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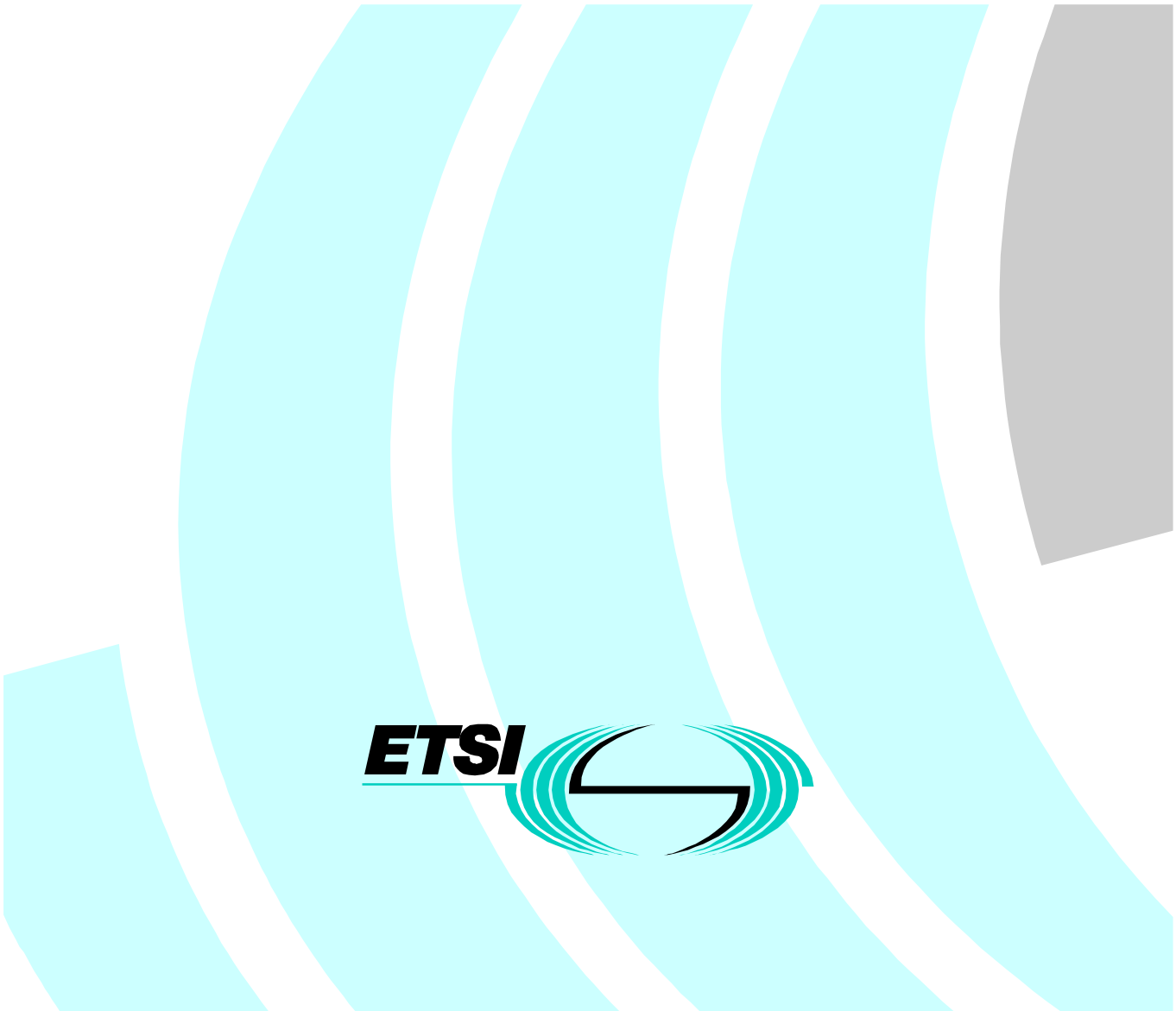
Technical Specification

Digital Enhanced Cordless Telecommunications (DECT); DECT Packet Radio Service (DPRS); Application Specific Access Profile (ASAP): V.24 Interworking



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Contents

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Foreword

This Technical Specification (TS) has been produced by ETSI Project Digital Enhanced Cordless Telecommunications (DECT).

