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*Technical Specification*

**Universal Mobile Telecommunications System (UMTS);  
LTE;  
Test specification for subscriber (U)SIM;  
Application Programming Interface (API) for Java Card™  
(3GPP TS 31.213 version 10.0.0 Release 10)**

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## Foreword

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## Foreword

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  - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

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# 1 Scope

The present document covers the minimum characteristics considered necessary in order to provide compliance to TS 31.130 [2].

The present document describes the technical characteristics and methods of test for testing the (U)SIM API for Java Card™ (TS 31.130 [2]) implemented in the (U)SIM. It specifies the following parts:

- test applicability;
- test environment description;
- tests format;
- test area reference;
- conformance requirements;
- test suite files;
- test procedure;
- test coverage; and
- a description of the associated testing tools that shall be used.

---

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] ETSI TS 101 220: "Integrated Circuit Cards (ICC); ETSI numbering system for telecommunication; Application providers (AID)".
- [2] 3GPP TS 31 130 Release 6: "(U)SIM API for Java Card™"
- [3] Void.
- [4] 3GPP TS 31.102: "Characteristics of the USIM Application".
- [5] 3GPP TS 51.011 Release 4: "Specification of the Subscriber Identity Module- Mobile Equipment (SIM – ME) interface".
- [6] 3GPP TS 23.041: "Technical realization of Cell Broadcast Service (CBS)".
- [7] Void.
- [8] 3GPP TS 31.111: "USIM Application Toolkit (USAT)".
- [9] Void.
- [10] 3GPP TS 31.115: "Secured packet structure for the (U)SIM Toolkit applications".
- [11] 3GPP TS 23.040: "Technical realization of the Short Message Service (SMS)".



- [12] Sun Microsystems Java Card™ Specification: "Java Card™ 2.2.1 Application Programming Interface".
- [13] Sun Microsystems Java Card™ Specification: "Java Card™ 2.2.1 Runtime Environment (JCRE) Specification".
- [14] Sun Microsystems Java Card™ Specification: "Java Card™ 2.2.1 Virtual Machine Specification".  
SUN Java Card™ Specifications can be downloaded at <http://java.sun.com/products/javacard>
- [15] ETSI TS 102 268 V6.0.0: "Test specification for UICC Application Programming Interface for Java Card (TM) ".
- [16] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

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## 3 Definitions, symbols and abbreviations

### 3.1 Definitions

For the purposes of the present document, the terms and definitions given in TR 21.905 [16] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in TR 21.905 [16].

**applet installation parameters:** values for applet installation parameters

**Conformance Requirement Reference (CRR):** description of the expected card behaviour according to TS 31.130 [2]

**expected state:** state in which the (U)SIM is supposed to be after the execution of the test procedure applied on the relevant initial conditions

**security parameters:** minimum security requirements defined for the applet installation process

**test area:** set of Test Cases applicable to a specific part (class method, CAT RE behaviour, etc) of the TS 31.130 [2].

**test case:** elementary test that checks for compliance with one or more Conformance Requirement References

**test procedure:** sequence of actions/commands to perform all the test cases defined in a test area

**test source file:** java file containing methods that will load and install test applet in the card, execute and verify the test results, and restore the Default Initial Conditions on the (U)SIM (when possible).

**test toolkit applet:** applet designed to test a specific functionality of the USIM API (TS 31.130 [2])

### 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [16] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [16].

|        |   |
|--------|---|
| AID    | Application Identifier                            |
| APDU   | Application Protocol Data Unit                    |
| API    | Application Programming Interface                 |
| CAT RE | Card Application Toolkit Runtime Environment      |
| CRR    | Conformance requirements Reference                |
| CRRC   | Conformance requirement Reference Context Error   |
| CRRN   | Conformance requirement Reference Normal          |
| CRRP   | Conformance requirement Reference Parameter Error |
| FFS    | For Further Study                                 |

# 4 Test environment

This clause specifies requirements that shall be met and the testing rules that shall be followed during the test procedure.

## 4.1 Applicability

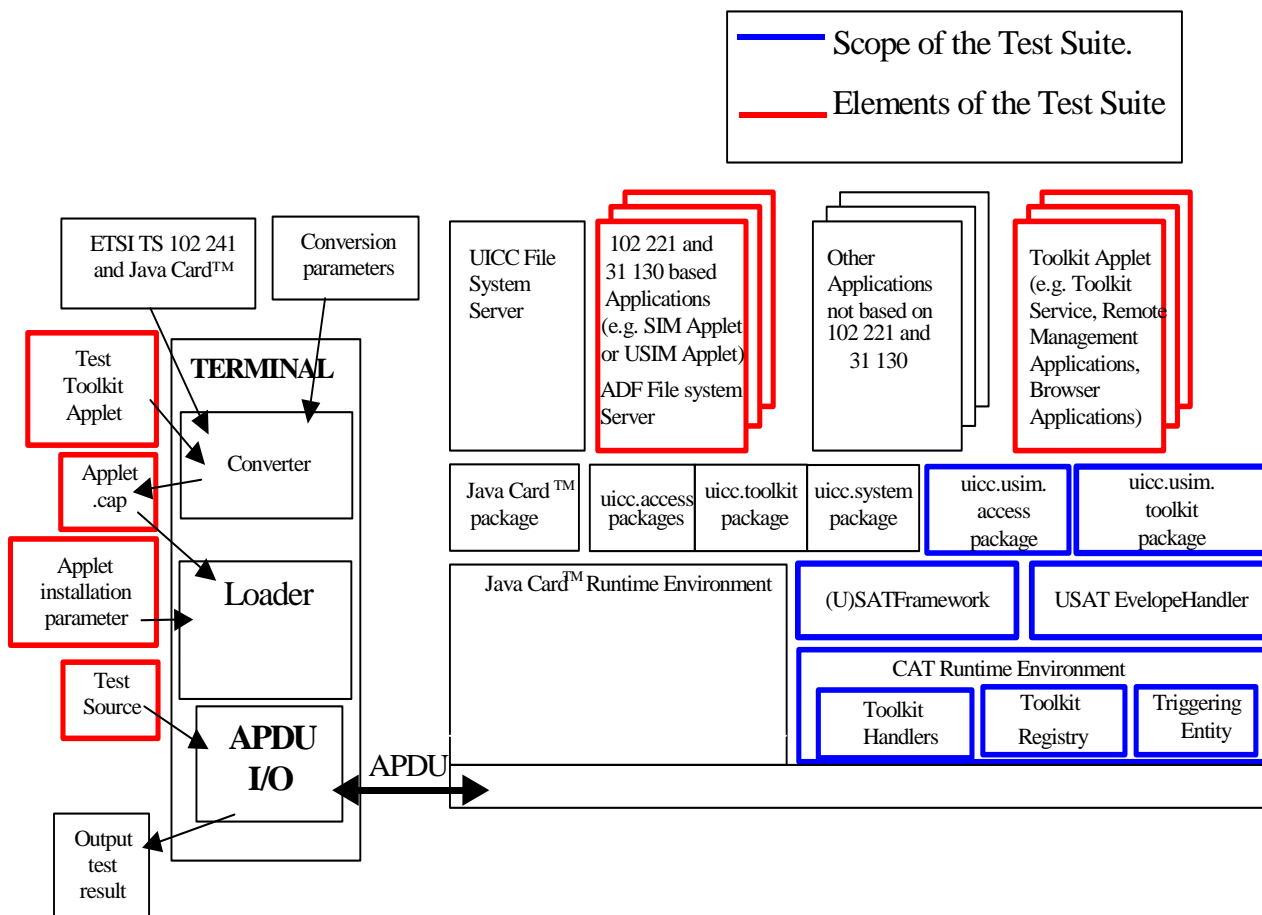
The tests defined in the present document shall be performed taking into account the services supported by the card as specified in the EF<sub>SST</sub> file.

The test defined in the present document are applicable to cards implementing TS 31.130 [2] unless otherwise stated.

The tests defined in the present document require that the card support the concatenation process with 2 concatenated SMS.

## 4.2 Test environment description

The general architecture for the test environment is:



## 4.3 Tests format

### 4.3.1 Test area reference

Each test area is referenced as follows:

For API testing:

API Testing: 'API\_[package name]\_[classname]\_[methodname]' where

package name:

uicc.usim.access package: '1'

uicc.usim.toolkit package: '2'

class name:

yyy: 3 letters for each class.

See Annex A for full classes acronyms list.

method name:

zzzz[input parameters]:

See Annex A for full methods name acronyms list.

For Framework testing:

FWK: framework testing

Chapter name:

xxx: 3 letters for each chapter

See annex F for full chapter acronyms list

Subchapter name

yyyy: : 4 letters for each subchapter

See annex F for full subchapter acronyms list

#### 4.3.1.1 Conformance requirements

The conformance requirements are expressed in the following way:

- Method prototype as listed in TS 31.130 [2].
- Normal execution:
  - Contains normal execution and correct parameters limit values, each referenced as a Conformance Requirement Reference Normal (CRRN).
- Parameters error:
  - Contains parameter errors and incorrect parameter limit values, each referenced as a Conformance Requirement Reference Parameter Error (CRRP).
- Context error:
  - Contains errors due to the context the method is used in, each referenced as a Conformance Requirement Reference Context Error (CRRC).

### 4.3.1.2 Test area files

The files included in the Test Area use the following naming convention:

- Test Source: Test\_[Test Area Reference].java
- Test Applet: [Test Area Reference]\_[Test applet number].java
- Cap File: [Test Area Reference].cap

The applet numbers start from '1'.

The test source shall use common interfaces defined in Annex D.

The Cap File format is described in Java Card™ Virtual Machine Specification [4].

Test files can be run in any order.

All files from the same test area are located in the same subfolder.

### 4.3.1.3 Test procedure

Each test procedure contains a table to indicate the expected responses form the API and/or the APDU level as follows:

| Test Case |                                       |  |   |
|-----------|---------------------------------------|--|---|
| Id        | Description                           | API/(U)SAT Framework Expectation                       | APDU Expectation                        |
|           | <i>Test Case detailed description</i> | <i>API and/or (U)SAT Framework expected behaviour.</i> | <i>Expected response at APDU level.</i> |

### 4.3.1.4 Test coverage

The table above each test procedure indicates the correspondence between the Conformance Requirements Reference (CRR) and the different test cases.

## 4.4 Initial conditions

The Initial Conditions are a set of general prerequisites for the (U)SIM prior to the execution of testing. For each test procedure described in the present document, the following rules apply to the Initial Conditions:

- unless otherwise stated, the file system and the files' content shall fulfil the requirements described in annex B;
- unless otherwise stated, before installing the applet(s) relevant to the current test procedure, all packages specific to other test procedures shall not be present.

When both statements apply, a test procedure is said to be in the "Default Initial Conditions" state.

## 4.5 Package name

Java packages integrating this Test Suite shall follow this naming convention:

**uicc.usim.test.access.[Test Area Reference]:** Java Card packages containing Test Area References for the TS 31.130 [2] uicc.access package.

**uicc.usim.test.toolkit.[Test Area Reference]:** Java Card packages containing Test Area References for the TS 31.130 [2] uicc.toolkit package.

**uicc.usim.test.usatframework.[Test Area Reference]:** Java Card packages containing Test Area References for the TS 31.130 [2] USAT Framework.

**uicc.usim.test.util:** for the Test util package defined in this Test Suite.

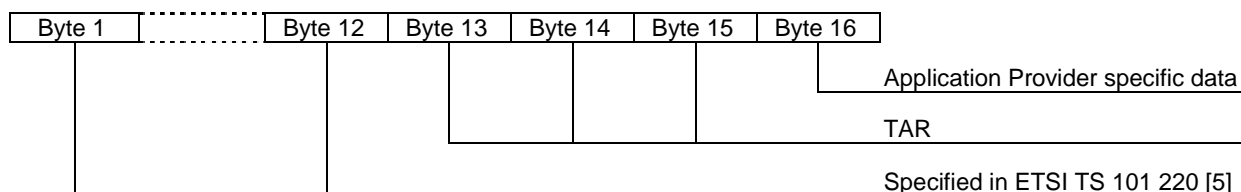
where the Test Area Reference is written in lower case.

EXAMPLE: The package `../uicc.usim.test.access.[Test Area Reference]` creates the following directory structure `../uiccsim/test/access/[Test Area Reference]/Api_1..._1..n.*`, where `'Api_1..._1..n.*'` are the different test applets Java source files used in `[Test Area Reference]`.

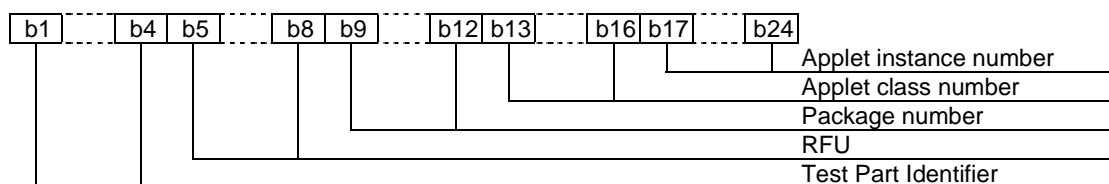
## 4.6 AID coding

The AID coding for the Test Packages, Applet classes and Applets shall be as specified in ETSI TS 101 220 [5]. In addition, the following TAR and Application Provider specific data values are defined for use within the present document:

AID coding



TAR coding (3 bytes/ 24 bits):



Applet instance number, Applet Class number, Package number:

For package AID, package number shall start from 0 and class and instance numbers shall be 0.

For class AID, package number is the number of the class package, class number shall start from 1 and instance shall be 0.

For instance AID, package and class number are the number of class and package of which instance belongs, and instance number shall start from 1.

Test part Identifier (bits b1-b4):

- 0000 reserved (as TAR= '00.00.00' is reserved for Issuer Security Domain)
- 0010 API uicc.usim.toolkit
- 0101 USAT Framework
- 1110 USIM ADF
- 1111 uicc.util
- other values are RFU

Application Provider specific data (1 byte):

- '00' for Package
- '01' for Applet class
- '02' for Applet Instance

EXAMPLE: The AID of Package uicc.usim.util is 'A0 00 00 00 87 10 05 FF FF FF FF 89 F0 00 00 00'.

## 4.7 Test equipment

These clauses recommend a minimum specification for each of the items of test equipment referenced in the tests.

### 4.7.1 Test tool

This test tool shall meet the following requirements:

- be able to send and receive APDU command to the USIM;
- the result of I/O commands must be presented at the application layer;
- be able to provide results of the tests;
- shall send and/or compare all data specified in test file.

### 4.7.2 Interfaces and classes use

The USIM test tool extends the UICC test tool defined in ETSI TS 102 268 [15]. Then The USIM test tool cannot be run without having implemented the UICC test tool.

The USIM test tool shall use some interfaces and classes, defined in Annex D. They define the only allowed methods to write the test sources.

Interfaces and classes are defined as follow:

- USimToolkitService defines methods to manage toolkit commands,
- USimAPITestService defines methods to send envelopes defined in TS 31.111 [8],
- USimAPITestCardService defines the static method to get a reference of the class implementing all interfaces.

### 4.7.3 Util package

Annex D includes java source code of TestToolkitApplet abstract class of the uicc.usim.util package. Each test applet shall extend this abstract class in order to retrieve test results when selecting it.

### 4.7.4 Java Software Development kit version

Java software development kit (SDK) version supported by Java Card 2.2.1 specifications ([12], [13], [14]) is 1.4.1.

---

## 5 Test plan

The test plan is divided according to the (U)SIM API specification, that way the tests will follow the class hierarchy for the uicc.usim.toolkit and uicc.usim.access package; for the SIM Toolkit framework this test plan describes the different points that will be tested with the present test specification.

### 5.1 Package uicc.usim.access package

#### 5.1.1 Interface SIMConstants

The constants in Java are resolved at compilation time, therefore a runtime test is not useful. No test of constants will be performed.

## 5.1.2 Interface USIMConstants

The constants in Java are resolved at compilation time, therefore a runtime test is not useful. No test of constants will be performed.

## 5.2 Package uicc.usim.toolkit package

### 5.2.1 Interface ToolkitConstants

The constants in Java are resolved at compilation time, therefore a runtime test is not useful. No test of constants will be performed.

### 5.2.2 Interface USATEnvelopeHandler

#### 5.2.2.1 Method getSecuredDataLength

Test Area Reference: Api\_2\_Ueh\_Gsdl

##### 5.2.2.1.1 Conformance requirement

The method with following header shall be compliant to its definition in the API.

```
public short getSecuredDataLength()
                throws uicc.toolkit.ToolkitException
```

##### 5.2.2.1.1.1 Normal execution

- CRRN1: The method shall return the length of the Secured Data from the Command Packet in the SMS TPDU (simple or concatenated) or Cell Broadcast Page Comprehension TLV contained in the Envelope handler.
- CRRN2: The length is from the first SMS TPDU TLV, USSD String TLV or Cell Broadcast Page Comprehension TLV.
- CRRN3: The length should not include padding bytes.
- CRRN4: The method can be used if the event is EVENT\_FORMATTED\_SMS\_PP\_ENV and if the SMS TP UD is formatted according to TS 31.115 [10] Single or Concatenated Short Message.
- CRRN5: The method can be used if the event is EVENT\_FORMATTED\_SMS\_PP\_UPD and if the SMS TP UD is formatted according to TS 31.115 [10] Single or Concatenated Short Message.
- CRRN6: The method can be used if the event is EVENT\_FORMATTED\_SMS\_CB and if the Cell Broadcast Page is formatted according to TS 31.115 [10].
- CRRN7: The method can be used if the event is EVENT\_FORMATTED\_USSD and if the USSD String id is formatted according to TS31.115 [10]
- CRRN8: If the method is successful and if the event is EVENT\_FORMATTED\_SMS\_PP\_ENV, the selected TLV should be the SMS TPDU TLV.
- CRRN9: If the method is successful and if the event is EVENT\_FORMATTED\_SMS\_PP\_UPD, the selected TLV should be the SMS TPDU TLV.
- CRRN10: If the method is successful and if the event is EVENT\_FORMATTED\_SMS\_CB, the selected TLV should be the Cell Broadcast Page TLV.
- CRRN11: If the method is successful and if the event is EVENT\_FORMATTED\_USSD, the selected TLV should be the USSD String TLV.

## 5.2.2.1.1.2 Parameter errors

No requirements.

## 5.2.2.1.1.3 Context errors

- CRRC1: The method shall throw ToolkitException.UNAVAILABLE\_ELEMENT in case of unavailable SMS TPDU TLV, USSD String TLV element or Cell Broadcast Page Comprehension TLV.
- CRRC2: The method shall throw ToolkitException.UNAVAILABLE\_ELEMENT in case of wrong data format.

## 5.2.2.1.2 Test area files

Specific triggering:

- FORMATTED SMS CB.
- UNFORMATTED SMS CB.
- FORMATTED SMS PP ENV.
- UNFORMATTED SMS PP ENV.
- FORMATTED SMS PP UPD.
- FORMATTED USSD ENV.
- UNFORMATTED USSD ENV.
- For Formatted triggering if CC/RC/DS is used, the security parameters are the one defined in section '5.3.8 Framework Security Management'.

Test Source: Test\_Api\_2\_Ueh\_Gsdl.java

Test Applet: Api\_2\_Ueh\_Gsdl\_1.java

Cap File: Api\_2\_Ueh\_Gsdl.cap

## 5.2.2.1.3 Test coverage

| CRR number | Test case number |
|------------|------------------|
| N1         | 1 to 42          |



|     |                      |
|-----|----------------------|
| N2  | 13, 30               |
| N3  | 6, 7, 23, 24, 37, 38 |
| N4  | 1 to 17              |
| N5  | 18 to 34             |
| N6  | 35 to 42             |
| N7  | 43 to 56             |
| N8  | 17                   |
| N9  | 34                   |
| N10 | 42                   |
| N11 | 56                   |
| C1  | 57                   |
| C2  | 58                   |
| C3  | 59                   |

## 5.2.2.1.4 Test procedure

| Id                                     | Description  | API(U)SAT Framework Expectation | APDU Expectation |
|--|--|---------------------------------|------------------|
| <b>FORMATTED SMS PP ENV Triggering</b> |  |                                 |                  |
| 1                                      | Test with FORMATTED_SMS_PP_ENV and TP-OA length of 2   | Returns 0x002A                  |                  |
| 2                                      | Test with TP-OA length of 6  | Returns 0x002A                  |                  |
| 3                                      | Test with TP-OA length of 12   | Returns 0x002A                  |                  |
| 4                                      | Test with RC/CC/DS length of 0   | Returns 0x0010                  |                  |
| 5                                      | Test with RC/CC/DS length of 8   | Returns 0x0010                  |                  |
| 6                                      | Test with PCNTR = 0  | Returns 0x0010                  |                  |
| 7                                      | Test with PCNTR = 7 (ciphering shall be used)  | Returns 0x0003                  |                  |
| 8                                      | Test with Secured Data Length = 00   | Returns 0x0000                  |                  |
| 9                                      | Test with Secured Data Length = 0x33   | Returns 0x0033                  |                  |
| 10                                     | Test with Secured Data Length = 0x6C (UDL = 0x7F)  | Returns 0x006C                  |                  |
| 11                                     | Test with Secured Data Length = 0x6D (UDL = 0x80)  | Returns 0x006D                  |                  |
| 12                                     | Test with Secured Data Length = maximum length for one envelope : 0x79 (UDL = 0x8C)  | Returns 0x0079                  |                  |
| 13                                     | Verify it is the first TPDU TLV:<br>Send a SMS PP with 2 TPDU TLV and inside two different secured data lengths: 5 and 10  | Returns 0x0005                  |                  |
| 14                                     | Test with secured data length = 0x7F (2 concatenated envelopes are needed)   | Returns 0x007F                  |                  |
| 15                                     | Test with secured data length = 0x80 (2 concatenated envelopes are needed)   | Returns 0x0080                  |                  |
| 16                                     | Test with secured data length = maximum length for 2 concatenated envelopes : 0xFA   | Returns 0x00FA                  |                  |
| 17                                     | Test with FORMATTED_SMS_PP_ENV<br>Verify after call of the method the current TLV is the TPDU TLV:<br>findTLV device identities, getSecuredDataLength and then getValueByte to verify that the current TLV is the TPDU TLV | getValueByte returns 0x0040     |                  |
| <b>FORMATTED SMS PP UPD Triggering</b> |  |                                 |                  |
| 18                                     | Same test as 1 but with FORMATTED_SMS_PP_UPD   | Returns 0x002A                  |                  |
| 19                                     | Same test as 2 but with FORMATTED_SMS_PP_UPD   | Returns 0x002A                  |                  |
| 20                                     | Same test as 3 but with FORMATTED_SMS_PP_UPD   | Returns 0x002A                  |                  |
| 21                                     | Same test as 4 but with FORMATTED_SMS_PP_UPD   | Returns 0x0010                  |                  |
| 22                                     | Same test as 5 but with FORMATTED_SMS_PP_UPD   | Returns 0x0010                  |                  |
| 23                                     | Same test as 6 but with FORMATTED_SMS_PP_UPD   | Returns 0x0010                  |                  |
| 24                                     | Same test as 7 but with FORMATTED_SMS_PP_UPD   | Returns 0x0003                  |                  |
| 25                                     | Same test as 8 but with  | Returns 0x0000                  |                  |

| Id | Description  | API(U)SAT Framework Expectation | APDU Expectation |
|----|--|---------------------------------|------------------|
|    | FORMATTED_SMS_PP_UPD   |                                 |                  |
| 26 | Same test as 9 but with FORMATTED_SMS_PP_UPD   | Returns 0x0033                  |                  |
| 27 | Same test as 10 but with FORMATTED_SMS_PP_UPD  | Returns 0x006C                  |                  |
| 28 | Same test as 11 but with FORMATTED_SMS_PP_UPD  | Returns 0x006D                  |                  |
| 29 | Same test as 12 but with FORMATTED_SMS_PP_UPD  | Returns 0x0079                  |                  |
| 30 | Same test as 13 but with FORMATTED_SMS_PP_UPD  | Returns 0x0005                  |                  |
| 31 | Test with secured data length = 0x7F (2 concatenated envelopes are needed)   | Returns 0x007F                  |                  |
| 32 | Test with secured data length = 0x80 (2 concatenated envelopes are needed)   | Returns 0x0080                  |                  |
| 33 | Test with secured data length = maximum length for 2 concatenated envelopes : 0xFA   | Returns 0x00FA                  |                  |
| 34 | Test with FORMATTED_SMS_PP_UPD<br>Verify after call of the method the current TLV is the TPDU TLV:<br>findTLV device identities, getSecuredDataLength and then getValueByte to verify that the current TLV is the TPDU TLV                           | getValueByte returns 0x0040     |                  |
|    | <b>FORMATTED SMS CB Triggering</b>   |                                 |                  |
| 35 | Same test as 4 but with FORMATTED_SMS_CB   | Returns 0x0010                  |                  |
| 36 | Same test as 5 but with FORMATTED_SMS_CB   | Returns 0x0010                  |                  |
| 37 | Same test as 6 but with FORMATTED_SMS_CB   | Returns 0x0010                  |                  |
| 38 | Same test as 7 but with FORMATTED_SMS_CB   | Returns 0x0003                  |                  |
| 39 | Same test as 8 but with FORMATTED_SMS_CB   | Returns 0x0000                  |                  |
| 40 | Same test as 9 but with FORMATTED_SMS_CB   | Returns 0x0033                  |                  |
| 41 | Same test as 12 but with maximum secured data length: 0x42, and FORMATTED_SMS_CB   | Returns 0x0042                  |                  |
| 42 | Test with FORMATTED_SMS_CB<br>Verify after call of the method the current TLV is the Cell Broadcast Page TLV:<br>findTLV device identities, getSecuredDataLength and then getValueByte to verify that the current TLV is the Cell Broadcast Page TLV | getValueByte returns 0x00       |                  |
|    | <b>FORMATTED USSD Triggering</b>   |                                 |                  |
| 43 | Test with formatted USSD and RC/CC/DS length of 0  | Returns 0x0010                  |                  |
| 44 | Test with RC/CC/DS length of 8   | Returns 0x0010                  |                  |
| 45 | Test with PCNTR = 0  | Returns 0x0010                  |                  |
| 46 | Test with PCNTR = 7 (ciphering shall be used)  | Returns 0x0003                  |                  |
| 47 | Test with Secured Data Length = 00   | Returns 0x0000                  |                  |
| 48 | Test with Secured Data Length = 0x33   | Returns 0x0033                  |                  |
| 49 | Test with Secured Data Length = 0x6C (UDL = 0x7F)  | Returns 0x006C                  |                  |
| 50 | Test with Secured Data Length = 0x6D (UDL = 0x80)  | Returns 0x006D                  |                  |
| 51 | Test with Secured Data Length = maximum length for one envelope : 0x79 (UDL = 0x8C)  | Returns 0x0079                  |                  |
| 52 | Verify it is the first String TLV:<br>Send a USSD with 2 USSD String TLV and inside two different secured data lengths: 5 and 10   | Returns 0x0005                  |                  |
| 53 | Test with secured data length = 0x7F (2 concatenated envelopes are needed)   | Returns 0x007F                  |                  |
| 54 | Test with secured data length = 0x80 (2 concatenated envelopes are needed)   | Returns 0x0080                  |                  |
| 55 | Test with secured data length = maximum length for 2 concatenated envelopes : 0xFA   | Returns 0x00FA                  |                  |
| 56 | Test with FORMATTED_USSD<br>Verify after call of the method the current TLV is the USSD String TLV:<br>findTLV device identities, getSecuredDataLength   | getValueByte returns 0x0040     |                  |

| Id | Description  | API/(U)SAT Framework Expectation                  | APDU Expectation |
|----|--|---|------------------|
|    | and then <code>getValueByte</code> to verify that the current TLV is the USSD String TLV |   |                  |
|    | <b>Error tests</b>   |   |                  |
| 57 | Send an envelope SMS CB, <code>getSecuredDataLength</code>                               | <code>ToolkitException.UNAVAILABLE_ELEMENT</code> |                  |
| 58 | Send an envelope SMS PP unformatted  | <code>ToolkitException.UNAVAILABLE_ELEMENT</code> |                  |
| 59 | Send an envelope USSD unformatted  | <code>ToolkitException.UNAVAILABLE_ELEMENT</code> |                  |

### 5.2.2.2 Method `getSecuredDataOffset`

Test Area Reference: `Api_2_Ueh_Gsdo`

#### 5.2.2.2.1 Conformance requirement

The method with following header shall be compliant to its definition in the API.

```
public short getSecuredDataOffset()
    throws uicc.toolkit.ToolkitException
```

##### 5.2.2.2.1.1 Normal execution

- CRRN1: The method shall return the offset of the secured data first byte contained in a SMS TPDU TLV or USSD String TLV.
- CRRN2: The offset is from the first SMS TPDU TLV or USSD String TLV.
- CRRN3: The method can be used if the event is `EVENT_FORMATTED_SMS_PP_ENV` and if the SMS TPDU is formatted according to TS 31.115 [10].
- CRRN4: The method can be used if the event is `EVENT_FORMATTED_SMS_PP_UPD` and if the SMS TPDU is formatted according to TS 31.115 [10].
- CRRN5: The method can be used if the event is `EVENT_FORMATTED_SMS_CB` and if the Cell Broadcast Page is formatted according to TS 31.115 [10].
- CRRN6: If the method is successful and if the event is `EVENT_FORMATTED_SMS_PP_ENV`, the selected TLV should be the SMS TPDU TLV.
- CRRN7: If the method is successful and if the event is `EVENT_FORMATTED_SMS_PP_UPD`, the selected TLV should be the SMS TPDU TLV.
- CRRN8: If the method is successful and if the event is `EVENT_FORMATTED_SMS_CB`, the selected TLV should be the Cell Broadcast Page TLV.
- CRRN9: If the method is successful and if the event is `EVENT_FORMATTED_USSD`, the selected TLV should be the USSD String TLV.
- CRRN10: If the Secured Data length is zero the value returned shall be the offset of the first byte following the TS 31.115 [10] Command Packet structure.

##### 5.2.2.2.1.2 Parameter errors

No requirements.

##### 5.2.2.2.1.3 Context errors

- CRRC1: The method shall throw `ToolkitException.UNAVAILABLE_ELEMENT` in case of unavailable SMS TPDU TLV or USSD String TLV element.

- CRRC2: The method shall throw ToolkitException.UNAVAILABLE\_ELEMENT in case of wrong data format.

#### 5.2.2.2.2 Test area files

Specific triggering:

- FORMATTED SMS CB.
- UNFORMATTED SMS CB.
- FORMATTED SMS PP UPD.
- FORMATTED SMS PP ENV.
- UNFORMATTED SMS PP ENV.
- FORMATTED USSD ENV.
- UNFORMATTED USSD ENV.
- For Formatted triggering if CC/RC/DS is used, the security parameters are the one defined in section '5.3.8 Framework Security Management'.

Test Source: Test\_Api\_2\_Ueh\_Gsdo.java

Test Applet: Api\_2\_Ueh\_Gsdo\_1.java

Cap File: Api\_2\_Ueh\_Gsdo.cap

#### 5.2.2.2.3 Test coverage

| CRR number | Test case number |
|------------|------------------|
| N1         | 1 to 20          |
| N2         | 5, 13            |
| N3         | 1 to 8           |
| N4         | 9 to 16          |
| N5         | 17, 18, 19, 20   |
| N6         | 7                |
| N7         | 15               |
| N8         | 20               |
| N9         | 21 to 25         |
| N10        | 6, 14, 19        |
| C1         | 26               |
| C2         | 27               |

#### 5.2.2.2.4 Test procedure

| Id | Description                            | API/(U)SAT Framework Expectation | APDU Expectation |
|----|--|----------------------------------|------------------|
|    | <b>FORMATTED SMS PP ENV triggering</b> |                                  |                  |

| Id | Description  | API/(U)SAT Framework Expectation  | APDU Expectation |
|----|--|-----------------------------------|------------------|
| 1  | Test with TP-OA length of 2 and RC/CC/DS length is 0   | Returns 0x21                      |                  |
| 2  | Test with TP-OA length of 6 and RC/CC/DS length is 0   | Returns 0x23                      |                  |
| 3  | Test with TP-OA length of 12 and RC/CC/DS length is 0  | Returns 0x26                      |                  |
| 4  | Test with RC/CC/DS length of 8 and TP-OA length is 2   | Returns 0x29                      |                  |
| 5  | Send a SMS PP with 2 TPDU TLV and inside two different secured data offsets  | Returns 0x24 ( the first offset ) |                  |
| 6  | Same test as 1 but without any secured data  | Returns 0x21                      |                  |
| 7  | Test with FORMATTED_SMS_PP ENV<br>Verify after call of the method the current TLV is the TPDU TLV:<br>findTLV device identities, getSecuredDataOffset and then getValueByte to verify that the current TLV is the TPDU TLV                           | Returns 0x40                      |                  |
| 8  | Same test as 1, but with a concatenated SMS (2 Short Messages and maximum Secured Data Length = 0x00FA)  | Returns 0x21                      |                  |
|    | <b>FORMATTED SMS PP UPR triggering</b>   |                                   |                  |
| 9  | Same test as 1 but with FORMATTED_SMS_PP_UPD   | Returns 0x21                      |                  |
| 10 | Same test as 2 but with FORMATTED_SMS_PP_UPD   | Returns 0x23                      |                  |
| 11 | Same test as 3 but with FORMATTED_SMS_PP_UPD   | Returns 0x26                      |                  |
| 12 | Same test as 4 but with FORMATTED_SMS_PP_UPD   | Returns 0x29                      |                  |
| 13 | Same test as 5 but with FORMATTED_SMS_PP_UPD   | Returns 0x24 ( the first offset ) |                  |
| 14 | Same test as 6 but with FORMATTED_SMS_PP_UPD   | Returns 0x21                      |                  |
| 15 | Test with FORMATTED_SMS_PP_UPD<br>Verify after call of the method the current TLV is the TPDU TLV:<br>findTLV device identities, getSecuredDataOffset and then getValueByte to verify that the current TLV is the TPDU TLV                           | Returns 0x40                      |                  |
| 16 | Same test as 8, but with a concatenated SMS (2 Short Messages and maximum Secured Data Length = 0x00FA)  | Returns 0x21                      |                  |
|    | <b>FORMATTED SMS CB triggering</b>   |                                   |                  |
| 17 | Same test as 2 but with FORMATTED_SMS_CB   | Returns 0x16                      |                  |
| 18 | Same test as 4 but with FORMATTED_SMS_CB   | Returns 0x1E                      |                  |
| 19 | Same test as 6 but with FORMATTED_SMS_CB   | Returns 0x16                      |                  |
| 20 | Test with FORMATTED_SMS_CB<br>Verify after call of the method the current TLV is the Cell Broadcast Page TLV:<br>findTLV device identities, getSecuredDataOffset and then getValueByte to verify that the current TLV is the Cell Broadcast Page TLV | Returns 0x00                      |                  |
|    | <b>FORMATTED USSD triggering</b>   |                                   |                  |
| 21 | Test with RC/CC/DS length of 8   | Returns 0x29                      |                  |
| 22 | Send a USSD with 2 USSD StringTLV and inside two different secured data offsets  | Returns 0x24 ( the first offset ) |                  |
| 23 | Same test as 1 but without any secured data  | Returns 0x21                      |                  |
| 24 | Test with FORMATTED_USSD<br>Verify after call of the method the current TLV is the String TLV:<br>findTLV device identities, getSecuredDataOffset and then getValueByte to verify that the current TLV is the StringTLV                              | Returns 0x40                      |                  |
| 25 | Same test as 1, but with a concatenated SMS (2 USSD message and maximum Secured Data   | Returns 0x21                      |                  |

| Id                            | Description   | API/(U)SAT Framework Expectation     | APDU Expectation |
|-------------------------------|---|--------------------------------------|------------------|
|                               | Length = 0x00FA)  |                                      |                  |
| <b>UNFORMATTED Triggering</b> |   |                                      |                  |
| 26                            | Send an UNFORMATTED SMS CB envelope, getSecuredDataOffset | ToolkitException.UNAVAILABLE_ELEMENT |                  |
| 27                            | Send an UNFORMATTED SMS PP envelope, getSecuredDataOffset | ToolkitException.UNAVAILABLE_ELEMENT |                  |
| 28                            | Send an UNFORMATTED USSD envelope, getSecuredDataOffset   | ToolkitException.UNAVAILABLE_ELEMENT |                  |

### 5.2.2.3 Method getShortMessageLength

Test Area Reference: Api\_2\_Ueh\_Gsml

#### 5.2.2.3.1 Conformance requirement

The method with following header shall be compliant to its definition in the API.

```
public short getShortMessageLength()
    throws uicc.toolkit.ToolkitException
```

##### 5.2.2.3.1.1 Normal execution

- CRRN1: The method shall return the length of the Short Message from the User Data part in the SMS TPDU (simple or concatenated) or Cell Broadcast Page Comprehension TLV contained in the USATEnvelopeHandler.
- CRRN2: The length is from the first SMS TPDU TLV or Cell Broadcast Page Comprehension TLV.
- CRRN3: The length should not include padding bytes.
- CRRN4: The length should not include the UDH if any.
- CRRN5: The method can be used if the event is EVENT\_FORMATTED\_SMS\_PP\_ENV or EVENT\_UNFORMATTED\_SMS\_PP.
- CRRN6: The method can be used if the event is EVENT\_FORMATTED\_SMS\_PP\_UPD or EVENT\_UNFORMATTED\_SMS\_UPD.
- CRRN7: The method can be used if the event is EVENT\_FORMATTED\_SMS\_CB or EVENT\_UNFORMATTED\_SMS\_CB.
- CRRN8: If the method is successful and if the event is EVENT\_FORMATTED\_SMS\_PP\_ENV or EVENT\_UNFORMATTED\_SMS\_PP, the selected TLV should be the SMS TPDU TLV.
- CRRN9: If the method is successful and if the event is EVENT\_FORMATTED\_SMS\_PP\_UPD or EVENT\_UNFORMATTED\_SMS\_UPD, the selected TLV should be the SMS TPDU TLV.
- CRRN10: If the method is successful and if the event is EVENT\_FORMATTED\_SMS\_CB or EVENT\_UNFORMATTED\_SMS\_CB, the selected TLV should be the Cell Broadcast Page TLV.
- CRRN11: If the Short Message Length is zero, no exception shall be thrown.

##### 5.2.2.3.1.2 Parameter errors

No requirements.

##### 5.2.2.3.1.3 Context errors

- CRRC1: The method shall throw ToolkitException.UNAVAILABLE\_ELEMENT in case of unavailable SMS TPDU TLV element or Cell Broadcast Page Comprehension TLV.
- CRRC2: The method shall throw ToolkitException.UNAVAILABLE\_ELEMENT in case of wrong data format.

## 5.2.2.3.2 Test area files

Specific triggering:

- FORMATTED SMS CB.
- UNFORMATTED SMS CB.
- FORMATTED SMS PP UPD.
- UNFORMATTED SMS PP UPD.
- FORMATTED SMS PP ENV.
- UNFORMATTED SMS PP ENV.
- UNRECOGNIZED\_ENVELOPE.
- For Formatted triggering if CC/RC/DS is used, the security parameters are the one defined in section '5.3.8 Framework Security Management'.

