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Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Test Case Library (TCL); Part 1: Test Suite Structure (TSS) and Test Purposes (TP) for Medium Access Control (MAC) layer

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Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Test Case Library (TCL); Part 1: Test Suite Structure (TSS) and Test Purposes (TP) for 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 EN covering the Common Interface (CI) Test Case Library (TCL), as identified below:

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

National transposition dates

Date of adoption of this EN:	27 August 1999
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Date of withdrawal of any conflicting National Standard (dow):	31 May 2000

1 Scope

The present document contains the Test Suite Structure (TSS) and Test Purposes (TP) to test the Digital Enhanced Cordless Telecommunications (DECT) 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 manufacturer's DECT equipment.

The ISO standard for the methodology of conformance testing (ISO/IEC 9646-1 [10] and ISO/IEC 9646-2 [11]) as well as the ETSI rules for conformance testing (ETS 300 406 [9]) 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.

- iTeh STANDARD PREVIEW**
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- [1] EN 300 175-1: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 1: Overview".
- [2] EN 300 175-2: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 2: Physical Layer (PHL)".
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- [3] EN 300 175-3: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 3: Medium Access Control (MAC) layer".
- [4] EN 300 175-4: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 4: Data Link Control (DLC) layer".
- [5] EN 300 175-5: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 5: Network (NWK) layer".
- [6] EN 300 175-6: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 6: Identities and addressing".
- [7] EN 300 175-7: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 7: Security features".
- [8] EN 300 175-8: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 8: Speech coding and transmission".
- [9] ETS 300 406: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".
- [10] ISO/IEC 9646-1: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts".
- [11] ISO/IEC 9646-2: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract Test Suite Specification".

- [12] ISO 7498: "Information Processing Systems - Open Systems Interconnection - Basic Reference model".
- [13] EN 300 824: "Digital Enhanced Cordless Telecommunications (DECT); Cordless Terminal Mobility (CTM); CTM Access Profile (CAP)".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply, in addition to those given in EN 300 175-1 [1]:

Implementation Under Test (IUT): see ISO/IEC 9646-1 [10]

Physical Layer (PHL): see ISO 7498 [12]

Protocol Implementation Conformance Statement (PICS): see ISO/IEC 9646-1 [10]

PICS proforma: see ISO/IEC 9646-1 [10]

3.2 Abbreviations

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

ARQ	Automatic Repeat Request
BI	Invalid Behaviour
BV	Valid Behaviour
C-Plane	Control plane
CA	Capability tests
C/O	Connection Oriented
CI	Common Interface
CSF	Cell Site Function
DECT	Digital Enhanced Cordless Telecommunications
DLC	Data Link Control
FP	Fixed Part
FT	Fixed radio Termination
I _N	higher layer Information channel (unprotected)
IUT	Implementation Under Test
LLME	Lower Layer Management Entity
MAC	Medium Access Control
N _T	identities channel
PDU	Protocol Data Unit
PHL	Physical Layer
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
TSS	Test Suite Structure
TP	Test Purposes
U-Plane	User Plane

4 Test suite structure

4.1 Overview

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

Lower	Network layer		(3)
Layer	Data Link Control layer C-Plane	Data Link Control layer U-Plane	(2b)
Management	Medium Access Control layer		(2a)
Entity	Physical layer		(1)

NOTE 1: C-Plane: Control Plane.

NOTE 2: U-Plane: User Plane.

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.

