM ————————————→

Term. U/N

SETUP

SETUP	IAM	SETUP
Broadband report type	Report type (Note 25)	Broadband report type
	Report type prime (Note 25)	
Called party number (Note 3) Called party number (Note 4) − Number digits (Note 5) − Numbering plan (Note 6) − Type of number (Note 7)	Called party number AESA for Called Party Contents as shown in Q.2763. Called Party Number − Address signals (Note 8) − Numbering plan (Note 9) − Nature of address indicator	Called party number (Notes 10, 26) Contents starting with octet 5 as in AESA for Called Party starting with octet 2.
CDVT descriptor	CDVT	CDVT descriptor
End-to-end transit delay	Propagation delay counter and Maximum end-to-end transit delay (Note 11)	End-to-end transit delay
	End-to-end transit delay network generated indicator (Note 24)	
Extended QoS parameters	Extended QoS parameters	Extended QoS parameters
Link layer core parameters	Link layer core parameters	Link layer core parameters
Link layer protocol parameters	Link layer protocol parameters	Link layer protocol parameters
Minimum acceptable ATM traffic descriptor	Minimum ATM cell rate	Minimum acceptable ATM traffic descriptor
Narrow-band bearer capability	Narrow-band bearer capability (Note 12)	Narrow-band bearer capability (Note 18)
Narrow-band low layer compatibility	Narrow-band low layer compatibility (Note 13)	Narrow-band low layer compatibility (Note 19)
Narrow-band high layer compatibility	Narrow-band high layer compatibility (Note 14)	Narrow-band high layer compatibility (Note 20)
Notification indicator	Notification (Note 23)	Notification indicator
OAM traffic descriptor	OAM traffic descriptor (Note 15)	OAM traffic descriptor
Progress indicator	Progress indicator (Note 16)	Progress indicator (Note 21)
Quality of Service	Quality of Service	Quality of Service
Transit network selection (Network option)	Transit network selection	Not carried

Table 1/Q.2650 – Mapping of set-up procedure parameters for B-ISDN call *(continued)*

NOTE 1 – The peak cell rate subfields are mapped to the ATM cell rate parameter. The additional subfields, if present, are mapped to the Additional ATM cell rate parameter.

NOTE 2 – The Broadband Low Layer Information IE may be repeated (see Recommendation Q.2931 for allowed repetitions). If it is repeated, all instances are mapped into the single Broadband Low Layer Information parameter in the network. The Repeat Indicator IE is mapped to the Repeat Indicator subfield of the parameter.

NOTE 3 – When the called party number contains the E.164 address, the Called party number IE is mapped to the Called party number parameter.

NOTE 4 – When the called party number contains an AESA, the Called party number IE is mapped to the AESA for called party parameter. When the AESA is an E.164 AESA, the initial domain identifier is mapped into the Called party number parameter in addition.

NOTE 5 – The address is coded as described in E.191.

NOTE 6 – The numbering plan is coded as ATM end system address.

NOTE 7 – The type of number is coded as unknown when ATM end system address is used.

NOTE 8 – When E.164 AESAs are used, the address signal is coded using E.164 address digits from the initial domain identifier field of the ATM end system address in the Called party number IE.

NOTE 9 – Numbering plan is coded as E.164.

NOTE 10 – Table 1/Q.2951.9 shows which information is delivered to the called user depending on the address presentation format at the destination UNI.

NOTE 11 – The Cumulative End-to-End Transit Delay subfield of the End-to-End Transit Delay IE is mapped to the Propagation Delay Counter. The Maximum End-to-End Transit Delay subfield is mapped to the Maximum End-to-End Transit Delay parameter in the network. At the destination exchange, the Propagation Delay Counter value is mapped back to the Cumulative End-to-End Transit Delay subfield only if a Maximum End-to-End Transit Delay parameter is present.

NOTE 12 – The Narrow-band Bearer Capability IE may be repeated (see Recommendation Q.2931 for allowed repetitions). Treatment as in Note 2 above applies. If no Broadband Repeat Indicator IE is present, the priority subfield in B-ISUP should be set to prioritized list ... in ascending order.

NOTE 13 – The Narrow-band Low Layer Compatibility IE may be repeated
(see Recommendation Q.2931 for allowed repetitions). Treatment as in Note 2 above applies.

NOTE 14 – The Narrow-band High Layer Compatibility IE may be repeated
(see Recommendation Q.2931 for allowed repetitions). Treatment as in Note 4 above applies. If no Broadband Repeat Indicator IE is present, the priority subfield in B-ISUP should be set to prioritized list ... in ascending order.

NOTE 15 – The OAM Traffic Descriptor is carried transparently through the network.

NOTE 16 – When the Progress indicator IE is repeated in DSS2, it is carried within a single Progress indicator parameter of B-ISUP, with the priority subfield marked no priority.

NOTE 17 – If the Broadband low layer information parameter contains multiple instances of the Broadband low layer information, each of these will be mapped to a separate Broadband low layer information IE.

NOTE 18 – If the Narrow-band bearer capability parameter contains multiple instances of the Narrow-band bearer capability, each of these will be mapped to a separate Narrow-band bearer capability IE.

Table 1/Q.2650 – Mapping of set-up procedure parameters for B-ISDN call *(concluded)*

NOTE 19 – If the Narrow-band low layer compatibility parameter contains multiple instances of the Narrow-band low layer compatibility, each of these will be mapped to a separate Narrow-band low layer compatibility IE.

NOTE 20 – If the Narrow-band high layer compatibility parameter contains multiple instances of the Narrow-band high layer compatibility, each of these will be mapped to a separate Narrow-band high layer compatibility IE.

NOTE 21 – If the Progress indicator parameter contains multiple progress indicators, each of these will be mapped to a separate Progress indicator IE.

NOTE 22 – The AAL parameters IE may be repeated (see Amendment 4 to Recommendation Q.2931 for allowed repetitions). A single or the first instance is mapped into the AAL parameters parameter. If repeated, the subsequent instances are mapped into the AAL prime parameters parameter. The Repeat indicator IE is mapped to the repeat indicator subfield of the parameter.

NOTE 23 – The Notification indicator IE may be repeated (see Recommendation Q.2931 for allowed repetitions). Each instance of the IE is mapped to a separate Notification parameter.

NOTE 24 – If the End-to-end transit delay IE is not received, the End-to-end transit delay network generated indicator parameter is generated by the network and is set to network generated. If the network generated indicator subfield is received in the End-to-end transit delay IE, the End-to-end transit delay network generated indicator parameter is generated by the network and is set to network generated. If the network generated indicator subfield is not received in the End-to-end transit delay IE, the End-to-end transit delay network generated indicator parameter is generated by the network and is set to user generated, when the maximum end-to-end transit delay subfield is present in the IE or network generated, when the maximum end-to-end transit delay subfield is not present in the IE.

NOTE 25 – The Broadband report type IE may be repeated (see Amendment 4 to Recommendation Q.2931 for allowed repetitions). A single or the first instance is mapped into the Report type parameter. If repeated, the subsequent instances are mapped into the Report type prime parameter. The priority subfield in B-ISUP should be set to no prioritized order.

NOTE 26 – This mapping only applies when the MSN or DDI supplementary service are subscribed.

Table 2/Q.2650 – Mapping of subsequent address information for overlap sending

Orig. U/N INFO →	Network SAM →	Term. U/N INFO
INFO	SAM	INFO
Called party number	Subsequent number	Called party number (Note)
Broadband sending complete	ST (Carried in the Subsequent number)	Broadband sending complete
NOTE – This mapping only applies when the MSN or DDI supplementary service are subscribed.		

Table 3/Q.2650 – Mapping of alerting, independent of ACM

Orig. U/N   Network   Term. U/N
ALERTing ←—————————— CPG ←—————————— ALERTing

ALERTing	CPG	ALERTing
Broadband report type	Report type	Broadband report type
	Called party's indicators: called party's status = alerting	
Narrow-band high layer compatibility	Narrow-band high layer compatibility	Narrow-band high layer compatibility
Narrow-band bearer capability	Narrow-band bearer capability	Narrow-band bearer capability
Progress indicator set to in-band information...now available	In-band information indicator = in-band information...now available	No mapping
Progress indicator (Note 2)	Progress indicator (Note 1)	Progress indicator
Notification indicator	Notification (Note 3)	Notification indicator
NOTE 1 – The Progress indicator IE may be repeated. If repeated, all instances are mapped into a single Progress indicator parameter, with the priority subfield marked no priority.		
NOTE 2 – If the Progress indicator parameter contains multiple progress indicators, each of these will be mapped to a separate Progress indicator IE.		
NOTE 3 – The Notification indicator IE may be repeated (see Recommendation Q.2931 for allowed repetitions). Each instance of the IE is mapped to a separate Notification parameter.		

