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fDHŁ

Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Test Case Library (TCL); Part 6: Test Suite Structure (TSS) and Test Purposes (TP) - Network (NWK) layer - Portable radio Termination (PT)

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# ETSI EN 300 497-6 V0.3.2 (1999-09)

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*European Standard (Telecommunications series)*

**Digital Enhanced Cordless Telecommunications (DECT);  
Common Interface (CI); Test Case Library (TCL);  
Part 6: Test Suite Structure (TSS) and Test Purposes (TP) -  
Network (NWK) layer - Portable radio Termination (PT)**

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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 6 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
Date of latest announcement of this EN (doa):	30 November 1999
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## 1 Scope

The present document contains the test specification for the Digital Enhanced Cordless Telecommunications (DECT) (EN 300 175 parts 1 to 8 [1] to [8]).

The objective of this test specification is to provide a basis for approval tests for DECT equipment giving a high probability of air interface inter-operability between different manufacturer's DECT equipment. This test specification defines the Test Suite Structure (TSS) and Test Purposes (TP) for testing of the Network (NWK) layer at the Portable radio Termination (PT).

The ISO standard for the methodology of conformance testing (ISO/IEC 9646-1 [12]) as well as the ETSI rules for conformance testing (ETS 300 406 [9]) are used as a basis for the test methodology.

Test specifications for the Physical layer (PHL) are provided in other DECT standards.

---

## 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] 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)".
- [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] EN 300 444: "Digital Enhanced Cordless Telecommunications (DECT); Generic Access Profile (GAP)".
- [11] EN 300 824: "Digital Enhanced Cordless Telecommunications (DECT), Cordless Terminal Mobility (CTM); CTM Access Profile (CAP)".



- [12] ISO/IEC 9646-1: "Information technology; Open Systems Interconnection; Conformance testing methodology and framework; Part 1: General concepts".
- [13] ISO/IEC 9646-2: "Information technology; Open Systems Interconnection; Conformance testing methodology and framework; Part 2: Abstract Test Suite Specification".

## 3 Definitions and abbreviations

### 3.1 DECT definitions

For the purposes of the present document, the terms and definitions given in ISO/IEC 9646-1 [12], ISO/IEC 9646-2 [13], EN 300 175-1 [1], EN 300 175-5 [5], EN 300 175-6 [6] and EN 300 175-7 [7] apply.

### 3.2 Abbreviations

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

AC	Authentication Code
AR	Access Rights
AU	Authentication
BI	Invalid Behaviour
BO	Inopportune Behaviour
BV	Valid Behaviour
CA	Capability
CC	Call Control
CH	Ciphering
CI	Call Information
CISS	Call Independent Supplementary Services
CLMS	Connectionless Message Services
COMS	Connection Oriented Message Services
CR	Call Release
DECT	Digital Enhanced Cordless Telecommunications
FT	Fixed radio Termination
HP	Handover Procedure
IC	Incoming Call
ID	Identification
IPUI	International Portable User Identity
IUT	Implementation Under Test
KA	Key Allocation
LC	Link Control
LE	connection oriented Link Establishment
LL	connectionless Link control
LO	Location
LR	connection oriented Link Release
LS	connection oriented Link Suspend and resume
ME	Management Entity
MM	Mobility Management
MO	Connection Oriented Message Services
NWK	Network layer
OC	Outgoing Call
PARK	Portable Access Rights Key
PDU	Protocol Data Unit
PHL	Physical layer
PICS	Protocol Implementation Conformance Statement

PIXIT	Protocol Implementation Extra Information for Testing
PM	Packet Mode
PR	Parameter Retrieval
PT	Portable radio Termination
RS	Call Related Supplementary Services
SC	Service Change
TP	Test Purpose
TSS	Test Suite Structure
UAK	User Authentication Key

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## 4 Test Suite Structure (TSS)

