

**EURO-NUMERIS+
ISDN ACCESS INTERFACE
Layers 1 to 3 and supplementary services**

Summary: This document provides all the information necessary to define the Euro-Numéris+ ISDN access interface, which is based on ETSI standards.

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1. timer values are indicative and can be subject to modification,
2. due to various technical constraints, some services or service options may not be available on some interfaces,
3. the fact that a service not yet commercially open is described in this document can in no case be considered as a binding commitment on France Telecom part to actually open this service.

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1. Purpose

This document provides all the information necessary to define the Euro-Numéris+ ISDN access interface, which is based on ETSI standards. It gives precise information on the technical options of the reference ETSI standards adopted for implementation in the current France Telecom network on the user-network interface. The document will therefore be updated to take account of any changes to the France Telecom network, including technical modifications to the user-network interface.

For each supplementary service offered, this document summarises the options offered to the user and useful for the terminal equipment. Any special features of the network are mentioned if they affect the terminal equipment in any way.

Note 1: In the rest of this document, the term “network” denotes the France Telecom network supporting the processes associated with the Euro-Numéris+ interface.

Note 2: To use these supplementary services, it is recommended that the terminal equipment support the various options in the ETSI standards in force. Any options that are not currently supported may be supported in later versions of the France Telecom network.

2. Reference ETSI standards

| Domain | Reference | Title |
|------------------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Layer 1 Basic rate access | ETS 300 012 (April 1992) | ISDN Basic rate user-network interface - Layer 1 specification and test principles |
| Layer 1 Primary rate access | ETS 300 011 (April 1992) | ISDN Primary rate user-network interface - Layer 1 specification and test principles |
| Layer 2 LAPD | ETS 300 402-1 (November 1995) | ISDN Digital Subscriber Signalling System No. One (DSS1) protocol; Data link layer; Part 1: General aspects |
| | ETS 300 402-2 (November 1995) | ISDN Digital Subscriber Signalling System No. One (DSS1) protocol; Data link layer; Part 2: General protocol specification |
| Layer 3 D-channel protocol | ETS 300 403-1 (November 1995) | ISDN Digital Subscriber Signalling System No. One (DSS1) protocol; Signalling network layer for circuit-mode basic call control; Part 1: Protocol specification |
| | Q.931 (ITU-T) (March 1993) | DSS1 ISDN User-network interface layer 3 Specification for basic call control |
| | Q.850 (May 1992) | ITU-T Recommendation Q.850: Usage of cause and location in the DSS1 and the signalling system N°7 ISDN User part |
| Bearer services | | |
| 64 kbit/s unrestricted | ETS 300 108 | Circuit mode 64 kbit/s unrestricted 8 kHz structured bearer service category: service description |
| 64 kbit/s for speech | ETS 300 109 | Circuit mode 64 kbit/s 8 kHz structured bearer service category usable for speech information transfer: service description |
| 64 kbit/s for 3.1 kHz | ETS 300 110 | Circuit mode 64 kbit/s 8 kHz structured bearer service category usable for 3.1 kHz information transfer: service description |
| Supplementary services (SS) | | |
| SS interaction | ETS 300 195 (February 1995) | Supplementary services interactions: DSS1 protocol; Part 1: Protocol specification |
| Functional protocol for SS's | ETS 300 196 (August 1993) | Generic functional protocol for the support of supplementary services: DSS1 protocol |
| Supplementary services | | |
| CLIP | ETS 300 089 (January 1992) | Calling Line Identification Presentation (CLIP) supplementary service: Service description |
| | ETS 300 092 (March 1992) | Calling Line Identification Presentation (CLIP) supplementary service: DSS1 protocol; Part 1: Protocol specification |
| CLIR | ETS 300 090 (January 1992) | Calling Line Identification Restriction supplementary service: Service description |
| | ETS 300 093 (March 1992) | Calling Line Identification Restriction supplementary service: DSS1 protocol; Part 1: Protocol specification |

| | | |
|--------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------|
| DDI | ETS 300 062 (October 1991) | Direct Dialling In (DDI) supplementary service: Service description |
| | ETS 300 064 (October 1991) | Direct Dialling In (DDI) supplementary service: DSS1 protocol; Part 1: Protocol specification |
| MSN | ETS 300 050 (October 1991) | Multiple Subscriber Number (MSN) supplementary service: Service description |
| | ETS 300 052 (October 1991) | Multiple Subscriber Number (MSN) supplementary service: DSS1 protocol; Part 1: Protocol specification |
| TP | ETS 300 053 (October 1991) | Terminal Portability (TP) supplementary service: Service description |
| | ETS 300 055 (October 1991) | Terminal Portability (TP) supplementary service: DSS1 protocol; Part 1: Protocol specification |
| SUB | ETS 300 059 (October 1991) | Sub-Addressing (SUB) supplementary service: Service description |
| | ETS 300 061 (October 1991) | Sub-Addressing (SUB) supplementary service: DSS1 protocol; Part 1: Protocol specification |
| CW | ETS 300 056 (October 1991) | Call Waiting (CW) supplementary service: Service description |
| | ETS 300 058 (October 1991) | Call Waiting supplementary service: DSS1 protocol; Part 1: Protocol specification |
| HOLD | ETS 300 139 (March 1992) | Call Hold (HOLD) supplementary service: Service description |
| | ETS 300 141 (May 1992) | Call Hold (HOLD) supplementary service: DSS1 protocol; Part 1: Protocol specification |
| MCID | ETS 300 128 (March 1992) | Malicious Call Identification (MCID) supplementary service: Service description |
| | ETS 300 130 (May 1992) | Malicious Call Identification (MCID) supplementary service: DSS1 protocol; Part 1: Protocol specification |
| AOC | ETS 300 179 (October 1992) | Advice of Charge: charging information during the call (AOC-D) supplementary service: Service description |
| | ETS 300 180 (October 1992) | Advice of Charge: charging information at the end of the call (AOC-E) supplementary service: Service description |
| | ETS 300 182 (April 1993) | Advice of Charge (AOC) supplementary service: DSS1 protocol; Part 1: Protocol specification |
| UUS | ETS 300 284 (March 1996) | User-to-User Signalling (UUS) supplementary service: Service description |
| | ETS 300 286-1 (February 1996) | User-to-User Signalling (UUS) supplementary service: DSS1 protocol; Part 1: Protocol specification |
| CFB, CFU, CFNR, CD | ETS 300 199 (December 1994) | Call Forwarding Busy (CFB) supplementary service: Service description |
| | ETS 300 200 (December 1994) | Call Forwarding Unconditional (CFU) supplementary service: Service description |
| | ETS 300 201 (December 1994) | Call Forwarding No Reply (CFNR) supplementary service: Service description |
| | ETS 300 202 (December 1994) | Call Deflection (CD) supplementary service: Service description |
| | ETS 300 207-1 (December 1994) | Diversion supplementary services; DSS1 protocol; Part 1: Protocol specification |

