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**Digital Enhanced Cordless Telecommunications (DECT);
DECT Packet Radio Service (DPRS) Test Case Library (TCL);
Part 1: Test Suite Structure (TSS) and Test Purposes (TP) -
Medium Access Control (MAC) layer**

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Foreword

This European Standard (Telecommunications series) has been produced by ETSI Project Digital Enhanced Cordless Telecommunications (DECT).

The present document is part 1 of a multi-part deliverable covering the Digital Enhanced Cordless Telecommunications (DECT); DECT Packet Radio Service (DPRS) Test Case Library (TCL), as identified below:

- Part 1: "Test Suite Structure (TSS) and Test Purposes (TP) - Medium Access Control (MAC) layer";**
- Part 2: "Abstract Test Suite (ATS) - Medium Access Control (MAC) layer - Portable radio Termination (PT)";
- Part 3: "Abstract Test Suite (ATS) - Medium Access Control (MAC) layer - Fixed radio Termination (FT)";
- Part 4: "Test Suite Structure (TSS) and Test Purposes (TP) - Data Link Control (DLC) layer";
- Part 5: "Abstract Test Suite (ATS) - Data Link Control (DLC) layer - Portable radio Termination (PT)";
- Part 6: "Abstract Test Suite (ATS) - Data Link Control (DLC) layer - Fixed radio Termination (FT)";
- Part 7: "Test Suite Structure (TSS) and Test Purposes (TP) - Network (NWK) layer";
- Part 8: "Abstract Test Suite (ATS) - Network (NWK) layer - Portable radio Termination (PT)";
- Part 9: "Abstract Test Suite (ATS) - Network (NWK) layer - Fixed radio Termination (FT)".

National transposition dates

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Date of withdrawal of any conflicting National Standard (dow):	31 July 2001

1 Scope

The present document contains the Test Suite Structure (TSS) and Test Purposes (TP) to test the DECT Packet Radio Service (DPRS) Medium Access Control (MAC) layer.

The objective of this test specification is to provide a basis for conformance tests for DECT equipment giving a high probability of air interface inter-operability between different manufacturers' DECT equipment.

The ISO standard for the methodology of conformance testing (ISO/IEC 9646-1 [6] and ISO/IEC 9646-2 [7]) as well as the ETSI rules for conformance testing (ETS 300 406 [5]) are used as a basis for the test methodology.

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, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

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- [1] ETSI EN 300 175-3: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 3: Medium Access Control (MAc) layer".
 - [2] ETSI EN 300 175-6: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 6: Identities and addressing".
 - [3] ETSI EN 300 175-7: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 7: Security features".
 - [4] ETSI EN 301 649: "Digital Enhanced Cordless Telecommunications (DECT); DECT Packet Radio Services (DPRS)".
 - [5] ETSI ETS 300 406: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".
 - [6] ISO/IEC 9646-1: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts". (See also CCITT Recommendation X.290).
 - [7] ISO/IEC 9646-2: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract test suite specification". (See also CCITT Recommendation X.291).
 - [8] ISO/IEC 9646-6: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 6: Protocol profile test specification".
 - [9] ISO/IEC 9646-7: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation conformance statement".
 - [10] ETSI EN 301 469-7: "Digital Enhanced Cordless Telecommunications (DECT); DECT Packet Radio Service (DPRS) Test Case Library (TCL); Part 7: Test Suite Structure (TSS) and Test Purposes (TP) - Network (NWK) layer".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

- a) the terms given in ISO/IEC 9646-7 [9]; and
- b) the definitions given in EN 300 175-3 [1].

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in ISO/IEC 9646-1 [6], ISO/IEC 9646-6 [8], ISO/IEC 9646-7 [9] and EN 300 175-3 [1] apply. In particular, the following abbreviations apply:

ARQ	Automatic Repeat Request
BI	Invalid Behaviour
BV	Valid Behaviour
C/L	Connectionless
CA	Capability tests
C _F	higher layer signalling Channel (fast)
CI	Common Interface
C-Plane	Control Plane
C _S	higher layer signalling Channel (slow)
DLC	Data Link Control
FP	Fixed Part
FT	Fixed radio Termination
I	higher layer Information channel (see I _N and I _P)
I _N	higher layer Information channel (unprotected)
I _P	higher layer Information channel (protected)
IUT	Implementation Under Test
LLME	Lower Layer Management Entity
MAC	Medium Access Control
N _T	identities channel
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
PP	Portable Part
P _T	Paging channel
PT	Portable radio Termination
Q _T	system information channel
RF	Radio Frequency
RFP	Radio Fixed Part
TP	Test Purposes
TSS	Test Suite Structure
U-Plane	User Plane

4 Test suite structure

4.1 Overview

MAC layer is layer 2a of the DECT protocol stack.

