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Digital Enhanced Cordless Telecommunications (DECT); Data Services Profile (DSP); Low rate messaging service (service type E, class 2)

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Foreword

This 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:	21 February 1997
Date of latest announcement of this ETS (doa):	30 June 1997
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	31 December 1997
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1 Scope

This European Telecommunication Standard (ETS) defines a profile for Digital Enhanced Cordless Telecommunications (DECT) systems conforming to ETS 300 175, parts 1 to 8 [1] - [8]. It is part of a family of profiles aimed at the general connection of terminals supporting non-voice services to a fixed infra-structure, private and public.

The Low Rate Messaging Service (LRMS), specified in this ETS, provides a means for the slow, acknowledged or unacknowledged, transfer of multimedia message objects, including alphanumeric paging messages. It provides both point-to-point and point-to-multipoint messaging and exploits the Multimedia Messaging Service (MMS) specified ETS 300 755 [13]. This service may be used for private and public roaming applications.

This ETS specifies the type E service, mobility class 2, as described in ETR 185 [11]. The service employs solely C-plane functionality and has been designed to coexist with other profiles such as the Generic Access Profile (GAP), ETS 300 444 [9] or the Global System for Mobile communication (GSM) Interworking Profile, ETS 300 370 [10]. No User plane (U-plane) functionality is required for the service.

Interworking with the GSM Short Message Service (SMS) is specifically provided for in an annex of this ETS which cross-references to GSM interworking profile standards (see ETS 300 764 [14]).

This ETS defines the requirements on the Physical (PHL), Medium Access Control (MAC), Data Link Control (DLC) and Network (NWK) layers of DECT. The standard also specifies management entity requirements and generic interworking conventions which ensure the efficient use of the DECT spectrum.

2 Normative references

[7]

features".

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.

edition of the publication referred to applies.			
[1] https://st	ETS 300 175-1 Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT); Common Interface (CI); Part 1: Overview".		
[2]	ETS 300 175-2: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT); Common Interface (CI); Part 2: Physical Layer".		
[3]	ETS 300 175-3: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT); Common Interface (CI); Part 3: Medium Access Control (MAC) layer".		
[4]	ETS 300 175-4: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT); Common Interface (CI); Part 4: Data Link Control (DLC) layer".		
[5]	ETS 300 175-5: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT); Common Interface (CI); Part 5: Network (NWK) layer".		
[6]	ETS 300 175-6: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT); Common Interface (CI); Part 6: Identities and addressing".		

ETS 300 175-7: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT); Common Interface (CI); Part 7: Security

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[8]	ETS 300 175-8: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT); Common Interface (CI); Part 8: Speech coding and transmission".
[9]	ETS 300 444: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT); Generic Access Profile (GAP)".
[10]	ETS 300 370: "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications / Global System for Mobile communications (DECT/GSM) inter-working profile; Access and mapping (Protocol/procedure description for 3,1 kHz speech service)".
[11]	ETR 185: "Radio Equipment and Systems (RES); Digital European Cordless Telecommunications (DECT); Data Services Profile (DSP); Profile overview".
[12]	ETS 300 651: "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications (DECT); Data Services Profile (DSP); Generic data link service; Service type C, class 2".
[13]	ETS 300 755: "Radio Equipment and Systems (RES); Digital Enhanced Cordless Telecommunications (DECT); Data services profile; Multimedia Messaging Service (MMS) with specific provision for facsimile services; (Service type F, class 2)".
[14]	ETS 300 764: "Radio Equipment and Systems (RES); 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", REVIEW
O Definitions	

3 Definitions and abbreviations and ards.iteh.ai)

3.1 Definitions

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

mobility class 1: Local area applications, for which terminals are pre-registered off-air with one or more specific fixed parts, and establishment of service and user parameters is therefore implicit, according to a profile-defined list.

mobility class 2: Private and public roaming applications for which terminals may move between fixed parts within a given domain and for which association of service parameters is explicit at the time of service request.

multiframe: A 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).

service type A: Low speed frame relay, with a net sustainable throughput of up to 24 kbits/s, optimized for bursty data, low power consumption and low complexity applications such as hand-portable equipment.

service type B: High performance frame relay, with a net sustainable throughput of up to 552 kbits/s, optimized for high speed and low latency with bursty data. Equipment implementing the type B profile shall inter-operate with type A equipment.

service type C: Non-transparent connection of data streams requiring Link Access Protocol (LAP) services, optimized for high reliability and low additional complexity. This builds upon the services offered by the type A or B profiles.

service type E: A short message transfer or paging service which may be unacknowledged or acknowledged, optimized for small Service Data Units (SDUs), low Portable Part (PP) complexity and ultra-low power consumption.

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service type F: An application profile specifically supporting teleservices such as fax, building upon the services offered by the type A/B and C profiles, optimized for terminal simplicity, spectrum efficiency and network flexibility.

TDMA frame: A 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.

3.2 Abbreviations

HTTP

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

ACK Acknowledgement
CB Cell Broadcast
CC Call Control

C_F higher layer signalling Channel (Fast)
CLMS Connectionless Message Service

C-plane Control Plane

C_S higher layer signalling Channel (Slow)

DECT Digital Enhanced Cordless Telecommunications

DLC Data Link Control

FP Fixed Part

FT Fixed radio Termination

FTAM File Transfer Access & Management

FTP File Transfer Protocol
GAP Generic Access Profile

GSM Global System for Mobile communication

Hyper Text Transfer Protocol

I_P higher layer Information channel (Protected) ISDN Integrated Services Digital Network

IWF Interworking Functions Iteh.ai

LAP Link Access Procedure

LAP-B Link Access Procedure (Balanced)