Test Source: Test\_Api\_2\_Ueh\_Gsml.java

Test Applet: Api\_2\_Ueh\_Gsml\_1.java

Cap File: Api\_2\_Ueh\_Gsml.cap

## 5.2.2.3.3 Test coverage

| CRR number | Test case number      |
|------------|-----------------------|
| N1         | 1 to 46               |
| N2         | 8, 18, 26, 34, 41, 45 |
| N3         | 4, 14, 22             |
| N4         | 1 to 27               |
| N5         | 1 to 10 and 28 to 35  |
| N6         | 11 to 20 and 36 to 43 |
| N7         | 21 to 27 and 44 to 46 |
| N8         | 9, 35                 |
| N9         | 19, 43                |
| N10        | 27, 46                |
| N11        | 6, 16, 24, 30, 38     |
| C1         | 47                    |
| C2         | Not applicable        |

## 5.2.2.3.4 Test procedure

| Id                                     | Description  | API/(U)SAT Framework Expectation | APDU Expectation |
|--|--|----------------------------------|------------------|
| <b>FORMATTED SMS PP ENV Triggering</b> |  |                                  |                  |
| 1                                      | Test with FORMATTED_SMS_PP_ENV and TP-OA length of 2 and secured data length of 0x2A with no padding byte (PCNTR = 0, no RC/CC/DS) | Returns 0x003A                   |                  |
| 2                                      | Test with TP-OA length of 12 and secured data length of 0x2A with no padding byte (PCNTR = 0, no RC/CC/DS)                         | Returns 0x003A                   |                  |
| 3                                      | Test with PCNTR = 0, no RC/CC/DS and data length of 0x10   | Returns 0x0020                   |                  |
| 4                                      | Test with PCNTR = 7, no RC/CC/DS and data length of 0x03 (ciphering shall be used)   | Returns 0x001A                   |                  |
| 5                                      | Test with PCNTR = 0, with RC/CC/DS length of 8 and secured data length of 0x10   | Returns 0x0028                   |                  |
| 6                                      | Test with PCNTR = 0, no RC/CC/DS and SecuredDataLength = 00  | Returns 0x0010                   |                  |
| 7                                      | Test with PCNTR = 0, no RC/CC/DS and   | Returns 0x0089                   |                  |

| Id | Description   | API(U)SAT Framework Expectation  | APDU Expectation |
|----|---|--|------------------|
|    | UserDataLength = maximum length (0x8C) for a single SMS   |  |                  |
| 8  | Verify it is the first TPDU TLV:<br>Send a SMS PP with 2 TPDU TLV with two different user data lengths: 0x18 and 0x23 (with PCNTR = 0, no RC/CC/DS)                               | Returns 0x0015   |                  |
| 9  | Send envelope SMS-PP Formatted.<br>FindTLV() with TAG_DEVICE_IDENTITIES.<br>getShortMessageLength() and then<br>getValueByte() with offset 0                                      | getValueByte() returns<br>0x40(TS 23.040 [11] first byte)                        |                  |
| 10 | Test with UserDataLength = maximum length (0x010D) with 2 concatenated SMS  | Returns 0x010A   |                  |
|    | <b>FORMATTED SMS PP UPD Triggering</b>  |  |                  |
| 11 | Test with FORMATTED_SMS_PP_UPD and TP-OA length of 2 and secured data length of 0x2A with no padding byte (PCNTR = 0)   | Returns 0x003A   |                  |
| 12 | Test with TP-OA length of 12 and secured data length of 0x2A with no padding byte (PCNTR = 0)   | Returns 0x003A   |                  |
| 13 | Test with PCNTR = 0, no RC/CC/DS and data length of 0x10  | Returns 0x0020   |                  |
| 14 | Test with PCNTR = 7, no RC/CC/DS and data length of 0x03 (ciphering shall be used)  | Returns 0x001A   |                  |
| 15 | Test with PCNTR = 0, with RC/CC/DS length of 8 and secured data length of 0x10  | Returns 0x0028   |                  |
| 16 | Test with PCNTR = 0, no RC/CC/DS and SecuredDataLength = 00   | Returns 0x0010   |                  |
| 17 | Test with PCNTR = 0, no RC/CC/DS and UserDataLength = maximum length (0x8C) for a single SMS  | Returns 0x0089   |                  |
| 18 | Verify it is the first TPDU TLV:<br>Send a SMS PP with 2 TPDU TLV with two different user data lengths: 0x18 and 0x23 (with PCNTR = 0, no RC/CC/DS)                               | Returns 0x0015   |                  |
| 19 | Send envelope SMS-PP Formatted.<br>FindTLV() with TAG_DEVICE_IDENTITIES.<br>GetShortMessageLength() and then<br>getValueByte() with offset 0                                      | GetValueByte() returns<br>0x40(TS 23.040 [11] first byte)                        |                  |
| 20 | Test with UserDataLength = maximum length (0x010D) with 2 concatenated SMS  | Returns 0x0010A  |                  |
|    | <b>FORMATTED SMS CB Triggering</b>  |  |                  |
| 21 | Test with PCNTR = 0, no RC/CC/DS and data length of 0x10  | Returns 0x0052   |                  |
| 22 | Test with PCNTR = 7, no RC/CC/DS and data length of 0x03 (ciphering shall be used)  | Returns 0x0052   |                  |
| 23 | Test with PCNTR = 0, with RC/CC/DS length of 8 and secured data length of 0x10  | Returns 0x0052   |                  |
| 24 | Test with PCNTR = 0, no RC/CC/DS and SecuredDataLength = 00   | Returns 0x0052   |                  |
| 25 | Test with PCNTR = 0, no RC/CC/DS and UserDataLength = maximum length (0x58) for a single SMS CB   | Returns 0x0052   |                  |
| 26 | Verify it is the first Cell Broadcast Page TLV:<br>Send a SMS CB with 2 Cell Broadcast Page TLV with two different user data lengths: 0x18 and 0x23 (with PCNTR = 0, no RC/CC/DS) | Returns 0x0052 and<br>GetValueShort(6) returns 0x0016<br>(UDL of first Page TLV) |                  |
| 27 | Send envelope SMS-CB Formatted.<br>FindTLV() with TAG_DEVICE_IDENTITIES.<br>GetShortMessageLength() and then<br>getValueByte() with offset 0                                      | GetValueByte() returns 0x00 (TS 23.041 first byte)                               |                  |
|    | <b>UNFORMATTED SMS PP ENV Triggering</b>  |  |                  |
| 28 | Test with UNFORMATTED_SMS_PP_ENV and TP-OA length of 2, and user data length of 0x3D  | Returns 0x003D   |                  |
| 29 | Test with TP-OA length of 12, and user data length of 0x3D  | Returns 0x003D   |                  |
| 30 | Test with UserDataLength = 0x00   | Returns 0x0000 with no exception   |                  |



| Id                                       | Description  | API(U)SAT Framework Expectation                         | APDU Expectation |
|--|--|---|------------------|
| 31                                       | Test with UserDataLength = 0x7F  | Returns 0x007F  |                  |
| 32                                       | Test with UserDataLength = 0x80  | Returns 0x0080  |                  |
| 33                                       | Test with UserDataLength = maximum length: 0x8C for a single SMS   | Returns 0x008C  |                  |
| 34                                       | Verify it is the first TPDU TLV:<br>Send a SMS PP with 2 TPDU TLV with two different user data lengths: 0x18 and 0x23  | Returns 0x0018  |                  |
| 35                                       | Send envelope SMS-PP Unformatted. FindTLV() with TAG_DEVICE_IDENTITIES. getShortMessageLength() and then getValueByte() with offset 0 (first user data = 0x55) | GetValueByte() returns 0x00 (TS 23.040 [11] first byte) |                  |
| <b>UNFORMATTED SMS PP UPD Triggering</b> |  |   |                  |
| 36                                       | Test with UNFORMATTED_SMS_PP_UPD and TP-OA length of 2, and user data length of 0x3D   | Returns 0x003D  |                  |
| 37                                       | Test with TP-OA length of 12, and user data length of 0x3D   | Returns 0x003D  |                  |
| 38                                       | Test with UserDataLength = 0x00  | Returns 0x0000 with no exception                        |                  |
| 39                                       | Test with UserDataLength = 0x7F  | Returns 0x007F  |                  |
| 40                                       | Test with UserDataLength = 0x80  | Returns 0x0080  |                  |
| 41                                       | Verify it is the first TPDU TLV:<br>Send a SMS PP with 2 TPDU TLV with two different user data lengths: 0x18 and 0x23  | Returns 0x0018  |                  |
| 42                                       | Test with UserDataLength = maximum length: 0x8C for a single SMS   | Returns 0x008C  |                  |
| 43                                       | Send envelope SMS-PP Formatted. FindTLV() with TAG_DEVICE_IDENTITIES. GetShortMessageLength() and then getValueByte() with offset 0                            | GetValueByte() returns 0x00 (TS 23.040 [11] first byte) |                  |
| <b>UNFORMATTED SMS CB Triggering</b>     |  |   |                  |
| 44                                       | Test with UNFORMATTED_SMS_CB   | Returns 0x0052  |                  |
| 45                                       | Verify it is the first Cell Broadcast Page TLV:<br>Send a SMS CB with 2 Cell Broadcast Page TLV with two different user data lengths: 0x58 and 0x23            | Returns 0x0052  |                  |
| 46                                       | Send envelope SMS-CB Formatted. FindTLV() with TAG_DEVICE_IDENTITIES. GetShortMessageLength() and then getValueByte() with offset 0                            | GetValueByte() returns 0x00 (TS 23.041 first byte)      |                  |
| <b>Unrecognized Envelope Triggering</b>  |  |   |                  |
| 47                                       | Send an Unrecognized Envelope with neither TPDU TLV nor Cell Broadcast Page TLV, then call the method.   | ToolkitException.UNAVAILABLE_ELEMENT                    |                  |

#### 5.2.2.4 Method getShortMessageOffset

Test Area Reference: Api\_2\_Ueh\_Gsmo

##### 5.2.2.4.1 Conformance requirement

The method with following header shall be compliant to its definition in the API.

```
public short getShortMessageOffset()
    throws uicc.toolkit.ToolkitException
```

##### 5.2.2.4.1.1 Normal execution

- CRRN1: The method shall return the offset of the Short Message first byte contained in the User Data part of the SMS TPDU TLV contained in the USATenvelopeHandler.
- CRRN2: The offset is from the first SMS TPDU TLV.

- CRRN3: The method can be used if the event is EVENT\_FORMATTED\_SMS\_PP\_ENV or EVENT\_UNFORMATTED\_SMS\_PP\_ENV.
- CRRN4: The method can be used if the event is EVENT\_FORMATTED\_SMS\_PP\_UPD or EVENT\_UNFORMATTED\_SMS\_PP\_UPD.
- CRRN5: The method can be used if the event is EVENT\_FORMATTED\_SMS\_CB or EVENT\_UNFORMATTED\_SMS\_CB.
- CRRN6: If the method is successful and if the event is EVENT\_FORMATTED\_SMS\_PP\_ENV or EVENT\_UNFORMATTED\_SMS\_PP\_ENV, the selected TLV should be the SMS TPDU TLV.
- CRRN7: If the method is successful and if the event is EVENT\_FORMATTED\_SMS\_PP\_UPD or EVENT\_UNFORMATTED\_SMS\_PP\_UPD, the selected TLV should be the SMS TPDU TLV.
- CRRN8: If the method is successful and if the event is EVENT\_FORMATTED\_SMS\_CB or EVENT\_UNFORMATTED\_SMS\_CB, the selected TLV should be the Cell Broadcast Page TLV.
- CRRN9: The method returns the offset of the first byte after the UDH, if any.

#### 5.2.2.4.1.2 Parameter errors

No requirements.

#### 5.2.2.4.1.3 Context errors

- CRRC1: The method shall throw ToolkitException.UNAVAILABLE\_ELEMENT in case of unavailable SMS TPDU TLV or Cell Broadcast Page Comprehension TLV element.
- CRRC2: The method shall throw ToolkitException.UNAVAILABLE\_ELEMENT in case of wrong data format.

#### 5.2.2.4.2 Test area files

Specific triggering:

- FORMATTED SMS CB.
- UNFORMATTED SMS CB.
- FORMATTED SMS PP UPD.
- UNFORMATTED SMS PP UPD.
- FORMATED SMS PP ENV.
- UNFORMATED SMS PP ENV.
- UNRECOGNIZED\_ENVELOPE.
- For Formatted triggering if CC/RC/DS is used, the security parameters are the one defined in section '5.3.8 Framework Security Management'.

Test Source: Test\_Api\_2\_Ueh\_Gsmo.java

Test Applet: Api\_2\_Ueh\_Gsmo\_1.java

Cap File: Api\_2\_Ueh\_Gsmo.cap

#### 5.2.2.4.3 Test coverage

| CRR number | Test case number |
|------------|------------------|
| N1         | 1 to 30          |

|    |                      |
|----|----------------------|
| N2 | 4, 11, 21, 26        |
| N3 | 1 to 7 and 19 to 23  |
| N4 | 8 to 14 and 24 to 28 |
| N5 | 15 to 18, 29, 30     |
| N6 | 6, 22                |
| N7 | 13, 27               |
| N8 | 18, 30               |
| N9 | 1 to 18, 23, 28      |
| C1 | 31                   |
| C2 | Not applicable       |

## 5.2.2.4.4 Test procedure

| <b>Id</b> | <b>Description</b>                     | <b>API(U)SAT Framework Expectation</b> | <b>APDU Expectation</b> |
|-----------|--|--|-------------------------|
|           | <b>FORMATTED SMS PP ENV triggering</b> |  |                         |

| Id | Description   | API(U)SAT Framework Expectation   | APDU Expectation |
|----|---|-----------------------------------|------------------|
| 1  | Test with TP-OA length of 2 and RC/CC/DS length is 0  | Returns 0x11                      |                  |
| 2  | Test with TP-OA length of 12 and RC/CC/DS length is 0   | Returns 0x16                      |                  |
| 3  | Test with RC/CC/DS length of 8 and TP-OA length is 2  | Returns 0x11                      |                  |
| 4  | Send a SMS PP with 2 TPDU TLV and inside two different secured data offsets   | Returns 0x14 ( the first offset ) |                  |
| 5  | Same test as 1 but without any secured data   | Returns 0x11                      |                  |
| 6  | Test with FORMATTED_SMS_PP ENV<br>Verify after call of the method the current TLV is the TPDU TLV:<br>findTLV device identities, getSecuredDataOffset and then getValueByte to verify that the current TLV is the TPDU TLV                                    | Returns 0x40                      |                  |
| 7  | Same test as 1, but with a concatenated SMS (2 Short Messages and maximum Secured Data Length = 0x00FA)   | Returns 0x15                      |                  |
|    | <b>FORMATTED SMS PP UPD triggering</b>  |                                   |                  |
| 8  | Same test as 1 but with FORMATTED_SMS_PP_UPD  | Returns 0x11                      |                  |
| 9  | Same test as 2 but with FORMATTED_SMS_PP_UPD  | Returns 0x16                      |                  |
| 10 | Same test as 3 but with FORMATTED_SMS_PP_UPD  | Returns 0x11                      |                  |
| 11 | Same test as 4 but with FORMATTED_SMS_PP_UPD  | Returns 0x14 ( the first offset ) |                  |
| 12 | Same test as 5 but with FORMATTED_SMS_PP_UPD  | Returns 0x11                      |                  |
| 13 | Test with FORMATTED_SMS_PP_UPD<br>Verify after call of the method the current TLV is the TPDU TLV:<br>findTLV device identities, getSecuredDataOffset and then getValueByte to verify that the current TLV is the TPDU TLV                                    | Returns 0x40                      |                  |
| 14 | Same test as 10, but with a concatenated SMS (2 Short Messages and maximum Secured Data Length = 0x00FA)  | Returns 0x21                      |                  |
|    | <b>FORMATTED SMS CB triggering</b>  |                                   |                  |
| 15 | Same test as 1 but with FORMATTED_SMS_CB  | Returns 0x06                      |                  |
| 16 | Same test as 3 but with FORMATTED_SMS_CB  | Returns 0x06                      |                  |
| 17 | Same test as 5 but with FORMATTED_SMS_CB  | Returns 0x06                      |                  |
| 18 | Test with FORMATTED_SMS_CB<br>Verify after call of the method the current TLV is the Cell Broadcast Page TLV:<br>FindTLV() device identities,<br>getSecuredDataOffset() and then getValueByte() to verify that the current TLV is the Cell Broadcast Page TLV | Returns 0x00                      |                  |
|    | <b>UNFORMATTED SMS PP ENV triggering</b>  |                                   |                  |

| Id | Description   | API/(U)SAT Framework Expectation                        | APDU Expectation |
|----|---|---|------------------|
| 19 | Test with TP-OA length of 2   | Returns 0x0E  |                  |
| 20 | Test with TP-OA length of 12  | Returns 0x13  |                  |
| 21 | Send a SMS PP with 2 TPDU TLV and inside two different UDL offsets  | Returns 0x11 (the first offset)                         |                  |
| 22 | Test with UNFORMATTED_SMS_PP ENV<br>Verify after call of the method the current TLV is the TPDU TLV:<br>findTLV device identities, getShortMessageOffset and then getValueByte to verify that the current TLV is the TPDU TLV | Returns 00  |                  |
| 23 | Same test as 19, but with a concatenated SMS (2 Short Messages and maximum User Data Length = 0x0102)   | Returns 0x0E or 0x0F (depending of UDHI implementation) |                  |
|    | <b>UNFORMATTED SMS PP UPD triggering</b>  |   |                  |
| 24 | Same test as 19 but with FORMATTED_SMS_PP_UPD   | Returns 0x0E  |                  |
| 25 | Same test as 20 but with FORMATTED_SMS_PP_UPD   | Returns 0x13  |                  |
| 26 | Same test as 21 but with FORMATTED_SMS_PP_UPD   | Returns 0x11 ( the first offset )                       |                  |
| 27 | Test with FORMATTED_SMS_UPD<br>Verify after call of the method the current TLV is the TPDU TLV:<br>findTLV device identities, getShortMessageOffset and then getValueByte to verify that the current TLV is the TPDU TLV      | Returns 0x11  |                  |
| 28 | Same test as 25, but with a concatenated SMS (2 Short Messages and maximum Secured Data Length = 0x00FA)  | Returns 0x0E or 0x0F (depending of UDHI implementation) |                  |
|    | <b>UNFORMATTED SMS CB Triggering</b>  |   |                  |
| 29 | Test with UNFORMATTED_SMS_CB  | Returns 0x06  |                  |
| 30 | Send envelope SMS-CB Unformatted.<br>FindTLV() with TAG_DEVICE_IDENTITIES.<br>getShortMessageOffset() and then getValueByte() with offset 0   | GetValueByte() returns 0x00 (TS 23.041 first byte)      |                  |
|    | <b>Unrecognized Envelope Triggering</b>   |   |                  |
| 31 | Send an Unrecognized Envelope with neither TPDU TLV nor Cell Broadcast Page TLV, then call the method.  | ToolkitException.UNAVAILABLE_ELEMENT                    |                  |

### 5.2.2.5 Method getTPUDLOffset

Test Area Reference: Api\_2\_Ueh\_Gtpo

#### 5.2.2.5.1 Conformance requirement

The method with following header shall be compliant to its definition in the API.

```
public short getTPUDLOffset()
    throws uicc.toolkit.ToolkitException
```

#### 5.2.2.5.1.1 Normal execution

- CRRN1: The method shall return the TPUDL offset in a SMS TPDU TLV.
- CRRN2: The offset is from the first SMS TPDU TLV.
- CRRN3: The method can be used if the event is EVENT\_FORMATTED\_SMS\_PP\_ENV.
- CRRN4: The method can be used if the event is EVENT\_FORMATTED\_SMS\_PP\_UPD.
- CRRN5: The method can be used if the event is EVENT\_UNFORMATTED\_SMS\_PP\_ENV.

- CRRN6: The method can be used if the event is EVENT\_UNFORMATTED\_SMS\_PP\_UPD.
- CRRN7: If the method is successful, the selected TLV should be the SMS TPDU TLV.

#### 5.2.2.5.1.2 Parameter errors

No requirements.

#### 5.2.2.5.1.3 Context errors

- CRRC1: The method shall throw ToolkitException.UNAVAILABLE\_ELEMENT in case of unavailable SMS TPDU TLV element.
- CRRC2: The method shall throw ToolkitException.UNAVAILABLE\_ELEMENT if the TPUDL field does not exist.

#### 5.2.2.5.2 Test area files

Specific triggering:

- FORMATTED SMS PP UPD.
- UNFORMATTED SMS PP UPD.
- UNFORMATTED SMS PP ENV.
- FORMATTED SMS PP ENV.
- UNFORMATTED SMS CB.

Test Source      Test\_Api\_2\_Ueh\_Gtpo.java

Test Applet:      Api\_2\_Ueh\_Gtpo\_1.java

Cap File:          Api\_2\_Ueh\_Gtpo.cap

#### 5.2.2.5.3 Test coverage

| CRR number | Test case number   |
|------------|--------------------|
| N1         | 1 to 21.           |
| N2         | 4, 10, 15, 20.     |
| N3         | 1, 2, 3, 4, 5, 6   |
| N4         | 7, 8, 9, 10, 11    |
| N5         | 12, 13, 14, 15, 16 |
| N6         | 17, 18, 19, 20, 21 |
| N7         | 6                  |
| C1         | 22                 |
| C2         | Not testable       |

#### 5.2.2.5.4 Test procedure

| Id | Description                            | API/(U)SAT Framework Expectation | APDU Expectation |
|----|--|----------------------------------|------------------|
|    | <b>FORMATTED SMS PP ENV triggering</b> |                                  |                  |

|    |  |  |  |
|----|--|--|--|
| 1  | Test with TP-OA length of 2  | Returns 0x0D                             |  |
| 2  | Test with TP-OA length of 6  | Returns 0x0F                             |  |
| 3  | Test with TP-OA length of 12   | Returns 0x12                             |  |
| 4  | Send a SMS PP with 2 TPDU TLV and inside two different UDL offsets   | Returns 0x10 (the first offset)          |  |
| 5  | Same test as 1, but with a concatenated SMS (2 Short Messages and maximum Secured Data Length = 0x00FA)  | Returns 0x0D                             |  |
| 6  | Verify after call of the method the current TLV is the TPDU TLV:<br>findTLV device identities, getTPUDLOffset and then getValueByte to verify that the current TLV is the TPDU TLV | Returns 0x40                             |  |
|    | <b>FORMATTED SMS PP UPD triggering</b>   |  |  |
| 7  | Same test as 1 but with FORMATTED_SMS_PP_UPD   | Returns 0x0D                             |  |
| 8  | Same test as 2 but with FORMATTED_SMS_PP_UPD   | Returns 0x0F                             |  |
| 9  | Same test as 3 but with FORMATTED_SMS_PP_UPD   | Returns 0x12                             |  |
| 10 | Same test as 4 but with FORMATTED_SMS_PP_UPD   | Returns 0x10 (the first offset)          |  |
| 11 | Same test as 7, but with a concatenated SMS (2 Short Messages and maximum Secured Data Length = 0x00FA)  | Returns 0x0D                             |  |
|    | <b>UNFORMATTED SMS PP UPD triggering</b>   |  |  |
| 12 | Same test as 1 but with UNFORMATTED_SMS_PP_UPD   | Returns 0x0D                             |  |
| 13 | Same test as 2 but with UNFORMATTED_SMS_PP_UPD   | Returns 0x0F                             |  |
| 14 | Same test as 3 but with UNFORMATTED_SMS_PP_UPD   | Returns 0x12                             |  |
| 15 | Same test as 4 but with UNFORMATTED_SMS_PP_UPD   | Returns 0x12 (the first offset)          |  |
| 16 | Same test as 12, but with a concatenated SMS (2 Short Messages and maximum User Data Length = 0x010C)  | Returns 0x0D                             |  |
|    | <b>UNFORMATTED SMS PP ENV triggering</b>   |  |  |
| 17 | Same test as 1 but with UNFORMATTED_SMS_PP_ENV   | Returns 0x0D                             |  |
| 18 | Same test as 2 but with UNFORMATTED_SMS_PP_ENV   | Returns 0x0F                             |  |
| 19 | Same test as 3 but with UNFORMATTED_SMS_PP_ENV   | Returns 0x12                             |  |
| 20 | Same test as 4 but with UNFORMATTED_SMS_PP_ENV   | Returns 0x10 (the first offset)          |  |
| 21 | Same test as 17, but with a concatenated SMS (2 Short Messages and maximum User Data Length = 0x010C)  | Returns 0x0D                             |  |
|    | <b>UNFORMATTED SMS CB triggering</b>   |  |  |
| 22 | Send an envelope Unformatted SMS CB, getTPUDLOffset  | ToolkitException.UNAVAILABL<br>E_ELEMENT |  |

### 5.2.2.6 Method getUserDataLength

Test Area Reference: Api\_2\_Ueh\_Gudl

#### 5.2.2.6.1 Conformance requirement

The method with following header shall be compliant to its definition in the API.

```
public short getUserDataLength()
    throws uicc.toolkit.ToolkitException
```

## 5.2.2.6.1.1 Normal execution

- CRRN1: The method shall return the length of the User Data contained in the SMS TPDU TLV element.
- CRRN2: The length is from the first SMS TPDU TLV element.
- CRRN3: If the SMS TPDU TLV element is available, it becomes the selected TLV
- CRRN4: The method can be used if the event is EVENT\_FORMATTED\_SMS\_PP\_ENV.
- CRRN5: The method can be used if the event is EVENT\_FORMATTED\_SMS\_PP\_UPD.
- CRRN6: The method can be used if the event is EVENT\_UNFORMATED\_SMS\_PP\_ENV.
- CRRN7: The method can be used if the event is EVENT\_UNFORMATED\_SMS\_PP\_UDP.

## 5.2.2.6.1.2 Context errors

- CRRC1: The method shall throw UNAVAILABLE\_ELEMENT in case of unavailable TPDU TLV element.
- CRRC2: The method shall throw UNAVAILABLE\_ELEMENT in case of wrong data format.

## 5.2.2.6.2 Test area files

Specific triggering:

- FORMATTED SMS PP UPD.
- UNFORMATTED SMS PP UPD.
- FORMATED SMS PP ENV.
- UNFORMATED SMS PP ENV.
- For Formatted triggering if CC/RC/DS is used, the security parameters are the one defined in section "5.3.8 Framework Security Management".

Test Source: Test\_Api\_2\_Ueh\_Gudl.java

Test Applet: Api\_2\_Ueh\_Gudl\_1.java

Cap File: Api\_2\_Ueh\_Gudl.cap

## 5.2.2.6.3 Test coverage

| CRR number | Test case number               |
|------------|--------------------------------|
| N1         | All test cases excepted:<br>53 |
| N2         | 11, 26, 37, 45                 |
| N3         | 12, 27, 38, 46                 |
| N4         | 1 to 15                        |
| N5         | 16 to 30                       |
| N6         | 31 to 38                       |
| N7         | 39 to 46                       |
| C1         | 47                             |
| C2         | Not applicable                 |



## 5.2.2.6.4 Test procedure

| Id                                     | Description   | API/(U)SAT Framework Expectation                       | APDU Expectation |
|--|---|--|------------------|
| <b>FORMATTED SMS PP ENV Triggering</b> |   |  |                  |
| 1                                      | Test with FORMATTED_SMS_PP_ENV and TP-OA length of 2 and user data length of 0x3D   | Returns 0x003D   |                  |
| 2                                      | Test with TP-OA length of 12 and user data length of 0x3D   | Returns 0x003D   |                  |
| 3                                      | Test with RC/CC/DS length of 0 and secured data length of 0x10  | Returns 0x0023   |                  |
| 4                                      | Test with RC/CC/DS length of 8 and secured data length of 0x10  | Returns 0x002B   |                  |
| 5                                      | Test with PCNTR = 0, no RC/CC/DS and data length of 0x10  | Returns 0x0023   |                  |
| 6                                      | Test with PCNTR = 7, no RC/CC/DS and data length of 0x03 (ciphering shall be used)  | Returns 0x001D   |                  |
| 7                                      | Test with SecuredDataLength = 00 and no RC/CC/DS  | Returns 0x0013   |                  |
| 8                                      | Test with UserDataLength = 0x7F   | Returns 0x007F   |                  |
| 9                                      | Test with UserDataLength = 0x80   | Returns 0x0080   |                  |
| 10                                     | Test with UserDataLength = maximum length (0x8C) for a single SMS   | Returns 0x008C   |                  |
| 11                                     | Verify it is the first TPDU TLV:<br>Send a SMS PP with 2 TPDU TLV with two different user data lengths: 0x18 and 0x23                 | Returns 0x0018   |                  |
| 12                                     | Send envelope SMS-PP Formatted.<br>FindTLV() with TAG_DEVICE_IDENTITIES.<br>GetUserDataLength() and then getValueByte() with offset 0 | GetValueByte() returns 0x40(TS 23.040 [11] first byte) |                  |
| 13                                     | Test with UserDataLength = 0xFF with 2 concatenated SMS   | Returns 0x00FF   |                  |
| 14                                     | Test with UserDataLength = 0x100 with 2 concatenated SMS  | Returns 0x0100   |                  |
| 15                                     | Test with UserDataLength = maximum length (0x010D) with 2 concatenated SMS  | Returns 0x010D   |                  |
| <b>FORMATTED SMS PP UPD Triggering</b> |   |  |                  |
| 16                                     | Test with FORMATTED_SMS_PP_UPD and TP-OA length of 2 and user data length of 0x3D   | Returns 0x003D   |                  |
| 17                                     | Test with TP-OA length of 12 and user data length of 0x3D   | Returns 0x003D   |                  |
| 18                                     | Test with RC/CC/DS length of 0 and secured data length of 0x10  | Returns 0x0023   |                  |
| 19                                     | Test with RC/CC/DS length of 8 and secured data length of 0x10  | Returns 0x002B   |                  |
| 20                                     | Test with PCNTR = 0, no RC/CC/DS and data length of 0x10  | Returns 0x0023   |                  |
| 21                                     | Test with PCNTR = 7, no RC/CC/DS and data length of 0x03 (ciphering shall be used)  | Returns 0x001D   |                  |
| 22                                     | Test with SecuredDataLength = 00 and no RC/CC/DS  | Returns 0x0013   |                  |
| 23                                     | Test with UserDataLength = 0x7F   | Returns 0x007F   |                  |
| 24                                     | Test with UserDataLength = 0x80   | Returns 0x0080   |                  |
| 25                                     | Test with UserDataLength = maximum length(0x8C) for a single SMS  | Returns 0x008C   |                  |
| 26                                     | Verify it is the first TPDU TLV:<br>Send a SMS PP with 2 TPDU TLV with two different user data lengths: 0x18 and 0x23                 | Returns 0x0018   |                  |
| 27                                     | Send envelope SMS-PP Formatted.<br>FindTLV() with TAG_DEVICE_IDENTITIES.<br>GetUserDataLength() and then getValueByte() with offset 0 | GetValueByte() returns 0x40(TS 23.040 [11] first byte) |                  |
| 28                                     | Test with UserDataLength = 0xFF with 2 concatenated SMS   | Returns 0x00FF   |                  |
| 29                                     | Test with UserDataLength = 0x100 with 2 concatenated SMS  | Returns 0x0100   |                  |

|  |  |   |  |
|--|--|---|--|
| 30                                       | Test with UserDataLength = maximum length (0x010D) with 2 concatenated SMS   | Returns 0x010D  |  |
| <b>UNFORMATTED SMS PP ENV Triggering</b> |  |   |  |
| 31                                       | Test with UNFORMATTED_SMS_PP_ENV and TP-OA length of 2, and user data length of 0x3D   | Returns 0x003D  |  |
| 32                                       | Test with TP-OA length of 12, and user data length of 0x3D   | Returns 0x003D  |  |
| 33                                       | Test with UserDataLength = 0x00  | Returns 0x0000  |  |
| 34                                       | Test with UserDataLength = 0x7F  | Returns 0x007F  |  |
| 35                                       | Test with UserDataLength = 0x80  | Returns 0x0080  |  |
| 36                                       | Test with UserDataLength = maximum length: 0x8C for a single SMS   | Returns 0x008C  |  |
| 37                                       | Verify it is the first TPDU TLV:<br>Send a SMS PP with 2 TPDU TLV with two different user data lengths: 0x18 and 0x23  | Returns 0x0018  |  |
| 38                                       | Send envelope SMS-PP Unformatted.<br>FindTLV() with TAG_DEVICE_IDENTITIES.<br>GetUserDataLength() and then getValueByte() with offset 0 (first user data = 0x55) | GetValueByte() returns 0x00 (TS 23.040 [11] first byte) |  |
| <b>UNFORMATTED SMS PP UPD Triggering</b> |  |   |  |
| 39                                       | Test with UNFORMATTED_SMS_PP_UPD and TP-OA length of 2, and user data length of 0x3D   | Returns 0x003D  |  |
| 40                                       | Test with TP-OA length of 12, and user data length of 0x3D   | Returns 0x003D  |  |
| 41                                       | Test with UserDataLength = 0x00  | Returns 0x0000  |  |
| 42                                       | Test with UserDataLength = 0x7F  | Returns 0x007F  |  |
| 43                                       | Test with UserDataLength = 0x80  | Returns 0x0080  |  |
| 44                                       | Test with UserDataLength = maximum length: 0x8C for a single SMS   | Returns 0x008C  |  |
| 45                                       | Verify it is the first TPDU TLV:<br>Send a SMS PP with 2 TPDU TLV with two different user data lengths: 0x18 and 0x23  | Returns 0x0018  |  |
| 46                                       | Send envelope SMS-PP Unformatted.<br>FindTLV() with TAG_DEVICE_IDENTITIES.<br>GetUserDataLength() and then getValueByte() with offset 0                          | GetValueByte() returns 0x00 (TS 23.040 [11] first byte) |  |
| <b>UNRECOGNIZED ENVELOPE Triggering</b>  |  |   |  |
| 47                                       | Test with an UNRECOGNIZED_ENVELOPE   | ToolkitException.UNAVAILABLE_ELEMENT                    |  |

### 5.2.2.7 Method getItemIdentifier

Test Area Reference: Api\_2\_Ueh\_Giid

#### 5.2.2.7.1 Conformance requirement

The method with following header shall be compliant to its definition in the API.

```
public byte getItemIdentifier()
    throws ToolkitException
```

##### 5.2.2.7.1.1 Normal execution

- CRRN1: The method shall return the item identifier byte value.
- CRRN2: The item identifier byte value returned shall be from the first Item Identifier TLV element.
- CRRN3: If the element is available it becomes the TLV selected.
- CRRN4: The item identifier is available for all triggered toolkit applets from the invocation to the termination of their processToolkit method if the USATEnvelopeHandler is available.

## 5.2.2.7.1.2 Parameter Errors

No requirements.

## 5.2.2.7.1.3 Context errors

- CRRC1: The method shall throw ToolkitException.UNAVAILABLE\_ELEMENT if the item identifier TLV is not present.
- CRRC2: The method shall throw ToolkitException.OUT\_OF\_TLV\_BOUNDARIES if the item identifier byte is missing in the Item Identifier Comprehension TLV.

## 5.2.2.7.2 Test area files

Test Source: Test\_Api\_2\_Ueh\_Giid.java

Test Applet: Api\_2\_Ueh\_Giid\_1.java

Cap File: Api\_2\_Ueh\_Giid.cap

## 5.2.2.7.3 Test coverage

| CRR number | Test case number |
|------------|------------------|
| N1         | 1, 2, 3          |
| N2         | 2, 3             |
| N3         | 4                |
| N4         | 6                |
| C1         | 5                |
| C2         | 7                |

## 5.2.2.7.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation       | APDU Expectation |
|----|--|--|------------------|
| 1  | Send envelope formatted SMS with an item identifier TLV and identifier value of 03   | Returns 03                             |                  |
| 2  | Send envelope formatted SMS with two item identifier TLV with first value FF and second 44   | Returns FF                             |                  |
| 3  | Send envelope formatted SMS with two item identifier TLV with first value 81 and second 44, call twice the method getItemIdentifier()                  | Returns 81<br>Returns 81               |                  |
| 4  | Send envelope formatted SMS with item identifier TLV and value of 66. FindTLV() with TAG 02. getItemIdentifier() and then getValueByte() with offset 0 | getItemIdentifier()=getValueByte()     |                  |
| 5  | Send envelope formatted SMS without item identifier TLV and getItemIdentifier()  | ToolkitException.UNAVAILABLE_ELEMENT   |                  |
| 6  | Send envelope formatted SMS with item identifier TLV (66), send proactive command. Then getItemIdentifier()  | Returns 66                             |                  |
| 7  | Send envelope formatted SMS with item identifier TLV but without item number   | ToolkitException.OUT_OF_TLV_BOUNDARIES |                  |

## 5.2.2.8 Method getChannelIdentifier

Test Area Reference: Api\_2\_Ueh\_Gcid

## 5.2.2.8.1 Conformance requirement

The method with following header shall be compliant to its definition in the API.

```
public byte getChannelIdentifier()  
            throws ToolkitException
```

#### 5.2.2.8.1.1 Normal execution

- CRRN1: The method shall return the channel identifier byte value.
- CRRN2: The channel identifier byte value returned shall be from the first Channel status TLV element.
- CRRN3: If the element is available it becomes the currently selected TLV.
- CRRN4: The channel identifier is available for all triggered toolkit applets from the invocation to the termination of their processToolkit method if the USATEnvelopeHandler is available.

#### 5.2.2.8.1.2 Context errors

- CRRC1: The method shall throw ToolkitException.UNAVAILABLE\_ELEMENT if the Channel status TLV is not present.
- CRRC2: The method shall throw ToolkitException.OUT\_OF\_TLV\_BOUNDARIES if the Comprehension TLV Channel Status length is equal to 0.

#### 5.2.2.8.2 Test area files

Test Source: Test\_Api\_2\_Ueh\_Gcid.java

Test Applet: Api\_2\_Ueh\_Gcid\_1.java

Cap File: Api\_2\_Ueh\_Gcid.cap

#### 5.2.2.8.3 Test coverage

| CRR number | Test case number |
|------------|------------------|
| N1         | 1, 2             |
| N2         | 3                |
| N3         | 3                |
| N4         | 5                |
| C1         | 4                |
| C2         | 6                |

## 5.2.2.8.4 Test procedure

| Id | Description   | API/(U)SAT Framework Expectation                                  | APDU Expectation  |
|----|---|---|---|
| 0  | 1- Applet1 is installed with maximum number of channel = 07.<br>2- Applet1 builds proactive commands OPEN CHANNEL with init() method in order to open all channels. ProactiveHandler.send() method is called.   |   | 2- OPEN CHANNEL proactive command is fetched<br><br>TERMINAL RESPONSE is issued with Channel Id from 01 to 07 |
| 1  | <p style="text-align: center;"><b>Successful Call</b></p> 1- Send envelope Event Download Channel Status with channel status TLV:<br>channel status value = 0x8100.<br><br>2- Call USATEnvelopeHandler.getChannelIdentifier() method  | 1- Applet1 is triggered<br><br>2- Returns 0x01                    |   |
| 2  | <p style="text-align: center;"><b>Two channel status elements</b></p> 1- Send envelope Event Download Channel Status with two channel status TLV:<br>first value = 0x8400<br>second value = 0x8500.<br><br>2- Call twice the USATEnvelopeHandler.getChannelIdentifier() method  | 2- Returns twice 0x04   |   |
| 3  | <p style="text-align: center;"><b>Verify current TLV</b></p> 1- Send envelope Event Download Channel Status with channel status TLV:<br>Channel Status value = 0x0605<br><br>ViewHandler.FindTLV() with Device Identity Tag.<br><br>2- Call USATEnvelopeHandler.getChannelIdentifier() method.<br><br>3- Compare USATEnvelopeHandler.getChannelIdentifier() and then ViewHandler.getValueByte(0). | 2- Returns 0x06<br><br>3- GetChannelIdentifier() =getValueByte(0) |   |
| 4  | <p style="text-align: center;"><b>UNAVAILABLE_ELEMENT exception</b></p> 1- Send envelope Menu Selection without Channel Status TLV.<br><br>2- Call USATEnvelopeHandler.getChannelIdentifier() method.   | 2- A Toolkit exception UNAVAILABLE_ELEMENT is thrown.             |   |
| 5  | <p style="text-align: center;"><b>Successful Call</b></p> 1- Send Envelope Event Download Channel Status with Channel Status TLV:<br>Channel status value = 0x0600<br><br>2- Call USATEnvelopeHandler.getChannelIdentifier() method.  | 1- Returns 0x06   |   |
| 6  | <p style="text-align: center;"><b>OUT_OF_TLV_BOUNDARIES exception</b></p> 1- Send unrecognized envelope with a Channel Status TLV having a length equal to 0.<br><br>2- Call USATEnvelopeHandler.getChannelIdentifier() method.   | 2- A Toolkit exception OUT_OF_TLV_BOUNDARIES is thrown.           |   |

### 5.2.2.9 Method getChannelStatus

Test Area Reference: Api\_2\_Ueh\_Gcst

#### 5.2.2.9.1 Conformance requirement

The method with following header shall be compliant to its definition in the API.

```
public short getChannelStatus(byte channelIdIdentifier)
    throws ToolkitException
```

##### 5.2.2.9.1.1 Normal execution

- CRRN1: The method shall return the value of the first Channel Status TLV element whose channel identifier is equal to the channelIdIdentifier parameter.
- CRRN2: The Channel Status value returned shall be from the element whose channel identifier is equal to the ChannelIdentifier parameter.
- CRRN3: If the element is available it becomes the currently selected TLV.
- CRRN4: The channel status is available for all triggered toolkit applets from the invocation to the termination of their processToolkit method if the USATEnvelopeHandler is available.

##### 5.2.2.9.1.2 Context errors

- CRRC1: The method shall throw ToolkitException.UNAVAILABLE\_ELEMENT if no Channel Status TLV element with the right identifier could be found.
- CRRC2: The method shall throw ToolkitException.OUT\_OF\_TLV\_BOUNDARIES if a Channel Status TLV element with the right identifier could be found but its value is less than 2 bytes long.

#### 5.2.2.9.2 Test area files

Test Source: Test\_Api\_2\_Ueh\_Gcst.java

Test Applet: Api\_2\_Ueh\_Gcst\_1.java

Cap File: Api\_2\_Ueh\_Gcst.cap

#### 5.2.2.9.3 Test coverage

| CRR number | Test case number |
|------------|------------------|
| N1         | 6                |
| N2         | 5, 7             |
| N3         | 8                |
| N4         | 9                |
| C1         | 1, 2             |
| C2         | 3, 4             |

#### 5.2.2.9.4 Test procedure

| Id | Description | API/(U)SAT Framework Expectation | APDU Expectation |
|----|-------------|----------------------------------|------------------|
|----|-------------|----------------------------------|------------------|

|   |  |   |   |
|---|--|---|---|
| 0 | <p>1- Applet1 is installed with maximum number of channel = 01.</p> <p>2- Applet1 builds proactive commands OPEN CHANNEL with init() method in order to open a channel.</p> <p>ProactiveHandler.send() method is called.</p>   |   | <p>2- OPEN CHANNEL proactive command is fetched</p> <p>TERMINAL RESPONSE is issued with channel status value = 0x8100</p> |
| 1 | <p><b>Channel status TLV is not present</b></p> <p>1- Send envelope unrecognized</p> <p>2- Call USATEnvelopeHandler.getChannelStatus(0x01) method.</p>   | 2- UNAVAILABLE_ELEMENT ToolkitException is thrown   |   |
| 2 | <p><b>Channel status TLV with the identifier is not present</b></p> <p>1- Send envelope Event Download Channel Status with Channel status Value = 0x8100</p> <p>2- Call USATEnvelopeHandler.getChannelStatus(0x02) method.</p> | 2- UNAVAILABLE_ELEMENT ToolkitException is thrown   |   |
| 3 | <p><b>Channel status TLV with a length equal to 0</b></p> <p>1- Send envelope unrecognized with Channel status TLV with a length equal to 0.</p> <p>2- Call USATEnvelopeHandler.getChannelStatus(0x01) method.</p>             | 2- UNAVAILABLE_ELEMENT ToolkitException is thrown   |   |
| 4 | <p><b>Channel status TLV with a length equal to 1</b></p> <p>1- - Send envelope unrecognized with Channel status TLV with a length equal to 1.</p> <p>2- Call USATEnvelopeHandler.getChannelStatus(0x01) method.</p>           | 2- OUT_OF_TLV_BOUNDARIES ToolkitException is thrown |   |
| 5 | <p><b>Get channel status value</b></p> <p>1- Send envelope Event Download Channel Status with Channel status value=0x8100.</p> <p>2- Call USATEnvelopeHandler.getChannelStatus(0x01) method.</p>                               | 2- Returns 0x8100                                   |   |
| 6 | <p><b>Get channel status value with 2 TLV</b></p> <p>1- Send envelope Event Download Channel Status with 2 channel status value: 0x8100 and 0x8101.</p> <p>2- Call USATEnvelopeHandler.getChannelStatus(0x01) method.</p>      | 2- Returns 0x8100                                   |   |
| 7 | <p><b>Get channel status value with 2 TLV</b></p> <p>1- Send envelope Event Download Channel</p>   |   |   |

|   |   |   |   |
|---|---|---|---|
|   | Status with 2 channel status value: 0x8100 and 0x8201.<br><br>2- Call USATEnvelopeHandler.getChannelStatus(0x02) method.  | 2- Returns 0x8201   |   |
| 8 | <b>Channel status TLV is currently selected TLV</b><br><br>1- Send envelope Event Download Channel Status with channel status value 0x8100. Call ViewHandler.FindTLV() method with Device Identity Tag.<br><br>2- Call USATEnvelopeHandler.getChannelStatus(0x01) method.<br><br>3- Compare USATEnvelopeHandler.getChannelStatus(0x01) and ViewHandler.getValueShort(0) method results. | 2- Returns 0x8100<br><br>3- Check getChannelStatus()=getValueShort(0) |   |
| 9 | <b>Get channel status value after a proactive command</b><br><br>1- Send envelope Event Download Channel Status with Channel status value=0x8100.<br><br>2- Call USATEnvelopeHandler.getChannelStatus(0x01) method.<br><br>3- Send a proactive command display text<br><br>4- Call USATEnvelopeHandler.getChannelStatus(0x01) method.   | 2- Returns 0x8100<br><br>4- Returns 0x8100                            | 3- DISPLAY TEXT proactive command is fetched<br><br>TERMINAL RESPONSE is issued |

### 5.2.2.10 Method getSize

Test Area Reference: Api\_2\_Ueh\_Gtsz

#### 5.2.2.10.1 Conformance requirement

The method with following header shall be compliant to its definition in the API.

```
public short getSize()
```

##### 5.2.2.10.1.1 Normal execution

- CRRN1: Returns the BER TLV size, this includes the tag and the length.

##### 5.2.2.10.1.2 Parameter errors

No requirements



## 5.2.2.10.1.3 Context errors

No requirements

## 5.2.2.10.2 Test area files

Specific triggering: Unrecognized Envelope

Test Source: Test\_Api\_2\_Ueh\_Gtsz.java

Test Applet: Api\_2\_Ueh\_Gtsz\_1.java

Cap File: Api\_2\_Ueh\_Gtsz.cap

## 5.2.2.10.3 Test coverage

| CRR number | Test case number |
|------------|------------------|
| 1          | 1, 2             |

## 5.2.2.10.4 Test procedure

| Id | Description   | API/(U)SAT Framework Expectation | APDU Expectation |
|----|---|----------------------------------|------------------|
| 0  | Send an unrecognized envelope of length 0x33 (including tag and length) |                                  |                  |
| 1  | Call getSize() method just after triggering of the application.         | Returns 0x33                     |                  |
| 2  | Call getSize() method after a proactive command.                        | Returns 0x33                     |                  |

## 5.2.2.11 Method getTag

Test Area Reference: Api\_2\_Ueh\_Gttg

## 5.2.2.11.1 Conformance requirement

The method with following header shall be compliant to its definition in the API.

```
public short getTag()
```

## 5.2.2.11.1.1 Normal execution

- CRRN1: Returns the BER Tag of the BER TLV list.

## 5.2.2.11.1.2 Parameter errors

No requirements.

## 5.2.2.11.1.3 Context errors

No requirements.

