



**SLOVENSKI STANDARD**  
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8 [[ ]HJbc`ca fYy`Y`n`]bhY[ f]fUb]a ]g]hcf]h] Ua ]f]G8 BŁĚ`Dfcltc\_c`UX[[ ]HJbY  
bUfc b]y\_Yg[[ bU]nUWY`Y`yh`r`%f8 GG%L]b`g[[ bU]nUWY`Y`yh`r`+`fGG+LĚ`8 cdc`b]bU  
g]hcf]h]j .`dcXUU\_`]WUŽ\_c`b]`XcgY[ `]j cgh]f7 : BFWžnUa cV]bcghVfYnj fj ] bY[ U  
hYfa ]bUUF7 HAłžZ]hU`%Ě`%`XY .`GdYWZ\_`UWY`Udfcltc\_c`U

Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) and Signalling System No.7 (SS7) protocols; Call Forwarding on Not Reachable (CFNRc) supplementary service for Cordless Terminal Mobility (CTM) phase 1; Part 1: Protocol specification

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*European Standard (Telecommunications series)*

**Integrated Services Digital Network (ISDN);  
Digital Subscriber Signalling System No. one (DSS1) and  
Signalling System No.7 (SS7) protocols;  
Call Forwarding on Not Reachable (CFNRc)  
supplementary service for  
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Part 1: Protocol specification**

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**Postal address**

F-06921 Sophia Antipolis Cedex - FRANCE

---

**Office address**

650 Route des Lucioles - Sophia Antipolis  
Valbonne - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C

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**Internet**

[secretariat@etsi.fr](mailto:secretariat@etsi.fr)

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## Foreword

This European Standard (Telecommunications series) has been produced by ETSI Technical Committee Signalling Protocols and Switching (SPS).

The present document is part 1 of a multi-part standard covering the Digital Subscriber Signalling System No. one (DSS1) and Signalling System No. seven (SS7) protocols; Call forwarding on not reachable supplementary service for CTM phase 1, as described below:

**Part 1:** "Protocol specification";

Part 2: "Protocol Implementation Conformance Statement (PICS) proforma specification".

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# 1 Scope

The present document specifies the stage 3 of the Signalling application for the mobility management service for the phase 1 of Call Forwarding on Not Reachable (CFNRc) supplementary service. The mobility management service functions include Cordless Terminal Mobility (CTM) for CTM phase 1 (DECT/GAP limitation) and DECT access to GSM via an ISDN user-network interface at the T reference point or coincident S and T reference point (as defined in ITU-T Recommendation I.411 [4]) by means of the Digital Subscriber Signalling System No. one (DSS1) protocol. Stage three identifies the protocol procedures and switching functions needed to support a telecommunication service (see CCITT Recommendation I.130 [2]).

The Call Forwarding on Not Reachable (CFNRc) supplementary service enables a served user to have the network redirect to another user calls which are addressed to the served user's ISDN number. After the Call Forwarding on Not Reachable (CFNRc) supplementary service has been activated, calls are forwarded only if the served user's cordless terminal is not reachable. The Call Forwarding on Not Reachable (CFNRc) supplementary service operates on all calls. The served user's ability to originate calls is in principle unaffected by the Call Forwarding on Not Reachable (CFNRc) supplementary service.

NOTE: Practically the served user's ability to originate calls is affected if there is radio congestion or if the served user's cordless terminal is for example out of radio coverage.

The signalling application for phase 1 describes the mobility management procedures required to allow users of cordless terminals to be mobile within and between networks. Whenever radio coverage is provided and the cordless terminal has appropriate access rights, the user is able to make calls from and to receive calls at any location within the network.

The signalling application for phase 1 is applicable to the telephony 3,1 kHz teleservice (ETS 300 111 [19]), speech bearer service (ETS 300 109 [17]) and 3,1 kHz audio bearer service (ETS 300 110 [18]).

Further parts of EN 302 094 specify the method of testing required to identify conformance to the present document.