Table 4/Q.2650 – Mapping of alerting

Orig. U/N   Network   Term. U/N
ALERTing ←—————————— ACM ←—————————— ALERTing

ALERTing	ACM	ALERTing
Broadband report type	Report type	Broadband report type
	Called party's indicators: called party's status = alerting	
Narrow-band high layer compatibility	Narrow-band high layer compatibility	Narrow-band high layer compatibility
Narrow-band bearer capability	Narrow-band bearer capability	Narrow-band bearer capability
Progress indicator set to in-band information...now available	In-band information indicator = in-band information...now available	
Progress indicator (Note 2)	Progress indicator (Note 1)	Progress indicator
Notification indicator	Notification (Note 3)	Notification indicator
NOTE 1 – The Progress indicator IE may be repeated. If repeated, all instances are mapped into a single Progress indicator parameter, with the priority subfield marked no priority.		
NOTE 2 – If the Progress indicator parameter contains multiple progress indicators, each of these will be mapped to a separate Progress indicator IE.		
NOTE 3 – The Notification indicator IE may be repeated (see Recommendation Q.2931 for allowed repetitions). Each instance of the IE is mapped to a separate Notification parameter.		

Table 5/Q.2650 – Mapping of answer indication, non-automatic answering terminal

Orig. U/N   Network   Term. U/N
CONNect ←   ANM ←   CONNect

CONNect	ANM	CONNect
AAL parameters	AAL parameters	AAL parameters
ABR setup parameters	ATC setup parameters	ABR setup parameters
ATM traffic descriptor	ATM cell rate (Note 4)	ATM traffic descriptor
	Additional ATM cell rate (Note 4)	
Broadband low layer information	Broadband low layer information	Broadband low layer information
Broadband report type	Report type (Note 7)	Broadband report type
	Report type prime (Note 7)	
CDVT descriptor	CDVT (Note 5)	CDVT descriptor
End-to-end transit delay	Call history information (Note 1)	End-to-end transit delay
Extended QoS parameters	Extended QoS parameters	Extended QoS parameters
Link layer core parameters	Link layer core parameters	Link layer core parameters
Link layer protocol parameters	Link layer protocol parameters	Link layer protocol parameters
Narrow-band bearer capability	Narrow-band bearer capability	Narrow-band bearer capability
Narrow-band high layer compatibility	Narrow-band high layer compatibility	Narrow-band high layer compatibility
Narrow-band low layer compatibility	Narrow-band low layer compatibility	Narrow-band low layer compatibility
Notification indicator	Notification (Note 6)	Notification indicator
Progress indicator (Note 3)	Progress indicator (Note 2)	Progress indicator
OAM traffic descriptor	OAM traffic descriptor	OAM traffic descriptor

NOTE 1 – If applicable, the Cumulative End-to-End Transit Delay from the called party is mapped to the Call history information parameter at the destination exchange, and is mapped back to the Cumulative End-to-End Transit Delay at the originating exchange.

NOTE 2 – The Progress indicator IE may be repeated. If repeated, all instances are mapped into a single Progress indicator parameter, with the priority subfield marked no priority.

NOTE 3 – If the Progress indicator parameter contains multiple progress indicators, each of these will be mapped to a separate Progress indicator IE.

NOTE 4 – The peak cell rate subfields are mapped to the ATM cell rate parameter. The additional subfields, if present, are mapped to the Additional ATM cell rate parameter.

NOTE 5 – Only the backward CDVT values are mapped.

NOTE 6 – The Notification indicator IE may be repeated (see Recommendation Q.2931 for allowed repetitions). Each instance of the IE is mapped to a separate Notification parameter.

NOTE 7 – The Broadband report type IE may be repeated (see Amendment 4 to Recommendation Q.2931 for allowed repetitions). A single or the first instance is mapped into the Report type parameter. If repeated, the subsequent instances are mapped into the Report type prime parameter. The priority subfield in B-ISUP should be set to no prioritized order.

Table 6a/Q.2650 – Mapping of progress indication

| Orig. U/N PROGress | ← | Network CPG | ← | Term. U/N PROGress |

PROGress	CPG	PROGress
	Called party's indicators: called party's status = no indication	
Narrow-band bearer capability	Narrow-band bearer capability	Narrow-band bearer capability
Narrow-band high layer compatibility	Narrow-band high layer compatibility	Narrow-band high layer compatibility
Notification indicator	Notification (Note 4)	Notification indicator
Progress indicator set to in-band information...now available (Note 3)	In-band information indicator = in-band information...now available	No mapping
Progress indicator (Notes 2 and 3)	Progress indicator (Note 1)	Progress indicator

NOTE 1 – The Progress indicator IE may be repeated. If repeated, all instances are mapped into a single Progress indicator parameter, with the priority subfield marked no priority.
NOTE 2 – If the Progress indicator parameter contains multiple progress indicators, each of these will be mapped to a separate Progress indicator IE.
NOTE 3 – When the number of Progress indicator IE's to be sent is more than the maximum number of this IE allowed in the DSS2 message, the supplementary progress indicator IE's are sent in a separate PROGRESS message.
NOTE 4 – The Notification indicator IE may be repeated (see Recommendation Q.2931 for allowed repetitions). Each instance of the IE is mapped to a separate Notification parameter.

Table 6b/Q.2650 – Mapping of progress indication

| Orig. U/N PROGress | ← | Network ACM | ← | Term. U/N PROGress |

PROGress	ACM	PROGress
	Called party's indicators: called party's status = no indication	
Narrow-band bearer capability	Narrow-band bearer capability	Narrow-band bearer capability
Narrow-band high layer compatibility	Narrow-band high layer compatibility	Narrow-band high layer compatibility
Notification indicator	Notification (Note 4)	Notification indicator
Progress indicator set to in-band information...now available (Note 3)	In-band information indicator = in-band information...now available	No mapping
Progress indicator (Notes 2 and 3)	Progress indicator (Note 1)	Progress indicator

Table 6b/Q.2650 – Mapping of progress indication *(concluded)*

NOTE 1 – The Progress indicator IE may be repeated. If repeated, all instances are mapped into a single Progress indicator parameter, with the priority subfield marked no priority.
NOTE 2 – If the Progress indicator parameter contains multiple progress indicators, each of these will be mapped to a separate Progress indicator IE.
NOTE 3 – When the number of Progress indicator IE's to be sent is more than the maximum number of this IE allowed in the DSS2 message, the supplementary progress indicator IE's are sent in a separate PROGRESS message.
NOTE 4 – The Notification indicator IE may be repeated (see Recommendation Q.2931 for allowed repetitions). Each instance of the IE is mapped to a separate Notification parameter.

Table 6c/Q.2650 – Mapping of connection available

Orig. U/N Connection Available	Network COA	Term. U/N Connection Available
Connection Available	COA	Connection Available
Broadband report type	Report type	Broadband report type
Notification indicator	Notification (Note)	Notification indicator
NOTE – The Notification indicator IE may be repeated (see Recommendation Q.2931 for allowed repetitions). Each instance of the IE is mapped to a separate Notification parameter.		

4.2   Arrow diagrams

This subclause contains the interworking arrow diagrams for the successful call set-up procedures. Also shown in each arrow diagram is the use of the Initial Address Acknowledgement (IAA) message in the network, which is of local significance in response to an Initial Address Message (IAM).

For those messages that are not mapped, for clarification, an X precedes the arrowhead. Optional messages are shown as dashed arrows.

4.2.1   *En bloc*, **non-automatic answering terminal, sending of ACM independent of access**

Figure 1 shows the sequence of messages for successful call set-up where *en bloc* address signalling is used, the Address Complete Message (ACM) is sent prior to receiving a message from the access, and the called party is not an automatic answering terminal.

4.2.2   *En bloc*, **automatic answering terminal, sending of ACM independent of access**

Figure 2 shows the sequence of messages for successful call set-up where *en bloc* address signalling is used, the Address Complete Message (ACM) is sent prior to receiving a message from the access, and the called party is an automatic answering terminal.

4.2.3   *En bloc*, **non-automatic answering terminal**

Figure 3 shows the sequence of messages for successful call set-up where *en bloc* address signalling is used, the Address Complete Message (ACM) is delayed until receipt of alerting indication from the access, and the called party is not an automatic answering terminal.