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|----------------------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------|
| 3PTY | ETS 300 186 (July 1993) | Three-Party (3PTY) supplementary service: Service description |
| | ETS 300 188-1 (August 1993) | Three-Party (3PTY) supplementary service: DSS1 protocol; Part 1: Protocol specification |
| ECT | EN 300 367 (1998-10) | Explicit Call Transfer (ECT) supplementary service: Service description |
| | EN 300 369-1 (1998-10) | Explicit Call Transfer (ECT) supplementary service: DSS1 protocol; Part 1: Protocol specification |
| CCBS | ETS 300 357 (October 1995) | Completion of Calls to Busy Subscribers (CCBS) supplementary service: Service description |
| | ETS 300 359-1 (November 1995) | Completion of Calls to Busy Subscribers (CCBS) supplementary service: DSS1 protocol; Part 1: Protocol specification |
| B-channel ISDN packet mode | ETS 300 007 (November 91) | ISDN: Support of packet-mode terminal equipment by an ISDN |
| PLL | DE/DAC/ARS/303/99 | Permanent logical link |

3. Layer 1 ISDN basic rate user-network interface

REFERENCES

Layer 1 of the interface is based on ETSI standard ETS 300 012.

CHOSEN NETWORK OPTIONS

No option.

Note:

The network does not support Auxiliary Power Supply (APS) devices.

4. Layer 1 ISDN primary rate user-network interface

REFERENCES

Layer 1 of the interface is based on ETSI standard ETS 300 011.

CHOSEN NETWORK OPTIONS

| ETSI ref. | Chosen network options |
|-----------|----------------------------------------------------------------------------------------------------------------|
| § 5 | CRC4 option 1 (setting multiframe TS0 bits C and E and activation command, deactivation of this process). |
| § 5 | Use of 64 kbit/s channel (B or D) only. |
| § 5 | Use of bit 2 of timeslot 0 not containing the frame alignment signal, according to CCITT Recommendation G.706. |

Note:

According to the ETSI standard, the digital network termination must be supplied via the user-network interface. The France Telecom network, however, supports third generation digital line terminations, which are supplied remotely.

5. Link access protocol on the D-channel (LAPD) for ISDN access

REFERENCES

Layer 2 of the interface is based on ETSI standards ETS 300 402-1 and ETS 300 402-2, modified versions of Q.920 and Q.921 respectively.

CHOSEN NETWORK OPTIONS

| ETSI /ITU-T ref. | Chosen network options |
|---------------------------|---------------------------------------------------------------------------------------------------|
| §5.3.5.1 (ITU-T Q.921) | TEI identity verify procedure (optional) at the request of the user not supported by the network. |
| Appendix II (ITU-T Q.921) | In cases C and D in Appendix II, the network first enables a TEI check procedure (informative). |

Note:

- Only Service Access Point Identifiers (SAPI) 0, 16 and 63 are supported by the network. Frames containing other SAPI values are ignored.

6. Layer 3 D-channel call control protocol on the ISDN user-network S/T and T interfaces

REFERENCES

ETS 300 403-1 (modified version of ITU-T Recommendation Q.931).

CHOSEN NETWORK OPTIONS

The "ETSI/ITU-T ref." column indicates whether the section given is in Recommendation Q.931 only (Q.931), ETS 300 403-1 only (ETS), or Recommendation Q.931 with comments from ETS 300 403-1 (Q.931+ETS).

| ETSI/ITU-T ref. | Chosen network options |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| § 3.1.3 (Q.931+ETS) note 7 § 5.1.8 (Q.931+ETS) | The Date/Time information element in the CONNECT message sent to the user by the network is supported. <u>Note:</u> The format of the Date/Time information element depends on the exchange: - yy.mm.dd.hh.mm.ss (where ss=0), or - yy.mm.dd.hh.mm |
| § 3.1.3 (Q.931+ETS) note 9 | The LLC information element is sent in the CONNECT message if it is supplied by the destination terminal equipment. |
| § 3.1.6 (Q.931+ETS) | The Cause information element in the INFORMATION message is not supported. |
| § 3.1.6 (Q.931+ETS) § 3.1.14 (Q.931+ETS) | The Keypad facility option is not supported (the Keypad facility information element is optional and may be present in the INFORMATION and SETUP messages). |
| § 3.1.14 (Q.931+ETS) | The Keypad facility information element is used in the network to user direction for the provision of CNIP. |
| § 4.5.5 (Q.931+ETS) | The circuit mode bearer services that are supported are speech, 3.1 kHz audio, unrestricted 64 kbit/s and unrestricted 64 kbit/s with tones/announcements. The "unrestricted 64 kbit/s with tones/announcements" service is actually combined with the "unrestricted 64 kbit/s" service as it is not supported by the network signalling. However, the "unrestricted 64 kbit/s with tones/announcements" service results in tones being generated. |
| § 4.5.16 (Q.931+ETS) | The Display information element can be sent by the network. |
| § 4.5.8 (Q.931+ETS) note 5 | The Abbreviated number called party number type is not supported. The other values are only supported by certain types of exchange. |
| § 4.5.19 (Q.931+ETS) note | The maximum length of the LLC information element is 18 octets. The note indicating that it is restricted to 16 octets does not apply. |
| § 4.5.23 (Q.931+ETS) note 2 | The "Transit network" value can be used in the location field of the Progress indicator information element. |
| § 5.1.3 (Q.931+ETS) | When a SETUP message is received without destination address information, the network sends the dial tone on the B-channel indicated and |