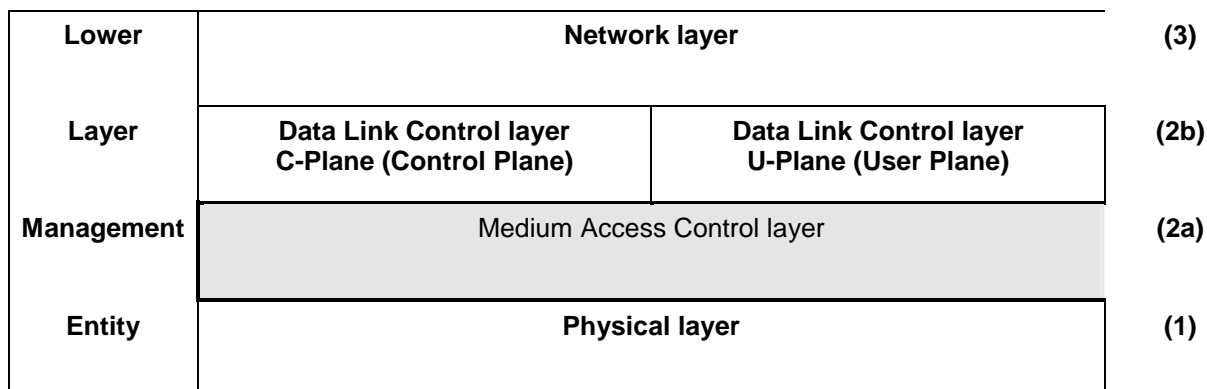


Figure 1: DECT protocol stack

MAC layer specifies three groups of services:

- the broadcast message control service;
- the connectionless message control service; and
- the multi-bearer control service.

The MAC layer also specifies the logical channels that are used by the above mentioned services, and how they are multiplexed and mapped into the service data units that are exchanged with the physical layer.

Figure 2 shows the MAC Test Suite Structure (TSS) including its subgroups defined for the conformance testing.

Test Suite	Protocol group	Protocol subgroup	Test group
MAC	General	Broadcast services	CA
			CA
	Advanced connection	Downlink broadcast	BV
			CA
		Non continuous broadcast	CA
			CA
		Paging services	BV
			CA
	CA		
	C-plane services	U-plane services	CA
			CA
			BV
			BI
			CA
	Encryption	MAC layer management	CA
			CA

Figure 2: TSS for DECT MAC layer (layer 2a of DECT protocol stack)

4.2 Test suite structure (TSS)

The test suite is structured as a tree with a first level defined as MAC representing the protocol group "MAC for PP and FP".

4.3 Test groups

The test groups are organized in three levels. The first level creates seven protocol groups representing the protocol services. The second level, if the third level exists, separates the protocol services in functional modules. The last level in each branch contains one or more of the standard ISO subgroups CA, BV and BI.

4.3.1 Protocol groups

The protocol groups identifies the DECT MAC services: general services, broadcast services, advanced connection services, C-plane services, U-plane services, encryption procedures, layer management procedures, as defined in EN 300 175-3 [1].

4.3.1.1 General services

The general services protocol group contains directly the main test group CA.

4.3.1.2 Broadcast services

The broadcast services protocol group is divided in three functional modules. The first functional module identifies the downlink broadcast services. The second functional module identifies the non-continuous broadcast services. The last functional module identifies the paging services.

4.3.1.3 Advanced connection services

The advanced connection services protocol group is divided in five functional modules. The first functional module distinguishes the bearer set-up subgroup. The second functional module distinguishes the connection modification subgroup. The third functional module distinguishes the bearer handover subgroup. The fourth functional module distinguishes the bearer release subgroup. The last functional module distinguishes the connection handover subgroup.

4.3.1.4 C-plane services

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https://standards.iteh.ai/catalog/standards/sist/9756288f-561f-43af-b0a6-4147d1587c1e/sist-301-469-1](https://standards.iteh.ai/catalog/standards/sist/9756288f-561f-43af-b0a6-4147d1587c1e/sist-301-469-1)

The C-plane services protocol group contains directly the main test group CA.

4.3.1.5 U-plane services

The U-plane services protocol group contains directly the main test groups CA, BV and BI.

4.3.1.6 Encryption

The encryption protocol group contains directly the main test group CA.

4.3.1.7 Layer management procedures

The layer management procedures protocol group contains directly the main test group CA.

4.3.2 Main test groups

The main test groups are the capability group, the valid behaviour group and the invalid behaviour group.

4.3.2.1 Capability (CA) tests

This test sub group shall provide limited testing of the major IUT capabilities aiming to insure that the claimed capabilities are correctly supported, according to the PICS.