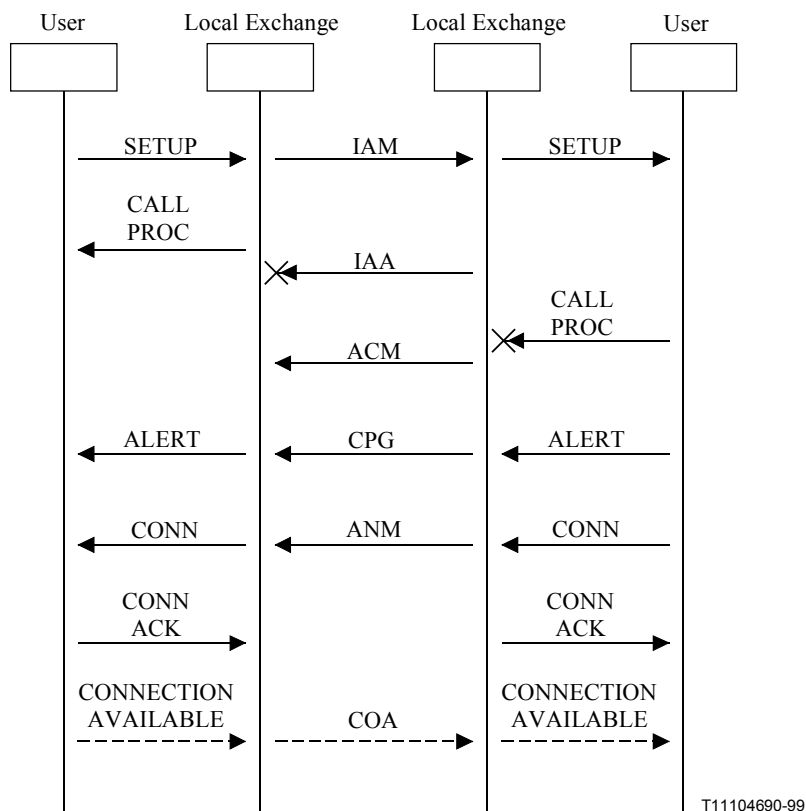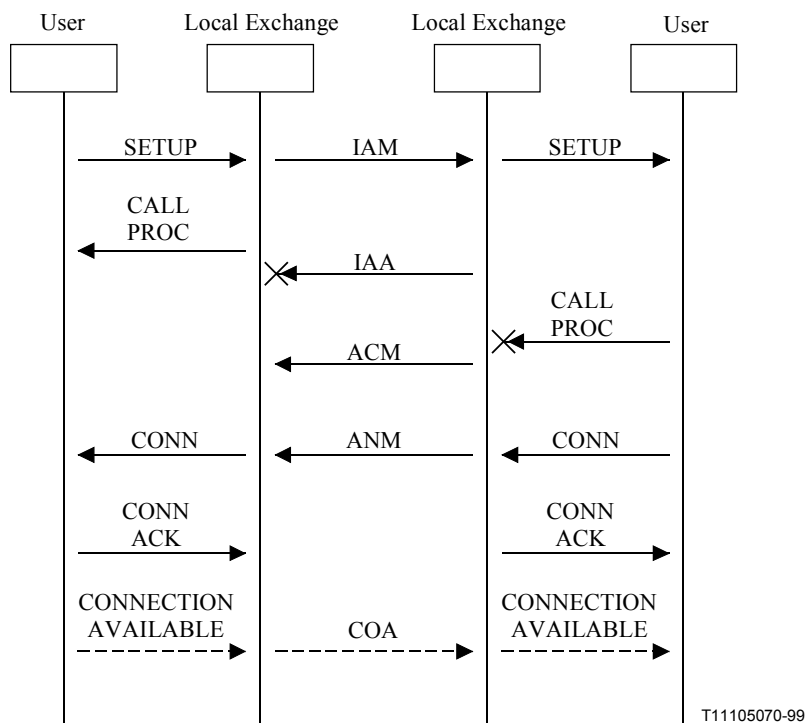### 4.2.4 *En bloc*, automatic answering terminal

Figure 4 shows the sequence of messages for successful call set-up where *en bloc* address signalling is used, the Address Complete Message (ACM) is not sent.

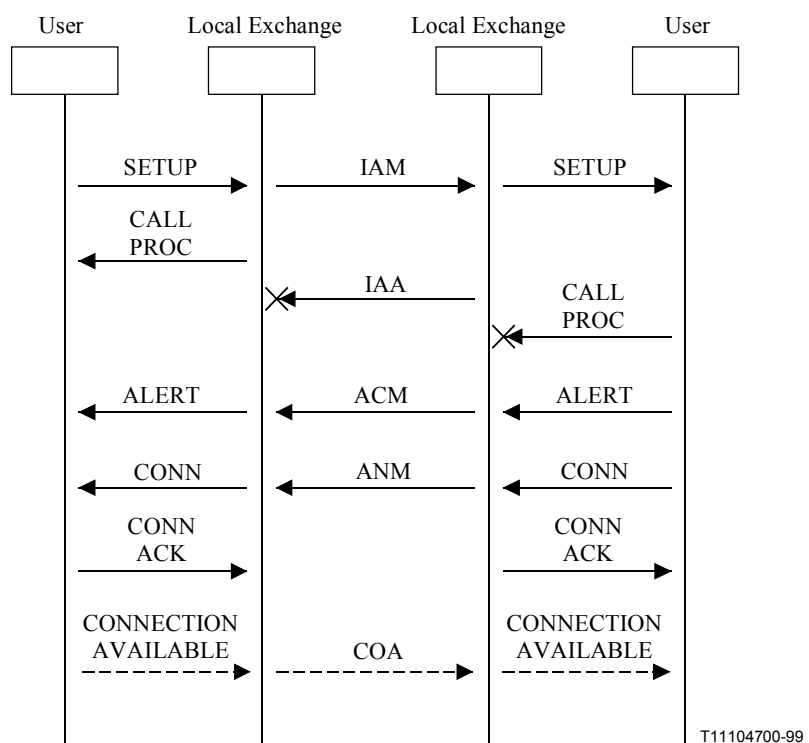### 4.2.5 Overlap addressing, non-automatic answering terminal

Figure 5 shows the sequence of messages when overlap addressing is used between the calling party and the originating local exchange, and *en bloc* addressing is used within the network. An independent ACM and non-automatic answering terminal is assumed in this case. Variations are possible in Figures 1 to 4.

**Figure 1/Q.2650 – *En bloc*, non-automatic answering terminal,
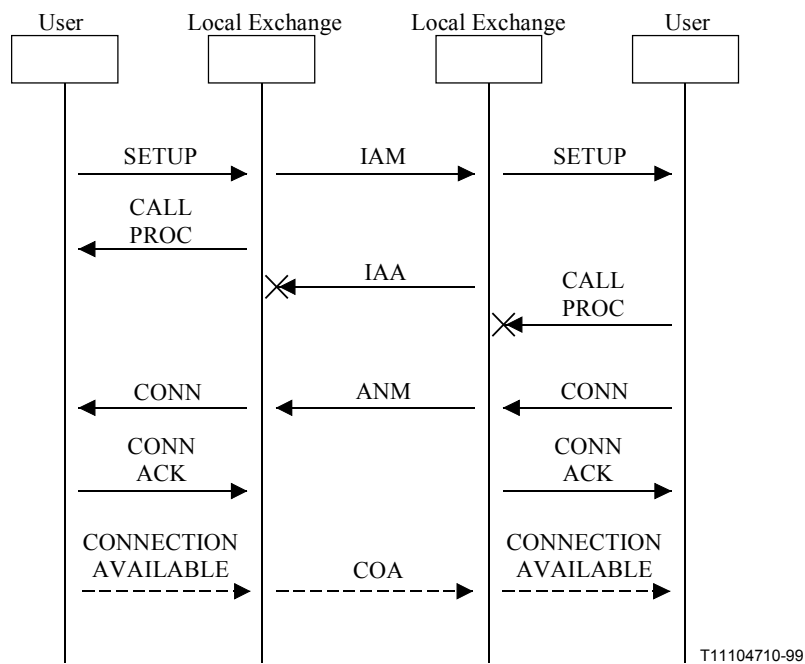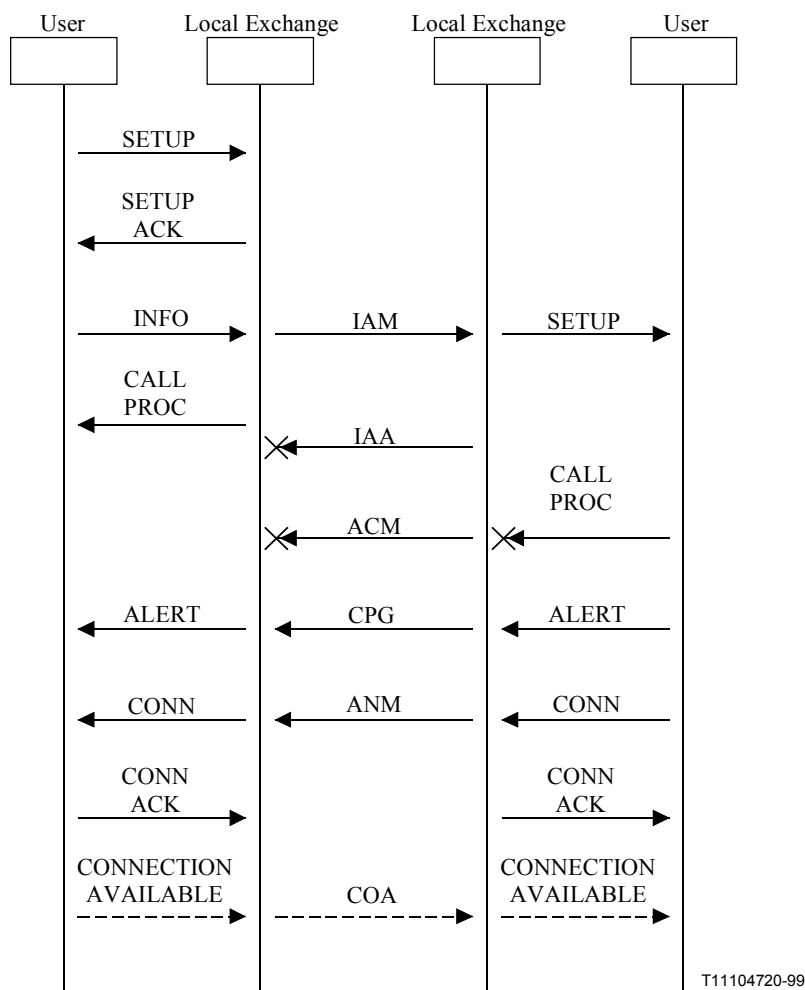sending of ACM independent of access**

Figure 2/Q.2650 – *En bloc*, automatic-answering terminal, sending of ACM independent of access

Figure 3/Q.2650 – *En bloc*, non-automatic answering terminal

Figure 4/Q.2650 – *En bloc*, automatic-answering terminal

Figure 5/Q.2650 – Overlap in access only, ACM sent independent of access

4.2.6 Overlap addressing, originating access and network, non-automatic answering terminal

Figure 6 shows the sequence of messages when overlap addressing is used at the originating access and in the network. In the case shown, the ACM through the network informs the originating local exchange that enough address information has been received, and the exchange can therefore indicate CALL PROC to the calling party. Alternatively, the CALL PROC may be generated independently by the originating local exchange.

