SLOVENSKI STANDARD
SIST EN 300 403-1 V1.3.2:2005

01-april-2005

Digitalno omrežje z integriranimi storitvami (ISDN) - Protokol digitalne naročniške signalizacije št. 1 (DSS1) - Signalizacijska omrežna plast za krmiljenje vodovnega osnovnega klica - 1. del: Specifikacija protokola (priporočilo ITU-T Q.931 (1993), spremenjeno)

Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Signalling network layer for circuit-mode basic call control; Part 1: Protocol specification [ITU-T Recommendation Q.931 (1993), modified]

Ta slovenski standard je istoveten z: **EN 300 403-1 Version 1.3.2**

ICS:

33.080	Digitalno omrežje z integriranimi storitvami (ISDN)	Integrated Services Digital Network (ISDN)
35.100.30	Omrežni sloj	Network layer

SIST EN 300 403-1 V1.3.2:2005 **en**

ETSI EN 300 403-1 V1.3.2 (1999-11)

European Standard (Telecommunications series)

Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Signalling network layer for circuit-mode basic call control; Part 1: Protocol specification

[ITU-T Recommendation Q.931 (1993), modified]

Reference
REN/SPS-05210-1 (3qc90j1c.PDF)

Keywords
basic, DSS1, ISDN, layer 3, protocol, UNI

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Services and Protocols for Advanced Networks (SPAN).

The present document is part 1 of a multi-part EN covering the Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Signalling network layer for circuit-mode basic call control, as identified below:

Part 1: "Protocol specification [ITU-T Recommendation Q.931 (1993), modified]";

Part 2: "Specification and Description Language (SDL) diagrams";

Part 3: "Protocol Implementation Conformance Statement (PICS) proforma specification";

Part 4: "Test Suite Structure and Test Purposes (TSS&TP) specification for the user";

Part 5: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the user";

Part 6: "Test Suite Structure and Test Purposes (TSS&TP) specification for the network";

Part 7: "Abstract Test Suite (ATS) and partial Protocol Implementation eXtra Information for Testing (PIXIT) proforma specification for the network".

The present document which is based upon ITU-T Recommendation Q.931 (1993) is an extended and updated version of ETS 300 403-1 (1995) and ETS 300 102-1 (1990). Annex ZA identifies relevant differences between the present document and these standards.

National transposition dates	
Date of adoption of this EN:	12 November 1999
Date of latest announcement of this EN (doa):	29 February 2000
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 August 2000
Date of withdrawal of any conflicting National Standard (dow):	31 August 2000

Endorsement notice

The elements of ITU-T Recommendation Q.931 (1993) apply, with the following modifications:

NOTE: Underlining and/or strikeout are used to highlight detailed modifications where necessary.

Page 1, clause 1

Delete clause 1 (General) and subclause 1.1 (Scope of the Recommendation).

Insert the following three clauses (Scope, References, Definitions) at the start of the text:

Scope

The present document specifies the stage three of circuit-mode on-demand basic telecommunication services for the pan-European Integrated Services Digital Network (ISDN) as provided by European telecommunications operators at the T reference point or coincident S and T reference point (as defined in ITU-T Recommendation I.411 [95] by means of the Digital Subscriber Signalling System No. one (DSS1). Stage three identifies the protocol procedures and switching functions needed to support a telecommunication service (see CCITT Recommendation I.130 [92]).

In addition, the present document specifies the protocol requirements at the T reference point where the service is provided to the user via a private ISDN.

NOTE 1: Procedures at the T reference point, to support the access of a private ISDN to the public ISDN are not explicitly identified in the present document, however some procedures are applicable only to the T reference point.

The present document does not specify the additional protocol requirements where the service is provided to the user via a telecommunication network that is not an ISDN.

A basic telecommunication service is a fundamental type of service. It forms the basis on which supplementary services may be added.

NOTE 2: Specific requirements of individual circuit-mode basic telecommunication services are not covered in the present document. However, ETR 018/EG 201 018 gives guidance on the use of service specific information elements to implement individual basic telecommunication services.

Further parts of the present document specify the Specification and Description Language (SDL) diagrams, the method of testing, and detailed application specific requirements to determine conformance based on the present document.

The present document is applicable to equipment supporting circuit-mode on-demand basic telecommunication services, to be attached at either side of a T reference point or coincident S and T reference point when used as an access to the public ISDN.