| | |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| note 1 | inserts the Progress indicator No.8 information element into the SETUP ACKNOWLEDGE message. |
| § 5.2 (Q.931) para. 2 | The option for layer 2 to always be established is supported for primary rate access but not for basic rate access. <i>Some exchanges support this option on the basic rate access T interface.</i> |
| § 5.2.1 (Q.931) | In the incoming direction, the network always gives the digits dialled en bloc in the SETUP message (no overlap mode). |
| § 5.2.1 (Q.931) | A new SETUP message may (on the first expiry of the T303 timer) or may not be sent in the incoming point-to-point configuration. Both options are possible, depending on the type of exchange. |
| § 5.2.3.1 (Q.931+ETS) items 1) and 4) in a) | When the SETUP message is delivered via a point-to-point data link, the only values used for negotiation are "channel is indicated, no acceptable alternative" and "no B-channel available". |
| § 5.3.4bis (ETS) paras. 1 and 2 | Both options for providing a second cause (#102) information element in the RELEASE message on timer expiry are possible, depending on the type of exchange. |
| § 5.5 (Q.931+ETS) | The restart procedures are not supported in point-to-multipoint configuration (optional in this configuration). |
| § 5.6.1 (Q.931+ETS) note 2 | With call suspension, the maximum length of the call identity supported by the network is 2 octets. |
| § 5.8 (Q.931+ETS) | When an unauthorised message is received by a DL-UNIT-DATA-INDICATION primitive, option a) is applied (entity discards received message; this is the recommended option). |
| § 5.8.7.1 (Q.931) and § 5.8.7.2 (Q.931+ETS) | Some types of exchange can send the STATUS message in the context of the processing of non-mandatory information element content errors (compliant with standard). |
| §5.8.7.2 (Q.931+ETS) | Both options for processing non-mandatory information element content errors in the DISCONNECT, RELEASE and RELEASE COMPLETE messages are possible, depending on the type of exchange. |
| § 5.8.7.2 (Q.931+ETS) | The option for truncating end-to-end information elements that exceed the maximum length is not supported. The information elements are discarded. |
| §5.8.9 a) (Q.931+ETS) NOTE 1 | The option for sending a new SETUP message after layer 2 re-establishment in point-to-point configuration is not supported. |
| § 5.8.9 b) (Q.931+ETS) | When layer 2 is re-established while T309 is running, both options are possible (sending of STATUS or STATUS ENQUIRY message), depending on the type of exchange. |
| § 5.11 (Q.931) | The BC negotiation procedures are not supported by the network. |
| § 5.12 (Q.931) | The HLC negotiation procedures are not supported by the network. |
| § 8 (Q.931) | The n*64 kbit/s bearer service is not supported by the network. |
| Annex C (Q.931+ETS) | Transit network selection by information element is not supported by the network. |
| Annex E (Q.931+ETS) | The Network facility selection information element is not supported by the network. |
| Annex H (Q.931+ETS) | Segmentation is not supported by the network. |
| Annex K (Q.931+ETS) | The procedures for reserving a channel before connection establishment are not supported. |

Note:

The duration of T310 at the network end is 20 s (to comply with the internal network signalling).

7. Usage of cause and location (Q.850)

REFERENCES

ITU-T Recommendation Q.850.

CHOSEN NETWORK OPTIONS

| ITU-T ref. (Q.850) | Chosen network options |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| § 3 | The network structure is defined in such a way that the local user network value in the location field is only generated by a subscriber exchange, to the local user. The remote user network value is always used on transmission to the correspondent, even if he/she is connected to the same exchange. |
| § 3 | The network only controls the location values received at the border with an international network or a private network. |

8. Generic functional protocol for the support of supplementary services: DSS1 protocol

REFERENCES

ETSI standard ETS 300 196.

CHOSEN NETWORK OPTIONS

| ETSI ref. | Chosen network options |
|-----------|------------------------------------------------------------------------------------------------|
| § 7.2.1.1 | The hold and hold reject procedures are only supported in call state N10. |
| § 8.1.1 | The Extended facility information element is not supported by the network. |
| § 9.3.1 | The network ensures that the contents of notifications received from users are a valid coding. |
| § 10.1.2 | Explicit B-channel reservation on call hold is not supported. |

Notes:

- Only the functional protocol is used for supplementary services.
- Signalling message transport in connection mode is not supported by the network (§ 8.3.2.1).
- The generic status request procedure is not supported by the network (§ 10.3).

9. Calling Line Identification Presentation (CLIP)

REFERENCES

For the service: ETSI standard ETS 300 089. For the protocol: ETSI standard ETS 300 092.

CHOSEN NETWORK OPTIONS

| ETSI ref. (service) | ETSI (protocol) | ref. | Chosen network options |
|---------------------|-----------------|------|------------------------------------------------------------------------------------------------------------------|
| § 6.1 | | | The service is generally available, to all subscribers. |
| § 6.1 | | | The special arrangement option is supported and generally available (NDS provided not screened) (see Note 1). |
| § 8.5.2 | | | CLIP can take precedence over CLIR when the called user has an override category. |
| Annex A | Annex B.2.1 | | Annex A of the ETSI standard applies (two numbers delivered to the called party, NDI and NDS). |
| | § 9.4.1 | | The originating exchange always uses the "national" number type for numbers provided by the network (ZABPQMCDU). |

NDI: Installation Designation Number

NDS: Supplementary Designation Number

Notes:

- The NDS is never authenticated by the network, but if the numbering plan and the number type are both set to "unknown", their values are changed to "ISDN" and "National" respectively by the originating exchange.
- For Transgroupe calls, all codings of the numbering plan field are accepted for the NDS.

10. Calling Line Identification Restriction (CLIR)

REFERENCES

For the service: ETSI standard ETS 300 090. For the protocol: ETSI standard ETS 300 093.

CHOSEN NETWORK OPTIONS

| ETSI ref. (service) | ETSI (protocol) | ref. | Chosen network options |
|---------------------|-----------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| § 6.1 | | | CLIR can be invoked on all calls on a subscription basis. |
| § 6.1 | | | The temporary (call-by-call) service is provided to all users (no subscription necessary), with the initial default value "presentation authorised". |
| § 6.2.3.2 | | | CLIP can take precedence over CLIR when the called user has an override category. |

| | | |
|-------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| § 7 and 7.1 | | In interworking situations with ISDNs or non-ISDNs, the network may restrict the sending of calling user identification information when the CLIR service is invoked (bilateral agreement). See Notes. |
| § 7.2 | | In interworking situations with a private ISDN, the network does not send the calling party identity information when CLIR is invoked. |

Notes:

- The prefix 3651 may also be used to invoke the CLIR service.
- In interworking situations with third-party networks, when calling party identity information is received without a presentation indicator (authorised or prohibited), presentation is considered to be prohibited.

