TECHNICAL SPECIFICATION

ISO/TS 16401-1

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Electronic fee collection — Evaluation of equipment for conformity to ISO/TS 17575-2 —

Part 1: Test suite structure and test purposes

Perception du télépéage — Évaluation de conformité de l'équipement à l'ISO/TS 17575-2 —

Partie 1: Structure de la suite d'essais et objectifs d'essai

Reference number
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of document:

— an ISO Publicly Available Specification (ISO/PAS) represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50 % of the members of the parent committee casting a vote;

— an ISO Technical Specification (ISO/TS) represents an agreement between the members of a technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/PAS or ISO/TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/PAS or ISO/TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO/TS 16401-1 was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*, in collaboration with Technical Committee CEN/TC 278, *Road transport and traffic telematics*.

ISO/TS 16401 consists of the following parts, under the general title *Electronic fee collection — Evaluation of equipment for conformity to ISO/TS 17575-2*:

— *Part 1: Test suite structure and test purposes*

— *Part 2: Abstract test suite*

Introduction

This part of ISO/TS 16401 is part of a set of standards that supports interoperability of autonomous EFC-systems, which includes ISO/TS 17575 parts 1 to 4 that define the EFC context data, their *charge report*s and their use of communication infrastructure.

Within the suite of EFC standards this conformance evaluation procedure defines the process and tests for conformity evaluation of Front End Communications API and *Front End application* that comply with the requirements in ISO/TS 17575-2.

This part of ISO/TS 16401 is intended to

— assess Front End Communications API and *Front End application* capabilities,

— assess Front End Communications API and *Front End application* behaviour,

— serve as a guide for Front End Communications API and *Front End application* conformance evaluation and type approval,

— achieve comparability between the results of the corresponding tests applied in different places at different times, and

— facilitate communications between parties.

This part of ISO/TS 16401 is based on

— ISO/TS 17575-2, and

— the ISO/IEC 9646 family of standards on conformance test methodology.

Electronic fee collection — Evaluation of equipment for conformity to ISO/TS 17575-2 —

Part 1:
Test suite structure and test purposes

1 Scope

This part of ISO/TS 16401 specifies the test suite structure (TSS) and test purposes (TP) to evaluate the conformity of Front End Communications API and *Front End application* to ISO/TS 17575-2.

The objective of this part of ISO/TS 16401 is to provide a basis for conformance tests for Front Ent Communications API and *Front End application* in Electronic Fee Collection based on autonomous on-board equipment (OBE) to enable interoperability between different equipment supplied by different manufacturers.

This part of ISO/TS 16401 covers the test purposes for Front End Communications API covering functionalities related to instance handling, session handling, communication service primitives (i.e. sending/receiving of ADUs) and visible state transitions. It fully covers EFC communication services claimed in ISO/TS 17575-2 clause 7 and PICS proforma Clause B.2 ISO/TS 17575-2. Claims related to Front End Storage capacity are outside of the scope of this part of ISO/TS 16401.

This part of ISO/TS 16401 covers the test purposes for *Front End application* related to session establishment on *Back End* request and related to session re-establishment when session requested by *Back End* failed. There are no other claims with respect to *Front End application* claimed in ISO/TS 17575-2.

The underlying communication technology requirements for layer 1-4 specified in Clause 8 ISO/TS 17575-2 is outside of the scope of this part of ISO/TS 16401.

Similarly *Back End* communications API is outside of the scope of this part of ISO/TS 16401. According to ISO/TS 17575-2 it is expected that these Front End Communications API will be reflected in the BE, however BE Communications API is outside of the scope of ISO/TS 17575-2.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/TS 17575-1, *Electronic fee collection — Application interface definition for autonomous systems — Part 2: Charging*

ISO/TS 17575-2, *Electronic fee collection — Application interface definition for autonomous systems — Part 2: Communication and connection to the lower layers*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/TS 17575-1 and the following apply.

3.1
contract
expression of an agreement between two or more parties concerning the use of the road infrastructure

[ISO 14906:2011, definition 3.7]

NOTE A *contract* specifies obligations, permissions and prohibitions for the objects involved.

3.2
Front End application
part of the Front End above the API

3.3
service provider
operator that accepts the user's payment means and in return provides a *road*-use service to the user

NOTE Taken from ISO 14906:2004.

3.4
toll charger
legal entity charging toll for vehicles in a *toll domain*

[ISO/TS 17574:2009, definition 3.27]

4 Abbreviations

For the purposes of this document, the following abbreviations apply throughout the document unless otherwise specified.

ADU	Application Data Unit
API	Application Programming Interface
ASN.1	Abstract Syntax Notation One
ATS	Abstract Test Suite
BE	*Back End*
BI	Invalid Behaviour
BV	Valid Behaviour
CCC	Compliance Check Communication
CN	Cellular Network
DUT	Device Under Tests
EFC	Electronic Fee Collection
FE	Front End
GNSS	Global Navigation Satellite Systems
HMI	Human Machine Interface
ID	Identifier

OBE On-Board Equipment

PCTR Protocol Conformance Test Report

PICS Protocol Implementation Conformance Statements

TP Test Purposes

TSS Test Suite Structure

VAT Value Added Tax

5 Test Suite Structure (TSS)

5.1 Structure

Table 1 — Test Suite Structures shows the Test Suite Structure (TSS).

Table 1 — Test Suite Structures

Group	Type of DUT	Behaviour
Instance Handling	Front End Communications API	Valid Behaviour
		Invalid Behaviour
Session Handling	Front End Communications API	Valid Behaviour
		Invalid Behaviour
	Front End application	Valid Behaviour
Communication Service Primitives	Front End Communications API	Valid Behaviour
		Invalid Behaviour
State Transitions	Front End Communications API	Valid Behaviour

5.2 Reference to conformance test specifications

This part of ISO/TS 16401 takes into account already defined test purposes for conformance to the base standards by referencing them, so that:

a) For test purposes that are **identical** to those defined in the base standards conformance test cases direct reference is reported. For reader's convenience, the title or a verbal description of the referenced test purpose is given, together with the reference.

b) For test purposes that are **derived** from those defined in the base standards conformance test cases, a direct reference is reported, plus an indication on how the referred test purpose has to be modified for the profile conformance testing.

c) For test purposes that are **specific** to ISO/TS 17575-2, a complete description is given.

d) An indication on whether a test purpose is **identical**, **derived**, or **specific** is given in each test purpose.

5.3 Test Purposes (TP)

5.3.1 TP definition conventions

The TPs are defined following the rules shown in Table 2 — TP Definition Rules below. All Test Purposes are defined in Annex A and Annex B, including the special notation and symbol conventions that shall be used.

Table 2 — TP Definition Rules

TP ID according to the TP naming conventions	Title
	Reference
	TP origin
	Initial condition
	Stimulus and expected behaviour

TP ID	The TP ID is a unique identifier. It shall be specified according to the TP naming conventions defined in the sub-clause below.
Title	Short description of Test Purpose objective.
Reference	The reference should contain the references of the subject to be validated by the actual TP (specification reference, clause, paragraph), or the reference to the standard document defining the TP.
TP origin	Indicates if the TP is **identical** to a TP defined in another test standard, **derived** from a TP defined in another test standard, or **specific** for this standard profile.
Initial condition	The condition defines in which initial state the DUT has to be to apply the actual TP.
Stimulus and expected behaviour	Definition of the events the tester performs, and the events that are expected from the DUT to conform to the base specification.

5.3.2 TP naming conventions

Each TP is given a unique identification. This unique identification is built up to contain the following string of information:

TP/<group>/<dut>/<x>-<nn>

TP : to indicate that it is a Test Purpose;

<group> : which group TP belongs to;

<dut> : type of DUT (i.e. API or APPL);

X : type of testing (i.e. Valid Behaviour tests – BV, or Invalid Behaviour tests – BI);

<nn> : sequential TP number (01-99).

The naming conventions are as described in Table 3.

Table 3 — TP naming convention

Identifier: TP/<group>/<dut>/<x>-<nn>

<group>		
applicable for FE Communications API	IH	Instance Handling
applicable for FE Communications API	SH	Session Handling
applicable for FE Application	SH	Session Handling
applicable for FE Communications API	CSP	Communications Service Primitives
applicable for FE Communications API	ST	State Transitions
<dut> = type of DUT	API	Front End Communications API
	APPL	*Front End application*
x = Type of testing	BV	Valid Behaviour Tests
	BI	Invalid Behaviour Tests
<nn> = sequential number	(01-99)	Test Purpose Number

5.4 Protocol Conformance Test Report (PCTR)

The supplier of the Front End and Back End, respectively, is responsible for providing a Protocol Conformance Test Report (PCTR).

The supplier of the Front End and the Back End shall complete a PCTR; see Annex C and Annex D for the proformas.

Annex A
(normative)

TP for Front End Communications API

A.1 Introduction

This annex contains the Test Purposes (TP) for the conformity evaluation of Front End Communications API to ISO/TS 17575-2.

A.1.1 TP symbols conventions

A special notation and symbol convention is used, as defined in what follows.

Symbols are used in the description of the TPs, with meanings according to Table A.1 below.

Table A.1 — Description of TP Symbols

SYMBOL	DESCRIPTION
XXX(Type1=value1) □	The Tester executes an XXX method of Front End Communications API with argument of Type1 having value value1. Value1 shall be stored in tester's memory for further TP processing.
□ R:ReturnedType	The DUT returns a value of type ReturnedType
□ C:CallbackName (Type1)	The DUT provides a callback CallbackName receiving variable of type Type1.
Type ISO/TS 17575-2	Anytime Type defined in ISO/TS 17575-2 is used, it means a variable of Type.
A → B	A “is transformed” into B
Ø	Means “empty” or “not set”.
A | B	A OR B
A != B	A is not equal B
i = i+1	Increment variable i by 1

Testing Front End Communications API it is needed to trigger operations and observe the DUT feedback both from the *Front End application* and Remote End (i.e. *Back End*) perspective. Thus there are two test points located as shown in Figure A.1.

Application emulation test point is using directly with DUT and emulates the *Front End application* layer. It is identified in the following test purposes by AppEm discriminator.

Remote End emulation test point is linked with DUT over communications channel. Depending on the test purposes it emulates application, presentation and session layer. It is identified in the following test purposes by RemEnd discriminator.

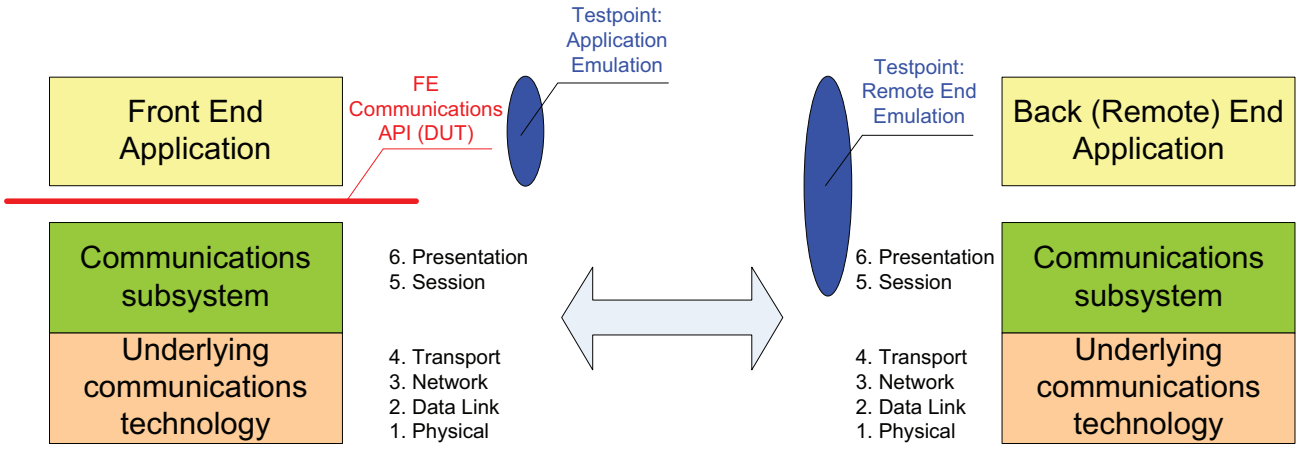

Figure A.1 — Handling of ADUs applicable for particular TP

A.2 Instance Handling

These Test Purposes apply to instance handling as claimed in ISO/TS 17575-2 clause B.2 with respect to following PICS proforma entries:

— API supports InitialiseInstance;

— API supports SetParameter;

— API supports GetParameter;

— API supports DeleteParameter;

— API supports DropInstance;

— API supports StackAvail.

A.2.1 BV test purposes (Valid Behaviour tests)

Test subgroup objective:

— to test DUT behaviour with respect to instance initialization including multiple instance handling in parallel;

— to test DUT behaviour with respect to parameter setting and updating;

— to test DUT behaviour with respect to parameter getting;

— to test DUT behaviour with respect to parameter deleting;

— to test DUT behaviour with respect to availability of communications stack;

— to test DUT behaviour with respect to dropping the session with following severities:

— SENormal;

— SEUrgent;

— SEUnconditional.

