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**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 final draft second edition European Telecommunication Standard (ETS) has been produced by the Digital Enhanced Cordless Telecommunications (DECT) Project of the European Telecommunications Standards Institute (ETSI), and is now submitted for the Voting phase of the ETSI standards approval procedure.

This ETS comprises nine parts, as follows:

- 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)".

Proposed transposition dates	
Date of latest announcement of this ETS (doa):	3 months after ETSI publication
Date of latest publication of new National Standard or endorsement of this ETS (dop/e):	6 months after doa
Date of withdrawal of any conflicting National Standard (dow):	6 months after doa

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1 Scope

This European Telecommunication Standard (ETS) contains the test specification for the Digital Enhanced Cordless Telecommunications (DECT) (ETS 300 175 [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 [14]) as well as the ETSI rules for conformance testing (ETS 300 406 [10]) are used as a basis for the test methodology.

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

2 Normative references

This ETS incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] ETS 300 175-1: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 1: Overview".
- [2] ETS 300 175-2: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 2: Physical layer (PHL)".
- [3] ETS 300 175-3: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 3: Medium Access Control (MAC) layer".
- [4] ETS 300 175-4: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 4: Data Link Control (DLC) layer".
- [5] ETS 300 175-5: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 5: Network (NWK) layer".
- [6] ETS 300 175-6: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 6: Identities and addressing".
- [7] ETS 300 175-7: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 7: Security features".
- [8] ETS 300 175-8: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI); Part 8: Speech coding and transmission".
- [9] ETS 300 323-1: "Digital European Cordless Telecommunications (DECT) Public Access Profile (PAP) test specification Part 1: Overview".
- [10] ETS 300 406: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".
- [11] ETS 300 444: "Digital European Cordless Telecommunications (DECT); Generic Access Profile (GAP)".
- [12] ETS 300 497-2: "Digital Enhanced Cordless Telecommunications (DECT); Common Interface (CI) Test Case Library (TCL); Part 2: Abstract Test Suite (ATS) for Medium Access Control (MAC) layer - Portable radio Termination (PT)".

- [13] 91/263/EEC: "Council Directive of 29 April 1991 on the approximation of the laws of the Member States concerning telecommunications terminal equipment, including the mutual recognition of their conformity" (Terminal Directive).
- [14] ISO/IEC 9646-1 (1991): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts". (See also CCITT Recommendation X.290 (1991)).
- [15] ISO/IEC 9646-2 (1991): "Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract test suite specification". (See also CCITT Recommendation X.291 (1991)).
- [16] TBR 6: "Digital Enhanced Cordless Telecommunications (DECT); General terminal attachment requirements".
- [17] TBR 10: "Digital Enhanced Cordless Telecommunications (DECT); General terminal attachment requirements; Telephony applications".
- [18] TBR 11: "Attachment requirements for terminal equipment for Digital European Cordless Telecommunications (DECT) Public Access Profile (PAP) applications".
- [19] TBR 22: "Attachment requirements for terminal equipment for Digital Enhanced Cordless Telecommunications (DECT) Generic Access Profile (GAP) applications".

3 Definitions and abbreviations

3.1 DECT definitions

For the purposes of this ETS, the definitions given in ISO/IEC 9646-1 [14], ISO/IEC 9646-2 [15], ETS 300 175-1 [1], ETS 300 175-5 [5], ETS 300 175-6 [6] and ETS 300 175-7 [7] apply.

3.2 Abbreviations

For the purposes of this ETS 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
CTS	Conformance Testing Services
DECT	Digital Enhanced Cordless Telecommunication
FT	Fixed radio Termination
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
ML	Connectionless Message Services
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

4 Test Suite Structure (TSS)

4.1 TSS overview

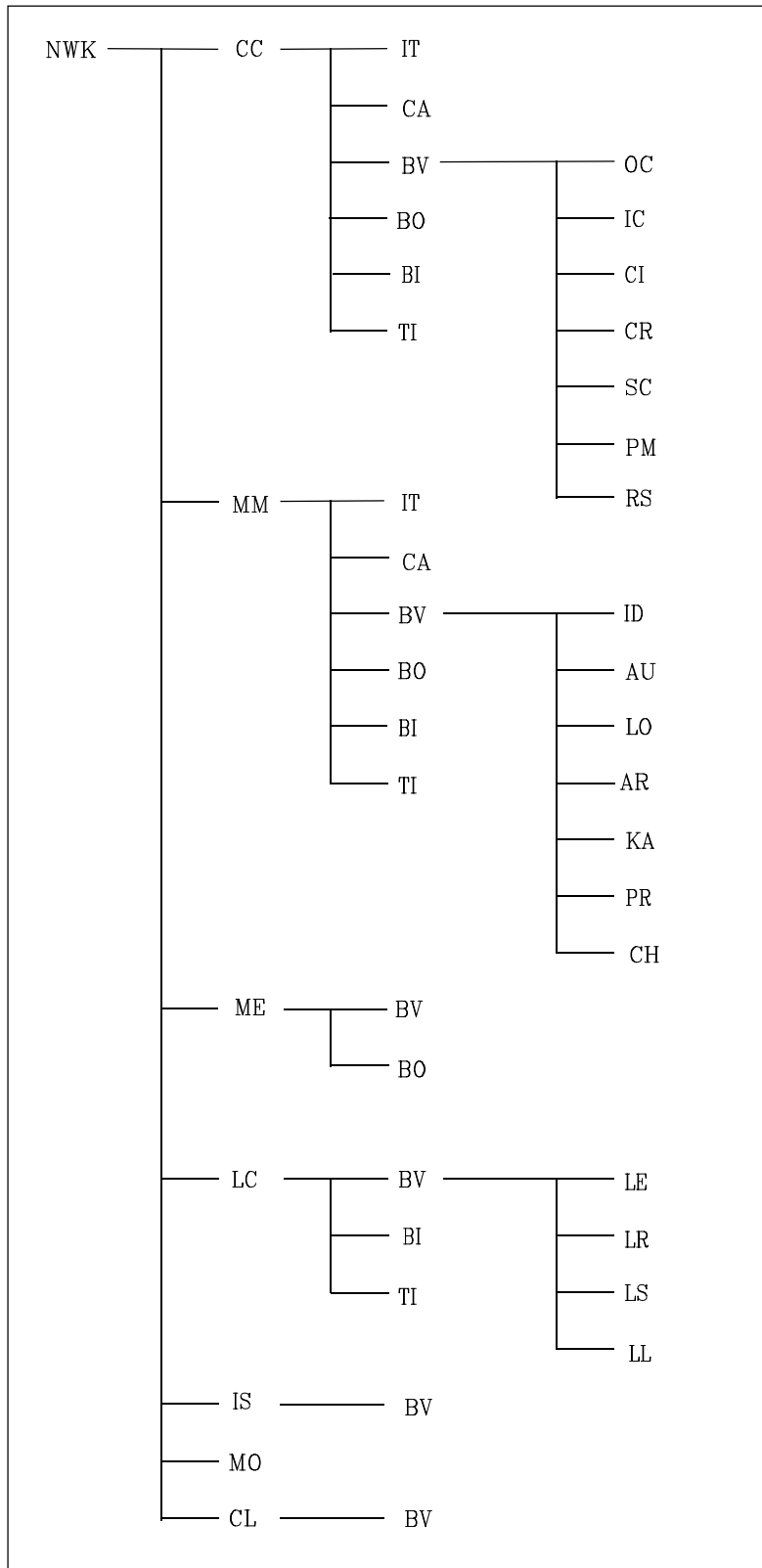


Figure 1: TSS

4.2 Test groups

4.2.1 Protocol groups

4.2.1.1 Call Control (CC)

Ref.: ETS 300 175-5 [5], subclause 5.2 and clause 9

4.2.1.2 Mobility Management (MM)

Ref.: ETS 300 175-5 [5], subclause 5.6 and clause 13

4.2.1.3 Lower layer Management Entity (ME)

Ref.: ETS 300 175-5 [5], clause 15

4.2.1.4 Link Control (LC)

Ref.: ETS 300 175-5 [5], subclause 5.7 and clause 14

4.2.1.5 Call Independent Supplementary Services (CISS)

Ref.: ETS 300 175-5 [5], subclauses 5.3 and 10.4.2.2

4.2.1.6 Connection Oriented Message Services (COMS)

Ref.: ETS 300 175-5 [5], subclause 5.4 and clause 11

4.2.1.7 Connectionless Message Services (CLMS)

Ref.: ETS 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 the 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

This subclause defines the use of references given in the TPs. The structure provides the interrelationship with:

- the source ETS giving the clause/subclause reference;
- the profile ETS giving the clause/subclause reference; and
- the cross reference to the output of the Conformance Testing Services (CTS) project, CTS 3 (see annex A).