11. Direct Dialling In (DDI)

REFERENCES

For the service: ETSI standard ETS 300 062. For the protocol: ETS 300 064.

CHOSEN NETWORK OPTIONS

| ETSI ref. (service) | ETSI (protocol) ref. | Chosen network options |
|---------------------|----------------------|-------------------------------------------------------------------------------------|
| § 5 | | The destination address is sent on the called party's interface in national format. |
| | § 6.3 | The called party destination address is always presented en bloc (no overlap mode). |

12. Multiple Subscriber Number (MSN)

REFERENCES

For the service: ETSI standard ETS 300 050. For the protocol: ETSI standard ETS 300 052.

CHOSEN NETWORK OPTIONS

| ETSI ref. (service) | ETSI (protocol) | ref. | Chosen network options |
|---------------------|-----------------|------|-------------------------------------------------------------------------------------|
| § 5 | | | The destination address is sent on the called party's interface in national format. |
| § 6.1 | | | The maximum number of MSNs per access is 10. |
| | § 3.2.1 | | The ID of the called party's numbering plan is always set to "ISDN numbering plan". |
| § 8 | | | The network does not use the MSN to identify the supplementary services applicable. |

13. Terminal Portability (TP)

REFERENCES

For the service: ETSI standard ETS 300 053. For the protocol: ETSI standard ETS 300 055.

CHOSEN NETWORK OPTIONS

| ETSI ref. (service) | ETSI (protocol) | ref. | Chosen network options |
|---------------------|-----------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| § 6.1 | | | No subscription necessary. |
| § 8.1.2 | | | The network does not provide charging information on call suspension. |
| § 8.1.2 | | | The network provides charging information on call resumption. |
| § 8.1.2 | | | The network provides charging information when resumption is refused if this is due to the call being cleared, as long as the suspension timer has not expired. |
| § 8.1.3 | | | The network provides total cost information when resumption is refused if this is due to the call being cleared, as long as the suspension timer has not expired. |

14. Subaddress (SUB)

REFERENCES

For the service: ETSI standard ETS 300 059. For the protocol: ETSI standard ETS 300 061.

CHOSEN NETWORK OPTIONS

| ETSI ref. (service) | ETSI (protocol) | ref. | Chosen network options |
|---------------------|-----------------|------|------------------------------------------------------------------|
| § 6.1.2 | | | No subscription necessary to receive the destination subaddress. |

15. Call Waiting (CW)

REFERENCES

For the service: ETSI standard ETS 300 056. For the protocol: ETSI standard ETS 300 058.

CHOSEN NETWORK OPTIONS

| ETSI ref. (service) | ETSI (protocol) | ref. | Chosen network options |
|---------------------|-----------------|------|-------------------------------------------------------------------------------------------------------------------|
| § 6.1 | | | The service is offered on a subscription basis. |
| § 6.1 | | | Timer T-CW is not used. T301 is used in its place. |
| § 6.1 | | | The number of waiting calls per access is limited by way of a parameter N, which can be modified by the operator. |
| § 6.1 | | | A CW call is a call presented when all the incoming or both-way channels specified are in use. |

CHOSEN USER OPTIONS

| ETSI ref. (service) | Chosen user options |
|---------------------|-------------------------------------------------------------------------|
| § 6.1 | The notification subscription option is not offered to the served user. |

16. Call hold (HOLD)

REFERENCES

For the service: ETSI standard ETS 300 139. For the protocol: ETSI standard ETS 300 141.

CHOSEN NETWORK OPTIONS

| ETSI ref. (service) | ETSI (protocol) | ref. | Chosen network options |
|---------------------|-----------------|------|-------------------------------------------------------------------------------------------------------------|
| § 5 | | | Service not supported on the primary rate access (S/T interface does not apply to the primary rate access). |
| § 6.1 | | | The service is offered on a subscription basis. |
| § 6.2.3.1 | | | A call can be placed on hold during the active call phase only. |
| | § 9.1.1 note | | Only implicit channel reservation is used. |

Notes:

- Only two calls can be in progress simultaneously on a terminal (TEI) (either two on hold, or one active and one on hold).
- Notifications received from other networks during the alerting phase may not necessarily be sent to the called party.
- Bearer service used not checked on hold invocation.

17. Malicious Call Identification (MCID)

REFERENCES

For the service: ETSI standard ETS 300 128. For the protocol: ETSI standard ETS 300 130.

CHOSEN NETWORK OPTIONS

| ETSI ref. (service) | ETSI (protocol) | ref. | Chosen network options |
|---------------------|-----------------|------|--------------------------------------------------------------------------------------------------------------------------------|
| § 7.1 | | | Information about the point of entry of the call into the ISDN registered if the number of the calling party is not available. |
| § 6.1 | | | Automatic invocation of MCID by the network not possible on calls to the served user which are not answered. |
| § 6.2.3 | | | Calling party subaddress not registered. |
| | | | There are no restrictions on automatic invocation. |
| § 6.2.3 note | | | The call does not continue to be presented after the calling party has cleared. |
| § 7.1 note | | | The option for holding the connection is not supported. |
| § 8.10.1 | | | The identity of the last diverting user is not registered (on multiple diversions). |
| | Protocol | | No subscription by DDI or MSN number. |

18. Advice Of Charge: charging information During the call (AOC-D)

REFERENCES

For the service: ETSI standard ETS 300 179. For the protocol: ETSI standard ETS 300 182.

CHOSEN NETWORK OPTIONS

| ETSI ref. (service) | ETSI (protocol) | ref. | Chosen network options |
|---------------------|-----------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| § 6.1 | | | AOC-D can be provided on a per call basis without subscription. It can be invoked on calls on a subscription basis. |
| § 6.2.3 | | | Rate of sending information not limited (every n seconds) by the network, but information sent in real time. |
| § 6.2.3 | | | If the call becomes free of charge to the served user during the call, the indication is not given at that time. |
| § 8.15 | | | The cumulative information is not given at call suspension request. |
| § 8.15 | | | The sending of charging information starts again on resumption of the call, even if the called user has cleared, as long as the suspension timer has not expired. |
| Annex A | | | Charging information is provided as charge units (no currency units option). |

19. Advice Of Charge: charging information at the End of the call (AOC-E)

REFERENCES

For the service: ETSI standard ETS 300 180. For the protocol: ETSI standard ETS 300 182.