## 5.2.2.11.2 Test area files

Specific triggering: Unrecognized Envelope

Test Source: Test\_Api\_2\_Ueh\_Gttg.java

Test Applet: Api\_2\_Ueh\_Gttg\_1.java

Cap File: Api\_2\_Ueh\_Gttg.cap

## 5.2.2.11.3 Test coverage

| CRR number | Test case number |
|------------|------------------|
| 1          | 1, 2             |

## 5.2.2.11.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation | APDU Expectation |
|----|--|----------------------------------|------------------|
| 0  | Send an unrecognized envelope                                  |                                  |                  |
| 1  | Call getTag() method just after triggering of the application. | Returns 0x01                     |                  |
| 2  | Call getTag() method after a proactive command.                | Returns 0x01                     |                  |

## 5.2.2.12 Method compareValue

Test Area Reference: Api\_2\_Ueh\_Cprv

## 5.2.2.12.1 Conformance requirement

The method with following header shall be compliant to its definition in the API.

```
public byte compareValue(short valueOffset,
                        byte[] compareBuffer,
                        short compareOffset,
                        short compareLength)
    throws java.lang.NullPointerException,
           java.lang.ArrayIndexOutOfBoundsException,
           ToolkitException
```

## 5.2.2.12.1.1 Normal execution

Compares the last found TLV element with a buffer:

- CRRN1: returns 0 if identical.
- CRRN2: returns -1 if the first miscomparing byte in Comprehension TLV List is less than that in compareBuffer.
- CRRN3: returns 1 if the first miscomparing byte in Comprehension TLV List is greater than that in compareBuffer.

## 5.2.2.12.1.2 Parameter errors

- CRRP1: if compareBuffer is null NullPointerException shall be thrown.
- CRRP2: if compareOffset or compareLength or both would cause access outside array bounds, or if compareLength is negative ArrayIndexOutOfBoundsException shall be thrown.
- CRRP3: if valueOffset, dstLength or both are out of the current TLV an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException.OUT\_OF\_TLV\_BOUNDARIES.

## 5.2.2.12.1.3 Context errors

- CRRC1: if the handler is busy an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException.HANDLER\_NOT\_AVAILABLE.
- CRRC2: in case of unavailable TLV element an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException.UNAVAILABLE\_ELEMENT.

## 5.2.2.12.2 Test area files

Specific triggering: Unrecognized Envelope

Test Source: Test\_Api\_2\_Ueh\_Cprv.java

Test Applet: Api\_2\_Ueh\_Cprv\_1.java

Cap File: Api\_2\_Ueh\_Cprv.cap

## 5.2.2.12.3 Test coverage

| CRR number | Test case number                       |
|------------|--|
| N1         | 12, 15                                 |
| N2         | 13, 16, 18                             |
| N3         | 14, 17                                 |
| P1         | 1                                      |
| P2         | 2, 3, 4, 5, 6                          |
| P3         | 7, 8, 9, 10                            |
| C1         | Does not apply for USATEnvelopeHandler |
| C2         | 11                                     |

## 5.2.2.12.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation                 | APDU Expectation |
|----|--|--|------------------|
| 1  | <b>Search TLV 02h</b>  |  |                  |
|    | compareValue() with a null compareBuffer   | NullPointerException is thrown                   |                  |
| 2  | <b>Search TLV 0Bh</b>  |  |                  |
|    | <b>compareOffset ≥ compareBuffer.length</b><br>compareValue()<br>compareBuffer.length = 5<br>compareOffset = 5<br>compareLength = 1                    | ArrayIndexOutOfBoundsException is thrown         |                  |
| 3  | <b>compareOffset &lt; 0</b><br>compareValue()<br>compareBuffer.length = 5<br>compareOffset = -1<br>compareLength = 1                                   | ArrayIndexOutOfBoundsException is thrown         |                  |
| 4  | <b>compareLength &gt; compareBuffer.length</b><br>compareValue()<br>compareBuffer.length = 5<br>compareOffset = 0<br>compareLength = 6                 | ArrayIndexOutOfBoundsException is thrown         |                  |
| 5  | <b>compareOffset + compareLength &gt; compareBuffer.length</b><br>compareValue()<br>compareBuffer.length = 5<br>compareOffset = 3<br>compareLength = 3 | ArrayIndexOutOfBoundsException is thrown         |                  |
| 6  | <b>compareLength &lt; 0</b><br>compareValue()<br>compareBuffer.length = 5<br>compareOffset = 0<br>compareLength = -1                                   | ArrayIndexOutOfBoundsException is thrown         |                  |
| 7  | <b>Search TLV 06h</b>  |  |                  |
|    | <b>valueOffset ≥ TLV Length</b><br>compareValue()<br>valueOffset = 6<br>compareBuffer.length = 15<br>compareOffset = 0<br>compareLength = 1            | ToolkitException.OUT_OF_TLV_BOUNDARIES is thrown |                  |
| 8  | <b>valueOffset &lt; 0</b><br>compareValue()<br>valueOffset = -1<br>compareBuffer.length = 15   | ToolkitException.OUT_OF_TLV_BOUNDARIES is thrown |                  |

| Id | Description  | API/(U)SAT Framework Expectation  | APDU Expectation |
|----|--|---|------------------|
|    | compareOffset = 0<br>compareLength = 1   |   |                  |
| 9  | <b>compareLength &gt; TLV length</b><br>compareValue()<br>valueOffset = 0<br>compareBuffer.length = 15<br>compareOffset = 0<br>compareLength = 7               | ToolkitException.OUT_OF_TLV_BOUNDARIES is thrown                          |                  |
| 10 | <b>valueOffset + compareLength &gt; TLV length</b><br>compareValue()<br>valueOffset = 2<br>compareBuffer.length = 15<br>compareOffset = 0<br>compareLength = 5 | ToolkitException.OUT_OF_TLV_BOUNDARIES is thrown                          |                  |
| 11 | <b>Search TLV 01h</b><br>compareValue()  | Result is TLV_NOT_FOUND<br>ToolkitException.UNAVAILABLE_ELEMENT is thrown |                  |
| 12 | <b>Search TLV 06h</b><br><b>Initialize compareBuffer</b><br>compareBuffer =<br>81 11 22 33 44 F5   |   |                  |
|    | <b>Compare buffers</b><br>compareValue()<br>valueOffset = 0<br>compareOffset = 0<br>compareLength = 6  | Result is 00h   |                  |
| 13 | <b>Initialize compareBuffer</b><br>compareBuffer =<br>7F 11 22 33 44 F5  |   |                  |
|    | <b>Compare buffers with same parameters</b>  | Result is -1  |                  |
| 14 | <b>Initialize compareBuffer</b><br>compareBuffer =<br>83 11 22 33 44 F5  |   |                  |
|    | <b>Compare buffers with same parameters</b>  | Result is -1  |                  |
| 15 | <b>Initialize compareBuffer</b><br>compareBuffer =<br>55 55 55 81 11 22 33 44 F5<br>55 55 55 55 55   |   |                  |
|    | <b>Compare buffers</b><br>compareValue()<br>valueOffset = 1<br>compareOffset = 4<br>compareLength = 5  | Result is 00h   |                  |
| 16 | <b>Initialize compareBuffer</b><br>compareBuffer =<br>55 55 55 81 10 22 33 44 F5<br>55 55 55 55 55   |   |                  |
|    | <b>Compare buffers with same parameters</b>  | Result is +1  |                  |
| 17 | <b>Initialize compareBuffer</b><br>compareBuffer =<br>55 55 55 81 12 22 33 44 F5<br>55 55 55 55 55   |   |                  |
|    | <b>Compare buffers with same parameters</b>  | Result is -1  |                  |
| 18 | <b>Successful call, compareValue() with length=0</b><br>CompareBuffer.length = 15<br>CompareOffset = 15<br>CompareLength = 0                                   | Result of compareValue() is 0   |                  |

### 5.2.2.13 Method copy

Test Area Reference: Api\_2\_Ueh\_Copy

#### 5.2.2.13.1 Conformance requirement

The method with following header shall be compliant to its definition in the API.

```
public short copy(byte[] dstBuffer,
```

```

        short dstOffset,
        short dstLength)
throws java.lang.NullPointerException,
       java.lang.ArrayIndexOutOfBoundsException,
       ToolkitException

```

#### 5.2.2.13.1.1 Normal execution

- CRRN1: copies the Comprehension TLV list contained in the handler to the destination byte array.
- CRRN2: returns dstOffset + dstLength.

#### 5.2.2.13.1.2 Parameter errors

- CRRP1: if dstBuffer is null a NullPointerException is thrown.
- CRRP2: if dstOffset or dstLength or both would cause access outside array bounds, or if dstLength is negative, an ArrayIndexOutOfBoundsException is thrown.
- CRRP3: if dstLength is greater than the length of the Comprehension TLV List, an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException. OUT\_OF\_TLV\_BOUNDARIES.

#### 5.2.2.13.1.3 Context errors

- CRRC1: if the handler is busy an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException.HANDLER\_NOT\_AVAILABLE.

#### 5.2.2.13.2 Test area files

Specific triggering: Unrecognized Envelope

Test Source: Test\_Api\_2\_Ueh\_Copy.java

Test Applet: Api\_2\_Ueh\_Copy\_1.java

Cap File: Api\_2\_Ueh\_Copy.cap

#### 5.2.2.13.3 Test coverage

| CRR number | Test case number                       |
|------------|--|
| N1         | 9, 11, 13, 15                          |
| N2         | 8, 10, 12, 14, 16                      |
| P1         | 1                                      |
| P2         | 2, 3, 4, 5, 6                          |
| P3         | 7                                      |
| C1         | Does not apply for USATEnvelopeHandler |

#### 5.2.2.13.4 Test procedure

| Id | Description   | API/(U)SAT Framework Expectation         | APDU Expectation |
|----|---|--|------------------|
| 1  | <b>NULL as parameter to dstBuffer</b>   | NullPointerException is thrown           |                  |
| 2  | <b>dstOffset ≥ dstBuffer.length</b><br>copy()<br>dstBuffer.length = 5<br>dstOffset = 5<br>dstLength = 1 | ArrayIndexOutOfBoundsException is thrown |                  |
| 3  | <b>dstOffset &lt; 0</b><br>copy()<br>dstBuffer.length = 5<br>dstOffset = -1<br>dstLength = 1            | ArrayIndexOutOfBoundsException is thrown |                  |

| Id | Description  | API/(U)SAT Framework Expectation             | APDU Expectation |
|----|--|--|------------------|
| 4  | <b>dstLength &gt; dstBuffer.length</b><br>copy()<br>dstBuffer.length = 5<br>dstOffset = 0<br>dstLength = 6                       | ArrayIndexOutOfBoundsException is thrown     |                  |
| 5  | <b>DstOffset + dstLength &gt; dstBuffer.length</b><br>copy()<br>DstBuffer.length = 5<br>DstOffset = 3<br>DstLength = 3           | ArrayIndexOutOfBoundsException is thrown     |                  |
| 6  | <b>dstLength &lt; 0</b><br>copy()<br>dstBuffer.length = 5<br>dstOffset = 0<br>dstLength = -1                                     | ArrayIndexOutOfBoundsException is thrown     |                  |
| 7  | <b>DstLength &gt; length of the Comprehension TLV list</b><br>copy()<br>DstBuffer.length = 48<br>DstOffset = 0<br>DstLength = 48 | ToolkitException.OUT_OF_TLV_BOUNDS is thrown |                  |
| 8  | <b>Successful call, dstBuffer is the whole buffer</b><br>copy()<br>DstBuffer.length = 47<br>DstOffset = 0<br>DstLength = 47      | Result of copy() is 0X0047                   |                  |
| 9  | <b>Compare the buffer</b>  | Result of arrayCompare() is 0                |                  |
| 10 | <b>Successful call, dstBuffer is part of a buffer</b><br>copy()<br>DstBuffer.length = 50<br>dstOffset = 3<br>dstLength = 47      | Result of copy() is 0X0032                   |                  |
| 11 | <b>Compare the whole buffer</b>  | Result of arrayCompare() is 0                |                  |
| 12 | <b>Successful call, dstBuffer is part of a buffer</b><br>copy()<br>dstBuffer.length = 15<br>dstOffset = 3<br>dstLength = 6       | Result of copy() is 0X0009                   |                  |
| 13 | <b>Compare the whole buffer</b>  | Result of arrayCompare() is 0                |                  |
| 14 | <b>Successful call, dstBuffer is part of a buffer</b><br>copy()<br>dstBuffer.length = 260<br>dstOffset = 257<br>dstLength = 3    | Result of copy() is 0X0104                   |                  |
| 15 | <b>Compare the whole buffer</b>  | Result of arrayCompare() is 0                |                  |
| 16 | <b>Successful call, copy() with length =0</b><br>dstBuffer.length = 260<br>dstOffset = 260<br>dstLength = 0                      | Result of copy() is 0x104                    |                  |

### 5.2.2.14 Method copyValue

Test Area Reference: Api\_2\_Ueh\_Cpyv

#### 5.2.2.14.1 Conformance requirement

The method with following header shall be compliant with its definition in the API.

```
public short copyValue(short valueOffset,
    byte[] dstBuffer,
    short dstOffset,
    short dstLength)
    throws java.lang.NullPointerException,
    java.lang.ArrayIndexOutOfBoundsException,
    ToolkitException
```

## 5.2.2.14.1.1 Normal execution

- CRRN1: copies a part of the last TLV element which has been found, into a destination. buffer.
- CRRN2: returns dstOffset + dstLength.

## 5.2.2.14.1.2 Parameter errors

- CRRP1: if dstBuffer is null NullPointerException is thrown.
- CRRP2: if dstOffset or dstLength or both would cause access outside array bounds, or if dstLength is negative ArrayIndexOutOfBoundsException is thrown.
- CRRP3: if valueOffset, dstLength or both are out of the current TLV an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException OUT\_OF\_TLV\_BOUNDARIES.

## 5.2.2.14.1.3 Context errors

- CRRC1: if the handler is busy an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException.HANDLER\_NOT\_AVAILABLE.
- CRRC2: in case of unavailable TLV element an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException.UNAVAILABLE\_ELEMENT.

## 5.2.2.14.2 Test area files

Specific triggering: Unrecognized Envelope

Test Source: Test\_Api\_2\_Ueh\_Cpyv.java

Test Applet: Api\_2\_Ueh\_Cpyv\_1.java

Cap File: Api\_2\_Ueh\_Cpyv.cap

## 5.2.2.14.3 Test coverage

| CRR number | Test case number                       |
|------------|--|
| N1         | 13, 15                                 |
| N2         | 12, 14, 16                             |
| P1         | 1                                      |
| P2         | 2, 3, 4, 5, 6                          |
| P3         | 7, 8, 9, 10                            |
| C1         | Does not apply for USATenvelopeHandler |
| C2         | 11                                     |

## 5.2.2.14.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation         | APDU Expectation |
|----|--|--|------------------|
| 1  | <b>Search TLV 02h</b>  |  |                  |
|    | copyValue() with a null dstBuffer  | NullPointerException is thrown           |                  |
| 2  | <b>Search TLV 0Bh</b>  |  |                  |
|    | <b>dstOffset ≥ dstBuffer.length</b><br>copyValue()<br>dstBuffer.length = 5<br>dstOffset = 5<br>dstLength = 1 | ArrayIndexOutOfBoundsException is thrown |                  |
| 3  | <b>dstOffset &lt; 0</b><br>copyValue()<br>dstBuffer.length = 5<br>dstOffset = -1<br>dstLength = 1            | ArrayIndexOutOfBoundsException is thrown |                  |
| 4  | <b>dstLength &gt; dstBuffer.length</b>   | ArrayIndexOutOfBoundsException           |                  |

| Id | Description   | API/(U)SAT Framework Expectation   | APDU Expectation |
|----|---|--|------------------|
|    | copyValue()<br>dstBuffer.length = 5<br>dstOffset = 0<br>dstLength = 6   | n is thrown  |                  |
| 5  | <b>dstOffset + dstLength &gt; dstBuffer.length</b><br>copyValue()<br>dstBuffer.length = 5<br>dstOffset = 3<br>dstLength = 3                 | ArrayIndexOutOfBoundsException is thrown                                       |                  |
| 6  | <b>dstLength &lt; 0</b><br>copyValue()<br>dstBuffer.length = 5<br>dstOffset = 0<br>dstLength = -1   | ArrayIndexOutOfBoundsException is thrown                                       |                  |
| 7  | <b>Search TLV 06h</b>   |  |                  |
|    | <b>valueOffset ≥ TLV Length</b><br>copyValue()<br>valueOffset = 6<br>dstBuffer.length = 15<br>dstOffset = 0<br>dstLength = 1                | ToolkitException.OUT_OF_TLV_BOUNDARIES is thrown                               |                  |
| 8  | <b>valueOffset &lt; 0</b><br>copyValue()<br>valueOffset = -1<br>dstBuffer.length = 15<br>dstOffset = 0<br>dstLength = 1                     | ToolkitException.OUT_OF_TLV_BOUNDARIES is thrown                               |                  |
| 9  | <b>dstLength &gt; TLV length</b><br>copyValue()<br>valueOffset = 0<br>dstBuffer.length = 15<br>dstOffset = 0<br>dstLength = 7               | ToolkitException.OUT_OF_TLV_BOUNDARIES is thrown                               |                  |
| 10 | <b>valueOffset + dstLength &gt; TLV length</b><br>copyValue()<br>valueOffset = 2<br>dstBuffer.length = 15<br>dstOffset = 0<br>dstLength = 5 | ToolkitException.OUT_OF_TLV_BOUNDARIES is thrown                               |                  |
| 11 | <b>Search TLV 01h</b>   |  |                  |
|    | copyValue()   | ToolkitException.UNAVAILABLE_ELEMENT is thrown on the copyValue() method call. |                  |
| 12 | <b>Search TLV 06h</b>   |  |                  |
|    | <b>Successful call</b><br>copyValue()<br>valueOffset = 0<br>dstBuffer.length = 6<br>dstOffset = 0<br>dstLength = 6                          | Result of copyValue() is 0x0006  |                  |
| 13 | <b>Compare buffer</b><br>buffer = 81 11 22 33 44 F5   | Result is 00h  |                  |
| 14 | <b>initialize dstBuffer</b><br>dstBuffer = 55 55 ... 55   |  |                  |
|    | <b>Successful call</b><br>copyValue()<br>valueOffset = 1<br>dstBuffer.length = 20<br>dstOffset = 3<br>dstLength = 4                         | Result of copyValue() is 0x0007  |                  |
| 15 | <b>Compare buffer</b><br>buffer =<br>55 55 55 11 22<br>33 44 55 55 55<br>55 55 55 55 55<br>55 55 55 55 55                                   | Result is 00h  |                  |
| 16 | <b>Successful call, copy with length =0</b><br>dstBuffer.length = 20<br>dstOffset = 20<br>dstLength = 0                                     | Result of copyValue() is 20  |                  |



### 5.2.2.15 Method findAndCompareValue(byte tag, byte[] compareBuffer, short compareOffset)

Test Area Reference: Api\_2\_Ueh\_Facrb\_Bs

#### 5.2.2.15.1 Conformance requirement

The method with following header shall be compliant to its definition in the API.

```
public byte findAndCompareValue(byte tag,
                               byte[] compareBuffer,
                               short compareOffset)
    throws java.lang.NullPointerException,
           java.lang.ArrayIndexOutOfBoundsException,
           ToolkitException
```

#### 5.2.2.15.1.1 Normal execution

Looks for the first occurrence of a TLV element from beginning of a TLV list and compare its value with a buffer:

- CRRN1: if no TLV element is found, the UNAVAILABLE\_ELEMENT exception is thrown and the current TLV is no longer defined.
- CRRN2: if the method is successful then the corresponding TLV becomes current.
- CRRN3: if identical returns 0.
- CRRN4: if the first miscomparing byte in Comprehension TLV is less than that in compareBuffer returns -1.
- CRRN5: if the first miscomparing byte in Comprehension TLV is greater than that in compareBuffer returns 1.
- CRRN6: The search method is comprehension required flag independent.

#### 5.2.2.15.1.2 Parameter errors

- CRRP1: if compareBuffer is null NullPointerException shall be thrown.
- CRRP2: if compareOffset would cause access outside array bounds ArrayIndexOutOfBoundsException shall be thrown.

#### 5.2.2.15.1.3 Context errors

- CRRC1: if the handler is busy an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException.HANDLER\_NOT\_AVAILABLE.

#### 5.2.2.15.2 Test area files

Specific triggering: Unrecognized Envelope

Test Source: Test\_Api\_2\_Ueh\_Facrb\_Bs.java

Test Applet: Api\_2\_Ueh\_Facrb\_Bs\_1.java

Cap File: Api\_2\_Ueh\_Facrb\_Bs.cap

#### 5.2.2.15.3 Test coverage

| CRR number | Test case number |
|------------|------------------|
| N1         | 6,7              |
| N2         | 9                |
| N3         | 8, 12, 13        |
| N4         | 10, 14           |
| N5         | 11, 15           |
| N6         | 16, 17           |
| P1         | 1                |

|    |  |
|----|--|
| P2 | 2, 3, 4, 5                             |
| C1 | Does not apply for USATenvelopeHandler |

## 5.2.2.15.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation                | APDU Expectation |
|----|--|---|------------------|
|    | <b>Fill the Unrecognized Envelope with TLV: Tag 02, Value 83 81, Tag 06, Value 81 11 22 33 44 F5, Tag 02 Value 22 44 Tag 33, Length C4 Value 01 02 ...</b> |   |                  |
| 1  | <b>findAndCompareValue() with a null dstBuffer</b>   | NullPointerException is thrown                  |                  |
| 2  | <b>compareOffset ≥ compareBuffer.length</b><br>findAndCompareValue()<br>tag = 06h<br>compareBuffer.length = 12<br>compareOffset = 12                       | ArrayIndexOutOfBoundsException is thrown        |                  |
| 3  | <b>compareOffset &lt; 0</b><br>findAndCompareValue()<br>compareBuffer.length = 12<br>compareOffset = -1  | ArrayIndexOutOfBoundsException is thrown        |                  |
| 4  | <b>length &gt; compareBuffer.length</b><br>findAndCompareValue()<br>compareBuffer.length = 05<br>compareOffset = 0   | ArrayIndexOutOfBoundsException is thrown        |                  |
| 5  | <b>compareOffset + length &gt; compareBuffer.length</b><br>findAndCompareValue()<br>compareBuffer.length = 12<br>compareOffset = 7                         | ArrayIndexOutOfBoundsException is thrown        |                  |
| 6  | <b>Select a TLV (tag 02h)</b><br>findAndCompareValue()<br>tag = 03h  | ToolkitException.UNAVAILABLE_ELEMENT is thrown  |                  |
| 7  | <b>Call the getValueLength() method</b>  | ToolkitException.UNAVAILABLE_ELEMENT is thrown. |                  |
| 8  | <b>Initialize compareBuffer</b><br>compareBuffer = 81 11 22 33 44 F5   |   |                  |
|    | <b>Compare buffers</b><br>findAndCompareValue()<br>tag = 06h<br>compareOffset = 0  | Result is 00h                                   |                  |
| 9  | <b>Verify current TLV</b><br>getValueLength()  | Result is 06                                    |                  |
| 10 | <b>Initialize compareBuffer</b><br>compareBuffer = 81 11 22 33 44 F4   |   |                  |
|    | <b>Compare buffers with same parameters</b>  | Result is +1                                    |                  |
| 11 | <b>Initialize compareBuffer</b><br>compareBuffer = 81 11 22 33 44 F6   |   |                  |
|    | <b>Compare buffers with same parameters</b>  | Result is -1                                    |                  |
| 12 | <b>Initialize compareBuffer</b><br>compareBuffer =<br>55 55 81 11 22 33 44 F5 55 55 55 55  |   |                  |
|    | <b>Compare buffers</b><br>findAndCompareValue()<br>compareOffset = 2   | Result is 00h                                   |                  |
| 13 | <b>Initialize compareBuffer</b><br>compareBuffer =<br>55 55 83 81 55 55 55 55 55 55 55   |   |                  |
|    | <b>Compare buffers</b><br>findAndCompareValue()<br>compareOffset = 2   | Result is 00h                                   |                  |
| 14 | <b>Initialize compareBuffer</b><br>compareBuffer =<br>55 55 83 80 55 55 55 55 55 55 55   |   |                  |
|    | <b>Compare buffers</b><br>findAndCompareValue()<br>compareOffset = 2   | Result is +1                                    |                  |
| 15 | <b>Initialize compareBuffer</b>  |   |                  |

|    |   |               |  |
|----|---|---------------|--|
|    | compareBuffer =<br>55 55 83 82 55 55 55 55 55 55 55   |               |  |
|    | <b>Compare buffers</b><br>findAndCompareValue()<br>compareOffset = 2  | Result is -1  |  |
| 16 | <b>Initialize compareBuffer</b><br>compareBuffer =<br>83 81 55 55 55 55 55 55 55 55 55  |               |  |
|    | <b>Successful call (with tag 02h)</b><br>findAndCompareValue()<br>tag = 02h<br>compareBuffer.length = 12<br>compareOffset = 0 | Result is 00h |  |
| 17 | <b>Initialize compareBuffer</b><br>CompareBuffer = 01 02 ... C4   |               |  |
|    | <b>Successful call (with tag B3h)</b><br>findAndCompareValue()<br>Tag = B3h<br>CompareBuffer.length = C4<br>CompareOffset = 0 | Result is 00h |  |

### 5.2.2.16 Method findAndCompareValue(byte tag, byte occurrence, short valueOffset, byte[] compareBuffer, short compareOffset, short compareLength)

Test Area Reference: Api\_2\_Ueh\_Facrbbs\_Bss

#### 5.2.2.16.1 Conformance requirement

The method with following header shall be compliant to its definition in the API.

```
public byte findAndCompareValue(byte tag,
                               byte occurrence,
                               short valueOffset,
                               byte[] compareBuffer,
                               short compareOffset,
                               short compareLength)
    throws java.lang.NullPointerException,
           java.lang.ArrayIndexOutOfBoundsException,
           ToolkitException
```

#### 5.2.2.16.1.1 Normal execution

Looks for the indicated occurrence of a TLV element from the beginning of a TLV list and compare its value with a buffer:

- CRRN1: if no TLV element is found, the UNAVAILABLE\_ELEMENT exception is thrown and the current TLV is no longer defined.
- CRRN2: if the method is successful then the corresponding TLV becomes current.
- CRRN3: if identical 0 is returned.
- CRRN4: if the first miscomparing byte in Comprehension TLV is less than that in compareBuffer -1 is returned.
- CRRN5: if the first miscomparing byte in Comprehension TLV is greater than that in compareBuffer 1 is returned
- CRRN6: The search method is comprehension required flag independent.

#### 5.2.2.16.1.2 Parameter errors

- CRRP1: if compareBuffer is null NullPointerException shall be thrown.
- CRRP2: if compareOffset or compareLength or both would cause access outside array bounds, or if compareLength is negative ArrayIndexOutOfBoundsException shall be thrown.
- CRRP3: if valueOffset, compareLength or both are out of the current TLV an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException.OUT\_OF\_TLV\_BOUNDARIES.

- CRRP4: if an input parameter is not valid (e.g. occurrence = 0) an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException.BAD\_INPUT\_PARAMETER.

#### 5.2.2.16.1.3 Context errors

- CRRC1: if the handler is busy an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException.HANDLER\_NOT\_AVAILABLE.

#### 5.2.2.16.2 Test area files

Specific triggering: Unrecognized Envelope

Test Source: Test\_Api\_2\_Ueh\_Facrbbs\_Bss.java

Test Applet: Api\_2\_Ueh\_Facrbbs\_Bss\_1.java

Cap File: Api\_2\_Ueh\_Facrbbs\_Bss.cap

#### 5.2.2.16.3 Test coverage

| CRR number | Test case number                       |
|------------|--|
| N1         | 12, 13                                 |
| N2         | 15                                     |
| N3         | 14, 18, 21, 22, 26                     |
| N4         | 16, 20                                 |
| N5         | 17, 19, 23                             |
| N6         | 24, 25                                 |
| P1         | 1                                      |
| P2         | 2, 3, 4, 5, 6                          |
| P3         | 7, 8, 9, 10                            |
| P4         | 11                                     |
| C1         | Does not apply for USATEnvelopeHandler |

#### 5.2.2.16.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation         | APDU Expectation |
|----|--|--|------------------|
|    | <b>Fill the Unrecognized Envelope with TLV: Tag 02, Value 83 81, Tag 06, Value 81 11 22 33 44 F5, Tag 02 Value 22 44 Tag 33, Length C4 Value 01 02 ...</b>                                 |  |                  |
| 1  | <b>findAndCompareValue() with a null compareBuffer</b>   | NullPointerException is thrown           |                  |
| 2  | <b>compareOffset ≥ compareBuffer.length</b><br>findAndCompareValue()<br>tag = 06h, occurrence = 1<br>valueOffset = 0<br>compareBuffer.length = 6<br>compareOffset = 6<br>compareLength = 1 | ArrayIndexOutOfBoundsException is thrown |                  |
| 3  | <b>compareOffset &lt; 0</b><br>findAndCompareValue()<br>compareBuffer.length = 6<br>compareOffset = -1<br>compareLength = 1  | ArrayIndexOutOfBoundsException is thrown |                  |
| 4  | <b>compareLength &gt; compareBuffer.length</b><br>findAndCompareValue()<br>compareBuffer.length = 5<br>compareOffset = 0<br>compareLength = 6  | ArrayIndexOutOfBoundsException is thrown |                  |
| 5  | <b>compareOffset + compareLength &gt; compareBuffer.length</b><br>findAndCompareValue()<br>compareBuffer.length = 5  | ArrayIndexOutOfBoundsException is thrown |                  |

| Id | Description  | API(U)SAT Framework Expectation                  | APDU Expectation |
|----|--|--|------------------|
|    | compareOffset = 3<br>compareLength = 3   |  |                  |
| 6  | <b>compareLength &lt; 0</b><br>findAndCompareValue()<br>compareBuffer.length = 5<br>compareOffset = 0<br>compareLength = -1  | ArrayIndexOutOfBoundsException is thrown         |                  |
| 7  | <b>valueOffset ≥ Value Length</b><br>findAndCompareValue()<br>tag = 06h, occurrence = 1<br>valueOffset = 6<br>compareBuffer.length = 15<br>compareOffset = 0<br>compareLength = 1                      | ToolkitException.OUT_OF_TLV_BOUNDARIES is thrown |                  |
| 8  | <b>valueOffset &lt; 0</b><br>findAndCompareValue()<br>valueOffset = -1<br>compareBuffer.length = 15<br>compareOffset = 0<br>compareLength = 1  | ToolkitException.OUT_OF_TLV_BOUNDARIES is thrown |                  |
| 9  | <b>compareLength &gt; Value length</b><br>findAndCompareValue()<br>valueOffset = 0<br>compareBuffer.length = 15<br>compareOffset = 0<br>compareLength = 7  | ToolkitException.OUT_OF_TLV_BOUNDARIES is thrown |                  |
| 10 | <b>valueOffset + compareLength &gt; Value length</b><br>findAndCompareValue()<br>valueOffset = 2<br>compareBuffer.length = 15<br>compareOffset = 0<br>compareLength = 5                                | ToolkitException.OUT_OF_TLV_BOUNDARIES is thrown |                  |
| 11 | <b>Invalid parameter</b><br>findAndCompareValue()<br>occurrence = 0  | ToolkitException.BAD_INPUT_PARAMETER is thrown   |                  |
| 12 | <b>Select a TLV (tag 02h)</b><br><b>findAndCompareValue()</b><br>tag = 06h<br>occurrence = 2   | ToolkitException.UNAVAILABLE_ELEMENT is thrown   |                  |
| 13 | <b>Call the getValueLength() method</b>  | ToolkitException.UNAVAILABLE_ELEMENT is thrown.  |                  |
| 14 | <b>Initialize compareBuffer</b><br>compareBuffer = 81 11 22 33 44 F5<br><b>findAndCompareValue()</b><br>tag = 06h, occurrence = 1<br>valueOffset = 0<br>compareOffset = 0<br>compareLength = 6         | Result is 00h                                    |                  |
| 15 | <b>Verify current TLV</b><br>getValueLength()  | Result is 0006                                   |                  |
| 16 | <b>Initialize compareBuffer</b><br>compareBuffer = 81 11 22 33 44 F4<br><b>Compare buffers with same parameters</b>  | Result is +1                                     |                  |
| 17 | <b>Initialize compareBuffer</b><br>compareBuffer = 81 11 22 33 44 F6<br><b>Compare buffers with same parameters</b>  | Result is -1                                     |                  |
| 18 | <b>Initialize compareBuffer</b><br>compareBuffer =<br>55 55 55 22 33 44 F5 55 55 55 55<br><b>Compare buffers</b><br>findAndCompareValue()<br>valueOffset = 2<br>compareOffset = 3<br>compareLength = 4 | Result is 00h                                    |                  |
| 19 | <b>Initialize compareBuffer</b><br>compareBuffer =<br>55 55 55 22 33 45 F5 55 55 55 55<br><b>Compare buffers with same parameters</b>  | Result is -1                                     |                  |
| 20 | <b>Initialize compareBuffer</b><br>compareBuffer =<br>55 55 55 22 33 43 F5 55 55 55 55   |  |                  |

| Id | Description  | API/(U)SAT Framework Expectation       | APDU Expectation |
|----|--|--|------------------|
|    | <b>Compare buffers with same parameters</b>  | Result is +1                           |                  |
| 21 | <b>Initialize compareBuffer</b><br>compareBuffer =<br>83 81 55 55 55 55 55 55 55 55 55 55  |  |                  |
|    | <b>findAndCompareValue()</b><br>tag = 02h, occurrence = 1<br>valueOffset = 0<br>compareOffset = 0<br>compareLength = 2   | Result is 00h                          |                  |
| 22 | <b>Initialize compareBuffer</b><br>compareBuffer =<br>22 44 55 55 55 55 55 55 55 55 55 55  |  |                  |
|    | <b>findAndCompareValue()</b><br>tag = 02h, occurrence = 2<br>valueOffset = 0<br>compareOffset = 0<br>compareLength = 2   | Result is 00h                          |                  |
| 23 | <b>Initialize compareBuffer</b><br>compareBuffer =<br>22 45 55 55 55 55 55 55 55 55 55 55  |  |                  |
|    | <b>findAndCompareValue()</b><br>tag = 02h, occurrence = 2<br>valueOffset = 0<br>compareOffset = 0<br>compareLength = 2   | Result is -1                           |                  |
| 24 | <b>Initialize compareBuffer</b><br>compareBuffer =<br>83 81 55 55 55 55 55 55 55 55 55 55  |  |                  |
|    | <b>Successful call (with tag 02h)</b><br>findAndCompareValue()<br>tag = 02h, occurrence = 1<br>valueOffset = 0<br>compareBuffer.length = 12<br>compareOffset = 0<br>compareLength = 2      | Result is 00h                          |                  |
| 25 | <b>Initialize compareBuffer</b><br>compareBuffer = 01 02 ... C4  |  |                  |
|    | <b>Successful call (with tag B3h)</b><br>findAndCompareValue()<br>tag = B3h, occurrence = 1<br>valueOffset = 0<br>compareBuffer.length = 00C4<br>compareOffset = 0<br>compareLength = 00C4 | Result is 00h                          |                  |
| 26 | <b>Successful call, findAndCompareValue() with length =0</b><br>DstBuffer.length = C4<br>DstOffset = C4<br>DstLength = 0   | Result of findAndCompareValue() is 00h |                  |

### 5.2.2.17 Method findAndCopyValue(byte tag, byte[] dstBuffer, short dstOffset)

Test Area Reference: Api\_2\_Ueh\_Facyb\_Bs

#### 5.2.2.17.1 Conformance requirement

The method with following header shall be compliant to its definition in the API.

```
public short findAndCopyValue(byte tag,
                             byte[] dstBuffer,
                             short dstOffset)
    throws java.lang.NullPointerException,
           java.lang.ArrayIndexOutOfBoundsException,
           ToolkitException
```

## 5.2.2.17.1.1 Normal execution

- CRRN1: looks for the first occurrence of a TLV element from the beginning of a TLV list and copy its value into a destination buffer.
- CRRN2: if no TLV element is found, the UNAVAILABLE\_ELEMENT exception is thrown and the current TLV is no longer defined.
- CRRN3: if the method is successful then the corresponding TLV becomes current and dstOffset + length of the copied value is returned.
- CRRN4: The search method is comprehension required flag independent.

## 5.2.2.17.1.2 Parameter errors

- CRRP1: if dstBuffer is null NullPointerException shall be thrown.
- CRRP2: if dstOffset would cause access outside array bounds ArrayIndexOutOfBoundsException shall be thrown.

## 5.2.2.17.1.3 Context errors

- CRRC1: if the handler is busy an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException.HANDLER\_NOT\_AVAILABLE.

## 5.2.2.17.2 Test area files

Specific triggering: Unrecognized Envelope

Test Source: Test\_Api\_2\_Ueh\_Facyb\_Bs.java

Test Applet: Api\_2\_Ueh\_Facyb\_Bs\_1.java

Cap File: Api\_2\_Ueh\_Facyb\_Bs.cap

## 5.2.2.17.3 Test coverage

| CRR number | Test case number                       |
|------------|--|
| N1         | 9, 11, 13                              |
| N2         | 6, 7                                   |
| N3         | 8, 10, 12                              |
| N4         | 14, 15, 16, 17                         |
| P1         | 1                                      |
| P2         | 2, 3, 4, 5                             |
| C1         | Does not apply for USATEnvelopeHandler |

## 5.2.2.17.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation         | APDU Expectation |
|----|--|--|------------------|
|    | <b>Fill the Unrecognized Envelope with TLV: Tag 02, Value 83 81, Tag 06, Value 81 11 22 33 44 F5, Tag 02 Value 22 44 Tag 33, Length C4 Value 01 02 ...</b> |  |                  |
| 1  | <b>FindAndCopyValue() with a null dstBuffer</b>  | NullPointerException is thrown           |                  |
| 2  | <b>dstOffset ≥ dstBuffer.length</b><br>findAndCopyValue()<br>tag = 06h<br>dstBuffer.length = 06<br>dstOffset = 06  | ArrayIndexOutOfBoundsException is thrown |                  |
| 3  | <b>dstOffset &lt; 0</b><br>findAndCopyValue()  | ArrayIndexOutOfBoundsException is thrown |                  |

| Id | Description  | API/(U)SAT Framework Expectation                   | APDU Expectation |
|----|--|--|------------------|
|    | <code>dstBuffer.length = 06</code><br><code>dstOffset = -1</code>  |  |                  |
| 4  | <b>length &gt; dstBuffer.length</b><br><code>findAndCopyValue()</code><br><code>dstBuffer.length = 05</code><br><code>dstOffset = 0</code>                             | ArrayIndexOutOfBoundsException is thrown           |                  |
| 5  | <b>DstOffset + length &gt; dstBuffer.length</b><br><code>findAndCopyValue()</code><br><code>dstBuffer.length = 06</code><br><code>dstOffset = 1</code>                 | ArrayIndexOutOfBoundsException is thrown           |                  |
| 6  | <b>Select a TLV (tag 02h)</b><br><code>findAndCopyValue()</code><br><code>tag = 03h</code>   | ToolkitException.UNAVAILABLE_ELEMENT is thrown     |                  |
| 7  | <b>Call the getValueLength() method</b>  | ToolkitException.UNAVAILABLE_ELEMENT is thrown.    |                  |
| 8  | <b>Successful call</b><br><code>findAndCopyValue()</code><br><code>Tag = 06h</code><br><code>dstBuffer.length = 06</code><br><code>dstOffset = 0</code>                | Result of <code>findAndCopyValue ()</code> is 0006 |                  |
| 9  | <b>Compare buffer</b><br><code>buffer = 81 11 22 33 44 F5</code>   | Result is 00h                                      |                  |
| 10 | <b>Initialize dstBuffer</b><br><code>dstBuffer = 55 55 ... 55</code>   |  |                  |
|    | <b>Successful call</b><br><code>findAndCopyValue()</code><br><code>dstBuffer.length = 12</code><br><code>dstOffset = 2</code>  | Result of <code>findAndCopyValue ()</code> is 0008 |                  |
| 11 | <b>Compare buffer</b><br><code>buffer =</code><br><code>55 55 81 11 22 33 44 F5 55 55 55 55</code>   | Result is 00h                                      |                  |
| 12 | <b>Successful call</b><br><code>findAndCopyValue()</code><br><code>tag = 02h</code><br><code>dstBuffer.length = 2</code><br><code>dstOffset = 0</code>                 | Result of <code>findAndCopyValue ()</code> is 0002 |                  |
| 13 | <b>Compare buffer</b><br><code>buffer = 83 81</code>   | Result is 00h                                      |                  |
| 14 | <b>Successful call (with tag 82h)</b><br><code>findAndCopyValue()</code><br><code>tag = 82h</code><br><code>dstBuffer.length = 02</code><br><code>dstOffset = 0</code> | Result of <code>findAndCopyValue ()</code> is 0002 |                  |
| 15 | <b>Compare buffer</b><br><code>buffer = 83 81</code>   | Result is 00h                                      |                  |
| 16 | <b>Successful call (with tag B3h)</b><br><code>findAndCopyValue()</code><br><code>tag = B3h</code><br><code>dstBuffer.length = C4</code><br><code>dstOffset = 0</code> | Result of <code>findAndCopyValue ()</code> is 00C4 |                  |
| 17 | <b>Compare buffer</b><br><code>buffer = 01 02 ... C4</code>  | Result is 00h                                      |                  |

### 5.2.2.18 Method `findAndCopyValue(byte tag, byte occurrence, short valueOffset, byte[] dstBuffer, short dstOffset, short dstLength)`

Test Area Reference: `Api_2_Ueh_Facybbs_Bss`

#### 5.2.2.18.1 Conformance requirement

The method with following header shall be compliant to its definition in the API.

```
public short findAndCopyValue(byte tag,
                             byte occurrence,
```



```

        short valueOffset,
        byte[] dstBuffer,
        short dstOffset,
        short dstLength)
throws java.lang.NullPointerException,
       java.lang.ArrayIndexOutOfBoundsException,
       ToolkitException
    
```

5.2.2.18.1.1 Normal execution

- CRRN1: looks for the indicated occurrence of a TLV element from the beginning of a TLV list and copy its value into a destination buffer.
- CRRN2: if no TLV element is found, the UNAVAILABLE\_ELEMENT exception is thrown and the current TLV is no longer defined.
- CRRN3: if the method is successful then the corresponding TLV becomes current and dstOffset + dstLength is returned.
- CRRN4: The search method is comprehension required flag independent.

5.2.2.18.1.2 Parameter errors

- CRRP1: if dstBuffer is null NullPointerException shall be thrown.
- CRRP2: if dstOffset or dstLength or both would cause access outside array bounds, or if dstLength is negative ArrayIndexOutOfBoundsException shall be thrown.
- CRRP3: if valueOffset, dstLength or both are out of the current TLV an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException.OUT\_OF\_TLV\_BOUNDARIES.

5.2.2.18.1.3 Context errors

- CRRC1: if the handler is busy an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException.HANDLER\_NOT\_AVAILABLE.

