
Digitalne izboljšane brezvrvične telekomunikacije (DECT) - Globalni sistem mobilnih komunikacij (GSM) - Profil vzajemnega delovanja DECT/GSM (IWP) - Komutacijski center za mobilne storitve (MSC) - Medsebojna povezava s fiksnim delom (FP)

Digital Enhanced Cordless Telecommunications (DECT); Global System for Mobile communications (GSM); DECT/GSM Interworking Profile (IWP); Mobile services Switching Centre (MSC) - Fixed Part (FP) interconnection

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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).

Transposition dates	
Date of adoption of this ETS:	23 August 1996
Date of latest announcement of this ETS (doa):	31 December 1996
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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 [7];
- access and mapping (protocol/procedure description for 3,1 kHz speech service), ETS 300 370 [6];
- GSM Phase 2 supplementary services implementation, ETS 300 703 [8];
- GSM MSC - DECT Fixed Part (FP) interconnection, (this ETS).

Other standards of the DECT/GSM IWP are expected to describe (see annex C):

- implementation of bearer services, ETS 300 756 [14];
- implementation of short message services, point-to-point and cell broadcast, ETS 300 764 [13];
- implementation of facsimile group 3, DE/RES-03072 [19].

This ETS is based on Digital Enhanced Cordless Telecommunications (DECT) Common Interface specification ETS 300 175 [18] and ETS 300 370 [6] to enable DECT terminals to interwork in the public and private environment with DECT systems which are connected to a Global System for Mobile communications (GSM) core infrastructure. From the GSM side this ETS is based upon the specifications of the GSM 08.0X series of Technical Specifications (TSs) [1] to [5]. Information on DECT access to the GSM PLMN may be found in ETR 159 [9]. Further details on the DECT system may be found in ETR 015 [10], ETR 043 [11], and ETR 056 [12].

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1 Scope

This European Telecommunication Standard (ETS) is a part of the Digital Enhanced Cordless Telecommunications / Global System for Mobile Communications (DECT/GSM) Interworking Profile (IWP) and specifies the interface used between the Digital Enhanced Cordless Telecommunications (DECT) Fixed Part (FP) and the Global System for Mobile communications (GSM) Mobile Switching Centre (MSC). This ETS specifies the exceptions to the GSM 08.0X series of Technical Specifications (TSs) [1] to [5] and only places requirements on the DECT FP.

For the purposes of Call Control (CC) and Mobility Management (MM), most messages are not interpreted, but relayed to the underlying DECT radio sub-system. Some messages may however be interpreted and handled at the interconnection. The DECT access protocols and a particular set of FP interworking functions/mappings to ensure that the GSM services can be provided over DECT are specified in ETS 300 370 [6] and ETS 300 466 [7].

The DECT sub-system uses the A-interface in the respect that the FP emulates a GSM Base Station Controller (BSC). This ETS covers the handling of procedures that are applicable on the A-interface in order to ensure an appropriate GSM BSC emulation. It also covers error conditions at the interface, handling of timers and handling of message headers that are required for the correct addressing of messages.

Interworking between the DECT FP and the GSM MSC via other interfaces is outside the scope of this ETS.

2 Normative references

This ETS incorporates by dated and 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 300 587-1: "European digital cellular telecommunications system (Phase 2); Base Station System - Mobile-services Switching Centre (BSS - MSC) interface; General aspects (GSM 08.01)".
- [2] ETS 300 587-2: "European digital cellular telecommunications system (Phase 2); Base Station System - Mobile-services Switching Centre (BSS - MSC) interface; Interface principles (GSM 08.02)".
- [3] ETS 300 588 : "European digital cellular telecommunications system (Phase 2); Base Station System - Mobile-services Switching Centre (BSS - MSC) interface; Layer 1 specification (GSM 08.04)".
- [4] ETS 300 589 : "European digital cellular telecommunications system (Phase 2); Signalling transport mechanism specification for the Base Station System - Mobile-services Switching Centre (BSS - MSC) interface (GSM 08.06)".
- [5] 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)".
- [6] ETS 300 370: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications/Global System for Mobile communications (DECT/GSM) inter-working profile; Access and mapping (Protocol/procedure description for 3,1 kHz speech service)".
- [7] ETS 300 466: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications/Global System for Mobile Communications (DECT/GSM) interworking profile; General description of service requirements; Functional capabilities and information flows".

- [8] ETS 300 703: "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications/Global System for Mobile communications (DECT/GSM) Interworking Profile (IWP); GSM phase 2 supplementary services implementation".
- [9] ETR 159: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT); Wide area mobility using the Global System for Mobile communications (GSM)".
- [10] ETR 015: "Radio Equipment and Systems; Digital European Cordless Telecommunications (DECT); Reference document".
- [11] ETR 043: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT); Common interface; Services and facilities requirements specification".
- [12] ETR 056: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT); System description document".
- [13] ETS 300 764: "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications / Global System for Mobile communications (DECT/GSM) inter-working profile; Implementation of short message service, point-to-point and cell broadcast".
- [14] ETS 300 756: "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications / Global System for Mobile communications (DECT/GSM) interworking profile; Implementation of bearer services".
- [15] ETS 300 704-1: "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications/Global System for Mobile communications (DECT/GSM) Interworking Profile (IWP); Profile Implementation Conformance Statement (ICS)); Part 1: Portable radio Termination (PT)".
- [16] ETS 300 704-2: "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications/Global System for Mobile communications (DECT/GSM) interworking Profile (IWP); Profile Implementation Conformance Statement (ICS)); Part 2: Fixed radio Termination (FT)".
- [17] ETS 300 702: "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications / Global System for Mobile communications (DECT/GSM) interworking profile".
- [18] ETS 300 175: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT); Common Interface (CI)".
- [19] DE/RES-03072: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications/Global System for Mobile Communications (DECT/GSM) interworking profile; Implementation of facsimile group 3".