CHOSEN NETWORK OPTIONS

| ETSI ref. (service) | ETSI (protocol) | ref. | Chosen network options |
|---------------------|-----------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| § 6.1 | | | Service provided on a subscription basis. Only the For all calls automatically subscription option is supported. |
| § 8.10 | | | When a call is forwarded and the forwarding user is charged for the forwarded part of the call, the charging information is not transferred to the served forwarding subscriber (B). |
| § 8.15 | | | Charging information is provided on resumption of the call if the called user has cleared, as long as the suspension timer has not expired. |
| Annex A | | | Charging information is provided as charge units (no currency units option). |

20. User-to-User Signalling (UUS)

REFERENCES

For the service: ETSI standard ETS 300 284. For the protocol: ETSI standard ETS 300 286-1.

CHOSEN NETWORK OPTIONS

| ETSI ref. (service) | ETSI (protocol) ref. | Chosen network options |
|-----------------------------------------------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| § 6.1 | | The UUS2 and UUS3 services are not supported by the network. |
| § 6.1 | | Only implicit request is supported for the UUS1 service. |
| § 6.3.3 | § 9.1.2.1.2 | The user is informed if UUI is discarded in case of excessive UUI length or a problem with activating the service. A STATUS message containing cause #43 "access information discarded" is sent on the calling party's interface on call setup on excessive length. |
| | § 9.1.2.2.2 | A STATUS message containing cause #43 "access information discarded" is sent on the calling party's interface on call release on excessive length or if service 1 is not activated. |
| § 8.10.1 NOTE, 8.10.2 NOTE, 8.10.3 NOTE 1 and 8.10.4 NOTE | | In forwarding situations (CFU, CFNR, CD), transferral of UUI is not restricted to served forwarding users (B) who subscribe to the relevant parts of UUS. |

Note:

The user is not informed if UUI is discarded after network-internal message conversion.

21. Call Forwarding Busy (CFB)

REFERENCES

For the service: ETSI standard ETS 300 199. For the protocol: ETSI standard ETS 300 207-1.

CHOSEN NETWORK OPTIONS

| ETSI ref. (service) | ETSI (protocol) | ref. | Chosen network options |
|-----------------------------------|------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| § 5 | | | The maximum number of diversions permitted for each call, between 1 and 5 (modifiable), is currently set at 1. |
| § 6.1 | | | Served user (B) does not receive notification that CFB is currently activated on the access in the first message sent to the user on an outgoing call. |
| § 6.1 | | | CFB applies to the whole access, even if it has DDI or MSN. |
| § 6.1 | | | CFB is subscribed to for all basic services subscribed to by the user (see Note 1). |
| § 6.2.1.1 § 6.2.1.2 § 6.2.4 | § 9.1.1.1 § 9.1.2.1 | 9.1.1.1 | As subscription on a per-NDS basis is not offered, the network functionality to activate, deactivate and interrogate CFB for all the NDS's in the access is not offered. |
| | § 9.1.3.1 | | As subscription on a per-NDS basis is not offered, the interrogation option to obtain a list of the NDS's on the served user's access for which CFB has been activated is not offered. |
| § 6.3.1.1 | § 9.1.1.1 | | On activation, C's number is checked, in particular to prevent forwards to the same access (NDS of forwarded-to user is served user's NDS). |
| § 6.3.1.1 NOTE | | | Certain forwarded-to destinations are prohibited (e.g. freephone numbers, emergency services, operator services). |
| § 7 note 1 | | | International calls cannot be forwarded to the international network. |
| § 7.2 | | | The network accepts rerouting requests from private networks. |
| § 8.1.3 | | | Charging information (AOC-E) is not provided to served subscriber B for calls he/she forwards. |
| § 8.7 | | | If user B has activated CFB after user A has activated CCBS on user B, and B is busy again upon the arrival of the CCBS call, the call is forwarded as a normal call. |
| § 8.12 | | | If MCID is invoked, the identity of the last diverting user is not registered. |
| § 8.17 | | | If UUS is invoked, the UUI is always transferred at the same time as the call (without checking whether B is subscribed to the relevant parts of UUS). |
| | note § 9.2.5.1 | | The network does not add a prefix to the redirecting number. N.B. This information is not expressed clearly in this note in the ETSI document. |

CHOSEN USER OPTIONS

| ETSI ref. (service) | User options |
|---------------------|----------------------------------------------------------------------------------------------------------------------------|
| § 5 and § 6.1 | The served user (B) does not receive a reminder notification that forwarding is activated. |
| § 6.1 and 6.2.3.1 | The served user (B) cannot authorise (on a subscription basis) the calling user (A) to be notified of diversion. |
| § 6.1 | The served user (B) cannot prevent (on a subscription basis) their number from being released to the diverted-to user (C). |

22. Call Forwarding Unconditional (CFU)

REFERENCES

For the service: ETSI standard ETS 300 200. For the protocol: ETSI standard ETS 300 207-1.

CHOSEN NETWORK OPTIONS

| ETSI ref. (service) | ETSI (protocol) ref. | Chosen network options |
|-----------------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| § 5 | | The maximum number of diversions permitted for each call, between 1 and 5 (modifiable), is currently set at 1. |
| § 6.1 | | Served user (B) always receives notification that CFU is currently activated on the access in the first message sent to the user on an outgoing call. |
| § 6.1 | | CFU applies to the whole access, even if it has DDI or MSN. |
| § 6.1 | | CFU is subscribed to for all basic services subscribed to by the user. |
| § 6.2.1.1 § 6.2.1.2 § 6.2.4 | § 9.1.1.1 § 9.1.2.1 | As subscription on a per-NDS basis is not offered, the network functionality to activate, deactivate and interrogate CFU for all the NDS's in the access is not offered. |
| | § 9.1.3.1 | As subscription on a per-NDS basis is not offered, the interrogation option to obtain a list of the NDS's on the served user's access for which CFU has been activated is not offered. |
| § 6.3.1.1 | § 9.1.1.1 | On activation, C's number is checked, in particular to prevent forwards to the same access (NDS of forwarded-to user is served user's NDS). |
| § 6.3.1.1 NOTE | | Certain forwarded-to destinations are prohibited (e.g. freephone numbers, emergency services, operator services). |
| § 7 note 1 | | International calls cannot be forwarded to the international network. |
| § 7.2 | | The network accepts rerouting requests from private networks. |
| § 8.1.3 | | Charging information (AOC-E) is not provided to served subscriber B for calls he/she forwards. |
| § 8.12 | | If MCID is invoked, the identity of the last diverting user is not registered. |
| § 8.17 | | If UUS is invoked, the UUI is always transferred at the same time as the call (without checking whether B is subscribed to the relevant parts of UUS). |
| | note § 9.2.5.1 | The network does not add a prefix to the redirecting number. N.B. This information is not expressed clearly in this note in the ETSI document. |