5.2.2.18.2 Test area files

Specific triggering: Unrecognized Envelope

Test Source: Test\_Api\_2\_Ueh\_Facybbs\_Bss.java

Test Applet: Api\_2\_Ueh\_Facybbs\_Bss\_1.java

Cap File: Api\_2\_Ueh\_Facybbs\_Bss.cap

5.2.2.18.3 Test coverage

| CRR number | Test case number                       |
|------------|--|
| N1         | 14, 15, 17, 19, 20                     |
| N2         | 11, 12                                 |
| N3         | 13, 15, 17, 19, 25                     |
| N4         | 21, 22, 23, 24                         |
| P1         | 1                                      |
| P2         | 2, 3, 4, 5, 6                          |
| P3         | 7, 8, 9, 10                            |
| C1         | Does not apply for USATenvelopeHandler |

5.2.2.18.4 Test procedure

| Id | Description | API/(U)SAT Framework Expectation | APDU Expectation |
|----|-------------|----------------------------------|------------------|
|----|-------------|----------------------------------|------------------|

| Id | Description   | API(U)SAT Framework Expectation                  | APDU Expectation |
|----|---|--|------------------|
|    | <b>Fill the Unrecognized Envelope with TLV: Tag 02, Value 83 81, Tag 06, Value 81 11 22 33 44 F5, Tag 02 Value 22 44 Tag 33, Length C4 Value 01 02 ...</b>          |  |                  |
| 1  | <b>findAndCopyValue() with a null dstBuffer</b>   | NullPointerException is thrown                   |                  |
| 2  | <b>dstOffset ≥ dstBuffer.length</b><br>findAndCopyValue()<br>tag = 06h, occurrence = 1<br>valueOffset = 0<br>dstBuffer.length = 5<br>dstOffset = 5<br>dstLength = 1 | ArrayIndexOutOfBoundsException is thrown         |                  |
| 3  | <b>dstOffset &lt; 0</b><br>findAndCopyValue()<br>dstBuffer.length = 5<br>dstOffset = -1<br>dstLength = 1  | ArrayIndexOutOfBoundsException is thrown         |                  |
| 4  | <b>dstLength &gt; dstBuffer.length</b><br>findAndCopyValue()<br>dstBuffer.length = 5<br>dstOffset = 0<br>dstLength = 6  | ArrayIndexOutOfBoundsException is thrown         |                  |
| 5  | <b>dstOffset + dstLength &gt; dstBuffer.length</b><br>findAndCopyValue()<br>dstBuffer.length = 5<br>dstOffset = 3<br>dstLength = 3                                  | ArrayIndexOutOfBoundsException is thrown         |                  |
| 6  | <b>dstLength &lt; 0</b><br>findAndCopyValue()<br>dstBuffer.length = 5<br>dstOffset = 0<br>dstLength = -1  | ArrayIndexOutOfBoundsException is thrown         |                  |
| 7  | <b>valueOffset ≥ Value Length</b><br>findAndCopyValue()<br>tag = 06h, occurrence = 1<br>valueOffset = 6<br>dstBuffer.length = 15<br>dstOffset = 0<br>dstLength = 1  | ToolkitException.OUT_OF_TLV_BOUNDARIES is thrown |                  |
| 8  | <b>valueOffset &lt; 0</b><br>findAndCopyValue()<br>valueOffset = -1<br>dstBuffer.length = 15<br>dstOffset = 0<br>dstLength = 1                                      | ToolkitException.OUT_OF_TLV_BOUNDARIES is thrown |                  |
| 9  | <b>dstLength &gt; Value length</b><br>findAndCopyValue()<br>valueOffset = 0<br>dstBuffer.length = 15<br>dstOffset = 0<br>dstLength = 7                              | ToolkitException.OUT_OF_TLV_BOUNDARIES is thrown |                  |
| 10 | <b>valueOffset + dstLength &gt; Text String length</b><br>findAndCopyValue()<br>valueOffset = 2<br>dstBuffer.length = 15<br>dstOffset = 0<br>dstLength = 5          | ToolkitException.OUT_OF_TLV_BOUNDARIES is thrown |                  |
| 11 | <b>Select a TLV (tag 02h)</b><br><b>findAndCopyValue()</b><br>tag = 06h<br>occurrence = 2   | ToolkitException.UNAVAILABLE_ELEMENT is thrown   |                  |
| 12 | <b>Call the getValueLength() method</b>   | ToolkitException.UNAVAILABLE_ELEMENT is thrown.  |                  |
| 13 | <b>Successful call</b><br>findAndCopyValue()<br>tag = 06h, occurrence = 1<br>valueOffset = 0<br>dstBuffer.length = 06<br>dstOffset = 0<br>dstLength = 06            | Result of findAndCopyValue() is 6                |                  |
| 14 | <b>Compare buffer</b>   | Result is 00h                                    |                  |

| Id | Description   | API/(U)SAT Framework Expectation      | APDU Expectation |
|----|---|---------------------------------------|------------------|
|    | buffer = 81 11 22 33 44 F5  |                                       |                  |
| 15 | <b>Initialize dstBuffer</b><br>dstBuffer = 55 55 ... 55   |                                       |                  |
|    | <b>Successful call</b><br>findAndCopyValue()<br>tag = 06h, occurrence = 1<br>valueOffset = 2<br>dstBuffer.length = 12<br>dstOffset = 3<br>dstLength = 04                  | Result of findAndCopyValue () is 0007 |                  |
| 16 | <b>Compare buffer</b><br>buffer =<br>55 55 55 22 33 44 F5 55 55 55 55 55  | Result is 00h                         |                  |
| 17 | <b>Successful call</b><br>findAndCopyValue()<br>tag = 02h, occurrence = 1<br>valueOffset = 0<br>dstBuffer.length = 12<br>dstOffset = 0<br>dstLength = 2                   | Result of findAndCopyValue() is 0002  |                  |
| 18 | <b>Compare buffer</b><br>buffer = 83 81 55 ... 55   | Result is 00h                         |                  |
| 19 | <b>Successful call</b><br>findAndCopyValue()<br>tag = 02h, occurrence = 2<br>valueOffset = 0<br>dstBuffer.length = 12<br>dstOffset = 0<br>dstLength = 2                   | Result of findAndCopyValue() is 0002  |                  |
| 20 | <b>Compare buffer</b><br>buffer = 22 44 55 ... 55   | Result is 00h                         |                  |
| 21 | <b>Successful call (with tag 82h)</b><br>findAndCopyValue()<br>tag = 82h<br>occurrence = 1<br>valueOffset = 0<br>dstBuffer.length = 12<br>dstOffset = 0<br>dstLength = 02 | Result of findAndCopyValue () is 0002 |                  |
| 22 | <b>Compare buffer</b><br>buffer = 83 81 55 ... 55   | Result is 00h                         |                  |
| 23 | <b>Successful call (with tag 82h)</b><br>findAndCopyValue()<br>tag = 82h<br>occurrence = 2<br>valueOffset = 0<br>dstBuffer.length = 12<br>dstOffset = 0<br>dstLength = 02 | Result of findAndCopyValue () is 0002 |                  |
| 24 | <b>Compare buffer</b><br>Buffer = 22 44 55 ... 55   | Result is 00h                         |                  |
| 25 | <b>Successful call, findAndCopyValue() with length =0</b><br>DstBuffer.length = 12<br>dstOffset = 12<br>dstLength = 0   | Result of findAndCopyValue () is 12   |                  |

### 5.2.2.19 Method findTLV

Test Area Reference: Api\_2\_Ueh\_Find

#### 5.2.2.19.1 Conformance requirement

The method with following header shall be compliant to its definition in the API.

```
public byte findTLV(byte tag,
                  byte occurrence)
    throws ToolkitException
```

## 5.2.2.19.1.1 Normal execution

Looks for the indicated occurrence of a TLV element from the beginning of the TLV list (handler buffer):

- CRRN1: the method is successful if the required occurrence exists then the corresponding TLV becomes current.
- CRRN2: if the method is successful then it returns TLV\_FOUND\_CR\_SET when Comprehension Required flag is set.
- CRRN3: if the method is successful then it returns TLV\_FOUND\_CR\_NOT\_SET when Comprehension Required flag is not set.
- CRRN4: if the required occurrence of the TLV element does not exist, the current TLV is no longer defined and TLV\_NOT\_FOUND is returned.
- CRRN5: The search method is comprehension required flag independent.

## 5.2.2.19.1.2 Parameter errors

- CRRP1: if an input parameter is not valid (e.g. occurrence = 0) an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException.BAD\_INPUT\_PARAMETER.

## 5.2.2.19.1.3 Context errors

- CRRC1: if the handler is busy an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException.HANDLER\_NOT\_AVAILABLE.

## 5.2.2.19.2 Test area files

Specific triggering: Unrecognized Envelope

Test Source: Test\_Api\_2\_Ueh\_Find.java

Test Applet: Api\_2\_Ueh\_Find\_1.java

Cap File: Api\_2\_Ueh\_Find.cap

## 5.2.2.19.3 Test coverage

| CRR number | Test case number                       |
|------------|--|
| N1         | 3, 5                                   |
| N2         | 2, 4                                   |
| N3         | 10, 11                                 |
| N4         | 6, 7, 8, 9                             |
| N5         | 12, 13                                 |
| P1         | 1                                      |
| C1         | Does not apply for USATEnvelopeHandler |

## 5.2.2.19.4 Test procedure

| Id | Description   | API/(U)SAT Framework Expectation               | APDU Expectation |
|----|---|--|------------------|
|    | Trigger the applet with Unrecognized Envelope including:<br>Tag 82, tag 86, tag 8B, tag 02 and tag 04 |  |                  |
| 1  | <b>Invalid input parameter</b><br>findTLV()<br>Occurrence = 0   | ToolkitException.BAD_INPUT_PARAMETER is thrown |                  |
| 2  | <b>Search 1st TLV</b><br>findTLV()<br>Tag = 02h<br>Occurrence = 1                                     | Result is TLV_FOUND_CR_SET                     |                  |

| Id | Description   | API/(U)SAT Framework Expectation                | APDU Expectation |
|----|---|---|------------------|
| 3  | Call the <code>getValueLength()</code> method   | Result is 0x02                                  |                  |
| 4  | Search 2nd TLV<br><code>findTLV()</code><br>Tag = 06h<br>Occurrence = 1                     | Result is TLV_FOUND_CR_SET                      |                  |
| 5  | Call the <code>getValueLength()</code> method   | Result is 0x05h                                 |                  |
| 6  | Select a TLV (tag 02h)<br>Search a wrong tag  | Result is TLV_NOT_FOUND                         |                  |
| 7  | Call the <code>getValueLength()</code> method   | ToolkitException.UNAVAILABLE_ELEMENT is thrown. |                  |
| 8  | Search a tag with wrong occurrence<br><code>findTLV()</code><br>Tag = 02h<br>Occurrence = 3 | Result is TLV_NOT_FOUND                         |                  |
| 9  | Call the <code>getValueLength()</code> method   | ToolkitException.UNAVAILABLE_ELEMENT is thrown. |                  |
| 10 | Search the TLV<br><code>findTLV()</code><br>Tag = 02h<br>Occurrence = 2                     | Result is TLV_FOUND_CR_NOT_SET                  |                  |
| 11 | Search the TLV<br><code>findTLV()</code><br>Tag = 04h<br>Occurrence = 1                     | Result is TLV_FOUND_CR_NOT_SET                  |                  |
| 12 | Search tag 86h<br><code>findTLV()</code><br>Tag = 86h<br>Occurrence = 1                     | Result is TLV_FOUND_CR_SET                      |                  |
| 13 | Search tag 84h<br><code>findTLV()</code><br>Tag = 84h<br>Occurrence = 1                     | Result is TLV_FOUND_CR_NOT_SET                  |                  |

### 5.2.2.20 Method `getCapacity`

Test Area Reference: `Api_2_Ueh_Gcap`

#### 5.2.2.20.1 Conformance requirement

The method with following header shall be compliant to its definition in the API.

```
public byte getCapacity()
```

##### 5.2.2.20.1.1 Normal execution

- CRRN1: The method shall return the maximum size of the Comprehension TLV list managed by the handler.

##### 5.2.2.20.1.2 Parameter Errors

No requirements

##### 5.2.2.20.1.3 Context errors

No requirements

#### 5.2.2.20.2 Test area files

Test Source: `Test_Api_2_Ueh_Gcap.java`

Test Applet: `Api_2_Ueh_Gcap_1.java`

Cap File: Api\_2\_Ueh\_Gcap.cap

#### 5.2.2.20.3 Test coverage

| CRR number | Test case number |
|------------|------------------|
| N1         | 1                |

#### 5.2.2.20.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation   | APDU Expectation |
|----|--|--|------------------|
| 1  | <b>USATEnvelopeHandler available</b><br>1 - Send envelope Menu Selection<br>2 - The applet calls the getLength() method<br>3 - The applet calls the getCapacity() method | 1 - Applet is triggered<br>2 - No exception is thrown<br>3 - No exception is thrown; the capacity is greater than the BER TLV Length |                  |

#### 5.2.2.21 Method getLength

Test Area Reference: Api\_2\_Ueh\_Glen

##### 5.2.2.21.1 Conformance requirement

The method with following header shall be compliant to its definition in the API.

```
public short getLength()
    throws ToolkitException
```

##### 5.2.2.21.1.1 Normal execution

- CRRN1: returns the length in bytes of the TLV list.

##### 5.2.2.21.1.2 Parameter Errors

No requirements.

##### 5.2.2.21.1.3 Context errors

- CRRC1: if the handler is busy an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException.HANDLER\_NOT\_AVAILABLE.

##### 5.2.2.21.2 Test area files

Specific triggering: Unrecognized envelope

Test Source: Test\_Api\_2\_Ueh\_Glen.java

Test Applet: Api\_2\_Ueh\_Glen\_1.java

Cap File: Api\_2\_Ueh\_Glen.cap

##### 5.2.2.21.3 Test coverage

| CRR number | Test case number                       |
|------------|--|
| N1         | 1, 2, 3, 4                             |
| C1         | Does not apply for USATEnvelopeHandler |

## 5.2.2.21.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation | APDU Expectation |
|----|--|----------------------------------|------------------|
| 1  | Send an Unrecognized Envelope with BER length of 0x31  | Result of getLength() is 0x0031  |                  |
| 2  | Send an Unrecognized Envelope with BER length of 0x7F  | Result of getLength() is 0x007Fh |                  |
| 3  | Send an Unrecognized Envelope with BER length of 81 80 | Result of getLength() is 0x0080h |                  |
| 4  | Send an Unrecognized Envelope with BER length of 81 FC | Result of getLength() is 0x00FCh |                  |

## 5.2.2.22 Method getValueByte

Test Area Reference: Api\_2\_Ueh\_Gvby

## 5.2.2.22.1 Conformance requirement

The method with following header shall be compliant to its definition in the API.

```
public byte getValueByte(short valueOffset)
    throws ToolkitException
```

## 5.2.2.22.1.1 Normal execution

- CRRN1: Gets a byte from the last TLV element which has been found in the handler and returns its value (1 byte).

## 5.2.2.22.1.2 Parameter errors

- CRRP1: if valueOffset is out of the current TLV an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException.OUT\_OF\_TLV\_BOUNDARIES.

## 5.2.2.22.1.3 Context errors

- CRRC1: if the handler is busy an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException.HANDLER\_NOT\_AVAILABLE.
- CRRC2: in case of unavailable TLV element an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException.UNAVAILABLE\_ELEMENT.

## 5.2.2.22.2 Test area files

Specific triggering: Unrecognized Envelope

Test Source: Test\_Api\_2\_Ueh\_Gvby.java

Test Applet: Api\_2\_Ueh\_Gvby\_1.java

Cap File: Api\_2\_Ueh\_Gvby.cap

## 5.2.2.22.3 Test coverage

| CRR number | Test case number                       |
|------------|--|
| N1         | 3, 4, 5, 6, 7, 8                       |
| P1         | 2                                      |
| C1         | Does not apply for USATEnvelopeHandler |
| C2         | 1                                      |

## 5.2.2.22.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation                 | APDU Expectation |
|----|--|--|------------------|
|    | Fill the Unrecognized envelope with TLV: Tag 02, length 02, value 83 81, Tag 06, length 06, Tag 0B, length 21, Tag 33, Length C8 Value 01 02 ... |  |                  |
| 1  | getValueByte(0)  | ToolkitException.UNAVAILABLE_ELEMENT is thrown   |                  |
| 2  | <b>Search TLV 02h</b>  |  |                  |
|    | getValueByte(2)  | ToolkitException.OUT_OF_TLV_BOUNDARIES is thrown |                  |
| 3  | <b>Search TLV 02h</b>  |  |                  |
|    | getValueByte(1)  | Result is 0x81                                   |                  |
| 4  | <b>Search TLV 02h (Device Identities TLV)</b>  |  |                  |
|    | getValueByte(0)  | Result is 83h (Source)                           |                  |
| 5  | <b>Search TLV 33h</b>  |  |                  |
|    | getValueByte(7E)   | Result is 0x7F                                   |                  |
| 6  | <b>Search TLV 33h</b>  |  |                  |
|    | getValueByte(80)   | Result is 0x81                                   |                  |
| 7  | getValueByte(7F)   | Result is 0x80                                   |                  |
| 8  | <b>Search TLV B3h</b>  |  |                  |
|    | getValueByte(C7)   | Result is 0xC8                                   |                  |

## 5.2.2.23 Method getValueLength

Test Area Reference: Api\_2\_Ueh\_Gvle

## 5.2.2.23.1 Conformance requirement

The method with following header shall be compliant to its definition in the API.

```
public short getValueLength()
    throws ToolkitException
```

## 5.2.2.23.1.1 Normal execution

- CRRN1: gets and returns the binary length of the value field for the last TLV element which has been found in the handler.

## 5.2.2.23.1.2 Parameter errors

No requirements.

## 5.2.2.23.1.3 Context errors

- CRRC1: if the handler is busy an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException.HANDLER\_NOT\_AVAILABLE.
- CRRC2: in case of unavailable TLV element an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException.UNAVAILABLE\_ELEMENT.

## 5.2.2.23.2 Test area files

Specific triggering: Unrecognized Envelope

Test source: Test\_Api\_2\_Ueh\_Gvle.java

Test Applet: Api\_2\_Ueh\_Gvle\_1.java

Cap File: Api\_2\_Ueh\_Gvle.cap



## 5.2.2.23.3 Test coverage

| CRR number | Test case number                       |
|------------|--|
| N1         | 2, 3, 4                                |
| C1         | Does not apply for USATEnvelopeHandler |
| C2         | 1                                      |

## 5.2.2.23.4 Test procedure

| Id | Description   | API/(U)SAT Framework Expectation               | APDU Expectation |
|----|---|--|------------------|
|    | Fill the Unrecognized envelope with TLV: Tag 02, length 02, Tag 06, length 05, Tag 0B, length 24, Tag 33, Length C8 |  |                  |
| 1  | <b>getValueLength()</b>   | ToolkitException.UNAVAILABLE_ELEMENT is thrown |                  |
| 2  | <b>Search TLV 02h</b><br>getValueLength()   | Result is 0X0002                               |                  |
| 3  | <b>Search TLV 0Bh</b><br>getValueLength()   | Result is 0X0024                               |                  |
| 4  | <b>Search TLV 33h</b><br>getValueLength()   | Result is 0X00C8                               |                  |

## 5.2.2.24 Method getValueShort

Test Area Reference: Api\_2\_Ueh\_Gvsh

## 5.2.2.24.1 Conformance requirement

The method with following header shall be compliant to its definition in the API.

```
public short getValueShort(short valueOffset)
    throws ToolkitException
```

## 5.2.2.24.1.1 Normal execution

- CRRN1: Gets a short from the last TLV element which has been found in the handler and returns its value (1 short).

## 5.2.2.24.1.2 Parameter errors

- CRRP1: if valueOffset is out of the current TLV an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException.OUT\_OF\_TLV\_BOUNDARIES.

## 5.2.2.24.1.3 Context errors

- CRRC1: if the handler is busy an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException.HANDLER\_NOT\_AVAILABLE.
- CRRC2: in case of unavailable TLV element an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException.UNAVAILABLE\_ELEMENT.

## 5.2.2.24.2 Test area files

Specific triggering: Unrecognized Envelope

Test Source: Test\_Api\_2\_Ueh\_Gvsh.java

Test Applet: Api\_2\_Ueh\_Gvsh\_1.java

Cap File: Api\_2\_Ueh\_Gvsh.cap

### 5.2.2.24.3 Test coverage

| CRR number | Test case number                       |
|------------|--|
| N1         | 3, 4, 5, 6, 7, 8                       |
| P1         | 2                                      |
| C1         | Does not apply for USATEnvelopeHandler |
| C2         | 1                                      |

### 5.2.2.24.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation                 | APDU Expectation |
|----|--|--|------------------|
|    | Fill the Unrecognized envelope with TLVs:<br>Tag 02, Length 02 Value 83 81<br>Tag 06, Length 06 Value 81 11 22 33 44 F5<br>Tag 33, Length C9 Value 01 02 ... |  |                  |
| 1  | getValueShort (0)  | ToolkitException.UNAVAILABLE_ELEMENT is thrown   |                  |
| 2  | Search TLV 02h<br>getValueShort (2)  | ToolkitException.OUT_OF_TLV_BOUNDARIES is thrown |                  |
| 3  | Search TLV 02h<br>getValueShort (0)  | Result is 0x83 0x81                              |                  |
| 4  | Search TLV 06h<br>getValueShort (1)  | Result is 0x11 0x22                              |                  |
| 5  | Search TLV 33h<br>getValueShort (7E)   | Result is 0x7F 0x80                              |                  |
| 6  | Search TLV 33h<br>getValueShort (80)   | Result is 0x81 0x82                              |                  |
| 7  | getValueShort (7F)   | Result is 0x80 0x81                              |                  |
| 8  | Search TLV B3h<br>getValueShort (C7)   | Result is 0xC8 0xC9                              |                  |

## 5.2.3 Interface USATTerminalProfile

The constants in Java are resolved at compilation time, therefore a runtime test is not useful. No test of constants will be performed

## 5.2.4 Class USATEnvelopeHandlerSystem

### 5.2.4.1 Method getTheHandler

Test Area Reference: Api\_2\_Ues\_Gthd

#### 5.2.4.1.1 Conformance requirements

The method with following header shall be compliant to its definition in the API.

```
public static USATEnvelopeHandler getTheHandler()
    throws uicc.toolkit.ToolkitException
```

#### 5.2.4.1.1.1 Normal execution

- CRRN1: The method shall return the single system instance of the class implementing the USATEnvelopeHandler interface.

- CRRN2: The USATEnvelopeHandler is a Temporary JCRE Entry Point Object (see Java Card 2.2.1 Runtime Environment (JCRE) Specification [])

#### 5.2.4.1.1.2 Parameter Errors

No requirements.

#### 5.2.4.1.1.3 Context errors

- CRRC1: The method shall throw ToolkitException.HANDLER\_NOT\_AVAILABLE if the handler is busy.

#### 5.2.4.1.2 Test area files

Test Source: Test\_Api\_2\_Ues\_Gthd.java

Test Applet: Api\_2\_Ues\_Gthd\_1.java

Cap File: Api\_2\_Ues\_Gthd.cap

#### 5.2.4.1.3 Test coverage

| CRR number | Test case number   |
|------------|--|
| N1         | 1, 2, 3  |
| N2         | Tested in § 5.3.7.1, other parts transferred to (U)SAT framework from API. |
| C1         | Tested in § 5.3.1.5, Minimum Handler Availability on USATEnvelopeHandler.  |

#### 5.2.4.1.4 Test procedure

| Id | Description   | API/(U)SAT Framework Expectation  | APDU Expectation |
|----|---|---|------------------|
| 1  | Call GetTheHandler() method twice                                 | The returned objects shall be the same  |                  |
| 2  | Verify that getTheHandler() method returns an USATEnvelopeHandler | The reference returned shall be an object implementing the USATEnvelopeHandler interface (check cast) |                  |
| 3  | Verify the returned value is not null                             | The reference returned shall not be null.   |                  |

## 5.2.5 Interface ToolkitRegistry

### 5.2.5.1 Method clearEvent

Test Area Reference: Api\_2\_Tkr\_Cevt

#### 5.2.5.1.1 Conformance requirement:

The method with following header shall be compliant to its definition in the API.

```
public void clearEvent(short event)
    throws ToolkitException,
           javacard.framework.TransactionException
```

#### 5.2.5.1.1.1 Normal execution

- CRRN1: A call to isEventSet() method for a cleared event should return false after a call to clearEvent.
- CRRN2: The (U)SAT Framework shall not trigger the applet on the occurrence of the cleared event anymore.

- CRRN3: if event was EVENT\_MO\_SHORT\_MESSAGE\_CONTROL\_BY\_SIM and after the call, no applet is registered to it, The (U)SAT Framework shall allow an applet to register to this event.
- CRRN4: if event was EVENT\_MO\_SHORT\_MESSAGE\_CONTROL\_BY\_SIM and one applet is still registered to this event, The (U)SAT Framework shall not allow an applet to register to this event.

#### 5.2.5.1.1.2 Parameter Errors

No requirements.

#### 5.2.5.1.1.3 Context errors

- CRRC1: shall throw javacard.framework.TransactionException - if the operation would cause the commit capacity to be exceeded.

#### 5.2.5.1.2 Test area files

Test Source: Test\_Api\_2\_Tkr\_Cevt.java

Test Applet: Api\_2\_Tkr\_Cevt\_1.java

Cap File: Api\_2\_Tkr\_Cevt.cap

#### 5.2.5.1.3 Test coverage

| CRR number | Test case number |
|------------|------------------|
| N1         | 1                |
| N2         | 2                |
| N3         | Framework        |
| N4         | Framework        |
| C1         | not testable     |

#### 5.2.5.1.4 Test procedure

| Id | Description   | API/(U)SAT Framework Expectation  | APDU Expectation |
|----|---|---|------------------|
| 1  | <p><b>Clear ALLOWED events</b></p> <p>Install Applet registered to<br/>EVENT_FORMATTED_SMS_PP_ENV event</p> <p>For events (2 to 6, 10 and 24) defined in<br/>TS 31.130 [2]:</p> <p>EVENT_FORMATTED_SMS_PP_ENV<br/>EVENT_FORMATTED_SMS_PP_UPD<br/>EVENT_UNFORMATTED_SMS_PP_ENV<br/>EVENT_UNFORMATTED_SMS_PP_UPD<br/>EVENT_UNFORMATTED_SMS_CB<br/>EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM<br/>EVENT_FORMATTED_SMS_CB<br/>EVENT_FORMATTED_USSD<br/>EVENT_UNFORMATTED_USSD<br/>EVENT_DOWNLOAD_IWLAN_ACCESS_STATUS</p> <p>The applet calls:</p> <p>1- Call clearEvent() method<br/>2- Call isEventSet() method</p> | <p>1- No exception is thrown each time.</p> <p>2- Shall return false each time.</p> |                  |
| 2  | <p><b>Checking applet isn't triggered by an ENVELOPE(EVENT_FORMATTED_SMS_PP_ENV) command</b></p> <p>1 - reset and initialize the card<br/>2 - An</p>  | Applet is not triggered by an   |                  |

|   |  |  |
|---|--|--|
| ENVELOPE(EVENT_FORMATTED_SMS_PP_ENV) is sent. | ENVELOPE(EVENT_FORMATTED_SMS_PP_ENV) command |  |
|---|--|--|

### 5.2.5.2 Method isEventSet

Test Area Reference: Api\_2\_Tkr\_Ievs

#### 5.2.5.2.1 Conformance requirement:

The method with following header shall be compliant to its definition in the API.

```
public boolean isEventSet(short event)
```

##### 5.2.5.2.1.1 Normal execution

- CRRN1: shall return true if the event is set in the Toolkit Registry for the applet.
- CRRN2: shall return false if the event is not set in the Toolkit Registry for the applet.

##### 5.2.5.2.1.2 Parameter errors

No requirements.

##### 5.2.5.2.1.3 Context errors

No requirements.

##### 5.2.5.2.2 Test area files

Test Source: Test\_Api\_2\_Tkr\_Ievs.java

Test Applet: Api\_2\_Tkr\_Ievs\_1.java

Cap File: Api\_2\_Tkr\_Ievs.cap

##### 5.2.5.2.3 Test coverage

| CRR number | Test case number |
|------------|------------------|
| N1         | 2                |
| N2         | 1                |

##### 5.2.5.2.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation | APDU Expectation |
|----|--|----------------------------------|------------------|
| 1  | <p><b>Install Applet only registered to EVENT_EVENT_DOWNLOAD_USER_ACTIVITY</b><br/> <b>Test that events are not set</b></p> <p>Applet calls isEventSet() method for each event ranging from (2 to 6, 10 and 24)</p>  | Shall return false each time.    |                  |
| 2  | <p><b>Setting events</b></p> <p>For the following events defined in TS 31.130 [2] for setEvent() method:</p> <p>EVENT_FORMATTED_SMS_PP_ENV<br/>                     EVENT_FORMATTED_SMS_PP_UPD<br/>                     EVENT_UNFORMATTED_SMS_PP_ENV<br/>                     EVENT_UNFORMATTED_SMS_PP_UPD<br/>                     EVENT_UNFORMATTED_SMS_CB</p> |                                  |                  |

|  |   |  |
|--|---|--|
| EVENT_FORMATTED_USSD<br>EVENT_UNFORMATTED_USSD<br>EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM<br>EVENT_FORMATTED_SMS_CB<br>EVENT_DOWNLOAD_IWLAN_ACCESS_STATUS<br>applet calls:<br><br>1- Call setEvent() method<br><br>2- Call isEventSet() method | 1- No exception shall be thrown.<br><br>2- Shall return true each time. |  |
|--|---|--|

### 5.2.5.3 Method setEvent

Test Area Reference: Api\_2\_Tkr\_Sevt

#### 5.2.5.3.1 Conformance requirement:

The method with following header shall be compliant to its definition in the API.

```
public void setEvent(short id)
    throws ToolkitException,
           javacard.framework.TransactionException
```

#### 5.2.5.3.1.1 Normal execution

- CRRN1: a following call to isEventSet() method with the same event id shall answer true for the applet.
- CRRN2: the (U)SAT Framework shall trigger the applet if an occurrence of the set event happens.

#### 5.2.5.3.1.2 Parameter errors

No requirements.

#### 5.2.5.3.1.3 Context errors

- CRRC1: shall throw a ToolkitException with EVENT\_ALREADY\_REGISTERED if event is EVENT\_MO\_SHORT\_MESSAGE\_CONTROL\_BY\_SIM but another applet is already registered to it.
- CRRC2: shall throw a ToolkitException with EVENT\_ALREADY\_REGISTERED if event is EVENT\_MO\_SHORT\_MESSAGE\_CONTROL\_BY\_SIM but another applet that it is not in selectable state is already registered to it.
- CRRC3: shall throw a ToolkitException with TAR\_NOT\_DEFINED if event is FORMATTED\_SMS\_PP\_ENV and the applet has no TAR defined.
- CRRC4: shall throw a ToolkitException with TAR\_NOT\_DEFINED if event is FORMATTED\_SMS\_PP\_UPD and the applet has no TAR defined.
- CRRC5: shall throw a ToolkitException with TAR\_NOT\_DEFINED if event is FORMATTED\_SMS\_CB and the applet has no TAR defined.
- CRRC6: shall throw a ToolkitException with TAR\_NOT\_DEFINED if event is FORMATTED\_USSD and the applet has no TAR defined.

#### 5.2.5.3.2 Test area files

Test Source: Test\_Api\_2\_Tkr\_Sevt.java

Test Applet: Api\_2\_Tkr\_Sevt\_1.java  
Api\_2\_Tkr\_Sevt\_2.java  
Api\_2\_Tkr\_Sevt\_3.java

The load script installs the 3 instances.

Cap File: Api\_2\_Tkr\_Sevt.cap

5.2.5.3.3 Test coverage

| CRR number | Test case number |
|------------|------------------|
| N1         | 1                |
| N2         | 2, 3             |
| C1         | 4                |
| C2         | 5                |
| C3         | 6                |
| C4         | 6                |
| C5         | 6                |
| C6         | 6                |

5.2.5.3.4 Test procedure

| Id | Description  | API(U)SAT Framework Expectation  | APDU Expectation |
|----|--|--|------------------|
| 1  | <p><b>Setting events</b></p> <p>1- For events (2 to 6, 10 and 24) defined in TS 31.130 [2]:</p> <p>EVENT_FORMATTED_SMS_PP_ENV<br/>                     EVENT_FORMATTED_SMS_PP_UPD<br/>                     EVENT_UNFORMATTED_SMS_PP_ENV<br/>                     EVENT_UNFORMATTED_SMS_PP_UPD<br/>                     EVENT_UNFORMATTED_SMS_CB<br/>                     EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM<br/>                     EVENT_FORMATTED_SMS_CB<br/>                     EVENT_FORMATTED_USSD<br/>                     EVENT_UNFORMATTED_USSD<br/>                     EVENT_IWLAN_ACCESS_STATUS</p> <p>1.1- Call clearEvent(event)<br/>                     1.2- Call isEventSet(event)<br/>                     1.3- Call setEvent(event)<br/>                     1.4- Call isEventSet(event)<br/>                     1.5- Call clearEvent(event)</p> | <p>1.1- No exception shall be thrown.<br/>                     1.2- Shall return false.<br/>                     1.3- No exception shall be thrown.<br/>                     1.4- Shall return true.<br/>                     1.5- No exception shall be thrown.</p> |                  |
| 2  | <p><b>Setting EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM</b></p> <p>Call<br/>                     setEvent(EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM)</p>   | No Exception shall be thrown   |                  |
| 3  | <p><b>Check applet is triggered by an ENVELOPE (EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM )</b></p> <p>Trigger the applet</p>  | Applet is triggered by an ENVELOPE (EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM)   |                  |
| 4  | <p><b>Applet2 registers to EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM but it is already assigned</b></p> <p>1- Trigger Applet2 by<br/>                     ENVELOPE(EVENT_FORMATTED_SMS_PP_ENV)</p> <p>2- Applet2 call<br/>                     setEvent(EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM)</p>   | 2- Shall throw a ToolkitException with EVENT_ALREADY_REGISTERED reason code.   |                  |

| Id | Description  | API(U)SAT Framework Expectation  | APDU Expectation |
|----|--|--|------------------|
| 5  | <p><b>Applet2 registers to EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM but it is already assigned to another applet in not selectable state</b></p> <p>1- Set the Applet1 in the lock state</p> <p>2- Applet2 call setEvent (EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM)</p> <p>3- Set the Applet1 in the make selectable state</p>                       | <p>2- Shall throw a ToolkitException with EVENT_ALREADY_REGISTERED reason code.</p>  |                  |
| 6  | <p><b>Applet3 with no TAR defined registers to EVENT_UNFORMATTED_SMS_CB event</b></p> <p>1- send unformatted ENVELOPE (CELL_BROADCAST_DATA_DOWNLOAD)</p> <p>2- setEvent (EVENT_FORMATTED_SMS_PP_ENV)</p> <p>3- setEvent (EVENT_FORMATTED_SMS_PP_UPD)</p> <p>4- setEvent (EVENT_FORMATTED_SMS_CB)</p> <p>5- setEvent (EVENT_FORMATTED_USSD)</p> | <p>1- Applet3 shall be triggered</p> <p>2- ToolkitException with reason code TAR_NOT_DEFINED shall be thrown</p> <p>3- ToolkitException with reason code TAR_NOT_DEFINED shall be thrown</p> <p>4- ToolkitException with reason code TAR_NOT_DEFINED shall be thrown</p> <p>5- ToolkitException with reason code TAR_NOT_DEFINED shall be thrown</p> |                  |

#### 5.2.5.4 Method setEventList

Test Area Reference: Api\_2\_Tkr\_Sevl

##### 5.2.5.4.1 Conformance requirement:

The method with following header shall be compliant to its definition in the API.

```
public void setEventList(short[] eventList,
                        short offset,
                        short length)
    throws java.lang.NullPointerException,
           java.lang.ArrayIndexOutOfBoundsException,
           ToolkitException,
           javacard.framework.TransactionException
```

##### 5.2.5.4.1.1 Normal execution

- CRRN1: for all events set successfully by this method, a call to isEventSet() method should return true.
- CRRN2: the (U)SAT Framework shall trigger the applet if an occurrence of one of the successfully registered events happens.

##### 5.2.5.4.1.2 Parameter errors

No requirements.

##### 5.2.5.4.1.3 Context errors

- CRRC1: shall throw a ToolkitException with EVENT\_ALREADY\_REGISTERED if eventList contains EVENT\_MO\_SHORT\_MESSAGE\_CONTROL\_BY\_SIM but another applet is already registered to it.



- CRRC2: shall throw a ToolkitException with EVENT\_ALREADY\_REGISTERED if event is EVENT\_MO\_SHORT\_MESSAGE\_CONTROL\_BY\_SIM but another applet that it is not in selectable state is already registered to it.
- CRRC3: shall throw a ToolkitException with TAR\_NOT\_DEFINED if event is FORMATTED\_SMS\_PP\_ENV and the applet has no TAR defined.
- CRRC4: shall throw a ToolkitException with TAR\_NOT\_DEFINED if event is FORMATTED\_SMS\_PP\_UPD and the applet has no TAR defined.
- CRRC5: shall throw a ToolkitException with TAR\_NOT\_DEFINED if event is FORMATTED\_SMS\_CB and the applet has no TAR defined.
- CRRC6: shall throw a ToolkitException with TAR\_NOT\_DEFINED if event is FORMATTED\_USSD and the applet has no TAR defined

#### 5.2.5.4.2 Test area files

Test Source: Test\_Api\_2\_Tkr\_Sev1.java

Test Applet: Api\_2\_Tkr\_Sev1\_1.java

Api\_2\_Tkr\_Sev1\_2.java

Cap File: Api\_2\_Tkr\_Sev1.cap

#### 5.2.5.4.3 Test coverage

| CRR number | Test case number |
|------------|------------------|
| N1         | 1,2              |
| N2         | 3, 4             |
| C1         | 5                |
| C2         | 6                |
| C3         | 7                |
| C4         | 7                |
| C5         | 7                |
| C6         | 7                |

## 5.2.5.4.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation   | APDU Expectation |
|----|--|--|------------------|
| 1  | <p><b>Applet1 registers all eventList buffer</b></p> <p>EventList = events (2 to 6, 10 and 24) defined in TS 31.130 [2]:</p> <p>EVENT_FORMATTED_SMS_PP_ENV<br/> EVENT_FORMATTED_SMS_PP_UPD<br/> EVENT_UNFORMATTED_SMS_PP_ENV<br/> EVENT_UNFORMATTED_SMS_PP_UPD<br/> EVENT_UNFORMATTED_SMS_CB<br/> EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM<br/> EVENT_FORMATTED_SMS_CB<br/> EVENT_FORMATTED_USSD<br/> EVENT_UNFORMATTED_USSD<br/> EVENT_DOWNLOAD_IWLAN_ACCESS_STATUS</p> <p>1- For each event in EventList<br/> clearEvent(event)</p> <p>2- Call setEventList(eventList)</p> <p>Offset = 0<br/> Length = eventList.length</p> <p>3- For all events in eventList<br/> isEventSet(event)</p> <p>4- For each event in EventList<br/> clearEvent(event)</p>                             | <p>1- No exception shall be thrown.</p> <p>2- No exception shall be thrown.</p> <p>3- Each time shall return true.</p> <p>4- No exception shall be thrown.</p>   |                  |
| 2  | <p><b>Registering part of eventList buffer</b></p> <p>EventList = events (2 to 6, 10 and 24) defined in TS 31.130 [2]:</p> <p>EVENT_FORMATTED_SMS_PP_ENV<br/> EVENT_FORMATTED_SMS_PP_UPD<br/> EVENT_UNFORMATTED_SMS_PP_ENV<br/> EVENT_UNFORMATTED_SMS_PP_UPD<br/> EVENT_UNFORMATTED_SMS_CB<br/> EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM<br/> EVENT_FORMATTED_SMS_CB<br/> EVENT_FORMATTED_USSD<br/> EVENT_UNFORMATTED_USSD<br/> EVENT_DOWNLOAD_IWLAN_ACCESS_STATUS</p> <p>1- For each event in EventList<br/> clearEvent(event)</p> <p>2- setEventList(eventList, offset, length)</p> <p>Offset &gt; 0<br/> Length = eventList.length - offset</p> <p>3- For all events in eventList:<br/> Call isEventSet(event)</p> <p>4- For each event in EventList:<br/> clearEvent(event)</p> | <p>1- No exception shall be thrown.</p> <p>2- No exception shall be thrown.</p> <p>3- Each time shall return true for events ranging from offset to offset+length else shall return false.</p> <p>4- No exception shall be thrown.</p> |                  |
| 3  | <p><b>Setting EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM</b></p> <p>Call setEventList(MonoEventList, 0, 1) with MonoEventList containing<br/> EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM</p>   | <p>Shall not throw an exception</p>  |                  |
| 4  | <p><b>Check applet1 is triggered by an ENVELOPE (EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM)</b></p> <p>Reset and initialize the card</p>   | <p>Applet is triggered by an ENVELOPE (EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM)</p>  |                  |

| Id | Description   | API/(U)SAT Framework Expectation  | APDU Expectation |
|----|---|---|------------------|
|    | Trigger the applet  |   |                  |
| 5  | <p align="center"><b>Applet 2 registers to<br/>EVENT_MO_SHORT_MESSAGE_<br/>CONTROL_BY_SIM<br/>but it is already assigned</b></p> <p>Call <code>setEventList (MonoEventList,0,1)</code> with <code>MonoEventList</code> containing <code>EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM</code></p>  | Shall throw a <code>ToolkitException</code> with <code>EVENT_ALREADY_REGISTERED</code> reason code.   |                  |
| 6  | <p align="center"><b>Applet2 registers to<br/>EVENT_MO_SHORT_MESSAGE_CONTROL_BY_S<br/>M<br/>but it is already assigned to another applet in not<br/>selectable state</b></p> <p>1- Set the <code>Applet1</code> in the lock state</p> <p>2- <code>Applet2</code> calls <code>setEventList (MonoEventList,0,1)</code> with <code>MonoEventList</code> containing <code>EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM</code></p> <p>3- Set the <code>Applet1</code> in the make selectable state</p>  | 2- Shall throw a <code>ToolkitException</code> with <code>EVENT_ALREADY_REGISTERED</code> reason code.  |                  |
| 7  | <p align="center"><b>Applet3 with no TAR defined registers to<br/>EVENT_UNFORMATTED_SMS_CB event</b></p> <p>1- send unformatted <code>ENVELOPE (CELL_BROADCAST_DATA_DOWNLOAD)</code></p> <p>2- <code>setEventList (EventList,0,1)</code> with <code>EventList</code> containing <code>EVENT_FORMATTED_SMS_PP_ENV</code></p> <p>3- <code>setEventList (EventList,1,1)</code> with <code>EventList</code> containing <code>EVENT_FORMATTED_SMS_PP_UPD</code></p> <p>4- <code>setEventList (EventList,2,1)</code> with <code>EventList</code> containing <code>EVENT_FORMATTED_SMS_CB</code></p> <p>5- <code>isEventSet (EVENT_FORMATTED_SMS_PP_ENV)</code></p> <p>6- <code>isEventSet (EVENT_FORMATTED_SMS_PP_UPD)</code></p> <p>7- <code>isEventSet (EVENT_FORMATTED_SMS_CB)</code></p> <p>8- <code>isEventSet (EVENT_FORMATTED_USSD)</code></p> | <p>1- <code>Applet3</code> shall be triggered</p> <p>2- <code>ToolkitException</code> with reason code <code>TAR_NOT_DEFINED</code> shall be thrown</p> <p>3- <code>ToolkitException</code> with reason code <code>TAR_NOT_DEFINED</code> shall be thrown</p> <p>4- <code>ToolkitException</code> with reason code <code>TAR_NOT_DEFINED</code> shall be thrown</p> <p>5- method shall return <code>FALSE</code></p> <p>6- method shall return <code>FALSE</code></p> <p>7- method shall return <code>FALSE</code></p> <p>8- method shall return <code>FALSE</code></p> |                  |

## 5.3 (U)SAT Framework

### 5.3.1 Minimum handler availability

#### 5.3.1.1 ProactiveHandler

Test Area Reference: Ufw\_Mha\_Pahd

##### 5.3.1.1.1 Conformance requirements

###### 5.3.1.1.1.1 Normal execution

- CRRN1: If a proactive session is not ongoing the *ProactiveHandler* is available from the invocation to the termination of the *processToolkit()* method for the following events:

EVENT\_FORMATTED\_SMS\_PP\_ENV

EVENT\_FORMATTED\_SMS\_PP\_UPD

EVENT\_UNFORMATTED\_SMS\_PP\_ENV

EVENT\_UNFORMATTED\_SMS\_PP\_UPD

EVENT\_UNFORMATTED\_SMS\_CB

EVENT\_MO\_SHORT\_MESSAGE\_CONTROL\_BY\_SIM

EVENT\_FORMATTED\_SMS\_CB

EVENT\_FORMATTED\_USSD

EVENT\_UNFORMATTED\_USSD

EVENT\_DOWNLOAD\_IWLAN\_ACCESS\_STATUS

- CRRN2: A *ProactiveHandler* is considered available when no `HANDLER_NOT_AVAILABLE ToolkitException` is thrown when the corresponding *getTheHandler()* method is called or a method of the handler is called.
- CRRN3: When available the *ProactiveHandler* shall remain available until the termination of the *processToolkit()* method.
- CRRN4: If a proactive command is pending the *ProactiveHandler* may not be available.