TP/IH/API/BV/01	**Verify the communications interface initialization**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.1
Initial Condition	Front End Communications API must handle at least one underlying communications stack which StackID equals to stack1. Set of Callback instances is instantiated.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	InitialiseInstance **(StackID = stack1, Callbacks = cb1)**	**AppEm**	□	
2		**AppEm**	□	R: Instace
3	**Verify whether** Instance **is valid**			
4	**IF verify OK THEN TP passed ELSE TP failed ENDI**			

TP/IH/API/BV/02	**Verify the multiple instance communications interface initialization based on the same communications stack**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.1
Initial Condition	Front End Communications API must handle at least one underlying communications stack which StackID equals to stack1. Sets of Callback instances are instantiated.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	InitialiseInstance **(StackID = stack1, Callbacks = cb1)**	**AppEm**	□	
2		**AppEm**	□	R: Instance
3	**Verify whether** Instance **is valid**			
4	**IF verify OK** **THEN GOTO step5** **ELSE TP failed** **ENDIF**			
5	InitialiseInstance **(StackID = stack1, Callbacks = cb2)**	**AppEm**	□	
6		**AppEm**	□	R: Instance
7	**Verify whether** Instance **is vali**			
8	**IF verify OK** **THEN GOTO step 9** **ELSE TP failed** **ENDIF**			
9	InitialiseInstance **(StackID = stack1, Callbacks = cb3)**	**AppEm**	□	
10		**AppEm**	□	Instance
11	**Verify whether** Instance □**s valid**			
12	**IF verify OK** **THEN TP passed ELSE TP failed** **ENDIF**			

TP/IH/API/BV/03	**Verify the multiple instance communications interface initialization based on different communications stack**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.1
Initial Condition	Front End Communications API must handle at least 2 underlying communications stacks which StackID equals to stack1 and stack2. Sets of Callback instances are instantiated.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	InitialiseInstance **(StackID = stack1, Callbacks = cb1)**	**AppEm**	□	
2		**AppEm**	□	R: Instance
3	**Verify whether** Instance **is valid**			
4	**IF verify OK** **THEN GOTO step5** **ELSE TP failed** **ENDIF**			
5	InitialiseInstance **(StackID = stack2, Callbacks = cb2)**	**AppEm**	□	
6		**AppEm**	□	R: Instance
7	**Verify whether** Instance **is vali**			
8	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BV/04	**Verify that parameter is set by Front End Application (single parameter)**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.1
Initial Condition	A valid Instance instance1 is created.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SetParameter **(Instance = instance1, Parameter = "Parameter1", Value = "Value1")**	**AppEm**	□	
2		**AppEm**	□	R:CEN175□52Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK THEN TP failed ENDIF**			
5	GetParameter **(Instance = instance1, Parameter = "Parameter1")**	**AppEm**	□	
6		**AppEm**	□	R: String
7	**IF (**String **equals to Valu1) THEN T passed** □**ELSE TP failed ENDIF**			

TP/IH/API/BV/05	**Verify that parameter is set by Front End Application for multiple instances (different parameter names)**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.1
Initial Condition	A valid Instance instance1 and instance2 are created.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SetParameter **(Instance = instance1, Parameter = "Parameter1", Value = "Value1")**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK THEN TP failed ENDIF**			
5	GetParameter **(Instance = instance1, Parameter = "Parameter1")**	**AppEm**	□	
6		**AppEm**	□	R: String
7	**IF (**String **equals to Value1) THEN GOTO step8 ELSE TP failed ENDIF**			
8	SetParameter **(Instance = instance2, Parameter = "Parameter2", Value = "Value2")**	**AppEm**	□	
9		**AppEm**	□	R: CEN175752Error
10	**Verify whether** CEN175752Error **equals to ERNoError**			
11	**IF verify NOT OK THEN TP failed ENDIF**			
12	GetParameter **(Instance = instance2, Parameter = "Parameter2")**	**AppEm**	□	
13		**AppEm**	□	R: String
14	**IF (**String **equals to Value2) THEN TP passed ELSE TP failed ENDIF**			

TP/IH/API/BV/06	**Verify that parameter is set by Front End Application for multiple instances (the same parameter names)**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.1
Initial Condition	A valid Instance instance1 and instance2 are created.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SetParameter **(Instance = instance1, Parameter = "Parameter1", Value = "Value1")**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK THEN TP failed ENDIF**			
5	GetParameter **(Instance = instance1, Parameter = "Parameter1")**	**AppEm**	□	
6		**AppEm**	□	R: String
7	**IF (**String **equals to Value1) THEN GOTO step8 ELSE TP failed ENDIF**			
8	SetParameter **(Instance = instance2, Parameter = "Parameter1", Value = "Value2")**	**AppEm**	□	
9		**AppEm**	□	R: CEN175752Error
10	**Verify whether** CEN175752Error **equals to ERNoError**			
11	**IF verify NOT O THEN TP failed ENDIF**			
12	GetParameter **(Instance = instance2, Parameter = "Parameter1")**	**AppEm**	□	
13		**AppEm**	□	R: String
14	**IF (**String **equals to Value2) THEN TP passed ELSE TP failed ENDIF**			

TP/IH/API/BV/07	**Verify that parameter is updated by Front End Application**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.1
Initial Condition	A valid Instance instance1 is created.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SetParameter **(Instance = instance1, Parameter = "Parameter1", Value = "Value1")**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK THEN TP failed ENDIF**			
5	GetParameter **(Instance = instance1, Parameter = "Parameter1")**	**AppEm**	□	
6		**AppEm**	□	R: String
7	**IF (**String **equals to Value1) THEN GOTO step8 ELSE TP failed ENDIF**			
8	SetParameter **(Instance = instance1, Parameter = "Parameter1", Value = "Value2")**	**AppEm**	□	
9		**AppEm**	□	R: CEN175752Error
10	**Verify whether** CEN175752Error **equals to ERNoError**			
11	**IF verify NOT OK THEN TP failed ENDIF**			
12	GetParameter **(Instance = instance1, Parameter = "Parameter1")**	**AppEm**	□	
13		**AppEm**	□	R: String
14	**IF (**String **equals to Value2) THEN GOTO step8 ELSE TP failed ENDIF**			

TP/IH/API/BV/08	**Verify that parameter's value is fetched by the Front End Application**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.1
Initial Condition	A valid Instance instance1 is created. Parameter1 has already been set with value1.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	GetParameter **(Instance = instance1, Parameter = "Parameter1")**	**AppEm**	□	
2		**AppEm**	□	R: String
3	**IF (**String **equals to Value1)** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BV/09	**Verify that parameter's value is fetched by the Front End Application (multiple instances)**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.1
Initial Condition	A valid Instance instance1, instance2 and instance3 are created. Parameter1 in instance1 has already been set with value1. Parameter2 in instance1 has already been set with value2. Parameter1 in instance3 has already been set with value3.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	GetParameter **(Instance = instance1, Parameter = "Parameter1")**	**AppEm**	□	
2		**AppEm**	□	R: String
3	**IF (**String **equals to Value1)** **THEN GOTO step4** **ELSE TP failed** **ENDIF**			
4	GetParameter **(Instance = instance2, Parameter = "Parameter2")**	**AppEm**	□	
5		**AppEm**	□	R: String
6	**IF (**String **equals to Value2)** **THEN GOTO step7** **ELSE □P failed** **ENDIF**			
7	GetParameter **(Instance = instance3, Parameter = "Parameter1")**	**AppEm**	□	
8		**AppEm**	□	R: String
9	**IF (**String **equals to Value3)** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BV/10	**Verify that parameter is deleted by Front End Application (single parameter)**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.1
Initial Condition	A valid Instance instance1 is created. Parameter1 has already been set by *Front End application*.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DeleteParameter **(Instance = instance1, Parameter = "Parameter1")**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	GetParameter **(Instance = instance1, Parameter = "Parameter1")**	**AppEm**	□	
6		**AppEm**	□	R: String
7	**IF (**String **has invalid value)** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BV/11	**Verify that parameter is deleted by Front End Application (multiple parameters)**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.1
Initial Condition	A valid Instance instance1, instance2 and instance3 are created. Parameter1 in instance1 has already been set. Parameter2 in instance2 has already been set. Parameter1 in instance3 has already been set.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DeleteParameter **(Instance = instance1, Parameter = "Parameter1")**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK THEN TP failed ENDIF**			
5	GetParameter **(Instance = instance1, Parameter = "Parameter1"**	**AppEm**	□	
6		**AppEm**	□	R: String
7	**IF (**String **has invalid value) THEN GOTO step8 ELSE TP failed ENDIF**			
8	DeleteParameter **(Instance = instance2, Parameter = "Parameter2")**		□	
9		**AppEm**	□	R: CEN175752Error
10	**Verify whether** CEN175752Error **equa□s o ERNoError**	**AppEm**		
11	**IF verify NOT OK THEN TP failed ENDIF**			
12	GetParameter **(Instance = instance2, Parameter = "Parameter2")**		□	
13			□	R: String
14	**IF (**String **has invalid value) THEN GOTO step15 ELSE TP failed ENDIF**			

15	DeleteParameter **(Instance = instance3, Parameter = "Parameter1")**		□	
16			□	R: CEN175752Error
17	**Verify whether** CEN175752Error **equals to ERNoError**			
18	**IF verify NOT OK THEN TP failed ENDIF**			
19	GetParameter **(Instance = instance3, Parameter = "Parameter1)**		□	
20			□	R: String
21	**IF (**String **has invalid value) THEN TP passed ELSE TP failed ENDIF**			

TP/IH/API/BV/12	**Verify whether StackAvail returns that communication stack is available**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.5
Initial Condition	A valid Instance instance1 has already been created. Communication stack for instance1 is available

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	StackAvail **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: Boolean
3	**IF (returned□TRUE THEN TP passed ELSE TP failed ENDIF**			

TP/IH/API/BV/13	**Verify whether StackAvail returns that communication stack is available (multiple instances)**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.5
Initial Condition	A valid Instance instance1 and instance2 have already been created. Communication stack for instance1 and instance2 is available

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	StackAvail **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: Boolean
3	**IF (returned FALSE)** **THEN TP failed** **ENDIF**			
4	StackAvail **(Instance = instance2)**	**AppEm**	□	
5		**AppEm**	□	R: Boolean
6	**IF (returned TRUE)** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BV/14	**Verify whether StackAvail returns that communication stack is unavailable**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.5
Initial Condition	A valid Instance instance1 has already been created. Communication stack for instance1 is not available

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	StackAvail **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: Boolean
3	**IF (returned FALSE)** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BV/15	**Verify whether StackAvail returns that communication stack is unavailable (multiple instances)**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.5
Initial Condition	A valid Instance instance1 and instance2 have already been created. Communication stack for instance1 and instance2 are not available

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	StackAvail **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: Boolean
3	**IF (returned TRUE)** **THEN TP failed** **ENDIF**			
4	StackAvail **(Instance = instance2)**	**AppEm**	□	
5		**AppEm**	□	R: Boolean
6	**IF (returned FALSE)** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BV/16	**Verify whether StackAvail returns that communication stack is available (for first instance) and unavailable (for second instance)**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.5
Initial Condition	A valid Instance instance1 and instance2 has already been created. Communication stack for instance1 is available. Communication stack for instance2 is unavailable

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	StackAvail **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: Boolean
3	**IF (returned FALSE)** **THEN TP failed** **ENDIF**			
4	StackAvail **(Instance = instance2)**	**AppEm**	□	
5		**AppEm**	□	R: Boolean
6	**IF (returned FALSE)** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BV/17	**Dropping the instance with SENormal severity**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. No session exists for instance1.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SENormal)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BV/18	**Dropping the instance with SEUrgent severity**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. No session exists for instance1.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SEUrgent)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BV/19	**Dropping the instance with SEUnconditional severity**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. No session exists for instance1.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SEUnconditional)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BV/20	**Dropping the instance with SEUnconditional severity once session is in STStarting state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 is being established. Session is in state Session is in state STStarting NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SEUnconditional)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify OK** **THEN TP passed** **ELSE TP fail□d** **ENDIF**			

TP/IH/API/BV/21	**Dropping the instance with SEUnconditional severity once session is in STSessionIdle state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 is established. Session is in state Session is in state STSessionIdle NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SEUnconditional)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BV/22	**Dropping the instance with SEUnconditional severity once session is in STSendingADU state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 is established. Session is in state Session is in state STSendingADU NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = S SEUnconditional)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BV/23	**Dropping the instance with SEUnconditional severity once session is in STSendingADURequest state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 is established. Session is in state Session is in state STSendingADURequest NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SEUnconditional)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify OK** **THEN TP passed** **ESE TP failed** **ENDIF**			

TP/IH/API/BV/24	**Dropping the instance with SEUnconditional severity once session is in STSendingUnformattedADU state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 is established. Session is in state Session is in state STSendingUnformattedADU NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SEUnconditional)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify OK** **THEN TP passed** **ELS TP failed** **ENDIF**			

TP/IH/API/BV/25	**Dropping the instance with SEUnconditional severity once session is in STSessionRxADUs state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 is established. Session is in state Session is in state STSessionRxADUs NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SEUnconditional)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify OK** **THEN TP passed** **ELSE TP□failed** **ENDIF**			

TP/IH/API/BV/26	**Dropping the instance with SEUnconditional severity once session is in STErrored state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 is established. Session is in state Session is in state STErrored NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SEUnconditional)**	**AppEm**	□	
2		**AppEm**	□	R:□CEN15752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDI**			

TP/IH/API/BV/27	**Dropping the instance with SEUnconditional severity once session is in STEnding state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 is established. Session is in state Session is in state STEnding NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SEUnconditional)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Errr
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

A.2.2 BI test purposes (Invalid Behaviour tests)

Test subgroup objective:

— to test DUT invalid behaviour with respect to instance initialization;

— to test DUT invalid behaviour with respect to parameter setting;

— to test DUT invalid behaviour with respect to parameter getting;

— to test DUT invalid behaviour with respect to parameter deleting;