1 Scope

Te present document is to define a data Application Specific Access Profile (ASAP) intended for enterprise, small office and home office (SOHO), and, home (residential/private) markets combining a selection of V.24 Interworking DECT-DPRS (EN 301 649 [3]) data services.

The aim of the present document is to guarantee a sufficient level of interoperability and to provide an easy route for development of DECT DATA applications, with the features of the present document being a common fall-back option available in all equipment compliant to this profile.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

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

[2] ETSI EN 300 444: "Digital Enhanced Cordless Telecommunications (DECT); Generic Access Profile (GAP)".

[3] ETSI EN 301 649: "Digital Enhanced Cordless Telecommunications (DECT); DECT Packet Radio Service (DPRS)".

[4] ISO/IEC 9646-7: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statement".

[5] ITU-T Recommendation V.24 (2000): "List of definitions for interchange circuits between data terminal equipment (DTE) and data circuit-terminating equipment (DCE)".

3 Definitions, abbreviations and symbols

3.1 Definitions

For the purposes of the present document, the terms and definitions given in EN 301 649 [3] and EN 300 444 [2] apply.

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ASAP	Application Specific Access Profile
C	Conditional
C-plane	Control plane
DECT	Digital Enhanced Cordless Telecommunications
DLC	Data Link Control
DPRS	DECT Packet Radio Service
EN	European Norm
FP	Fixed Part
FT	Fixed radio Termination

FU	Fragmentation U-plane service
I	Irrelevant (Out of scope)
LCE	Link Control Entity
LU	LAP-U service
M	Mandatory
MAC	Medium Access Control
ME	Management Entity
MM	Mobility Management
NWK	NetWorK
O	Optional
PC	Personal Computer
PHL	PHysical Layer
PICS	Protocol Implementation Conformance Statement
PP	Portable Part
PT	Portable radio Termination
RFP	Radio Fixed Part
RFPI	Radio Fixed Part Identity
SOHO	Small Office and Home Office
U-plane	User-plane
WV.24	Wireless V.24

3.3 Symbols

For the purposes of the present document, the following symbols apply:

M	mandatory to support (provision mandatory, process mandatory);
O	optional to support (provision optional, process mandatory);
O.x	option comprising number of items;
I	out-of-scope (provision optional, process optional) not subject for testing;
C	conditional to support (process mandatory);
N/A	not-applicable (in the given context the specification makes it impossible to use this capability);
X	excluded, not allowed.

Provision mandatory, process mandatory means that the indicated feature service or procedure shall be implemented as described in the present document, and may be subject to testing.

Provision optional, process mandatory means that the indicated feature, service or procedure may be implemented, and if implemented, the feature, service or procedure shall be implemented as described in the present document, and may be subject to testing.

NOTE: The used notation is based on the notation proposed in ISO/IEC 9646-7 [4].

4 Service Objectives

4.1 General application environments

Typical applications for this profile are those which require or work together with a V.24.

4.1.1 Enterprise

A typical enterprise scenario for this profile can be the wireless PC-access to a Modem (or ISDN-TA)-Farm via a corporate DECT network.

4.1.2 Small office and home office (SOHO)

Typical SOHO applications for this profile are:

- the wireless PC-access to one or several modems (or ISDN-TAs) for one or more PCs;

- wireless PC-to-PC direct communication;
- wireless synchronization between a PDA and a PC.

4.1.3 Home (residential private)

Typical Home applications for this profile are:

- the wireless PC-access to a modem (or ISDN-TA) for one or more PCs especially for Internet access anywhere in the home;
- wireless PC-to-PC direct communication.

4.2 DECT Protocol

The basic general packet oriented data services that DECT could offer and the requirements to the terminals in regard to provision of such services are described in EN 301 649 [3], the DECT DATA Packet Radio Service (DPRS) Profile.

This profile focuses on an application solution using V.24 connectivity for Data services.

The reference model of this DECT V.24 application is schematically depicted in the figure 1.

It is not a requirement for this profile to mandate connection of the FT to an external network. The external data protocols required for support in regard to this profile are indicated in clause 5.