5.1.3 TP naming conventions

The identifier of the TP is built according to table 2:

Table 2: TP naming convention

TP/<rt>/<fm>/<x>/<s>/<nn>		
<rt>= type of radio termination	PT	Portable radio Termination
<fm> = functional module	CC	Call Control
	MM	Mobility Management
	ME	Lower Layer Management Entity
	LC	Link Control Entity
	IS	Call Independent Supplementary Services
	MO	Connection Oriented Message Service
	CL	Connectionless Message Service
x = Type of testing	IT	Basic Interconnection Tests
	CA	Capability Tests
	BV	Valid Behaviour Tests
	BO	Inopportune Behaviour Tests
	BI	Invalid Behaviour Tests
	TI	Timer expiry and counter mismatch tests
s = test subgroup	OC	Outgoing Call establishment
	IC	Incoming Call establishment
	CI	Call Information
	CR	Call Release
	SC	Service Change
	PM	Packet Mode
	RS	Call Related Supplementary services
	ID	Identification
	AU	Authentication
	LO	Location
	AR	Access Rights
	KA	Key Allocation
	PR	Parameter Retrieval
	CH	Ciphering
	LE	Connection oriented Link Establishment
	LR	Connection oriented Link Release
LS	Connection oriented Link Suspend and resume	
LL	ConnectionLess Link Control	
<nn> = sequential number	(01-99)	Test Purpose Number

5.2 CC test purposes

Test group objectives:

To check the behaviour of the CC module of the IUT.

Subgroups:

- IT;
- CA;
- BV;
- BO;
- BI;
- TI.

5.2.1 CC/IT test purposes

There are no test purposes defined for this group in this ETS.

5.2.2 CC/CA test purposes

There are no test purposes defined for this group in this ETS.

5.2.3 CC/BV test purposes

Subgroups:

- OC;
- IC;
- CI;
- CR;
- SC;
- PM;
- RS.

5.2.3.1 CC/BV/OC test purposes

Test subgroup objectives:

To check the IUT's behaviours to setup an outgoing call.

Test purposes:

TP/PT/CC/BV/OC-01	<p>Reference: ETS 300 175-5 [5], subclauses 9.1, 9.2, 9.3.1 ETS 300 444 [11], subclause 8.1, figure 1</p> <p>Initial state: T-00 Verify that the IUT is able to perform a CC-state transition from the T-00 state to T-10 state via T-01 , T-02, T-03 and T-04 for an outgoing normal call set-up using piecewise method to transfer dialling information in state T-02.</p>
TP/PT/CC/BV/OC-02	<p>Reference: ETS 300 175-5 [5], subclauses 9.1, 9.2, 9.3.1 ETS 300 444 [11], subclause 8.1, figure 2</p> <p>Initial state: T-00 Verify that the IUT is able to perform a CC-state transition from the T-00 state to T-10 state via T-01 for an outgoing normal call set-up using piecewise method to transfer dialling information in state T-10.</p>
TP/PT/CC/BV/OC-03	<p>Reference: ETS 300 175-5 [5], subclauses 9.1, 9.2, 9.3.1 ETS 300 444 [11], subclause 8.1, figure 3</p> <p>Initial state: T-00 Verify that the IUT is able to perform a CC-state transition from the T-00 state to T-10 state via T-01 and T-02 for an outgoing normal call set-up using piecewise method to transfer dialling information in states T-02 and T-10.</p>
TP/PT/CC/BV/OC-04	<p>Reference: ETS 300 175-5 [5], subclauses 9.3.1.4 and 9.3.1.5, ETS 300 444 [11], subclause 8.3, figure 9, table 11</p> <p>Initial state: T-01 Verify that the IUT is able to connect the U-plane on receipt of the {CC-SETUP-ACK} message with the information element <<PROGRESS INDICATOR>> containing "in-band information or appropriate pattern now available".</p>

5.2.3.2 CC/BV/IC test purposes

Test subgroup objectives:

To check the IUT's behaviours to setup an incoming call.

Test purposes:

TP/PT/CC/BV/IC-01	<p>Reference: ETS 300 175-5 [5], subclauses 9.1, 9.2, 9.3.2 ETS 300 444 [11], subclause 8.11, figure 28</p> <p>Initial state: T-00 Verify that the IUT is able to process an incoming call via the states T-06, T-07 and T-08 to the state T-10, on receipt of the information element <<SIGNAL>> in the {CC-INFO} message</p>
TP/PT/CC/BV/IC-02	<p>Reference: ETS 300 175-5 [5], subclauses 9.1, 9.2, 9.3.2 ETS 300 444 [11], subclause 8.11, figure 29</p> <p>Initial state: T-00 Verify that the IUT is able to process an incoming call via the states T-06, T-07 and T-08 to the state T-10. The information element <<SIGNAL>> is in the {CC-SETUP} message.</p>
TP/PT/CC/BV/IC-03	<p>Reference: ETS 300 175-5 [5], subclauses 9.3.2.4 ETS 300 444 [11], subclause 8.12</p> <p>Initial state: T-00 Verify that the IUT in case of incoming call, is able to connect the U-plane on receipt of the {CC-SETUP} message with the information element <<PROGRESS INDICATOR>> containing "in-band information or appropriate pattern now available".</p>
TP/PT/CC/BV/IC-04	<p>Reference: ETS 300 175-5 [5], subclauses 9.3.2.4 ETS 300 444 [11], subclause 8.14</p> <p>Initial state: T-00 Verify that the IUT in case of incoming call, is able to connect the U-plane on receipt of a {CC-INFO} message with the information element <<PROGRESS INDICATOR>> containing "in-band information or appropriate pattern now available".</p>

5.2.3.3 CC/BV/CI test purposes

Test subgroup objectives:

To check the IUT's behaviours for information transfer.

Test purposes:

TP/PT/CC/BV/CI-01	Reference: ETS 300 175-5 [5], subclause 9.3.1.5 ETS 300 444 [11], subclause 8.13 Initial state: T-06 Verify that the IUT is able to alert the user of an incoming call, when the information element <<SIGNAL>> is present in the {CC-SETUP} message.
TP/PT/CC/BV/CI-02	Reference: ETS 300 175-5 [5], subclause 9.3.1.5 ETS 300 444 [11], subclause 8.10, table 20 Initial state: T-02 Verify that the IUT, after the user has invoked pulse (decadic) dialling, sends a {CC-INFO} message with a <<MULTI-KEYPAD>> information element containing keypad-info '12H' (goto pulse). (feature N.23 in ETS 300 444 [11])
TP/PT/CC/BV/CI-03	Reference: ETS 300 175-5 [5], subclause 9.3.1.5 ETS 300 444 [11], subclause 8.10, table 20 Initial state: T-10 Verify that the IUT, after the user has invoked pulse (decadic) dialling, sends a {CC-INFO} message with a <<MULTI-KEYPAD>> information element containing keypad-info '12H' (goto pulse). (feature N.23 in ETS 300 444 [11])
TP/PT/CC/BV/CI-04	Reference: ETS 300 175-5 [5], subclause 9.3.1.5 ETS 300 444 [11], subclause 8.10, table 20 Initial state: T-02 Verify that the IUT, after the user has invoked dialling pause, sends a {CC-INFO} message with a <<MULTI-KEYPAD>> information element containing keypad-info '05H' (dialling pause). (feature N.7 in ETS 300 444 [11])
TP/PT/CC/BV/CI-05	Reference: ETS 300 175-5 [5], subclause 9.3.1.5 ETS 300 444 [11], subclause 8.10, table 20 Initial state: T-10 Verify that the IUT, after the user has invoked dialling pause, sends a {CC-INFO} message with a <<MULTI-KEYPAD>> information element containing keypad-info '05H' (dialling pause). (feature N.7 in ETS 300 444 [11])
TP/PT/CC/BV/CI-06	Reference: ETS 300 175-5 [5], subclause 9.3.1.5 ETS 300 444 [11], subclause 8.10, table 20 Initial state: T-02 Verify that the IUT, after the user has invoked DTMF dialling with defined tone length, sends a {CC-INFO} message with a <<MULTI-KEYPAD>> information element containing keypad-info '14H' (goto DTMF, defined tone length). (feature N.6 in ETS 300 444 [11])
TP/PT/CC/BV/CI-07	Reference: ETS 300 175-5 [5], subclause 9.3.1.5 ETS 300 444 [11], subclause 8.10, table 20 Initial state: T-10 Verify that the IUT, after the user has invoked DTMF dialling with defined tone length, sends a {CC-INFO} message with a <<MULTI-KEYPAD>> information element containing keypad-info '14H' (goto DTMF, defined tone length). (feature N.6 in ETS 300 444 [11])

TP/PT/CC/BV/CI-08	<p>Reference: ETS 300 175-5 [5], subclause 9.3.1.5 ETS 300 444 [11], subclause 8.10, table 20</p> <p>Initial state: T-02</p> <p>Verify that the IUT, after the user has invoked DTMF dialling with defined tone length, sends a {CC-INFO} message with a <<MULTI-KEYPAD>> information element containing keypad-info '16H' (goto DTMF, infinite tone length). (feature N.22 in ETS 300 444 [11])</p>
TP/PT/CC/BV/CI-09	<p>Reference: ETS 300 175-5 [5], subclause 9.3.1.5 ETS 300 444 [11], subclause 8.10, table 20</p> <p>Initial state: T-10</p> <p>Verify that the IUT, after the user has invoked DTMF dialling with defined tone length, sends a {CC-INFO} message with a <<MULTI-KEYPAD>> information element containing keypad-info '16H' (goto DTMF, infinite tone length). (feature N.22 in ETS 300 444 [11])</p>
TP/PT/CC/BV/CI-10	<p>Reference: ETS 300 175-5 [5], subclause 9.3.1.5 ETS 300 444 [11], subclause 8.10, table 20</p> <p>Initial state: T-02</p> <p>Verify that the IUT, after the user has invoked the sending of the basic digits (0-9, star, hash mark), sends one or more {CC-INFO} messages with <<MULTI-KEYPAD>> information elements containing the basic digits. (feature N.4 in ETS 300 444 [11])</p>
TP/PT/CC/BV/CI-11	<p>Reference: ETS 300 175-5 [5], subclause 9.3.1.5 ETS 300 444 [11], subclause 8.18, table 30 and 31</p> <p>Initial state: T-00</p> <p>Verify that the IUT, after the user has invoked an internal call, performs one of the possible internal call setups, as described in ETS 300 444 [11], subclause 8.18, table 30 and 31.</p> <p>PT can either send internal call specification in the CC-SETUP PDU, or in the CC-INFO PDU later on</p>
TP/PT/CC/BV/CI-12	<p>Reference: ETS 300 175-5 [5], subclause 9.3.1.5 ETS 300 444 [11], subclause 8.16, table 27</p> <p>Initial state: T-10</p> <p>Verify that the IUT, on reception of <<MULTI_DISPLAY>> information elements, containing standard characters in {CC-INFO} messages, is able to show these characters on the display.</p>
TP/PT/CC/BV/CI-13	<p>Reference: ETS 300 175-5 [5], subclause 9.3.1.5 ETS 300 444 [11], subclause 8.16, table 27</p> <p>Initial state: T-10</p> <p>Verify that the IUT, on reception of <<MULTI_DISPLAY>> information elements, containing control characters in {CC-INFO} messages, is able to understand and react upon these characters.</p>
TP/PT/CC/BV/CI-14	<p>Reference: ETS 300 175-5 [5], subclause 9.3.1.5 ETS 300 444 [11], subclause 8.10, table 20</p> <p>Initial state: T-10</p> <p>Verify that the IUT, after invocation of 'register recall', is able to activate the feature register recall in a {CC-INFO} message.</p>

5.2.3.4 CC/BV/CR test purposes

Test subgroup objectives:

To check the IUT's behaviour to release an outgoing and incoming call.

Test purposes:

TP/PT/CC/BV/CR-01	Reference: ETS 300 175-5 [5], subclause 9.5.1 ETS 300 444 [11], subclause 8.3.2.4 Initial state: T-02 Verify that the IUT is able to process a FT initiated normal release.
TP/PT/CC/BV/CR-02	Reference: ETS 300 175-5 [5], subclause 9.5.1 ETS 300 444 [11], subclause 8.7 Initial state: T-03 Verify that the IUT is able to process a FT initiated normal release.
TP/PT/CC/BV/CR-03	Reference: ETS 300 175-5 [5], subclause 9.5.1 ETS 300 444 [11], subclause 8.7 Initial state: T-04 Verify that the IUT is able to process a FT initiated normal release.
TP/PT/CC/BV/CR-04	Reference: ETS 300 175-5 [5], subclause 9.5.1 ETS 300 444 [11], subclause 8.7 Initial state: T-08 Verify that the IUT is able to process a FT initiated normal release.
TP/PT/CC/BV/CR-05	Reference: ETS 300 175-5 [5], subclause 9.5.1 ETS 300 444 [11], subclause 8.7 Initial state: T-10 Verify that the IUT is able to process a FT initiated normal release.
TP/PT/CC/BV/CR-06	Reference: ETS 300 175-5 [5], subclause 9.5.1 ETS 300 444 [11], subclause 8.7 Initial state: T-10 Verify that the IUT is able to process an IUT initiated normal release.
TP/PT/CC/BV/CR-07	Reference: ETS 300 175-5 [5], subclause 9.5.2 ETS 300 444 [11], subclause 8.2.2.3 Initial state: T-01 Verify that the IUT is able to process a FT initiated abnormal release.
TP/PT/CC/BV/CR-08	Reference: ETS 300 175-5 [5], subclause 9.5.2 ETS 300 444 [11], subclause 8.3.2.2 ETS 300 323-1 [9], subclause 5.3.1.4 Initial state: T-02 Verify that the IUT is able to process a FT initiated abnormal release.

TP/PT/CC/BV/CR-09	Reference: ETS 300 175-5 [5], subclause 9.5.2 ETS 300 444 [11], subclause 8.8 Initial state: T-10 Verify that the IUT is able to process a FT initiated abnormal release.
TP/PT/CC/BV/CR-10	Reference: ETS 300 175-5 [5], subclause 14.2.7 ETS 300 444 [11], subclause 8.9 Initial state: T-10 Verify that the IUT is able to process a FT initiated partial release.
TP/PT/CC/BV/CR-11	Reference: ETS 300 175-5 [5], subclause 14.2.7 ETS 300 444 [11], subclause 8.9 Initial state: T-10 Verify that the IUT is able to process an IUT initiated partial release.

5.2.3.5 CC/BV/SC test purposes

There are no test purposes defined for this group in this ETS.

5.2.3.6 CC/BV/PM test purposes

There are no test purposes defined for this group in this ETS.

5.2.3.7 CC/BV/RS test purposes

Test subgroup objectives:

To check the IUT's behaviour during any call related procedures.