— to test DUT invalid behaviour with respect to availability of communications stack;

— to test DUT invalid behaviour with respect to dropping the session including following severities:

  — SENormal;

  — SEUrgent;

TP/IH/API/BI/01	**Verify that FE Communications API returns invalid instance once FE Application selected invalid communication stack**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.1
Initial Condition	Set of Callback instances is instantiated.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	InitialiseInstance **(StackID =invalidStack, Callbacks = cb1)**	**AppEm**	□	
2		**AppEm**	□	R: Instance
3	**Verify whether** Instance **is invalid**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BI/02	**Verify that FE Communications API returns invalid instance once FE Application provides invalid Callbacks**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.1
Initial Condition	Front End Communications API must handle at least one underlying communications stacks which StackID equals to stack1.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	InitialiseInstance **(StackID =invalidStack, Callbacks = ø)**	**AppEm**	□	
2		**AppEm**	□	R: Instance
3	**Verify whether** Instance **is invalid**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BI/03	**Verify parameter setting upon invalid instance**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.1
Initial Condition	

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SetParameter **(Instance = invalidInstance1, Parameter = "Parameter1", Value = "Value1")** **Note: InvalidParameter1 may have too many characters what is not handled by FE Communications API**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNotSet**			
4	**IF verify OK** **THEN GOTO step5** **ELSE TP failed** **ENDIF**			
5	GetParameter **(Instance = instance1, Parameter = "InvalidParameter1")**	**AppEm**	□	
6		**AppEm**	□	R: String
□	**IF** (String **is invalid)** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BI/04	**Verify parameter setting upon invalid parameter**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.1
Initial Condition	A valid Instance instance1 is created.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SetParameter **(Instance = instance1, Parameter = "InvalidParameter1", Value = "Value1")** **Note: InvalidParameter1 may have too many characters what is not handled by FE Communications API**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNotSet**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	GetParameter **(Instance = instance1, Parameter = "InvalidParameter1")**	**AppEm**	□	
6		**AppEm**	□	R: String
7	**IF (**String □**s invalid)** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BI/05	**Verify parameter setting upon invalid value**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.1
Initial Condition	A valid Instance instance1 is created.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SetParameter **(Instance = instance1, Parameter = "Parameter1", Value = "InvalidValue1")** **Note: InvalidValue1 may have too many characters what is not handled by FE Communications API**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNotSet**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	GetParameter **(Instance = instance1, Parameter = "Parameter1")**	**AppEm**	□	
6		**AppEm**	□	R: String
7	**IF (**String **is inva□id)** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BI/06	**Verify getting the parameter's value upon invalid instance**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.1
Initial Condition	

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	GetParameter **(Instance = invalidInstance1, Parameter = "Parameter1")**	**AppEm**	□	
2		**AppEm**	□	R: String
3	**IF (**String **is invalid)** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BI/07	**Verify getting the parameter's value once parameter does not exist**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.1
Initial Condition	A valid Instance instance1 is created. InvalidParameter has not been set by *Front End application*.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	GetParameter **(Instance = instance1, Parameter = "invalidParameter")**	**AppEm**	□	
2		**AppEm**	□	R: String
3	**IF (**String **is invalid)** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BI/08	**Verify parameter deletion upon invalid instance**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.1
Initial Condition	

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DeleteParameter **(Instance = invalidInstance1, Parameter = "Parameter1")**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNotSet**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BI/09	**Verify parameter deletion once parameter does not exist**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.1
Initial Condition	A valid Instance instance1 is created.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DeleteParameter **(Instance =instance1, Parameter = "Parameter1")**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNotSet**			
4	**IF verify OK THEN TP passed ELSE TP failed ENDIF**			

TP/IH/API/BI/10	**Verify whether StackAvail returns false not having instance initialized**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.5
Initial Condition	FE Communications API is initialized

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	StackAvail **(Instance = invalidInstance)**	**AppEm**	□	
2		**AppEm**	□	R: Boolean
3	**IF (returned FALSE) THEN TP passed ELSE TP failed ENDIF**			

TP/IH/API/BI/11	**Dropping the instance with SENormal severity once no instance is initialized**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	FE Communications API is initialized

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = invalidInstance,** **Severity = SENormal)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals** □**o EUnknownInstance**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BI/12	**Dropping the instance with SEUrgent severity once no instance is initialized**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	FE Communications API is initialized

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = invalidInstance,** **Severity = SEUrgent)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERUnknownInstance**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BI/13	**Dropping the instance with SEUnconditional severity once no instance is initialized**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	FE Communications API is initialized

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = invalidInstance,** **Severity = SEUnconditional)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERUnknownInstance**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BI/14	**Dropping the instance with SENormal severity once session is in STStarting state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 is being established. Session is in state Session is in state STStarting NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SENormal)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERBadState**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDF**			

TP/IH/API/BI/15	**Dropping the instance with SENormal severity once session is in STSessionIdle state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 is established. Session is in state Session is in state STSessionIdle NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SENormal)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752 Err□r
3	**Verify whether** CEN175752Error **equals to ERBadState**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BI/16	**Dropping the instance with SENormal severity once session is in STSendingADU state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 is established. Session is in state Session is in state STSendingADU NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SENormal)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERBadState**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BI/17	**Dropping the instance with SENormal severity once session is in STSendingADURequest state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 is established. Session is in state Session is in state STSendingADURequest NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SENormal)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERBadState**			
4	**IF verify OK** **THEN TP passed** **ELSE TP fa□led** **ENDIF**			

TP/IH/API/BI/18	**Dropping the instance with SENormal severity once session is in STSendingUnformattedADU state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 is established. Session is in state Session is in state STSendingUnformattedADU NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SENormal)**	**AppEm**	□	
		AppEm	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERBadState**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BI/19	**Dropping the instance with SENormal severity once session is in STSessionRxADUs state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 is established. Session is in state Session is in state STSessionRxADUs NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SENormal)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERBadState**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BI/20	**Dropping the instance with SENormal severity once session is in STErrored state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 is established. Session is in state Session is in state STErrored NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SENormal)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERBadState**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BI/21	**Dropping the instance with SENormal severity once session is in STEnding state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 is established. Session is in state Session is in state STEnding NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SENormal)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERBadState**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BI/22	**Dropping the instance with SEUrgent severity once session is in STStarting state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 is being established. Session is in state Session is in state STStarting NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SEUrgent)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERBadState**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BI/23	**Dropping the instance with SEUrgent severity once session is in STSessionIdle state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 is established. Session is in state Session is in state STSessionIdle NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SEUrgent)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERBadState**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BI/24	**Dropping the instance with SEUrgent severity once session is in STSendingADU state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 is established. Session is in state Session is in state STSendingADU NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SEUrgent)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERBadState**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BI/25	**Dropping the instance with SEUrgent severity once session is in STSendingADURequest state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 is established. Session is in state Session is in state STSendingADURequest NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SEUrgent)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERBadState**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BI/26	**Dropping the instance with SEUrgent severity once session is in STSendingUnformattedADU state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 is established. Session is in state Session is in state STSendingUnformattedADU NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SEUrgent)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERBadState**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BI/27	**Dropping the instance with SEUrgent severity once session is in STSessionRxADUs state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 is established. Session is in state Session is in state STSessionRxADUs NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SEUrgent)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERBadState**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BI/28	**Dropping the instance with SEUrgent severity once session is in STErrored state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 is established. Session is in state Session is in state STErrored NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SEUrgent)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERBadState**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/IH/API/BI/29	**Dropping the instance with SEUrgent severity once session is in STEnding state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 is established. Session is in state Session is in state STEnding NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	DropInstance **(** **Instance = instance1,** **Severity = SEUrgent)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERBadState**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

A.3 Session Handling

These Test Purposes apply to session handling as claimed in ISO/TS 17575-2 Clause B.2 with respect to following PICS proforma entries:

— API supports StartSession;

— API supports EndSession.

A.3.1 BV test purposes (Valid Behaviour tests)

Test subgroup objective:

— to test DUT behaviour with respect to session establishment including multiple session establishment in parallel;

— to test DUT behaviour with respect to session ending;

— to test DUT behaviour with respect to session failure.

TP/SH/API/BV/01	**Session establishment**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.3
Initial Condition	A valid Instance instance1 has already been created. No session exists for instance1 (STNoSession state). Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	StartSession **(Instance = instance1, Reason = any, SessionHandle)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK THEN TP failed ENDIF**			
				Session establishment process over communications stack in progress
5	**Verify whether session has been established at remote end**	**RemEnd**		
6	**IF verify NOT OK THEN TP failed ENDIF**			
7			□	C: InstanceStateChange **(Instance, OldState, NewState)**
8	**IF (Instance equals to instance1 AND OldState equals to (STNoSession OR STStarting) AND NewState equals to STSessionI□le) THEN TP passed ELSE TP failed ENDIF**			

TP/SH/API/BV/02	**Multiple session establishment**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.3
Initial Condition	A valid Instance instance1 and instance2 have already been created. No session exists for instance1 and instance2 (STNoSession state). Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set) using instance1 and instance2.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	StartSession **(Instance = instance1, Reason = any, SessionHandle)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**	**AppEm**		
4	**IF verifyNOT OK THEN TP failed ENDIF**	**AppEm**		
		RemEnd		**Session establishment process over communications stack in progress**
5	**Verify whether session has been established at remote end**	**RemEnd**		
6	**IF verify NOT OK THEN TP failed ENDIF**	**RemEnd**		
7		**AppEm**	□	C: InstanceStateChange **(Instance, OldState, NewStat□)**
8	**IF (Instance equals to instance1 AND OldState equals to (STNoSession OR STStarting) AND NewState equals to STSessionIdle) THEN TP passed ELSE TP failed ENDIF**	**AppEm**		
9	StartSession **(Instance = instance1, Reason = any, SessionHandle)**	**AppEm**	□	
10		**AppEm**	□	R: CEN175752Error
11	**Verify whether** CEN175752Error **equals to ERNoError**	**AppEm**		
12	**IF verify NOT OK THEN TP failed ENDIF**	**AppEm**		

		RemEnd		**Session establishment process over communications stack in progress**
13	**Verify whether session has been established at remote end**	**RemEnd**		
14	**IF verify NOT OK** **THEN TP failed** **ENDIF**	**RemEnd**		
15		**AppEm**	□	C: InstanceStateChange **(Instance, OldState, NewState)**
16	**IF (Instance equals to instance1 AND** **OldState equals to (STNoSession OR STStarting) AN**□ **NewState equals to STSessionIdle)** **THEN TP passed** **ELSE TP failed** **ENDIF**	**AppEm**		

TP/SH/API/BV/03	**Ending the session**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.4
Initial Condition	A valid Instance instance1 has already been created. Session for instance 1 is established. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	EndSession **(Instance = instance1, Reason = any)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK THEN TP failed ENDIF**			
5				**Completion of *transaction* in progress**
6	**Verify whether session has been closed**	□**emEnd**		
7	**IF verify NOT OK THEN TP failed ENDIF**			
8			□	C: InstanceStateChange **(Instance, OldState, NewState)**
9	**IF (Instance equals to instance1 AND OldState equals to (STSessionIdle) AND NewState equals to STNoSession) THEN TP passed ELSE T f□iled ENDIF**			

TP/SH/API/BV/04	**Session failure handling**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.5
Initial Condition	A valid Instance instance1 has already been created. Session for instance 1 is established. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	CommsQuery **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752StateE
3	**Assign a received state to oldState1**			
4	**Session failed due to example communication infrastructure failure**	**RemEnd**		
5		**AppEm**	□	C: InstanceStateChange **(Instance, OldState, NewState)**
6	**IF (Instance equals to inst□nce1 AND** **OldState equals to oldState1 AND** **NewState equals to STErrored)** **THEN TP passed** **ELSE TP failed** **ENDIF**			

A.3.2 BI test purposes (Invalid Behaviour tests)

Test subgroup objective:

— to test DUT invalid behaviour with respect to session establishment including multiple session establishment in parallel;

— to test DUT invalid behaviour with respect to session ending in each visible state.

