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Digitalne izboljġane brezvrviļ ne telekomunikacije (DECT) - Sploġne zahteve za priključ evanje terminalov

Digital Enhanced Cordless Telecommunications (DECT); General terminal attachment requirements

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Foreword

This 2nd edition Technical Basis for Regulation (TBR) has been produced by the Radio Equipment and Systems (RES) Technical Committee of the European Telecommunications Standards Institute (ETSI).

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1 Scope

This Technical Basis for Regulation (TBR) covers the general attachment requirements for terminal equipment for the Digital Enhanced Cordless Telecommunications (DECT) common interface.

This TBR contains the procedures and requirements for the type examination of DECT equipment.

DECT equipment capable of being physically attached to the public network also needs to meet the appropriate attachment requirements. Speech attachment requirements are covered in TBR 10 (see annex A).

This TBR is based on the DECT Common Interface (CI) given in ETS 300 175 parts 1 to 8 [1] to [8].

Annex J of this TBR contains changes to text in ETS 300 175-2 [2] and should therefore be read in conjunction with this TBR. ETS 300 175-2 [2] will be amended in due course to reflect these changes, following the normal ETSI amendment procedure.

This TBR specifies the technical characteristics to be provided by terminal equipment which is capable of connection to a public telecommunications network and which uses DECT cordless communications for network access. The cordless transmissions for such terminal equipment operate within the frequency band 1 880 - 1 900 MHz.

The objective of this TBR is to ensure that no disturbance occurs to the public network, and to ensure interworking between network and terminal so that calls can be routed successfully through the network, but without any guarantee of terminal to terminal operation.

The requirements in this TBR applies together with the attachment requirements for the appropriate public network (see note) and the requirements of any other relevant TBR. It does not add to or reduce the attachment requirements unless there is a particular effect on the network which is unique to DECT.

NOTE: TBR for basic Integrated Services Digital Network (ISDN), TBR for primary rate ISDN, or national regulations (implementing ETS 300 001) for Public Switched Telephone Network (PSTN). Interconnection of a DECT terminal to a GSM network is still under study; in due course, the scope statement may need amending to reflect this point.

A DECT terminal equipment comprises two elements, referred to as a Fixed Part (FP) and a Portable Part (PP). This TBR is structured to allow type approval of the FP and PP as separate items.

Because of the need for effective use of the radio frequency spectrum, the air interface characteristics between FP and PP are tested.

For each requirement, a test is given, including measurement methods. Requirements apply at the public network interface of the terminal equipment, which may be stimulated to perform the tests by additional equipment if necessary.

Terminal equipment may be subject to additional or alternative requirements in other Common Technical Regulations (CTRs) depending on its functionality, in particular if it supports a service which is considered a justified case for regulation of terminal equipment interworking via the public telecommunications network.

2 Normative references

This TBR 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 TBR 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 (1996): "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 1: Overview".

[2] ETS 300 175-2 (1996): "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 2: Physical Layer".

[3] ETS 300 175-3 (1996): "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 3: Medium Access Control (MAC) layer".

[4] ETS 300 175-4 (1996): "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 4: Data Link Control (DLC) layer".

[5] ETS 300 175-5 (1996): "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 5: Network (NWK) layer".

[6] ETS 300 175-6 (1996): "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 6: Identities and addressing".

[7] ETS 300 175-7 (1996): "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 7: Security features".

[8] ETS 300 175-8 (1996): "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 8: Speech coding and transmission".

[9] ISO/IEC 9646-1 (1991): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts". (See also CCITT Recommendation X.290 (1991)).

[10] CCITT Recommendation V.11 (1988): "Electrical characteristics for balanced double-current interchange circuits operating at data signalling rates up to 10 Mbit/s".

[11] CCITT Recommendation O.153 (1988): "Basic parameters for the measurement of error performance at bit rates below the primary rate".

[12] 91/263/EEC: "Council Directive of 29 April 1991 on the approximation of the laws of the Member States concerning telecommunications terminal equipment, including the mutual recognition of their conformity" (Terminal Directive).

[13] EN 55022: "Limits and methods of measurements of radio interferers characteristics of information technology equipment".

[14] CCITT Recommendation G.726: "40, 32, 24, 16 kbit/s adaptive differential pulse code modulation (ADPCM)".

[15] 89/336/EEC: "Council Directive of 3rd May 1989 on the approximation of the laws of the Member States relating to Electromagnetic Compatibility" (EMC Directive).

3 Definitions and abbreviations

3.1 Definitions

For the purposes of this ETS, the following definitions apply:

antenna diversity: Antenna diversity implies that the Radio Fixed Part (RFP) for each bearer independently can select different antenna properties such as gain, polarization, coverage patterns, and other features that may effect the practical coverage. A typical example is space diversity, provided by two vertically polarized antennas separated by 10 - 20 cm.

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

NOTE 1: Bearer handover is slot based.

cell: The domain served by a single antenna system (including a leaky feeder) of one FP.

NOTE 2: A cell may include more than one source of radiated Radio Frequency energy (i.e. more than one Radio End Point).

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

NOTE 3: A CCFP controls one or more RFPs.

conducted measurements: Measurements which are made using a direct connection to the equipment under test.

DECT-like carrier: A modulated RF DECT carrier used for interference testing which conforms to the requirements in ETS 300 175-2 [2] in terms of frequency and timing and uses a pseudo-random sequence for modulation.

Double Slot (SLOT): One 12th of a Time Division Multiple Access (TDMA) frame which is used to support one high capacity physical channel.

duplex bearer: The use of two simplex bearers operating in opposite directions on two physical channels. These pairs of channels always use the same RF carrier and always use evenly spaced slots (i.e. separated by 0,5 TDMA frame).

Equipment Under Test (EUT): The equipment submitted to the test laboratory for type examination.

Fixed Part (DECT 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 4: A DECT FP contains the logical elements of at least one Fixed radio Termination (FT), 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 5: A FT only includes elements that are defined in the DECT CI standard. This includes radio transmission elements (layer 1) together with a selection of layer 2 and layer 3 elements.

full slot (slot): One 24th of a TDMA frame which is used to support one physical channel.