Test purposes:

TP/PT/CC/BV/RS-01	Reference: ETS 300 175-5 [5], subclause 9.3.2 ETS 300 444 [11], subclause 8.12, table 21 Initial state: T-00 Verify that the IUT shows the calling party number correctly on receipt of calling party number indication before accepting a call. (feature N.30 in ETS 300 444 [11])
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5.2.4 CC/BO test purposes

Test group objectives:

To check the CC of the IUT in response to the messages that are syntactically correct but not allowed to occur in some states of the CC procedures.

Test purposes:

TP/PT/CC/BO-01	Reference: ETS 300 175-5 subclause 17.4.1 ETS 300 444 [11], subclause 6.9.4 Initial state: T-03 Verify that the IUT ignores the unexpected message {CC-CALL-PROC}. The {CC-CALL-PROC} message occurs in an unexpected state.
TP/PT/CC/BO-02	Reference: ETS 300 175-5 subclause 17.4.1 ETS 300 444 [11], subclause 8.7.2.1, figure 21 Initial state: T-19 Verify that the IUT is able to react correctly on a release collision, in the sense that on the reception of a {CC-RELEASE} message in state F-19, no {CC-RELEASE-COM} message is sent back, and the call is cleared.

5.2.5 CC/BI test purposes

Test group objectives:

To check the CC module of the IUT in response to invalid messages.

Test purposes:

TP/PT/CC/BI-01	Reference: ETS 300 175-5 [5], subclause 17.6.1 ETS 300 444 [11], subclause 6.9.4 Initial state: T-00 Verify that the IUT sends a {CC-RELEASE-COM} message, on receipt of a {CC-SETUP} message with a mandatory information element missing. The mandatory information element that is missing, is 'basic service'.
TP/PT/CC/BI-02	Reference: ETS 300 175-5 subclause 17.6.2 ETS 300 444 [11], subclause 6.9.4 Initial state: T-00 Verify that the IUT on receipt of a {CC-SETUP} message containing a mandatory information element with invalid contents returns a {CC-RELEASE-COM} message. The mandatory information element 'portable_id' has invalid contents
TP/PT/CC/BI-03	Reference: ETS 300 175-5 subclause 17.4.1 ETS 300 444 [11], subclause 6.9.4 Initial state: T-10 Verify that the IUT ignores an unrecognised message, when it is constructed as a {CC-SETUP} with one bit wrong in the <<message type>>.

5.2.6 CC/TI test purposes

Test group objectives:

To check the IUT's properly reacting to an expiry of one of the timers.

Test purposes:

TP/PT/CC/TI-01	<p>Reference: ETS 300 175-5 [5], subclause 9.5.1 ETS 300 444 [11], subclause 8.7.2.3</p> <p>Initial state: T-19 Verify that the IUT, after having started timer P-<CC.02>, sends a {CC-RELEASE-COM} message when the timer expires after the defined time. The {CC-RELEASE-COM} message should arrive within the allowed margin time of $\pm 5\%$.</p>
TP/PT/CC/TI-02	<p>Reference: ETS 300 175-5 [5], subclause 9.3.2.1 ETS 300 444 [11], subclause 8.2.2.1</p> <p>Initial state: T-01 Verify that the IUT, after having started timer P-<CC.03>, sends a {CC-RELEASE-COM} message when the timer expires after the defined time. The {CC-RELEASE-COM} message should arrive within the allowed margin time of $\pm 5\%$.</p>
TP/PT/CC/TI-03	<p>Reference: ETS 300 175-5 [5], subclause 9.3.2.1 ETS 300 444 [11], subclause 8.2.1.1</p> <p>Initial state: T-01 Verify that the IUT is able to restart timer P-<CC.03>. on receipt of a {CC-NOTIFY} message, sent by the FT.</p>
TP/PT/CC/TI-04	<p>Reference: ETS 300 175-5 [5], subclause 9.3.2.8 ETS 300 444 [11], subclause 8.15.2.3</p> <p>Initial state: T-08 Verify that the IUT, after having started timer P-<CC.05>, releases the call using the normal procedure when the timer expires after the defined time. The {CC-RELEASE} message should arrive within the allowed margin time of $\pm 5\%$.</p>

5.3 MM test purposes

Test group objectives:

To check the behaviour of the MM module of the IUT. The initial states are not fixed. The manufacturer has to decide in which state the test case is to be done.

Subgroups:

- IT;
- CA;
- BV;
- BO;
- BI;
- TI.

5.3.1 MM/IT test purposes

There are no test purposes defined for this group in this ETS.

5.3.2 MM/CA test purposes

There are no test purposes defined for this group in this ETS.

5.3.3 MM/BV test purposes

Subgroups:

- ID;
- AU;
- LO;
- AR;
- KA;
- PR;
- CH.

5.3.3.1 MM/BV/ID test purposes

Test subgroup objectives:

To check the IUT's behaviours of identity request procedure.

Test purposes:

TP/PT/MM/BV/ID-01	<p>Reference: ETS 300 175-5 [5], subclause 13.2.1 ETS 300 444 [11], subclause 8.19, figure 43</p> <p>Initial state: T-00</p> <p>Verify that the IUT, on receipt of an {IDENTITY-REQUEST} message specifying the International Portable User Identity (IPUI), returns an {IDENTITY-REPLY} message with the IPUI.</p>
TP/PT/MM/BV/ID-02	<p>Reference: ETS 300 175-5 [5], subclause 13.2.1 ETS 300 444 [11], subclause 8.19.2.1</p> <p>Initial state: T-00</p> <p>Verify that the IUT, on receipt of an {IDENTITY-REQUEST} message specifying an unavailable identity type, returns an {IDENTITY-REPLY} message without identity information elements thereby indicating reject.</p>
TP/PT/MM/BV/ID-03	<p>Reference: ETS 300 175-5 [5], subclause 13.2.1</p> <p>Initial state: T-00</p> <p>Verify that the IUT, on receipt of an {IDENTITY-REQUEST} message specifying a portable identity with IPUI type for which it has stored more than one identity, returns an {IDENTITY-REPLY} message with all available portable id's with IPUI type.</p> <p>In order for the IUT to receive more than one portable_id, a second accessrights request will have to be done, assigning a second portabis id.</p>
TP/PT/MM/BV/ID-04	<p>Reference: ETS 300 175-5 [5], subclause 13.2.1</p> <p>Initial state: T-00</p> <p>Verify that the IUT, on receipt of an {IDENTITY-REQUEST} message specifying a fixed identity with Portable Access Rights Key (PARK) type for which it has stored more than one identity, returns an {IDENTITY-REPLY} message with all available fixed id's with PARK type.</p> <p>In order for the IUT to receive more than one fixed_id, a second accessrights request will have to be done, assigning a second fixed-id.</p>
TP/PT/MM/BV/ID-08	<p>Reference: ETS 300 175-5 [5], subclause 13.2.1 ETS 300 444 [11], subclause 8.19, figure 43</p> <p>Initial state: T-00</p> <p>Verify that the IUT, on receipt of an {IDENTITY-REQUEST} message specifying the PARK, returns an {IDENTITY-REPLY} message with the PARK.</p>

5.3.3.2 MM/BV/AU test purposes

Test subgroup objectives:

To check the IUT's valid behaviours of the authentication procedure.