The present document is applicable to equipment supporting the signalling application for the alpha interface or the beta interface, to be attached at either side of a T reference point and coincident S and T reference point when used as an access to the public ISDN or GSM.

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# 2 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.

- [1] ITU-T Recommendation I.112 (1993): "Vocabulary of terms for ISDN".
- [2] CCITT Recommendation I.130 (1988): "Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN".
- [3] ITU-T Recommendation I.210 (1993): "Principles of telecommunication services supported by an ISDN and the means to describe them".
- [4] ITU-T Recommendation I.411 (1993): "ISDN user-network interfaces - Reference configurations".
- [5] CCITT Recommendation X.208 (1988): "Specification of Abstract Syntax Notation One (ASN.1)".



- [6] CCITT Recommendation X.219 (1988): "Remote operations: Model, notation and service definition".
- [7] ITU-T Recommendation X.880: "Information technology - Remote operations: Concepts, model and notation".
- [8] EN 300 195-1 (V1.4): "Integrated Services Digital Network (ISDN); Supplementary service interactions; Digital Subscriber Signalling System No. one (DSS1) protocol; Part 1: Protocol specification".
- [9] 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".
- [10] EN 300 207-1 (V1.2): "Integrated Services Digital Network (ISDN); Diversion supplementary services; Digital Subscriber Signalling No. one (DSS1) protocol; Part1: Protocol specification".
- [11] ETS 300 403-2 (1995): "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 Description Language (SDL) diagrams".
- [12] ETS 300 788 (1997): "Digital Enhanced Cordless Telecommunications (DECT); Global System for Mobile communications (GSM); Integrated Services Digital Network (ISDN); DECT access to GSM via ISDN; Functional capabilities and information flows".
- [13] EN 301 144-1: "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) and Signalling System No. 7 (SS7) protocols; Signalling application for the mobility management service on the alpha interface; Part 1: Protocol specification".
- [14] EN 301 175 (V1.1): "Cordless Terminal Mobility (CTM); Phase 1; Service description".
- [15] EN 300 356-15: "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 3 for the international interface; Part 15: Diversion supplementary services [ITU-T Recommendation Q.732, clause 2 to 5 (1997), modified]".
- [16] ITU-T Recommendation X.680 Amendment 1 (04/95): "Information technology - Abstract Syntax Notation One (ASN.1) - Specification of basic notation Amendment 1: Rules of extensibility".
- [17] ETS 300 109 (1992): Integrated Services Digital Network (ISDN); Circuit-mode 64 kbit/s 8 kHz structured bearer service category usable for speech information transfer; Service description".
- [18] ETS 300 110 (1992): "Integrated Services Digital Network (ISDN); Circuit-mode 64kbit/s 8kHz structured bearer service category usable for 3,1 kHz audio information transfer; Service description".
- [19] ETS 300 111 (1992): "Integrated Services Digital Network (ISDN); Telephony 3,1 kHz teleservice; Service description".

### 3 Definitions

For the purposes of the present document, the following terms and definitions apply:

**basic call procedure:** procedures by which a call (as an instance of a basic telecommunication service) is established and terminated.

**(Call) forwarding:** general term applied to any functionality whereby a call is redirected automatically by the service provider to another user. The forms of forwarding are: unconditional, whereby all calls are redirected; busy, whereby calls encountering busy are redirected; no reply, whereby calls which are not answered within a time period are redirected; and, not reachable, whereby calls which are encountering not reachable are redirected.

**calling network:** network to which the calling user is attached.

**calling user:** user which initiated a call that has been diverted.

**cordless terminal:** physical entity that provides access to the telecommunication service of a network via a radio interface.

**cordless terminal mobility:** ability of a cordless terminal to be mobile within and between Fixed Parts.

NOTE 1: The mobility may be continuous while the terminal is accessing and using the telecommunication services offered by the network, and it may include the capability of the networks to keep track of the cordless terminal's location throughout the entire network.