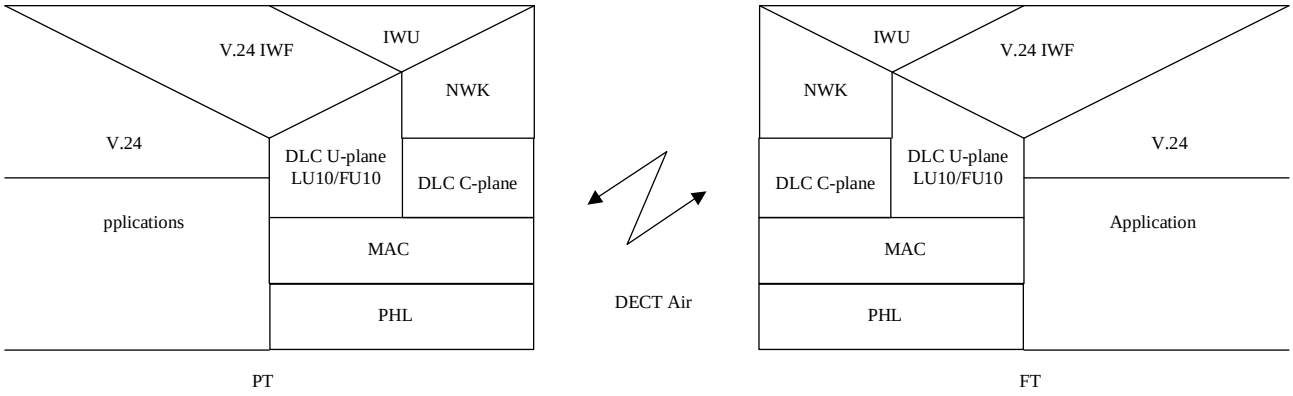

Figure 1: Reference configuration for V.24 ASAP

4.3 USB Implementation

For interworking between DECT and USB the following typical architectural model for wireless connection of analogue Modems / ISDN TAs should apply:

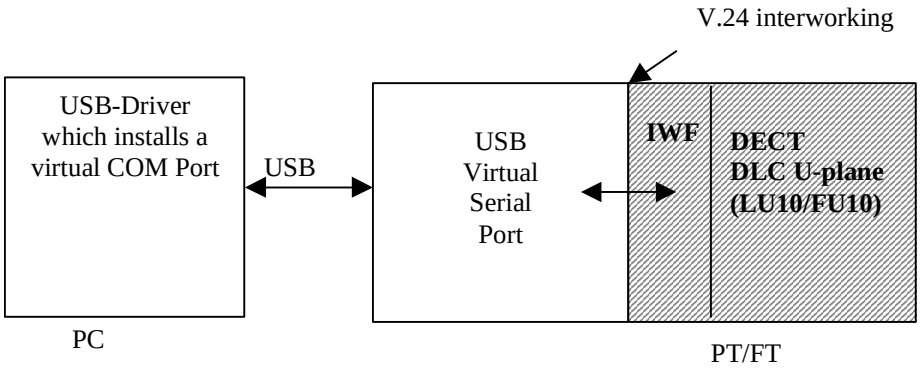

Figure 2: Reference configuration for V.24 ASAP

5 Relevant Requirements

The requirements of EN 300 176-1 [1] shall apply.

For the wireless V.24 applications the Requirements of the EN 301 649 [3] relevant for class 2 equipment apply with the modifications stated in clause 6 of the present document.

If other profiles or interconnection to special networks are implemented other standards as appropriate may apply.

Additional, not covered by other standards requirements are described in clause 6.3 and annexes.

This Profile standard is based on, or/and, reference requirements in regard to services, features, procedures and elements of procedures specified in other standards and therefore shall be used together with those standards. A schematic standards relation diagram is depicted in figure 3.