3 Definitions and abbreviations

3.1 DECT definitions

This subclause only includes DECT definitions valid for this ETS. A complete list of DECT definitions may be found in ETS 300 370 [6].

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 (NWK) layer.

NOTE 1: A DNW is a logical grouping that contains one or more Fixed radio Terminations (FTs) plus their associated Portable radio Termination (PT). The boundaries of the DECT network are not physical boundaries.

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

NOTE 2: A DECT FP contains the logical elements of at least one FT, plus additional implementation specific elements.

Fixed Part GSM PLMN attachment (DECT fixed part attached to a GSM MSC): A definition of a functional environment where a DECT system (FP) is attached to a GSM MSC. The MSC in this case refers to a functional entity providing the required MM and CC functionality defined in this ETS in order to communicate with the FP.

Interworking Unit (IWU): A unit that is used to interconnect sub-networks.

NOTE 3: The IWU will contain the inter-working functions necessary to support the required sub-network interworking.

Portable Part (PP), DECT PP: A physical grouping that contains all elements between the user and the DECT air interface. PP is a generic term that may describe one or several physical pieces.

NOTE 4: A DECT PP is logically divided into one portable termination plus one or more portable applications.

3.2 Abbreviations

For the purposes of this ETS the following abbreviations apply:

BSC	GSM Base Station Controller
BSSAP	Base Station System Application Part
BSSMAP	GSM Base Station System - Mobile Application Part
BSSOMAP	Base Station System Operation and Maintenance Part
DCMAP	DECT Connection and Mobility Application Part
DECT	Digital Enhanced Cordless Telecommunications
DLCI	Data Link Connection Identifier
DTAP	Direct Transfer Application Part
FP	Fixed Part
FPAP	Fixed Part Application Part
FPMAP	Fixed Part Management Application Part
FPOMAP	Fixed Part Operation and Maintenance Application Part
GSM	Global System for Mobile Communications
IPEI	International Portable Equipment Identity
IWU	Interworking Unit
MM	Mobility Management, a NWK layer functional grouping
MS	Mobile Station
MSC	Mobile Switching Centre
MTP	Message Transfer Part
NWK	Network layer
O&M	Operations & Maintenance

PLMN	Public Land Mobile Network
PP	Portable Part
SAPI	Service Access Point Identifier
SCCP	Signalling Connection Control Part
TS	GSM Technical Specification

4 General

This ETS is structured in the same way as GSM 08.0X series of TSs [1] to [5], but contained in a single document, i.e. each applicable GSM 08.0X TS [1] to [5] is included as a subclause in this ETS. Only the exceptions to the GSM 08.0X TSs [1] to [5] are specified in these subclauses.

5 FP-MSC interface

5.1 General aspects (ETS 300 587-1, GSM 08.01)

The FP-MSC interface shall be capable of supporting all the services offered to a DECT user with a GSM subscription.

The MSC to FP interface recommendation shall allow the following:

- connection of various manufactures FPs to the same MSC;
- the use of the same FPs in any PLMN;
- support of all services defined in ETS 300 370 [6] and ETS 300 466 [7].

The MSC to FP interface is specified by a set of characteristics, including:

- physical parameters;
- procedures.

The definition of the MSC to FP interface follows a layered approach almost identical to that used for the A-interface.

5.2 Interface principles (ETS 300 587-2, GSM 08.02)

This subclause gives the principles on which the detailed interface specifications in the rest of this ETS are based.

The set of fixed equipment accessed from the MSC through one particular instance of the interface will be referred to as a DECT FP. A FP ensures the coverage of (n) DECT Radio Fixed Parts (RFPs), where (n) can be one or more.

The interface is based on the use of one or more 2 048 kbit/s digital transmission system interfaces.

Each 2 048 kbit/s interface provides 31 x 64 kbit/s channels that can be used for traffic or signalling as the operator requires. The DECT radio path traffic channel is at a rate of 32 kbit/s.

A rate adapting function is thus needed for the rate conversion. This rate adapting function is considered to be a part of the FP, but could physically be located at the MSC's site. As there is only one rate adaption required on the MSC-FP interface, there is no need for the support of groups of circuits (circuit pools) having different capabilities.

The functional split between the FP and the MSC are similar to the functional split between a BSC and a MSC. Since DECT has a completely different radio management that does not use interworking, the number of functions handled by the FP will be less than for a GSM BSC.