**deflected-to number:** ISDN number of the deflected-to user.

**deflected-to user:** user to which the call is redirected as a result of deflection.

**deflecting number:** ISDN number of the deflecting user.

**deflection:** see "diversion".

**diversion:** generic all forms of forwarding, including deflection whereby calls are redirected by the user instead of being answered.

**diverted-to user:** either the forwarded-to user or the deflected-to user.

**diverted-to network:** network to which the diverted-to user is attached.

**diverted-to number:** ISDN number of the forwarded-to or the deflected-to user.

**diverting network:** network to which the served user (diverting user) is attached.

**diverting number:** ISDN number of the forwarding/deflecting user.

**fixed Part (FP):** physical grouping that contains all elements in the cordless network between the local network and the cordless terminal air interface.

**forwarded-to user:** user to whom the call is redirected as a result of forwarding.

**network:** entity which provides the mobility management function and basic call functionality to the user.

**network operator:** entity that provides the network operating elements and resources for the execution of the mobility management service.

**not reachable:** status in the network when an incoming call is offered to a cordless terminal but the cordless terminal is out of radio coverage, switched off, or there is radio congestion.

**portable identity:** identity by which a subscriber is known to the mobility management service providers and networks supporting mobility management used for flexibility and security purposes.

NOTE 2: The portable identity identifies a subscriber unambiguously. The portable identity does not need to be known by subscriber.

**Portable Part (PP):** physical grouping that contains all elements between the user and air interface.

NOTE 3: Portable Part is a generic term that may describe one or several physical pieces.

**portable termination:** logical group of functions that contains all of the CT processes and procedures on the portable side of the CT air interface.

NOTE 4: A Portable radio Termination only includes elements that are defined in the relevant CT specification.

**public land mobile network:** see ETS 300 788 [12].

**radio coverage:** area in which cordless terminals may be used to establish and maintain telecommunication services via the radio base stations supported by the network supporting the mobility management service.

**roaming:** movement of the cordless terminal without a call in progress from one location area to another location area within the same and/or between different networks supporting the mobility management service.

**served user:** user to which the Call Forwarding on Not Reachable (CFNRc) supplementary service is provided.

**service feature:** specific aspect of a telecommunication service that can also be used in conjunction with other telecommunication services or service features as parts of a commercial offering.

NOTE 5: It is either a core part of a telecommunication service or an optional part offered as an enhancement to a telecommunication service.

**service profile:** record containing all the service information related to a served user.

**service provider:** actor who offers mobility management services to its service subscribers on a contractual basis and who is responsible for the mobility management services offered.

NOTE 6: The same organization may act as a network operator and a service provider.

**service subscriber:** entity that contracts for services offered by a service provider.

**service:** that which is offered by an administration or a public or private service provider to its service subscriber in order to satisfy a telecommunication requirement.

**supplementary service:** see ITU-T Recommendation I.210 [3], subclause 2.4.

**telecommunication service:** see ITU-T Recommendation I.112 [1].

**terminal mobility:** ability of a terminal to access telecommunication services, while in motion, and the capability of the network to locate and identify that terminal as it moves.

**user:** DSS1 protocol entity at the user side of the user-network interface (EN 300 356-15 [15]).

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### 4 Abbreviations (standards.iteh.ai)

For the purposes of the present document, the following abbreviations apply:

ASN.1	Abstract Syntax Notation one
CD	Call Deflection
CFB	Call Forwarding Busy
CFNR	Call Forwarding No Reply
CFNRc	Call Forwarding on Not Reachable
CFU	Call Forwarding Unconditional
CT	Cordless Terminal
CTM	Cordless Terminal Mobility
DECT	Digital Enhanced Cordless Telecommunications
DSS1	Digital Subscriber Signalling System 1
FP	Fixed Part
GAP	Generic Access Profile
GSM	Global System for Mobile communications
ISDN	Integrated Services Digital Network
LE	Local Exchange
MSC	Mobile Switching Center
PLMN	Public Land Mobile Network
PP	Portable Part
SCFNR	Selective Call Forwarding on No Reply
SDL	Specification and Description Language
TMSI	Temporary Mobile Subscriber Identity