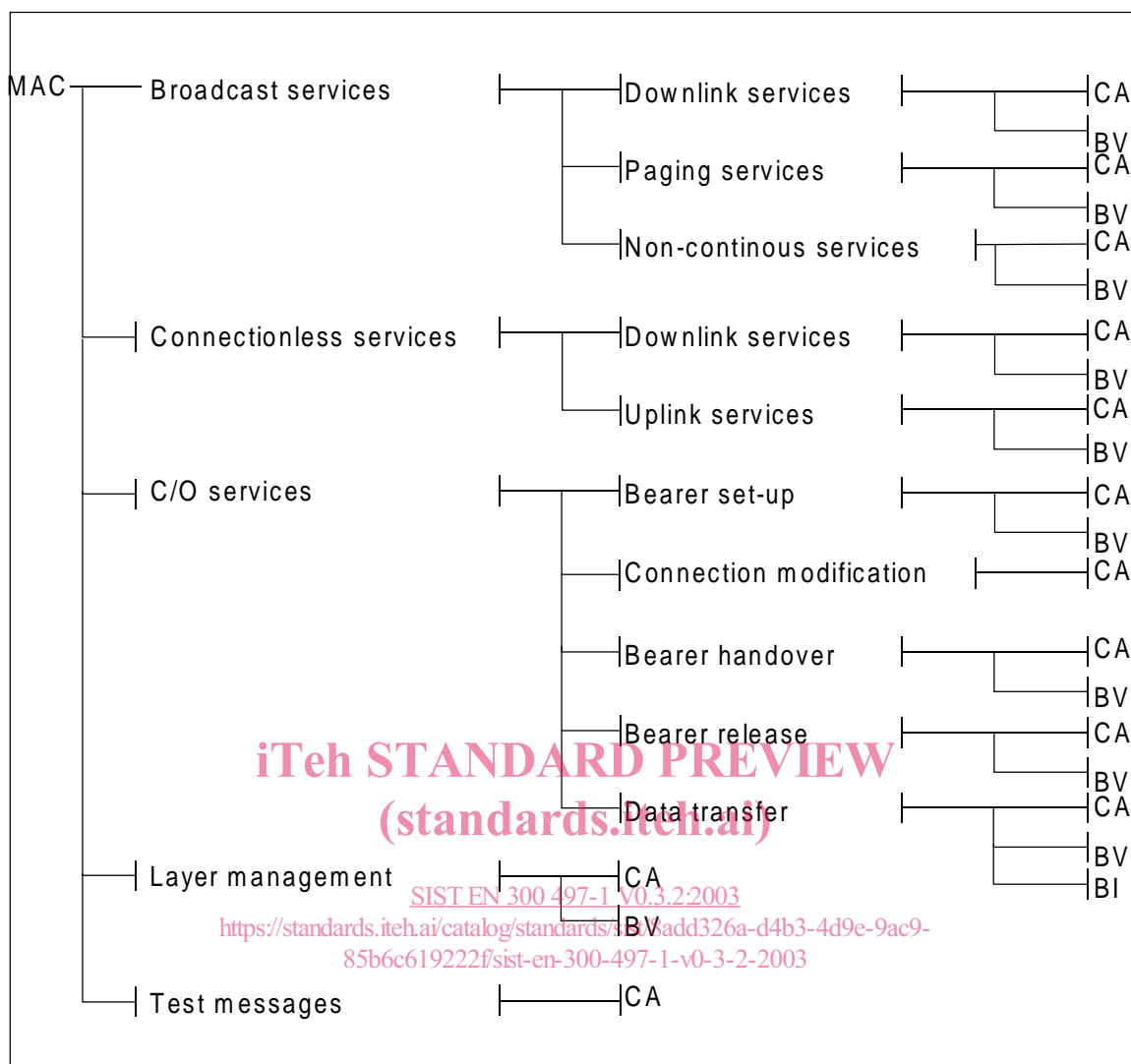


Figure 2: TSS for DECT MAC layer (layer 2a of DECT protocol stack)

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 five protocol groups representing the protocol services and the standard ISO main group BI. The second level, if the third level exists, separates the protocol services in functional modules. The last level in each branch contains the standard ISO subgroups CA, BV and BI.

4.3.1 Protocol groups

The protocol groups identifies the DECT MAC services: broadcast services, connectionless services, connection oriented services, layer management procedures, test messages procedures, as defined in EN 300 175, Parts 1 to 8 [1] to [8].