References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

[87] ITU-T Recommendation H.245 (1998): "Control protocol for multimedia communication".

[88] ITU-T Recommendation F.711 (1993): "Audiographic conference teleservice for ISDN".

[89] ITU-T Recommendation F.720 (1992): "Videotelephony services - General".

[90] ITU-T Recommendation H.223 (1996): "Multiplexing protocol for low bit rate multimedia communication".

[91] ITU-T Recommendation I.112 (1993): "Vocabulary of terms for ISDNs".

[92] CCITT Recommendation I.130 (1988): "Method for characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN".

[93] ITU-Recommendation I.140 (1993): "Attribute technique for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN".

[94] ITU-T Recommendation I.210 (1993): "Principles of telecommunication services supported by an ISDN and the means used to describe them".

[95] ITU-T Recommendation I.411 (1993): "ISDN user-network interfaces - Reference configurations".

[96] CCITT Recommendation Q.9 (1988): "Vocabulary of switching and signalling terms".

[97] ITU-T Recommendation V.34 (1994): "A modem operating at data signalling rates of up to 28 800 bit/s for use on the general switched telephone network and on leased point-to-point 2-wire telephone-type circuits".

[98] ETS 300 007: "Integrated Services Digital Network (ISDN); Support of packet-mode terminal equipment by an ISDN".

[99] ETS 300 011: "Integrated Services Digital Network (ISDN); Primary rate user-network interface; Layer 1 specification and test principles".

[100] ETS 300 012: "Integrated Services Digital Network (ISDN); Basic user-network interface; Layer 1 specification and test principles".

[101] ETS 300 058-1: "Integrated Services Digital Network (ISDN); Call Waiting (CW) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

[102] ETS 300 092-1: "Integrated Services Digital Network (ISDN); Calling Line Identification Presentation (CLIP) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

[103] ETS 300 093-1: "Integrated Services Digital Network (ISDN); Calling Line Identification Restriction (CLIR) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

[104] ETS 300 122-1: "Integrated Services Digital Network (ISDN); Generic keypad protocol for the support of supplementary services; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

[105] EN 300 196-1 (V1.2): "Integrated Services Digital Network (ISDN); Generic functional protocol for the support of supplementary services; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

[106] ETS 300 207-1: "Integrated Services Digital Network (ISDN); Diversion supplementary services; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

[107] ETS 300 286-1: "Integrated Services Digital Network (ISDN); User-to-User Signalling (UUS) supplementary service; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".

[108] ETS 300 383: "Integrated Services Digital Network (ISDN); File transfer over the ISDN; EUROFILE transfer profile".

[109] ETS 300 388: "Integrated Services Digital Network (ISDN); File Transfer Access & Management (FTAM) over ISDN based on simple file transfer profile".

[110] ETS 300 402-1: "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Data link layer; Part 1: General aspects [ITU-T Recommendation Q.920 (1993), modified]".

[111] ETS 300 402-2: "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Data link layer; Part 2: General protocol specification [ITU-T Recommendation Q.921 (1993), modified]".

[112] ETS 300 403-2: "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Signalling network layer for circuit-mode basic call control; Part 2: Specification and Description Language (SDL) diagrams".

[113] ETS 300 485: "Integrated Services Digital Network (ISDN); Definition and usage of cause and location in Digital Subscriber Signalling System No. one (DSS1) and Signalling System No. 7 ISDN User Part (ISUP) [ITU-T Recommendation Q.850 (1993), modified]".

NOTE: The references listed in the present document are a continuation of publications referenced in ITU-T Recommendation Q.931.

Definitions

For the purposes of the present document, the following definitions apply, together with those given in the referenced publications:

access channel; channel: see CCITT Recommendation Q.9 [96], definition 0008

B-channel: 64 kbit/s channel accompanied by timing intended to carry a wide variety of user information streams. A B-channel does not carry signalling information for circuit switching by the ISDN

basic access: see CCITT Recommendation Q.9 [96], definition 1551

basic service; basic telecommunication service: see CCITT Recommendation Q.9 [96], definition 7018

call: see CCITT Recommendation Q.9 [96], definition 2201

call control message: message as defined in subclause 3.1 of the present document, which on sending or receipt causes a change of the call state at either the network or the user; and also PROGRESS and INFORMATION messages

call establishment; connection establishment: see CCITT Recommendation Q.9 [96], definition 2207