###### 5.3.1.1.1.2 Parameter errors

No requirements.

###### 5.3.1.1.1.3 Context errors

- CRRN1: The *ProactiveHandler* shall not be available if the Terminal Profile command has not yet been processed by the (U)SAT Framework.

###### 5.3.1.1.2 Test area files

Test Source: Test\_Ufw\_Mha\_Pahd.java

Test Applet: Ufw\_Mha\_Pahd\_1.java

Ufw\_Mha\_Pahd\_2.java

Cap File: Ufw\_Mha\_Pahd.cap

## 5.3.1.1.3 Test coverage

| CRR Number | Test Case Number   |
|------------|--|
| N1         | 1 to 10  |
| N2         | 11 to 20   |
| N3         | 1 to 11  |
| N4         | Not testable   |
| C1         | 12 to 17 and also tested in Test Cases 8 to 14 in Ufw_Mha_Prhd.<br>Applicable only if the applet is triggered when no terminal profile has been previously received. |

## 5.3.1.1.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation  | APDU Expectation |
|----|--|---|------------------|
| 1  | <p><b>ProactiveHandler availability with EVENT_FORMATTED_SMS_PP_ENV</b></p> <p>1- Envelope SMS-PP Download formatted is sent to the (U)SIM</p> <p>2- Applet1 gets the ProactiveHandler</p> | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown.</p> <p>Applet1 finalizes</p> |                  |

| Id | Description   | API/(U)SAT Framework Expectation   | APDU Expectation |
|----|---|--|------------------|
| 2  | <p align="center"><b>ProactiveHandler availability with<br/>EVENT_FORMATTED_SMS_PP_UPD</b></p> <p>1- Update Record EF<sub>SMS</sub> instruction formatted is sent to the (U)SIM</p> <p>2- Applet1 gets the ProactiveHandler</p>   | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown.</p> <p>Applet1 finalizes</p>  |                  |
| 3  | <p align="center"><b>ProactiveHandler availability with<br/>EVENT_UNFORMATTED_SMS_PP_ENV</b></p> <p>1- Envelope SMS-PP Download unformatted is sent to the (U)SIM</p> <p>2- Applet1 gets the ProactiveHandler</p> <p>3- Applet2 gets the ProactiveHandler</p>                   | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown.</p> <p>Applet1 finalizes<br/>Applet2 is triggered</p> <p>3- No exception is thrown.</p>       |                  |
| 4  | <p align="center"><b>ProactiveHandler availability with<br/>EVENT_UNFORMATTED_SMS_PP_UPD</b></p> <p>1- Update Record EF<sub>SMS</sub> instruction unformatted is sent to the (U)SIM</p> <p>2- Applet1 gets the ProactiveHandler</p> <p>3- Applet2 gets the ProactiveHandler</p> | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown.</p> <p>Applet1 finalizes</p> <p>3- Applet2 is triggered</p> <p>4- No exception is thrown.</p> |                  |
| 5  | <p align="center"><b>ProactiveHandler availability with<br/>EVENT_UNFORMATTED_SMS_CB</b></p> <p>1- Envelope Cell Broadcast Download unformatted is sent to the (U)SIM</p> <p>2- Applet1 gets the ProactiveHandler</p> <p>3- Applet2 gets the ProactiveHandler</p>               | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown</p> <p>Applet1 finalizes<br/>Applet2 is triggered</p> <p>3- No exception is thrown</p>         |                  |
| 6  | <p align="center"><b>ProactiveHandler availability with<br/>EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM</b></p> <p>1- Envelope MO short message control by SIM is sent to the (U)SIM</p> <p>2- Applet1 gets the ProactiveHandler</p>  | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown</p>  |                  |
| 7  | <p align="center"><b>ProactiveHandler availability with<br/>EVENT_FORMATTED_SMS_CB</b></p> <p>1- Envelope Cell Broadcast Download formatted is sent to the (U)SIM</p>   | <p>1- Applet1 is triggered</p>   |                  |

| Id | Description  | API/(U)SAT Framework Expectation   | APDU Expectation |
|----|--|--|------------------|
|    | 2- Applet1 gets the ProactiveHandler   | 2-No exception is thrown<br>Applet1 finalizes  |                  |
| 8  | <p align="center"><b>ProactiveHandler availability with EVENT_FORMATTED_USSD</b></p> 1- Envelope USSD formatted is sent to the (U)SIM<br><br>2- Applet1 gets the ProactiveHandler  | 1- Applet1 is triggered<br><br>2- No exception is thrown.<br>Applet1 finalizes   |                  |
| 9  | <p align="center"><b>ProactiveHandler availability with EVENT_UNFORMATTED_USSD</b></p> 1- Envelope USSD unformatted is sent to the (U)SIM<br><br>2- Applet1 gets the ProactiveHandler<br><br>3- Applet2 gets the ProactiveHandler  | 1- Applet1 is triggered<br><br>2- No exception is thrown.<br>Applet1 finalizes<br>Applet2 is triggered<br><br>3- No exception is thrown. |                  |
| 10 | <p align="center"><b>ProactiveHandler availability with EVENT_DOWNLOAD_IWLAN_ACCESS_STATUSES</b></p> 1- Envelope DOWNLOAD_IWLAN_ACCESS_STATUS is sent to the (U)SIM<br><br>2- Applet1 gets the ProactiveHandler<br><br>3- Applet2 gets the ProactiveHandler  | Applet1 is triggered<br><br>2- No exception is thrown.<br>Applet1 finalizes<br>Applet2 is triggered<br><br>3- No exception is thrown.    |                  |
| 11 | <p align="center"><b>The ProactiveHandler is not available before the Terminal Profile with EVENT_FORMATTED_SMS_PP_ENV</b></p> 1- Reset the card without sending the Terminal Profile<br><br>2- Envelope SMS-PP Download formatted is sent to the (U)SIM<br><br>3- Applet1 gets the ProactiveHandler | 2- Applet1 is triggered<br><br>3- A ToolkitException HANDLER_NOT_AVAILABLE is thrown<br>Applet1 finalizes                                |                  |
| 12 | <p align="center"><b>The ProactiveHandler is not available before the Terminal Profile with EVENT_FORMATTED_SMS_PP_UPD</b></p> 1- Update Record EF <sub>SMS</sub> instruction formatted is sent to the (U)SIM<br><br>2- Applet1 gets the ProactiveHandler  | 1- Applet1 is triggered<br><br>2- A ToolkitException HANDLER_NOT_AVAILABLE is thrown<br>Applet1 finalizes                                |                  |
| 13 | <p align="center"><b>The ProactiveHandler is not available before the Terminal Profile with EVENT_UNFORMATTED_SMS_PP_ENV</b></p>   | 1- Applet1 is triggered  |                  |

| Id | Description  | API/(U)SAT Framework Expectation  | APDU Expectation |
|----|--|---|------------------|
|    | <p>1- Envelope SMS-PP Download unformatted is sent to the (U)SIM</p> <p>2- Applet1 gets the ProactiveHandler</p> <p>3- Applet2 gets the ProactiveHandler</p>   | <p>2- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>Applet1 finalizes<br/>Applet2 is triggered</p> <p>3- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>Applet2 finalizes</p>                                |                  |
| 14 | <p><b>The ProactiveHandler is not available before the Terminal Profile with EVENT_UNFORMATTED_SMS_PP_UPD</b></p> <p>1- Update Record EF<sub>SMS</sub> instruction unformatted is sent to the (U)SIM</p> <p>2- Applet1 gets the ProactiveHandler</p> <p>3- Applet2 gets the ProactiveHandler</p> | <p>1- Applet1 is triggered</p> <p>2- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>Applet1 finalizes<br/>Applet2 is triggered</p> <p>3- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>Applet2 finalizes</p> |                  |
| 15 | <p><b>The ProactiveHandler is not available before the Terminal Profile with EVENT_UNFORMATTED_SMS_CB</b></p> <p>1- Envelope Cell Broadcast Download unformatted is sent to the (U)SIM</p> <p>2- Applet1 gets the ProactiveHandler</p> <p>3- Applet2 gets the ProactiveHandler</p>               | <p>1- Applet1 is triggered</p> <p>2- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>Applet1 finalizes<br/>Applet2 is triggered</p> <p>3- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>Applet2 finalizes</p> |                  |
| 16 | <p><b>The ProactiveHandler is not available before the Terminal Profile with EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM</b></p> <p>1- Envelope MO short message control by SIM is sent to the (U)SIM</p> <p>2- Applet1 gets the ProactiveHandler</p>  | <p>1- Applet1 is triggered</p> <p>2- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>Applet1 finalizes</p>  |                  |
| 17 | <p><b>The ProactiveHandler is not available before the Terminal Profile with EVENT_FORMATTED_SMS_CB</b></p> <p>1- Envelope Cell Broadcast Download formatted is sent to the (U)SIM</p> <p>2- Applet1 gets the ProactiveHandler</p>   | <p>1- Applet1 is triggered</p> <p>2- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>Applet1 finalizes</p>  |                  |
| 18 | <p><b>The ProactiveHandler is not available before the Terminal Profile with EVENT_FORMATTED_USSD</b></p> <p>1- Envelope USSD formatted is sent to the</p>   | <p>1- Applet1 is triggered</p>  |                  |



| Id | Description  | API/(U)SAT Framework Expectation  | APDU Expectation |
|----|--|---|------------------|
|    | (U)SIM<br>2- Applet gets the ProactiveHandler  | 2- A ToolkitException HANDLER_NOT_AVAILABLE is thrown<br><br>Applet1 finalizes  |                  |
| 19 | <b>The ProactiveHandler is not available before the Terminal Profile with EVENT_UNFORMATTED_USSD</b><br><br>1- Envelope USSD unformatted is sent to the (U)SIM<br><br>2- Applet1 gets the ProactiveHandler<br><br><br><br>3- Applet2 gets the ProactiveHandler                               | 1- Applet1 is triggered<br><br>2- A ToolkitException HANDLER_NOT_AVAILABLE is thrown<br><br>Applet1 finalizes<br>Applet2 is triggered<br><br>3- A ToolkitException HANDLER_NOT_AVAILABLE is thrown<br><br>Applet2 finalizes |                  |
| 20 | <b>The ProactiveHandler is not available before the Terminal Profile with EVENT_DOWNLOAD_IWLNA_ACCESS_STATUSES</b><br><br>1- Envelope Download Iwlan Access Status h n is sent to the (U)SIM<br><br>2- Applet1 gets the ProactiveHandler<br><br><br><br>3- Applet2 gets the ProactiveHandler | 1- Applet1 is triggered<br><br>2- A ToolkitException HANDLER_NOT_AVAILABLE is thrown<br><br>Applet1 finalizes<br>Applet2 is triggered<br><br>3- A ToolkitException HANDLER_NOT_AVAILABLE is thrown<br><br>Applet2 finalizes |                  |

### 5.3.1.2 ProactiveResponseHandler

Test Area Reference: Ufw\_Mha\_Prhd

#### 5.3.1.2.1 Conformance requirements

##### 5.3.1.2.1.1 Normal execution

- CRRN1: The *ProactiveResponseHandler* is available as soon as the *ProactiveHandler* is available and remains available until the termination of the *processToolkit()* method for the following events:

EVENT\_FORMATTED\_SMS\_PP\_ENV

EVENT\_FORMATTED\_SMS\_PP\_UPD

EVENT\_UNFORMATTED\_SMS\_PP\_ENV

EVENT\_UNFORMATTED\_SMS\_PP\_UPD

EVENT\_UNFORMATTED\_SMS\_CB

EVENT\_MO\_SHORT\_MESSAGE\_CONTROL\_BY\_SIM

EVENT\_FORMATTED\_SMS\_CB

EVENT\_FORMATTED\_USSD

EVENT\_UNFORMATTED\_USSD

EVENT\_DOWNLOAD\_IWLAN\_ACCESS\_STATUS

- CRRN2: A *ProactiveResponseHandler* is considered available when no `HANDLER_NOT_AVAILABLE` `ToolkitException` is thrown when the corresponding *getTheHandler()* method is called or a method of the handler is called.

#### 5.3.1.2.1.2 Parameter errors

No requirements.

#### 5.3.1.2.1.3 Context errors

- CRR1: The *ProactiveResponseHandler* shall not be available if the *ProactiveHandler* is not available.

#### 5.3.1.2.2 Test area files

Test Source: Test\_Ufw\_Mha\_Prhd.java

Test Applet: Ufw\_Mha\_Prhd\_1.java

Ufw\_Mha\_Prhd\_2.java

Cap File: Ufw\_Mha\_Prhd.cap

#### 5.3.1.2.3 Test coverage

| CRR Number | Test Case Number  |
|------------|---|
| N1         | 1 to 10   |
| N2         | 1 to 20   |
| C1         | 8 to 20.<br>Applicable only if the applet is triggered when no terminal profile has been previously received. |

## 5.3.1.2.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation   | APDU Expectation  |
|----|--|--|---|
| 1  | <p><b>ProactiveResponseHandler availability with EVENT_FORMATTED_SMS_PP_ENV</b></p> <p>1- Envelope SMS-PP Download formatted is sent to the (U)SIM</p> <p>Applet builds a proactive command DISPLAY TEXT</p> <p>2- ProactiveHandler.send() method is called</p> <p>3- ProactiveResponseHandler.getTheHandler() method is called</p>  | <p>1- Applet1 is triggered</p> <p>3- No exception is thrown</p>  | <p>2- A proactive command DISPLAY TEXT is fetched</p> <p>TERMINAL RESPONSE</p>  |
| 2  | <p><b>ProactiveResponseHandler availability with EVENT_FORMATTED_SMS_PP_UPD</b></p> <p>1- Update Record EF<sub>SMS</sub> instruction formatted is sent to the (U)SIM</p> <p>Applet builds a proactive command DISPLAY TEXT</p> <p>2- ProactiveHandler.send() method is called</p> <p>3- ProactiveResponseHandler.getTheHandler() method is called</p>  | <p>1- Applet1 is triggered</p> <p>3- No exception is thrown</p>  | <p>2- A proactive command DISPLAY TEXT is fetched</p> <p>TERMINAL RESPONSE</p>  |
| 3  | <p><b>ProactiveResponseHandler availability with EVENT_UNFORMATTED_SMS_PP_ENV</b></p> <p>1- Envelope SMS-PP Download unformatted is sent to the (U)SIM</p> <p>Applet1 builds a proactive command DISPLAY TEXT</p> <p>2- ProactiveHandler.send() method is called</p> <p>3- ProactiveResponseHandler.getTheHandler() method is called</p> <p>Applet2 builds a proactive command DISPLAY TEXT</p> <p>4- ProactiveHandler.send() method is called</p> <p>5- ProactiveResponseHandler.getTheHandler() method is called</p> | <p>1- Applet1 is triggered</p> <p>3- No exception is thrown</p> <p>Applet1 finalizes<br/>Applet2 is triggered</p> <p>5- No exception is thrown</p> | <p>2- A proactive command DISPLAY TEXT is fetched</p> <p>TERMINAL RESPONSE</p> <p>4- A proactive command DISPLAY TEXT is fetched</p> <p>TERMINAL RESPONSE</p> |
| 4  | <p><b>ProactiveResponseHandler availability with EVENT_UNFORMATTED_SMS_PP_UPD</b></p> <p>1- Update Record EF<sub>SMS</sub> instruction unformatted is sent to the (U)SIM</p>   | <p>1- Applet1 is triggered</p>   |   |

| Id | Description   | API/(U)SAT Framework Expectation   | APDU Expectation  |
|----|---|--|---|
|    | <p>Applet1 builds a proactive command DISPLAY TEXT</p> <p>2- ProactiveHandler.send() method is called</p> <p>3- ProactiveResponseHandler.getTheHandler() method is called</p> <p>Applet2 builds a proactive command DISPLAY TEXT</p> <p>4- ProactiveHandler.send() method is called</p> <p>5- ProactiveResponseHandler.getTheHandler() method is called</p>   | <p>3- No exception is thrown</p> <p>Applet1 finalizes<br/>Applet2 is triggered</p> <p>5- No exception is thrown</p>                                | <p>2- A proactive command DISPLAY TEXT is fetched</p> <p>TERMINAL RESPONSE</p> <p>4- A proactive command DISPLAY TEXT is fetched</p> <p>TERMINAL RESPONSE</p> |
| 5  | <p><b>ProactiveResponseHandler availability with EVENT_UNFORMATTED_SMS_CB</b></p> <p>1- Envelope Cell Broadcast Download unformatted is sent to the (U)SIM</p> <p>Applet1 builds a proactive command DISPLAY TEXT</p> <p>2- ProactiveHandler.send() method is called</p> <p>3- ProactiveResponseHandler.getTheHandler() method is called.</p> <p>Applet2 builds a proactive command DISPLAY TEXT</p> <p>4- ProactiveHandler.send() method is called</p> <p>5- ProactiveResponseHandler.getTheHandler() method is called</p> | <p>1- Applet1 is triggered</p> <p>3- No exception is thrown</p> <p>Applet1 finalizes<br/>Applet2 is triggered</p> <p>5- No exception is thrown</p> | <p>2- A proactive command DISPLAY TEXT is fetched</p> <p>TERMINAL RESPONSE</p> <p>4- A proactive command DISPLAY TEXT is fetched</p> <p>TERMINAL RESPONSE</p> |

| Id | Description   | API/(U)SAT Framework Expectation  | APDU Expectation   |
|----|---|---|--|
| 6  | <p><b>ProactiveResponseHandler availability with EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM</b></p> <p>1- Envelope MO short message control by SIM is sent to the (U)SIM</p> <p>Applet builds a proactive command DISPLAY TEXT</p> <p>2- ProactiveHandler.send() method is called</p> <p>3- ProactiveResponseHandler.getTheHandler() method is called</p>  | <p>1- Applet1 is triggered</p> <p>3- No exception is thrown</p>   | <p>2- A proactive command DISPLAY TEXT is fetched</p> <p>TERMINAL RESPONSE</p>   |
| 7  | <p><b>ProactiveResponseHandler availability with EVENT_FORMATTED_SMS_CB</b></p> <p>1- Envelope Cell Broadcast Download formatted is sent to the (U)SIM</p> <p>Applet1 builds a proactive command DISPLAY TEXT</p> <p>2- ProactiveHandler.send() method is called</p> <p>3- ProactiveResponseHandler.getTheHandler() method is called.</p>   | <p>1- Applet1 is triggered</p> <p>3- No exception is thrown</p>   | <p>2- A proactive command DISPLAY TEXT is fetched</p> <p>TERMINAL RESPONSE</p>   |
| 8  | <p><b>ProactiveResponseHandler availability with EVENT_FORMATTED_USSD</b></p> <p>1- Envelope USSD formatted is sent to the (U)SIM</p> <p>Applet builds a proactive command DISPLAY TEXT</p> <p>2- ProactiveHandler.send() method is called</p> <p>3- ProactiveResponseHandler.getTheHandler() method is called</p>  | <p>1- Applet1 is triggered</p> <p>3- No exception is thrown</p>   | <p>2- A proactive command DISPLAY TEXT is fetched</p> <p>TERMINAL RESPONSE</p>   |
| 9  | <p><b>ProactiveResponseHandler availability with EVENT_UNFORMATTED_USSD</b></p> <p>1- Envelope USSD unformatted is sent to the (U)SIM</p> <p>Applet1 builds a proactive command DISPLAY TEXT</p> <p>2- ProactiveHandler.send() method is called</p> <p>3- ProactiveResponseHandler.getTheHandler() method is called</p> <p>4- Applet2 builds a proactive command DISPLAY TEXT</p> <p>4- ProactiveHandler.send() method is called</p> <p>5- ProactiveResponseHandler.getTheHandler()</p> | <p>1- Applet1 is triggered</p> <p>3- No exception is thrown</p> <p>Applet1 finalizes Applet2 is triggered</p> | <p>2- A proactive command DISPLAY TEXT is fetched</p> <p>TERMINAL RESPONSE</p> <p>4- A proactive command DISPLAY TEXT is fetched</p> <p>TERMINA RESPONSE</p> |

| Id | Description      | API/(U)SAT Framework Expectation | APDU Expectation |
|----|------------------|----------------------------------|------------------|
|    | method is called | 5- No exception is thrown        |                  |

| Id | Description   | API/(U)SAT Framework Expectation  | APDU Expectation  |
|----|---|---|---|
| 10 | <p><b>ProactiveResponseHandler availability with EVENT_DOWNLOAD_IWLAN_ACCESS_STATU S</b></p> <p>1- Envelope USSD unformatted is sent to the (U)SIM</p> <p>Applet1 builds a proactive command DISPLAY TEXT</p> <p>2- ProactiveHandler.send() method is called</p> <p>3- ProactiveResponseHandler.getTheHandler() method is called</p> <p>4- Applet2 builds a proactive command DISPLAY TEXT</p> <p>4- ProactiveHandler.send() method is called</p> <p>5- ProactiveResponseHandler.getTheHandler() method is called</p> | <p>1- Applet1 is triggered</p> <p>3- No exception is thrown</p> <p>Applet1 finalizes<br/>Applet2 is triggered</p>   | <p>2- A proactive command DISPLAY TEXT is fetched</p> <p>TERMINAL RESPONSE</p> <p>4- A proactive command DISPLAY TEXT is fetched</p> <p>TERMINAL RESPONSE</p> |
| 11 | <p><b>The ProactiveHandler is not available before the Terminal Profile with EVENT_FORMATTED_SMS_PP_ENV</b></p> <p>1- Reset the card without sending the Terminal Profile</p> <p>2- Envelope SMS-PP Download formatted is sent is sent to the (U)SIM</p> <p>3- Applet1 gets the ProactiveHandler</p> <p>4- Applet1 gets the ProactiveResponseHandler</p>  | <p>2- Applet1 is triggered</p> <p>3- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>4- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>Applet1 finalizes</p> |   |
| 12 | <p><b>The ProactiveHandler is not available before the Terminal Profile with EVENT_FORMATTED_SMS_PP_UPD</b></p> <p>1- Update Record EF<sub>SMS</sub> instruction formatted is sent to the (U)SIM</p> <p>2- Applet1 gets the ProactiveHandler</p> <p>3- Applet1 gets the ProactiveResponseHandler</p>  | <p>1- Applet1 is triggered</p> <p>2- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>3- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>Applet1 finalizes</p> |   |
| 13 | <p><b>The ProactiveHandler is not available before the Terminal Profile with EVENT_UNFORMATTED_SMS_PP_ENV</b></p> <p>1- Envelope SMS-PP Download unformatted is sent to the (U)SIM</p> <p>2- Applet1 gets the ProactiveHandler</p> <p>3- Applet1 gets the</p>   | <p>1- Applet1 is triggered</p> <p>2- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>3- A ToolkitException HANDLER_NOT_AVAILABLE is</p>                                 |   |

| Id | Description  | API/(U)SAT Framework Expectation   | APDU Expectation |
|----|--|--|------------------|
|    | ProactiveResponseHandler<br><br>4- Applet2 gets the ProactiveHandler<br><br>5- Applet2 gets the ProactiveResponseHandler | thrown<br><br>Applet1 finalizes<br>Applet2 is triggered<br><br>4- A ToolkitException<br>HANDLER_NOT_AVAILABLE is<br>thrown<br><br>5- A ToolkitException<br>HANDLER_NOT_AVAILABLE is<br>thrown<br><br>Applet2 finalizes |                  |



| Id | Description  | API/(U)SAT Framework Expectation  | APDU Expectation |
|----|--|---|------------------|
| 14 | <p><b>The ProactiveHandler is not available before the Terminal Profile with EVENT_UNFORMATTED_SMS_PP_UPD</b></p> <p>1- Update Record EF<sub>SMS</sub> instruction unformatted is sent to the (U)SIM</p> <p>2- Applet1 gets the ProactiveHandler</p> <p>3- Applet1 gets the ProactiveResponseHandler</p> <p>4- Applet2 gets the ProactiveHandler</p> <p>5- Applet2 gets the ProactiveResponseHandler</p> | <p>1- Applet1 is triggered</p> <p>2- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>3- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>Applet1 finalizes<br/>Applet2 is triggered</p> <p>4- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>5- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>Applet2 finalizes</p> |                  |
| 15 | <p><b>The ProactiveHandler is not available before the Terminal Profile with EVENT_UNFORMATTED_SMS_CB</b></p> <p>1- Envelope Cell Broadcast Download unformatted is sent to the (U)SIM</p> <p>2- Applet1 gets the ProactiveHandler</p> <p>3- Applet1 gets the ProactiveResponseHandler</p> <p>4- Applet2 gets the ProactiveHandler</p> <p>5- Applet2 gets the ProactiveResponseHandler</p>               | <p>1- Applet1 is triggered</p> <p>2- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>3- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>Applet1 finalizes<br/>Applet2 is triggered</p> <p>4- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>5- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>Applet2 finalizes</p> |                  |
| 16 | <p><b>The ProactiveHandler is not available before the Terminal Profile with EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM</b></p> <p>1- Envelope MO short message control by SIM is sent to the (U)SIM</p> <p>2- Applet1 gets the ProactiveHandler</p> <p>3- Applet1 gets the ProactiveResponseHandler</p>  | <p>1- Applet1 is triggered</p> <p>2- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>3- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>Applet1 finalizes</p>   |                  |
| 17 | <b>The ProactiveHandler is not available before</b>  |   |                  |

| Id | Description  | API/(U)SAT Framework Expectation  | APDU Expectation |
|----|--|---|------------------|
|    | <p align="center"><b>the Terminal Profile with<br/>EVENT_FORMATTED_SMS_CB</b></p> <p>1- Envelope Cell Broadcast Download formatted is sent to the (U)SIM</p> <p>2- Applet1 gets the ProactiveHandler</p> <p>3- Applet1 gets the ProactiveResponseHandler</p>   | <p>1- Applet1 is triggered</p> <p>2- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>3- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>Applet1 finalizes</p>   |                  |
| 18 | <p align="center"><b>The ProactiveHandler is not available before<br/>the Terminal Profile with<br/>EVENT_FORMATTED_USSD</b></p> <p>1- Envelope USSD formatted is sent is sent to the (U)SIM</p> <p>2- Applet1 gets the ProactiveHandler</p> <p>3- Applet1 gets the ProactiveResponseHandler</p>   | <p>1- Applet1 is triggered</p> <p>2- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>3- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>Applet1 finalizes</p>   |                  |
| 19 | <p align="center"><b>The ProactiveHandler is not available before<br/>the Terminal Profile with<br/>EVENT_UNFORMATTED_USSD</b></p> <p>1- Envelope USSD unformatted is sent to the (U)SIM</p> <p>2- Applet1 gets the ProactiveHandler</p> <p>3- Applet1 gets the ProactiveResponseHandler</p> <p>4- Applet2 gets the ProactiveHandler</p> <p>5- Applet2 gets the ProactiveResponseHandler</p> | <p>1- Applet1 is triggered</p> <p>2- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>3- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>Applet1 finalizes<br/>Applet2 is triggered</p> <p>4- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>5- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>Applet2 finalizes</p> |                  |
| 20 | <p align="center"><b>The ProactiveHandler is not available before<br/>the Terminal Profile with<br/>EVENT_DOWNLOAD_IWLAN_ACCESS_STATU<br/>S</b></p> <p>1- Envelope Download Iwlan Access Status is sent to the (U)SIM</p> <p>2- Applet1 gets the ProactiveHandler</p> <p>3- Applet1 gets the ProactiveResponseHandler</p>  | <p>1- Applet1 is triggered</p> <p>2- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>3- A ToolkitException HANDLER_NOT_AVAILABLE is</p>   |                  |

| Id | Description   | API/(U)SAT Framework Expectation   | APDU Expectation |
|----|---|--|------------------|
|    | <p>4- Applet2 gets the ProactiveHandler</p> <p>5- Applet2 gets the ProactiveResponseHandler</p> | <p>thrown</p> <p>Applet1 finalizes<br/>Applet2 is triggered</p> <p>4- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>5- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>Applet2 finalizes</p> |                  |

### 5.3.1.3 EnvelopeHandler

Test Area Reference: Ufw\_Mha\_Enhnd

#### 5.3.1.3.1 Conformance requirements

##### 5.3.1.3.1.1 Normal execution

- CRRN1: The *EnvelopeHandler* and its content are available for all toolkit applets triggered from the invocation to the termination of their *processToolkit()* method for the following events:

EVENT\_FORMATTED\_SMS\_PP\_ENV

EVENT\_FORMATTED\_SMS\_PP\_UPD

EVENT\_UNFORMATTED\_SMS\_PP\_ENV

EVENT\_UNFORMATTED\_SMS\_PP\_UPD

EVENT\_UNFORMATTED\_SMS\_CB

EVENT\_MO\_SHORT\_MESSAGE\_CONTROL\_BY\_SIM

EVENT\_FORMATTED\_SMS\_CB

EVENT\_FORMATTED\_USSD

EVENT\_UNFORMATTED\_USSD

EVENT\_DOWNLOAD\_IWLAN\_ACCESS

- CRRN2: An *EnvelopeHandler* is considered available when no HANLDER\_NOT\_AVAILABLE ToolkitException is thrown when the corresponding *getTheHandler()* method is called or a method of the handler is called.

##### 5.3.1.3.1.2 Parameter errors

No requirements.

##### 5.3.1.3.1.3 Context Errors

No requirements.

##### 5.3.1.3.2 Test area files

Test Source: Test\_Ufw\_Mha\_Enhnd.java

Test Applet: Ufw\_Mha\_Enhd\_1.java

Ufw\_Mha\_Enhd\_2.java

Cap File: Ufw\_Mha\_Enhd.cap

### 5.3.1.3.3 Test coverage

| CRR Number | Test Case Number |
|------------|------------------|
| N1         | 1 to 10          |
| N2         | 1 to 10          |

### 5.3.1.3.4 Test procedure

| Id | Description   | API/(U)SAT Framework Expectation   | APDU Expectation |
|----|---|--|------------------|
| 1  | <p><b>EnvelopeHandler availability with EVENT_FORMATTED_SMS_PP_ENV</b></p> <p>1- Envelope SMS-PP Download formatted is sent to the (U)SIM</p> <p>2- EnvelopeHandler.getTheHandler() method is called by Applet1</p>   | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown.</p>   |                  |
| 2  | <p><b>EnvelopeHandler availability with EVENT_FORMATTED_SMS_PP_UPD</b></p> <p>1- Update Record EF<sub>SMS</sub> instruction formatted is sent to the (U)SIM</p> <p>2- EnvelopeHandler.getTheHandler() method is called by Applet1</p>   | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown.</p>   |                  |
| 3  | <p><b>EnvelopeHandler availability with EVENT_UNFORMATTED_SMS_PP_ENV</b></p> <p>1- Envelope SMS-PP Download unformatted is sent to the (U)SIM</p> <p>2- EnvelopeHandler.getTheHandler() method is called by Applet1</p> <p>3- EnvelopeHandler.getTheHandler() method is called by Applet2</p> | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown.</p> <p>Applet1 finalizes</p> <p>3- Applet2 is triggered</p> <p>4- No exception is thrown.</p> |                  |

| Id | Description  | API/(U)SAT Framework Expectation  | APDU Expectation |
|----|--|---|------------------|
| 4  | <p align="center"><b>EnvelopeHandler availability with<br/>EVENT_UNFORMATTED_SMS_PP_UPD</b></p> <p>1- Update Record EF<sub>SMS</sub> instruction unformatted is sent to the (U)SIM</p> <p>2- EnvelopeHandler.getTheHandler() method is called by Applet1</p> <p>3- EnvelopeHandler.getTheHandler() method is called by Applet2</p> | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown.<br/>Applet1 finalizes<br/>Applet2 is triggered</p> <p>3- No exception is thrown.</p>     |                  |
| 5  | <p align="center"><b>EnvelopeHandler availability with<br/>EVENT_UNFORMATTED_SMS_CB</b></p> <p>1- Envelope Cell Broadcast Download unformatted is sent to the (U)SIM</p> <p>2- EnvelopeHandler.getTheHandler() method is called by Applet1</p> <p>3- EnvelopeHandler.getTheHandler() method is called by Applet2</p>               | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown<br/>Applet1 finalizes</p> <p>3- Applet2 is triggered</p> <p>4- No exception is thrown</p> |                  |

| Id | Description   | API/(U)SAT Framework Expectation   | APDU Expectation |
|----|---|--|------------------|
| 6  | <p align="center"><b>EnvelopeHandler availability with<br/>EVENT_MO_SHORT_MESSAGE_CONTROL_B<br/>Y_SIM</b></p> <p>1- Envelope MO short message control by SIM is sent to the (U)SIM</p> <p>2- EnvelopeHandler.getTheHandler() method is called by Applet1</p>  | <p>1- Applet1 is triggered</p> <p>2- No exception is throw</p>   |                  |
| 7  | <p align="center"><b>EnvelopeHandler availability with<br/>EVENT_FORMATTED_SMS_CB</b></p> <p>1- Envelope Cell Broadcast Download formatted is sent to the (U)SIM</p> <p>2- EnvelopeHandler.getTheHandler() method is called by Applet1</p>  | <p>1- Applet1 is triggered</p> <p>2-No exception is thrown</p>   |                  |
| 8  | <p align="center"><b>EnvelopeHandler availability with<br/>EVENT_FORMATTED_USSD</b></p> <p>1- Envelope USSD formatted is sent to the (U)SIM</p> <p>2- EnvelopeHandler.getTheHandler() method is called by Applet1</p>   | <p>1- Applet1 is triggered</p> <p>2-No exception is thrown</p>   |                  |
| 9  | <p align="center"><b>EnvelopeHandler availability with<br/>EVENT_UNFORMATTED_USSD</b></p> <p>1- Envelope USSD unformatted is sent to the (U)SIM</p> <p>2- EnvelopeHandler.getTheHandler() method is called by Applet1</p> <p>3- EnvelopeHandler.getTheHandler() method is called by Applet2</p>                   | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown. Applet1 finalizes</p> <p>3- Applet2 is triggered</p> <p>4- No exception is thrown</p> |                  |
| 10 | <p align="center"><b>EnvelopeHandler availability with<br/>DOWNLOAD_IWLAN_ACCESS_STATUS</b></p> <p>1- Envelope Download Iwlan Access Status is sent to the (U)SIM</p> <p>2- EnvelopeHandler.getTheHandler() method is called by Applet1</p> <p>3- EnvelopeHandler.getTheHandler() method is called by Applet2</p> | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown. Applet1 finalizes</p> <p>3- Applet2 is triggered</p> <p>4- No exception is thrown</p> |                  |

### 5.3.1.4 EnvelopeResponseHandler

Test Area Reference: Ufw\_Mha\_Erhd

## 5.3.1.4.1 Conformance requirements

## 5.3.1.4.1.1 Normal execution

- CRRN1: The handler is available for all triggered toolkit applets from the invocation of the *processToolkit()* method of the toolkit applet until a toolkit applet has posted an envelope response or the first invocation of the *ProactiveHandler.send()* method for the following events:

EVENT\_FORMATTED\_SMS\_PP\_ENV

EVENT\_UNFORMATTED\_SMS\_PP\_ENV

EVENT\_MO\_SHORT\_MESSAGE\_CONTROL\_BY\_SIM

EVENT\_FORMATTED\_USSD

EVENT\_UNFORMATTED\_USSD

- CRRN2: An *EnvelopeResponseHandler* is considered available when no HANLDER\_NOT\_AVAILABLE ToolkitException is thrown when the corresponding *getTheHandler()* method is called or a method of the handler is called.

## 5.3.1.4.1.2 Parameter errors

No requirements.

## 5.3.1.4.1.3 Context Errors

- CRR1: The handler is not available for the following events:

EVENT\_FORMATTED\_SMS\_PP\_UPD

EVENT\_UNFORMATTED\_SMS\_PP\_UPD

EVENT\_UNFORMATTED\_SMS\_CB

EVENT\_FORMATTED\_SMS\_CB

EVENT\_DOWNLOAD\_IWLAN\_ACCESS\_STATUS

## 5.3.1.4.2 Test area files

Test Source: Test\_Ufw\_Mha\_Erhd.java

Test Applet: Ufw\_Mha\_Erhd\_1.java

Ufw\_Mha\_Erhd\_2.java

Cap File: Ufw\_Mha\_Erhd.cap

## 5.3.1.4.3 Test coverage

| CRR Number | Test Case Number |
|------------|------------------|
| N1         | 5 to 10          |
| N2         | 1 to 10          |
| C1         | 1 to 11          |

## 5.3.1.4.4 Test procedure

| Id | Description | API/(U)SAT Framework Expectation | APDU Expectation |
|----|-------------|----------------------------------|------------------|
|----|-------------|----------------------------------|------------------|

|   |   |  |  |
|---|---|--|--|
| 1 | <p><b>EnvelopeResponseHandler availability with EVENT_FORMATTED_SMS_PP_UPD</b></p> <p>1- Update Record EF<sub>SMS</sub> instruction formatted is sent to the (U)SIM</p> <p>2- EnvelopeResponseHandler.getTheHandler() method is called by Applet1</p>     | <p>1- The applet1 is triggered.</p> <p>2- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> |  |
| 2 | <p><b>EnvelopeResponseHandler availability with EVENT_UNFORMATTED_SMS_PP_UPD</b></p> <p>1- Update Record EF<sub>SMS</sub> instruction unformatted is sent to the (U)SIM</p> <p>2- EnvelopeResponseHandler.getTheHandler() method is called by Applet1</p> | <p>1- Applet1 is triggered.</p> <p>2- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p>     |  |
| 3 | <p><b>EnvelopeResponseHandler availability with EVENT_FORMATTED_SMS_CB</b></p> <p>1- Envelope Cell Broadcast Download formatted is sent to the SIM</p> <p>2- EnvelopeResponseHandler.getTheHandler() method is called by Applet1</p>                      | <p>1- The applet1 is triggered.</p> <p>2- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> |  |
| 4 | <p><b>EnvelopeResponseHandler availability with EVENT_UNFORMATTED_SMS_CB</b></p> <p>1- Envelope Cell Broadcast Download unformatted is sent to the SIM</p> <p>2- EnvelopeResponseHandler.getTheHandler() method is called by Applet1</p>                  | <p>1- Applet1 is triggered.</p> <p>2- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p>     |  |



|          |   |   |   |
|----------|---|---|---|
| <p>5</p> | <p><b>EnvelopeResponseHandler availability with EVENT_FORMATTED_SMS_PP_ENV</b></p> <p>1- Envelope SMS-PP Download formatted is sent to the (U)SIM</p> <p>2- EnvelopeResponseHandler.getTheHandler() method is called by Applet1</p> <p>3- Applet1 builds an additional information for response packet and it calls the post() method</p> <p>4- Applet1 calls all methods of the EnvelopeResponseHandler (including inherited methods)</p> <p>5- A EVENT_FORMATTED_SMS_PP_ENV envelope is sent to the (U)SIM</p> <p>6- EnvelopeResponseHandler.getTheHandler() method is called by Applet1</p> <p>7- Applet1 builds a proactive command and it calls the send() method</p> <p>8- Applet1 calls all methods of the EnvelopeResponseHandler (including inherited methods)</p> | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown.</p> <p>4- A ToolkitException HANDLER_NOT_AVAILABLE is thrown for each method</p> <p>Applet1 finalizes</p> <p>5- Applet1 is triggered</p> <p>6- No Exception is thrown</p> <p>8- ToolkitException HANDLER_NOT_AVAILABLE is thrown for each method</p> | <p>3- The response packet is sent</p> <p>7- The proactive command is sent</p> |
|----------|---|---|---|

|          |  |  |   |
|----------|--|--|---|
| <p>6</p> | <p><b>EnvelopeResponseHandler availability with EVENT_UNFORMATTED_SMS_PP_ENV</b></p> <p>1- Envelope SMS-PP Download unformatted is sent to the (U)SIM</p> <p>2- EnvelopeResponseHandler.getTheHandler() method is called by Applet1</p> <p>3- Applet1 builds the envelope response and it calls the post() method</p> <p>4- Applet1 calls all methods of the EnvelopeResponseHandler (including inherited methods)</p> <p>5- EnvelopeResponseHandler.getTheHandler() method is called</p> <p>6- An unformatted SMS PP envelope is sent to the (U)SIM</p> <p>7- EnvelopeResponseHandler.getTheHandler() method is called.</p> <p>8- Applet1 builds a proactive command and it calls the send() method</p> <p>9- Applet1 calls all methods of the EnvelopeResponseHandler (including inherited methods)</p> <p>10- EnvelopeResponseHandler.getTheHandler() method is called by Applet2</p> | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown.</p> <p>4- A ToolkitException HANDLER_NOT_AVAILABLE is thrown for each method Applet1 finalizes</p> <p>5- Applet2 is triggered.</p> <p>A ToolkitException HANDLER_NOT_AVAILABLE is thrown.</p> <p>Applet2 finalizes</p> <p>6- Applet1 is triggered.</p> <p>7- No exception is thrown.</p> <p>9- A ToolkitException HANDLER_NOT_AVAILABLE is thrown for each method.</p> <p>Applet1 finalizes</p> <p>10- Applet2 is triggered.</p> <p>A ToolkitException HANDLER_NOT_AVAILABLE is thrown.</p> | <p>3- The envelope response is sent</p> <p>9- The proactive command is fetched and the Terminal response is issued.</p> |
|----------|--|--|---|

|   |   |   |   |
|---|---|---|---|
| 7 | <p><b>EnvelopeResponseHandler availability with EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM</b></p> <p>1- Envelope MO short message control by SIM is sent to the (U)SIM</p> <p>2- EnvelopeResponseHandler.getTheHandler() method is called by Applet1</p> <p>3- Applet1 builds the envelope response and it calls the postAsBERTLV() method</p> <p>4- Applet1 calls all methods of the EnvelopeResponseHandler (including inherited methods)</p> <p>5- Envelope MO short message control by SIM is sent to the (U)SIM</p> <p>6- EnvelopeResponseHandler.getTheHandler() method is called by Applet1</p> <p>7- Applet1 builds a proactive command and it calls the send method</p> <p>8- Applet1 calls all methods of the EnvelopeResponseHandler (including inherited methods)</p> | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown.</p> <p>4- A ToolkitException HANDLER_NOT_AVAILABLE is thrown for each method</p> <p>Applet1 finalizes</p> <p>5- Applet1 is triggered</p> <p>6- No exception is thrown</p> <p>8- A ToolkitException HANDLER_NOT_AVAILABLE is thrown for each method</p> | <p>3-The envelope response is sent</p> <p>7- The proactive command is fetched and the Terminal Response is issued</p> |
|---|---|---|---|

|          |  |  |                                    |
|----------|--|--|------------------------------------|
| <p>8</p> | <p><b>EnvelopeResponseHandler availability with EVENT_UNFORMATTED_SMS_PP_ENV in case of multi-triggering</b></p> <p>1- Envelope SMS-PP Download unformatted is sent to the (U)SIM</p> <p>2- EnvelopeResponseHandler.getTheHandler() method is called by Applet1</p> <p>5- EnvelopeResponseHandler.getTheHandler() method is called by Applet 2</p> <p>6- Applet2 calls the post() method</p> | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown.</p> <p>3- Applet1 finalizes</p> <p>4- Applet2 is triggered.</p> <p>5- No Exception is thrown</p> <p>Applet2 finalizes</p> | <p>6- The response is checked.</p> |
|----------|--|--|------------------------------------|

|          |  |   |   |
|----------|--|---|---|
| <p>9</p> | <p><b>EnvelopeResponseHandler availability with EVENT_FORMATTED_USSD</b></p> <p>1- Envelope USSD formatted is sent to the (U)SIM</p> <p>2- EnvelopeResponseHandler.getTheHandler() method is called by Applet1</p> <p>3- Applet1 builds an additional information for response packet and it calls the post() method</p> <p>4- Applet1 calls all methods of the EnvelopeResponseHandler (including inherited methods)</p> <p>5- EVENT_FORMATTED_USSD envelope is sent to the (U)SIM</p> <p>6- EnvelopeResponseHandler.getTheHandler() method is called by Applet1</p> <p>7- Applet1 builds a proactive command and it calls the send() method</p> <p>8- Applet1 calls all methods of the EnvelopeResponseHandler (including inherited methods)</p> | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown.</p> <p>4- A ToolkitException HANDLER_NOT_AVAILABLE is thrown for each method</p> <p>Applet1 finalizes</p> <p>5- Applet1 is triggered</p> <p>6- No Exception is thrown</p> <p>8- ToolkitException HANDLER_NOT_AVAILABLE is thrown for each method</p> | <p>3- The response packet is sent</p> <p>7- The proactive command is sent</p> |
|----------|--|---|---|

|    |   |  |                                    |
|----|---|--|------------------------------------|
| 10 | <p><b>EnvelopeResponseHandler availability with EVENT_UNFORMATTED_SMS_PP_ENV in case of multi-triggering</b></p> <p>1- Envelope USSD unformatted is sent to the (U)SIM</p> <p>2- EnvelopeResponseHandler.getTheHandler() method is called by Applet1</p> <p>5- EnvelopeResponseHandler.getTheHandler() method is called by Applet 2</p> <p>6- Applet2 calls the post() method</p> | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown.</p> <p>3- Applet1 finalizes</p> <p>4- Applet2 is triggered.</p> <p>5- No Exception is thrown</p> <p>Applet2 finalizes</p> | <p>6- The response is checked.</p> |
|----|---|--|------------------------------------|

|    |  |  |  |
|----|--|--|--|
| 11 | <p><b>EnvelopeResponseHandler availability with EVENT_DOWNLOAD_IWLAN_ACCESS_STATUSES</b></p> <p>1- Envelope Download Iwlan Access Status is sent to the (U)SIM</p> <p>2- EnvelopeResponseHandler.getTheHandler() method is called by Applet1</p> | <p>1- The applet1 is triggered.</p> <p>2- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> |  |
|----|--|--|--|

### 5.3.1.5 USATEnvelopeHandler

Test Area Reference: Ufw\_Mha\_Uehd

#### 5.3.1.5.1 Conformance requirements

##### 5.3.1.5.1.1 Normal execution

- CRRN1: The *UsatEnvelopeHandler* and its content are available for all toolkit applets triggered from the invocation to the termination of their *processToolkit()* method for the following events:

EVENT\_FORMATTED\_SMS\_PP\_ENV  
EVENT\_FORMATTED\_SMS\_PP\_UPD  
EVENT\_UNFORMATTED\_SMS\_PP\_ENV  
EVENT\_UNFORMATTED\_SMS\_PP\_UPD  
EVENT\_UNFORMATTED\_SMS\_CB  
EVENT\_MO\_SHORT\_MESSAGE\_CONTROL\_BY\_SIM  
EVENT\_FORMATTED\_SMS\_CB  
EVENT\_FORMATTED\_USSD  
EVENT\_UNFORMATTED\_USSD  
EVENT\_DOWNLOAD\_IWLAN\_ACCESS\_STATUS

- CRRN2: An *UsatEnvelopeHandler* is considered available when no HANLDER\_NOT\_AVAILABLE ToolkitException is thrown when the corresponding *getTheHandler()* method is called or a method of the handler is called.

