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Digitalne izboljšane brezvrvične telekomunikacije (DECT) - Skupni vmesnik (CI) - 8. del: Kodiranje in prenos govora in zvoka

Digital Enhanced Cordless Telecommunications (DECT) - Common Interface (CI) - Part 8: Speech and audio coding and transmission

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Foreword

This European Standard (EN) has been produced by ETSI Technical Committee Digital Enhanced Cordless Telecommunications (DECT).

The present document is part 8 of a multi-part deliverable ([1] to [7]). Full details of the entire series can be found in part 1 [1].

Further details of the DECT system may be found in TR 101 178 [i.6] and ETR 043 [i.7].

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1 Scope

The present document is one of the parts of the specification of the Digital Enhanced Cordless Telecommunications (DECT) Common Interface (CI) [1] to [7].

This part of the DECT CI specifies the speech and audio coding and transmission requirements.

In order to ensure satisfactory interworking of different portable and fixed units, it is necessary to specify the transmission performance of the analog information over the digital link. This requires not only use of a common speech algorithm, but also standardization of frequency responses, reference speech levels (or loudness) at the air interface and various other parameters.

The present document applies to DECT equipment which includes all the necessary functions to provide real-time two-way speech conversation. Several speech services are defined in the present document, including conventional 3,1 kHz telephony, wideband 7 kHz voice transmission and super-wideband 14 kHz service. DECT Fixed part providing such services may be connected to the public circuit switched (PSTN/ISDN) network, to private networks or to the Internet.

Tethered fixed point local loop applications are not required to comply with the requirements of the present document.

For the DECT systems which connect to the Public Switched Telephone Network (PSTN) via an analog interface, the additional requirements, which are implemented in the FP, have as much as possible been aligned with TBR 038 [29].

A summary of the control and the use of the DECT echo control functions, to guide on need for options to manufacturers and installers, is found in annex A.

Information concerning test methods can be found in EN 300 176-1 [9] and EN 300 176-2 [10] (previously covered by TBR 010 [i.5]). The test methods take into account that DECT is a digital system.

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The present document includes New Generation DECT, a further development of the DECT standard introducing wideband speech, improved data services, new slot types and other technical enhancements.

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2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

NOTE: While any hyperlinks included in this clause were valid at the time of publication ETSI cannot guarantee their long term validity.

2.1 Normative references

The following referenced documents are necessary for the application of the present document.

[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".

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[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] Void.

[9] ETSI EN 300 176-1: "Digital Enhanced Cordless Telecommunications (DECT); Test specification; Part 1: Radio".

[10] ETSI EN 300 176-2: "Digital Enhanced Cordless Telecommunications (DECT); Test specification; Part 2: Audio and speech".

[11] Recommendation ITU-T G.701: "Vocabulary of digital transmission and multiplexing, and pulse code modulation (PCM) terms".

[12] Recommendation ITU-T G.726: "40, 32, 24, 16 kbit/s Adaptive Differential Pulse Code Modulation (ADPCM)".

[13] Recommendation ITU-T G.711 (1988): "Pulse Code Modulation (PCM) of voice frequencies".

[14] Recommendation ITU-T G.722 (2012): "7 kHz audio-coding within 64 kbit/s".

[15] Void.

[16] Void.

[17] Recommendation ITU-T G.729.1 (2006): "G.729-based Embedded Variable bit-rate coder: An 8-32 kbit/s scalable wideband coder bitstream interoperable with G.729".

[18] Void.

[19] ISO/IEC 14496-3:2009: "Information Technology - Coding of audio-visual objects - Part 3: Audio" ISO/IEC JTC1/SC29/WG11 (MPEG).

[20] Recommendation ITU-T P.311 (2011): "Transmission characteristics for wideband digital handset and headset telephones".

[21] Recommendation ITU-T P.10: "Vocabulary for performance and quality of service".

[22] Recommendation ITU-T P.340: "Transmission characteristics and speech quality parameters of hands-free terminals".

[23] Recommendation ITU-T P.58: "Head and torso simulator for telephonometry".

[24] Recommendation ITU-T G.111: "Loudness Ratings (LRs) in an international connection".

[25] Recommendation ITU-T G.1020: "Performance parameter definitions for quality of speech and other voiceband applications utilizing IP networks".

[26] Recommendation ITU-T P.57: "Artificial ears".

[27] Recommendation ITU-T P.502: "Objective test methods for speech communication systems using complex test signals".

[28] Recommendation ITU-T P.51: "Artificial mouth".

[29] ETSI TBR 038: "Public Switched Telephone Network (PSTN); Attachment requirements for a terminal equipment incorporating an analogue handset function capable of supporting the justified case service when connected to the analogue interface of the PSTN in Europe".

[30] Recommendation ITU-T G.131: "Talker echo and its control".

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