call reference: identifier of a signalling transaction. The signalling transaction may either be bearer related, in which case the signalling transaction can be used to control that bearer, or bearer independent, in which case there is no bearer associated with that signalling transaction. All signalling transactions in the present document are bearer related except those associated with the global call reference. Where there is only one bearer required for a call, then the call reference of the associated bearer related signalling transaction might be used to identify the call. In the present document, there is only one bearer for each call

call state: state as defined in subclause 2.1 of the present document, for either the user side or network side as appropriate. A call state may exist for each call reference value (and at the network side for each additional responding CEI in the incoming call states)

circuit switched; circuit switching: see CCITT Recommendation Q.9 [96], definition 1125

comprehension required: requirement that the coding structure and meaning of an information element shall be understood by its receiver for the message to be processed. A specific range of values for information element identifiers is provided for those information elements for which comprehension is required

connection: see CCITT Recommendation Q.9 [96], definition 0011. In the present document, the term is taken to include a bearer and its associated control signalling

D-channel: channel primarily intended to carry signalling information for circuit switching by the ISDN

data link connection endpoint identifier: identifier used by a layer 3 protocol entity to address its peer entity

dummy call reference: call reference value of one octet length encoded as "0000 0000"

en bloc receiving: procedure, used in call establishment of an incoming call, to enable the network to send called party number digits to the user in a single message

en bloc sending: procedure, used in call establishment of an outgoing call, to enable the user to send called party number digits to the network in a single message

global call reference: Call reference information element with a call reference value of zero. The length of the call reference value is encoded in the first octet of the information element. The Global call reference identifies all call references currently associated with the appropriate data link connection endpoint identifier

Incoming (call): call incoming to the user side of the interface

Integrated Services Digital Network (ISDN): see ITU-T Recommendation I.112 [91], definition 308

interface: see CCITT Recommendation Q.9 [96], definition 4001

Network Service Access Point (NSAP) address; OSI NSAP address: see CCITT Recommendation Q.9 [96], definition 2083

network: DSS1 protocol entity at the network side of the user-network interface

on demand: see ITU-T Recommendation I.140 [93], annex A, clause A.2

Open System Interconnection (OSI): concept of interconnecting systems in accordance with the architecture described in the Open System Interconnection Reference model (CCITT Recommendation X.200 [78])

outgoing (call): call outgoing from the user side of the interface

overlap receiving: procedure, used in call establishment of an incoming call, to enable the network to send called party number digits to the user in successive messages, as and when they are made available from the remote network

overlap sending: procedure, used in call establishment of an outgoing call, to enable the user to send called party number digits to the network in successive messages, as and when they are made available by the user

point-to-multipoint configuration; multipoint terminal configuration; multipoint configuration: terminal configuration in which there is more than one signalling entity

point-to-multipoint data link; broadcast data link: data link connection with the capability of supporting more than two connection endpoints

point-to-point configuration; single-point terminal configuration; single-point configuration: terminal configuration in which there is one signalling entity

point-to-point data link: data link on which a frame is directed to a single endpoint

primary rate access: see CCITT Recommendation Q.9 [96], definition 1552

service; telecommunication service: see ITU-T Recommendation I.112 [91], definition 201

supplementary service: see ITU-T Recommendation I.210 [94], subclause 2.4

user: DSS1 protocol entity at the user side of the user-network interface

Throughout the text of ITU-T Recommendation Q.931

Replace references throughout the text as shown below.

Reference in ITU-T Recommendation Q.931	Modified reference
ITU-T Recommendation I.430 [46]	ETS 300 012 [100]
ITU-T Recommendation I.431 [27]	ETS 300 011 [99]
ITU-T Recommendation Q.850 [67]	ETS 300 485 [113]
ITU-T Recommendation Q.920 [45]	ITU-T Recommendation Q.920 as modified by ETS 300 402-1 [110]
ITU-T Recommendation Q.921 [3]	ITU-T Recommendation Q.921 as modified by ETS 300 402-2 [111]
ITU-T Recommendation Q.931	ITU-T Recommendation Q.931 as modified by the present document
ITU-T Recommendation Q.951 [85], clause 3	ETS 300 092-1 [102]
ITU-T Recommendation Q.951 [85], clause 4	ETS 300 093-1 [103]
ITU-T Recommendation Q.952 [86]	ETS 300 207-1 [106]
ITU-T Recommendation Q.953 [84], clause 1	ETS 300 058-1 [101]
ITU-T Recommendation Q.957 [54], clause 1	ETS 300 286-1 [107]

Pages 1 and 2, clause 2

Replace the second paragraph by:

In the subclauses which follow, states are defined for circuit switched calls in subclause 2.1 (call states) and for the interface in subclause 2.4 (global call reference states).