##### 5.3.1.5.1.2 Parameter errors

No requirements.

##### 5.3.1.5.1.3 Context Errors

No requirements.

##### 5.3.1.5.2 Test area files

Test Source: Test\_Ufw\_Mha\_Uehd.java

Test Applet: Ufw\_Mha\_Uehd\_1.java

Ufw\_Mha\_Uehd\_2.java

Cap File: Ufw\_Mha\_Uehd.cap

## 5.3.1.5.3 Test coverage

| CRR Number | Test Case Number |
|------------|------------------|
| N1         | 1 to 10          |
| N2         | 1 to 10          |

## 5.3.1.5.4 Test procedure

| Id | Description   | API/(U)SAT Framework Expectation   | APDU Expectation |
|----|---|--|------------------|
| 1  | <p><b>USATEnvelopeHandler availability with EVENT_FORMATTED_SMS_PP_ENV</b></p> <p>1- Envelope SMS-PP Download formatted is sent to the (U)SIM</p> <p>2- USATEnvelopeHandler.getTheHandler() method is called by Applet1</p>   | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown.</p>   |                  |
| 2  | <p><b>USATEnvelopeHandler availability with EVENT_FORMATTED_SMS_PP_UPD</b></p> <p>1- Update Record EF<sub>SMS</sub> instruction formatted is sent to the (U)SIM</p> <p>2- USATEnvelopeHandler.getTheHandler() method is called by Applet1</p>   | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown.</p>   |                  |
| 3  | <p><b>USATEnvelopeHandler availability with EVENT_UNFORMATTED_SMS_PP_ENV</b></p> <p>1- Envelope SMS-PP Download unformatted is sent to the (U)SIM</p> <p>2- USATEnvelopeHandler.getTheHandler() method is called by Applet1</p> <p>3- USATEnvelopeHandler.getTheHandler() method is called by Applet2</p>                   | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown.</p> <p>Applet1 finalizes</p> <p>3- Applet2 is triggered</p> <p>4- No exception is thrown.</p> |                  |
| 4  | <p><b>USATEnvelopeHandler availability with EVENT_UNFORMATTED_SMS_PP_UPD</b></p> <p>1- Update Record EF<sub>SMS</sub> instruction unformatted is sent to the (U)SIM</p> <p>2- USATEnvelopeHandler.getTheHandler() method is called by Applet1</p> <p>3- USATEnvelopeHandler.getTheHandler() method is called by Applet2</p> | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown.</p> <p>Applet1 finalizes<br/>Applet2 is triggered</p> <p>3- No exception is thrown.</p>       |                  |
| 5  | <p><b>USATEnvelopeHandler availability with EVENT_UNFORMATTED_SMS_CB</b></p> <p>1- Envelope Cell Broadcast Download unformatted is sent to the (U)SIM</p>   | <p>1- Applet1 is triggered</p>   |                  |



| Id | Description  | API/(U)SAT Framework Expectation   | APDU Expectation |
|----|--|--|------------------|
|    | 2- USATEnvelopeHandler.getTheHandler()<br>method is called by Applet1<br><br>3- USATEnvelopeHandler.getTheHandler()<br>method is called by Applet2 | 2- No exception is thrown<br><br>Applet1 finalizes<br><br>3- Applet2 is triggered<br><br>4- No exception is thrown |                  |

| Id | Description  | API/(U)SAT Framework Expectation   | APDU Expectation |
|----|--|--|------------------|
| 6  | <p align="center"><b>USATEnvelopeHandler availability with<br/>EVENT_MO_SHORT_MESSAGE_CONTROL_B<br/>Y_SIM</b></p> <p>1- Envelope MO short message control by SIM is sent to the (U)SIM</p> <p>2- USATEnvelopeHandler.getTheHandler() method is called by Applet1</p>   | <p>1- Applet1 is triggered</p> <p>2- No exception is throw</p>   |                  |
| 7  | <p align="center"><b>USATEnvelopeHandler availability with<br/>EVENT_FORMATTED_SMS_CB</b></p> <p>1- Envelope Cell Broadcast Download formatted is sent to the (U)SIM</p> <p>2- USATEnvelopeHandler.getTheHandler() method is called by Applet1</p>   | <p>1- Applet1 is triggered</p> <p>2-No exception is thrown</p>   |                  |
| 8  | <p align="center"><b>USATEnvelopeHandler availability with<br/>EVENT_FORMATTED_USSD</b></p> <p>1- Envelope USSD formatted is sent to the (U)SIM</p> <p>2- USATEnvelopeHandler.getTheHandler() method is called by Applet1</p>  | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown.</p>   |                  |
| 9  | <p align="center"><b>USATEnvelopeHandler availability with<br/>EVENT_UNFORMATTED_USSD</b></p> <p>1- Envelope USSD unformatted is sent to the (U)SIM</p> <p>2- USATEnvelopeHandler.getTheHandler() method is called by Applet1</p> <p>3- USATEnvelopeHandler.getTheHandler() method is called by Applet2</p>                  | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown.</p> <p>Applet1 finalizes</p> <p>3- Applet2 is triggered</p> <p>4- No exception is thrown.</p> |                  |
| 10 | <p align="center"><b>USATEnvelopeHandler availability with<br/>EVENT_DOWNLOAD_IWLAN_ACCESS_STATU<br/>S</b></p> <p>1- Envelope USSD unformatted is sent to the (U)SIM</p> <p>2- USATEnvelopeHandler.getTheHandler() method is called by Applet1</p> <p>3- USATEnvelopeHandler.getTheHandler() method is called by Applet2</p> | <p>1- Applet1 is triggered</p> <p>2- No exception is thrown.</p> <p>Applet1 finalizes</p> <p>3- Applet2 is triggered</p> <p>4- No exception is thrown</p>  |                  |

### 5.3.1.6 Applet triggering with ongoing proactive session

Test Area Reference: Ufw\_Mha\_Rent

## 5.3.1.6.1 Conformance requirements

## 5.3.1.6.1.1 Normal execution

- CRRN1: *EnvelopeHandler* and *USATEnvelopeHandler* are available for all events.
- CRRN2: *EnvelopeResponseHandler* is available for the following events:

EVENT\_FORMATTED\_SMS\_PP\_ENV

EVENT\_UNFORMATTED\_SMS\_PP\_ENV

EVENT\_MO\_SHORT\_MESSAGE\_CONTROL\_BY\_SIM

EVENT\_FORMATTED\_USSD

EVENT\_UNFORMATTED\_USSD

- CRRN3: Reply busy is not allowed for following events:

EVENT\_FORMATTED\_SMS\_PP\_UPD

EVENT\_UNFORMATTED\_SMS\_PP\_UPD

EVENT\_MO\_SHORT\_MESSAGE\_CONTROL\_BY\_SIM

## 5.3.1.6.1.2 Parameter errors

No requirements.

## 5.3.1.6.1.3 Context Errors

- CRRC1: *EnvelopeResponseHandler* is not available for the following events:

EVENT\_FORMATTED\_SMS\_PP\_UPD

EVENT\_UNFORMATTED\_SMS\_PP\_UPD

EVENT\_UNFORMATTED\_SMS\_CB

EVENT\_FORMATTED\_SMS\_CB

EVENT\_DOWNLOAD\_IWLAN\_ACCESS\_STATUS

## 5.3.1.6.2 Test area files

Test Source: Test\_Ufw\_Mha\_Rent.java

Test Applet: Ufw\_Mha\_Rent\_1.java

Cap File: Ufw\_Mha\_Rent.cap

## 5.3.1.6.3 Test coverage

| CRR Number | Test Case Number       |
|------------|------------------------|
| N1         | 1, 2, 3, 4, 5, 6, 7, 8 |
| N2         | 3, 4, 5, 8, 9          |
| N3         | 1, 2, 3                |
| C1         | 1, 2, 6, 7, 10         |

## 5.3.1.6.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation   | APDU Expectation  |
|----|--|--|---|
| 1  | <p align="center"><b>Handlers availability with<br/>EVENT_FORMATTED_SMS_PP_UPD</b></p> <p>1- Envelope unrecognized is sent to the (U)SIM</p> <p>2- Applet1 builds a proactive command and calls the send() method</p> <p>3- Update Record EF<sub>SMS</sub> instruction formatted is sent to the (U)SIM</p> <p>4- EnvelopeHandler.getTheHandler() and USATEnvelopeHandler.getTheHandler() methods are called by Applet1</p> <p>5- EnvelopeResponseHandler.getTheHandler() method is called by Applet1</p>     | <p>1- Applet1 is triggered</p> <p>3- Applet1 is triggered again</p> <p>4- No exception is thrown</p> <p>5- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>Applet1 finalizes</p> | <p>2- 91 XX</p> <p>6- The proactive command is fetched and the Terminal Response is issued.</p> |
| 2  | <p align="center"><b>Handlers availability with<br/>EVENT_UNFORMATTED_SMS_PP_UPD</b></p> <p>1- Envelope unrecognized is sent to the (U)SIM</p> <p>2- Applet1 builds a proactive command and calls the send() method</p> <p>3- Update Record EF<sub>SMS</sub> instruction unformatted is sent to the (U)SIM</p> <p>4- EnvelopeHandler.getTheHandler() and USATEnvelopeHandler.getTheHandler() methods are called by Applet1</p> <p>5- EnvelopeResponseHandler.getTheHandler() method is called by Applet1</p> | <p>1- Applet1 is triggered</p> <p>3- Applet1 is triggered again</p> <p>4- No exception is thrown</p> <p>5- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>Applet1 finalizes</p> | <p>2- 91 XX</p> <p>6- The proactive command is fetched and the Terminal Response is issued.</p> |
| 3  | <p align="center"><b>Handlers availability with<br/>EVENT_MO_SHORT_MESSAGE_CONTROL_B<br/>Y_SIM</b></p> <p>1- Envelope unrecognized is sent to the (U)SIM</p> <p>2- Applet1 builds a proactive command and calls the send() method</p> <p>3- Envelope MO short message control by SIM is sent to the (U)SIM</p> <p>4- EnvelopeHandler.getTheHandler() and USATEnvelopeHandler.getTheHandler() methods are called by Applet1</p> <p>5- EnvelopeResponseHandler.getTheHandler() method is called by Applet1</p> | <p>1- Applet1 is triggered</p> <p>3- Applet1 is triggered again</p> <p>4- No exception is thrown</p> <p>5- No exception is thrown</p> <p>Applet1 finalizes</p>                             | <p>2- 91 XX</p> <p>6- The proactive command is fetched and the Terminal Response is issued.</p> |
| 4  | <p align="center"><b>Handlers availability with<br/>EVENT_FORMATTED_SMS_PP_ENV</b></p>   |  |   |

| Id | Description   | API/(U)SAT Framework Expectation   | APDU Expectation  |
|----|---|--|---|
|    | <p>1- Envelope unrecognized is sent to the (U)SIM</p> <p>2- Applet1 builds a proactive command and calls the send() method</p> <p>3- Envelope SMS-PP Download formatted is sent to the (U)SIM</p> <p>4- EnvelopeHandler.getTheHandler() and USATEnvelopeHandler.getTheHandler() methods are called by Applet1</p> <p>5- EnvelopeResponseHandler.getTheHandler() method is called by Applet1</p> | <p>1- Applet1 is triggered</p> <p>3- Applet1 is triggered again</p> <p>4- No exception is thrown</p> <p>5- No exception is thrown</p> <p>Applet1 finalizes</p> | <p>2- 91 XX</p> <p>6- The proactive command is fetched and the Terminal Response is issued.</p> |

| Id | Description  | API/(U)SAT Framework Expectation   | APDU Expectation  |
|----|--|--|---|
| 5  | <p align="center"><b>Handlers availability with<br/>EVENT_UNFORMATTED_SMS_PP_ENV</b></p> <p>1- Envelope unrecognized is sent to the (U)SIM</p> <p>2- Applet1 builds a proactive command and calls the send() method</p> <p>3- Envelope SMS-PP Download unformatted is sent to the (U)SIM</p> <p>4- EnvelopeHandler.getTheHandler() and USATEnvelopeHandler.getTheHandler() methods are called by Applet1</p> <p>5- EnvelopeResponseHandler.getTheHandler() method is called by Applet1</p> | <p>1- Applet1 is triggered</p> <p>3- Applet1 is triggered again</p> <p>4- No exception is thrown</p> <p>5- No exception is thrown</p> <p>Applet1 finalizes</p>                             | <p>2- 91 XX</p> <p>6- The proactive command is fetched and the Terminal Response is issued.</p> |
| 6  | <p align="center"><b>Handlers availability with<br/>EVENT_FORMATTED_SMS_CB</b></p> <p>1- Envelope unrecognized is sent to the (U)SIM</p> <p>2- Applet1 builds a proactive command and calls the send() method</p> <p>3- Envelope CB Download formatted is sent to the (U)SIM</p> <p>4- EnvelopeHandler.getTheHandler() and USATEnvelopeHandler.getTheHandler() methods are called by Applet1</p> <p>5- EnvelopeResponseHandler.getTheHandler() method is called by Applet1</p>             | <p>1- Applet1 is triggered</p> <p>3- Applet1 is triggered again</p> <p>4- No exception is thrown</p> <p>5- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>Applet1 finalizes</p> | <p>2- 91 XX</p> <p>6- The proactive command is fetched and the Terminal Response is issued.</p> |
| 7  | <p align="center"><b>Handlers availability with<br/>EVENT_UNFORMATTED_SMS_CB</b></p> <p>1- Envelope unrecognized is sent to the (U)SIM</p> <p>2- Applet1 builds a proactive command and calls the send() method</p> <p>3- Envelope CB Download unformatted is sent to the (U)SIM</p> <p>4- EnvelopeHandler.getTheHandler() and USATEnvelopeHandler.getTheHandler() methods are called by Applet1</p> <p>5- EnvelopeResponseHandler.getTheHandler() method is called by Applet1</p>         | <p>1- Applet1 is triggered</p> <p>3- Applet1 is triggered again</p> <p>4- No exception is thrown</p> <p>5- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>Applet1 finalizes</p> | <p>2- 91 XX</p> <p>6- The proactive command is fetched and the Terminal Response is issued.</p> |
| 8  | <p align="center"><b>Handlers availability with<br/>EVENT_FORMATTED_SMS_USSD</b></p> <p>1- Envelope unrecognized is sent to the (U)SIM</p> <p>2- Applet1 builds a proactive command and</p>  | <p>1- Applet1 is triggered</p>   | <p>2- 91 XX</p>   |

| Id | Description   | API/(U)SAT Framework Expectation   | APDU Expectation  |
|----|---|--|---|
|    | <p>calls the send() method</p> <p>3- Envelope USSD formatted is sent to the (U)SIM</p> <p>4- EnvelopeHandler.getTheHandler() and USATEnvelopeHandler.getTheHandler() methods are called by Applet1</p> <p>5- EnvelopeResponseHandler.getTheHandler() method is called by Applet1</p>  | <p>3- Applet1 is triggered again</p> <p>4- No exception is thrown</p> <p>5- No exception is thrown</p> <p>Applet1 finalizes</p>  | <p>6- The proactive command is fetched and the Terminal Response is issued.</p>                 |
| 9  | <p><b>Handlers availability with EVENT_UNFORMATTED_USSD</b></p> <p>1- Envelope unrecognized is sent to the (U)SIM</p> <p>2- Applet1 builds a proactive command and calls the send() method</p> <p>3- Envelope USSD unformatted is sent to the (U)SIM</p> <p>4- EnvelopeHandler.getTheHandler() and USATEnvelopeHandler.getTheHandler() methods are called by Applet1</p> <p>5- EnvelopeResponseHandler.getTheHandler() method is called by Applet1</p>                          | <p>1- Applet1 is triggered</p> <p>3- Applet1 is triggered again</p> <p>4- No exception is thrown</p> <p>5- No exception is thrown</p> <p>Applet1 finalizes</p>                             | <p>2- 91 XX</p> <p>6- The proactive command is fetched and the Terminal Response is issued.</p> |
| 10 | <p><b>Handlers availability with EVENT_DOWNLOAD_IWLAN_ACCESS_STATU S</b></p> <p>1- Envelope unrecognized is sent to the (U)SIM</p> <p>2- Applet1 builds a proactive command and calls the send() method</p> <p>3- Envelope Download Iwlan Access Status is sent to the (U)SIM</p> <p>4- EnvelopeHandler.getTheHandler() and USATEnvelopeHandler.getTheHandler() methods are called by Applet1</p> <p>5- EnvelopeResponseHandler.getTheHandler() method is called by Applet1</p> | <p>1- Applet1 is triggered</p> <p>3- Applet1 is triggered again</p> <p>4- No exception is thrown</p> <p>5- A ToolkitException HANDLER_NOT_AVAILABLE is thrown</p> <p>Applet1 finalizes</p> | <p>2- 91 XX</p> <p>6- The proactive command is fetched and the Terminal Response is issued.</p> |

## 5.3.2 Handler integrity

### 5.3.2.1 ProactiveResponseHandler

Test Area Reference: Ufw\_Hin\_Prhd

## 5.3.2.1.1 Conformance requirements

## 5.3.2.1.1.1 Normal execution

- CRRN1: The *ProactiveResponseHandler* TLV list shall be empty before the first call to the *ProactiveHandler.send()* method.

## 5.3.2.1.1.2 Parameter errors

No requirements.

## 5.3.2.1.1.3 Context Errors

No requirements.

## 5.3.2.1.2 Test area files

Test Source: Test\_Ufw\_Hin\_Prhd.java

Test Applet: Ufw\_Hin\_Prhd\_1.java

Cap File: Ufw\_Hin\_Prhd.cap

## 5.3.2.1.3 Test coverage

| CRR Number | Test Case Number |
|------------|------------------|
| N1         | 1                |

## 5.3.2.1.4 Test procedure

| Id | Description   | API/(U)SAT Framework Expectation   | APDU Expectation |
|----|---|--|------------------|
| 1  | <p><b>Applet registration and ProactiveResponseHandler obtaining</b></p> <p>1- Applet is registered to all events defined in TS 31.130 [2]. Using the method <code>setEventList()</code> for all the events.</p> <p>Terminal Profile command is sent to the (U)SIM without the facilities of <code>SET_EVENT_LIST</code>, <code>SETUP_IDLE_MODE_TEXT</code>, <code>SETUP_MENU</code> and <code>POLL_INTERVAL</code>.</p> <p>2- For each event/triggering:</p> <p>3- <code>ProactiveResponseHandler.getTheHandler()</code> is called</p> <p>4- <code>ProactiveResponseHandler.getLength()</code> is called</p> | <p>1- No exception is thrown</p> <p>2- Applet is triggered.</p> <p>3- No exception is thrown</p> <p>4- The return value is 0</p> |                  |

## 5.3.2.2 EnvelopeHandler

Test Area Reference: Ufw\_Hin\_Enhhd



## 5.3.2.2.1 Conformance requirements

## 5.3.2.2.1.1 Normal execution

- CRRN1: When available, the *EnvelopeHandler* shall remain available and its content shall remain unchanged from the invocation to the termination of the *processToolkit()* method.
- CRRN2: The *EnvelopeHandler* TLV list is filled with the Comprehension TLV data objects of the ENVELOPE APDU command. The Comprehension TLV data objects shall be provided in the order given in the ENVELOPE command data.

## 5.3.2.2.1.2 Parameter errors

No requirements.

## 5.3.2.2.1.3 Context Errors

No requirements.

## 5.3.2.2.2 Test area files

Test Source: Test\_Ufw\_Hin\_Enhd.java

Test Applet: Ufw\_Hin\_Enhd\_1.java

Cap File: Ufw\_Hin\_Enhd.cap

## 5.3.2.2.3 Test coverage

| CRR Number | Test Case Number |
|------------|------------------|
| N1         | 1 to 10          |
| N2         | 1 to 10          |

## 5.3.2.2.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation  | APDU Expectation   |
|----|--|---|--|
| 1  | <p><b>EnvelopeHandler integrity checks with EVENT_FORMATTED_SMS_PP_ENV</b></p> <p>1- A formatted SMS PP envelope is sent to the (U)SIM</p> <p>2- EnvelopeHandler.getTheHandler() method is called</p> <p>3- Copy the content of the EnvelopeHandler in buffer1 using EnvelopeHandler.copy()</p> <p>The EnvelopeHandler.findTLV() method is called with TAG_SMS_TPDU</p> <p>4- A proactive command DISPLAY TEXT is sent</p> <p>5- Envelope call control by SIM is sent to the (U)SIM</p> <p>EnvelopeHandler.getTheHandler() method is called</p> <p>6- Check that EnvelopeHandler content is the same as in the envelope call control using EnvelopeHandler.copy() and Util.arrayCompare() methods</p> <p>The EnvelopeHandler.findTLV() method is called with TAG_DEVICE_IDENTITIES</p> <p>Call Control execution is finished.</p> <p>Check that the TAG_SMS_TPDU is the TLV selected</p> <p>7- The content of EnvelopeHandler is compared with buffer1 using Util.arrayCompare()</p> | <p>1- Applet is triggered</p> <p>2- No exception is thrown.</p> <p>3- No exception is thrown.</p> <p>5- Applet is triggered</p> <p>6- No exception is thrown and the handler contains the envelope call control by SIM</p> <p>7- The contents of the EnvelopeHandler shall be the same as stored in buffer1</p> | <p>4- 91 XX</p> <p>Proactive command Display Text is fetched<br/>The terminal Response of DISPLAY TEXT is sent to the (U)SIM</p> |
| 2  | <p><b>EnvelopeHandler integrity checks with EVENT_FORMATTED_SMS_PP_UPD</b></p> <p>1- Update Record EF<sub>SMS</sub> instruction single and formatted is sent to the (U)SIM</p> <p>2- EnvelopeHandler.getTheHandler() method is called</p> <p>3- Copy the content of the EnvelopeHandler in buffer1 using EnvelopeHandler.copy()</p> <p>The EnvelopeHandler.findTLV() method is called with TAG_SMS_TPDU</p> <p>4- A proactive command DISPLAY TEXT is sent</p> <p>5- Envelope call control by SIM is sent to the (U)SIM</p> <p>EnvelopeHandler.getTheHandler() method is</p>   | <p>1- Applet is triggered</p> <p>2- No exception is thrown.</p> <p>3- No exception is thrown.</p> <p>5- Applet is triggered</p>   | <p>4- 91 XX</p>  |

| Id | Description   | API/(U)SAT Framework Expectation  | APDU Expectation  |
|----|---|---|---|
|    | <p>called</p> <p>6- Checked that EnvelopeHandler content is the same as in envelope call control using EnvelopeHandler.copy() and Util.arrayCompare() methods</p> <p>The EnvelopeHandler.findTLV() method is called with TAG_SMS_TPDU</p> <p>Call Control execution is finished.</p> <p>Checked that the TAG_SMS_TPDU is the TLV selected</p> <p>7- The content of EnvelopeHandler is compared with buffer1 using Util.arrayCompare()</p> | <p>6- No exception is thrown and the handler contains the envelope call control by SIM</p> <p>7- The contents of the EnvelopeHandler shall be the same as stored in buffer1</p> | <p>Proactive command Display Text is fetched</p> <p>The terminal Response of DISPLAY TEXT is sent to the (U)SIM</p> |

| Id | Description  | API/(U)SAT Framework Expectation   | APDU Expectation  |
|----|--|--|---|
| 3  | <p><b>EnvelopeHandler integrity checks with EVENT_UNFORMATTED_SMS_PP_ENV</b></p> <p>1- A unformatted SMS PP envelope is sent to the (U)SIM</p> <p>2- EnvelopeHandler.getTheHandler() method is called</p> <p>3- Copy the content of the EnvelopeHandler in buffer1 using EnvelopeHandler.copy()</p> <p>The EnvelopeHandler.findTLV method is called with TAG_DEVICE_IDENTITIES</p> <p>4- A proactive command DISPLAY TEXT is sent</p> <p>5- Envelope call control by SIM is sent to the (U)SIM</p> <p>EnvelopeHandler.getTheHandler() method is called</p> <p>6- Check that EnvelopeHandler content is the same as in the envelope call control using EnvelopeHandler.copy() and Util.arrayCompare() methods</p> <p>The EnvelopeHandler.findTLV() method is called with TAG_DEVICE_IDENTITIES</p> <p>Call Control execution is finished.</p> <p>Check that the TAG_DEVICE_IDENTITIES is the TLV selected</p> <p>7- The content of EnvelopeHandler is compared with buffer1 using Util.arrayCompare()</p> | <p>1- Applet is triggered</p> <p>2- No exception is thrown.</p> <p>3- No exception is thrown.</p> <p>5- Applet is triggered</p> <p>6- No exception is thrown and the handler contains the envelope call control by SIM</p> <p>7- The contents of the EnvelopeHandler shall be the same as stored in buffer1.</p> | <p>4- 91 XX</p> <p>Proactive command Display Text is fetched</p> <p>The terminal Response of DISPLAY TEXT is sent to the (U)SIM</p> |
| 4  | <p><b>EnvelopeHandler integrity checks with EVENT_UNFORMATTED_SMS_PP_UPD</b></p> <p>1- Update Record EF<sub>SMS</sub> instruction single and unformatted is sent to the (U)SIM</p> <p>2- EnvelopeHandler.getTheHandler() method is called</p> <p>3- Copy the content of the EnvelopeHandler in buffer1 using EnvelopeHandler.copy()</p> <p>The EnvelopeHandler.findTLV method is called with TAG_SMS_TPDU</p> <p>4- A proactive command DISPLAY TEXT is sent</p> <p>5- Envelope call control by SIM is sent to the (U)SIM</p>  | <p>1- Applet is triggered</p> <p>2- No exception is thrown.</p> <p>3- No exception is thrown.</p> <p>5- Applet is triggered</p>  | <p>4- 91 XX</p>   |

| Id | Description  | API/(U)SAT Framework Expectation   | APDU Expectation  |
|----|--|--|---|
|    | <p>EnvelopeHandler.getTheHandler() method is called</p> <p>6- Check that EnvelopeHandler content is the same as in envelope call control using EnvelopeHandler.copy() and Util.arrayCompare() methods</p> <p>The EnvelopeHandler.findTLV() method is called with TAG_DEVICE_IDENTITIES</p> <p>Call Control execution is finished.</p> <p>Check that the SMS_TPDU is the TLV selected</p> <p>7- The content of EnvelopeHandler is compared with buffer1 using Util.arrayCompare()</p> | <p>6- No exception is thrown and the handler contains the envelope call control by SIM</p> <p>7- The contents of the EnvelopeHandler shall be the same as stored in buffer1.</p> | <p>Proactive command Display Text is fetched</p> <p>The terminal Response of DISPLAY TEXT is sent to the (U)SIM</p> |

| Id | Description   | API/(U)SAT Framework Expectation   | APDU Expectation  |
|----|---|--|---|
| 5  | <p><b>EnvelopeHandler integrity checks with EVENT_UNFORMATTED_SMS_CB</b></p> <p>1- An unformatted cell broadcast envelope is sent to the (U)SIM</p> <p>2- EnvelopeHandler.getTheHandler() method is called</p> <p>3- Copy the content of the EnvelopeHandler in buffer1 using EnvelopeHandler.copy()</p> <p>The EnvelopeHandler.findTLV() method is called with TAG_CELLBROADCAST_PAGE</p> <p>4- A proactive command DISPLAY TEXT is sent</p> <p>5- Envelope call control by SIM is sent to the (U)SIM</p> <p>EnvelopeHandler.getTheHandler() method is called</p> <p>6- Checked that EnvelopeHandler content is the same as in envelope call control using EnvelopeHandler.copy() and Util.arrayCompare() methods</p> <p>The EnvelopeHandler.findTLV() method is called with TAG_DEVICE_IDENTITIES</p> <p>Call Control execution is finished.</p> <p>Check that the TAG_CELLBROADCAST_PAGE is the TLV selected</p> <p>7- The content of EnvelopeHandler is compared with buffer1 using Util.arrayCompare()</p> | <p>1- Applet is triggered</p> <p>2- No exception is thrown.</p> <p>3- No exception is thrown.</p> <p>5- Applet is triggered</p> <p>6- No exception is thrown and the handler contains the envelope call control by SIM</p> <p>7- The contents of the EnvelopeHandler shall be the same as stored in buffer1.</p> | <p>4- 91 XX</p> <p>Proactive command Display Text is fetched</p> <p>The terminal Response of DISPLAY TEXT is sent to the (U)SIM</p> |
| 6  | <p><b>EnvelopeHandler integrity checks with EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM</b></p> <p>1- A MO short message control by SIM envelope is sent to the (U)SIM</p> <p>2- EnvelopeHandler.getTheHandler() method is called</p> <p>3- Copy the content of the EnvelopeHandler in buffer1 using EnvelopeHandler.copy()</p> <p>The EnvelopeHandler.findTLV() method is called with TAG_ADDRESS</p> <p>4- A proactive command DISPLAY TEXT is sent</p> <p>5- Envelope call control by SIM is sent to the (U)SIM</p>  | <p>1- Applet is triggered</p> <p>2- No exception is thrown.</p> <p>3- No exception is thrown.</p> <p>5- Applet is triggered</p>  | <p>4- 91 XX</p>   |

| Id | Description   | API/(U)SAT Framework Expectation   | APDU Expectation  |
|----|---|--|---|
|    | <p>EnvelopeHandler.getTheHandler() method is called</p> <p>6- Checked that EnvelopeHandler content is the same as in envelope call control using EnvelopeHandler.copy() and Util.arrayCompare() methods</p> <p>The EnvelopeHandler.findTLV() method is called with TAG_DEVICE_IDENTITIES</p> <p>Call Control execution is finished.</p> <p>Check that the TAG_ADDRESS is the TLV selected</p> <p>7- The content of EnvelopeHandler is compared with buffer1 using Util.arrayCompare()</p> | <p>6- No exception is thrown and the handler contains the envelope call control by SIM</p> <p>7- The contents of the EnvelopeHandler shall be the same as stored in buffer1.</p> | <p>Proactive command Display Text is fetched</p> <p>The terminal Response of DISPLAY TEXT is sent to the (U)SIM</p> |

| Id | Description  | API/(U)SAT Framework Expectation   | APDU Expectation  |
|----|--|--|---|
| 7  | <p><b>EnvelopeHandler integrity checks with EVENT_FORMATTED_SMS_CB</b></p> <p>1- A formatted cell broadcast envelope is sent to the (U)SIM</p> <p>2- EnvelopeHandler.getTheHandler() method is called</p> <p>3- Copy the content of the EnvelopeHandler in buffer1 using EnvelopeHandler.copy()</p> <p>The EnvelopeHandler.findTLV() method is called with TAG_CELLBROADCAST_PAGE</p> <p>4- A proactive command DISPLAY TEXT is sent</p> <p>5- Envelope call control by SIM is sent to the (U)SIM</p> <p>EnvelopeHandler.getTheHandler() method is called</p> <p>6- Checked that EnvelopeHandler content is the same as in envelope call control using EnvelopeHandler.copy() and Util.arrayCompare() methods</p> <p>The EnvelopeHandler.findTLV() method is called with TAG_DEVICE_IDENTITIES</p> <p>Call Control execution is finished.</p> <p>Check that the TAG_CELLBROADCAST_PAGE is the TLV selected</p> <p>7- The content of EnvelopeHandler is compared with buffer1 using Util.arrayCompare()</p> | <p>1- Applet is triggered</p> <p>2- No exception is thrown.</p> <p>3- No exception is thrown.</p> <p>5- Applet is triggered</p> <p>6- No exception is thrown and the handler contains the envelope call control by SIM</p> <p>7- The contents of the EnvelopeHandler shall be the same as stored in buffer1.</p> | <p>4- 91 XX</p> <p>Proactive command Display Text is fetched</p> <p>The terminal Response of DISPLAY TEXT is sent to the (U)SIM</p> |
| 8  | <p><b>EnvelopeHandler integrity checks with EVENT_FORMATTED_USSD</b></p> <p>1- A formatted USSD envelope is sent to the (U)SIM</p> <p>2- EnvelopeHandler.getTheHandler() method is called</p> <p>3- Copy the content of the EnvelopeHandler in buffer1 using EnvelopeHandler.copy()</p> <p>The EnvelopeHandler.findTLV() method is called with TAG_USSD_STRING</p> <p>4- A proactive command DISPLAY TEXT is sent</p> <p>5- Envelope call control by SIM is sent to the (U)SIM</p>   | <p>1- Applet is triggered</p> <p>2- No exception is thrown.</p> <p>3- No exception is thrown.</p> <p>5- Applet is triggered</p>  | <p>4- 91 XX</p>   |



| Id | Description   | API/(U)SAT Framework Expectation  | APDU Expectation  |
|----|---|---|---|
|    | <p>EnvelopeHandler.getTheHandler() method is called</p> <p>6- Check that EnvelopeHandler content is the same as in the envelope call control using EnvelopeHandler.copy() and Util.arrayCompare() methods</p> <p>The EnvelopeHandler.findTLV() method is called with TAG_DEVICE_IDENTITIES</p> <p>Call Control execution is finished.</p> <p>Check that the TAG_USSD_STRING is the TLV selected</p> <p>7- The content of EnvelopeHandler is compared with buffer1 using Util.arrayCompare()</p> | <p>6- No exception is thrown and the handler contains the envelope call control by SIM</p> <p>7- The contents of the EnvelopeHandler shall be the same as stored in buffer1</p> | <p>Proactive command Display Text is fetched</p> <p>The terminal Response of DISPLAY TEXT is sent to the (U)SIM</p> |

| Id | Description  | API/(U)SAT Framework Expectation   | APDU Expectation  |
|----|--|--|---|
| 9  | <p><b>EnvelopeHandler integrity checks with EVENT_UNFORMATTED_USSD</b></p> <p>1- A unformatted USSD envelope is sent to the (U)SIM</p> <p>2- EnvelopeHandler.getTheHandler() method is called</p> <p>3- Copy the content of the EnvelopeHandler in buffer1 using EnvelopeHandler.copy()</p> <p>The EnvelopeHandler.findTLV method is called with TAG_DEVICE_IDENTITIES</p> <p>4- A proactive command DISPLAY TEXT is sent</p> <p>5- Envelope call control by SIM is sent to the (U)SIM</p> <p>EnvelopeHandler.getTheHandler() method is called</p> <p>6- Check that EnvelopeHandler content is the same as in the envelope call control using EnvelopeHandler.copy() and Util.arrayCompare() methods</p> <p>The EnvelopeHandler.findTLV() method is called with TAG_DEVICE_IDENTITIES</p> <p>Call Control execution is finished.</p> <p>Check that the TAG_DEVICE_IDENTITIES is the TLV selected</p> <p>7- The content of EnvelopeHandler is compared with buffer1 using Util.arrayCompare()</p> | <p>1- Applet is triggered</p> <p>2- No exception is thrown.</p> <p>3- No exception is thrown.</p> <p>5- Applet is triggered</p> <p>6- No exception is thrown and the handler contains the envelope call control by SIM</p> <p>7- The contents of the EnvelopeHandler shall be the same as stored in buffer1.</p> | <p>4- 91 XX</p> <p>Proactive command Display Text is fetched</p> <p>The terminal Response of DISPLAY TEXT is sent to the (U)SIM</p> |
| 10 | <p><b>EnvelopeHandler integrity checks with EVENT_DOWNLOAD_IWLAN_ACCESS_STATU S</b></p> <p>1- An Download Iwlan Access Status envelope is sent to the (U)SIM</p> <p>2- EnvelopeHandler.getTheHandler() method is called</p> <p>3- Copy the content of the EnvelopeHandler in buffer1 using EnvelopeHandler.copy()</p> <p>The EnvelopeHandler.findTLV() method is called with TAG WLAN_ACCESS_STATUS (0x4B)</p> <p>4- A proactive command DISPLAY TEXT is sent</p> <p>5- Envelope call control by SIM is sent to the (U)SIM</p> <p>EnvelopeHandler.getTheHandler() method is</p>  | <p>1- Applet is triggered</p> <p>2- No exception is thrown.</p> <p>3- No exception is thrown.</p> <p>5- Applet is triggered</p>  | <p>4- 91 XX</p>   |

| Id | Description  | API/(U)SAT Framework Expectation   | APDU Expectation  |
|----|--|--|---|
|    | <p>called</p> <p>6- Checked that EnvelopeHandler content is the same as in envelope call control using EnvelopeHandler.copy() and Util.arrayCompare() methods</p> <p>The EnvelopeHandler.findTLV() method is called with TAG_DEVICE_IDENTITIES</p> <p>Call Control execution is finished.</p> <p>Check that the TAG_WLAN_ACCESS_STATUS is the TLV selected</p> <p>7- The content of EnvelopeHandler is compared with buffer1 using Util.arrayCompare()</p> | <p>6- No exception is thrown and the handler contains the envelope call control by SIM</p> <p>7- The contents of the EnvelopeHandler shall be the same as stored in buffer1.</p> | <p>Proactive command Display Text is fetched</p> <p>The terminal Response of DISPLAY TEXT is sent to the (U)SIM</p> |

### 5.3.2.3 USATenvelopeHandler

Test Area Reference: Ufw\_Hin\_Uehd

#### 5.3.2.3.1 Conformance requirements

##### 5.3.2.3.1.1 Normal execution

- CRRN1: When available, the *USATenvelopeHandler* shall remain available and its content shall remain unchanged from the invocation to the termination of the *processToolkit()* method.
- CRRN2: The *USATenvelopeHandler* TLV list is filled with the Comprehension TLV data objects of the ENVELOPE APDU command. The Comprehension TLV data objects shall be provided in the order given in the ENVELOPE command data.
- CRRN3: The (U)SAT Framework shall convert the UPDATE RECORD EF<sub>SMS</sub> APDU into a COMPREHENSION TLV List containing Device Identities TLV, Address TLV, SMS TPDU TLV and AID TLV (only if the EF<sub>SMS</sub> file updated is under an ADF).
- CRRN4: The *getEnvelopeTag()* method shall return BTAG\_SMS\_PP\_DOWNLOAD.
- CRRN5: The *getLength()* method shall return the Comprehension TLV list length.
- CRRN6: The Device Identity Simple TLV is used to store the information about the absolute record number in the EF<sub>SMS</sub> file and the value of the EF<sub>SMS</sub> record status byte.

##### 5.3.2.3.1.2 Parameter errors

No requirements.

##### 5.3.2.3.1.3 Context Errors

No requirements.