CHOSEN USER OPTIONS

| ETSI ref. (service) | User options |
|---------------------|----------------------------------------------------------------------------------------------------------------------------|
| § 5 and § 6.1 | The served user (B) does not receive a reminder notification that forwarding is activated. |
| § 6.1 and 6.2.3.1 | The served user (B) cannot authorise (on a subscription basis) the calling user (A) to be notified of diversion. |
| § 6.1 | The served user (B) cannot prevent (on a subscription basis) their number from being released to the diverted-to user (C). |

23. Call Forwarding No Reply (CFNR)

REFERENCES

For the service: ETSI standard ETS 300 201. For the protocol: ETSI standard ETS 300 207-1.

CHOSEN NETWORK OPTIONS

| ETSI ref. (service) | ETSI (protocol) | ref. | Chosen network options |
|-----------------------------------|------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| § 5 | | | The maximum number of diversions permitted for each call, between 1 and 5 (modifiable), is currently set at 1. |
| § 6.1 | | | Served user (B) does not receive notification that CFB is currently activated on the access in the first message sent to the user on an outgoing call. |
| § 6.1 | | | CFNR applies to the whole access, even if it has DDI or MSN. |
| § 6.1 | | | CFNR is subscribed to for all basic services subscribed to by the user. |
| § 6.1 | § 6.1 | | The value of the no reply timer, between 10 and 40 s, is set by the network (20 s by default). It is a default value applying for all subscribers. |
| § 6.2.1.1 § 6.2.1.2 § 6.2.4 | § 9.1.1.1 § 9.1.2.1 | 9.1.1.1 | As subscription on a per-NDS basis is not offered, the network functionality to activate, deactivate and interrogate CFB for all the NDS's in the access is not offered. |
| | § 9.1.3.1 | | As subscription on a per-NDS basis is not offered, the interrogation option to obtain a list of the NDS's on the served user's access for which CFB has been activated is not offered. |
| § 6.2.3.1 b) | | | The call presented to B is removed from the served user immediately when CFNR is invoked. |
| § 6.3.1.1 | § 9.1.1.1 | | On activation, C's number is checked, in particular to prevent forwards to the same access (NDS of forwarded-to user is served user's NDS). |
| § 6.3.1.1 NOTE | | | Certain forwarded-to destinations are prohibited (e.g. freephone numbers, emergency services, operator services). |
| § 7 note 1 | | | International calls cannot be forwarded to the international network (call released on expiry of no reply timer). |
| § 7.2 | | | The network accepts rerouting requests from private networks. |
| § 8.1.3 | | | Charging information (AOC-E) is not provided to served subscriber B for calls he/she forwards. |
| § 8.12 | | | If MCID is invoked, the identity of the last diverting user is not registered. |
| § 8.17 | | | If UUS is invoked, the UUI is always transferred at the same time as the call (without checking whether B is subscribed to the relevant parts of UUS). |
| | note § 9.2.5.1 | | The network does not add a prefix to the redirecting number. N.B. This information is not expressed clearly in this note in the ETSI document. |
| | | | The ringing tone is retained until the network receives an indication that the deflected-to user is being informed of the call (end of selection), or until the connection is established at the deflected-to user (ISUP option). |

CHOSEN USER OPTIONS

| ETSI ref. (service) | User options |
|---------------------|----------------------------------------------------------------------------------------------------------------------------|
| § 5 and § 6.1 | The served user (B) does not receive a reminder notification that forwarding is activated. |
| § 6.1 and 6.2.3.1 | The served user (B) cannot authorise (on a subscription basis) the calling user (A) to be notified of diversion. |
| § 6.1 | The served user (B) cannot prevent (on a subscription basis) their number from being released to the diverted-to user (C). |

24. Call Deflection (CD)

REFERENCES

For the service: ETSI standard ETS 300 202. For the protocol: ETSI standard ETS 300 207-1.

CHOSEN NETWORK OPTIONS

| ETSI ref. (service) | ETSI ref. (protocol) | Chosen network options |
|---------------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| § 5 | | The maximum number of diversions permitted for each call, between 1 and 5 (modifiable), is currently set at 1. |
| § 6.1 | | CD applies to the whole access, even if it has DDI or MSN. |
| § 6.2.3.1 | | The call is removed from the served user when CD is accepted. |
| § 6.3.3 note | | Certain forwarded-to destinations are prohibited (e.g. freephone numbers, emergency services, operator services). |
| § 6.3.3 | | Deflection to the same access is authorised. |
| § 7 note 1 | | International calls cannot be forwarded to the international network. |
| § 7.2 | | The network accepts rerouting requests from private networks. |
| § 8.1.3 | | Charging information (AOC-E) is not provided to served subscriber B for calls he/she forwards. |
| § 8.12 | | If MCID is invoked, the identity of the last diverting user is not registered. |
| § 8.17 | | If UUS is invoked, the UUI is always transferred at the same time as the call (without checking whether B is subscribed to the relevant parts of UUS). |
| | note § 9.2.5.1 | The network does not add a prefix to the redirecting number. N.B. This information is not expressed clearly in this note in the ETSI document. |

CHOSEN USER OPTIONS

| ETSI ref. (service) | User options |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------|
| § 6.1 and 6.2.3.1 | The served user (B) cannot authorise (on a subscription basis) the calling user (A) to be notified of deflection. |
| § 6.1 | The served user (B) cannot prevent (on a subscription basis) their number from being released to the deflected-to user (C). |
| § 6.2.3.1 | Presentation of the identity of the served user (B) to the deflected-to user (C) cannot be overridden by a call-by-call request. |

The information below applies to all types of call forwarding.

