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Digitalne izboljšane brezvrvične telekomunikacije (DECT) - Globalni sistem mobilnih komunikacij (GSM) - Profil vzajemnega delovanja (IWP) pri DECT/GSM - Dostop in preslikava (opis postopka/protokola govorne storitve s pasovno širino 3,1 kHz)

Digital Enhanced Cordless Telecommunications (DECT); Global System for Mobile communications (GSM); DECT/GSM Interworking Profile (IWP); Access and mapping (protocol/procedure description for 3,1 kHz speech service)

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Foreword

This second edition European Telecommunication Standard (ETS) has been produced by the Digital Enhanced Cordless Telecommunications (DECT) Project of the European Telecommunications Standards Institute (ETSI).

Transposition dates	
Date of adoption of this ETS:	23 January 1998
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Introduction

This ETS is a part of a set of standards for the Digital Enhanced Cordless Telecommunications / Global System for Mobile communications (DECT/GSM) Interworking Profile (IWP) concept that includes:

- general description of service requirements, functional capabilities and information flows, ETS 300 466 [12];
- **access and mapping (protocol/procedure description for 3,1 kHz speech service), (this ETS);**
- GSM Phase 2 supplementary services implementation, ETS 300 703 [21];
- GSM Mobile Switching Centre (MSC) – DECT Fixed Part (FP), Fixed Interconnection, ETS 300 499 [13];
- implementation of bearer services, ETS 300 756 [22];
- implementation of short message services, point to point and cell broadcast, ETS 300 764 [23];
- implementation of facsimile group 3, (ETS 300 792 [24]).

This ETS is based on DECT Common Interface (CI) specification ETS 300 175, parts 1 to 8 [1] to [8] to enable DECT terminals to interwork in the public and private environment with DECT systems which are connected to a GSM core infrastructure.

In addition, this ETS is based on the DECT Generic Access Profile (GAP), EN 300 444 [10] to enable the same DECT/GSM terminal to interwork with a DECT FP complying to the GAP requirements, irrespective of whether this FP provides residential, business or public access services. General attachment requirements and speech attachment requirements are based on TBR 6 [26] and TBR 10 [27].

This ETS utilizes, in addition to the GAP only related features and procedures, the following:

- GSM authentication;
- derivation of the DECT ciphering key from the respective GSM cipher key;
- the GSM International Mobile Subscriber Identity (IMSI) and Temporary Mobile Subscriber Identity (TMSI);
- the GSM Location Area Identity (LAI);
- subscription management by use of Subscriber Identity Module (SIM); and
- adding/deleting a Public Land Mobile Network (PLMN) in the SIM forbidden PLMN list.

This ETS defines a general purpose, but strict, mobility profile in terms of features, procedures, data structures, information elements and fields within the information elements at the DECT air interface in order to achieve full inter–operability between equipment, i.e. DECT systems and terminals, which fulfil the requirements of this ETS. This ETS also fulfils the minimum requirements of the GAP enabling backwards compatibility with the respective equipment.

Information on DECT access to the GSM PLMN may be found in ETR 159 [33]. Further details on the DECT system may be found in ETR 015 [29], ETR 043 [30], and ETR 056 [31], and in ETS 300 176 [9].

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1 Scope

This European Telecommunication Standard (ETS) specifies the Digital Enhanced Cordless Telecommunications (DECT) access protocols and Fixed Part (FP) and Portable Part (PP) interworking/mappings necessary to ensure that the Global System for Mobile communications (GSM) basic voice telephony service can be provided over DECT. To enable DECT terminals to interwork with DECT systems which are connected to the GSM infrastructure, from the DECT side this ETS is based on EN 300 444 [10] and on the DECT Common Interface specification ETS 300 175 parts 1 to 8 [1] to [8] (for the cases not covered by Generic Access Profile (GAP)), from GSM side this ETS assumes interworking with GSM Public Land Mobile Network (PLMN) phase 2.

An air–interface profile is specified for a particular set of GSM services so that inter–operability of DECT equipment for these services can be achieved. Interworking functions/mappings are specified for Mobile Switching Centre (MSC) attachment for the DECT FP as the FP is using the A–interface towards the GSM MSC in the respect that the FP emulates a GSM Base Station Controller (BSC) with regards to the GSM messages which are relevant to this ETS. Interworking functions/mappings for the PP are specified for MSC environment.

The provision of the GSM Subscriber Identity Module (SIM) and DECT Authentication Module (DAM) with the GSM Application (GA) within the DECT portable are also considered.