### 4.1 TSS overview

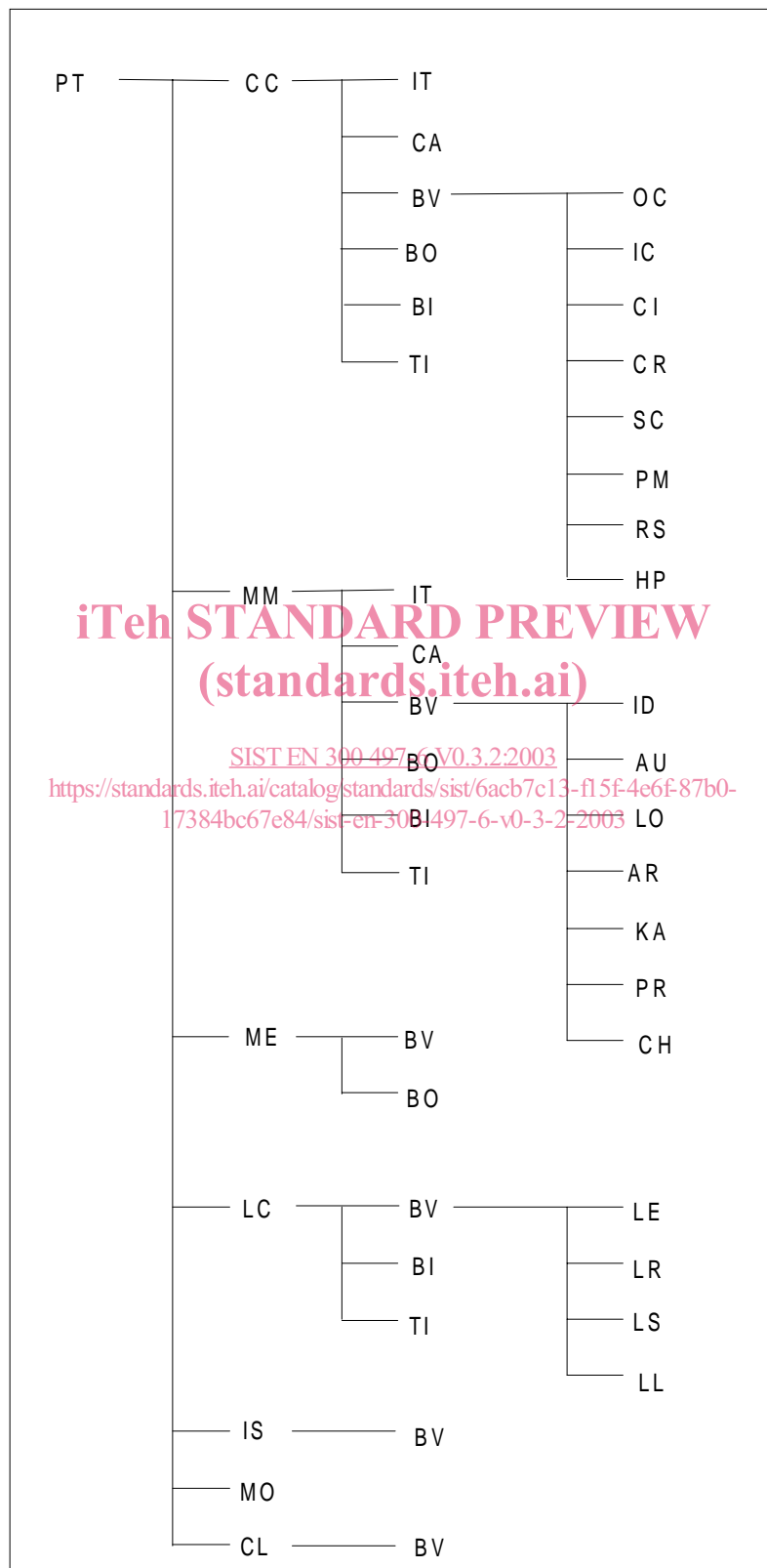


Figure 1: TSS

## 4.2 Test groups

### 4.2.1 Protocol groups

#### 4.2.1.1 Call Control (CC)

Reference: EN 300 175-5 [5], subclause 5.2, clause 9 and subclause 15.7.