TP/SH/API/BI/01	**Session establishment once session is already established**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.3
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	StartSession (**Instance = instance1, Reason = any, SessionHandle)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERInSession**			
4	**IF verify NOT OK THEN TP failed ENDIF**			
5	**Verify whether session has been established at remote end**	**RemEnd**		
6	**IF verify OK THEN TP failed ELSE TP passed ENDIF**			

TP/SH/API/BI/02	**Session establishment once no instance initialized**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.3
Initial Condition	FE Communications API is initialized

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	StartSession **(Instance = invalidInstance1, Reason = any, SessionHandle)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoInstance**			
4	**IF verify NOT OK THEN TP failed ELSE TP passed ENDIF**			

TP/SH/API/BI/03	**Session establishment once end point unknown**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.3
Initial Condition	A valid Instance instance1 has already been created. No parameterization has been done to establish session

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	StartSession **(Instance = instance1, Reason = any, SessionHandle)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERUnknownEndpoint**			
4	**IF verify NOT OK THEN TP failed ELSE TP passed ENDIF**			

TP/SH/API/BI/04	**Ending the session once no instance initialized**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.4
Initial Condition	FE Communications API is initialized

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	EndSession **(Instance = invalidInstance, Reason = any)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoInstance**			
4	**IF verify NOT OK THEN TP failed ELSE TP passed ENDIF**			

TP/SH/API/BI/05	**Ending the session once no session is established**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.4
Initial Condition	A valid Instance instance1 has already been created. No session exists for instance1.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	EndSession **(Instance = instance1, Reason = any)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoInstance**			
4	**IF verify NOT OK THEN TP failed ELSE TP passed ENDIF**			

TP/SH/API/BI/06	**Ending the session once session is in STSendingUnformattedADU**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.4
Initial Condition	A valid Instance instance1 has already been created. Session for instance 1 is established. Session is in state STSendingUnformattedADU NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	EndSession **(Instance = instance1, Reason != RERemoteDrop)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERInSession**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/SH/API/BI/07	**Ending the session once session is in STSendingADU**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.4
Initial Condition	A valid Instance instance1 has already been created. Session for instance 1 is established. Session is in state Session is in state STSendingADU NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	EndSession **(Instance = instance1, Reason != RERemoteDrop)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERInSession**			
4	**IF verify□K THEN TP passed ELSE TP failed ENDIF**			

TP/SH/API/BI/08	**Ending the session once session is in STSendingADURequest**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.4
Initial Condition	A valid Instance instance1 has already been created. Session for instance 1 is established. Session is in state Session is in state STSendingADURequest NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	EndSession **(Instance = instance1, Reason != RERemoteDrop)**	**AppEm**	□	
2		**AppEm**	□	R: EN□5752Error
3	**Verify whether** CEN175752Error **equals to ERInSession**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/SH/API/BI/09	**Ending the session once session is in STAwaitingADUConfirm**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.4
Initial Condition	A valid Instance instance1 has already been created. Session for instance 1 is established. Session is in state Session is in state STAwaitingADUConfirm NOTE see test purposes for other operations and corresponding to this state which specify the steps how to fulfil this precondition. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	EndSession **(Instance = instance1, Reason != RERemoteDrop)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERInSession**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

A.4 Communication Service Primitives

These Test Purposes apply to communication service primitives as claimed in ISO/TS 17575-2 Clause B.2 with respect to following PICS proforma entries:

— API supports SendUnformattedADU;

— API supports SendADUSetStart;

— API supports SendADU;

— API supports SendADUSetEnd;

— API supports UnformattedADUReceived Event;

— API supports ADUReceived Event;

— API supports ADUSent Event;

— API supports ADUSendOK Event.

A.4.1 BV test purposes (Valid Behaviour tests)

Test subgroup objective:

— to test DUT behaviour with respect to sending unformatted ADU while one and multiple sessions are established;

— to test DUT behaviour with respect to sending set of structured ADU while one and multiple sessions are established:

  — having one ADU in a set;

  — having multiple ADUs in a set;

— to test DUT behaviour with respect to receiving unformatted ADU while one and multiple sessions are established;

— to test DUT behaviour with respect to receiving structured ADU while one and multiple sessions are established;

— to test DUT behaviour with respect to ADU request from remote end.

TP/CSP/API/BV/01	**Sending unformatted ADU**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 has already been established. Session related to Instance1 is in STSessionIdle state.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendUnformattedADU **(Instance = instance1, MessageLen = any, Message = any)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
				Unformatted ADU is being sent
5	**Remote end acknowledges receipt of ADU**	**RemEnd**	□	
6			□	C: ADUSent **(Instance)**
7	□**F (Instance equals to instance1)** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BV/02	**Sending unformatted ADU (multiple sessions)**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.2
Initial Condition	A valid Instance instance1 and instance2 has already been created. Session for instance1 and instance2 has already been established. Instance1 and instance2 are in STSessionIdle state.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendUnformattedADU **(Instance = instance1, MessageLen = any, Message = any)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK THEN TP failed ENDIF**			
				Unformatted ADU is being sent
5	**Remote end acknowledges receipt of ADU**	**RemEn**	□	
6			□	C: ADUSent **(Instance)**
7	**IF (Instance NOT equals to instance1) THEN TP failed ENDIF**			
8	SendUnformattedADU **(Instance = instance2, MessageLen = any, Message = any)**	**AppEm**	□	
9		**AppEm**	□	R: CEN175752Error
10	**Verify whether** CEN175752Error **e□uals to ERNoError**			
11	**IF verify NOT OK THEN TP failed ENDIF**			
				Unformatted ADU is being sent
12	**Remote end acknowledges receipt of ADU**	**RemEnd**	□	
13			□	C: ADUSent **(Instance)**
14	**IF (Instance equals to instance2) THEN TP passed ELSE TP faild□NDIF**			

TP/CSP/API/BV/03	**Sending one structured ADU**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 has already been established. Session related to instance1 is in STSessionIdle state.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendADUSetStart **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	**Remote End indicates its ability to receive elements**	**RemEnd**	□	
6		**AppEm**	□	C: ADUSendOK**(Instance, CanSend)**
7	**Verify□whether Instance equals to instance1 AND CanSend equals to TRUE**			
8	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
9	SendADU **(Instance = instance1,** **ElementLen = any,** **Element = any)**	**AppEm**	□	
10		**AppEm**	□	R: WORD
11	**Verify whether returned value is greater than 0**			
12	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
13	SendADUSetEnd**(Instance = instance1)**	**AppEm**	□	
14		**AppEm**	□	R: CEN175752Error
15	**Verify whether** CEN175752Error **equals to ERNoError**			
16	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
17	**Remote end acknowledges receipt of ADU**	**RemEnd**	□	

18		**AppEm**	□	C: ADUSent **(Instance)**
19	**IF (Instance equals to instance1)** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BV/04	**Sending multiple structured ADUs in one ADU set (n messages)**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 has already been established. Session related to instance1 is in STSessionIdle state.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendADUSetStart **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	**Remote End indicates its ability to receive elements**	**RemEnd**	□	
6		**AppEm**	□	C: ADUSendOK**(Instance, CanSend)**
7	**Verify whether Instance equals to instance1 AND CanSend equals to TRUE**			
8	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
9	**i=0** **NOTE: i is internal counter used by DUT to send n consecutive SendADU messages**			
10	SendADU **(Instance = instance1,** **ElementLen = any,** **Element = any)**	**AppEm**	□	
11		**AppEm**	□	R: WORD
12	**Verify whether returned value is greater than 0**			
13	**IF verify NOT OK** **THEN TP failed**			

	ENDIF			
14	i=i+1			

15	IF (i < n)
	THEN GOTO STEP10
	ENDIF			

16	SendADUSetEnd**(Instance = instance1)**	**AppEm**	□	
17		**AppEm**	□	R: CEN□75752Error
18	**Verify whether** CEN175752Error **equals to ERNoError**			
19	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
20	**Remote end acknowledges receipt of ADU**	**RemEnd**	□	
21		**AppEm**	□	C: ADUSent **(Instance)**
22	**IF (Instance equals to instance1)** **THEN TP pass□d** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BV/05	**Sending structured ADUs (multiple sessions)**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	A valid Instance instance1 and instance 2has already been created. Session for instance1 and instance2 has already been established. Instance1 and instance2 is in STSessionIdle state.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendADUSetStart **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK THEN TP failed ENDIF**			
5	**Remote End indicates its ability to receive elements**	**RemEnd**	□	
6		**AppEm**	□	C: ADUSendOK**(Instance, CanSend)**
7	**Verify whether Instance equals to instance1 AND CanSend equals to TRUE**			
8	**IF verify NOT OK THEN TP failed ENDIF**			
9	SendADU **(Instance = instance1, ElementLen = any, Element = any)**	**AppEm**	□	
10		**AppEm**	□	R: WORD
11	**Verify whether returned value is greater than 0**			
12	**IF verify NOT OK THEN TP failed ENDIF**			
13	SendADUSetEnd**(Instance = instance1)**	**AppEm**	□	
14		**AppEm**	□	R: CEN175752Error
15	**Verify whether** CEN175752Error **equals to ERNoError**			
16	**IF verify NOT OK THEN TP failed ENDIF**			
17	**Remote end acknowledges receipt of ADU**	**RemEnd**	□	

18		**AppEm**	□	C: ADUSent **(Instance)**
19	**IF (Instance equals to instance1)** **THEN TP GOTO STEP20** **ELSE TP failed** **ENDIF**			
20	SendADUSetStart **(Instance = instance2)**	**AppEm**	□	
21		**AppEm**	□	R: CEN175752Error
22	**Verify whether** CEN175752Error **equals to ERNoError**			
23	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
24	**Remote End indicates its ability to receive elements**	**RemEnd**	□	
25		**AppEm**	□	C: ADUSendOK**(Instance, CanSend)**
26	**Verify whether Instance equals to instan□e1 AND CanSend equals to TRUE**			
27	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
28	SendADU **(Instance = instance2,** **ElementLen = any,** **Element = any)**	**AppEm**	□	
29		**AppEm**	□	R: WORD
30	**Verify whether returned value is greater than 0**			
31	**IF verify N□T OK** **THEN TP failed** **ENDIF**			
32	SendADUSetEnd**(Instance = instance2)**	**AppEm**	□	
33		**AppEm**	□	R: CEN175752Error
34	**Verify whether** CEN175752Error **equals to ERNoError**			
35	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
36	**Remote end acknowledges receipt of ADU**	**RemEnd**	□	
37		**AppEm**	□	C: ADUSent **(Instance)**
38	**IF (Instance equals to instance2)** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BV/06	**Receipt of unformatted ADU**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.1
Initial Condition	A valid Instance instance1 has already been created. Session for instance 1 is established. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	**Unformatted ADU is sent from the remote end, consisting of certain payload P of length L, using a session related to instance1.**	**RemEnd**	□	
2		**AppEm**	□	C: UnformattedADUReceived **(** **Instance, UnformattedMessageLen, UnformattedMessage)**
3	**Verify whether:** **Instance equals to instance1 AND** **UnformattedMessageLen equals to L** **AND** **UnformattedMessage equals to P**			
4	**IF verify NOT OK** **THEN T□ failed** **ENDIF**			
5	**Verify whether the remote end has been informed that ADU was received.**	**RemEnd**		
6	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BV/07	**Receipt of unformatted ADUs for multiple sessions**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.1
Initial Condition	A valid Instance instance1 and instance2 have already been created. Session for instance1 and instance2 are established. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	**Unformatted ADU is sent from the remote end, consisting of certain payload P1 of length L1, using a session related to instance1.**	**RemEnd**	□	
		AppEm	□	C: UnformattedADUReceived **(** **Instance, UnformattedMessageLen, UnformattedMessage)**
3	**Verify whether:** **Instance equals to instance1 AND UnformattedMessageLen equals to L1 AND UnformattedMessage equals to P1**			
4	**IF verify NOT OK** **THEN TP□failed** **ENDIF**			
5	**Verify whether the remote end has been informed that ADU was received.**	**RemEnd**		
6	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
7	**Unformatted ADU is sent from the remote end, consisting of certain payload P2 of length L2, using a session related to instance2.**	**RemEnd**	□	
8		**AppEm**	□	C: UnformattedADUReceived **(** **Instance, UnformattedMessageLen, UnformattedMessage)**
9	**Verify whether:** **Instance equals to instance2 AND UnformattedMessageLen equals to L2 AND UnformattedMessage equals to P2**			
10	**IF verify NOT OK** **TH□N TP failed** **ENDIF**			

11	**Verify whether the remote end has been informed that ADU was received.**	**RemEnd**		
12	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BV/08	**Receipt of structured ADU**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.1
Initial Condition	A valid Instance instance1 has already been created. Session for instance 1 is established. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	**Structured ADU is sent from the remote end using a session related to instance1.**	**RemEnd**	□	
2		**AppEm**	□	C: ADUReceived **(Instance, Element)**
3	**Verify whether:** **Instance equals to instance□AD** **Element corresponds to sent ADU**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	**Verify whether the remote end has been informed that ADU was received.**	**RemEnd**		
6	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BV/09	**Receipt of structured ADU for multiple sessions**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.1
Initial Condition	A valid Instance instance1 and instance2 have already been created. Session for instance1 and instance2 are established. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	**Structured ADU is sent from the remote end using a session related to instance1.**	**RemEnd**	□	
2		**AppEm**	□	C: ADUReceived **(Instance, Element)**
3	**Verify whether:** **Instance equals to instance1 AND** **Element corresponds to sent ADU**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	**Verify whether the remote end has been informed that ADU was rece□ved.**	**RemEnd**		
6	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
7	**Structured ADU is sent from the remote end using a session related to instance2.**	**RemEnd**	□	
8		**AppEm**	□	C: ADUReceived **(Instance, Element)**
9	**Verify whether:** **Instance equals to instance2 AND□** **Element corresponds to sent ADU**			
10	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
11	**Verify whether the remote end has been informed that ADU was received.**	**RemEnd**		
12	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BV/10	**Verify whether FE Application receives ADURequest callback**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.1
Initial Condition	A valid Instance instance1 has been created. Session for instance1 is established. Session is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	**Remote end sends ADU Request for elements E corresponding to instance1**	**RemEnd**	□	
2		**AppEm**	□	C: ADURequest **(Instance, Elements)**
3	**Verify whether:** **Instance equals to instance1 AND** **Elements corresponds to E**			
4	**IF verify NOT OK** **THEN TP failed** **ELSE TP passed** **ENDIF**			

A.4.2 BI test purposes (Invalid Behaviour tests)

Test subgroup objective:

— to test DUT invalid behaviour with respect to sending unformatted ADU once:

  — no instance exists;

  — no session exists;

  — DUT is in visible state which does not allow sending unformatted ADU.

— to test DUT invalid behaviour with respect to

  — starting ADU set;

  — ending ADU set;

  — sending ADU;

  once:

  — no instance exists;

  — no session exists;

— DUT is in visible state which does not allow starting and ending ADU set and sending structured ADU.