Test purposes:

TP/PT/MM/BV/AU-01	<p>Reference: ETS 300 175-5 [5], subclause 13.3.1 ETS 300 444 [11], subclause 8.21</p> <p>Initial state: T-00 Verify that the IUT is able to operate the basic authentication of PT procedure. (IUT has not stored ZAP value and service class information.) Authentication will be based on a User Authentication Key (UAK), so a precondition to this test will be that the UAK is assigned. A DCK will not be stored by the PT. It is assumed that the IUT will reply to the authentication request automatically, without any user intervention needed.</p>
TP/PT/MM/BV/AU-02	<p>Reference: ETS 300 175-5 [5], subclause 13.3.1 ETS 300 444 [11], subclause 8.21.2.1</p> <p>Initial state: T-00 Verify that the IUT, on receipt of an {AUTH-REQUEST} message containing unacceptable algorithm, returns an {AUTH-REJECT} message. Authentication will be based on UAK, so a precondition to this test will be that the UAK is assigned.</p>
TP/PT/MM/BV/AU-03	<p>Reference: ETS 300 175-5 [5], subclause 13.3.1 ETS 300 444 [11], subclause 8.23</p> <p>Initial state: T-00 Verify that the IUT, when it has stored ZAP value, includes the <<ZAP field>> in the {AUTH-REPLY} message during the authentication of PT procedure. Authentication will be based on UAK, so a precondition to this test will be that the UAK is assigned</p>
TP/PT/MM/BV/AU-04	<p>Reference: ETS 300 175-5 [5], subclause 13.3.1 ETS 300 444 [11], subclause 8.23</p> <p>Initial state: T-00 Verify that the IUT increments the ZAP field during an authentication of PT procedure. The IUT may or may not authenticate the FT before incrementing the ZAP value. Authentication will be based on UAK, so a precondition to this test will be that the UAK is assigned.</p>
TP/PT/MM/BV/AU-05	<p>Reference: ETS 300 175-5 [5], subclause 13.3.1 ETS 300 444 [11], subclause 8.23</p> <p>Initial state: T-00 Verify that the IUT, if it supports authentication of FT as part of the increment ZAP procedure, does not increment the ZAP value if the FT authentication fails. Authentication will be based on UAK, so a precondition to this test will be that the UAK is assigned.</p>

TP/PT/MM/BV/AU-06	<p>Reference: ETS 300 175-5 [5], subclause 13.8 and 7.7.24 ETS 300 444 [11], subclause 8.24</p> <p>Initial state: T-00</p> <p>Verify that the IUT, receiving an {AUTH-REQ} message containing an <<AUTH-TYPE>> information element, containing UPC bit = 1 (store DCK), stores the DCK and that the DCK can be used again in a successive FT initiated ciphering procedure.</p> <p>Authentication will be based on UAK, so a precondition to this test will be that the UAK is assigned. The testpurpose will be checked by switching on ciphering, and afterwards requesting an identity (IPUI) of the IUT. If no response is received on this identity request, LT and IUT are probably ciphering with a different DCK.</p>
TP/PT/MM/BV/AU-07	<p>Reference: ETS 300 175-5 [5], subclause 13.3.2 ETS 300 444 [11], subclause 8.22</p> <p>Initial state: T-00</p> <p>Verify that the IUT is able to operate the basic authentication of user procedure.</p>
TP/PT/MM/BV/AU-08	<p>Reference: ETS 300 175-5 [5], subclause 13.3.3 ETS 300 444 [11], subclause 8.20</p> <p>Initial state: specified in PIXIT</p> <p>Verify that the IUT, after invoking the basic authentication of FT procedure, is able to operate the procedure.</p> <p>Authentication will be based on UAK, so a precondition to this test will be that the UAK is assigned.</p>
TP/PT/MM/BV/AU-09	<p>Reference: ETS 300 175-5 [5], subclause 13.3.1 ETS 300 444 [11], subclause 8.23</p> <p>Initial state: T-00</p> <p>Verify that the IUT, when it has stored service class information, includes the <<Service class>> information elements in the {AUTH-REPLY} message during the authentication of PT procedure.</p> <p>Authentication will be based on UAK, so a precondition to this test will be that the UAK is assigned.</p>

5.3.3.3 MM/BV/LO test purposes

Test subgroup objectives:

To check the IUT's valid behaviours of the location procedure.

Test purposes:

TP/PT/MM/BV/LO-01	<p>Reference: ETS 300 175-5 [5], subclause 13.4.1 ETS 300 444 [11], subclause 8.25</p> <p>Initial state: T-00 Verify that the IUT, if the a44 and a38 bits in the FT broadcasted "higher layer capabilities" were set to "1", is capable to operate the basic location registration procedure after it performed the obtain access rights procedure. (FT does not perform TPUI assignment). See note</p>
TP/PT/MM/BV/LO-02	<p>Reference: ETS 300 175-5 [5], subclause 13.4.1 ETS 300 444 [11], subclause 8.25</p> <p>Initial state: T-00. Verify that the IUT, if the a44 and a38 bits in the FT broadcasted "higher layer capabilities" were set to "1", is capable to operate the basic location registration procedure after it performed the obtain access rights procedure. (FT does perform TPUI assignment). See note</p>
TP/PT/MM/BV/LO-03	<p>Reference: ETS 300 175-5 [5], subclause 13.4.1 ETS 300 444 [11], subclause 8.25</p> <p>Initial state: T-00. Verify that the IUT, if the a44 bit in the FT broadcasted "higher layer capabilities" was set to "1" but a38 is set to "0", does not initiate location registration procedure after it performed the obtain access rights procedure. See note</p>
TP/PT/MM/BV/LO-04	<p>Reference: ETS 300 175-5 [5], subclause 13.4.1 ETS 300 444 [11], subclause 8.25</p> <p>Initial state: T-00 Verify that the IUT, if the a38 bit in the FT broadcasted "higher layer capabilities" was set to "1" and if location area changes not during a CC call, is able to operate location registration procedure. (FT does not perform TPUI assignment). See note</p>
TP/PT/MM/BV/LO-05	<p>Reference: ETS 300 175-5 [5], subclause 13.4.1 ETS 300 444 [11], subclause 8.25</p> <p>Initial state: T-00. Verify that the IUT, if the a38 bit in the FT broadcasted "higher layer capabilities" was set to "1", after power-off and power-on and after locking to the FT to which it has access rights, will initiate location registration procedure. See note</p>
TP/PT/MM/BV/LO-06	<p>Reference: ETS 300 175-5 [5], subclause 13.4.1 ETS 300 444 [11], subclause 8.25</p> <p>Initial state: T-00 Verify that the IUT, during a location registration procedure on receipt of a {LOCATE-ACCEPT} message specifying an unacceptable TPUI, will reject the assignment.</p>
TP/PT/MM/BV/LO-07	<p>Reference: ETS 300 175-5 [5], subclause 13.4.1 ETS 300 444 [11], subclause 8.25</p> <p>Initial state: T-00 Verify that the IUT, entering a new location area, deletes the individual assigned TPUI, before performing the location registration procedure. This shall be done by verifying that the IUT does not return the deleted TPUI in the identity request procedure.</p>

TP/PT/MM/BV/LO-08	Reference: ETS 300 175-5 [5], subclause 13.7 ETS 300 444 [11], subclause 8.26 Initial state: T-00 Verify that the IUT, as part of the parameter retrieval procedure on receipt of a location update request, will start location registration procedure within reasonable time, when in the broadcast attributes bit a38 was set to "1".
TP/PT/MM/BV/LO-09	Reference: ETS 300 175-5 [5], subclause 13.7 ETS 300 444 [11], subclause 8.26 Initial state: T-00 Verify that the IUT, as part of the parameter retrieval procedure on receipt of a location update request, will start location registration procedure within reasonable time, even when in the broadcast attributes bit a38 was set to "0".
NOTE:	The phrase 'bit a38 was set to 1' means: the bit a38 had the value of 1 during the time the PT locked to the IUT.

5.3.3.4 MM/BV/AR test purposes

Test subgroup objectives:

To check the IUT's valid behaviours of the access rights procedure.