This ETS covers a subset of ETS 300 557 [18] (GSM 04.08) and ETS 300 590 [20] (GSM 08.08) procedures as far as mapping is concerned and as far as this is required for support of 3,1 kHz speech service.

GSM functions of ETS 300 590 [20] (GSM 08.08) which, in a DECT/GSM context, are relevant at the A-interface only, are out of the scope of this ETS, as well as interfaces to non GSM networks.

Specific interworking procedures/mappings for the support of supplementary services, data services, short message services and other GSM services are out of the scope of this ETS. Basic support for service initiation/invocation is however supported by this ETS.

A PP conforming to this ETS should be capable of distinguishing a FP conforming to this ETS from a FP conforming to the GAP and to access and react upon it accordingly.

2 Normative references

This 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: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 1: Overview".

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

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

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

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

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

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

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

[9] ETS 300 176: "Digital Enhanced Cordless Telecommunications (DECT); Approval test specification".

[10] EN 300 444: "Digital European Cordless Telecommunications (DECT); Generic Access Profile (GAP)".

[11] ETS 300 331: "Digital European Cordless Telecommunications (DECT); DECT Authentication Module (DAM)".

[12] ETS 300 466: "Digital European Cordless Telecommunications/Global System for Mobile Communications (DECT/GSM) interworking profile; General description of service requirements; Functional capabilities and information flows".

[13] ETS 300 499: "Digital Enhanced Cordless Telecommunications / Global System for Mobile Communications (DECT/GSM) interworking profile; Mobile services Switching Centre (MSC) - Fixed Part (FP) interconnection".

[14] ETS 300 508: "European digital cellular telecommunications system (Phase 2); International Mobile station Equipment Identities (IMEI) (GSM 02.16)".

[15] ETS 300 522: "Digital cellular telecommunications system (Phase 2); Network architecture (GSM 03.02)".

[16] ETS 300 523: "European digital cellular telecommunications system (Phase 2); Numbering, addressing and identification (GSM 03.03)".

[17] ETS 300 551: "European digital cellular telecommunications system (Phase 2); GSM Public Land Mobile Network (PLMN) access reference configuration (GSM 04.02)".

[18] ETS 300 557: "Digital cellular telecommunications system (Phase 2); Mobile radio interface layer 3 specification (GSM 04.08)".

[19] ETS 300 580–1: "European digital cellular telecommunications system (Phase 2); Full rate speech processing functions (GSM 06.01)".

[20] ETS 300 590: "Digital cellular telecommunications system (Phase 2); Mobile - services Switching Centre - Base Station System (MSC - BSS) interface; Layer 3 specification (GSM 08.08)".

[21] ETS 300 703: "Digital Enhanced Cordless Telecommunications / Global System for Mobile communications (DECT/GSM) Inter-Working Profile (IWP); GSM phase 2 supplementary services implementation".

[22] ETS 300 756: "Digital Enhanced Cordless Telecommunications / Global System for Mobile communications (DECT/GSM) interworking profile; Implementation of bearer services".

[23] ETS 300 764: "Digital Enhanced Cordless Telecommunications / Global System for Mobile communications (DECT/GSM) Interworking Profile (IWP); Implementation of short message service, point-to-point and cell broadcast".

[24] ETS 300 792: "Digital Enhanced Cordless Telecommunications / Global System for Mobile communications (DECT/GSM); DECT/GSM interworking profile; Implementation of facsimile group 3".

[25] ISO/IEC 9646–6: "Information technology – Open Systems Interconnection – Conformance testing methodology and framework – Part 6: Protocol profile test specification".

[26] TBR 6: "Digital Enhanced Cordless Telecommunications (DECT); General terminal attachment requirements".

[27] TBR 10: "Digital Enhanced Cordless Telecommunications (DECT); General terminal attachment requirements; Telephony applications".

[28] 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).

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

[30] ETR 043: "Digital European Cordless Telecommunications (DECT); Common interface; Services and facilities requirements specification".

[31] ETR 056: "Digital European Cordless Telecommunications (DECT); System description document".

[32] ETR 100: "European digital cellular telecommunications system (Phase 2); Abbreviations and acronyms (GSM 01.04)".

[33] ETR 159: "Digital European Cordless Telecommunications (DECT); Wide area mobility using the Global System for Mobile communications (GSM)".

[34] ETR 206: "Public Switched Telephone Network (PSTN); Multifrequency signalling system to be used for push-button telephones [CEPT Recommendation T/CS 46-02 E (1985)]".