TP/CSP/API/BI/01	**Sending unformatted ADU once no instance is initialized**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.2
Initial Condition	FE Communications API is initialized

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendUnformattedADU **(** **Instance = invalidInstance,** **MessageLen = any, Message = any)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoInstance**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	**Verify whether an ADU payload transmitted to remote end**	**RemEnd**		
6	**IF verify OK** **THEN TP failed** **ELSE TP passed** **ENDIF**			

TP/CSP/API/BI/02	**Sending unformatted ADU once no session is established**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.2
Initial Condition	A valid Instance instance1 has already been created. No session exists for instance1.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendUnformattedADU **(** **Instance = instance1,** **MessageLen = any, Message = any)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERBadState**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	**Verify whether an ADU payload transmitted to remote end**	**RemEnd**		
6	**IF verify OK** **THEN TP failed** **ELSE TP passed** **ENDIF**			

TP/CSP/API/BI/03	**Sending unformatted ADU once session is in STStarting state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.2
Initial Condition	A valid Instance instance1 has already been created. No session exists for instance1.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	StartSession **(Instance = instance1, Reason = any, SessionHandle)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK THEN TP failed ENDIF**			
5	SendUnformattedADU **(Instance = instance1, MessageLen = any, Message = any)**	**AppEm**	□	
6		**AppEm**	□	R: CEN175752Er□or
7	**Verify whether** CEN175752Error **equals to ERBadState**			
8	**IF verify NOT OK THEN TP failed ENDIF**			
9	**Verify whether an ADU payload transmitted to remote end**	**RemEnd**		
10	**IF verify OK THEN TP failed ELSE TP passed ENDIF**			

TP/CSP/API/BI/04	**Sending unformatted ADU once session is in STEnding state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.2
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Session related to instance1 is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	EndSession **(Instance = instance1, Reason = any)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK THEN TP failed ENDIF**			
5	SendUnformattedADU **(Instance = instance1, MessageLen = any, Message = any)**	**AppEm**	□	
6		**AppEm**	□	R: CEN175752Er□or
7	**Verify whether** CEN175752Error **equals to ERBadState**			
8	**IF verify NOT OK THEN TP failed ENDIF**			
9	**Verify whether an ADU payload transmitted to remote end**	**RemEnd**		
10	**IF verify OK THEN TP failed ELSE TP passed ENDIF**			

TP/CSP/API/BI/05	**Sending unformatted ADU once session is in STErrored state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.2
Initial Condition	Session related to instance1 is in STErrored state.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendUnformattedADU **(** **Instance = instance1,** **MessageLen = any, Message = any)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERBadState**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	**Verify whether an ADU payload transmitted to remote end**	**RemEnd**		
6	**IF verify OK** **THEN TP failed** **ELSE TP passed** **ENDIF**			

TP/CSP/API/BI/06	**Sending unformatted ADU once another unformatted ADU is being sent**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.2
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Session related to instance1 is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendUnformattedADU **(** **Instance = instance1,** **MessageLen = any, Message = any)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	SendUnformattedADU **(** **Instance = instance1,** **MessageLen = any, Message = any)**	**AppEm**	□	
6		**AppEm**	□	R: CEN175752Error
7	**Verify whether** CEN175752Error **equals to ERBadState**			
8	**IF verify NOT OK** **THEN TP □iled** **NDIF**			
9	**Verify whether an ADU payload transmitted to remote end**	**RemEnd**		
10	**IF verify OK** **THEN TP failed** **ELSE TP passed** **ENDIF**			

TP/CSP/API/BI/07	**Sending unformatted ADU once session is in STSendingADURequest state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.2
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Session related to instance1 is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendADUSetStart **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals t□ ERNoError**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	SendUnformattedADU **(** **Instance = instance1,** **MessageLen = any, Message = any)**	**AppEm**	□	
6		**AppEm**	□	R: CEN175752Error
7	**Verify whether** CEN175752Error **equals to ERBadState**			
8	**IF verify NO□ OK** **THEN TP failed** **ENDIF**			
9	**Verify whether an ADU payload transmitted to remote end**	**RemEnd**		
10	**IF verify OK** **THEN TP failed** **ELSE TP passed** **ENDIF**			

TP/CSP/API/BI/08	**Sending unformatted ADU once session is in STSendingADU state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.2
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Session related to instance1 is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendADUSetStart **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	**Remote End indicates its ability to receive elements**	**RemEnd**	□	
6		**AppEm**	□	C: ADUSendOK**(instance, CanSend)**
7	**IF (Instance equals to instance1 AND** **CanSend equals to TRUE)** **THEN GOT□ STEP7** **ELSE TP failed** **ENDIF**			
8	SendUnformattedADU **(** **Instance = instance1,** **MessageLen = any, Message = any)**	**AppEm**	□	
9		**AppEm**	□	R: CEN175752Error
10	**Verify whether** CEN175752Error **equals to ERBadState**			
11	**IF verify NOT OK** **THEN TP failed** **ENIF**			
12	**Verify whether an ADU payload transmitted to remote end**	**RemEnd**		
13	**IF verify OK** **THEN TP failed** **ELSE TP passed** **ENDIF**			

TP/CSP/API/BI/09	**Sending unformatted ADU once session is in STAwaitingADUConfirm state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.2
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Session related to instance1 is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set)

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendADUSetStart **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoEr□or**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	**Remote End indicates its ability to receive elements**	**RemEnd**	□	
6			□	C: ADUSendOK**(instance, CanSend)**
7	**IF (Instance equals to instance1 AND** **CanSend equals to TRUE)** **THEN GOTO STEP8** **ELSE TP faid** **E□DIF**			
8	SendADU **(Instance = instance1,** **ElementLen = any,** **Element = any)**	**AppEm**	□	
9		**AppEm**	□	R: WORD
10	**Verify whether returned value is greater than 0**			
11	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
12	SendADUSetEnd **(Instance = instance1)**		□	
13		**AppEm**	□	R: CEN175752Error
14	**Verify whether** CEN175752Error **equals to ERNoError**			

15	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
16	SendUnformattedADU **(** **Instance = instance1,** **MessageLen = any, Message = any)**	**AppEm**	□	
17		**AppEm**	□	R: CEN5752E□ror
18	**Verify whether** CEN175752Error **equals to ERBadState**			
19	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
20	**Verify whether an ADU payload transmitted to remote end**	**RemEnd**		
21	**IF verify OK** **THEN TP failed** **ELSE TP passed** **ENDIF**			

TP/CSP/API/BI/10	**Sending unformatted ADU once session failed**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 has already been established. Session related to instance1 is in STSessionIdle state.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1a	SendUnformattedADU **(Instance = instance1,** **MessageLen = any, Message = any)**	**AppEm**	□	
1b		**RemEnd**		**In parallel to STEP1a terminate a session at remote en**
2		**AppEm**	□	R: CEN17572Error
3	**Verify whether** CEN175752Error **equals to ERSessionFailed**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BI/11	**Starting ADU set once no instance is initialized**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	FE Communications API is initialized

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendADUSetStart **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to** □**ERNoInstance**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BI/12	**Starting ADU set once no session is established**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	A valid Instance instance1 has already been created. No session exists for instance1.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendADUSetStart **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN75752Error
3	**Verify whether** CEN175752Error **equals to ERBadState**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BI/13	**Starting ADU set once session is in STStarting state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	A valid Instance instance1 has already been created. No session exists for instance1.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	StartSession **(Instance = instance1, Reason = any, SessionHandle)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	SendADUSetStart **(Instance = instance1)**	**AppEm**	□	
6		**AppEm**	□	R: CEN175752Error
7	**Verify whether** CEN175752Error **equ□ls to ERBadState**			
8	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BI/14	**Starting ADU set once session is in STEnding state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Session related to instance1 is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	EndSession **(Instance = instance1, Reason = any)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	SendADUSetStart **(Instance = instance1)**	**AppEm**	□	
6		**AppEm**	□	R: CEN175752Error
7	**Verify whether** CEN175752Error **equals to ERBadState**			
8	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BI/15	**Starting ADU set once session is in STErrored state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	Session related to instance1 is in STErrored state.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendADUSetStart **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERBadState**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BI/16	**Starting ADU set once session is in STSendingUnformattedADU state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Session related to instance1 is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendUnformattedADU **(** **Instance = instance1,** **MessageLen = any, Message = any)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	SendADUSetStart **(Instance = instance1)**	**AppEm**	□	
6		**AppEm**	□	R: CEN175752Error
7	**Verify whether** CEN175752Error **equ□ls to ERBadState**			
8	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BI/17	**Starting ADU set once session is in STSendingADURequest state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Session related to instance1 is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendADUSetStart **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	SendADUSetStart **(Instance = instance1)**	**AppEm**	□	
6		**AppEm**	□	R: CEN175752Error
7	**Verify whether** CEN175752Error **equals to ERBadState**			
8	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BI/18	**Starting ADU set once session is in STSendingADU state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Session related to instance1 is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendADUSetStart **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	**Remote End indicates its ability to receive elements**	**RemEnd**	□	
6		**AppEm**	□	C: ADUSendOK**(Instance, CanSend)**
7	**IF (Instance equals to instance1 AND** **CanSend equals to TRUE)** **THEN GOTO STEP8** **ELSE TP failed** **ENDIF**			
8	SendADUSetStart **(Instance = instance1)**	**AppEm**	□	
9		**AppEm**	□	R: CEN175752Error
10	**Verify whether** CEN175752Error **equals to ERBadState**			
11	**IF verify K** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BI/19	**Starting ADU set once session is in STAwaitingADUConfirm state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Session related to instance1 is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendADUSetStart **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	**Remote End indicates its ability to re□eive elements**	**RemEnd**	□	
6			□	C: ADUSendOK**(instance, CanSend)**
7	**IF (Instance equals to instance1 AND** **CanSend equals to TRUE)** **THEN GOTO STEP8** **ELSE TP failed** **ENDIF**			
8	SendADU **(Instance = instance1,** **ElementLen = any,** **Element = any)**	**AppEm**	□	
9		**AppEm**	□	R: WORD
10	**Verify whether returned value is greater than 0**			
11	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
12	SendADUSetEnd **(Instance = instance1)**		□	
13		**AppEm**	□	R: CEN175752Error
14	**Verify whether** CEN175752Error **equals to ERNoError**			

	I verify NOT OK **THEN TP failed** **ENDIF**			
16	SendADUSetStart **(Instance = instance1)**	**AppEm**		
17		**AppEm**		R: CEN175752Error
18	**Verify whether** CEN175752Error **equals to ERBadState**			
19	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BI/20	**Starting ADU set once session failed**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 has already been established. Session related to instance1 is in STSessionIdle state.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1a	SendADUSetStart **(Instance = instance1)**	**AppEm**		
1b		**RemEnd**		**In parallel to STEP1a terminate a session at remote end**
2		**AppEm**		R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERSessionFailed**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BI/21	**Sending structured ADU once no instance is initialized**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	FE Communications API is initialized

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendADU **(Instance = invalidInstance,** **ElementLen = any,** **Element = any)**	**AppEm**	□	
2		**AppEm**	□	R: WORD
3	**Verify whether returned value equals to 0**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	**Verify whether an ADU payload transmitted to remote end**	**RemEnd**		
6	**IF verify OK** **THEN TP failed** **ELSE TP passed** **ENDIF**			

TP/CSP/API/BI/22	**Sending structured ADU once no session is established**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	A valid Instance instance1 has already been created. No session exists for instance1.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendADU **(Instance = instance1,** **ElementLen = any,** **Element = any)**	**AppEm**	□	
2		**AppEm**	□	R: WORD
3	**Verify whether returned value equals to 0**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	**Verify whether an ADU payload transmitted to remote end**	**RemEnd**		
6	**IF verify OK** **THEN TP failed** **ELSE TP passed** **ENDIF**			

TP/CSP/API/BI/23	**Sending structured ADU once session is in STStarting state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	A valid Instance instance1 has already been created. No session exists for instance1.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	StartSession **(Instance = instance1, Reason = any, SessionHandle)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK THEN TP failed ENDIF**			
5	SendADU **(Instance = instance1, ElementLen = any, Element = any)**	**AppEm**	□	
6		**AppEm**	□	R: WORD
7	**Verify whether returned value equals to 0**			
8	**IF verify NOT OK THEN TP failed ENDIF**			
9	**Verify whether an ADU payload transmitted to remote end**	**RemEnd**		
10	**IF verify OK THEN TP failed ELSE TP passed ENDIF**			

TP/CSP/API/BI/24	**Sending structured ADU once session is in STEnding state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Session related to instance1 is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	EndSession **(Instance = instance1, Reason = any)**	**AppEm**	□	
2		**AppEm**	□	R: EN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK THEN TP failed ENDIF**			
5	SendADU **(Instance = instance1, ElementLen = any, Element = any)**	**AppEm**	□	
6		**AppEm**	□	R: WORD
7	**Verify whether returned value equals to 0**			
8	**IF verify NOT OK THEN TP failed ENDIF**			
9	**Verify whether an ADU payload transmitted to remote end**	**RemEnd**		
10	**IF verify OK THEN TP failed ELSE TP passed ENDIF**			

TP/CSP/API/BI/25	**Sending structured ADU once session is in STErrored state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	Session related to instance1 is in STErrored state.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendADU **(Instance = instance1,** **ElementLen = any,** **Element = any)**	**AppEm**	□	
2		**AppEm**	□	R: WORD
3	**Verify whether returned value equals to 0**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	**Verify whether an ADU payload transmitted to remote end**	**RemEnd**		
6	**IF verify OK** **THEN TP failed** **ELSE TP passed** **ENDIF**			