Replace the three last paragraphs by:

A detailed description of the procedures for call control is given in clause 5 in terms of:

a) the messages defined in clause 3 which are transferred across the user-network interface;

b) the information processing and actions that take place at the user side and the network side. Detailed SDL diagrams for call control of circuit switched calls are contained in ETS 300 403-2 [112].

Page 2, subclause 2.1, last paragraph

Delete the last paragraph referring to annex D.

Pages 4 to 6, subclause 2.2

Delete subclause 2.2 and all of its subclauses. The basic packet-mode access connection control states for access to the ISDN virtual bearer service are defined in ETS 300 007 [98] and are outside the scope of the present document.

Pages 6 to 8, subclause 2.3

Delete subclause 2.3 and all of its subclauses. Temporary signalling connections are outside the scope of the present document.

Page 8, subclause 2.4, last paragraph

Replace the last paragraph by:

The global call reference shall be handled independently for incoming and outgoing sides, i.e. two independent state machines in an entity shall be referenced by the global call reference.

Page 8, subclause 2.4.1.1, subclause heading

Replace the subclause heading by the following:

2.4.1.1 Restart Null (Rest 0)

Page 9, subclause 2.4.2.1, subclause heading

Replace the subclause heading by the following:

2.4.2.1 Restart Null (Rest 0)

Page 9, clause 3, note 1

Delete the last sentence "Annex D ... interfaces".

Page 10, table 3-1/Q.931

Include SEGMENT as a message in the *Miscellaneous messages* part of table 3-1/Q.931 with a reference to subclause 3.5.1.

Page 11, table 3-2/Q.931

Modify table 3-2/Q.931 as follows:

Message type: ALERTING
Significance: global
Direction: both

Information element	Reference	Direction	Type	Length
Protocol discriminator	4.2	both	M	1
Call reference	4.3	both	M	2 - 3
Message type	4.4	both	M	1
Bearer capability	4.5	both	O (note 1)	4 - 12
Channel identification	4.5	~~both (note 2)~~ u → n	O (note 3)	2 - 34
Progress indicator	4.5	both	O (note 4)	2 - 4
Display	4.5	n → u	O (note 5)	2 - 82 (note 6)
~~Signal~~	~~4.5~~	~~n → u~~	~~O (note 7)~~	~~2 - 3~~
High layer compatibility	4.5	both	O (note 8)	2 - 5

NOTE 1: The Bearer capability information element is included when the procedures of subclause 5.11 for bearer capability selection apply. When present, progress description #5 "interworking has occurred and has resulted in a telecommunication service change" shall also be present.
NOTE 2: ~~Included in the network-to-user direction for support of the procedures in annex D.~~ Void.
NOTE 3: Mandatory if this message is the first message in response to SETUP, unless the user accepts the B-channel indicated in the SETUP message.
NOTE 4: Included in the event of interworking. Included in the network-to-user direction in connection with the provision of in-band information/patterns. Included in the user-to-network direction in connection with the provision of in-band information/patterns if annex K is implemented or in accordance with the procedures of subclause 5.11.3 and subclause 5.12.3.
NOTE 5: Included if the network provides information that can be presented to the user.
NOTE 6: The minimum length is 2 octets; the maximum length ~~is network dependent and is either 34 or~~ 82 octets.
NOTE 7: ~~Included if the network optionally provides information describing tones or alerting signals.~~ Void.
NOTE 8: The High layer compatibility information element is included when the procedures of subclause 5.12 for high layer compatibility selection apply. When present, progress description #5, "interworking has occurred and has resulted in a telecommunication service change", shall also be present.