Restrictions in relation to standards:

- The exchange of the served user B does not send a notification to the exchange of the calling user.
- The exchange of the calling user A does not send a notification to user A.
- Not all of the procedures on the T interface are supported. The exchange ignores the incoming components DivertingLegInformation1, DivertingLegInformation2, DivertingLegInformation3, and some CallRerouting parameters are not used (Q.931 information elements (BC, LLC, HLC, UUS1), redirection reason, redirection counter, last forwarded-to number, calling party subaddress and subscription option). The request is always considered as call deflection.
- In some exchanges, activation (of CFB, CFU and CFNR) is per basic service.
- Interrogation using "all basic services" may be rejected by some exchanges.

Note:

- A subscription option is necessary to authorise forwarding to an international number.

25. Completion of Calls to Busy Subscribers (CCBS)

REFERENCES

For the service: ETSI standard ETS 300 357. For the protocol: ETSI standard ETS 300 359-1.

CHOSEN NETWORK OPTIONS

| ETSI ref. (service) | ETSI (protocol) ref. | Chosen network options |
|---------------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| § 6.1 | § 6.1 | Recall mode is supported by the network. One of the two values is chosen by the user on subscription: a - Global, i.e. CCBS recall offered to all terminals. b - Specific, i.e. CCBS recall offered to the terminal which activated CCBS (right category). |
| § 6.2 | | Service duration timer (A end) T-CCBS2 15 to 45 mins. Selected value T1 = 30. |
| § 6.2.1.1 | | The network (A's exchange) limits the number of CCBS requests user A has outstanding. The limit applies in general for all subscribers with a maximum value of 5. |
| § 6.2.1.1 | § 6.1 | Check for identical calls option. The network checks if CCBS is requested for subscriber A for a call identical to a call for which CCBS is already activated, i.e. to different destinations, the same destination B with different service requirements (e.g. teleservice, BC, HLC). If two identical requests are found, the second is rejected. |
| § 6.2.1.1 | | The network (B's exchange) limits the number of incoming CCBS requests queued. The limit applies in general for all users with a maximum value of 5. |
| § 6.2.1.1 | | A category prohibiting the right to incoming CCBS will be introduced. The network option for reducing the size of the destination B CCBS queue for individual users to zero length has not been requested. |
| § 6.3.3.1 b) | § 6.1 | Two CCBS request retention options are possible, depending on the type of exchange: - The network continues user A's CCBS request (queued) if user B is busy again. - The network does not continue user A's current CCBS request, and activates CCBS again if user B is busy again. User A can activate CCBS again. Note: CCBS request retention option for access steps 1 and 3, Retain option option for network step 3. |
| § 8.10.2 | | If user B has activated CFB after user A has activated CCBS on user B, and B is busy again upon the arrival of the CCBS call, the call is forwarded as a normal call. |
| | | The STATUS request network option has not been requested in incoming. If this procedure exists, its processing should be associated with a type. |

CHOSEN USER OPTIONS

| ETSI ref. (service) | User options |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| § 6.1 | Recall mode is supported by the network. One of the two values is chosen by the user on subscription: a - Global, i.e. CCBS recall offered to all terminals. b - Specific, i.e. CCBS recall offered to the terminal which activated CCBS (right category). |

26. Three-Party (3PTY)

ETSI standards ETS 300 186 and ETS 300 188.

CHOSEN NETWORK OPTIONS

| ETSI ref. (service) | ETSI ref. (protocol) | Chosen network options |
|----------------------------|----------------------|----------------------------------------------------------------------------------------------------|
| § 5 note § 6.2.3.1 note | | The basic services involved in a three-way conversation are 3.1 kHz audio and speech. |
| § 8.1.2 § 8.1.3 | | Charging information related to 3PTY is not sent to the served user (no charge for invoking 3PTY). |
| § 8.16 | | A remote user in a three-way conversation can invoke 3PTY. |

27. Explicit Call Transfer (ECT)

For the service: ETSI standard EN 300 367. For the access signalling protocol: EN 300 369-1.

CHOSEN NETWORK OPTIONS

| ETSI ref. (service) | ETSI ref. (protocol) | Chosen network options |
|---------------------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | § 5 and § 10 | The service is offered on the T interface. |
| § 4 § 5.2.3 | § 9.2 § 9.2 | ECT may be invoked when both calls are in the active state, depending on the type of exchange. ECT may be invoked when the second call is in alerting phase (user informed). |
| § 6.3.3 | | The network does not reject an ECT request if the resulting connection does not contain a user who is able to terminate the call. |
| § 6 note 1 | | The ECT request is rejected if both calls are international calls. |
| § 6 note 2 | | If interworking between networking occurs, the ECT request is always accepted (even if the resulting connection does not contain a user who is able to terminate the call). |

| | | |
|---------|---------|-------------------------------------------------------------------------------------------------------|
| § 7.1.3 | | Charging information may be sent to user A at the end of the call, depending on the type of exchange. |
| | § 9.2.2 | The network supports the explicit linkage procedure for identifying the calls to be transferred. |
| | § 10.3 | The network does not support the mechanism to avoid looping of uncontrolled circuits (see Note1). |

Note 1: The mechanism for limiting the duration of long calls should prevent looping.

Note:

- Transfer to the international network can be authorised by way of an option.

28. Interactions between supplementary services

REFERENCE

ETSI standard: ETS 300 195.

CHOSEN NETWORK OPTIONS:

- The interactions with the AOC-S, COLP, COLR, CONF and CUG supplementary services are not defined as they are not supported by the network.

29. Calling Name Identification Presentation (CNIP)

Definition of the service: Supplementary service offered to the called subscriber that provides the calling subscriber's name. This service is offered on a subscription basis.

Procedures:

Information sent:

- calling party name (if available),
- "name not available" character string (if the calling party name is not available),
- or 6 asterisks (if presentation restriction has been activated).

This information is sent in a Display information element included in the SETUP message sent to the called subscriber. This information is set using the International Reference Alphabet, International Reference Version (IRA-IRV).

These procedures apply to the S/T and T interfaces.

30. Transgroupe service¹

Definition of the service: See § 6.2.3.13 of the document that describes the Euro-Numéris access interface.