TP/CSP/API/BI/26	**Sending structured ADU once session is in STSendingUnformattedADU state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Session related to instance1 is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendUnformattedADU **(** **Instance = instance1,** **MessageLen = any, Message = any)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	SendADU **(Instance = instance1,** **ElementLen = any,** **Element = any)**	**AppEm**	□	
6		**AppEm**	□	R: WORD
7	**Verify whether returned value equals to 0**			
8	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
9	**Verify whether an ADU payload transmitted to remote end**	**RemEnd**		
10	**IF verify OK** **THEN TP failed** **ELSE TP passed** **ENDIF**			

TP/CSP/API/BI/27	**Sending structured ADU once session is in STSendingADURequest state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Session related to instance1 is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendADUSetStart **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	SendADU **(Instance = instance1,** **ElementLen = any,** **Element = any)**	**AppEm**	□	
6		**AppEm**	□	R: WORD
7	**Verify whether returned value equals to 0**			
8	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
9	**Verify whether an ADU payload transmitted to remote end**	**RemEnd**		
10	**IF verify OK** **THEN TP failed** **ELSE TP passed** **ENDIF**			

TP/CSP/API/BI/28	**Sending structured ADU once session is in STAwaitingADUConfirm state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Instance1 is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendADUSetStart **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	**Remote End indicates its ability to receive elements**	**RemEnd**	□	
6			□	C: ADUSendOK**(instance, CanSend)**
7	**IF (Instance equals to instance1 AND CanSend equals to TRUE)** **THEN GOTO STEP8** **ELSE TP failed** **ENDIF**			
8	SendADU **(Instance = instance1, ElementLen = any, Element = any)**	**AppEm**	□	
9		**AppEm**	□	R: WORD
10	**Verify whether returned value is greater than 0**			
11	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
12	SendADUSetEnd **(Instance = instance1)**		□	
13		**AppEm**	□	R: CEN175752Error
14	**Verify whether** CEN175752Error **equals to ERNoError**			

15	**IF verify NOT OK** **THE T failed** **ENDIF**			
16	SendADU **(Instance = instance1,** **ElementLen = any,** **Element = any)**	**AppEm**		
17		**AppEm**		R: WORD
18	**Verify whether returned value equals to 0**			
19	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			
20	**Verify whether an ADU payload transmitted to remote end**	**RemEnd**		
21	**IF verify OK** **THEN TP failed** **ELSE TP passed** **ENDIF**			

TP/CSP/API/BI/29	**Ending ADU set once no instance is initialized**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	FE Communications API is initialized

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendADUSetEnd **(Instance = invalidInstance)**			
2		**AppEm**		R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERBadState**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BI/30	**Ending ADU set once no session is established**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	A valid Instance instance1 has already been created. No session exists for instance1.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendADUSetEnd **(Instance = instance1)**		□	
2		**AppEm**	□	R: CEN175752Er□r
3	**Verify whether** CEN175752Error **equals to ERBadState**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BI/31	**Ending ADU set once session is in STStarting state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	A valid Instance instance1 has already been created. No session exists for instance1.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	StartSession **(Instance = instance1, Reason = any, SessionHandle)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	SendADUSetEnd **(Instance = instance1)**		□	
6		**AppEm**	□	R: CEN175752Error
7	**Verify whether** CEN175752Error **equals to ERBadState**			
8	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BI/32	**Ending ADU set once session is in STEnding state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Instance1 is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	EndSession **(Instance = instance1, Reason = any)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	SendADUSetEnd **(Instance = instance1)**		□	
6		**AppEm**	□	R: CEN175752Error
7	**Verify whether** CEN175752Error **equals to ERBadState**			
8	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BI/33	**Ending ADU set once session is in STErrored state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	Instance1 is in STErrored state.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendADUSetEnd **(Instance = instance1)**		□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERBadState**			
4	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BI/34	**Ending ADU set once session is in STSendingUnformattedADU state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Instance1 is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendUnformattedADU **(** **Instance = instance1,** **MessageLen = any, Message = any)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK** **THEN TP fai□ed** **ENDIF**			
	SendADUSetEnd **(Instance = instance1)**		□	
6		**AppEm**	□	R: CEN175752Error
7	**Verify whether** CEN175752Error **equals to ERBadState**			
8	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BI/35	**Ending ADU set once session is in STSendingADURequest state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Instance1 is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendADUSetStart **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	SendADUSetEnd **(Instance = instance1)**		□	
6		**AppEm**	□	R: CEN175752Error
7	**Verify whether** CEN175752Error **equals to ERBadState**			
8	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BI/36	**Ending ADU set once session is in STAwaitingADUConfirm state**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Instance1 is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendADUSetStart **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	**Remote End indicates its abili□y toreceive elements**	**RemEnd**	□	
6			□	C: ADUSendOK**(instance, CanSend)**
7	**IF (Instance equals to instance1 AND** **CanSend equals to TRUE)** **THEN GOTO STEP8** **ELSE TP failed** **ENDIF**			
8	SendADU **(Instance = instance1,** **ElementLen = any,** **Element = any)**	**AppEm**	□	
9		**AppEm**	□	R: WORD
10	**Verify whether returned value is greater than 0**			
11	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
12	SendADUSetEnd **(Instance = instance1)**		□	
13		**AppEm**	□	R: CEN175752Error
14	**Verify whether** CEN175752Error **equals to ERNoError**			

15	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
16	SendADUSetEnd **(Instance = instance1)**		□	
17		**AppEm**	□	R: CEN175752Error
18	**Verify whether** CEN175752Error **equals to ERBadState**			
19	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/CSP/API/BI/37	**Ending ADU set once session failed**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.3.3
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Instance1 is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	SendADUSetStart **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752Error
3	**Verify whether** CEN175752Error **equals to ERNoError**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	**Remote End indicates its ability to receive elements**	**RemEnd**	□	
6			□	C: ADUSendOK**(instance, CanSend)**
7	**IF (Instance equals to instance1 AND** **CanSend equals to TRUE)** **THEN GOTO STEP8** **ELSE TP failed** **ENDIF**			
8	SendADU **(Instance = instance1,** **ElementLen = any,** **Element = any)**	**AppEm**	□	
9		**AppEm**	□	R: WORD
10	**Verify whether returned value is greater than 0**			
11	**I verify NOT OK** **THEN TP failed** **ENDIF**			
12a	SendADUSetEnd **(Instance = instance1)**		□	
12b		**RemEnd**		**In parallel to STEP12a terminate a session at remote end**
13		**AppEm**	□	R: CEN175752Error
14	**Verify whether** CEN175752Error **equals to ERSessionFailed**			

1	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

A.5 State Transition

These Test Purposes apply to state transitions as claimed in ISO/TS 17575-2 Clause B.2 with respect to following PICS proforma entries:

— API supports InstanceStateChange Event;

— API supports CommsQuery;

— API supports SessionRequest Event.

A.5.1 BV test purposes

Test subgroup objective:

— to test DUT behaviour with respect to state transition by

  — querying DUT about old visible state;

  — triggering DUT to change its visible state;

  — checking whether DUT provides InstanceStateChange upon visible state change;

  — querying DUT about new visible state.

TP/ST/API/BV/01	**State transition from STUnknownInstance to STNoSession**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	Front End Communications API must handle at least one underlying communications stack which StackID equals to stack1. Set of Callback instances is instantiated.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	CommsQuery **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752StateE
3	**Verify whether** CEN175752StateE **equals to STUnknownInstance**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	InitialiseInstance **(StackID = stack1,** **Callbacks = cb1)**	**AppEm**	□	
6		**AppEm**	□	R: Instance
7	**Verify whether** Instance **is valid**			
8	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			
9	**Assign received** Instance **as instance1**			
10		**AppEm**	□	C: InstanceStateChange **(Instance, OldState, NewState)**
11	**Verify whether** **Instance equals to instance1 AND** **OldState□quals to STUnknownInstance** **AND** **NewState equals to STNoSession)**			
12	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
13	CommsQuery **(Instance = instance1)**	**AppEm**	□	
14		**AppEm**	□	R: CEN175752StateE
15	**Verify whether** CEN175752StateE **equals to** STNoSession			
16	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/ST/API/BV/02	**State transition from STNoSession to STUnknownInstance**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. No session exists for instance1.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	CommsQuery **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752StateE
3	**Verify whether** CEN175752StateE **equals to STNoSession**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	DropInstance **(** **Instance = instance1,** **Severity = anyI)**	**AppEm**	□	
6		**AppEm**	□	R: CEN175752Error
7	**Verify whether** CEN175752Error **equals to ERNoError**			
8	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
9		**AppEm**	□	C: InstanceStateChange **(Instance, OldState, NewState)**
10	**Verify whether** **Instance equals to instance1 AND** **OldState equals to STNoSession** **AND** **NewState□equals to STUnknownInstance)**			
11	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
12	CommsQuery **(Instance = instance1)**	**AppEm**	□	
13		**AppEm**	□	R: CEN175752StateE
14	**Verify whether** CEN175752StateE **equals to STUnknownInstance**			
15	**IF verify OK** **THEN TP□assed** **ELSE TP failed** **ENDIF**			

TP/ST/API/BV/03	**Verify that there is no state change upon receipt of SessionRequest**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. No session exists for instance1.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	CommsQuery **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752StateE
3	**Verify whether** CEN175752StateE **equals to STNoSession**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	**Session request from remote end corresponding to instance1**	**RemEnd**	□	
6		**AppEm**	□	C: SessionRequest**(Instance, Ha□dle)**
7	**Verify whether Instance equals to instance1**			
8	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
9	CommsQuery **(Instance = instance1)**	**AppEm**	□	
10		**AppEm**	□	R: CEN175752StateE
11	**Verify whether** CEN175752StateE **equals to STNoSession**			
12	**IF verify K** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/ST/API/BV/04	**State transition from STNoSession to STStarting**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. No session exists for instance1.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	CommsQuery **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752StateE
3	**Verify whether** CEN175752StateE **equals to STNoSession**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	StartSession **(Instance = instance1,** **Reason = any, SessionHandle)**	**AppEm**	□	
6		**AppEm**	□	R: CEN175752Error
7	**Verify whether** CEN175752Error **equals to ERNoError**			
8	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
9		**AppEm**	□	C: InstanceStateChange **(Instance, OldState, NewState)**
10	**Verify whether** **Instance equals to instance1 AND** **OldState equals to STNoSession** **AND □NewState equals to STStarting)**			
11	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
12	CommsQuery **(Instance = instance1)**	**AppEm**	□	
13		**AppEm**	□	R: CEN175752StateE
14	**Verify whether** CEN175752StateE **equals to STStarting**			
15	**IF verify OK** **THEN TP passd□ ELSE TP failed** **ENDIF**			

TP/ST/API/BV/05	**State transition from STStarting to STSessionIdle**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session for instance1 is being established.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	CommsQuery **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752StateE
3	**Verify whether** CEN175752StateE **equals to STStarting**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5		**AppEm**	□	C: InstanceStateChange **(Instance, OldState, NewState)**
6	**Verify whether** **Instance equals to instance1 AD** **OldState equals to STNoSession AND** **NewState equals to STSessionIdle)**			
7	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
8	CommsQuery **(Instance = instance1)**	**AppEm**	□	
9		**AppEm**	□	R: CEN175752StateE
10	**Verify whether** CEN175752StateE **equals to STSess□onIdle**			
11	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/ST/API/BV/06	**State transition from STSessionIdle to STSendingUnformattedADU**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Session is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	CommsQuery **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752StateE
3	**Verify whether** CEN175752StateE **equals to STSessionIdle**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	SendUnformattedADU **(** **Instance = instance1,** **MessageLen = any, Message = any)**	**AppEm**	□	
6		**AppEm**	□	R: CEN175752Error
7	**Verify whether** CEN175752Error **equals to ERNoError**			
8	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
9		**AppEm**	□	C: InstanceStateChange **(Instance, OldState, NewState)**
10	**□erify whether** **Instance equals to instance1 AND** **OldState equals to STSessionIdle AND** **NewState equals to** **STSendingUnformattedADU)**			
11	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
12	CommsQuery **(Instance = instance1)**	**AppEm**	□	
13		**AppEm**	□	R: CE1□572StateE
14	**Verify whether** CEN175752StateE **equals to STSendingUnformattedADU**			