**Figure 6/Q.2650 – Overlap in access and within network,
ACM sent independent of access**

4.2.7 User-generated PROG message, sending of address complete independent of access

Figure 7 shows the case where the PROG message in DSS2 is used to indicate interworking outside of the public network.

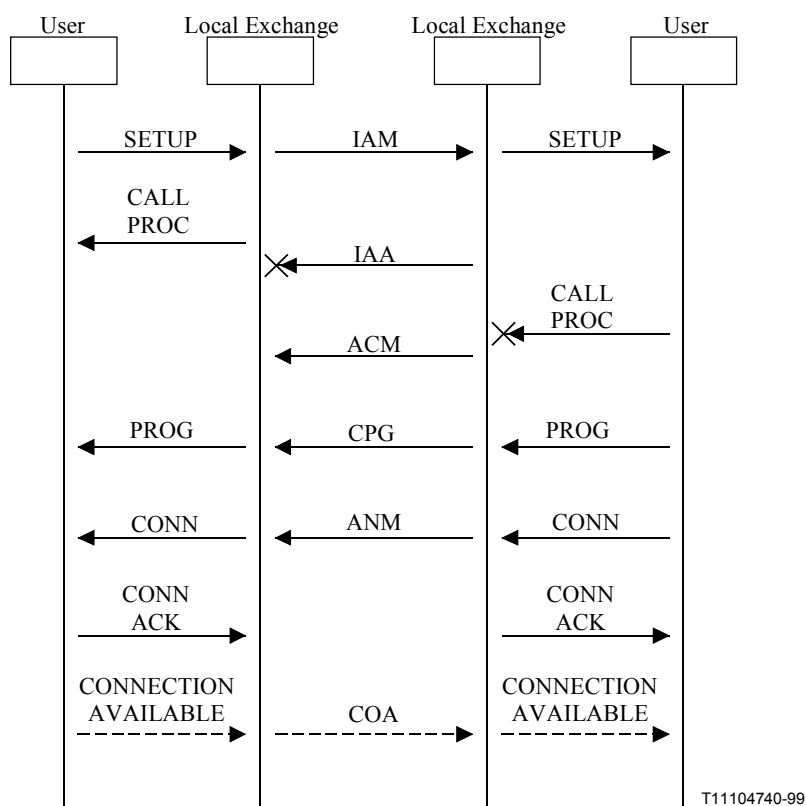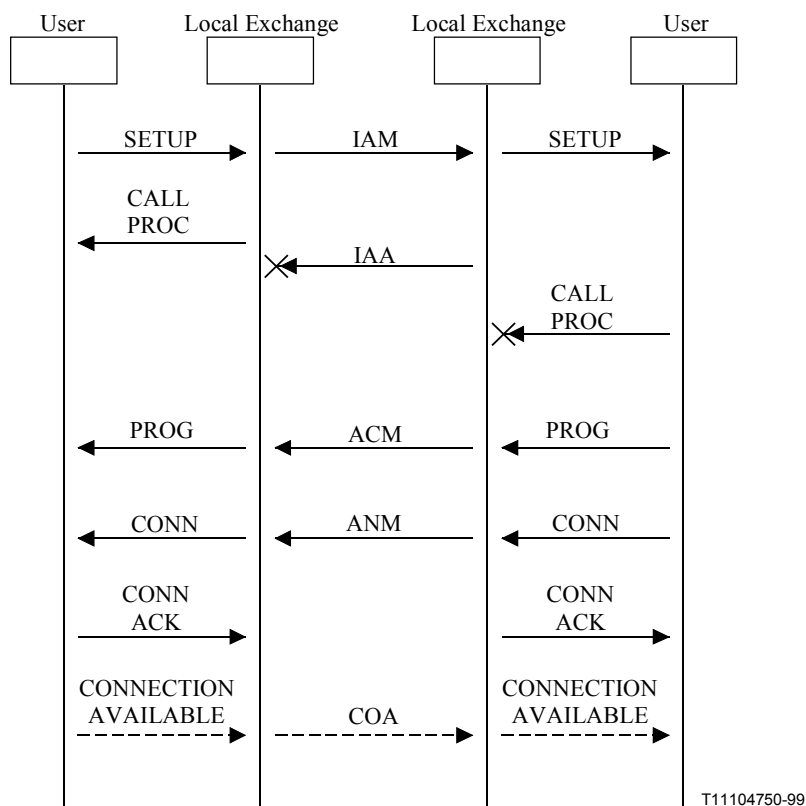**Figure 7/Q.2650 – User-generated PROG message, ACM sent independent of access**

4.2.8 User-generated PROG message

Figure 8 shows the corresponding case when the address complete indication is delayed until an indication is received from the access, and the PROG message maps to an Address Complete Message.

Figure 8/Q.2650 – User-generated PROG message, ACM sent dependent on access, *en bloc* sending

5 Interworking specification for call release procedures

5.1 Mapping table

This subclause contains the mapping table and associated parameters and information elements for call release. (See Table 7.)

Table 7/Q.2650 – Mapping of release procedure parameters for B-ISDN call

Orig. U/N REL ———————————→ Network REL ———————————→ Term. U/N REL

REL	REL	REL
Cause	Cause indicators	Cause
Notification indicator	Notification (Note 3)	Notification indicator
Progress indicator (Note 1)	Progress indicator (Note 2)	Progress indicator

NOTE 1 – The Progress indicator IE may be repeated. If repeated, all instances are mapped into a single Progress indicator parameter, with the priority subfield marked no priority.

NOTE 2 – If the Progress indicator parameter contains multiple progress indicators, each of these will be mapped to a separate Progress indicator IE.

NOTE 3 – The Notification indicator IE may be repeated (see Recommendation Q.2931 for allowed repetitions). Each instance of the IE is mapped to a separate Notification parameter.

6 Interworking specification for unsuccessful call set-up procedures

6.1 Mapping tables

This subclause contains the mapping tables and associated parameters and information elements for unsuccessful call set-up. (See Table 8 and Table 8a.)

Table 8/Q.2650 – Mapping of DSS2 REL COMP message information elements

Orig. U/N REL ←——————————— Network REL ←——————————— Term. U/N REL COMP

REL	REL	REL COMP
Cause	Cause indicators	Cause

Table 8a/Q.2650 – Mapping of B-ISUP IAR message

Orig. U/N REL ←——————————— Network IAR

REL	IAR
Cause	Cause indicators

6.2 Arrow diagram

This subclause contains the interworking arrow diagrams for unsuccessful call set-up procedures.

6.2.1 Unsuccessful call set-up

Figure 9 shows the unsuccessful call set-up procedure, where in-band tones/announcements are not provided (e.g. 64 kbit/s unrestricted bearer service). The DSS2 REL COMP message at the destination exchange is mapped into the B-ISUP REL message. At the originating exchange the B-ISUP REL message is mapped into the DSS2 REL message.

Figure 9a shows the unsuccessful call set-up procedure where the Initial Address Reject (IAR) message at the originating exchange is mapped into the DSS2 REL message.
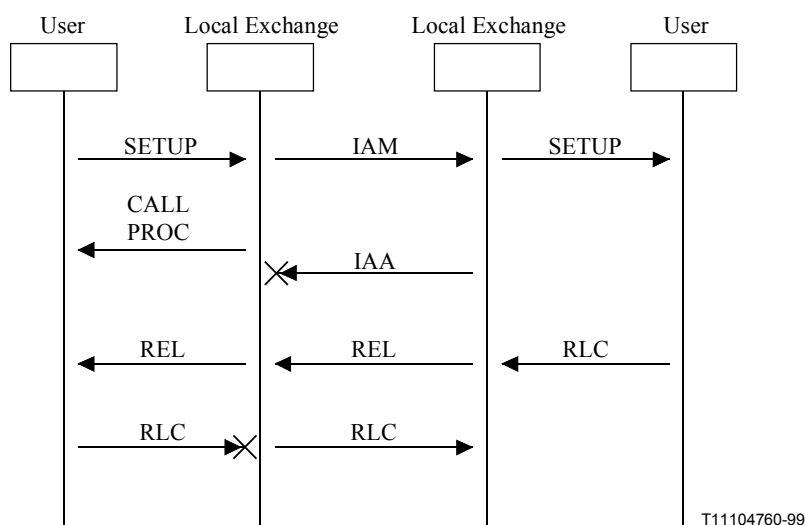

