# SLOVENSKI STANDARD
# SIST EN 301 649 V1.2.1:2005

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**Digitalne izboljġane brezvrviļ ne telekomunikacije (DECT) - Paketna radijska storitev DECT (DPRS)**

Digital Enhanced Cordless Telecommunications (DECT); DECT Packet Radio Service (DPRS)

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*European Standard (Telecommunications series)*

## Digital Enhanced Cordless Telecommunications (DECT); DECT Packet Radio Service (DPRS)

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# Foreword

This European Standard (Telecommunications series) has been produced by ETSI Project Digital Enhanced Cordless Telecommunications (DECT).

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# 1 Scope

The present document defines the standard for packet radio services for Digital Enhanced Cordless Telecommunications (DECT) systems conforming to EN 300 175 Parts 1 [1] to 7 [7]. It is the basis of profiles, which define more specific applications (Application Specific Access Profiles ASAPs), aimed at the connection of terminals supporting packet data services to a fixed infrastructure, both private and public.

The present document defines a basic service, with the service classes 1 or 2. Service class 1 provides for applications in closed user groups, whereas service class 2 is intended for use in private and public roaming applications.

The annexes to the present document contain the conventions for interworking of the frame-relay and character oriented services.

The present document defines the additional requirements on the Physical Layer (PHL), Medium Access Control (MAC) layer, Data Link Control (DLC) layer and Network (NWK) layer of DECT. The standard also specifies Management Entity (ME) requirements, which ensure the efficient use of the DECT spectrum.

# 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 and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

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[1] ETSI EN 300 175-1: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 1: Overview".

[2] ETSI EN 300 175-2: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 2: Physical layer (PHL)".

[3] ETSI EN 300 175-3: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 3: Medium Access Control (MAC) layer".

[4] ETSI EN 300 175-4: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 4: Data Link Control (DLC) layer".

[5] ETSI EN 300 175-5: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 5: Network (NWK) layer".

[6] ETSI EN 300 175-6: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 6: Identities and addressing".

[7] ETSI EN 300 175-7: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 7: Security features".

[8] ETSI EN 300 444: "Digital Enhanced Cordless Telecommunications (DECT); Generic Access Profile (GAP)".

[9] ETSI EN 300 824: "Digital Enhanced Cordless Telecommunications (DECT); Cordless Terminal Mobility (CTM); CTM Access Profile (CAP)".

[10] ISO/IEC 8802-3 (1996): "Information technology - Telecommunications and information exchange between systems - Local and metropolitan area networks - Specific requirements - Part 3: Carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications".

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[11] ISO/IEC 8802-5 (1998): "Information technology - Telecommunications and information exchange between systems - Local and Metropolitan Area Networks - Specific requirements - Part 5: Token ring access method and physical layer specifications".

[12] IETF RFC 791 (1981): "Internet Protocol", J. Postel.

[13] IETF RFC 1661 (1994): "The Point-to-Point Protocol (PPP)", W. Simpson.

[14] IETF RFC 1662 (1994): "PPP in HDLC-like Framing", W. Simpson.

[15] V.24 (1988): "List of definitions for interchange circuits between data terminal equipment (DTE) and data circuit-terminating equipment (DCE)".

[16] ISO/IEC 9646-7: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".

# 3 Definitions, symbols and abbreviations

## 3.1 Definitions

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

**Access Rights Identity (ARI):** see EN 300 175-6

**service class 1:** local area applications, for which terminals are pre-registered off-air with one or more specific Fixed Parts (FPs), and establishment of service and user parameters is therefore implicit, according to a profile-defined list

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**service class 2:** private and public roaming applications for which terminals may move between FPs within a given domain and for which association of service parameters is explicit at the time of service request

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**multiframe:** repeating sequence of 16 successive Time Division Multiple Access (TDMA) frames, that allows low rate or sporadic information to be multiplexed (e.g. basic system information or paging)

**TDMA frame:** time-division multiplex of 10 ms duration, containing 24 successive full slots. A TDMA frame starts with the first bit period of full slot 0 and ends with the last bit period of full slot 23

