SLOVENSKI STANDARD
SIST ETS 300 175-6 E1:2003

01-december-2003

Radijska oprema in sistemi (RES) ï Digitalne evropske brezvrvi ne telekomunikacije (DECT) ï Skupni vmesnik ï 6. del: Identitete in naslavljanje

Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT) Common interface Part 6: Identities and addressing

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Ta slovenski standard je istoveten z: ETS 300 175-6 Edition 1

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ICS:

33.070.30	Digitalne izboljġane brezvrvi ne telekomunikacije (DECT)	Digital Enhanced Cordless Telecommunications (DECT)

SIST ETS 300 175-6 E1:2003 **en**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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EUROPEAN TELECOMMUNICATION STANDARD

ETS 300 175-6

October 1992

Source: ETSI TC-RES

Reference: DE/RES-3001-6

ICS: 33.060

Key words: DECT

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Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT) Common interface Part 6: Identities and addressing

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Radio Equipment and Systems (RES) Technical Committee of the European Telecommunications Standards Institute (ETSI), and was adopted, having passed through the ETSI standards approval procedure (Public Enquiry 23: 1991-09-02 to 1991-12-27, Vote 22: 1992-05-25 to 1992-07-17).

Annex A to this ETS is informative.

Further details of the DECT system may be found in the ETSI Technical Reports, ETR 015 [16], ETR 043 [15] and also in draft ETSI Technical Report: "Digital European Cordless Telecommunications System description document [17]".

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1 Scope

This part of the Digital European Cordless Telecommunications (DECT) Common Interface specifies the identities and addressing structure. It is Part 6 of a series of 9.

There are four categories of identities to be used for identification and addressing in a general DECT environment. These four categories are:

- Fixed Part (FP) identities;
- Portable Part (PP) identities;
- connection-related identities;
- equipment-related identities.

Fixed part identities and portable part identities are used for:

- access information from fixed parts to portable parts;
- access requests from portable parts;
- identification of portable parts;
- identification of fixed parts and radio fixed parts;
- paging;
- billing.

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These identities support:

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- different environments, such as residential, public or private;
- supply to manufacturers, installers, and operators of globally unique identity elements with a minimum of central administration;
- multiple access rights for the same portable;
- large freedom for manufacturers, installers, and operators to structure the fixed part identities, e.g. to facilitate provision of access rights to groups of DECT systems;
- roaming agreements between DECT networks run by the same or different owners/operators;
- indication of handover domains;
- indication of location areas, i.e. paging area;
- indication of subscription areas of a public service.

This specification also provides for length indicators and other messages that can override the default location and/or paging area and domain indications given by the structure of the identities.

Connection related identities are used to identify the protocol instances associated with a call and are used for peer-to-peer communication.

Equipment related identities are used to identify a stolen PP and to derive a default identity coding for PP emergency call set-up.

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Coding of identity information elements for higher layer messages is found in ETS 300 175-5 [5], subclause 4.7.

User authentication and ciphering need additional key information and is not within the scope of this part, but is covered in other Parts of ETS 300 175, e.g. Part 7.

2 Normative references

This European Telecommunication Standard (ETS) incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to, or revisions of, any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

[1] ETS 300 175-1: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT) Common interface Part 1: Overview".

[2] ETS 300 175-2: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT) Common interface Part 2: Physical layer".

[3] ETS 300 175-3: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT) Common interface Part 3: Medium access control layer".

[4] ETS 300 175-4: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT) Common interface Part 4: Data link control layer".

[5] ETS 300 175-5: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT) Common interface Part 5: Network layer".

[6] ETS 300 175-6: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT) Common interface Part 6: Identities and addressing".

[7] ETS 300 175-7: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT) Common interface Part 7: Security features".

[8] ETS 300 175-8: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT) Common interface Part 8: Speech coding and transmission".

[9] ETS 300 175-9: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT) Common interface Part 9: Public access profile".

[10] Reserved.

[11] Reserved.

[12] I-ETS 300 176: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT) Approval test specification".

[13] Reserved for future ETS version of [12].

[14] CEPT Recommendation T/SGT SF2 (89) 6/0: "Draft Recommendation T/SF Services and Facilities of Digital European Cordless Telecommunications".

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[15] ETR 043: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT) Common interface Services and facilities requirements specification".

[16] ETR 015: "Digital European Cordless Telecommunications (DECT) Reference document".

[17] Draft ETSI Technical Report: "Digital European Cordless Telecommunications (DECT) System description document".

[18] ETR 042: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT). A guide to DECT features that influence the traffic capacity and the maintenance of high radio link transmission quality including results of simulations".

[19] Reserved for future DECT document.

[20] CCITT Recommendation E.163 (1988): "Numbering Plan for the ISDN Era".

[21] CCITT Recommendation E.164 (1988): "Numbering Plan for the International Telephone Service".

[22] ETSI-GSM Technical Specification GSM 03.03: "Numbering, addressing, and identification".

3 Definitions and abbreviations

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The definitions are listed in alphabetic order.

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3.1 Definitions

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For the purposes of this ETS the following definitions apply.

Attach: the process whereby a Portable Part (PP) within the coverage area of a Fixed Part (FP) to which it has access rights, notifies this fixed part that it is operative. The reverse process is detach, which reports the portable part as inoperative.

