



SLOVENSKI STANDARD  
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Digital Enhanced Cordless Telecommunications (DECT); DECT Packet Radio Service (DPRS) Test Case Library (TCL); Part 4: Test Suite Structure (TSS) and Test Purposes (TP) - Data Link Control (DLC) layer

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# ETSI EN 301 469-4 V1.1.1 (2000-10)

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*European Standard (Telecommunications series)*

## **Digital Enhanced Cordless Telecommunications (DECT); DECT Packet Radio Service (DPRS) Test Case Library (TCL); Part 4: Test Suite Structure (TSS) and Test Purposes (TP) - Data Link Control (DLC) 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 4 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)".

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## 1 Scope

The present document contains the Test Suite Structure (TSS) and Test Purposes (TP) to test the DECT Packet Radio Service (DPRS) Data Link Control (DLC) 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 [4] and ISO/IEC 9646-2 [5]) as well as the ETSI rules for conformance testing (ETS 300 406 [3]) are used as a basis for the test methodology.

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## 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 300 175-4: "Digital Enhanced Cordless Telecommunications (DECT); Common interface; Part 4: Data Link Control (DLC) layer".
- [2] ETSI EN 301 649: "Digital Enhanced Cordless Telecommunications (DECT); DECT Packet Radio Services (DPRS)".  
<https://standards.iteh.ai/catalog/standards/sist/a5a6b483-c0ce-40f1-83fe-e494ae45fd3b/sist-en-301-469-4-2001>
- [3] ETSI ETS 300 406: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".
- [4] ISO/IEC 9646-1: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts". (See also ITU-T Recommendation X.290).
- [5] ISO/IEC 9646-2: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract test suite specification". (See also ITU-T Recommendation X.291).
- [6] ISO/IEC 9646-6: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 6: Protocol profile test specification".
- [7] ISO/IEC 9646-7: "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation conformance statement".
- [8] 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 [7]; and
- b) the definitions given in EN 300 175-4 [1].

### 3.2 Abbreviations

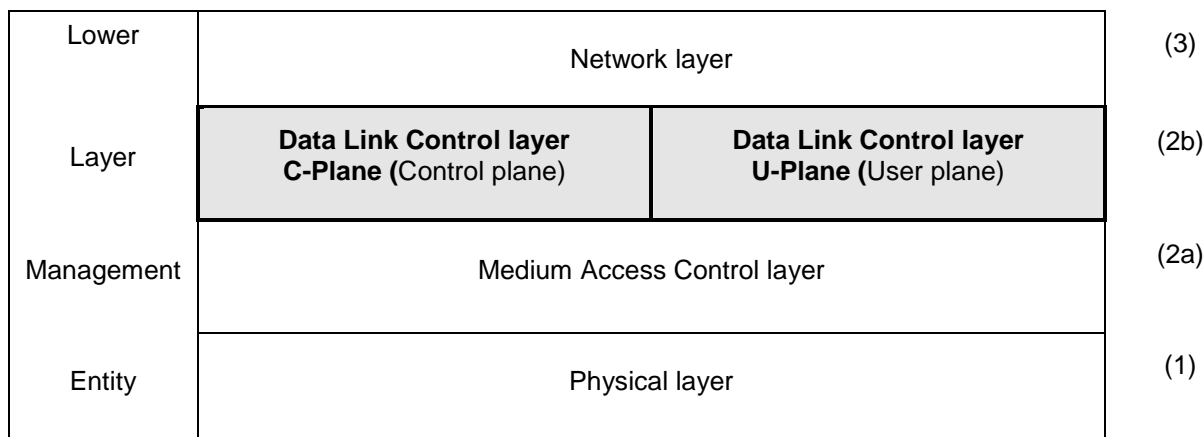
For the purposes of the present document, the abbreviations given in ISO/IEC 9646-1 [4], ISO/IEC 9646-6 [6], ISO/IEC 9646-7 [7] and EN 300 175-4 [1] apply. In particular, the following abbreviations apply:

BI	Invalid Behaviour
BO	Inopportune Behaviour
BV	Valid Behaviour
C/L	Connectionless mode
C/O	Connection Oriented mode
CA	Capability tests
C-plane	Control plane
DLC	Data Link Control layer
FP	Fixed Part
FT	Fixed radio Termination
IUT	Implementation Under Test
LAPC	a DLC layer C-plane protocol entity
Lb	a DLC broadcast entity
MAC	Medium Access Control layer
NWK	Network layer
PDU	Protocol Data Unit
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation eXtra Information for Testing
PP	Portable Part
PT	Portable radio Termination
SAPI	Service Access Point Identifier
TP	Test Purpose
TSS	Test Suite Structure
ULI	Unassigned Link Identifier (U-Plane)
U-plane	User plane

## 4 Test suite structure

### 4.1 Overview

The Data Link Control (DLC) layer is layer 2b of the DECT protocol stack. The separation of the user information from the DECT signalling data is managed by the allocation of two independent planes:



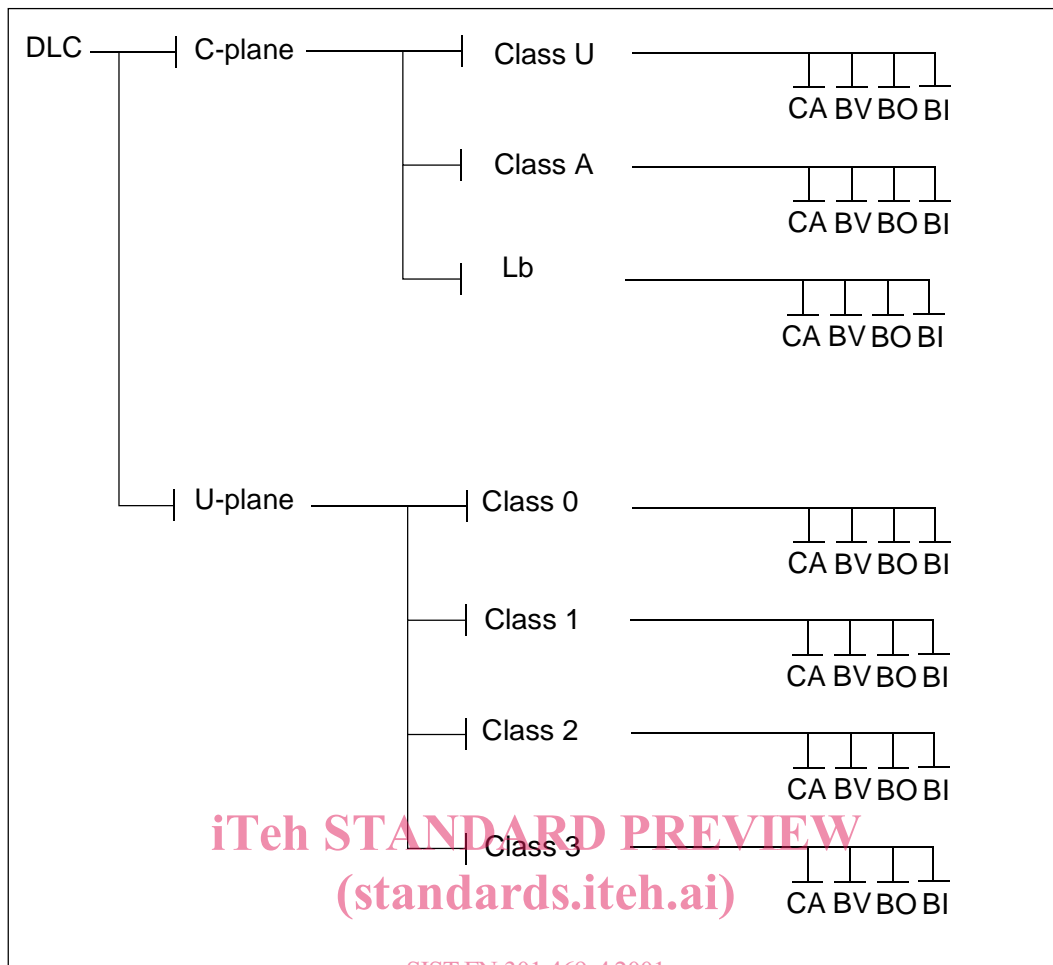
**Figure 1: DECT protocol stack**

The U-plane is the part of the DLC implementation that is responsible for the transmission of the user data. The U-plane may provide a series of different services and facilities, grouped into categories (LUX families).

The C-Plane is the second part of DECT DLC and is mainly involved with the transfer of signalling information. It provides the means to support DECT Connection Oriented, Connectionless and Broadcast services (the broadcast service exists only at the FT to PT direction). DECT DLC provides three classes of operation (Unacknowledged for C/L services, Single frame and Multiframe for C/O services).

At the DLC layer, C-plane and U-plane resources are considered as completely independent. The association of C and U-plane resources to serve a higher layer service (e.g. to setup and maintain a call) is a NWK layer responsibility. Moreover, no interaction is required between the services provided by each of the planes.

Figure 2 shows the DLC (TSS) including its subgroups and defined for the conformance testing.



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 Figure 2: DLC TSS

## 4.2 Test suite structure (TSS)

The test suite is structured as a tree with a first level defined as DLC representing the protocol group "DLC for Portable Part (PP) and Fixed Part (FP)".

## 4.3 Test groups

The test groups are organized in three levels. The first level creates two protocol groups representing the protocol plane. The second level separates the protocol plane in functional modules. The last level contains the standard ISO subgroups CA, BV, BO and BI.

### 4.3.1 Protocol groups

The protocol groups identifies the DECT DLC planes, C-Plane and U-Plane, as defined in EN 300 175-4 [1].

#### 4.3.1.1 C-plane group

The C-plane protocol group is divided in four functional modules. The first functional module identifies the LAPC Class U services. The second functional module identifies the LAPC Class A services. The third functional module identifies the LAPC Class B services. The last functional module identifies the broadcast services Lb.