15	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/ST/API/BV/07	**State transition from STSendingUnformattedADU to STSessionIdle**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Session is in STSendingUnformattedADU state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	CommsQuery **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752StateE
3	**Verify whether** CEN175752StateE **equals to STSendingUnformatte□ADU**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5		**AppEm**	□	C: ADUSent **(Instance)**
6	**Verify whether Instance equals to instance1**			
7	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
8		**AppEm**	□	InstanceStateChange **(Instance, OldState, NewState)**
9	**Verif□ whether** **Instance equals to instance1 AND** **OldState equals to** **STSendingUnformattedADU AND** **NewState equals to STSessionIdle)**			
10	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
11	CommsQuery **(Instance = instance1)**	**AppEm**	□	
12		**AppEm**	□	R: CEN1772S□ateE
13	**Verify whether** CEN175752StateE **equals to STSessionIdle**			
14	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/ST/API/BV/08	**Verify that there is no state change upon receipt of ADURequest**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Session is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	CommsQuery **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752StateE
3	**Verify whether** CEN175752StateE **equals to STSessionIdle**			
4	**IF verify NOT OK** **THEN □P failed** **ENDIF**			
5	**Remote end sends ADU Request for elements E corresponding to instance1**	**RemEnd**	□	
6		**AppEm**	□	C: ADURequest **(Instance, Elements)**
7	**Verify whether:** **Instance equals to instance1 AND** **Elements corresponds to E**			
8	**IF verify NOT OK** **□THEN TPfailed** **ENDIF**			
9	CommsQuery **(Instance = instance1)**	**AppEm**	□	
10		**AppEm**	□	R: CEN175752StateE
11	**Verify whether** CEN175752StateE **equals to STSessionIdle**			
12	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/ST/API/BV/09	**Verify that there is no state change upon receipt of UnformattedADUReceived**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Session is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	CommsQuery **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752StateE
3	**Verify whether** CEN175752StateE **equals to STSessionIdle**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	**Unformatted ADU is sent from the remote end, consisting of certain payload P of length L, using a session related to instance1.**	**RemEnd**	□	
6		**AppEm**	□	C: UnformattedADUReceived **(** **Instance, UnformattedMessageLen, UnformattedMessage)**
7	**Verify whether:** **Instance equals to instance1 AND** **UnformattedMessageLen equals to L** **AND** **UnformattedMessage equals to P**			
8	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
9	CommsQuery **(Instance = instance1)**	**AppEm**	□	
10		**AppEm**	□	R: CEN175752StateE
11	**Verify whether** CEN175752StateE **equals to STSessionIdle**			
12	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/ST/API/BV/10	**Verify that there is no state change upon receipt of ADU Received**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Session is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	CommsQuery **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752StateE
3	**Verify whether** CEN175752StateE **equals to STSessionIdle**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	**Structured ADU is sent from the remote end using a session related to instance1.**	**RemEnd**	□	
6		**AppEm**	□	C: ADUReceived **(Instance, Element)**
7	**Verify whether:** **Instance equals to instance1 AND** **Element corresponds to sent ADU**			
8	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
9	CommsQuery **(Instance = instance1)**	**AppEm**	□	
10		**AppEm**	□	R: CEN175752StateE
11	**Verify whether** CEN175752StateE **equals to STSessionIdle**			
12	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/ST/API/BV/11	**State transition from STSessionIdle to STSendingADURequest**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Session is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	CommsQuery **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752StateE
3	**Verify whether** CEN175752StateE **equals to STSessionIdle**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	SendADUSetStart **(Instance = instance1)**	**AppEm**	□	
6		**AppEm**	□	R: CEN175752Error
7	**Verify whether** CEN175752Error **equals to ERNoError**			
8	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
9		**AppEm**	□	C: InstanceStateChange **(Instance, OldState, NewState)**
10	**Verify wether** **Instance equals to instance1 AND** **OldState equals to STSessionIdle AND** **NewState equals to** **STSendingADURequest)**			
11	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
12	CommsQuery **(Instance = instance1)**	**AppEm**	□	
13		**AppEm**	□	R: CEN175752St□teE
14	**Verify whether** CEN175752StateE **equals to STSendingADURequest**			

15	IF verify OK THEN TP passed ELSE TP failed ENDIF			

TP/ST/API/BV/12	**Verify whether session enters STSessionIdle state once remote end is not able to receive elements**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Session is in STSessionIdle state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	CommsQuery **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752StateE
3	**Verify whether** CEN175752StateE **equals to STS□ssionIdle**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	SendADUSetStart **(Instance = instance1)**	**AppEm**	□	
6		**AppEm**	□	R: CEN175752Error
7	**Verify whether** CEN175752Error **equals to ERNoError**			
8	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
9	**Remote E□d indicates no ability to receive elements**	**RemEnd**	□	
10		**AppEm**	□	C: ADUSendOK**(Instance, CanSend)**
11	**Verify whether Instance equals to instance1 AND CanSend equals to FALSE**			
12	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
13	CommsQuery **(Instance = instance1)**	**AppEm**	□	
14		**AppEm**	□	R: CEN175752StateE
15	**Verify whether** CEN175752StateE **equals to STSessionIdle**			
16	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/ST/API/BV/13	**State transition from STSendingADURequest to STSendingADU**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Session is in STSendingADURequest state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	CommsQuery **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752StateE
3	**Verify whether** CEN175752StateE **equals to STSendingADURequest**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	**Remote End indicates its ability to receive elements**	**RemEnd**	□	
6		**AppEm**	□	C: ADUSendOK**(Instance, CanSen**□
7	**Verify whether Instance equals to instance1 AND CanSend equals to TRUE**			
8	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
9		**AppEm**	□	C: InstanceStateChange **(Instance, OldState, NewState)**
10	**Verify whether** **Instance equals to instance1 AND** **OldStateequals to STSendingADURequest AND** **NewState equals to STSendingADU)**			
11	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
12	CommsQuery **(Instance = instance1)**	**AppEm**	□	
13		**AppEm**	□	R: CEN175752StateE
14	**Verify whether** CEN175752StateE **equals to STSending**□**DU**			

15	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/ST/API/BV/14	**State transition from STSendingADU to STAwaitingADUConfirm**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Session is in STSendingADU state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	CommsQuery **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752StateE
3	**Verify whether** CEN175752StateE **equals to STSendingADU**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	SendADU **(Instance = instance1,** **ElementLen = any,** **Element = any)**	**AppEm**	□	
6		**AppEm**	□	R: WORD
7	**Verify whether returned value is greater than 0**			
8	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
9	SendADUSetEnd**(Instance = instance1)**	**AppEm**	□	
10		**AppEm**	□	R: CEN175752Error
11	**Verify whether** CEN175752Error **equals to ERNoError**			
12	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
13		**AppEm**	□	C: InstanceStateChange **(Instance, OldState, NewState)**
14	**Verify whether** **Instance equals to instance1 AND** **OldState equals to STSendingADU AND** **NewState equls□t STAwaitingADUConfirm)**			

15	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
16	CommsQuery **(Instance = instance1)**	**AppEm**	□	
17		**AppEm**	□	R: CEN175752StateE
18	**Verify whether** CEN175752StateE **equals to STAwaitingADUConfirm**			
19	**IF verify OK** **THEN TP pa□sed** **ELSE TP failed** **ENDIF**			

TP/ST/API/BV/15	**State transition from STAwaitingADUConfirm to STSessionIdle**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session exists for instance1. Session is in STAwaitingADUConfirm state. Correct parameterization has already been done to establish session (example: ipAddress, port, url, protocol, PDP context, etc. are set).

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	CommsQuery **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752StateE
3	**Verify whether** CEN175752StateE **equals to STAwaitingADUConfirm**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	**Remote end acknowledges receipt of ADU**	**RemEnd**	□	
6		**AppEm**	□	C: ADUSent**(Instance)**
7	**Verify whether Instance equals to instance1**			
8	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
9		**AppEm**	□	R: InstanceStateChange **(Instance, OldState, NewState)**
10	**Verify whether** **Instance equals to instance1 AND** **OldState equals to STA□aitingADUConfirm AND** **NewState equals to STSessionIdle)**			
11	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
12	CommsQuery **(Instance = instance1)**	**AppEm**	□	
13		**AppEm**	□	R: CEN175752StateE
14	**Verify whether** CEN175752StateE **equals to STSessionIdle**			
15	**IF verify OK** **THEN TP passed** **ELSE TP failed** **ENDIF**			

TP/ST/API/BV/16	**State transition from STErrored to STNoSession**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2
Initial Condition	A valid Instance instance1 has already been created. Session is in STErrored state.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	CommsQuery **(Instance = instance1)**	**AppEm**	□	
2		**AppEm**	□	R: CEN175752StateE
3	**Verify whether** CEN175752StateE **equals to STErrored**			
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	EndSession **(Instance = instance1,** **Reason = any)**	**AppEm**	□	
6		**AppEm**	□	R: CEN175752Error
7	**Verify whether** CEN175752Error **equals to ERNoError**			
8	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
9		**AppEm**	□	C: InstanceStateChange **(Instance, OldState, NewState)**
10	**Verify whether** **Instance equals to instance1 AND** **OldState equals to STErrored AND** **NewState equals to ST□oSession)**			
11	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
12	CommsQuery **(Instance = instance1)**	**AppEm**	□	
13		**AppEm**	□	R: CEN175752StateE
14	**Verify whether** CEN175752StateE **equals to STNoSession**			
15	**IF verify OK** **THEN TP passed** **ELSE TP failed** **EN□F**			

Annex B
(normative)

Annex ATP for Front End Application

B.1 Introduction

This annex contains the Test Purposes (TP) for the conformity evaluation of *Front End application* to ISO/TS 17575-2.

B.1.1 TP symbols conventions

A special notation and symbol convention is used, as defined in what follows.

Symbols are used in the description of the TPs, with meanings according Table B.1 below.

Table B.1 — Description of TP Symbols

SYMBOL	DESCRIPTION
R:ReturnedType = value1 □	The tester returns a variable of type ReturnedType with value1. Value1 shall be stored in tester's memory for further TP processing.
C:CallbackName (Type1=value1) □	The tester provides a callback CallbackName providing argument of type Type1 with value1. Value1 shall be stored in tester's memory for further TP processing.
□XXX(Type1=value1)	The DUT executes an XXX method of Front End Communications API with argument of Type1 having value value1.
Type ISO/TS 17575-2	Anytime Type defined in ISO/TS 17575-2 is used, it means a variable of Type.
A → B	A “is transformed” into B
Ø	Means “empty” or “not set”.
A | B	A OR B
A != B	A is not equal B

Testing *Front End application* it is sufficient to have a single test point. Application emulation test point is linked directly with DUT and emulates the Front End Communications API. It is identified in the following test purposes by AppEm discriminator. For more details see Figure B.1.

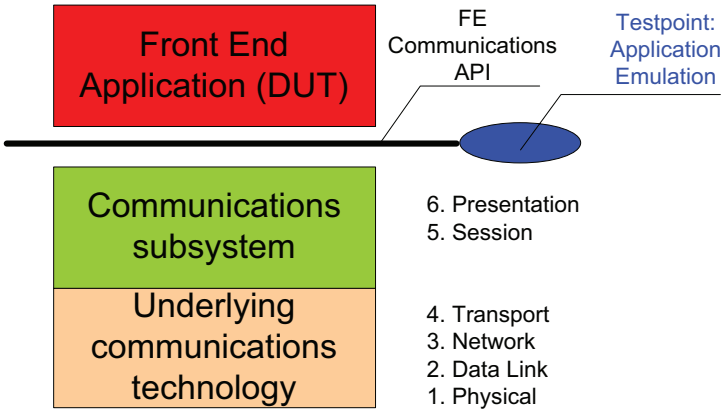

Figure B.1 — Test Purpose configuration

B.2 Session Handling

These Test Purposes apply to session establishment/re-establishment upon *Back End* session request as claimed in ISO/TS 17575-2 Clause 7.2.2 and 7.5.

B.2.1 BV test purposes

Test subgroup objective:

— to test DUT behaviour with respect to session establishment having received session request from Front End Communications API;

— to test DUT behaviour with respect to session re-establishment upon session, that was requested by *Back End*, failed.

TP/SH/APPL/BV/01	**Incoming session request (BE to FE Application)**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.2.2
Initial Condition	FE Application is initialized and can receive Session Request callback.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	C: SessionRequest**(Instance = instance1, Handle = sessionHandle1)**	**AppEm**	□	
2		**AppEm**	□	StartSession **(Instance, Reason, e□sinHandle)**
3	**Verify whether Instance equals to instance1 AND SessionHandle equals to sessionHandle1**	**AppEm**		
4	**IF verify NOT OK** **THEN TP failed** **ENDIF**			
5	R**:** CEN175752Error = **ErNoError**	**AppEm**	□	
6	C: InstanceStateChange **(Instance = instance1, oldState = STStarting, newState = STSessionIdle)**	**AppEm**	□	
7	**TP Passed**			

TP/SH/APPL/BV/02	**Session re-establishment by Front End application upon session failure**
TP Origin	Specific
Reference	ISO/TS 17575-2, Clause 7.5
Initial Condition	FE Application is initialized and can receive Session Request callback.

Stimulus and Expected Behaviour

	Tester	Test Point		DUT
1	C: SessionRequest**(Instance = instance1, Handle = sessionHandle1)**	**AppEm**	□	
2		**AppEm**	□	StartSession **(Instance, Reason, SessionHandle)**
3	**Verify w□ether Instance equals to instance1 AND SessionHandle equals to sessionHandle1**			
4	**IF verify NOT OK THEN TP failed ENDIF**			
5	R: CEN175752Error = **ErNoError**	**AppEm**	□	
6	C: InstanceStateChange **(Instance = instance1, oldState = STStarting, newState = STSessionIdle)**	**AppEm**	□	
7	C: InstanceStateChange **(Instance = instance1, oldState = STSessionIdle, newState = STErrored)**	**AppEm**	□	
8		**AppEm**	□	EndSession **(Instance, Reason)**
9	**Verify whether Instance equals to instance1**			
10	**IF verify NOT OK THEN TP ail□ ENDIF**			
11	R: CEN175752Error = **ErNoError**	**AppEm**	□	
12		**AppEm**	□	StartSession **(Instance, Reason, SessionHandle)**
13	**Verify whether Instance equals to instance1 AND SessionHandle equals to sessionHandle1**			
14	**IF verify NOT OK THEN TP failed ENDF**			
15	R: CEN175752Error = **ErNoError**	**AppEm**	□	
16	C: InstanceStateChange **(Instance = instance1, oldState = STStarting, newState = STSessionIdle)**	**AppEm**	□	
17	**TP passed**			

Annex C
(informative)

PCTR Proforma for Front End Communications API

C.1 Introduction

The protocol conformance test report (PCTR) proforma is based on ISO/IEC 9646-6, which can be consulted for any necessary additional information.