**physical Connection:** association between two sets of TBCS at MAC layer including the underlying bearers that belong to a single Logical connection

**logical connection:** association between two instances of the MAC MBC that can be used by higher layers to exchange U-plane or C-plane data

**link:** association between two DLC layer entities. This can either be one DLC C-plane association or one DLC U-plane association. Usually, but not necessarily, one DLC Link is mapped to one Logical connection

**virtual circuit:** in service class 2, a Virtual Circuit is any user connection opened at NWK layer. Virtual circuits could be of two types: Virtual Calls (VC) and Permanent Virtual Circuits (PVC). A Virtual circuit is mapped to one Link and to one Logical connection (MBC)

**Virtual Call (VC):** any packet-mode user connection that can be set up and released by means of NWK layer C-plane procedures. A Virtual Call is the packet-mode equivalent of a circuit-mode call. Virtual Calls can only be provided by DPRS service class 2

**Permanent Virtual Circuit (PVC):** Virtual Circuit that can be established and cleared only by configuration

NOTE: A Permanent Virtual Circuit is the packet-mode equivalent of a circuit-mode leased line. A PVC can be provided by both DPRS mobility class 1 and 2. Service class 1 provides by construction a PVC between any pair of FP, PP. In service class 2, a PVC is a degenerated case of a VC.

**suspended state:** state of an established Logical connection with no associated TBC's or physical layer resources

**suspend:** procedure to release the Physical connection without releasing the Logical connection

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**resumed state:** state of an established Logical connection, open at MB, DLC and NWK, with active TBC's and physical layer

**resume:** procedure to establish the Physical Connection related to a Suspended Logical connection

**physical Connection release:** procedure to release all bearers and TBC's associated with a Logical connection. Physical Connection release is always under control of the Management Entity (ME)

**physical Connection establishment:** procedure to activate all bearers and TBC's related to a single Logical connection. The Physical Connection establishment is always under control of the Management Entity (ME)

**logical connection establishment:** in service class 2, the procedure to create a logical connection. The Logical connection establishment is instantiated by the DLC upon request of the NWK layer

**logical connection release:** in service class 2, the procedure to release a logical connection. The Logical connection release is usually instantiated by the DLC upon request of the NWK layer, but under certain circumstances it could also be initiated by the ME

## 3.2 Symbols

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

| | |
|---|---|
| M | for mandatory to support (provision mandatory, process mandatory) |
| O | for optional to support (provision optional, process mandatory) |
| O.x | option comprising number of items |
| I | for out-of-scope (provision optional, process optional) not subject for testing |
| C | for conditional to support (process mandatory) |
| N/A | for not-applicable (in the given context the specification makes it impossible to use this capability) |
| X | excluded, not allowed |

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The symbols defined in this clause are applied for procedures, features, and services in the present document if not explicitly otherwise stated. The interpretation of status columns in all tables is as follows:

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Provision mandatory, process mandatory means that the indicated feature service or procedure shall be implemented as described in the present document, and may be subject to testing.

Provision optional, process mandatory means that the indicated feature, service or procedure may be implemented, and if implemented, the feature, service or procedure shall be implemented as described in the present document, and may be subject to testing.

NOTE: The used notation is based on the notation proposed in ISO/IEC 9646-7 [16].

## 3.3 Abbreviations

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

| | |
|---|---|
| AC | Authentication Code |
| ACK | Acknowledgement |
| ARI | Access Rights Identity |
| ARQ | Automatic Retransmission reQuest |
| C | higher layer control Channel (see $C_S$ and $C_F$) |
| C/L | ConnectionLess |
| CC | Call Control. A NWK layer functional grouping |
| $C_F$ | higher layer signalling Channel (Fast) |
| C-plane | Control plane |
| CRC | Cyclic Redundancy Check |
| $C_S$ | higher layer signalling Channel (Slow) |
| CSMA/CD | Carrier Sense Multiple Access with Collision Detection |
| CUG | Closed User Group |
| DCE | Data Circuit terminating Equipment |
| DCDL-net | Distributed Communication DECT Local network |