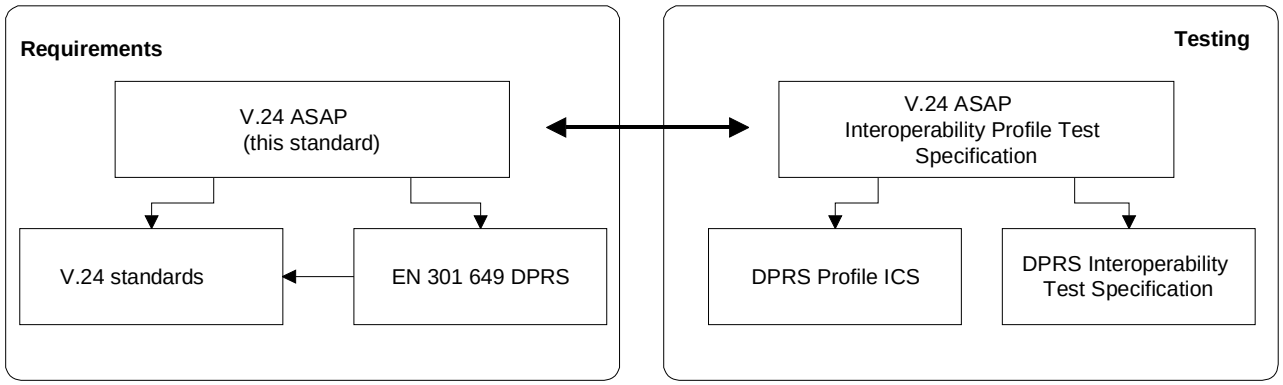

Figure 3: Standards relations V.24 ASAP

6 Profile Specific Requirements

6.1 General

The table of the following clauses are derived from the EN 301 649 [3] and the status of each particular item in regard to the required support for this profile is explicitly stated when it constitutes change to the status indicated in EN 301 649 [3].

The exact description of a modification of an existing requirement and additional requirements are provided in clause 6.3.

6.2 Requirements Tables

6.2.1 General

The tables listed in this clause define all the protocol elements i.e. features, services, and procedures which are mandatory, optional, or conditional under the provision of another protocol element, or outside the scope of the present document, or in some context not applicable according to the status column designation as defined in clause 3.3.

All optional elements shall be process mandatory according to the procedures described in the present document.

A terminal that claims to be compliant to this profile shall be capable of indicating and proving the indicated support to the service(s) as defined in the following tables and in EN 301 649 [3], clause 4.4.

Table 1: General Class and Service support

Item	Name of service	Reference	Support status	
			PT	FT
DPRS-G.1	DPRS Class 1	3.1, 4.1 [3]	I	I
DPRS-G.2	DPRS Class 2	3.1, 4.1 [3]	M	M
DPRS-G.3	Frame Relay (FREL)	Annex B [3]	I	I
DPRS-G.4	Character stream	Annex C [3]	M	M

Table 2: General Service/Interworking support

			Status	
Service	Interworking	Reference	PT	FT
DPRS-G.3, Frame Relay (FREL)		Annex B [3]	I	I
	Ethernet	B.4 [3]	I	I
	Token Ring	B.5 [3]	I	I
	IP	B.6 [3]	I	I
	PPP	B.7 [3]	I	I
DPRS-G.4, Character stream		Annex C [3]	M	M
	V.24	C.4 [3]	M	M

6.2.2 NWK layer

6.2.2.1 NWK features

In regard to the WV.24 applications NWK layer requirements the following modifications to EN 301 649 [3], clause 8 shall apply.

Table 3: NWK features status in regard to EN 301 649

Feature supported				
Features			Status	
Item no.	Name of feature	Reference	PT	FT
DPRS-N.1	Outgoing call	4.3.4 [4]	M	M
DPRS-N.3	On hook (full release)	4.3.4 [4]	M	M
DPRS-N.8	Incoming call	4.3.4 [4]	M	M
DPRS-N.11	Location registration	4.3.4 [4]	M	C201
DPRS-N.12	On air key allocation	4.3.4 [4]	M	M
DPRS-N.15	Alerting	4.3.4 [4]	M	O
DPRS-N.20	Terminate access rights FT initiated	4.3.4 [4]	M	M
C201: IF Fast Setup supported THEN M ELSE O				

6.2.2.2 NWK features to procedures mapping

In regard to the WV.24 applications NWK layer feature to procedure mapping requirements the requirements specified in EN 301 649 [3], clause 8.2 shall apply.

Table 4: NWK feature to procedure mapping in regard to EN 301 649

Feature/Procedure mapping				
Feature/Procedure			Status	
Feature Name	Procedure name	Reference	PT	FT
DPRS-N.2, Off Hook		4.3.4 [3]	M	M
	Outgoing call request	12.1 [3]	M	M
	Incoming call connection	12.2 [3]	M	M

6.2.3 DLC Layer

6.2.3.1 DLC service

In regard to the WV.24 applications the DLC layer requirements as indicated in EN 301 649 [3], clause 7.1 with the following modification shall apply.