Page 12, table 3-3/Q.931

Modify table 3-3/Q.931 as follows:

Message type: CALL PROCEEDING
Significance: local
Direction: both

Information element	Reference	Direction	Type	Length
Protocol discriminator	4.2	both	M	1
Call reference	4.3	both	M	2 - 3
Message type	4.4	both	M	1
Bearer capability	4.5	both	O (note 5)	4 - 12
Channel identification	4.5	both	O (note 1)	2 - 34
Progress indicator	4.5	both	O (note 2)	2 - 4
Display	4.5	n → u	O (note 3)	2 - 82 (note 4)
High layer compatibility	4.5	both	O (note 6)	2 - 5

NOTE 1: Mandatory in the network-to-user direction if this message is the first message in response to SETUP. Mandatory in the user-to-network direction if this message is the first message in response to SETUP, unless the user accepts the B-channel indicated in the SETUP message.
NOTE 2: Included in the event of interworking. Included in the network-to-user direction in connection with the provision of in-band information/patterns. Included in the user-to-network direction in connection with the provision of in-band information/patterns if annex K is implemented or in accordance with the procedures of subclause 5.11.3 and subclause 5.12.3.
NOTE 3: Included if the network provides information that can be presented to the user.
NOTE 4: The minimum length is 2 octets; the maximum length is ~~network dependent and is either 34 or~~ 82 octets.
NOTE 5: The Bearer capability information element is included when the procedures of subclause 5.11 for bearer capability selection apply. When present, progress description #5 "interworking has occurred and has resulted in a telecommunication service change", shall also be present.
NOTE 6: The High layer compatibility information element is included when the procedures of subclause 5.12 for high layer compatibility selection apply. When present, progress description #5, "interworking has occurred and has resulted in a telecommunication service change", shall also be present.

Page 13, table 3-4/Q.931

Modify table 3-4/Q.931 as follows:

Message type: CONNECT
Significance: global
Direction: both

Information element	Reference	Direction	Type	Length
Protocol discriminator	4.2	both	M	1
Call reference	4.3	both	M	2 - 3
Message type	4.4	both	M	1
Bearer capability	4.5	both	O (note 1)	4 - 12
Channel identification	4.5	~~both (note 2)~~ u → n	O (note 3)	2 - 34
Progress indicator	4.5	both	O (note 4)	2 - 4
Display	4.5	n → u	O (note 5)	2 - 82 (note 6)
Date/time	4.6	n → u	O (note 7)	2 - 8
~~Signal~~	~~4.5~~	~~n → u~~	~~O (note 8)~~	~~2 - 3~~
Low layer compatibility	4.5	both	O (note 9)	2 - 18
High layer compatibility	4.5	both	O (note 10)	2 - 5

NOTE 1: The Bearer capability information element is included when the procedures of subclause 5.11 for bearer capability selection apply.
NOTE 2: ~~Included in the network-to-user direction for support of the procedures in annex D.~~ Void.
NOTE 3: Mandatory if this message is the first message in response to SETUP, unless the user accepts the B-channel indicated in the SETUP message.
NOTE 4: Included in the event of interworking or in connection with the provision of in-band information/patterns.
NOTE 5: Included if the network provides information that can be presented to the user.
NOTE 6: The minimum length is 2 octets; the maximum length is ~~network dependent and is either 34 or~~ 82 octets.
NOTE 7: As a network option, may be included to provide date and time information to the calling user for all calls or for calls involving specific telecommunication services.
NOTE 8: ~~Included if the network optionally provides information describing tones.~~ Void.
NOTE 9: Included in the user-to-network direction when the answering user wants to return low layer compatibility information to the calling user. Included in the network-to-user direction if the user awarded the call included a Low layer compatibility information element in the CONNECT message. Optionally included for low layer compatibility negotiation, but some networks may not transport this information element to the calling user (see annex J).
NOTE 10: The High layer compatibility information element is included when the procedures of subclause 5.12 for high layer compatibility selection apply.

Page 14, table 3-5/Q.931

Modify table 3-5/Q.931 as follows:

Message type: CONNECT ACKNOWLEDGE
Significance: local
Direction: both

Information element	Reference	Direction	Type	Length
Protocol discriminator	4.2	both	M	1
Call reference	4.3	both	M	2 - 3
Message type	4.4	both	M	1
Display	4.5	n → u	O (note 1)	2 - 82 (note 2)
~~Signal~~	~~4.5~~	~~n → u~~	~~O (note 3)~~	~~2 - 3~~

NOTE 1: Included if the network provides information that can be presented to the user.
NOTE 2: The minimum length is 2 octets; the maximum length is ~~network dependent and is either 34 or~~ 82 octets.
NOTE 3: ~~Included if the network optionally provides additional information describing tones.~~ Void.