#### 4.2.1.2 Mobility Management (MM)

Reference: EN 300 175-5 [5], subclause 5.6 and clause 13.

#### 4.2.1.3 Lower layer Management Entity (ME)

Reference: EN 300 175-5 [5], clause 15.

#### 4.2.1.4 Link Control (LC)

Reference: EN 300 175-5 [5], subclause 5.7 and clause 14.

#### 4.2.1.5 Call Independent Supplementary Services (CISS)

Reference: EN 300 175-5 [5], subclauses 5.3 and 10.4.2.2.

#### 4.2.1.6 Connection Oriented Message Services (COMS)

Reference: EN 300 175-5 [5], subclause 5.4 and clause 11.

#### 4.2.1.7 Connectionless Message Services (CLMS)

Reference: EN 300 175-5 [5], subclause 5.5 and clause 12.

### 4.2.2 Main test groups

#### 4.2.2.1 Basic InTerconnection tests (IT)

IT tests provide limited testing of an Implementation Under Test (IUT) in order to establish that there is sufficient conformance for possible interconnection without trying to perform thorough testing. In particular, only those test cases will be executed which will assure the sufficient interconnection between the IUT of the NWK layer and the test system exists, so that the rest of the test cases can then be put into execution.

#### 4.2.2.2 Capability tests (CA)

CA tests provide limited testing that the observable capabilities of the IUT are in accordance with the static conformance requirements and the additional capabilities claimed in the Protocol Implementation Conformance Statement / Protocol Implementation Extra Information for Testing (PICS / PIXIT). In particular, this test group can be regarded as a set of spot checks for all the capabilities of the IUT stated in the PICS / PIXIT. Scope of the test group is the observable capabilities of the IUT with respect to NWK layer connection, call control, and the mobility management.

#### 4.2.2.3 Valid Behaviour tests (BV)

BV group tests an IUT in response to valid behaviour of the test system. "Valid" means that a test event is syntactically and contextually correct. All test cases in the valid behaviour group are intended to verify as thoroughly as possible the various functions of the protocol.

#### 4.2.2.4 Invalid Behaviour tests (BI)

BI group is intended to verify that the IUT is able to react properly in case an invalid protocol data unit (message) occurring. Invalid Protocol Data Unit (PDU) here means syntactically or semantically invalid test events generated by the test system. A syntactically or semantically invalid test event regardless of the current state is not allowed.

#### 4.2.2.5 InOpportune Behaviour tests (BO)

BO test group is intended to verify that the IUT is able to react properly in case an inopportune test event occurring. Such an event is syntactically correct, but occurs when it is not allowed.

#### 4.2.2.6 Timer expiry and counter mismatch tests (TI)

Different timers and counters are defined to supervise the various state transitions. This test subgroup is intended to verify that the IUT is reacting properly to an expiry of one of the timers or counters mismatch.

## 5 Test Purposes (TPs)

Each test case is allocated directly under a defined TP.

### 5.1 Introduction

#### 5.1.1 TP definition conventions

The TPs are defined following particular rules as shown in table 1.

**Table 1: TP definition rules**

TP Id according to the TP naming conventions	Reference Initial condition Stimulus Expected behaviour
TP Id:	The TP Id is a unique identifier it shall be specified according to the TP naming conventions defined in the subclause below.
Reference:	The reference should contain the references of the subject to be validated by the actual TP (specification reference, clause, paragraph).
Condition:	The condition defines in which initial state the IUT has to be to apply the actual TP.
Stimulus:	The stimulus defines the test event to which the TP is related.
Expected behaviour:	Definition of the events that are expected from the IUT to conform to the base specification.

#### 5.1.2 References

Subclause 5.1.2 defines the use of references given in the TPs. The structure provides the interrelationship with:

- the source EN giving the clause / subclause reference; and
- the profile EN giving the clause / subclause reference.