Test purposes:

TP/PT/MM/BV/AR-01	<p>Reference: ETS 300 175-5 [5], subclause 13.5.1 ETS 300 444 [11], subclause 8.27, figure 53</p> <p>Initial state: No accessrights Verify that the IUT, after invocation, if the a44 bit in the FT broadcasted "higher layer capabilities" is set to "1" is able to perform the basic operation of the obtain access rights procedure. (PT has only Authentication Code (AC))</p>
TP/PT/MM/BV/AR-03	<p>Reference: ETS 300 175-5 [5], subclause 13.5.1 ETS 300 444 [11], subclause 8.27</p> <p>Initial state: T-00 Verify that the IUT, after invocation, if the a44 bit in the FT broadcasted "higher layer capabilities" is set to "0" does not initiate obtain access rights procedure after it has locked to the FT.</p>
TP/PT/MM/BV/AR-05	<p>Reference: ETS 300 175-5 [5], subclause 13.5.2 ETS 300 444 [11], subclause 8.28, figure 55</p> <p>Initial state: T-00 Verify that the IUT, is able to perform the basic operation of the FT initiated terminate access rights procedure. (IUT may or may not authenticate the FT before performing the procedure.)</p>
TP/PT/MM/BV/AR-06	<p>Reference: ETS 300 175-5 [5], subclause 13.5.2 ETS 300 444 [11], subclause 8.28.2.1, figure 56</p> <p>Initial state: T-00 Verify that the IUT, if requested by the FT to terminate the access rights, will first try to authenticate the FT and if this procedure fails, rejects the access rights terminate procedure.</p>
TP/PT/MM/BV/AR-09	<p>Reference: ETS 300 175-5 [5], subclause 13.5.1 ETS 300 444 [11], subclause 8.28, figure 55</p> <p>Initial state: T-00 Verify that the IUT, on receipt of the {ACCESS-RIGHTS-ACCEPT} message containing the information element <<ZAP-FIELD>>, will store this information.</p>
TP/PT/MM/BV/AR-10	<p>Reference: ETS 300 175-5 [5], subclause 13.5.1 ETS 300 444 [11], subclause 8.28, figure 55</p> <p>Initial state: T-00 Verify that the IUT, on receipt of the {ACCESS-RIGHTS-ACCEPT} message containing the information element <<SERVICE-CLASS>>, will store this information.</p>

5.3.3.5 MM/BV/KA test purposes

Test subgroup objectives:

To check the IUT's valid behaviour of the key allocation procedure.

Test purposes:

TP/PT/MM/BV/KA-01	Reference: ETS 300 175-5 [5], subclause 13.6 ETS 300 444 [11], subclause 8.29, figure 57 Initial state: T-00 Verify that the IUT is able to operate the basic key allocation procedure.
TP/PT/MM/BV/KA-02	Reference: ETS 300 175-5 [5], subclause 13.6 ETS 300 444 [11], subclause 8.29.2.3, figure 58 Initial state: T-00 Verify that the IUT is able to send an {AUTH_REJECT} message as a response to the key allocation procedure when the <<Allocation type>> information element is not acceptable.
TP/PT/MM/BV/KA-03	Reference: ETS 300 175-5 [5], subclause 13.6 ETS 300 444 [11], subclause 8.29.2.5, figure 60 Initial state: T-00 Verify that after failure of the authentication of FT as part of the key allocation procedure, the PT retains the AC and does not convert it into a User Authentication Key (UAK).

5.3.3.6 MM/BV/PR test purposes

Test subgroup objectives:

To check the IUT's valid behaviour of the parameter retrieval procedure.

Test purpose:

TP/PT/MM/BV/PR-01	Reference: ETS 300 175-5 [5], subclause 13.7 Initial state: specified in PIXIT Verify that the IUT, after invocation, is able to operate the basic operation of the PT initiated parameter retrieval procedure.
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5.3.3.7 MM/BV/CH test purposes

Test subgroup objectives:

To check the IUT's valid behaviour of the ciphering procedure.

Test purposes:

TP/PT/MM/BV/CH-01	<p>Reference: ETS 300 175-5 [5], subclause 13.8 ETS 300 444 [11], subclause 8.31, figure 63</p> <p>Initial state: specified in PIXIT</p> <p>Verify that the IUT, being in unciphered mode, is able to operate the basic PT initiated cipher-switching procedure requesting "cipher-on".</p>
TP/PT/MM/BV/CH-02	<p>Reference: ETS 300 175-5 [5], subclause 13.8 ETS 300 444 [11], subclause 8.31, figure 63</p> <p>Initial state: specified in PIXIT</p> <p>Verify that the IUT, being in ciphered mode, is able to operate the basic PT initiated cipher-switching procedure requesting "cipher-off".</p>
TP/PT/MM/BV/CH-03	<p>Reference: ETS 300 175-5 [5], subclause 13.8 ETS 300 444 [11], subclause 8.30, figure 61</p> <p>Initial state: T-00</p> <p>Verify that the IUT, being in unciphered mode, is able to operate the basic FT initiated cipher-switching procedure requesting "cipher-on".</p>
TP/PT/MM/BV/CH-04	<p>Reference: ETS 300 175-5 [5], subclause 13.8 ETS 300 444 [11], subclause 8.30, figure 61</p> <p>Initial state: specified in PIXIT</p> <p>Verify that the IUT, being in ciphered mode, is able to operate the basic FT initiated cipher-switching procedure requesting "cipher-off".</p>
TP/PT/MM/BV/CH-05	<p>Reference: ETS 300 175-5 [5], subclause 13.8 ETS 300 444 [11], subclause 8.30, figure 61</p> <p>Initial state: T-00</p> <p>Verify that the IUT, being in unciphered mode, on receipt of a {CIPHER-REQUEST} message containing unacceptable algorithm or key and requesting "cipher-on", will reject the request.</p>
TP/PT/MM/BV/CH-08	<p>Reference: ETS 300 175-7 [7], subclause 6.4.7 ETS 300 444 [11], subclause 10.15</p> <p>Initial state: specified in PIXIT</p> <p>Check that the IUT releases the basic connection when it cannot conclude the procedure to switch from clear mode to encrypt mode (PT initiated cipher-switching).</p>
TP/PT/MM/BV/CH-09	<p>Reference: ETS 300 175-7 [7], subclause 6.4.7 ETS 300 444 [11], subclause 10.15</p> <p>Initial state: specified in PIXIT</p> <p>Check that the IUT, for a duplex bearer, correctly initiates and completes an intercell bearer handover procedure using basic set-up when encryption is enabled (PT initiated cipher-switching).</p>
TP/PT/MM/BV/CH-10	<p>Reference: ETS 300 175-7 [7], subclause 6.4.6 ETS 300 444 [11], subclause 10.14</p> <p>Initial state: specified in PIXIT</p> <p>Check that the IUT, for a duplex bearer, correctly initiates and completes an intracell bearer handover procedure using basic set-up when encryption is enabled (PT initiated cipher-switching).</p>

TP/PT/MM/BV/CH-11	<p>Reference: ETS 300 175-7 [7], subclause 6.4.6 ETS 300 444 [11], subclause 10.14</p> <p>Initial state: specified in PIXIT</p> <p>Check that the IUT releases the basic connection when it cannot conclude the procedure to switch from encrypt mode to clear mode (PT initiated cipher off procedure).</p>
TP/PT/MM/BV/CH-12	<p>Reference: ETS 300 175-7 [7], subclause 6.4.6 ETS 300 444 [11], subclause 10.14</p> <p>Initial state: T-00</p> <p>Check that the IUT releases the basic connection when it cannot conclude the procedure to switch from clear mode to encrypt mode (FT initiated cipher-switching).</p>
TP/PT/MM/BV/CH-13	<p>Reference: ETS 300 175-7 [7], subclause 6.4.6 ETS 300 444 [11], subclause 10.14</p> <p>Initial state: T-00</p> <p>Check that the IUT, for a duplex bearer, correctly initiates and completes an intercell bearer handover procedure using basic set-up when encryption is enabled (FT initiated cipher-switching).</p>
TP/PT/MM/BV/CH-14	<p>Reference: ETS 300 175-7 [7], subclause 6.4.7 ETS 300 444 [11], subclause 10.15</p> <p>Initial state: T-00</p> <p>Check that the IUT, for a duplex bearer, correctly initiates and completes an intracell bearer handover procedure using basic set-up when encryption is enabled (FT initiated cipher-switching).</p>
TP/PT/MM/BV/CH-15	<p>Reference: ETS 300 175-7 [7], subclause 6.4.6 ETS 300 444 [11], subclause 10.14</p> <p>Initial state: specified in PIXIT</p> <p>Check that the IUT releases the basic connection when it cannot conclude the procedure to switch from encrypt mode to clear mode (FT initiated cipher off procedure).</p>

5.3.4 MM/BO test purposes

Test group objectives:

To check the MM of the IUT in response to the messages that are syntactically correct but not allowed to occur in some phase of the MM procedures.