The following changes apply to the Euro-Numéris+ access in the terminating exchange:

- If the call is a Transgroupe call and if the access has the Transgroupe discrimination, it is presented to the user according to the specification for basic calls. If the private number (in the Transgroupe network) of the subscriber is available, it is included in the destination address information element in the SETUP message. This is placed immediately in front of the destination address information element that gives the address of the destination number in the general network. The numbering digits, and the coding of the number type and numbering plan fields of the private destination address are imposed by the signalling received from the network.
- If the call is a Transgroupe call and terminates in an access that does not have the Transgroupe discrimination, the call is released with cause 87 (barring of incoming calls).
- If the call is a call from the general network and if the Transgroupe access has the "barring of incoming calls" discrimination, the call is released with cause 87 (barring of incoming calls).

These procedures also apply to the T interface.

31. B-channel ISDN packet mode

REFERENCE

ETSI standard: ETS 300 007.

Access to the ISDN packet mode service via the B-channel offers the user the possibility of requesting the network to set up a 64 kbit/s digital circuit between the user equipment and the Packet Access Point (PAP). This is done by including a Bearer capability information element, the Transfer mode field of which (bits 6 and 7 of octet 4) is set to "packet mode". The destination address may not necessarily be included. This mode corresponds to case B in Recommendation X.31, on the B-channel.

¹ France Telecom Virtual Private Network (VPN) service.

Note 1 – There are no major benefits to this ISDN packet service access mode as far as the user is concerned, except that the terminal equipment pool can be large as it is supported by the vast majority of European ISDNs.

Note 2 – The use of the B-channel ISDN packet mode fixes, in the exchange, the PAP access number to which all packet mode calls are routed (unless the user gives a destination address that addresses another PAP). ETSI standard ETS 300 007 does not make provision for, in the first edition at least (1990), the user to include the destination address on the call message. ETSI-compliant terminal equipment would, therefore, only be able to access the PAP corresponding to the PAP access number stored in the exchange.

This service can be used on Euro-Numéris+ accesses by all ISDN users (no right category).

It gives ISDN users synchronous customised access to the PAPs that identify the calling party and the packet mode service profile via the NDI origin number (and the NDS if present) provided by the call setup signalling on the ISDN – PAP interface. If the calling party cannot be identified, the standard packet mode service profile is used and the called party is charged for the call.

The packet mode call setup procedures are the same as the circuit mode call setup procedures, but the content and processing of the SETUP message are different:

- The Bearer capability information element is set as defined in ETSI standard ETS 300 007 (1991), section 7.1.2.1:

- The information element is 6 or 7 octets long. Information transfer capability (bits 1 to 5 of octet 3) is set to “unrestricted digital information”. Transfer mode (bits 6 and 7 of octet 4) is set to “packet mode”. Information rate (bits 1 to 5 of octet 4) is set to “0”. Octet 5 (layer 1 protocol) is optional, and if present is set to “X.31, rate adaptation” (stuffed using flag). Octet 6 (layer 2 protocol) is set to “X.25, data link layer”. Octet 7 (layer 3 protocol) is set to “X.25, packet layer”.

The originating exchange only examines the first 4 octets of the Bearer capability information element, and ensures that it is transferred in its entirety to the destination interface, including octets 5, 6, and 7, without checking the content, if they are present. The network treats the Bearer capability information element as valid if it is between 4 and 11 octets long.

- The destination address information element is not usually present.

- * If it is not present, when processing calls the exchange presumes that en bloc dialling is being used (PROGRESS message sent), even if the information element indicating that all of the digits have been sent is present, and takes account of the PAP access number stored in the exchange to set up the call.

- * If it is present, which it always is with packet mode calls from the PAP (in this case the destination address identifies the called user), the exchange takes it into account and processes the call according to the basic call handling procedures.

Note: If the call cannot be handled on the basis of the digits received, the call is released according to the procedures for handling basic calls (the PAP access number stored in the exchange is not used).

- The call is presented to the PAP with “packet mode” in the Bearer capability information element, as circuit switching exchanges do not modify the coding received from the user, and simply transport it.

32. D-channel Permanent Logical Links (PLL)

See the document covering permanent logical links [2].

33. Glossary

| | |
|------------|---------------------------------------------------------------|
| 3PTY | Three-party |
| AOC | Advice Of Charge |
| AOC-D | Advice Of Charge: charging information During the call |
| AOC-E | Advice Of Charge: charging information at the End of the call |
| BC | Bearer Capability |
| CCBNT | Non-transparent B-channel circuit switching |
| CCBS | Completion of Calls to Busy Subscribers |
| CCBT | Transparent B-channel circuit switching |
| CD | Call Deflection |
| CFB | Call Forwarding Busy |
| CFNR | Call Forwarding No Reply |
| CFU | Call Forwarding Unconditional |
| C-H (HOLD) | Call Hold |
| CLIP | Calling Line Identification Presentation |
| CLIR | Calling Line Identification Restriction |
| CNIP | Calling Name Identification Presentation |
| CT | Total cost |
| CW | Call Waiting |
| DDI | Direct Dialling In |
| ECT | Explicit Call Transfer |
| HLC | High Layer Compatibility |
| LLC | Low Layer Compatibility |
| MCID | Malicious Call IDentification |
| MSN | Multiple Subscriber Number |
| OCB-F | Outgoing Call Barring-Fixed |
| PLL | Permanent Logical Link |
| SAPI | Service Access Point Identifier |
| SR | Restricted service |
| SS | Supplementary service |
| SUB | Sub-addressing |
| TEI | Terminal Endpoint Identifier |
| TG | Transgroupe |
| TP | Terminal Portability |
| UDI | Unrestricted Digital Information |
| UDI-TA | Unrestricted Digital Information with Tones/Announcements |
| UUS1 | User-to-user signalling service 1 |
| UUS2 | User-to-user signalling service 2 |
| UUS3 | User-to-user signalling service 3 |
| TS | Time Slot (IT in french) |

34. Reference documents

- [1] STI 6 Interface d'accès RNIS : Euro-Numéris. Layer 3 du protocole D et compléments de service (ISDN access interface: Euro-Numéris, D-channel protocol layer 3 and supplementary services)
- [2] STI 8 D-channel packet mode service for the Euro-Numéris and Euro-Numéris+ ISDN access interfaces

35. History

| Edition | Date | Comments |
|---------|--------------|-------------------------------------------------------------------|
| 1 | March 2000 | First edition |
| 2 | October 2000 | Minor modifications to layout and the information on CCBS and ECT |