#### 5.3.2.3.2 Test area files

Test Source: Test\_Ufw\_Hin\_Uehd.java

Test Applet: Ufw\_Hin\_Uehd\_1.java

Cap File: Ufw\_Hin\_Uehd.cap

#### 5.3.2.3.3 Test coverage

| CRR Number | Test Case Number   |
|------------|--------------------|
| N1         | 1 to 7, 14, 15, 16 |
| N2         | 1 to 7, 14, 15, 16 |
| N3         | 8, 11              |
| N4         | 10, 13             |
| N5         | 9, 12              |
| N6         | 8, 11              |

#### 5.3.2.3.4 Test procedure

| Id | Description | API/(U)SAT Framework Expectation | APDU Expectation |
|----|-------------|----------------------------------|------------------|
|----|-------------|----------------------------------|------------------|

| Id | Description  | API/(U)SAT Framework Expectation  | APDU Expectation   |
|----|--|---|--|
| 1  | <p><b>USATEnvelopeHandler integrity checks with EVENT_FORMATTED_SMS_PP_ENV</b></p> <p>1- A formatted SMS PP envelope is sent to the (U)SIM</p> <p>2- USATEnvelopeHandler.getTheHandler() method is called</p> <p>3- Copy the content of the EnvelopeHandler in buffer1 using USATEnvelopeHandler.copy()</p> <p>The USATEnvelopeHandler.findTLV() method is called with TAG_SMS_TPDU</p> <p>4- A proactive command DISPLAY TEXT is sent</p> <p>5- Envelope call control by SIM is sent to the (U)SIM</p> <p>USATEnvelopeHandler.getTheHandler() method is called</p> <p>6- Check that EnvelopeHandler content is the same as in the envelope call control using USATEnvelopeHandler.copy() and Util.arrayCompare() methods</p> <p>The USATEnvelopeHandler.findTLV() method is called with TAG_DEVICE_IDENTITIES</p> <p>Call Control execution is finished.</p> <p>Check that the TAG_SMS_TPDU is the TLV selected</p> <p>7- The content of USATEnvelopeHandler is compared with buffer1 using Util.arrayCompare()</p> | <p>1- Applet is triggered</p> <p>2- No exception is thrown.</p> <p>3- No exception is thrown.</p> <p>5- Applet is triggered</p> <p>6- No exception is thrown and the handler contains the envelope call control by SIM</p> <p>7- The contents of the EnvelopeHandler shall be the same as stored in buffer1</p> | <p>4- 91 XX</p> <p>Proactive command Display Text is fetched<br/>The terminal Response of DISPLAY TEXT is sent to the (U)SIM</p> |

| Id | Description   | API/(U)SAT Framework Expectation  | APDU Expectation   |
|----|---|---|--|
| 2  | <p><b>USATEnvelopeHandler integrity checks with EVENT_FORMATTED_SMS_PP_UPD</b></p> <p>1- Update Record EF<sub>SMS</sub> instruction single and formatted is sent to the (U)SIM</p> <p>2- USATEnvelopeHandler.getTheHandler() method is called</p> <p>3- Copy the content of the EnvelopeHandler in buffer1 using USATEnvelopeHandler.copy()</p> <p>The USATEnvelopeHandler.findTLV() method is called with TAG_SMS_TPDU</p> <p>4- A proactive command DISPLAY TEXT is sent</p> <p>5- Envelope call control by SIM is sent to the (U)SIM</p> <p>USATEnvelopeHandler.getTheHandler() method is called</p> <p>6- Checked that EnvelopeHandler content is the same as in envelope call control using USATEnvelopeHandler.copy() and Util.arrayCompare() methods</p> <p>The USATEnvelopeHandler.findTLV() method is called with TAG_SMS_TPDU</p> <p>Call Control execution is finished.</p> <p>Checked that the TAG_SMS_TPDU is the TLV selected</p> <p>7- The content of USATEnvelopeHandler is compared with buffer1 using Util.arrayCompare()</p> | <p>1- Applet is triggered</p> <p>2- No exception is thrown.</p> <p>3- No exception is thrown.</p> <p>5- Applet is triggered</p> <p>6- No exception is thrown and the handler contains the envelope call control by SIM</p> <p>7- The contents of the EnvelopeHandler shall be the same as stored in buffer1</p> | <p>4- 91 XX</p> <p>Proactive command Display Text is fetched<br/>The terminal Response of DISPLAY TEXT is sent to the (U)SIM</p> |

| Id | Description  | API/(U)SAT Framework Expectation   | APDU Expectation  |
|----|--|--|---|
| 3  | <p><b>USATEnvelopeHandler integrity checks with EVENT_UNFORMATTED_SMS_PP_ENV</b></p> <p>1- A unformatted SMS PP envelope is sent to the (U)SIM</p> <p>2- USATEnvelopeHandler.getTheHandler() method is called</p> <p>3- Copy the content of the EnvelopeHandler in buffer1 using USATEnvelopeHandler.copy()</p> <p>The USATEnvelopeHandler.findTLV method is called with TAG_DEVICE_IDENTITIES</p> <p>4- A proactive command DISPLAY TEXT is sent</p> <p>5- Envelope call control by SIM is sent to the (U)SIM</p> <p>USATEnvelopeHandler.getTheHandler() method is called</p> <p>6- Check that EnvelopeHandler content is the same as in the envelope call control using USATEnvelopeHandler.copy() and Util.arrayCompare() methods</p> <p>The USATEnvelopeHandler.findTLV() method is called with TAG_DEVICE_IDENTITIES</p> <p>Call Control execution is finished.</p> <p>Check that the TAG_DEVICE_IDENTITIES is the TLV selected</p> <p>7- The content of USATEnvelopeHandler is compared with buffer1 using Util.arrayCompare()</p> | <p>1- Applet is triggered</p> <p>2- No exception is thrown.</p> <p>3- No exception is thrown.</p> <p>5- Applet is triggered</p> <p>6- No exception is thrown and the handler contains the envelope call control by SIM</p> <p>7- The contents of the EnvelopeHandler shall be the same as stored in buffer1.</p> | <p>4- 91 XX</p> <p>Proactive command Display Text is fetched</p> <p>The terminal Response of DISPLAY TEXT is sent to the (U)SIM</p> |

| Id | Description   | API/(U)SAT Framework Expectation   | APDU Expectation  |
|----|---|--|---|
| 4  | <p><b>USATEnvelopeHandler integrity checks with EVENT_UNFORMATTED_SMS_PP_UPD</b></p> <p>1- Update Record EF<sub>SMS</sub> instruction single and unformatted is sent to the (U)SIM</p> <p>2- USATEnvelopeHandler.getTheHandler() method is called</p> <p>3- Copy the content of the EnvelopeHandler in buffer1 using USATEnvelopeHandler.copy()</p> <p>The USATEnvelopeHandler.findTLV method is called with TAG_SMS_TPDU</p> <p>4- A proactive command DISPLAY TEXT is sent</p> <p>5- Envelope call control by SIM is sent to the (U)SIM</p> <p>USATEnvelopeHandler.getTheHandler() method is called</p> <p>6- Check that EnvelopeHandler content is the same as in envelope call control using USATEnvelopeHandler.copy() and Util.arrayCompare() methods</p> <p>The USATEnvelopeHandler.findTLV() method is called with TAG_DEVICE_IDENTITIES</p> <p>Call Control execution is finished.</p> <p>Check that the TAG_DEVICE_IDENTITIES is the TLV selected</p> <p>7- The content of USATEnvelopeHandler is compared with buffer1 using Util.arrayCompare()</p> | <p>1- Applet is triggered</p> <p>2- No exception is thrown.</p> <p>3- No exception is thrown.</p> <p>5- Applet is triggered</p> <p>6- No exception is thrown and the handler contains the envelope call control by SIM</p> <p>7- The contents of the EnvelopeHandler shall be the same as stored in buffer1.</p> | <p>4- 91 XX</p> <p>Proactive command Display Text is fetched</p> <p>The terminal Response of DISPLAY TEXT is sent to the (U)SIM</p> |



| Id | Description   | API/(U)SAT Framework Expectation   | APDU Expectation  |
|----|---|--|---|
| 5  | <p><b>USATEnvelopeHandler integrity checks with EVENT_UNFORMATTED_SMS_CB</b></p> <p>1- An unformatted cell broadcast envelope is sent to the (U)SIM</p> <p>2- USATEnvelopeHandler.getTheHandler() method is called</p> <p>3- Copy the content of the EnvelopeHandler in buffer1 using USATEnvelopeHandler.copy()</p> <p>The USATEnvelopeHandler.findTLV() method is called with TAG_CELLBROADCAST_PAGE</p> <p>4- A proactive command DISPLAY TEXT is sent</p> <p>5- Envelope call control by SIM is sent to the (U)SIM</p> <p>USATEnvelopeHandler.getTheHandler() method is called</p> <p>6- Checked that EnvelopeHandler content is the same as in envelope call control using USATEnvelopeHandler.copy() and Util.arrayCompare() methods</p> <p>The USATEnvelopeHandler.findTLV() method is called with TAG_DEVICE_IDENTITIES</p> <p>Call Control execution is finished.</p> <p>Check that the TAG_CELLBROADCAST_PAGE is the TLV selected</p> <p>7- The content of USATEnvelopeHandler is compared with buffer1 using Util.arrayCompare()</p> | <p>1- Applet is triggered</p> <p>2- No exception is thrown.</p> <p>3- No exception is thrown.</p> <p>5- Applet is triggered</p> <p>6- No exception is thrown and the handler contains the envelope call control by SIM</p> <p>7- The contents of the EnvelopeHandler shall be the same as stored in buffer1.</p> | <p>4- 91 XX</p> <p>Proactive command Display Text is fetched</p> <p>The terminal Response of DISPLAY TEXT is sent to the (U)SIM</p> |

| Id | Description  | API/(U)SAT Framework Expectation   | APDU Expectation  |
|----|--|--|---|
| 6  | <p><b>USATEnvelopeHandler integrity checks with EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM</b></p> <p>1- A MO short message control by SIM envelope is sent to the (U)SIM</p> <p>2- USATEnvelopeHandler.getTheHandler() method is called</p> <p>3- Copy the content of the EnvelopeHandler in buffer1 using USATEnvelopeHandler.copy()</p> <p>The USATEnvelopeHandler.findTLV() method is called with TAG_ADDRESS</p> <p>4- A proactive command DISPLAY TEXT is sent</p> <p>5- Envelope call control by SIM is sent to the (U)SIM</p> <p>USATEnvelopeHandler.getTheHandler() method is called</p> <p>6- Checked that EnvelopeHandler content is the same as in envelope call control using USATEnvelopeHandler.copy() and Util.arrayCompare() methods</p> <p>The USATEnvelopeHandler.findTLV() method is called with TAG_DEVICE_IDENTITIES</p> <p>Call Control execution is finished.</p> <p>Check that the TAG_ADDRESS is the TLV selected</p> <p>7- The content of USATEnvelopeHandler is compared with buffer1 using Util.arrayCompare()</p> | <p>1- Applet is triggered</p> <p>2- No exception is thrown.</p> <p>3- No exception is thrown.</p> <p>5- Applet is triggered</p> <p>6- No exception is thrown and the handler contains the envelope call control by SIM</p> <p>7- The contents of the EnvelopeHandler shall be the same as stored in buffer1.</p> | <p>4- 91 XX</p> <p>Proactive command Display Text is fetched</p> <p>The terminal Response of DISPLAY TEXT is sent to the (U)SIM</p> |

| Id | Description  | API/(U)SAT Framework Expectation   | APDU Expectation  |
|----|--|--|---|
| 7  | <p><b>USATEnvelopeHandler integrity checks with EVENT_FORMATTED_SMS_CB</b></p> <p>1- A formatted cell broadcast envelope is sent to the (U)SIM</p> <p>2- USATEnvelopeHandler.getTheHandler() method is called</p> <p>3- Copy the content of the EnvelopeHandler in buffer1 using USATEnvelopeHandler.copy()</p> <p>The USATEnvelopeHandler.findTLV() method is called with TAG_CELLBROADCAST_PAGE</p> <p>4- A proactive command DISPLAY TEXT is sent</p> <p>5- Envelope call control by SIM is sent to the (U)SIM</p> <p>USATEnvelopeHandler.getTheHandler() method is called</p> <p>6- Checked that EnvelopeHandler content is the same as in envelope call control using USATEnvelopeHandler.copy() and Util.arrayCompare() methods</p> <p>The USATEnvelopeHandler.findTLV() method is called with TAG_DEVICE_IDENTITIES</p> <p>Call Control execution is finished.</p> <p>Check that the TAG_CELLBROADCAST_PAGE is the TLV selected</p> <p>7- The content of USATEnvelopeHandler is compared with buffer1 using Util.arrayCompare()</p> | <p>1- Applet is triggered</p> <p>2- No exception is thrown.</p> <p>3- No exception is thrown.</p> <p>5- Applet is triggered</p> <p>6- No exception is thrown and the handler contains the envelope call control by SIM</p> <p>7- The contents of the EnvelopeHandler shall be the same as stored in buffer1.</p> | <p>4- 91 XX</p> <p>Proactive command Display Text is fetched</p> <p>The terminal Response of DISPLAY TEXT is sent to the (U)SIM</p> |

| Id | Description  | API/(U)SAT Framework Expectation   | APDU Expectation |
|----|--|--|------------------|
| 8  | <p style="text-align: center;"><b>Check the TLV list conversion for<br/>EVENT_FORMATTED_SMS_PP_UPD</b></p> <p>1- An EVENT_FORMATTED_SMS_PP_UPD is sent to the (U)SIM.</p> <p>2- The findTLV(tag == device identities Tag) method is called.</p> <p>3- The getValueByte(offset == 0) method is called.</p> <p>4- The getValueByte(offset == 1) method is called.</p> <p>5- The findTLV(tag == address Tag) method is called.</p> <p>6- Check the content.</p> <p>7- The findTLV(tag == SMS TPDU Tag) method is called.</p> <p>8- Check the content.</p> | <p>1- Applet is triggered.</p> <p>2- No exception is thrown.</p> <p>3- return the absolute record.</p> <p>4- return the record status.</p> <p>5- No exception is thrown.</p> <p>7- No exception is thrown.</p> |                  |

| Id | Description   | API/(U)SAT Framework Expectation         | APDU Expectation |
|----|---|--|------------------|
| 9  | <b>getLength() call</b><br>Call <code>getLength()</code> method | return the Comprehension TLV list length |                  |

| Id | Description   | API/(U)SAT Framework Expectation | APDU Expectation |
|----|---|----------------------------------|------------------|
| 10 | <b>getEnvelopeTag() call</b><br>Call <code>getTag()</code> method | return<br>BTAG_SMS_PP_DOWNLOAD   |                  |

| Id | Description  | API/(U)SAT Framework Expectation   | APDU Expectation |
|----|--|--|------------------|
| 11 | <p><b>Check the TLV list conversion for EVENT_UNFORMATTED_SMS_PP_UPD</b></p> <p>1- An EVENT_UNFORMATTED_SMS_PP_UPD is sent to the (U)SIM.</p> <p>2- The findTLV(tag == device identities Tag) method is called.</p> <p>3- The getValueByte(offset == 0) method is called.</p> <p>4- The getValueByte(offset == 1) method is called.</p> <p>5- The findTLV(tag == address Tag) method is called.</p> <p>6- Check the content.</p> <p>7- The findTLV(tag == SMS TPDU Tag) method is called.</p> <p>8- Check the content.</p> | <p>1- Applet is triggered.</p> <p>2- No exception is thrown.</p> <p>3- return the absolute record.</p> <p>4- return the record status.</p> <p>5- No exception is thrown.</p> <p>7- No exception is thrown.</p> |                  |

| <b>Id</b> | <b>Description</b>                                 | <b>API/(U)SAT Framework Expectation</b>  | <b>APDU Expectation</b> |
|-----------|--|--|-------------------------|
| 12        | <b>getLength() call</b><br>Call getLength() method | return the Comprehension TLV list length |                         |



| Id | Description   | API/(U)SAT Framework Expectation | APDU Expectation |
|----|---|----------------------------------|------------------|
| 13 | <b>getEnvelopeTag() call</b><br>Call <code>getEnvelopeTag()</code> method | return<br>BTAG_SMS_PP_DOWNLOAD   |                  |

| Id | Description  | API/(U)SAT Framework Expectation  | APDU Expectation   |
|----|--|---|--|
| 14 | <p><b>USATEnvelopeHandler integrity checks with EVENT_FORMATTED_USSD</b></p> <p>1- A formatted USSD envelope is sent to the (U)SIM</p> <p>2- USATEnvelopeHandler.getTheHandler() method is called</p> <p>3- Copy the content of the EnvelopeHandler in buffer1 using USATEnvelopeHandler.copy()</p> <p>The USATEnvelopeHandler.findTLV() method is called with TAG_USSD_STRING</p> <p>4- A proactive command DISPLAY TEXT is sent</p> <p>5- Envelope call control by SIM is sent to the (U)SIM</p> <p>USATEnvelopeHandler.getTheHandler() method is called</p> <p>6- Check that EnvelopeHandler content is the same as in the envelope call control using USATEnvelopeHandler.copy() and Util.arrayCompare() methods</p> <p>The USATEnvelopeHandler.findTLV() method is called with TAG_DEVICE_IDENTITIES</p> <p>Call Control execution is finished.</p> <p>Check that the TAG_USSD_STRING is the TLV selected</p> <p>7- The content of USATEnvelopeHandler is compared with buffer1 using Util.arrayCompare()</p> | <p>1- Applet is triggered</p> <p>2- No exception is thrown.</p> <p>3- No exception is thrown.</p> <p>5- Applet is triggered</p> <p>6- No exception is thrown and the handler contains the envelope call control by SIM</p> <p>7- The contents of the EnvelopeHandler shall be the same as stored in buffer1</p> | <p>4- 91 XX</p> <p>Proactive command Display Text is fetched<br/>The terminal Response of DISPLAY TEXT is sent to the (U)SIM</p> |

| Id | Description  | API/(U)SAT Framework Expectation   | APDU Expectation  |
|----|--|--|---|
| 15 | <p><b>USATEnvelopeHandler integrity checks with EVENT_UNFORMATTED_USSD</b></p> <p>1- A unformatted USSD envelope is sent to the (U)SIM</p> <p>2- USATEnvelopeHandler.getTheHandler() method is called</p> <p>3- Copy the content of the EnvelopeHandler in buffer1 using USATEnvelopeHandler.copy()</p> <p>The USATEnvelopeHandler.findTLV method is called with TAG_DEVICE_IDENTITIES</p> <p>4- A proactive command DISPLAY TEXT is sent</p> <p>5- Envelope call control by SIM is sent to the (U)SIM</p> <p>USATEnvelopeHandler.getTheHandler() method is called</p> <p>6- Check that EnvelopeHandler content is the same as in the envelope call control using USATEnvelopeHandler.copy() and Util.arrayCompare() methods</p> <p>The USATEnvelopeHandler.findTLV() method is called with TAG_DEVICE_IDENTITIES</p> <p>Call Control execution is finished.</p> <p>Check that the TAG_DEVICE_IDENTITIES is the TLV selected</p> <p>7- The content of USATEnvelopeHandler is compared with buffer1 using Util.arrayCompare()</p> | <p>1- Applet is triggered</p> <p>2- No exception is thrown.</p> <p>3- No exception is thrown.</p> <p>5- Applet is triggered</p> <p>6- No exception is thrown and the handler contains the envelope call control by SIM</p> <p>7- The contents of the EnvelopeHandler shall be the same as stored in buffer1.</p> | <p>4- 91 XX</p> <p>Proactive command Display Text is fetched</p> <p>The terminal Response of DISPLAY TEXT is sent to the (U)SIM</p> |

| Id | Description  | API/(U)SAT Framework Expectation   | APDU Expectation  |
|----|--|--|---|
| 16 | <p><b>USATEnvelopeHandler integrity checks with EVENT_DOWNLOAD_IWLAN_ACCESS_STATUSES</b></p> <p>1- A Download Iwlan Access Status envelope is sent to the (U)SIM</p> <p>2- USATEnvelopeHandler.getTheHandler() method is called</p> <p>3- Copy the content of the EnvelopeHandler in buffer1 using USATEnvelopeHandler.copy()</p> <p>The USATEnvelopeHandler.findTLV method is called with TAG_DEVICE_IDENTITIES</p> <p>4- A proactive command DISPLAY TEXT is sent</p> <p>5- Envelope call control by SIM is sent to the (U)SIM</p> <p>USATEnvelopeHandler.getTheHandler() method is called</p> <p>6- Check that EnvelopeHandler content is the same as in the envelope call control using USATEnvelopeHandler.copy() and Util.arrayCompare() methods</p> <p>The USATEnvelopeHandler.findTLV() method is called with TAG_DEVICE_IDENTITIES</p> <p>Call Control execution is finished.</p> <p>Check that the TAG_DEVICE_IDENTITIES is the TLV selected</p> <p>7- The content of USATEnvelopeHandler is compared with buffer1 using Util.arrayCompare()</p> | <p>1- Applet is triggered</p> <p>2- No exception is thrown.</p> <p>3- No exception is thrown.</p> <p>5- Applet is triggered</p> <p>6- No exception is thrown and the handler contains the envelope call control by SIM</p> <p>7- The contents of the EnvelopeHandler shall be the same as stored in buffer1.</p> | <p>4- 91 XX</p> <p>Proactive command Display Text is fetched</p> <p>The terminal Response of DISPLAY TEXT is sent to the (U)SIM</p> |

### 5.3.3 Exception handling

#### 5.3.3.1 General Behaviour

Test Area Reference: Ufw\_Exh\_Genb

##### 5.3.3.1.1 Conformance requirement

###### 5.3.3.1.1.1 Normal execution

- CRRN1: If more than one Applet shall be triggered by the currently processed event all Exceptions shall be caught by the USAT Framework and shall not be sent to the terminal. The USAT Framework shall proceed with the triggering.
- CRRN2: If only one Applet shall be triggered by the currently processed event and an ISOException with the reason code REPLY\_BUSY is thrown, it shall be sent to the terminal using the Status Word 0x9300.
- CRRN3: If only one Applet shall be triggered by the currently processed event other Exceptions than an ISOException with the reason code REPLY\_BUSY shall not be propagated to the terminal.

## 5.3.3.1.1.2 Parameter errors

No requirements.

## 5.3.3.1.1.3 Context errors

No requirements.

## 5.3.3.1.2 Test area files

Test Source: Test\_Ufw\_Exh\_Genb.java

Test Applet: Ufw\_Exh\_Genb\_1.java

Ufw\_Exh\_Genb\_2.java

Cap File: ufw\_exh\_genb.cap

## 5.3.3.1.3 Test coverage

| CRR Number | Test Case Number |
|------------|------------------|
| CRRN1      | 1, 2, 3, 4       |

## 5.3.3.1.4 Test procedure

| Id | Description   | API/(U)SAT Framework Expectation   | APDU Expectation                          |
|----|---|--|---|
| 0  | <p>Applet1 is installed and registers to<br/>EVENT_FORMATTED_SMS_PP_ENV<br/>EVENT_UNFORMATTED_SMS_PP_ENV<br/>EVENT_FORMATTED_USSD<br/>and</p> <p>Applet2 is installed and registers to<br/>EVENT_UNFORMATTED_SMS_PP_ENV and<br/>EVENT_UNFORMATTED_SMS_CB<br/>EVENT_UNFORMATTED_USSD</p>                     |  |   |
| 1  | <p><b>ISOException REPLY_BUSY is not sent to the terminal in multi triggering</b></p> <p>1- Send an envelope Event Unformatted SMS PP ENV (multi triggering event, multi registered applets)</p> <p>4- Send an envelope Event Unformatted SMS PP ENV (multi triggering event, multi registered applets)</p> | <p>1- Applet1 is triggered</p> <p>2- Applet1 sends a ISOException with the reason code REPLY_BUSY then finalizes</p> <p>Applet2 is triggered, does nothing and finalizes</p> <p>4- Applet1 is triggered, does nothing and finalizes</p> <p>Applet2 is triggered, sends a ISOException with the reason code REPLY_BUSY then finalizes</p> | <p>3- SW = 90 00</p> <p>5- SW = 90 00</p> |

| Id | Description   | API/(U)SAT Framework Expectation  | APDU Expectation                          |
|----|---|---|---|
| 2  | <p><b>ISOException REPLY_BUSY is sent to the terminal in single triggering SMS PP</b></p> <p>1- Send an envelope Event formatted SMS PP ENV to trigger Applet1 (single triggering event)</p> <p>2- Send an envelope Event Unformatted SMS CB (multi triggering event, single registered applet)</p> | <p>1- Applet1 is triggered, sends a ISOException with the reason code REPLY_BUSY then finalizes</p> <p>2- Applet2 is triggered, sends a ISOException with the reason code REPLY_BUSY then finalizes</p> | <p>1- SW = 93 00</p> <p>2- SW = 93 00</p> |
| 3  | <p><b>Other exception than ISOException REPLY_BUSY are not sent to the terminal</b></p> <p>1- Send an envelope Event formatted SMS PP ENV to trigger Applet1 (single triggering event)</p> <p>2- Send an envelope Event formatted SMS PP ENV to trigger Applet1 (single triggering event)</p>       | <p>1- Applet1 is triggered, sends a ISOException with reason code different to REPLY_BUSY then finalizes</p> <p>2- Applet1 is triggered, sends a ToolkitException then finalizes</p>                    | <p>1- SW = 90 00</p> <p>2- SW = 90 00</p> |
| 4  | <p><b>ISOException REPLY_BUSY is sent to the terminal in single triggering USSD</b></p> <p>1- Send an envelope Event formatted USSD to trigger Applet1 (single triggering event)</p> <p>2- Send an envelope Event unformatted SMS CB (multi triggering event, single registered applet)</p>         | <p>1- Applet1 is triggered, sends a ISOException with the reason code REPLY_BUSY then finalizes</p> <p>2- Applet2 is triggered, sends a ISOException with the reason code REPLY_BUSY then finalizes</p> | <p>1- SW = 93 00</p> <p>2- SW = 93 00</p> |

### 5.3.3.2 Interaction with Multiple Triggering

Test Area Reference: Ufw\_Exh\_Imtg

#### 5.3.3.2.1 Conformance requirement

##### 5.3.3.2.1.1 Normal execution:

- CRRN1: An exception thrown by a toolkit applet, will not influence toolkit applets registered to the same event.

##### 5.3.3.2.1.2 Parameter errors

No requirements.

##### 5.3.3.2.1.3 Context errors

No requirements.

#### 5.3.3.2.2 Test area files

Test Source: Test\_Ufw\_Exh\_Imtg.java

Test Applet: Ufw\_Exh\_Imtg\_1.java

Ufw\_Exh\_Imtg\_2.java

Cap File: ufw\_exh\_imtg.cap

## 5.3.3.2.3 Test coverage

| CRR Number | Test Case Number |
|------------|------------------|
| CRRN1      | 1, 2, 3, 4       |

## 5.3.3.2.4 Test procedure

| Id | Description   | API/(U)SAT Framework Expectation   | APDU Expectation |
|----|---|--|------------------|
| 0  | <p><b>Load/install 2 toolkit applets registered to<br/>EVENT_UNFORMATTED_SMS_PP_ENV,<br/>EVENT_UNFORMATTED_SMS_PP_UPD,<br/>EVENT_UNFORMATTED_SMS_CB,<br/>EVENT_UNFORMATTED_USSD</b></p> <p>Applet1: Priority= 0x01,<br/>Applet2: Priority= 0x02,<br/>(i.e. Applet1 is triggered before Applet2)</p> |  |                  |
| 1  | <b>UNFORMATTED_SMS_PP_ENV is sent</b>   | <p>1- Applet1 is triggered</p> <p>2- NullPointerException is thrown</p> <p>3- Applet2 is triggered</p> |                  |
| 2  | <b>UNFORMATTED_SMS_PP_UPD is sent</b>   | <p>1- Applet1 is triggered</p> <p>2- NullPointerException is thrown</p> <p>3- Applet2 is triggered</p> |                  |
| 3  | <b>UNFORMATTED_SMS_CB is sent</b>   | <p>1- Applet1 is triggered</p> <p>2- NullPointerException is thrown</p> <p>3- Applet2 is triggered</p> |                  |
| 4  | <b>UNFORMATTED_USSD is send</b>   | <p>1- Applet1 is triggered</p> <p>2- NullPointerException is thrown</p> <p>3- Applet2 is triggered</p> |                  |

## 5.3.4 Applet triggering

## 5.3.4.1 EVENT\_FORMATTED\_SMS\_PP\_ENV

Test Area Reference: Ufw\_Apt\_Efse

## 5.3.4.1.1 Conformance requirement

## 5.3.4.1.1.1 Normal execution

- CRRN1: The applet is triggered by the EVENT\_FORMATTED\_SMS\_PP\_ENV once:
  - it has been registered to this event;
  - a Short Message Point to Point (Single or Concatenated) is received by Envelope APDU(s) and is formatted according to TS 31.115 [10];
  - the toolkit applet to be triggered is registered with the corresponding TAR in the SMS TPDU;
  - the security is verified.
- CRRN2: The applet is not triggered by the EVENT\_FORMATTED\_SMS\_PP\_ENV once it has deregistered from this event.

## 5.3.4.1.1.2 Parameters error

No requirements.

## 5.3.4.1.1.3 Context Errors

No requirements.

## 5.3.4.1.2 Test area files

Test Source: Test\_Ufw\_Apt\_Efse.java

Test Applet: Ufw\_Apt\_Efse\_1.java

Cap File: ufw\_apt\_efse.cap

## 5.3.4.1.3 Test coverage

| CRR Number       | Test Case Number |
|------------------|------------------|
| CRRN1 (See note) | 1, 2             |
| CRRN2            | 2                |

NOTE: The security checks are not relevant to the test designed in this test area; they will be checked in the "Framework Security Management" section.

## 5.3.4.1.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation | APDU Expectation |
|----|--|----------------------------------|------------------|
| 1  | <p><b>Applet registration to EVENT FORMATTED_SMS_PP_ENV and triggering</b></p> <p>Applet is registered to EVENT_FORMATTED_SMS_PP_ENV and EVENT_UNRECOGNIZED_ENVELOPE</p> <p>1- A Single Short Message SMS-PP Formatted Data Download is sent to the USIM.</p> <p>2- A Concatenated Short Message SMS-PP Formatted Data Download is sent to the USIM (composed of 2 Short Messages. The UDL for the first Short Message is 70 and</p> | 1- Applet is triggered           |                  |



| Id | Description  | API/(U)SAT Framework Expectation  | APDU Expectation |
|----|--|---|------------------|
|    | for the second 70)   | 2- Applet is triggered  |                  |
| 2  | <p style="text-align: center;"><b>Applet deregistration</b></p> <p>ToolkitRegistry.clearEvent() method is called for EVENT_FORMATTED_SMS_PP_ENV</p> <p>1- A Single Short Message SMS-PP Data Download is sent to the USIM.</p> <p>2- A Concatenated Short Messages SMS-PP Data Download is sent to the USIM (composed of 2 Short Messages. The UDL for the first Short Message is 70 and for the second 70).</p> <p>An unrecognized envelope is sent to the USIM</p> <p>ToolkitRegistry.setEvent() method is called for EVENT_FORMATTED_SMS_PP_ENV</p> <p>3- A Single Short Messages SMS-PP Data Download is sent to the USIM.</p> <p>4- A Concatenated Short Messages SMS-PP Data Download is sent to the USIM (composed of 2 Short Messages. The UDL for the first Short Message is 70 and for the second 70).</p> | <p>1- Applet is not triggered</p> <p>2- Applet is not triggered</p> <p>3- Applet is triggered</p> <p>4- Applet is triggered</p> |                  |

### 5.3.4.2 EVENT\_UNFORMATTED\_SMS\_PP\_ENV

Test Area Reference: Ufw\_Apt\_Euse

#### 5.3.4.2.1 Conformance requirement

##### 5.3.4.2.1.1 Normal execution

- CRRN1: The applets registers are triggered by the EVENT\_UNFORMATTED\_SMS\_PP\_ENV once a Short Message Point to Point (Single or Concatenated) is received by Envelope APDU(s) and is unformatted.
- CRRN2: The applet is not triggered by the EVENT\_UNFORMATTED\_SMS\_PP\_ENV once it has deregistered from this event.

##### 5.3.4.2.1.2 Parameters error

No requirements.

##### 5.3.4.2.1.3 Context Errors

No requirements.

#### 5.3.4.2.2 Test area files

Test Source: Test\_Ufw\_Apt\_Euse.java

Test Applet: Ufw\_Apt\_Euse\_1.java

Cap File: ufw\_appt\_euse.cap

5.3.4.2.3 Test coverage

| CRR Number | Test Case Number |
|------------|------------------|
| CRRN1      | 1, 2             |
| CRRN2      | 2                |

5.3.4.2.4 Test procedure

| Id | Description   | API/(U)SAT Framework Expectation  | APDU Expectation |
|----|---|---|------------------|
| 1  | <p><b>Applet registration to EVENT_UNFORMATTED_SMS_PP_ENV and triggering</b></p> <p>Applet is registered to the EVENT_UNFORMATTED_SMS_PP_ENV and EVENT_FORMATTED_SMS_PP_ENV.</p> <p>1-ToolkitRegistry.isEventSet() method is called for EVENT_UNFORMATTED_SMS_PP_ENV</p> <p>2- A Single and Unformatted SMS-PP Data Download Envelope is sent to the USIM.</p> <p>3- A Concatenated and Unformatted SMS-PP Data Download Envelope is sent to the USIM (composed of 2 Short Messages. The UDL for the first Short Message is 70 and for the second 70)</p> | <p>1- The method returns true</p> <p>2- Applet is triggered</p> <p>3- Applet is triggered</p> |                  |

| Id | Description   | API/(U)SAT Framework Expectation  | APDU Expectation |
|----|---|---|------------------|
| 2  | <p style="text-align: center;"><b>Applet deregistration</b></p> <p>ToolkitRegistry.clearEvent() method is called for EVENT_UNFORMATTED_SMS_PP_ENV</p> <p>1- A Single and Unformatted SMS-PP Data Download Envelope is sent to the USIM.</p> <p>2- A Concatenated and Unformatted SMS-PP Data Download Envelope is sent to the USIM (composed of 2 Short Messages. The UDL for the first Short Message is 70 and for the second 70)</p> <p>An unrecognized envelope is sent to the USIM</p> <p>ToolkitRegistry.setEvent() method is called for EVENT_UNFORMATTED_SMS_PP_ENV</p> <p>3- A Single and Unformatted SMS-PP Data Download Envelope is sent to the USIM.</p> <p>4- A Concatenated and Unformatted SMS-PP Data Download Envelope is sent to the USIM (composed of 2 Short Messages. The UDL for the first Short Message is 70 and for the second 70)</p> | <p>1- Applet isn't triggered</p> <p>2- Applet isn't triggered</p> <p>3- Applet is triggered</p> <p>4- Applet is triggered</p> |                  |

### 5.3.4.3 EVENT\_FORMATTED\_SMS\_PP\_UPD

Test Area Reference: Ufw\_Apt\_Efsu

#### 5.3.4.3.1 Conformance requirement

##### 5.3.4.3.1.1 Normal execution

- CRRN1: The applet is triggered by the EVENT\_FORMATTED\_SMS\_PP\_UPD once:
  - it has been registered to this event,
  - a Short Message Point to Point (Single or Concatenated) is received by Update Record EF<sub>SMS</sub> APDU(s) and is formatted according to TS 31.115[10],
  - the toolkit applet to be triggered is registered with the corresponding TAR in the SMS TPDU,
- CRRN2: The applets are not triggered by the EVENT\_FORMATTED\_SMS\_PP\_UPD once it has deregistered from this event.

#### 5.3.4.3.2 Test area files

Test Source: Test\_Ufw\_Apt\_Efsu.java

Test Applet: Ufw\_Apt\_Efsu\_1.java

Cap File: ufw\_appt\_efsucap

## 5.3.4.3.3 Test coverage

| <b>CRR Number</b> | <b>Test Case Number</b> |
|-------------------|-------------------------|
| CRRN1 (See note)  | 1,2                     |
| CRRN2             | 2                       |

NOTE: The security checks are not relevant to the test designed in this test area; they will be checked in the "Framework Security Management" section.

## 5.3.4.3.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation   | APDU Expectation |
|----|--|--|------------------|
| 1  | <p align="center"><b>Applet registration to EVENT FORMATTED_SMS_PP_UPD and triggering</b></p> <p>Applet is registered to<br/>EVENT_FORMATTED_SMS_PP_UPD and<br/>EVENT_UNRECOGNIZED_ENVELOPE</p> <p>1. ToolkitRegistry.isEventSet() method is called for EVENT_FORMATTED_SMS_PP_UPD</p> <p>2. Short Message Point to Point Single and Formatted is received by Update Record EF<sub>SMS</sub> APDU.</p> <p>3. Short Message Point to Point Concatenated Formatted is received by Update Record EF<sub>SMS</sub> APDU(s) (The Concatenated Message is composed of 2 Short Messages. The UDL for the first Short Message is 70 and for the second 70).</p>  | <p>1- The method returns true.</p> <p>2- Applet is triggered.</p> <p>3- Applet is triggered on reception of the last concatenated SMS</p>                                  |                  |
| 2  | <p align="center"><b>Applet deregistration</b></p> <p>ToolkitRegistry.clearEvent() method is called for EVENT_FORMATTED_SMS_PP_UPD</p> <p>1. Short Message Point to Point Single and Formatted is received by Update Record EF<sub>SMS</sub> APDU.</p> <p>2. Short Message Point to Point Concatenated and Formatted is received by Update Record EF<sub>SMS</sub> APDU(s). (The Concatenated Message is composed of 2 Short Messages. The UDL for the first Short Message is 70 and for the second 70).</p> <p>An unrecognized envelope is sent to the USIM</p> <p>ToolkitRegistry.setEvent() method is called for EVENT_FORMATTED_SMS_PP_UPD</p> <p>3. Short Message Point to Point Single and Formatted is received by Update Record EF<sub>SMS</sub> APDU.</p> <p>4. Short Message Point to Point Concatenated Formatted is received by Update Record EF<sub>SMS</sub> APDU(s). (The Concatenated Message is composed of 2 Short Messages. The UDL for the first Short Message is 70 and for the second 70).</p> | <p>1- Applet is not triggered</p> <p>2- Applet is not triggered</p> <p>3- Applet is triggered</p> <p>4- Applet is triggered on reception of the last concatenated SMS.</p> |                  |

## 5.3.4.4 EVENT\_UNFORMATTED\_SMS\_PP\_UPD

Test Area Reference: Ufw\_Apt\_Eusu

## 5.3.4.4.1 Conformance requirement

## 5.3.4.4.1.1 Normal execution

- CRRN1: The applets registers are triggered by the EVENT\_UNFORMATTED\_SMS\_PP\_UPD once a Short Message Point to Point (Single or Concatenated) is received by Update Record EF<sub>SMS</sub> APDU(s) and is unformatted.
- CRRN2: The applets are not triggered by the EVENT\_UNFORMATTED\_SMS\_PP\_UPD once it has deregistered from this event.

## 5.3.4.4.2 Test area files

Test Source: Test\_Ufw\_Apt\_Eusu.java

Test Applet: Ufw\_Apt\_Eusu\_1.java

Cap File: ufw\_apr\_eusu.cap

## 5.3.4.4.3 Test coverage

| CRR Number | Test Case Number |
|------------|------------------|
| CRRN1      | 1,2              |
| CRRN2      | 2                |

## 5.3.4.4.4 Test procedure

| Id | Description   | API/(U)SAT Framework Expectation   | APDU Expectation |
|----|---|--|------------------|
| 1  | <p><b>Applet registration to EVENT UNFORMATTED_SMS_PP_UPD and triggering</b></p> <p>Applet is registered to EVENT_UNFORMATTED_SMS_PP_UPD and EVENT_UNRECOGNIZED_ENVELOPE</p> <p>1. ToolkitRegistry.isEventSet() method is called for EVENT_UNFORMATTED_SMS_PP_UPD</p> <p>2. Short Message Point to Point Single and Unformatted is received by Update Record EF<sub>SMS</sub> APDU</p> <p>3. Short Message Point to Point Concatenated and Unformatted is received by Update Record EF<sub>SMS</sub> APDU (The Concatenated Message is composed of 2 Short Messages. The UDL for the first Short Message is 70 and for the second 70).</p>  | <p>1- Applet is not triggered</p> <p>2- Applet is triggered.</p> <p>3- Applet is triggered on reception of the last concatenated SMS.</p>                                  |                  |
| 2  | <p><b>Applet deregistration</b></p> <p>ToolkitRegistry.clearEvent() method is called for EVENT_UNFORMATTED_SMS_PP_UPD</p> <p>1. Short Message Point to Point Single and Unformatted is received by Update Record EF<sub>SMS</sub> APDU</p> <p>2. Short Message Point to Point Concatenated and Unformatted is received by Update Record EF<sub>SMS</sub> APDU(s) (The Concatenated Message is composed of 2 Short Messages. The UDL for the first Short Message is 70 and for the second 70).</p> <p>An unrecognized envelope is sent to the USIM</p> <p>ToolkitRegistry.setEvent() method is called for EVENT_UNFORMATTED_SMS_PP_UPD</p> <p>3. Short Message Point to Point Single and Unformatted is received by Update Record EF<sub>SMS</sub> APDU</p> <p>4. Short Message Point to Point Concatenated and Unformatted is received by Update Record EF<sub>SMS</sub> APDU(s) (The Concatenated Message is composed of 2 Short Messages. The UDL for the first Short Message is 70 and for the second 70).</p> | <p>1- Applet is not triggered</p> <p>2- Applet is not triggered.</p> <p>3- Applet is triggered</p> <p>4- Applet is triggered on reception of the last concatenated SMS</p> |                  |

### 5.3.4.5 EVENT\_FORMATTED\_SMS\_CB

Test Area Reference: Ufw\_Apt\_Efcb

#### 5.3.4.5.1 Conformance requirement

##### 5.3.4.5.1.1 Normal execution

- CRRN1: The applet is triggered by the EVENT\_FORMATTED\_SMS\_CB once:
  - it has been registered to this event;
  - an envelope APDU carrying a Cell Broadcast Page, formatted according to TS 31.115[10] , is received;
  - the toolkit applet to be triggered is registered with the corresponding TAR in the CB page;
  - the security is verified.
- CRRN2: The applet is not triggered by the EVENT\_FORMATTED\_SMS\_CB once it has deregistered from this event.

##### 5.3.4.5.1.2 Parameters error

No requirements.

##### 5.3.4.5.1.3 Context Errors

No requirements.

#### 5.3.4.5.2 Test area files

Test Source: Test\_Ufw\_Apt\_Efcb.java

Test Applet: Ufw\_Apt\_Efcb\_1.java

Cap File: ufw\_apr\_efcb.cap

#### 5.3.4.5.3 Test coverage

| CR Number   | Test Case Number |
|---|------------------|
| CRRN1 (See note)  | 1, 2             |
| CRRN2   | 2                |
| NOTE: The security checks are not relevant to the test designed in this test area; they will be checked in subclause 6.3.6. |                  |

#### 5.3.4.5.4 Test procedure

| Id | Description   | API/(U)SAT Framework Expectation | APDU Expectation |
|----|---|----------------------------------|------------------|
| 1  | <p><b>Applet registration to EVENT_FORMATTED_SMS_CB and triggering</b></p> <p>Applet is registered to EVENT_FORMATTED_SMS_CB and EVENT_FORMATTED_SMS_PP_ENV</p> |                                  |                  |



| Id | Description   | API/(U)SAT Framework Expectation  | APDU Expectation |
|----|---|---|------------------|
|    | 1-An Envelope EVENT_FORMATTED_SMS_CB is sent to the USIM.   | 1-Applet is triggered   |                  |
| 2  | <p style="text-align: center;"><b>Applet deregistration</b></p> <p>ToolkitRegistry.clearEvent() method is called for EVENT_FORMATTED_SMS_CB</p> <p>1-A formatted SMS CB envelope is sent to the USIM.</p> <p>2-An envelope SMS-PP formatted is sent to the USIM</p> <p>ToolkitRegistry.setEvent() method is called for EVENT_FORMATTED_SMS_CB</p> <p>3-An Envelope FORMATTED_SMS_CB is sent to the USIM</p> | <p>1- Applet is not triggered</p> <p>2- Applet is triggered</p> <p>3- Applet is triggered</p> |                  |

### 5.3.4.6 EVENT\_UNFORMATTED\_SMS\_CB

Test Area Reference: Ufw\_Apt\_Eucb

#### 5.3.4.6.1 Conformance requirement

##### 5.3.4.6.1.1 Normal execution

- CRRN1: The applet is triggered by the EVENT\_UNFORMATTED\_SMS\_CB once it has registered to this event and an Envelope Cell Broadcast Download is received.
- CRRN2: The applet is not triggered by the EVENT\_UNFORMATTED\_SMS\_CB once it has deregistered from this event.

##### 5.3.4.6.1.2 Parameters error

No requirements.

##### 5.3.4.6.1.3 Context Errors

No requirements.