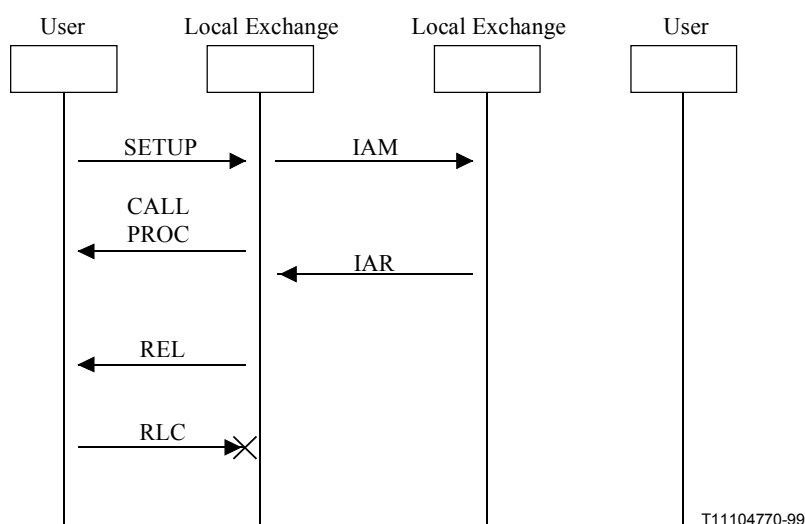**Figure 9/Q.2650 – Unsuccessful call**

Figure 9a/Q.2650 – Unsuccessful call

6.3 Interworking specification for additional procedures

6.3.1 Modification

This subclause contains the mapping table for the modification capability associated messages, parameters and information elements.

6.3.1.1 Mapping table

See Tables 8b, 8c, 8d and 8e.

Table 8b/Q.2650 – Mapping of modification request

| Orig. U/N Modify Request | → | Network MOD | → | Term. U/N Modify Request |

Modify Request	MOD	Modify Request
ATM traffic descriptor	ATM cell rate	ATM traffic descriptor
	Additional ATM cell rate (Note 1)	
Alternative ATM traffic descriptor	Alternative ATM cell rate	Alternative ATM traffic descriptor
Minimum acceptable ATM traffic descriptor	Minimum ATM cell rate	Minimum acceptable ATM traffic descriptor
Notification indicator	Notification (Note 2)	Notification indicator
NOTE 1 – The peak cell rate parameters (if present) are mapped to/from the ATM cell rate and the sustainable cell rate or maximum burst size parameters (if present) are mapped to/from the Additional ATM cell rate.		
NOTE 2 – The Notification indicator IE may be repeated (see Recommendation Q.2931 for allowed repetitions). Each instance of the IE is mapped to a separate Notification parameter.		

Table 8c/Q.2650 – Mapping of modification acknowledge

| Orig. U/N Modify Acknowledge | ← | Network MOA | ← | Term. U/N Modify Acknowledge |

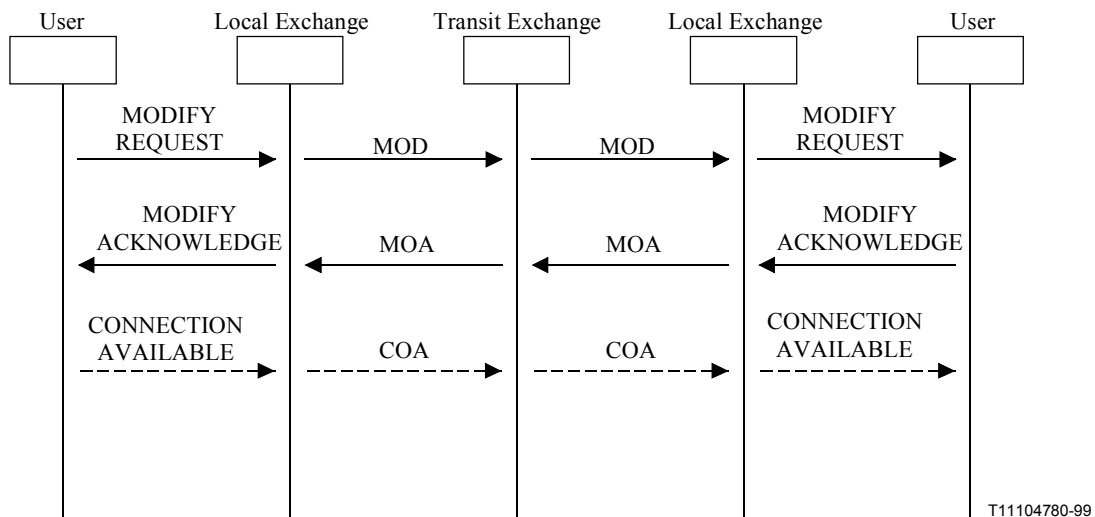| Modify Acknowledge	MOA	Modify Acknowledge
ATM traffic descriptor	ATM cell rate	ATM traffic descriptor
	Additional ATM cell rate (Note 1)	
Broadband report type (Note 2)	Report type (Note 2)	Broadband report type (Note 2)
Notification indicator	Notification (Note 3)	Notification indicator
NOTE 1 – Only the sustainable cell rate and maximum burst size subfields of the ATM traffic descriptor information element are mapped to the additional ATM cell rate parameter. The peak cell rate subfields are mapped to the ATM cell rate parameter.		
NOTE 2 – This parameter is transferred only in the case that the terminating user requires confirmation procedure that is an option.		
NOTE 3 – The Notification indicator IE may be repeated (see Recommendation Q.2931 for allowed repetitions). Each instance of the IE is mapped to a separate Notification parameter.		

Table 8d/Q.2650 – Mapping of modification reject

Orig. U/N	Network	Term. U/N
Modify Reject ←	MOR ←	Modify Reject

Modify Reject	MOR	Modify Reject
Cause	Cause indicators	Cause
Notification indicator	Notification (Note)	Notification indicator
NOTE – The Notification indicator IE may be repeated (see Recommendation Q.2931 for allowed repetitions). Each instance of the IE is mapped to a separate Notification parameter.		

Table 8e/Q.2650 – Mapping of connection available

Orig. U/N	Network	Term. U/N
Connection Available →	COA →	Connection Available

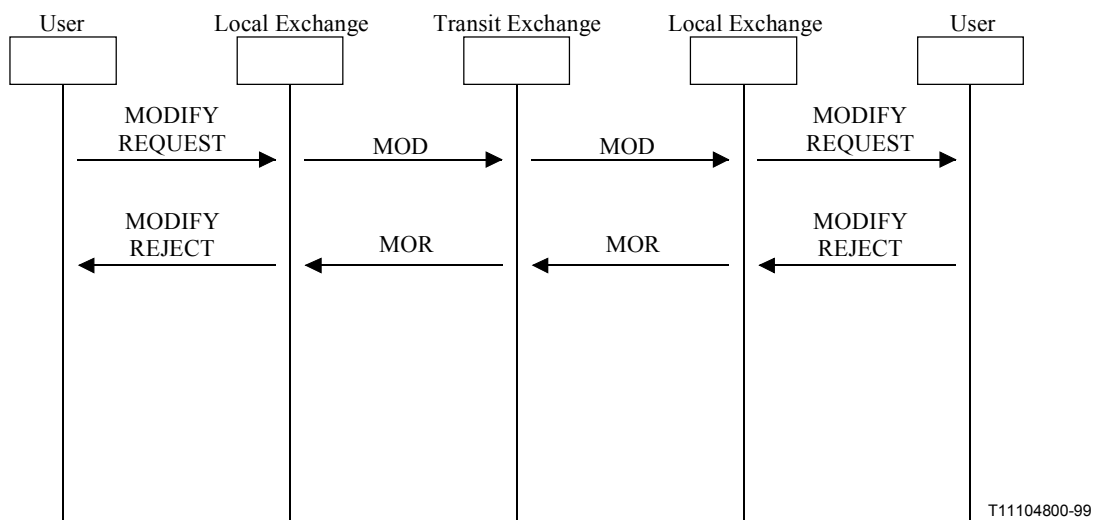| Connection Available	COA	Connection Available
Notification indicator	Notification (Note)	Notification indicator
NOTE – The Notification indicator IE may be repeated (see Recommendation Q.2931 for allowed repetitions). Each instance of the IE is mapped to a separate Notification parameter.		