Test purpose:

TP/PT/MM/BO-01	<p>Reference: ETS 300 175-5 [5], subclause 17.4.4 ETS 300 444 [11], subclause 6.9.4</p> <p>Initial state: T-00</p> <p>Verify that the IUT ignores the unexpected message {ACCESS-RIGHTS-ACCEPT} after the IUT has initiated the location registration procedure.</p>
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5.3.5 MM/BI test purposes

Test group objectives:

To check the MM module of the IUT in response to invalid messages.

Test purposes:

TP/PT/MM/BI-01	Reference: ETS 300 175-5 [5], subclause 17.4.4 ETS 300 444 [11], subclause 6.9.4 Initial state: T-00 Verify that the IUT ignores an invalid message with an unrecognised message type.
TP/PT/MM/BI-02	Reference: ETS 300 175-5 [5], subclause 17.6.4 ETS 300 444 [11], subclause 6.9.4 Initial state: T-00 Verify that the IUT's response to a {CIPHER-REQUEST} message with invalid <<cipher info>> information element is the sending of a {CIPHER-REJECT} message.
TP/PT/MM/BI-03	Reference: ETS 300 175-5 [5], subclause 17.6.4 ETS 300 444 [11], subclause 6.9.4 Initial state: T-00 Verify that the IUT, on receipt of an {AUTHENT-REQUEST} message without <<rand>> information element, sends back an {AUTH-REJECT} message.
TP/PT/MM/BI-04	Reference: ETS 300 175-5 [5], subclause 17.6.4 ETS 300 444 [11], subclause 6.9.4 Initial state: No accessrights Verify that the IUT, during a PT-initiated Obtain access rights procedure ignores an {ACCESS-RIGHTS-ACC} message containing a <<portable-id>> information element with invalid content.

5.3.6 MM/TI test purposes

Test group objectives:

To check the IUT's properly reacting to an expiry of one of the timers.

Test purposes:

TP/PT/MM/TI-01	<p>Reference: ETS 300 175-5 [5], subclause 13.3.3 ETS 300 444 [11], subclause 8.29.2.2</p> <p>Initial state: T-00</p> <p>Verify that the IUT, when the timer P-<MM_auth.1> as part of the key allocation procedure expires after the defined time ($\pm 5\%$), aborts the procedure and thus allows the same priority procedure identity request of PT to proceed.</p>
TP/PT/MM/TI-02	<p>Reference: ETS 300 175-5 [5], subclause 13.3.3 ETS 300 444 [11], subclause 8.20.1.1</p> <p>Initial state: T-00</p> <p>Verify that the IUT is capable of completing the FT Authentication procedure at a point in time 10% before expiry of the timer P-<MM_auth.1>.</p>
TP/PT/MM/TI-03	<p>Reference: ETS 300 175-5 [5], subclause 13.4.1 ETS 300 444 [11], subclause 8.25.2.2</p> <p>Initial state: T-00</p> <p>Verify that the IUT is capable of completing the Location Registration procedure at a point in time 10% before expiry of the timer P-<MM_locate.1>.</p>
TP/PT/MM/TI-04	<p>Reference: ETS 300 175-5 [5], subclause 13.5.1 ETS 300 444 [11], subclause 8.27.2.2</p> <p>Initial state: T-00</p> <p>Verify that the IUT is capable of obtaining Access Rights at a point in time 10% before expiry of the timer P-<MM_access.1>.</p>
TP/PT/MM/TI-05	<p>Reference: ETS 300 175-5 [5], subclause 13.8 ETS 300 444 [11], subclause 8.31.2.2</p> <p>Initial state: T-00</p> <p>Verify that the IUT is capable of completing the PT Initiated Ciphering procedure at a point in time 10% before expiry of the timer P-<MM_cipher.2>.</p>

5.4 ME test purposes

Subgroups:

- BV;
- BO.

5.4.1 ME/BV test purposes

Test group objectives:

To check priority scheme in the MM entity and interleaving operation of MM entity and CC entity of the IUT.

Test purposes:

TP/PT/ME/BV-01	Reference: ETS 300 175-5 [5], subclause 15.5 ETS 300 444 [11], subclause 6.9.6 Initial state: T-00 Verify that the IUT is able to operate the authentication of PT procedure before answering to the {CC-SETUP} message.
TP/PT/ME/BV-02	Reference: ETS 300 175-5 [5], subclause 15.5 ETS 300 444 [11], subclause 8.26 Initial state: specified in PIXIT Verify that the IUT, if interrupted by the parameter retrieval procedure indicating "locate suggest" during the PT initiated cipher switching procedure, finishes the ciphering procedure before initiating the location registration.
TP/PT/ME/BV-03	Reference: ETS 300 175-5 [5], subclause 15.5 ETS 300 444 [11], subclause 6.9.6 Initial state: No accessrights Verify that the IUT is able to perform authentication of the user request, when it interrupts an obtain access rights procedure.
TP/PT/ME/BV-04	Reference: ETS 300 175-5 [5], subclause 15.5 ETS 300 444 [11], subclause 6.9.6 Initial state: No accessrights Verify that the IUT is able to perform authentication of PT request, when it interrupts an obtain access rights procedure.
TP/PT/ME/BV-05	Reference: ETS 300 175-5 [5], subclause 15.5 ETS 300 444 [11], subclause 6.9.6 Initial state: T-00 Verify that the IUT is able to operate the authentication of PT procedure performed in parallel with an outgoing call establishment.
TP/PT/ME/BV-06	Reference: ETS 300 175-5 [5], subclause 15.5 ETS 300 444 [11], subclause 6.9.6 Initial state: T-00 Verify that the IUT is able to perform the FT initiated cipher-switching procedure in parallel with an outgoing call establishment.
TP/PT/ME/BV-07	Reference: ETS 300 175-5 [5], subclause 15.5 ETS 300 444 [11], subclauses 6.9.6 and 8.30 Initial state: T-00 Verify that the IUT is able to perform the FT initiated cipher-switching procedure, before reception of a {CC_SETUP_ACK} message during an outgoing call establishment.

TP/PT/ME/BV-09	Reference: ETS 300 175-5 [5], subclause 13.8 and 7.7.24 ETS 300 444 [11], subclause 8.24 Initial state: T-00 Verify that the IUT is able to operate correctly the procedure for storing the DCK started in cipher mode. The IUT shall store the DCK, but not use it for the current ciphering session.
TP/PT/ME/BV-10	Reference: ETS 300 175-5 [5], subclause 13.4.1 ETS 300 444 [11], subclause 8.25 Initial state: T-10 Verify that the IUT, if the a38 bit in the FT broadcasted "higher layer capabilities" was set to "1" and if location area changes during a CC call, will initiate location registration procedure before or after entering the T-00 state. (FT does not perform TPUI assignment.)
TP/PT/ME/BV-11	Reference: ETS 300 175-5 [5], subclause 15.5 ETS 300 444 [11], subclause 6.9.6 Initial state: T-00 Verify that the IUT is able to operate the terminate access rights procedure before answering to the {CC-SETUP} message.
TP/PT/ME/BV-12	Reference: ETS 300 175-5 [5], subclause 14.2.7 ETS 300 444 [11], subclause 8.34 Initial state: T-10 Verify that the IUT, when the link fails during an active call, will clear the call.
TP/PT/ME/BV-13	Reference: ETS 300 175-5 [5], subclause 13.5.1 ETS 300 444 [11], subclause 8.27 Initial state: No accessrights Verify that the IUT, after invocation, if the a44 bit in the FT broadcasted "higher layer capabilities" is set to "1", is able to accept key allocation procedure interrupting obtaining access rights procedure and to continue normal operation.