LAP-C https://stabinkiAccess-Brocedure.i(Control)5e5f0-839f-478f-bf30-

LINK Control Entitysist-ets-300-757-e1-2003

LLN Logical Link Number (DLC layer)

LRMS PTM Low Rate Messaging Service Point-To-Multipoint LRMS PTP Low Rate Messaging Service Point-To-Point

LRMS Low Rate Messaging Service
M MAC control channel
MAC Medium Access Control
MCE Message Control Entity
MCI MAC Connection Identification

MMSP Multimedia Messaging Service Protocol

MNCC Mobile Network Call Control

MO Mobile Originated
MT Mobile Terminated
NLF New Link Flag
NWK Network

P Paging channel
PDU Protocol Data Unit

PHL Physical

PICS Protocol Implementation Conformance Statement

PP Portable Part

PT Portable radio Termination
PTM Point-To-Multipoint

Q system information channel

RFP Radio Fixed Part

RFPI Radio Fixed Part Identifier SAP Service Access Point

SAPI Service Access Point Identifier

SDU Service Data Unit SMS Short Message Service Page 12

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TDMA Time Division Multiple Access
UI Unnumbered Information (Frame)

U-plane User plane WWW World Wide Web

4 Description of services

4.1 General

The DECT data profile defined in this ETS has been intended for message transfer or paging and is optimized for small SDUs, low PP complexity and ultra-low power consumption. Two service types are defined: Low Rate Messaging Service Point-To-Point (LRMS PTP) which may be unacknowledged or acknowledged used for point-to-point messaging and Low Rate Messaging Service Point-To-Multipoint (LRMS PTM) used for point-to-multipoint messaging. The LRMS PTM is an optional feature while LRMS PTP support is mandatory if this profile is supported.

The LRMS PTP and PTM may co-exist with other profiles and their existence should not have any effect on the functionality of the other existing profiles. That is, the LRMS functionality should have a secondary priority in respect to the profile relations.

4.2 Low Rate Messaging Service Point-To-Point (LRMS PTP)

The objectives of the data profile service type E, class 2 LRMS PTP are as follows:

The LRMS PTP is a generic set of commands, information elements and functionality for file/messaging service. In most of the cases LRMS can be regarded as a DECT internal teleservice that can be interworked to the similar services in external networks. In addition LRMS PTP provides means to convey transparently application specific upper layer protocol frames thus facilitating the usage of this profile as a bearer service. It provides a generic file handling/messaging services over the DECT air interface by utilizing the transportation mechanism of the DECT C-plane in the best way possible while offering a general set of functions to the applications using its services. The LRMS procedures can be accessed in a standardized way through a set of primitives. The LRMS point to point service may be acknowledge or unacknowledged.

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LRMS provides a compact subset of functions to messaging servers with the advantage that a single terminal with LRMS support can use a wide variety of messaging services with minimum amount of application layer complexity. If a complete set of services is needed an escape sequence has to be used or some other means such as transparent protocol transportation mechanism should be used.

These objectives are fulfilled by Multimedia Messaging Service Protocol (MMSP).

MMSP that is used for the provision of LRMS services and functionality is a stateless protocol which defines a set of messages, framing rules and information elements each containing optional and mandatory information fields.

MMSP utilities the services of the DECT Call Control (CC)entity. It could be regarded as a supplementary service type of service that provides signalling/control and application specific information related to the teleservices provided by the DECT data profiles.

The MMSP layer functionality is provided by a set of specific DECT network layer CC information elements. Therefore the MMSP is not from DECT layer viewpoint a separate real protocol layer but a service provided to the application. However, from the application perspective the MMSP can be seen as a protocol layer. Therefore, the MMSP can be regarded as a virtual protocol layer.

The support of MMSP protocol in LRMS PTP is mandatory.

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The LRMS PTP is closely aligned with the ETS 300 755 [13] Multimedia Messaging Service (MMS) in the following way:

- the MMSP protocol used by LRMS PTP is the MMSP protocol used by MMS;
- LRMS PTP utilized only the C-plane services; no U-plane is required;
- the LRMS PTP and MMS may co-exist in a same terminal. It is the matter of the implementation if the services of LRMS and MMS are joined or separated i.e. if the messaging is done through the same link or a separate link is instantiated;
- a specific procedure can be used to change the type E profile (this ETS) connection into type F profile (ETS 300 755 [13]) connection. However, this requires the support of the both profiles as well as additional DECT network layer functionality.

In general the LRMS PTP may receive or send messages during a on-going other profile based call but this requires a separate CC instance.

4.3 Low Rate Messaging Service Point-To-Multipoint (LRMS PTM)

The objectives of data profile service type E, class 2 LRMS PTM are as follows:

The purpose of this service is to provide a point-to-multipoint broadcast service of alphanumeric messages from Fixed Part (FP) to PPs. The messages are not acknowledged. With the addressing provided a subset of the receiving PP can be preselected or the messages can be aimed at all PPs in the range of a specific Radio Fixed Part (RFP). Thus the receiving terminals and area can be selected by the DECT FP service provider.

NOTE: For the addressing of the PPs the connectionless TPUI is used.

The LRMS PTM service provides means for sending a subset of MMSP messages over a point-to-multipoint link. This facilitates the usage of standard format messages in both point-to-point and point-to-multipoint cases. With this functionality a network server can control a subgroup of MMSP terminals with single multicast messages without a need of full bi-directional link instantiation. In this way the LRMS PTM facilitates a simple and cost effective means of messaging and remote group control of terminal equipment saving at the same time the air interface resources.

The LRMS PTM may co-exist with other profiles in the PPs and FPs. The co-existence of the LRMS PTM should not have any affect on the functionality of the co-existing profiles.

The support of LRMS PTM is optional and if supported the MMSP support is mandatory.

In general the LRMS PTM may function during a on-going other profile based call.