6.3.1.2 Arrow diagrams

This subclause contains the interworking arrow diagrams for successful and unsuccessful modification.
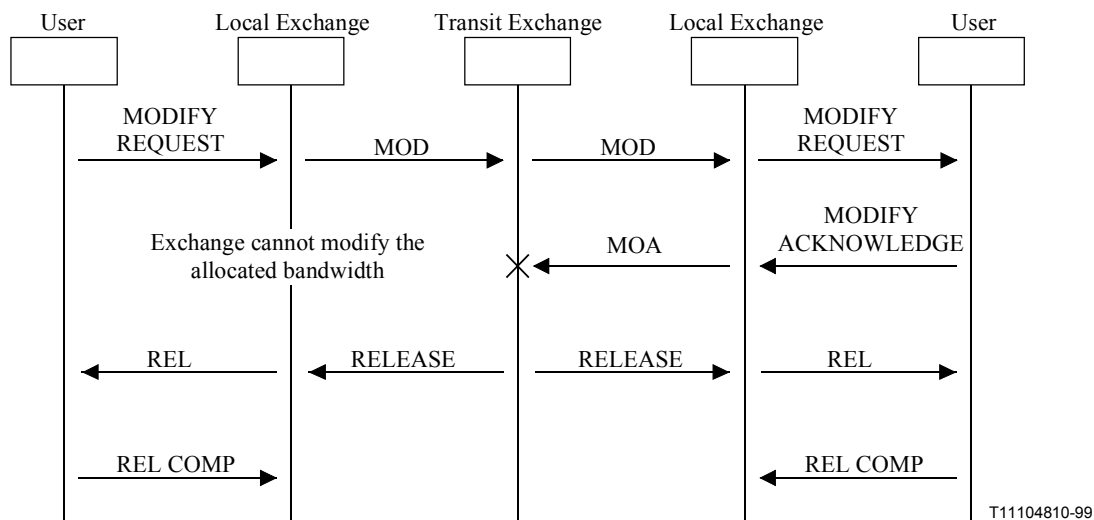

Figure 9b/Q.2650 – Example of successful modification

Figure 9c/Q.2650 – Example of unsuccessful modification

Figure 9d/Q.2650 – Example of unsuccessful modification

Figure 9e/Q.2650 – Example of unsuccessful modification

7 Supplementary services

7.1 Direct-Dialling-In supplementary service

This subclause contains the mapping tables for the Direct-Dialling-In supplementary service associated messages, parameters and information elements.

7.1.1 Mapping table

See Tables 9a and 9b.

Table 9a/Q.2650 – Mapping the Initial Address Message with the SETUP message

SETUP	IAM	SETUP
	Called party number (as for basic call)	Called party number
	AESA for called party (as for basic call)	
	ST (carried in Called Party number)	Broadband sending complete

Table 9b/Q.2650 – Mapping of subsequent address information for overlap sending

Orig. U/N INFO	Network SAM	Term. U/N INFO

INFO	SAM	INFO
	Subsequent number (as for basic call – called party uses E.164 address only)	Called party number
	ST (carried in Subsequent number)	Broadband sending complete

7.1.2 Arrow Diagram

Figure 10 shows the case where the indication that complete address information has been received is transferred by the terminating access in the CALL PROCEEDING message.

**Figure 10/Q.2650 – Overlap in both accesses and within network,
CALL PROC mapped to ACM**

7.2 Multiple Subscriber Number supplementary service

This subclause contains the mapping tables for the Multiple Subscriber Number supplementary service associated messages, parameters and information elements.
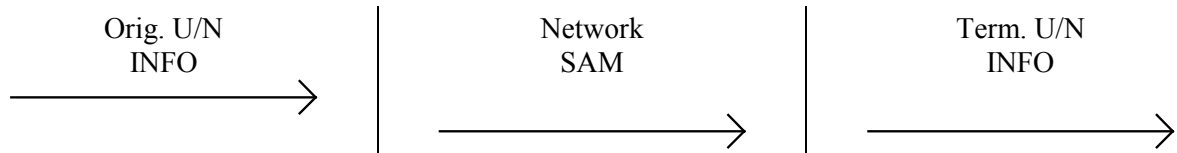
7.2.1 Mapping table

See Table 10.

Table 10/Q.2650 – Mapping the Initial Address Message with the SETUP Message

SETUP	IAM	SETUP
	Called party number (as for basic call)	Called party number (Note)
	AESA for called party (as for basic call)	
	ST (carried in Called Party number)	Broadband sending complete
NOTE – The MSN number received in the called party number information element can be part of the ISDN number or as a network provider option a number which can be mapped from the ISDN number received from the network.		

7.3 CLIP/CLIR supplementary services

This subclause contains the mapping tables for the Calling Line Identification Presentation/Restriction supplementary services associated messages, parameters and information elements.

7.3.1 Mapping table

See Table 11.

7.4 COLP/COLR supplementary services

This subclause contains the mapping tables for the Connected Line Identification Presentation/Restriction supplementary services associated messages, parameters and information elements.

7.4.1 Mapping table

See Table 12.

Table 11/Q.2650 – Mapping the Initial Address Message with the SETUP message

Orig. U/N
SETUP

Network
IAM

Term. U/N
SETUP

Orig. U/N	Network	Term. U/N
Network screening		
Calling party number	Calling party number (Note 1)	Calling party number (Note 1)
	AESA for calling party parameter (Note 1)	
No network screening		
Calling party number	Additional calling party number (Note 1)	Calling party number (Note 1)
	AESA for additional calling party parameter (Note 1)	Calling party number (Notes 1 and 2)
	Calling party number parameter (Note 1)	
	AESA for calling party (Note 1)	
Calling party sub-address	Calling party sub-address parameter	Calling party sub-address
NOTE 1 – Mapping depends on the number format. Refer to Recommendation Q.2730 for details.		
NOTE 2 – This requires the support of the two-number delivery option.		

Table 12/Q.2650 – Mapping the Initial Address Message with the SETUP message

Orig. U/N
SETUP

Network
IAM

Term. U/N
SETUP

Orig. U/N	Network	Term. U/N
	Connected line identity request parameter: generated by the network	

7.4.2 Mapping table

See Table 13.

7.5 Interworking specification for the Sub-address supplementary service

This subclause contains the mapping tables for the Sub-address supplementary service associated messages, parameters and information elements.

7.5.1 Mapping table

See Table 14.

7.6 UUS 1 supplementary services

This subclause contains the mapping tables for the User-to-user Signalling Service 1 (implicit) supplementary service associated messages, parameters and information elements.

7.6.1 Mapping table

See Table 15.

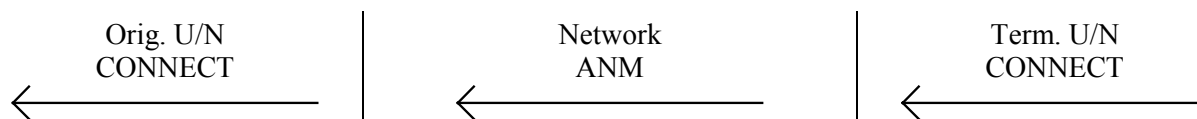### 7.6.2 Mapping table

See Table 16.

7.6.3 Mapping table

See Table 17.

7.6.4 Mapping table

See Table 18.

Table 13/Q.2650 – Mapping the Answer Message with the CONNECT message

Orig. U/N CONNECT	Network ANM	Term. U/N CONNECT
←	←	←

Orig. U/N	Network	Term. U/N
Network screening		
Connected number (Note)	Connected number parameter (Note)	Connected number
	AESA for connected party parameter (Note)	
No network screening		
Connected number (Note)	Additional connected number parameter (Note)	Connected number
	AESA for additional connected party parameter (Note)	
	Connected number parameter (Note)	
	AESA for connected party parameter (Note)	
Connected sub-address	Connected sub-address parameter	Connected sub-address
NOTE – Mapping depends on the number format. Refer to Recommendation Q.2730 for details.		

Table 14/Q.2650 – Mapping the Initial Address Message with the SETUP Message

Orig. U/N SETUP	Network IAM	Term. U/N SETUP
⟶	⟶	⟶

SETUP	IAM	SETUP
Called party sub-address (as for basic call) (Note)	Called party sub-address (as for basic call) (Note)	Called party sub-address
NOTE – The called party subaddress is always transported by the network, but only sent to the called party when this party has subscribed to the sub-address supplementary service.		

Table 15/Q.2650 – Mapping the Initial Address Message with the SETUP Message

Orig. U/N SETUP	Network IAM	Term. U/N SETUP
⟶	⟶	⟶

Orig. U/N	Network	Term. U/N
User-to-user information	User-to-user information	User-to-user information

Table 16/Q.2650 – Mapping the Address Complete message with the ALERT message

Orig. U/N ALERT	Network ACM	Term. U/N ALERT
⟵	⟵	⟵

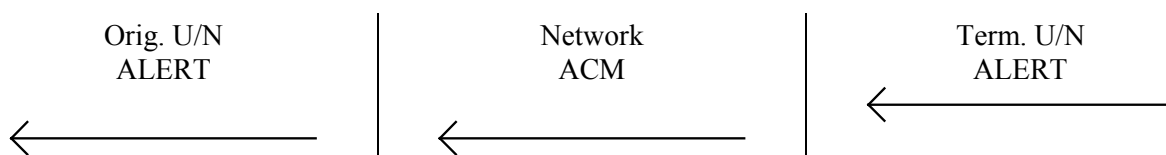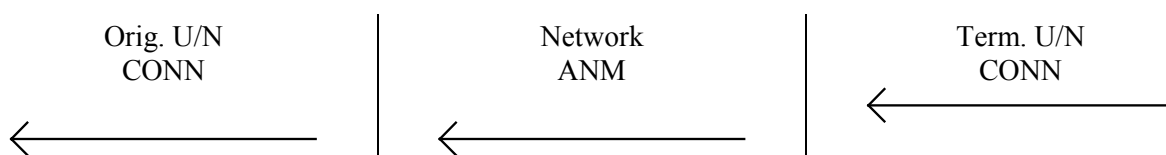| Orig. U/N	Network	Term. U/N
User-to-user information	User-to-user information	User-to-user information
	User-to-user indicators parameter	

Table 17/Q.2650 – Mapping the Answer message with the CONNECT message

Orig. U/N CONN	Network ANM	Term. U/N CONN
⟵	⟵	⟵

Orig. U/N	Network	Term. U/N
User-to-user information	User-to-user information	User-to-user information
	User-to-user indicators parameter	

Table 18/Q.2650 – Mapping the Release Message with the REL or RLC message

Orig. U/N REL	Network REL	Term. U/N REL or RLC
←	←	←

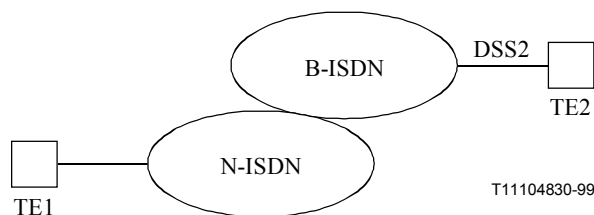| Orig. U/N	Network	Term. U/N
User-to-user information	User-to-user information	User-to-user information

7.7   Closed User Group

This subclause contains the mapping tables for the Closed User Group supplementary service associated messages, parameters and information elements.