5.4.2 ME/BO test purposes

Test group objectives:

To check priority scheme in the MM entity and interleaving operation of MM entity and CC entity of the IUT in response to the messages that are syntactically correct but not allowed to occur at certain phase.

Test purpose:

TP/PT/ME/BO-01	Reference: ETS 300 175-5 [5], subclauses 17.4.4 and 15.5 ETS 300 444 [11], subclauses 6.9.6 and 13.1 Initial state: T-00 Verify that the IUT, if it receives during a FT authentication procedure an {AUTH-REQUEST} message as an attempt from the FT to initiate the authentication of PT procedure, will ignore the interrupting procedure.
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5.5 LC test purposes

Test group objectives:

To verify the behaviour of the LC entity of the IUT.

Subgroups:

- BV;
- BI;
- TI.

5.5.1 LC/BV test purposes

Subgroups:

- LE;
- LR;
- LS;
- LL.

5.5.1.1 LC/BV/LE test purposes

Test subgroup objectives:

To check the IUT's behaviour of establishing connection oriented link procedure.

Test purposes:

TP/PT/LC/BV/LE-01	Reference: ETS 300 175-5 [5], subclause 14.2.2 ETS 300 444 [11], subclause 8.3.3 Initial state: T-00 Verify that the IUT, when no link to the FT exists, on receipt of a higher layer message is able to operate a direct link establishment procedure.
TP/PT/LC/BV/LE-02	Reference: ETS 300 175-5 [5], subclause 14.2.3 ETS 300 444 [11], subclause 8.32, figure 65 Initial state: T-00 Verify that the IUT is able to respond to indirect (paged) FT-initiated link establishment request which uses a short address request paging and contains correct identity.

5.5.1.2 LC/BV/LR test purposes

Test subgroup objectives:

To check the IUT's valid behaviour of connection oriented link release procedures.

Test purposes:

TP/PT/LC/BV/LR-01	Reference: ETS 300 175-5 [5], subclause 14.2.7 ETS 300 444 [11], subclause 8.36 Initial state: T-00 Verify that the IUT is able to perform a normal release after a MM procedure has been accomplished, and no other entities are using the link.
TP/PT/LC/BV/LR-02	Reference: ETS 300 175-5 [5], subclause 14.2.7 ETS 300 444 [11], subclause 8.36 Initial state: T-07 Verify that the IUT is able to perform a normal release after a CC procedure has been accomplished, and no other entities are using the link.
TP/PT/LC/BV/LR-03	Reference: ETS 300 175-5 [5], subclause 14.2.7 ETS 300 444 [11], subclause 8.36 Initial state: T-07 Verify that the IUT, after a CC requested partial release has been agreed, is able to maintain the link for a specified time, and no other entities are using the link.

5.5.1.3 LC/BV/LS test purposes

Test subgroup objectives:

To check the IUT's valid behaviour of connection oriented link suspend and resume procedures.

Test purposes:

There are no test purposes defined for this group in this ETS.

5.5.1.4 LC/BV/LL test purposes

Test subgroup objectives:

To check the IUT's valid behaviour of connectionless link control procedures.

Test purposes:

There are no test purposes defined for this group in this ETS.

5.5.2 LC/BI test purposes

Test group objectives:

To check the LC entity of the IUT in response to invalid messages.

Test purposes:

TP/PT/LC/BI-01	Reference: ETS 300 175-5 subclause 17.1 ETS 300 444 [11], subclause 6.9.4 Initial state: T-00 Verify that the IUT ignores a message containing a protocol discriminator value that indicates a service that is not supported by the IUT.
TP/PT/LC/BI-03	Reference: ETS 300 175-5 [5], subclause 17.3.1 ETS 300 444 [11], subclause 6.9.4 Initial state: T-00 Verify that the IUT ignores an {IDENTITY-REQUEST} message containing illegal transaction identifier.

5.5.3 LC/TI test purposes

Test group objectives:

To check the IUT's properly reacting to an expiry of one of the timers.

Test purposes:

TP/PT/LC/TI-02	Reference: ETS 300 175-5 [5], subclause 14.2.7 ETS 300 444 [11], subclause 8.36 Initial state: T-00 Verify that the IUT, after termination of an MM procedure, maintains the link for a period of <LCE.02>. The link shall be released in the period (<LCE_02> - 1000) to 10500 ms.
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5.6 IS test purposes

Subgroups:

- BV

5.6.1 IS/BV test purposes

Test group objectives:

To verify the behaviour of the CISS entity of the IUT.

Test purposes:

TP/PT/IS/BV-01	Reference: ETS 300 175-5 [5], subclauses 14.2.1 and 14.2.3 Initial state: T-00 To test the IUT's capability to operating of a CISS outgoing call containing a <<Feature Activate>> information element.
TP/PT/IS/BV-02	Reference: ETS 300 175-5 [5], subclauses 14.2.1 and 14.2.3 Initial state: T-00 To test the IUT's capability of operating a CISS outgoing call containing a <<KEYPAD>> information element.
TP/PT/IS/BV-03	Reference: ETS 300 175-5 [5], subclauses 14.2.1 and 14.2.3 Initial state: T-00 To test the IUT's capability of operating a CISS outgoing call containing a <<Facility>> information element.
TP/PT/IS/BV-04	Reference: ETS 300 175-5 [5], subclauses 14.2.1 and 14.2.3 Initial state: T-00 To test the IUT's capability of operating a CISS incoming call containing <<Facility>> information element.

5.7 MO test purposes

There are no test purposes defined for this group in this ETS.

5.8 CL test purposes

Subgroups:

- BV.

5.8.1 CL/BV test purposes

Test group objectives:

To verify the behaviour of the CLMS entity of the IUT.

Test purposes:

TP/PT/CL/BV-01	Reference: ETS 300 175-5 [5], subclauses 14.2.1 and 14.2.3 Initial state: T-00 To test the IUT's capability of processing a CLMS-FIXED message sent by the FT.
TP/PT/CL/BV-02	Reference: ETS 300 175-5 [5], subclauses 14.2.1 and 14.2.3 Initial state: T-00 To test the IUT's capability to send a CLMS-VARIABLE.
TP/PT/CL/BV-03	Reference: ETS 300 175-5 [5], subclauses 14.2.1 and 14.2.3 Initial state: T-00 To test the IUT's capability to process a CLMS-VARIABLE message.

Annex A (informative): Bibliography

- 1) EWOS/ETSI Project Team No 5: "Project Report and Technical Report. OSI Conformance Testing Methodology and Procedures in Europe".
- 2) ETR 022: "Advanced Testing Methods (ATM); Vocabulary of terms used in communications protocols conformance testing".
- 3) ETR 141: "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; The Tree and Tabular Combined Notation (TTCN) style guide".
- 4) CEPT Recommendation T/SGT SF2 (89) 6/0: "Draft Recommendation T/SF Services and Facilities of Digital Enhanced Cordless Telecommunications".
- 5) ETR 015: "Digital Enhanced Cordless Telecommunications (DECT); Reference document".
- 6) ETR 041: "Transmission and Multiplexing (TM); Digital Enhanced Cordless Telecommunications (DECT); Transmission aspects 3,1 kHz telephony Interworking with other networks".
- 7) ETR 042: "Digital Enhanced Cordless Telecommunications (DECT); A Guide to DECT features that influence the traffic capacity and the maintenance of high radio link transmission quality, including the results of simulations".
- 8) ETR 043: "Digital Enhanced Cordless Telecommunications (DECT); Common interface; Services and Facilities requirements specification".
- 9) ETR 056: "Digital Enhanced Cordless Telecommunications (DECT); System description document".

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