NOTE: An operative portable part is assumed to be ready to receive calls.

Authentication (of a subscriber): the process whereby a DECT subscriber is positively verified to be a legitimate user of a particular fixed part.

NOTE: Authentication is generally performed at call set-up, but may also be done at any other time (e.g. during a call).

Bearer: see Medium Access Control (MAC) bearer or bearer service.

Bearer handover: the internal handover process provided by the MAC layer, whereby one MAC connection can modify its underlying bearers while maintaining the service provided to the Data Link Control (DLC) layer.

NOTE: Bearer handover is slot based.

Cell: the domain served by a single antenna(e) system (including a leaky feeder) of one fixed part.

NOTE: A cell may include more than one source of radiated Radio Frequency (RF) energy (i.e. more than one radio end point).

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Central Control Fixed Part (CCFP): a physical grouping that contains the central elements of a fixed part. A fixed part shall contain a maximum of one CCFP.

NOTE: A CCFP controls one or more Radio Fixed Parts (RFPs).

Cluster: a logical grouping of one or more cells between which bearer handover is possible. A Cluster Control Function (CCF) controls one cluster.

NOTE: Internal handover to a cell which is not part of the same cluster can only be done by connection handover.

Connection: see "MAC connection".

Connection handover: the internal handover process provided by the DLC layer, whereby one set of DLC entities (C-plane and U-plane) can reroute data from one MAC connection to a second new MAC connection, while maintaining the service provided to the network layer.

NOTE: Connection handover is DLC frame based.

Coverage area: the area over which reliable communication can be established and maintained.

DECT NetWork (DNW): a network that uses the DECT air interface to interconnect a local network to one or more portable applications. The logical boundaries of the DECT network are defined to be at the top of the DECT network layer.

NOTE: A DECT network is a logical grouping that contains one or more fixed radio terminations plus their associated portable radio termination. The boundaries of the DECT network are not physical boundaries.

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External handover: the process of switching a call in progress from one fixed radio termination to another fixed radio termination.

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Fixed Part (FP): a physical grouping that contains all of the elements in the DECT network between the local network and the DECT air interface.

NOTE: A DECT fixed part contains the logical elements of at least one fixed radio Termination, plus additional implementation specific elements.

Fixed radio Termination (FT): a logical group of functions that contains all of the DECT processes and procedures on the fixed side of the DECT air interface.

NOTE: A fixed radio termination only includes elements that are defined in ETS 300 175. This includes radio transmission elements (layer 1) together with a selection of layer 2 and layer 3 elements.

Frame: see Time Division Multiple Access (TDMA) frame or DLC frame.

Geographically unique: this term relates to fixed part identities, (PARIs and RFPIs). It indicates that two fixed parts with the same PARI, or respectively two RFPIs with the same RFPI, can not be reached or listened to at the same geographical position.

NOTE: PARI stands for Primary Access Rights Identifier, RFPI stands for Radio Fixed Part Identifier.

Global NetWork (GNW): a telecommunication network capable of offering a long distance telecommunication service.

NOTE: The term does not include legal or regulatory aspects, nor does it indicate if the network is a public or a private network.

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Globally unique (identity): the identity is unique within DECT (without geographical or other restrictions).

Handover: the process of switching a call in progress from one physical channel to another physical channel. These processes can be internal (see internal handover) or external (see external handover).

NOTE: There are two physical forms of handover, intra-cell handover and inter-cell handover. Intra-cell handover is always internal, inter-cell handover can be internal or external.

Inter-cell handover: the switching of a call in progress from one cell to another cell.

Internal handover: handover processes that are completely internal to one fixed radio termination. Internal handover reconnects the call at the lower layers, while maintaining the call at the network layer.

NOTE: The lower layer reconnection can either be at the DLC layer (see connection handover) or at the MAC layer (see bearer handover).

Interoperability: the capability of fixed parts and portable parts, that enable a portable part to obtain access to teleservices in more than one location area and/or from more than one operator (more than one service provider).

Interoperator roaming: roaming between fixed part coverage areas of different operators (different service providers).

Intra-cell handover: the switching of a call in progress from one physical channel of one cell to another physical channel of the same cell.

Intraoperator roaming: roaming between different fixed part coverage areas of the same operator (same service provider).

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Local NetWork (LNW): a telecommunication network capable of offering local telecommunication services.

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NOTE: The term does not include legal or regulatory aspects, nor does it indicate if the network is a public network or a private network.

Locally unique (identity): the identity is unique within one FP or location area, depending on application.

Location area: the domain in which a portable part may receive (and/or make) calls as a result of a single location registration.

Location registration: the process whereby the position of a DECT portable termination is determined to the level of one location area, and this position is updated in one or more databases.

NOTE: These databases are not included within the DECT fixed radio termination.

Multiframe: a repeating sequence of 16 successive TDMA frames, that allows low rate or sporadic information to be multiplexed (e.g. basic system information or paging).

Network (telecommunication network): all the means of providing telecommunication services between a number of locations where the services are accessed via equipment attached to the network.

Operator (DECT operator): the individual or entity who or which is responsible for operation of one or more DECT fixed parts.

NOTE: The term does not imply any legal or regulatory conditions, nor does it imply any aspects of ownership.