7.7.1   Mapping tables

See Recommendation Q.2735.1.

8   N-ISDN supplementary services not supported by B-ISDN

This clause specifies the interworking for those supplementary services that are not part of B-ISDN. This interworking occurs due to interworking with the N-ISDN (see Figure 11).
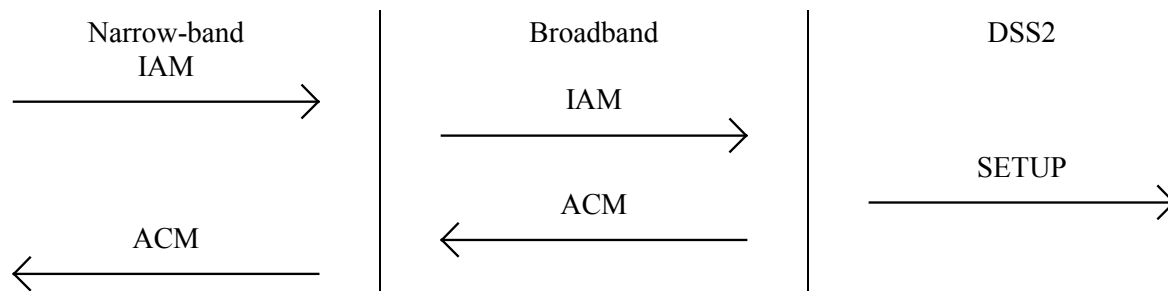
Figure 11/Q.2650

8.1   Call Forwarding Busy supplementary service

This subclause contains the mapping tables for the Call Forwarding Busy supplementary service associated messages, parameters and information elements.

8.1.1   Mapping table

See Table 19.

Table 19/Q.2650 – Mapping CFB information

Narrow-band	Broadband	DSS2
IAM	IAM	
	ACM	SETUP
ACM		

IAM	IAM	SETUP
Redirecting number	Redirecting number	
Redirection information	Redirection information	
Original called number	Original called number	

8.2 Call Forwarding No Reply supplementary service

Refer to 8.1.

8.3 Call Forwarding Unconditional supplementary service

Refer to 8.1.

8.4 Call Deflection supplementary service

Refer to 8.1.

8.5 Call Waiting supplementary service

The notification is passed transparently through B-ISDN.

8.6 Call Hold supplementary service

The notification is passed transparently through B-ISDN.

8.7 Conference Add-on Call supplementary service

The notification is passed transparently through B-ISDN.

8.8 Three-Party Service supplementary service

The notification is passed transparently through B-ISDN.

8.9 Terminal Portability supplementary service

This subclause contains the mapping tables for the Terminal Portability supplementary service associated messages, parameters and information elements.

8.9.1 Mapping tables

See Tables 20 and 21.

Table 20/Q.2650 – Mapping of suspend procedures

SUS	SUS	NOTIFY
Suspend/resume indicators: ISDN subscriber initiated	Suspend/resume indicators: User initiated	Notification description: User suspended

Table 21/Q.2650 – Mapping of resume procedures

RES	RES	NOTIFY
Suspend/resume indicators: ISDN subscriber initiated	Suspend/resume indicators: User initiated	Notification description: User resumed

8.10 Multi-level Precedence and Preemption supplementary service

The MLPP precedence parameter shall be discarded.

8.11 User-to-User Signalling 1 (explicit) supplementary service

This subclause contains the mapping tables for the User-to-User Signalling Service 1 (explicit) supplementary service associated messages, parameters and information elements.
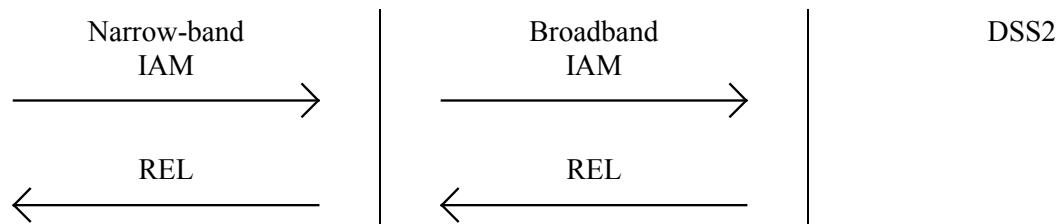
8.11.1 Mapping tables

See Tables 22 and 23.

**Table 22/Q.2650 – Mapping UUS1 information
UUS1 is requested as not essential**

IAM	IAM	SETUP
User-to-user indicators: service 1 not essential for the call	User-to-user indicators: service 1 not essential for the call	

ACM	ACM	
User-to-user indicators: service 1 not provided	User-to-user indicators: service 1 not provided	

Table 23/Q.2650 – Mapping UUS1 information
UUS1 is requested as essential for the call

Narrow-band	Broadband	DSS2
IAM ⟶	IAM ⟶	
REL ⟵	REL ⟵	

IAM	IAM	
User-to-user indicators: service 1 essential for the call	User-to-user indicators: service 1 essential for the call	

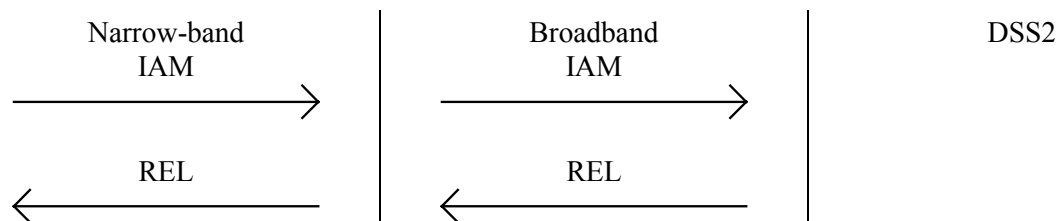| REL	REL	
Cause indicators: cause value #29 or #69	Cause indicators: cause value #29 or #69	

8.12 User-to-User Signalling 2 supplementary service

This subclause contains the mapping tables for the User-to-User Signalling Service 2 supplementary service associated messages, parameters and information elements.

8.12.1 Mapping tables

See Tables 24 and 25.

Table 24/Q.2650 – Mapping UUS2 information
UUS2 is requested as essential

Narrow-band	Broadband	DSS2
IAM ⟶	IAM ⟶	
REL ⟵	REL ⟵	

IAM	IAM	
User-to-user indicators: service 2 essential for the call	User-to-user indicators: service 2 essential for the call	

REL	REL	
Cause indicators: cause value #29 or #69	Cause indicators: cause value #29 or #69	

Table 25/Q.2650 – Mapping UUS2 information
UUS2 is requested as not essential

Narrow-band	Broadband	DSS2
IAM ⟶	IAM ⟶	SETUP ⟶
⟵ ACM	⟵ ACM	

IAM	IAM	SETUP
User-to-user indicators: service 2 not essential for the call	User-to-user indicators: service 2 not essential for the call	

ACM	ACM	
User-to-user indicators: service 2 not provided	User-to-user indicators: service 2 not provided	

8.13 User-to-User Signalling 3 supplementary service

This subclause contains the mapping tables for the User-to-user Signalling Service 3 supplementary service associated messages, parameters and information elements.

8.13.1 Mapping tables

See Tables 26, 27 and 28.