Page 15, table 3-6/Q.931

Modify table 3-6/Q.931 as follows:

Message type: DISCONNECT
Significance: global
Direction: both

Information element	Reference	Direction	Type	Length
Protocol discriminator	4.2	both	M	1
Call reference	4.3	both	M	2 - 3
Message type	4.4	both	M	1
Cause	4.5	both	M	4 - 32
Progress indicator	4.5	(note 1) n → u	O (note 2)	2 - 4
Display	4.5	n → u	O (note 3)	2 - 82 (note 4)
~~Signal~~	~~4.5~~	~~n → u~~	~~O (note 5)~~	~~2 - 3~~

NOTE 1: Included in the network-to-user direction if the network provides in-band tones. ~~See annex D for usage in the user-to-network direction.~~
NOTE 2: Included by the network if in-band tones are provided. ~~However, the user may include the Progress Indicator and provide in-band tones (see annex D). In such cases the network will ignore this information element and will not convey the in-band tones.~~
NOTE 3: Included if the network provides information that can be presented to the user.
NOTE 4: The minimum length is 2 octets; the maximum length is ~~network dependent and is either 34 or~~ 82 octets.
NOTE 5: ~~Included if the network optionally provides additional information describing tones.~~ Void.

Page 16, table 3-7/Q.931

Modify table 3-7/Q.931 as follows:

Message type: INFORMATION
Significance: local (note 1)
Direction: both

Information element	Reference	Direction	Type	Length
Protocol discriminator	4.2	both	M	1
Call reference	4.3	both	M	2 - 3 ~~(note 2)~~
Message type	4.4	both	M	1
Sending complete	4.5	both	O (note 3)	1
Cause	4.5	n → u	O (note 9)	2 - 32
Display	4.5	n → u	O (note 4)	2 - 82 (note 5)
Keypad facility	4.5	u → n (note 10)	O (note 6)	2 - 34
~~Signal~~	~~4.5~~	~~n → u~~	~~O (note 7)~~	~~2 - 3~~
Called party number	4.5	~~u → n~~ both	O (note 8)	2 - 23

NOTE 1: This message has local significance, but may carry information of global significance.
NOTE 2: ~~This message may be set with the dummy call reference defined in § 4.3 when feature key management procedures are used (see Recommendation Q.932); otherwise the minimum length in 2 octets.~~ Void.
NOTE 3: Included if the user optionally indicates completion of overlap sending to the network, or if the network optionally indicates completion of overlap receiving to the user.
NOTE 4: Included if the network provides information that can be presented to the user.
NOTE 5: The minimum length is 2 octets; the maximum length is ~~network dependent and is either 34 or~~ 82 octets.
NOTE 6: ~~Either the Called party number or the Keypad facility information element is included by the user to convey called party number information to the network during overlap sending.~~ The Keypad facility information element may ~~also~~ be included ~~if the user wants to convey other call establishment information to the network or~~ to convey supplementary service information ~~(see clause 7)~~.
NOTE 7: ~~Included if the network optionally provides additional information describing tones.~~ Void.
NOTE 8: ~~Either~~ The Called party number ~~or the Keypad facility~~ information element is included by the user to convey called party number information to the network during overlap sending. The Called party number information element is included by the network to transfer called party number information to the user during overlap receiving.
NOTE 9: As a network option, may be used for stimulus operation of supplementary services.
NOTE 10: The use of the Keypad facility information element in the network to user direction is to convey supplementary service information as part of keypad protocol is a network option. (This option is maintained due to backwards compatibility and is not recommended for future use.)

Page 17, table 3-8/Q.931

Modify table 3-8/Q.931 as follows:

Message type: NOTIFY
Significance: access
Direction: both

Information element	Reference	Direction	Type	Length
Protocol discriminator	4.2	both	M	1
Call reference	4.3	both	M	2 - 3
Message type	4.4	both	M	1
~~Bearer capability~~	~~4.5~~	~~n → u~~	~~O (note 1)~~	~~2 - 12~~
Notification indicator	4.5	both	M	3
Display	4.5	n → u	O (note 2)	2 - 82 (note 3)

NOTE 1: ~~Included by the network to indicate a change in bearer capability (see annex L).~~ Void.
NOTE 2: Included if the network provides information that can be presented to the user.
NOTE 3: The minimum length is 2 octets; the maximum length is ~~network dependent and is either 34 or~~ 82 octets.