C.2 Identification summary

C.2.1 Protocol conformance test report

Table C.1 — Protocol conformance test report

PCTR Number:	
PCTR Date:	
Corresponding SCTR Number:	
Corresponding SCTR Date:	
Test Laboratory Identification:	
Test Laboratory Manager:	
Signature	

C.2.2 DUT identification

Table C.2 — DUT identification

Name:	
Version:	
Protocol specification:	
PICS:	
Previous PCTR if any:	

C.2.3 Testing environment

Table C.3 — Testing environment

PIXIT Number:	
ATS Specification:	
Abstract Test Method:	
Means of Testing identification:	
Date of testing:	
Conformance Log reference(s):	
Retention Date for Log reference(s):	

C.2.4 Limits and reservation

Additional information relevant to the technical contents or further use of the test report, or the rights and obligations of the test laboratory and the client, may be given here. Such information may include restriction on the publication of the report.

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C.2.5 Comments

Additional comments may be given by either the client or the test laboratory on any of the contents of the PCTR, for example, to note disagreement between the two parties.

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C.3 DUT Conformance status

This DUT has or has not been shown by conformance assessment to be none conforming to the specified protocol specification.

Strike the appropriate words in this sentence. If the PICS for this DUT is consistent with the static conformance requirements (as specified in Clause C.3 in the present document) and there are no "FAIL" verdicts to be recorded (in Clause C.6 in the present document) strike the words "has or", otherwise strike the words "or has not".

C.4 Static conformance summary

The PICS for this DUT is or is not consistent with the static conformance requirements in the specified protocol.

Strike the appropriate words in this sentence.

C.5 Dynamic conformance summary

The test campaign did or did not reveal errors in the DUT.

Strike the appropriate words in this sentence. If there are no "FAIL" verdicts to be recorded (in Clause C.6 of the present document) strike the words "did or" otherwise strike the words "or did not".

Summary of the results of groups of test:

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C.6 Static conformance review report

If Clause C.3 indicates non-conformance, this clause itemises the mismatches between the PICS and the static conformance requirements of the specified protocol specification.

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C.7 Test campaign report

Table C.4 — Test campaign report

ATS Reference	Selected?	Run?	Verdict	Observations (Reference to any observations made in clause C.7)
TP/IH/API/BV/01	Yes/No	Yes/No		
TP/IH/API/BV/02	Yes/No	Yes/No		
TP/IH/API/BV/03	Yes/No	Yes/No		
TP/IH/API/BV/04	Yes/No	Yes/No		
TP/IH/API/BV/05	Yes/No	Yes/No		
TP/IH/API/BV/06	Yes/No	Yes/No		
TP/IH/API/BV/07	Yes/No	Yes/No		
TP/IH/API/BV/08	Yes/No	Yes/No		
TP/IH/API/BV/09	Yes/No	Yes/No		
TP/IH/API/BV/10	Yes/No	Yes/No		
TP/IH/API/BV/11	Yes/No	Yes/No		
TP/IH/API/BV/12	Yes/No	Yes/No		
TP/IH/API/BV/13	Yes/No	Yes/No		
TP/IH/API/BV/14	Yes/No	Yes/No		
TP/IH/API/BV/15	Yes/No	Yes/No		
TP/IH/API/BV/16	Yes/No	Yes/No		
TP/IH/API/BV/17	Yes/No	Yes/No		
TP/IH/API/BV/18	Yes/No	Yes/No		
TP/IH/API/BV/19	Yes/No	Yes/No		
TP/IH/API/BV/20	Yes/No	Yes/No		
TP/IH/API/BV/21	Yes/No	Yes/No		
TP/IH/API/BV/22	Yes/No	Yes/No		
TP/IH/API/BV/23	Yes/No	Yes/No		
TP/IH/API/BV/24	Yes/No	Yes/No		
TP/IH/API/BV/25	Yes/No	Yes/No		
TP/IH/API/BV/26	Yes/No	Yes/No		
TP/IH/API/BV/27	Yes/No	Yes/No		
TP/IH/API/BI/01	Yes/No	Yes/No		
TP/IH/API/BI/02	Yes/No	Yes/No		
TP/IH/API/BI/03	Yes/No	Yes/No		
TP/IH/API/BI/04	Yes/No	Yes/No		
TP/IH/API/BI/05	Yes/No	Yes/No		
TP/IH/API/BI/06	Yes/No	Yes/No		
TP/IH/API/BI/07	Yes/No	Yes/No		
TP/IH/API/BI/08	Yes/No	Yes/No		
TP/IH/API/BI/09	Yes/No	Yes/No		
TP/IH/API/BI/10	Yes/No	Yes/No		
TP/IH/API/BI/11	Yes/No	Yes/No		
TP/IH/API/BI/12	Yes/No	Yes/No		
TP/IH/API/BI/13	Yes/No	Yes/No		
TP/IH/API/BI/14	Yes/No	Yes/No		
TP/IH/API/BI/15	Yes/No	Yes/No		
TP/IH/API/BI/16	Yes/No	Yes/No		
TP/IH/API/BI/17	Yes/No	Yes/No		
TP/IH/API/BI/18	Yes/No	Yes/No		
TP/IH/API/BI/19	Yes/No	Yes/No		
TP/IH/API/BI/20	Yes/No	Yes/No		
TP/IH/API/BI/21	Yes/No	Yes/No		
TP/IH/API/BI/22	Yes/No	Yes/No		
TP/IH/API/BI/23	Yes/No	Yes/No		
TP/IH/API/BI/24	Yes/No	Yes/No		
TP/IH/API/BI/25	Yes/No	Yes/No		
TP/IH/API/BI/26	Yes/No	Yes/No		
TP/IH/API/BI/27	Yes/No	Yes/No		
TP/IH/API/BI/28	Yes/No	Yes/No		
TP/IH/API/BI/29	Yes/No	Yes/No		

TP/SH/API/BV/01	Yes/No	Yes/No		
TP/SH/API/BV/02	Yes/No	Yes/No		
TP/SH/API/BV/03	Yes/No	Yes/No		
TP/SH/API/BV/04	Yes/No	Yes/No		
TP/SH/API/BI/01	Yes/No	Yes/No		
TP/SH/API/BI/02	Yes/No	Yes/No		
TP/SH/API/BI/03	Yes/No	Yes/No		
TP/SH/API/BI/04	Yes/No	Yes/No		
TP/SH/API/BI/05	Yes/No	Yes/No		
TP/SH/API/BI/06	Yes/No	Yes/No		
TP/SH/API/BI/07	Yes/No	Yes/No		
TP/SH/API/BI/08	Yes/No	Yes/No		
TP/SH/API/BI/09	Yes/No	Yes/No		
TP/CSP/API/BV/01	Yes/No	Yes/No		
TP/CSP/API/BV/02	Yes/No	Yes/No		
TP/CSP/API/BV/03	Yes/No	Yes/No		
TP/CSP/API/BV/04	Yes/No	Yes/No		
TP/CSP/API/BV/05	Yes/No	Yes/No		
TP/CSP/API/BV/06	Yes/No	Yes/No		
TP/CSP/API/BV/07	Yes/No	Yes/No		
TP/CSP/API/BV/08	Yes/No	Yes/No		
TP/CSP/API/BV/09	Yes/No	Yes/No		
TP/CSP/API/BV/10	Yes/No	Yes/No		
TP/CSP/API/BI/01	Yes/No	Yes/No		
TP/CSP/API/BI/02	Yes/No	Yes/No		
TP/CSP/API/BI/03	Yes/No	Yes/No		
TP/CSP/API/BI/04	Yes/No	Yes/No		
TP/CSP/API/BI/05	Yes/No	Yes/No		
TP/CSP/API/BI/06	Yes/No	Yes/No		
TP/CSP/API/BI/07	Yes/No	Yes/No		
TP/CSP/API/BI/08	Yes/No	Yes/No		
TP/CSP/API/BI/09	Yes/No	Yes/No		
TP/CSP/API/BI/10	Yes/No	Yes/No		
TP/CSP/API/BI/11	Yes/No	Yes/No		
TP/CSP/API/BI/12	Yes/No	Yes/No		
TP/CSP/API/BI/13	Yes/No	Yes/No		
TP/CSP/API/BI/14	Yes/No	Yes/No		
TP/CSP/API/BI/15	Yes/No	Yes/No		
TP/CSP/API/BI/16	Yes/No	Yes/No		
TP/CSP/API/BI/17	Yes/No	Yes/No		
TP/CSP/API/BI/18	Yes/No	Yes/No		
TP/CSP/API/BI/19	Yes/No	Yes/No		
TP/CSP/API/BI/20	Yes/No	Yes/No		
TP/CSP/API/BI/21	Yes/No	Yes/No		
TP/CSP/API/BI/22	Yes/No	Yes/No		
TP/CSP/API/BI/23	Yes/No	Yes/No		
TP/CSP/API/BI/24	Yes/No	Yes/No		
TP/CSP/API/BI/25	Yes/No	Yes/No		
TP/CSP/API/BI/26	Yes/No	Yes/No		
TP/CSP/API/BI/27	Yes/No	Yes/No		
TP/CSP/API/BI/28	Yes/No	Yes/No		
TP/CSP/API/BI/29	Yes/No	Yes/No		
TP/CSP/API/BI/30	Yes/No	Yes/No		
TP/CSP/API/BI/31	Yes/No	Yes/No		
TP/CSP/API/BI/32	Yes/No	Yes/No		
TP/CSP/API/BI/33	Yes/No	Yes/No		
TP/CSP/API/BI/34	Yes/No	Yes/No		
TP/CSP/API/BI/35	Yes/No	Yes/No		
TP/CSP/API/BI/36	Yes/No	Yes/No		
TP/CSP/API/BI/37	Yes/No	Yes/No		
TP/ST/API/BV/01	Yes/No	Yes/No		
TP/ST/API/BV/02	Yes/No	Yes/No		
TP/ST/API/BV/03	Yes/No	Yes/No		
TP/ST/API/BV/04	Yes/No	Yes/No		

TP/ST/API/BV/05	Yes/No	Yes/No		
TP/ST/API/BV/06	Yes/No	Yes/No		
TP/ST/API/BV/07	Yes/No	Yes/No		
TP/ST/API/BV/08	Yes/No	Yes/No		
TP/ST/API/BV/09	Yes/No	Yes/No		
TP/ST/API/BV/10	Yes/No	Yes/No		
TP/ST/API/BV/11	Yes/No	Yes/No		
TP/ST/API/BV/12	Yes/No	Yes/No		
TP/ST/API/BV/13	Yes/No	Yes/No		
TP/ST/API/BV/14	Yes/No	Yes/No		
TP/ST/API/BV/15	Yes/No	Yes/No		
TP/ST/API/BV/16	Yes/No	Yes/No		

C.8 Observations

Additional information relevant to the technical content of the PCTR is given here.

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Annex D
(informative)

PCTR Proforma for Front End Application

D.1 Introduction

The protocol conformance test report (PCTR) proforma is based on ISO/IEC 9646-6, which can be consulted for any necessary additional information.

D.2 Identification summary

D.2.1 Protocol conformance test report

Table D.1 — Protocol conformance test report

PCTR Number:	
PCTR Date:	
Corresponding SCTR Number:	
Corresponding SCTR Date:	
Test Laboratory Identification:	
Test Laboratory Manager:	
Signature	

D.2.2 DUT identification

Table D.2 — DUT identification

Name:	
Version:	
Protocol specification:	
PICS:	
Previous PCTR if any:	

D.2.3 Testing environment

Table D.3 — Testing environment

PIXIT Number:	
ATS Specification:	
Abstract Test Method:	
Means of Testing identification:	
Date of testing:	
Conformance Log reference(s):	
Retention Date for Log reference(s):	

D.2.4 Limits and reservation

Additional information relevant to the technical contents or further use of the test report, or the rights and obligations of the test laboratory and the client, may be given here. Such information may include restriction on the publication of the report.

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D.2.5 Comments

Additional comments may be given by either the client or the test laboratory on any of the contents of the PCTR, for example, to note disagreement between the two parties.

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D.3 DUT Conformance status

This DUT has or has not been shown by conformance assessment to be none conforming to the specified protocol specification.

Strike the appropriate words in this sentence. If the PICS for this DUT is consistent with the static conformance requirements (as specified in Clause D.3 in the present document) and there are no "FAIL" verdicts to be recorded (in Clause D.6 in the present document) strike the words "has or", otherwise strike the words "or has not".

D.4 Static conformance summary

The PICS for this DUT is or is not consistent with the static conformance requirements in the specified protocol.

Strike the appropriate words in this sentence.

D.5 Dynamic conformance summary

The test campaign did or did not reveal errors in the DUT.

Strike the appropriate words in this sentence. If there are no "FAIL" verdicts to be recorded (in Clause D.6 of the present document) strike the words "did or" otherwise strike the words "or did not".

Summary of the results of groups of test:

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D.6 Static conformance review report

If Clause D.3 indicates non-conformance, this clause itemises the mismatches between the PICS and the static conformance requirements of the specified protocol specification.

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D.7 Test campaign report

Table D.4 — Test campaign report

ATS Reference	Selected?	Run?	Verdict	Observations (Reference to any observations made in clause D.7)
TP/SH/APPL/BV/01	Yes/No	Yes/No		
TP/SH/APPL/BV/02	Yes/No	Yes/No		

D.8 Observations

Additional information relevant to the technical content of the PCTR is given here.

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