Table 26/Q.2650 – Mapping UUS3 information
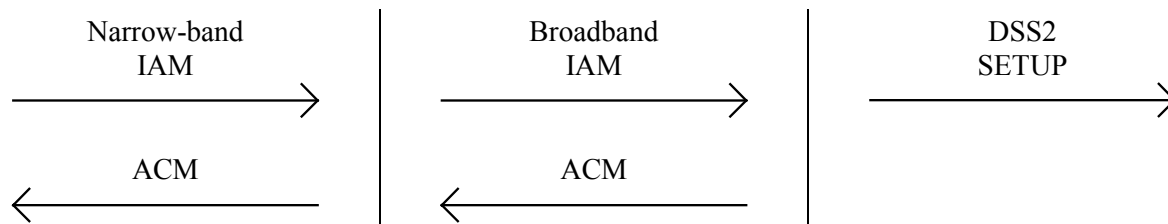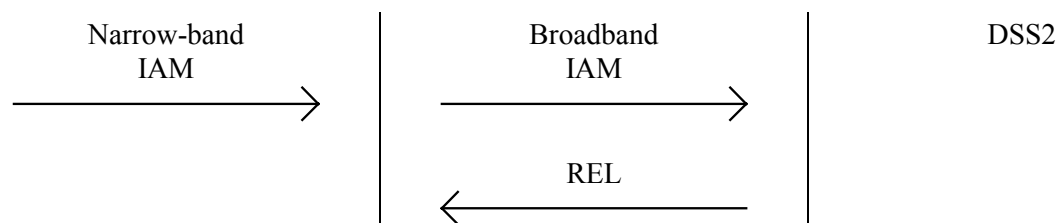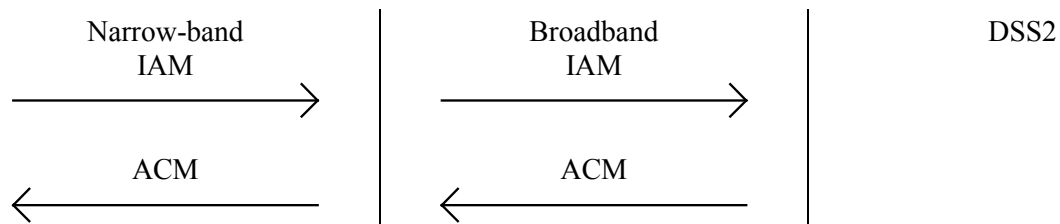**UUS3 is requested as essential during call set-up**

Narrow-band	Broadband	DSS2
IAM ⟶	IAM ⟶	
	⟵ REL	

IAM	IAM	
User-to-user indicators: service 3 essential for the call	User-to-user indicators: service 3 essential for the call	

	REL	
	Cause indicators: cause value #29 or #69	

**Table 27/Q.2650 – Mapping UUS3 information
UUS3 is requested as not essential during call set-up**

Narrow-band	Broadband	DSS2
IAM	IAM	

IAM	IAM	SETUP
User-to-user indicators: service 3 not essential for the call	User-to-user indicators: service 3 not essential for the call	

ACM	ACM	
User-to-user indicators: service 3 not provided	User-to-user indicators: service 3 not provided	

**Table 28/Q.2650 – Mapping UUS3 information
UUS3 is requested after call set-up**

Narrow-band	Broadband	DSS2
FAR	USR	

FAR	USR	
User-to-user indicators: service 3 not essential for the call	User-to-user indicators: service 3 not essential for the call	

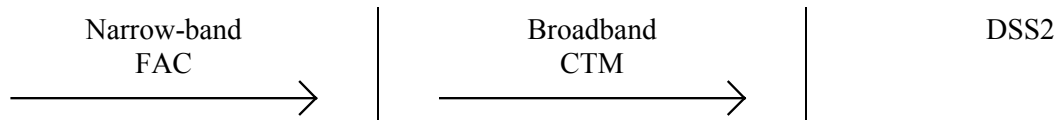| FRJ	USR	
User-to-user indicators: service 3 not provided	User-to-user indicators: service 3 not provided	

8.14   Explicit Call Transfer (ECT) supplementary service

This subclause contains the mapping tables for the Explicit Call Transfer supplementary service associated messages, parameters and information elements.
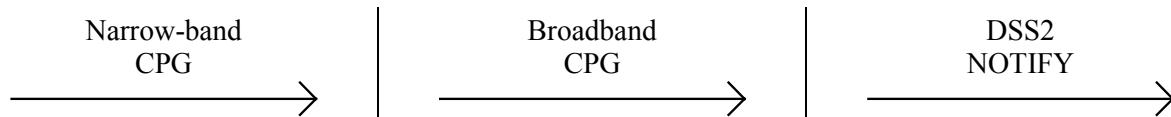
8.14.1 Mapping tables

See Tables 29, 30 and 31.

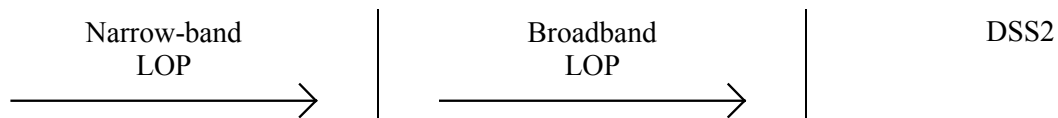**Table 29/Q.2650 – Mapping of ECT information**
Facility message

Narrow-band FAC →	Broadband CTM →	DSS2

FAC	CTM	
Call transfer number	Call transfer number	
Access transport	Calling party sub-address	
Generic notification	Notification	
Service activation parameter: call transfer	Not carried	
NOTE – The local exchange shall discard the CTM Message.		

Table 30/Q.2650 – Mapping of ECT information
Call Progress message

Narrow-band CPG →	Broadband CPG →	DSS2 NOTIFY →

CPG	CPG	NOTIFY
Call transfer number	Call transfer number	Not carried
Generic notification	Notification	Notification Indicator

Table 31/Q.2650 – Mapping of ECT Information
LOP message

Narrow-band LOP →	Broadband LOP →	DSS2

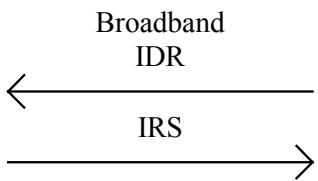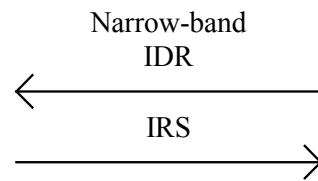| LOP	LOP	
Loop prevention indicator	Loop prevention indicator	
Call transfer reference	Call transfer reference	
NOTE – The local exchange shall discard the LOP Message.		

8.15 Malicious Call Identification (MCID) supplementary service

This subclause contains the mapping tables for the Malicious Call Identification supplementary service associated messages, parameters and information elements.
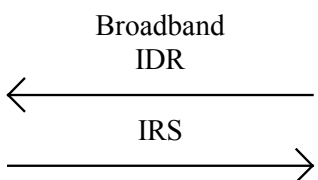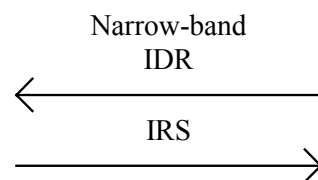
8.15.1 Mapping tables

See Tables 32 and 33.

Table 32/Q.2650 – Mapping of MCID information
MCID information available

DSS2	Broadband	Narrow-band
	IDR ←	IDR ←
	IRS →	IRS →

	IDR	IDR
	MCID request indicator: MCID requested	MCID request indicator: MCID requested

	IRS	IRS
	MCID response indicator: MCID included	MCID response indicator: MCID included
	Calling party number	Calling party number
	Additional calling party number	Generic number
	Calling party sub-address	Access transport

Table 33/Q.2650 – Mapping of MCID information
MCID information not available

DSS2	Broadband	Narrow-band
	IDR ←	IDR ←
	IRS →	IRS →

	IDR	IDR
	MCID request indicator: MCID requested	MCID request indicator: MCID requested

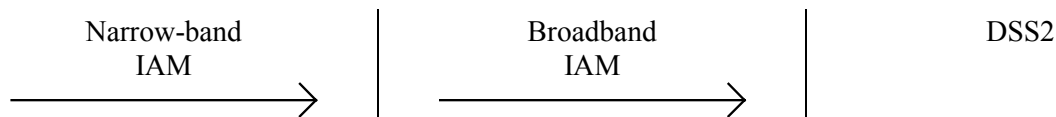|	IRS	IRS
	MCID response indicator: MCID not included	MCID response indicator: MCID not included

8.16 Completion of calls to busy subscribers (CCBS) supplementary service

This subclause contains the mapping tables for the Completion of calls to busy subscribers supplementary service associated messages, parameters and information elements.

8.16.1 Mapping tables

See Table 34.

Table 34/Q.2650 – Mapping of CCBS information
Initial address message

Narrow-band IAM	Broadband IAM	DSS2
→	→	

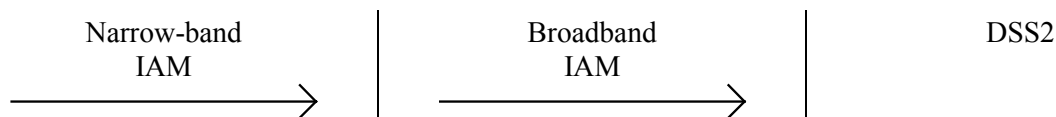| IAM	IAM	
CCSS	CCSS	
NOTE – The local exchange shall discard the CCBS parameter.		

8.17 Completion of calls – no reply (CCNR) supplementary service

This subclause contains the mapping tables for the Completion of calls – no reply subscribers supplementary service associated messages, parameters and information elements.

8.17.1 Mapping tables

See Table 35.

Table 35/Q.2650 – Mapping of CCNR information
Initial address message

Narrow-band IAM	Broadband IAM	DSS2
→	→	

IAM	IAM	
CCSS	CCSS	
NOTE – The local exchange shall discard the CCBS parameter.		

8.18 Global Virtual Network Service (GVNS) supplementary service

No mapping between DSS2 IEs and B-ISUP parameters is required.

8.19 Reverse charging supplementary service

No mapping between DSS2 IEs and B-ISUP parameters is required.

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