Table 5: DLC service status

			Status	
Item no.	**Name of service**	**Reference**	**PT**	**FT**
DPRS-D.13	Connectionless U-plane	4.3.3	O	O

6.2.3.2 DLC service to procedure mapping

In regard to the WV.24 applications DLC layer service to procedure mapping requirements the requirements specified in EN 301 649 [3], clause 7.2 shall apply.

6.2.4 MAC layer

6.2.4.1 MAC services

In regard to the WV.24 applications the MAC layer requirements as indicated in EN 301 649 [3], clause 6.1 with the following modification shall apply.

Table 6: MAC service support for mobility class 1 and 2

Item	**Name of service**	**Reference**	**Support status**	
			PT	**FT**
DPRS-M.9	C_S higher layer signalling	4.3.2	M	M
DPRS-M.10	C_F higher layer signalling	4.3.2	O	O

6.2.4.2 MAC service to procedure mapping

In regard to the WV.24 applications MAC layer service to procedure mapping requirements the requirements specified in EN 301 649 [3], clause 6.2 shall apply.

6.2.5 Management Entity (ME)

In regard to the WV.24 applications ME requirements the following modifications to EN 301 649 [3], clause 9.1 shall apply.

Table 7: Management Entity Requirements

Feature/Procedure mapping			**Status**	
Feature	**Procedure**	**Reference**	**PT**	**FT**
DPRS-ME.1, Class 1 management		4.3.7	I	I

6.2.6 Application Features

6.2.6.1 Application features

In regard to the WV.24 applications the requirements of as defined in EN 301 649 [3], clause 8.3 "Application Features" shall apply.

6.2.6.2 Application features to procedures mapping

In regard to the WV.24 applications the requirements of as defined in EN 301 649 [3], clause 8.4 "Application feature to procedure requirements" shall apply.

6.2.7 Distributed Communications

In regard to the WV.24 applications the requirements as defined in EN 301 649 [3], clause 8.5 shall apply.

6.2.8 PHL Requirements

In regard to the WV.24 applications the PHL requirements as defined in EN 301 649 [3], clause 5 shall apply.

6.3 Profile Specific Procedures Description

6.3.1 General

This clause identifies differences and additions to the feature/service/procedure definitions and descriptions as specified in EN 301 649 [3] DPRS.

6.3.2 Management Entity requirements

No differences/additions - the requirements as specified in EN 301 649 [3], clause 9 shall apply.

6.3.3 MAC layer requirements

No differences/additions - the requirements as specified in EN 301 649 [3], clause 10 shall apply.

6.3.4 DLC layer requirements

No differences/additions - the requirements as specified in EN 301 649 [3], clause 11 shall apply.

6.3.5 NWK layer requirements

No differences/additions - the requirements as specified in EN 301 649 [3], clause 12 shall apply.

6.3.6 Interworking requirements

No differences/additions - the requirements as specified in EN 301 649 [3], annex C shall apply.

Annex A (informative): Bibliography

- ETSI EN 300 175-1: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 1: Overview".
- ETSI EN 300 175-2: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 2: Physical layer (PHL)".
- ETSI EN 300 175-3: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 3: Medium Access Control (MAC) layer".
- ETSI EN 300 175-4: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 4: Data Link Control (DLC) layer".
- ETSI EN 300 175-5: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 5: Network (NWK) layer".
- ETSI EN 300 175-6: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 6: Identities and addressing".
- ETSI EN 300 175-7: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 7: Security features".

  ETSI EN 300 824: "Digital Enhanced Cordless Telecommunications (DECT); Cordless Terminal Mobility (CTM); CTM Access Profile (CAP)".
- ISO/IEC 8073 (1997): "Information technology - Open Systems Interconnection - Protocol for providing the connection-mode transport service ".
- ISO/IEC 9646-6: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 6: Protocol profile test specification".
- ISO/IEC 2022 (1994): "Information Technology - Character code structure and extension techniques".
- Universal Serial Bus (USB) Specification (Compaq Computer Corporation, Intel Corporation, Microsoft Corporation, NEC Corporation).

History

Document history		
V1.1.1	April 2001	Publication