#### 5.3.4.6.2 Test area files

Test Source: Test\_Ufw\_Apt\_Eucb.java

Test Applet: Ufw\_Apt\_Eucb\_1.java

Cap File: ufw\_appt\_eucb.cap

#### 5.3.4.5.3 Test coverage

| CRR Number | Test Case Number |
|------------|------------------|
| CRRN1      | 1, 2             |
| CRRN2      | 2                |

## 5.3.4.6.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation                               | APDU Expectation |
|----|--|--|------------------|
| 1  | <p style="text-align: center;"><b>Applet registration to<br/>EVENT_UNFORMATTED_SMS_CB and<br/>triggering</b></p> <p>Applet is registered to the<br/>EVENT_UNFORMATTED_SMS_CB and<br/>EVENT_FORMATTED_SMS_PP_ENV.</p> <p>event= EVENT_UNFORMATTED_SMS_CB<br/>1-ToolkitRegistry.isEventSet() method is<br/>called.</p> <p>2-An Envelope UNFORMATTED_SMS_CB is sent<br/>to the USIM.</p>  | <p>1- Method returns true.</p> <p>2- Applet is triggered</p>   |                  |
| 2  | <p style="text-align: center;"><b>Applet deregistration</b></p> <p>ToolkitRegistry.ClearEvent()method is<br/>called for EVENT_UNFORMATTED_SMS_CB</p> <p>1-An Envelope UNFORMATTED_SMS_CB is sent<br/>to the USIM.</p> <p>An Envelope formatted SMS pp envelope is<br/>sent to the USIM</p> <p>event= EVENT_UNFORMATTED_SMS_CB</p> <p>ToolkitRegistry.setEvent() method is called<br/>for EVENT_UNFORMATTED_SMS_CB</p> <p>2-An Envelope UNFORMATTED_SMS_CB is sent<br/>to the USIM.</p> | <p>1- Applet isn't triggered</p> <p>2- Applet is triggered</p> |                  |

## 5.3.4.7 EVENT\_FORMATTED\_USSD

Test Area Reference: Ufw\_Apt\_Efud

## 5.3.4.7.1 Conformance requirement

## 5.3.4.7.1.1 Normal execution

- CRRN1: The applet is triggered by the EVENT\_FORMATTED\_USSD once:
  - it has been registered to this event;
  - formatted according to TS 31.115 [10] or an other protocol to identify explicitly the toolkit applet for which the message is sent;
  - the toolkit applet to be triggered is registered with the corresponding TAR in the USSD String TLV;
  - the security is verified.
- CRRN2: The applet is not triggered by the EVENT\_FORMATTED\_USSD once it has deregistered from this event.

## 5.3.4.7.1.2 Parameters error

No requirements.

## 5.3.4.7.1.3 Context Errors

No requirements.

## 5.3.4.7.2 Test area files

Test Source: Test\_Ufw\_Apt\_Efud.java

Test Applet: Ufw\_Apt\_Efud\_1.java

Cap File: ufw\_apt\_Efud.cap

## 5.3.4.7.3 Test coverage

| CRR Number | Test Case Number |
|------------|------------------|
| CRRN1      | 1,2              |
| CRRN2      | 2                |

NOTE: The security checks are not relevant to the test designed in this test area; they will be checked in the "Framework Security Management" section.

## 5.3.4.7.4 Test coverage

| Id | Description   | API/(U)SAT Framework Expectation  | APDU Expectation |
|----|---|---|------------------|
| 1  | <p><b>Applet registration to EVENT FORMATTED_USSD and triggering</b></p> <p>Applet is registered to<br/>EVENT_FORMATTED_USSD and<br/>EVENT_UNRECOGNIZED_ENVELOPE</p> <p>1- A Single USSD Formatted Envelope is sent to the USIM.</p> <p>2- A Concatenated USSD is sent to the USIM (composed of 2 USSD messages. The UDL for the first Short Message is 70 and for the second 70)</p>   | <p>1- Applet is triggered</p> <p>2- Applet is triggered</p>                                       |                  |
|    | <p><b>Applet deregistration</b></p> <p>ToolkitRegistry.clearEvent() method is called for EVENT_FORMATTED_USSD</p> <p>1- A formatted USSD message is sent to the USIM.</p> <p>2- A Concatenated USSD message is sent to the USIM (composed of 2 USSD Messages. The UDL for the first USSD message is 70 and for the second 70).</p> <p>An unrecognized envelope is sent to the USIM</p> <p>ToolkitRegistry.setEvent() method is called for EVENT_FORMATTED_USSD</p> <p>3- A Single formatted USSD is sent to the USIM.</p> | <p>1- Applet is not triggered</p> <p>2- Applet is not triggered</p> <p>3- Applet is triggered</p> |                  |

| Id | Description  | API/(U)SAT Framework Expectation | APDU Expectation |
|----|--|----------------------------------|------------------|
|    | 4- A Concatenated USSD message is sent to the USIM (composed of 2 Messages. The UDL for the first USSD message is 70 and for the second 70). | 4- Applet is triggered           |                  |

### 5.3.4.8 EVENT\_UNFORMATTED\_USSD

Test Area Reference: Ufw\_Apt\_Euud

#### 5.3.4.8.1 Conformance requirement

##### 5.3.4.8.1.1 Normal execution

- CRRN1: The applets registers are triggered by the EVENT\_UNFORMATTED\_USSD once a unformatted USSDis received by Envelope APDU(s) and is unformatted.
- CRRN2: The applet is not triggered by the EVENT\_UNFORMATTED\_USSD once it has deregistered from this event.

##### 5.3.4.8.1.2 Parameters error

No requirements.

##### 5.3.4.8.1.3 Context Errors

No requirements.

#### 5.3.4.8.2 Test area files

Test Source: Test\_Ufw\_Apt\_Euud.java

Test Applet: Ufw\_Apt\_Euud\_1.java

Cap File: ufw\_apt\_euud.cap

#### 5.3.4.8.3 Test coverage

| CRR Number | Test Case Number |
|------------|------------------|
| CRRN1      | 1,2              |
| CRRN2      | 2                |

#### 5.3.4.8.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation  | APDU Expectation |
|----|--|---|------------------|
| 1  | <p><b>Applet registration to EVENT_UNFORMATTED_USSD and triggering</b></p> <p>Applet is registered to the EVENT_UNFORMATTED_USSD and EVENT_FORMATTED_USSD</p> <p>1-ToolkitRegistry.isEventSet() method is called for EVENT_UNFORMATTED_USSD</p> <p>2- A Single and Unformatted USSD message is sent to the USIM.</p> <p>3- A Concatenated and Unformatted USSD message is sent to the USIM (composed of 2 USSD messages. The UDL for the first</p> | <p>1- The method returns true</p> <p>2- Applet is triggered</p> <p>3- Applet is triggered</p> |                  |

| Id | Description  | API/(U)SAT Framework Expectation  | APDU Expectation |
|----|--|---|------------------|
|    | message is 70 and for the second 70)   |   |                  |
|    | <p style="text-align: center;"><b>Applet deregistration</b></p> <p>ToolkitRegistry.clearEvent() method is called for EVENT_UNFORMATTED_USSD</p> <p>1- A Single and Unformatted USSD message is sent to the USIM.</p> <p>2- A Concatenated and Unformatted USSD message is sent to the USIM (composed of 2 USSD messages. The UDL for the first Message is 70 and for the second 70)</p> <p>An unrecognized envelope is sent to the USIM</p> <p>ToolkitRegistry.setEvent() method is called for EVENT_UNFORMATTED_USSD</p> <p>3- A Single and Unformatted USSD Envelope is sent to the USIM.</p> <p>4- A Concatenated and Unformatted USSD Envelope is sent to the USIM (composed of 2 messages. The UDL for the first message is 70 and for the second 70)</p> | <p>1- Applet is not triggered</p> <p>2- Applet is not triggered</p> <p>3- Applet is triggered</p> <p>4- Applet is triggered</p> |                  |

## 5.3.5 Envelope response posting

### 5.3.5.1 EVENT\_MO\_SHORT\_MESSAGE\_CONTROL\_BY\_SIM

Test Area Reference: Ufw\_Erp\_Emcn

#### 5.3.5.1.1 Conformance requirement

##### 5.3.5.1.1.1 Normal execution

- CRRN1: The (U)SAT Framework can't reply busy when an Envelope(MO-Short Message Control) is sent to the (U)SAT.

#### 5.3.6.2.1.2 Parameter errors

No requirements.

#### 5.3.6.2.1.3 Context errors

No requirements.

#### 5.3.5.1.2 Test area files

Test Source: Test\_Ufw\_Erp\_Emcn.scr

Test Applet: Ufw\_Erp\_Emcn\_1.java

Ufw\_Erp\_Emcn\_2.java

Ufw\_Erp\_Emcn\_3.java

Cap File: Ufw\_Erp\_Emcn.cap

5.3.5.1.3 Test coverage

| CRR Number | Test Case Number |
|------------|------------------|
| CRRN1      | 1, 2             |

5.3.5.1.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation   | APDU Expectation   |
|----|--|--|--|
| 1  | <p><b>Applet1 is registered on the EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM; Applet2 is registered and triggered on the EVENT_MENU_SELECTION.</b></p> <p>1- Applet2 invokes the method send() and no fetch is performed</p> <p>2- Envelope(MO-SM control) is sent to the (U)SAT</p> <p>3- Applet1 calls the method EnvelopeResponseHandler.postAsBERTLV() to change any incoming TP_Destination_Address and any RP_Destination_Address of the Service Center into +11 22 33 44</p> <p>4- A Fetch command is sent to the (U)SAT</p> <p>5- A Terminal Response command is sent to the (U)SAT</p> <p>6- Delete Applet1 &amp; Applet2</p> <p>7- Install Applet3</p> | <p>1- Applet2 is suspended</p> <p>2- Applet1 is triggered.</p> <p>5- Applet2 execution shall continue.</p>   | <p>3- The U(SAT) answers 91xx to the Envelope(MO-Short Message Control)<br/>The new TP_Destination_Address and RP_Destination_Address are retrieved.</p> |
| 2  | <p><b>Applet3 is registered on both the events EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM and EVENT_MENU_SELECTION.</b></p> <p>1- Applet3 invokes the method send()and no fetch is performed</p> <p>2- Envelope(MO-SM control) is sent to the (U)SAT</p> <p>3- Applet3 calls the method EnvelopeResponseHandler.postAsBERTLV() to change any incoming TP_Destination_Address and any RP_Destination_Address of the Service Center into +11 22 33 44.</p> <p>4- A Fetch command is sent to the (U)SAT</p> <p>5- A Terminal Response command is sent to the (U)SAT</p>  | <p>1- Applet3 is suspended on the send() method</p> <p>2- Applet3 is triggered on the EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM.</p> <p>5- Applet3 execution shall continue.</p> | <p>3- The U(SAT) answers 91xx to the Envelope(MO-Short Message Control)<br/>The new TP_Destination_Address and RP_Destination_Address are retrieved.</p> |

## 5.3.6 Toolkit installation

### 5.3.6.1 Minimum security level

Test Area Reference: ufw\_tin\_msl

#### 5.3.6.1.1 Conformance requirements

##### 5.3.6.1.1.1 Normal execution

- CRRN1: The Receiving Entity shall check the Minimum Security Level during processing the security of the Command Packet.
- CRRN2: The Receiving Entity shall reject the message if the MSL check fails.
- CRRN3: If the MSL check fails, a Response Packet with the 'Insufficient Security Level' Response Status Code shall be sent if required.
- CRRN4: If the length of the Minimum Security Level field is greater than zero, the Minimum Security Level is used to specify the minimum level to be applied to Secured Packets. The first byte shall be the MSL Parameter, other bytes shall be the MSL Data.
- CRRN5: If the length of the Minimum Security Level field is zero, no minimum security level check shall be performed by the receiving entity.

#### 5.3.6.1.2 Test area files

Test source: Test\_Ufw\_Tin\_Msl\_1.java

Test Applet: Ufw\_Tin\_Msl\_1.java

Cap file: ufw\_tin\_msl.cap

#### 5.3.6.1.3 Test coverage

| CRR number | Test case number |
|------------|------------------|
| CRRN1      | Not applicable   |
| CRRN2      | 2, 4             |
| CRRN3      | 2, 4             |
| CRRN4      | 2, 4             |
| CRRN5      | 1, 4             |

## 5.3.6.1.4 Test procedure

| Id | Description   | API/(U)SAT Framework Expectation   | APDU Expectation  |
|----|---|--|---|
| 1  | <p align="center"><b>Installation with MSL length of 0 FORMATTED_SMS_PP_ENV</b></p> 1- Install (install) applet with a MSL length = 0<br>2- Send formatted SMS PP ENV with no RC/CC/DS, no Ciphering and counter mode 0 (not checked)<br>3- Send a formatted SMS PP ENV with CC, ciphering and counter mode 1 (counter available and no checking)<br>4- Delete the applet instance  | 2- Applet is triggered<br><br>3- Applet is triggered                                       | 1- SW = 9000  |
| 2  | <p align="center"><b>Installation with correct MSL value FORMATTED_SMS_PP_ENV</b></p> 1- Install (install) applet with MSL field set to 02 (CC needed).<br>2- Send formatted SMS PP ENV with no RC/CC/DS, no Ciphering and counter mode 0 (not checked)<br>3- Send a formatted SMS PP ENV with CC, no ciphering and counter mode 1 counter available and no checking)<br>4- Send a formatted SMS PP ENV with PoR required and no CC, ciphered with DES and counter mode 0 counter available and no checking)<br>5- Delete the applet instance | 2- Applet is not triggered<br><br>3- Applet is triggered<br><br>4- Applet is not triggered | 1- SW = 9000<br><br><br>4- SW = 62 00, Response status code shall be '0A', insufficient security level. |
| 3  | <p align="center"><b>Installation with MSL length of 0 FORMATTED_USSD</b></p> 1- Install (install) applet with a MSL length = 0<br>2- Send formatted USSD with no RC/CC/DS, no Ciphering and counter mode 0 (not checked)<br>3- Send a formatted USSD with CC, ciphering and counter mode 1 (counter available and no checking)<br>4- Delete the applet instance  | 2- Applet is not triggered<br><br>3- Applet is triggered<br><br>4- Applet is not triggered | 1- SW = 9000  |
| 4  | <p align="center"><b>Installation with correct MSL value FORMATTED_USSD</b></p> 1- Install (install) applet with MSL field set to 02 (CC needed).<br>2- Send formatted SMS PP ENV with no RC/CC/DS, no Ciphering and counter mode 0 (not checked)<br>3- Send a formatted SMS PP ENV with CC, no ciphering and counter mode 1 counter available and no checking)<br>4- Send a formatted SMS PP ENV with PoR required and no CC, ciphered with DES and counter mode 0 counter available and no checking)<br>5- Delete the applet instance       | 2- Applet is not triggered<br><br>3- Applet is triggered<br><br>4- Applet is not triggered | 1- SW = 9000<br><br><br>4- SW = 62 00, Response status code shall be '0A', insufficient security level  |

## 5.3.6.2 TAR

Test Area Reference: ufw\_tin\_tar

## 5.3.6.2.1 Conformance requirements

## 5.3.6.2.1.1 Normal execution

- CRRN1: It is possible to define several TAR values at the installation of the Toolkit Application .



- CRRN2: If the length of the TAR value is zero, the TAR may be taken out of the AID if any.
- CRRN3: If the length of the TAR value is greater than zero then the application instance shall be installed with the TAR value field defined in parameter and the TAR indicated in the AID if any shall be ignored.
- CRRN4: If the TAR value(s) is already assigned on the card for the Toolkit Application instance the card shall return the status word '6A 80', incorrect parameter in data field.
- CRRN5: If the length of the TAR value(s) field is incorrect, the card shall return the status word '6A 80', incorrect parameter in data field.

#### 5.3.6.2.2 Test area files

Test source: Test\_Ufw\_Tin\_Tar\_1.scr

Test Applet: ufw\_tin\_tar\_1.java

Cap file: ufw\_tin\_tar.cap

#### 5.3.6.2.3 Test Coverage

| CRR number | Test case number |
|------------|------------------|
| CRRN1      | 1                |
| CRRN2      | 2                |
| CRRN3      | 3                |
| CRRN4      | 4                |
| CRRN5      | 5                |

## 5.3.6.2.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation                                    | APDU Expectation |
|----|--|---|------------------|
| 1  | <p><b>Installation with several TAR value FORMATTED_SMS_PP_ENV</b></p> <p>1- Install (install) applet with no TAR defined in the AID but TAR values set to 11 11 11, 22 22 22<br/> 2- Send formatted SMS PP ENV with TAR set to 11 11 11.<br/> 3- Send formatted SMS PP ENV with TAR set to 22 22 22.<br/> 4- Delete the applet instance.</p>  | <p>2- Applet is triggered</p> <p>3- Applet is triggered</p>         | 1- SW = 9000     |
| 2  | <p><b>Installation without TAR value in install parameter FORMATTED_SMS_PP_ENV</b></p> <p>1- Install (install) applet with TAR value length set to 0 in install parameters.<br/> 2- Send formatted SMS PP ENV with the TAR value defined in applet AID.<br/> 3- Delete the applet instance</p>   | 2- Applet is triggered  | 1- SW = 9000     |
| 3  | <p><b>Installation with TAR value within AID different from the one define in install parameters FORMATTED_SMS_PP_ENV</b></p> <p>1- Install (install) applet with applet AID TAR set to XX YY ZZ and TAR value set to 11 11 11.<br/> 2- Send formatted SMS PP ENV with the TAR value set to the one defined in applet AID.<br/> 3- Send formatted SMS PP ENV with the TAR value set to 11 11 11.</p> | <p>2- Applet is not triggered.</p> <p>3- Applet is triggered</p>    |                  |
| 4  | <p><b>Installation with TAR value already assigned FORMATTED_SMS_PP_ENV</b></p> <p>1- Install (install) applet with no TAR in applet AID and TAR value in install parameters set to 11 11 11.</p>  | 1- Applet is not installed  | 1- SW = 6A80     |
| 5  | <p><b>Installation with incorrect TAR value length in install parameters FORMATTED_SMS_PP_ENV</b></p> <p>1- Install (install) applet with no TAR in applet AID and TAR value length set to 02 and TAR value set to 11 11.<br/> 2- Install (install) applet with no TAR in applet AID and TAR value length set to 05 and TAR value set to 11 11 11,22 22.</p>   | <p>1- Applet is not installed</p> <p>2- Applet is not installed</p> | 1- SW = 6A80     |
| 7  | <p><b>Installation with several TAR value FORMATTED_USSD</b></p> <p>1- Install (install) applet with no TAR defined in the AID but TAR values set to 33 33 33, 44 44 44<br/> 2- Send formatted USSD with TAR set to 33 33 33.<br/> 3- Send formatted USSD with TAR set to 44 44 44.<br/> <b>4- Delete the applet instance.</b></p>   | <p>2- Applet is triggered</p> <p>3- Applet is triggered</p>         | 1- SW = 9000     |
| 8  | <p><b>Installation without TAR value in install parameter FORMATTED_USSD</b></p> <p>1- Install (install) applet with TAR value length set to 0 in install parameters.<br/> 2- Send formatted USSD with the TAR value</p>   | 2- Applet is triggered  | 1- SW = 9000     |

| Id | Description  | API/(U)SAT Framework Expectation                             | APDU Expectation |
|----|--|--|------------------|
|    | defined in applet AID.<br>3- Delete the applet instance  |  |                  |
| 9  | <b>Installation with TAR value within AID different from the one defined in install parameters FORMATTED_USSD</b><br><br>1- Install (install) applet with applet AID TAR set to XX YY ZZ and TAR value set to 33 33 33.<br>2- Send formatted USSD with the TAR value set to the one defined in applet AID.<br>3- Send formatted USSD with the TAR value set to 33 33 33. | 2- Applet is not triggered.<br><br>3- Applet is triggered    |                  |
| 10 | <b>Installation with TAR value already assigned FORMATTED_USSD</b><br><br>1- Install (install) applet with no TAR in applet AID and TAR value in install parameters set to 33 33 33.   | 1- Applet is not installed                                   | 1- SW = 6A80     |
| 11 | <b>Installation with incorrect TAR value length in install parameters FORMATTED_USSD</b><br><br>1- Install (install) applet with no TAR in applet AID and TAR value length set to 02 and TAR value set to 11 11.<br>2- Install (install) applet with no TAR in applet AID and TAR value length set to 05 and TAR value set to 11 11 11,22 22.                            | 1- Applet is not installed<br><br>2- Applet is not installed | 1- SW = 6A80     |

### 5.3.6.3 Access domain

Test Area Reference: ufw\_tin\_acdo

#### 5.3.6.3.1 Conformance requirements

##### 5.3.6.3.1.1 Normal execution

- CRRN1: The USAT framework shall grant files access to the application instance according to the USAT Framework access parameters.
- CRRN2: The access rights granted to an application and defined in the access parameter shall be independent from the access rights granted at the USAT Framework/Terminal interface level.
- CRRN3: If an application with access domain parameter set to 'FF' tries to access a file, the USAT framework shall throw an exception.
- CRRN4: An application with access domain parameter set to '00' can perform all actions on files, except the ones with NEVER access conditions.
- CRRN5: If a requested Access Domain is not supported, the card shall return the Status word '6A 80' to the Install(install) command.
- CRRN6: The card shall at least support the following Access Domain Parameter values:
  - '00' : Full access to the file system
  - '02' : UICC access mechanism
  - 'FF' : No access to the file system

## 5.3.6.3.2 Test area files

Test source: Test\_Ufw\_Tin\_Acdo\_1.java

Test Applet: Ufw\_Tin\_Acdo\_1.java

Cap file: ufw\_tin\_acdo.cap

## 5.3.6.3.3 Test coverage

| CRR number | Test case number |
|------------|------------------|
| CRRN1      | 1,2,3            |
| CRRN2      | 1                |
| CRRN3      | 2                |
| CRRN4      | 3                |
| CRRN5      | Not testable     |
| CRRN6      | 1,2,3            |

## 5.3.6.3.4 Test procedure

| Id | Description   | API/(U)SAT Framework Expectation  | APDU Expectation |
|----|---|---|------------------|
| 1  | <p><b>The access granted to an application shall be independent from the USAT Framework/Terminal interface</b></p> <p>1- Install (install) applet with Access domain parameter set to PIN1<br/> 2- Block PIN1 by sending unsuccessful verify pin command.<br/> 3- Trigger the installed applet and try to increase EF_CUAC file with uicc.access.increase() method.<br/> 4- Delete the applet instance.</p> | 3- no exception is thrown   |                  |
| 2  | <p><b>Access domain parameter set to 'FF'</b></p> <p>1- Install (install) applet with access domain parameter set to 'FF'.<br/> 2- Trigger the installed applet and try to access EF_TARU file with uicc.access.readBinary() method.<br/> 3- Delete the applet instance</p>   | 2- UICCEException. SECURITY_STATUS_NOT_SATISFIED is thrown  |                  |
| 3  | <p><b>Access domain parameter set to '00'</b></p> <p>1- Install (install) applet with access domain parameter set to '00'.<br/> 2- Trigger the installed applet and try to access EF_TARU file using uicc.access.readBinary() method.<br/> 3- Trigger the applet and try to access the EF_TNU file using uicc.access.updateBinary() method.<br/> 4- Delete the applet instance</p>                          | <p>2- No exception is thrown.</p> <p>3- UICCEException. SECURITY_STATUS_NOT_SATISFIED is thrown</p> |                  |

## 5.3.7 Other parts transferred to (U)SAT framework from API

## 5.3.7.1 A handler is a temporary JCRE Entry Point object

Test Area Reference: Ufw\_Api\_Hepo

5.3.7.1.1 Conformance requirement

5.3.7.1.1.1 Normal execution

- CRRN1: The *USATEnvelopeHandler* is a Temporary JCRE Entry Point Object (see Java Card 2.2.1 Runtime Environment (JCRE) Specification [13]).

5.3.7.1.1.2 Parameter errors

No requirements.

5.3.7.1.1.3 Context errors

No requirements.

5.3.7.1.2 Test area files

Test Source: Test\_Ufw\_Api\_Hepo.java

Test Applet: Ufw\_Api\_Hepo\_1.java

Cap File: Ufw\_Api\_Hepo.cap

5.3.7.1.3 Test coverage

| CRR number | Test case number |
|------------|------------------|
| CRRN1      | 1, 2             |

5.3.7.1.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation | APDU Expectation |
|----|--|----------------------------------|------------------|
| 1  | <b>Storage in a static object</b><br>Call <i>USATEnvelopeHandler.getTheHandler()</i> method and store it in a static field of the toolkit applet         | SecurityException is thrown      |                  |
| 2  | <b>Storage in a non-static object</b><br>Call <i>USATEnvelopeHandler.getTheHandler()</i> method and store it in a non-static field of the toolkit applet | SecurityException is thrown      |                  |

## 5.3.8 Framework security management

Security parameters

The table that follows contains the security parameters that shall be used when the TS 31.115[10] security is required in the test cases developed in the current subclause.

| Parameter         | Value in hexadecimal    |
|-------------------|-------------------------|
| KIC               | 11                      |
| KID               | 11                      |
| CNTR              | 00 00 00 00 01          |
| Key for ciphering | 01 41 42 7F DA E8 91 A7 |
| Key for RC/CC/DS  | 01 23 45 67 89 AB CD EF |

If a parameter is not listed explicitly in the above table, the default values of subclause 4.7.3.1 apply.

### 5.3.8.1 Input data

Test Area Reference: ufw\_fws\_inda

#### 5.3.8.1.1 Conformance requirements

##### 5.3.8.1.1.1 Normal execution

- CRRN1: If the USAT Framework receives an envelope APDU containing a Short Message Point to Point formatted according to TS 31.115 [10], it shall verify the security of the SMS TPDU and trigger the applet registered with the corresponding TAR.
- CRRN2: The toolkit applet will only be triggered if the TAR is known and the security verified.
- CRRN3: If the USAT Framework receives an envelope APDU containing a Short message Cell Broadcast formatted according to TS 31.115 [10], it shall verify the security of the cell broadcast page and trigger the applet registered with the corresponding TAR.
- CRRN4: If the USAT Framework receives an Update Record EF<sub>SMS</sub> instruction formatted according to TS 31.115 [10], it shall verify the security of the SMS and trigger the applet registered with the corresponding TAR.
- CRRN5: The USAT Framework shall provide the input data deciphered.

##### 5.3.8.1.1.2 Parameter errors

No requirements.

##### 5.3.8.1.1.3 Context errors

No requirements.

#### 5.3.8.1.2 Test area files

Test source: Test\_ufw\_fws\_inda\_1.java

Test Applet: ufw\_fws\_inda\_1.java

ufw\_fws\_inda\_2.java

ufw\_fws\_inda\_3.java

ufw\_fws\_inda\_4.java

ufw\_fws\_inda\_5.java

ufw\_fws\_inda\_6.java

Cap file: ufw\_fws\_inda.cap

#### 5.3.8.1.3 Test coverage

| CRR Number | Test Case Number |
|------------|------------------|
| CRRN1      | 1, 2, 3          |
| CRRN2      | 3,6,9            |
| CRRN3      | 4, 5, 6          |
| CRRN4      | 7,8,9            |
| CRRN5      | 1,2,4,5,7,8      |

## 5.3.8.1.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation   | APDU Expectation  |
|----|--|--|---|
| 1  | <p><b>Framework checks the Cryptographic checksum and deciphers the data SMS-PP</b></p> <p>Applet1 is loaded and installed</p> <p>1-Envelope(SMS-PP) single and formatted is sent to the USAT Framework with this features:<br/>           Ciphering;<br/>           Cryptographic checksum;<br/>           No proof of receipt;<br/>           TAR of Applet1;<br/>           Data = 01</p> <p>2- Short Message concatenated and formatted is sent to the USAT Framework by an Envelope (SMS PP)with these features:<br/>           Ciphering;<br/>           Cryptographic checksum;<br/>           No proof of receipt;<br/>           TAR of Applet1;<br/>           Data length is 150.</p> | <p>1- Applet1 is triggered and the value integrity is checked.</p> <p>2- Applet1 is triggered and the value integrity is checked</p> | <p>1- The USAT Framework answers to the Envelope with status words 9000</p> <p>2- The USAT Framework answers to the Envelope with status words 9000</p> |

| Id | Description  | API/(U)SAT Framework Expectation  | APDU Expectation  |
|----|--|---|---|
| 2  | <p>Triggering two different applets with different security</p> <p>Applet2 is installed</p> <p>1-Envelope(SMS-PP) single and formatted is sent to the USAT Framework with this features:<br/>Ciphering;<br/>Cryptographic checksum;<br/>No proof of receipt;<br/>TAR of Applet1<br/>Data = 03</p> <p>2- Short Message concatenated and formatted is sent to the USAT Framework by an Envelope (SMS PP)with these features:<br/>Ciphering;<br/>Cryptographic checksum;<br/>No proof of receipt;<br/>TAR of Applet1<br/>Data length = 150</p> <p>3-Envelope(SMS-PP) single and formatted is sent to the USAT Framework with this features:<br/>No ciphering;<br/>No cryptographic checksum;<br/>No proof of receipt;<br/>TAR of Applet2<br/>Data = 05</p> <p>4- Short Message concatenated and formatted is sent to the USAT Framework by an Envelope (SMS PP)with these features:<br/>No ciphering;<br/>No cryptographic checksum;<br/>No proof of receipt;<br/>TAR of Applet2<br/>Data length = 150.</p> | <p>1- Applet1 is triggered and the value integrity is checked</p> <p>2- Applet1 is triggered and the value integrity is checked</p> <p>3- Applet2 is triggered and the value integrity is checked</p> <p>4- Applet2 is triggered and the value integrity is checked</p> | <p>1- The USAT Framework answers to the Envelope with status words 9000</p> <p>2- The USAT Framework answers to the Envelope with status words 9000</p> <p>3- The USAT Framework answers to the Envelope with status words 9000</p> <p>4- The USAT Framework answers to the Envelope with status words 9000</p> |
| 3  | <p><b>Envelope(SMS-PP) formatted with wrong cryptographic checksum</b></p> <p>1-Envelope 03.48 single and formatted is sent to the USAT Framework with this features:<br/>No ciphering;<br/>Wrong cryptographic checksum;<br/>No proof of receipt;<br/>TAR of Applet1<br/>Data = 07</p> <p>2- Short Message concatenated and formatted is sent to the USAT Framework by an Envelope (SMS PP)with these features:<br/>No ciphering;<br/>Wrong cryptographic checksum;<br/>No proof of receipt;<br/>TAR of Applet1<br/>Data length = 150</p>   | <p>1- No applet is triggered.</p> <p>2- No applet is triggered.</p>   | <p>1- The USAT Framework answers to the Envelope with status words 9000</p>   |



| Id | Description  | API/(U)SAT Framework Expectation  | APDU Expectation  |
|----|--|---|---|
| 4  | <p><b>Framework checks the Cryptographic checksum and deciphers the data</b></p> <p>Applet3 is loaded and installed</p> <p>1-Envelope(SMS-CB) formatted is sent to the USAT Framework with this features:<br/>CIPHERING;<br/>Cryptographic checksum;<br/>No proof of receipt;<br/>Data = 01</p>  | <p>1- Applet3 is triggered and the value integrity is checked</p>   | <p>1- The USAT Framework answers to the Envelope with status words 9000</p>   |
| 5  | <p><b>Triggering two different applets with different security on Envelope(SMS-CB) formatted</b></p> <p>Applet4 is installed</p> <p>1-Envelope(SMS-CB) formatted is sent to the USAT Framework with this features:<br/>CIPHERING;<br/>Cryptographic checksum;<br/>No proof of receipt;<br/>TAR of Applet3<br/>Data = 02</p> <p>2-Envelope(SMS-CB) formatted is sent to the USAT Framework with this features:<br/>No ciphering;<br/>No cryptographic checksum;<br/>No proof of receipt;<br/>TAR of Applet4<br/>Data = 03</p> | <p>1- Applet3 is triggered and the value integrity is checked</p> <p>2- Applet4 is triggered and the value integrity is checked</p> | <p>1- The USAT Framework answers to the Envelope with status words 9000</p> <p>2- The USAT Framework answers to the Envelope with status words 9000</p> |
| 6  | <p><b>Envelope(SMS-CB) formatted with wrong cryptographic checksum</b></p> <p>No ciphering;<br/>Wrong Cryptographic checksum;<br/>No proof of receipt;<br/>TAR of Applet3<br/>Data = 04</p>  | <p>No applet is triggered</p>   | <p>1- The USAT Framework answers to the Envelope with status words 9000</p>   |

| Id | Description  | API/(U)SAT Framework Expectation  | APDU Expectation  |
|----|--|---|---|
| 7  | <p><b>Framework checks the Cryptographic checksum and deciphers the data</b></p> <p>Applet5 is installed</p> <p>1- Short Message single and formatted is sent to the USAT Framework by Update Record EF<sub>SMS</sub> instruction with these features:<br/>Cipherring;<br/>Cryptographic checksum;<br/>No proof of receipt;<br/>TAR of Applet5;<br/>Data = 01</p> <p>2- Short Message concatenated and formatted is sent to the USAT Framework by Update Record EF<sub>SMS</sub> instruction with these features:<br/>Cipherring;<br/>Cryptographic checksum;<br/>No proof of receipt;<br/>TAR of Applet5;<br/>Data length = 150.</p>  | <p>1- Applet5 is triggered and the value integrity is checked.</p> <p>2- Applet5 is triggered and the value integrity is checked</p>  | <p>1- The USAT Framework answers to the Update Record EF<sub>SMS</sub> instruction with status words 9000</p> <p>2- The USAT Framework answers to the Update Record EF<sub>SMS</sub> instruction with status words 9000</p>   |
| 8  | <p><b>Triggering two different applets with different security</b></p> <p>Applet6 is installed</p> <p>1- Short Message single and formatted is sent to the USAT Framework by Update Record EF<sub>SMS</sub> instruction with these features:<br/>Cipherring;<br/>Cryptographic checksum;<br/>No proof of receipt;<br/>TAR of Applet5<br/>Data = 03</p> <p>2- Short Message concatenated and formatted is sent to the USAT Framework by Update Record EF<sub>SMS</sub> instruction with these features:<br/>Cipherring;<br/>Cryptographic checksum;<br/>No proof of receipt;<br/>TAR of Applet5<br/>Data length = 150.</p> <p>3- Short Message single and formatted is sent to the USAT Framework by Update Record EF<sub>SMS</sub> instruction with these features:<br/>No cipherring;<br/>No cryptographic checksum;<br/>No proof of receipt;<br/>TAR of Applet6;<br/>Data = 05</p> <p>4- Short Message concatenated and formatted is sent to the USAT Framework by Update Record EF<sub>SMS</sub> instruction with these features:<br/>No cipherring;<br/>No cryptographic checksum;<br/>No proof of receipt;<br/>TAR of Applet6;<br/>Data length = 150.</p> | <p>1- Applet5 is triggered and the value integrity is checked.</p> <p>2- Applet5 is triggered and the value integrity is checked.</p> <p>3- Applet6 is triggered and the value integrity is checked.</p> <p>4- Applet6 is triggered and the value integrity is checked.</p> | <p>1- The USAT Framework answers to the Update Record EF<sub>SMS</sub> instruction with status words 9000</p> <p>2- The USAT Framework answers to the Update Record EF<sub>SMS</sub> instruction with status words 9000</p> <p>3- The USAT Framework answers to the Update Record EF<sub>SMS</sub> instruction with status words 9000</p> <p>4- The USAT Framework answers to the Update Record EF<sub>SMS</sub> instruction with status words 9000</p> |

| Id | Description  | API/(U)SAT Framework Expectation   | APDU Expectation  |
|----|--|--|---|
| 9  | <p><b>Update Record EF<sub>SMS</sub> instruction formatted with wrong cryptographic checksum</b></p> <p>1- Short Message single and formatted is sent to the USAT Framework by Update Record EF<sub>SMS</sub> instruction with these features: No ciphering; Wrong Cryptographic checksum; No proof of receipt; TAR of Applet5<br/>Data = 07</p> <p>2- Short Message concatenated and formatted is sent to the USAT Framework by Update Record EF<sub>SMS</sub> instruction with these features: No ciphering; Wrong Cryptographic checksum; No proof of receipt; TAR of Applet5<br/>Data length = 150</p> | <p>1- No applet is triggered.</p> <p>2- No applet is triggered.</p>  | <p>1- The USAT Framework answers to the Update Record EF<sub>SMS</sub> instruction with status words 9000</p> <p>2- The USAT Framework answers to the Update Record EF<sub>SMS</sub> instruction with status words 9000</p> |
| 10 | <p><b>Framework checks the Cryptographic checksum and deciphers the data USSD</b></p> <p>Applet1 is loaded and installed</p> <p>1-Envelope(USSD) single and formatted is sent to the USAT Framework with this features: Ciphering; Cryptographic checksum; No proof of receipt; TAR of Applet1;<br/>Data = 01</p> <p>2- USSD Message concatenated and formatted is sent to the USAT Framework by an Envelope (USDD)with these features: Ciphering; Cryptographic checksum; No proof of receipt; TAR of Applet1;<br/>Data length is 150.</p>  | <p>1- Applet1 is triggered and the value integrity is checked.</p> <p>2- Applet1 is triggered and the value integrity is checked</p> | <p>1- The USAT Framework answers to the Envelope with status words 9000</p> <p>2- The USAT Framework answers to the Envelope with status words 9000</p>   |
| 11 | <p><b>Triggering two different applets with different security USSD</b></p> <p>Applet2 is installed</p> <p>1-Envelope(USSD) single and formatted is sent to the USAT Framework with this features: Ciphering; Cryptographic checksum; No proof of receipt; TAR of Applet1<br/>Data = 03</p>  | <p>1- Applet1 is triggered and the value integrity is checked</p>  | <p>1- The USAT Framework answers to the Envelope with status words 9000</p>   |

| Id | Description   | API/(U)SAT Framework Expectation  | APDU Expectation  |
|----|---|---|---|
|    | <p>2- Short Message concatenated and formatted is sent to the USAT Framework by an Envelope (USSD)with these features:<br/>CIPHERING;<br/>Cryptographic checksum;<br/>No proof of receipt;<br/>TAR of Applet1<br/>Data length = 150</p> <p>3-Envelope(USSD) single and formatted is sent to the USAT Framework with this features:<br/>No ciphering;<br/>No cryptographic checksum;<br/>No proof of receipt;<br/>TAR of Applet2<br/>Data = 05</p> <p>4- Concatenated and formatted USSD is sent to the USAT Framework by an Envelope (USSD)with these features:<br/>No ciphering;<br/>No cryptographic checksum;<br/>No proof of receipt;<br/>TAR of Applet2<br/>Data length = 150.</p> | <p>2- Applet1 is triggered and the value integrity is checked</p> <p>3- Applet2 is triggered and the value integrity is checked</p> <p>4- Applet2 is triggered and the value integrity is checked</p> | <p>2- The USAT Framework answers to the Envelope with status words 9000</p> <p>3- The USAT Framework answers to the Envelope with status words 9000</p> <p>4- The USAT Framework answers to the Envelope with status words 9000</p> |
| 12 | <p><b>USSD formatted with wrong cryptographic checksum<br/>USSD</b></p> <p>1-Formatted USSD is sent to the USAT Framework with this features:<br/>No ciphering;<br/>Wrong cryptographic checksum;<br/>No proof of receipt;<br/>TAR of Applet1<br/>Data = 07</p> <p>2- USSD concatenated and formatted is sent to the USAT Framework by an Envelope (USSD)with these features:<br/>No ciphering;<br/>Wrong cryptographic checksum;<br/>No proof of receipt;<br/>TAR of Applet1<br/>Data length = 150</p>   | <p>1- No applet is triggered.</p> <p>2- No applet is triggered.</p>   | <p>1- The USAT Framework answers to the Envelope with status words 9000</p>   |
| 13 | <p><b>Framework checks the Cryptographic checksum and deciphers the data<br/>USSD</b></p> <p>Applet3 is loaded and installed</p> <p>1-USSD formatted is sent to the USAT Framework with this features:<br/>CIPHERING;<br/>Cryptographic checksum;<br/>No proof of receipt;<br/>Data = 01</p>  | <p>1- Applet3 is triggered and the value integrity is checked</p>   | <p>1- The USAT Framework answers to the Envelope with status words 9000</p>   |

### 5.3.8.2 Output data

Test Area Reference: ufw\_fws\_ouda

#### 5.3.8.2.1 Conformance requirements

##### 5.3.8.2.1.1 Normal execution

- CRRN1: The USAT Framework Toolkit Framework shall secure and send the response packet.

##### 5.3.8.2.1.2 Parameters errors

No requirements.

##### 5.3.8.2.1.3 Context errors

No requirements.

#### 5.3.8.2.2 Test Area Files

Test source: Test\_Ufw\_Fws\_Ouda\_1.java

Test Applet: Ufw\_Fws\_Ouda\_1.java

Cap file: Ufw\_Fws\_Ouda.cap

#### 5.3.8.2.3 Test coverage

| CRR Number | Test Case Number |
|------------|------------------|
| CRRN1      | 1, 2, 3, 4       |

#### 5.3.8.2.4 Test procedure

| Id | Description  | API/(U)SAT Framework Expectation  | APDU Expectation  |
|----|--|---|---|
| 1  | <b>Envelope(SMS-PP) formatted</b><br>Ciphering;<br>Cryptographic checksum;<br>proof of receipt response shall be sent using SMS-Deliver-Report;<br>no security applied to proof of receipt<br>Data in plain text = "APPLET1" | The applet is triggered and sends a "Display Text" proactive command with the data received in the Envelope.  | The USAT Framework answers to the Envelope with a PoR which is retrieved and checked.<br>The PoR has no application data.<br>The USAT Framework answers with status words 91xx to issue a Display Text "APPLET1". |
| 2  | <b>Envelope(SMS-PP) formatted</b><br>Ciphering;<br>Cryptographic checksum;<br>proof of receipt response shall be sent using SMS-Deliver-Report;<br>no security applied to proof of receipt<br>Data in plain text = "APPLET1" | The applet posts application data. It does not call the ProactiveHandler.send() method  | The USAT Framework answers to the Envelope with a PoR which is retrieved and checked.<br>The PoR has the application data posted by the application.  |
| 3  | <b>Envelope(SMS-PP) formatted</b><br>Ciphering;<br>Cryptographic checksum;<br>proof of receipt response shall be sent using SMS-Deliver-Report;<br>no security applied to proof of receipt<br>Data in plain text = "TEST"    | The applet posts application data and calls the ProactiveHandler.send() method to send a "Display Text" proactive command with the data received in the Envelope. | The USAT Framework answers to the Envelope with a PoR which is retrieved and checked. The PoR has the application data posted by the application.<br>The USAT Framework   |

| Id | Description  | API/(U)SAT Framework Expectation  | APDU Expectation   |
|----|--|---|--|
|    |  |   | answers with status words 91xx to issue the Display Text "TEST".   |
| 4  | <p align="center"><b>Envelope(SMS-PP) formatted</b></p> Ciphering;<br>Cryptographic checksum;<br>proof of receipt response shall be sent using SMS-Deliver-Report;<br>proof of receipt shall be ciphred<br>Data in plain text = "TEST"                                     | The applet posts application data and calls the ProactiveHandler.send() method to send a "Display Text" proactive command with the data received in the Envelope. | The USAT Framework answers to the Envelope with a PoR which is retrieved and checked. The PoR has the application data posted by the application.<br>The USAT Framework answers with status words 91xx to issue the Display Text "TEST". |
| 5  | <p align="center"><b>Envelope(USSD) formatted</b></p> Ciphering;<br>Cryptographic checksum;<br>proof of receipt response shall be sent and no security shall be applied<br><br>Data in plain text = "APPLET1"  | The applet is triggered and sends a "Display Text" proactive command with the data received in the Envelope.  | The USAT Framework answers to the Envelope with a PoR which is retrieved and checked. The PoR has no application data.<br>The USAT Framework answers with status words 91xx to issue a Display Text "APPLET1".                           |
| 6  | <p align="center"><b>Envelope(USSD) formatted</b></p> Ciphering;<br>Cryptographic checksum;<br>proof of receipt response shall be sent using SMS-Deliver-Report;<br>no security applied to proof of receipt<br><p align="center"><b>Data in plain text = "APPLET1"</b></p> | The applet posts application data. It does not call the ProactiveHandler.send() method  | The USAT Framework answers to the Envelope with a PoR which is retrieved and checked. The PoR has the application data posted by the application.  |
| 7  | <p align="center"><b>Envelope(USSD) formatted</b></p> Ciphering;<br>Cryptographic checksum;<br>proof of receipt response shall be sent and no security applied to proof of receipt<br><br>Data in plain text = "TEST"  | The applet posts application data and calls the ProactiveHandler.send() method to send a "Display Text" proactive command with the data received in the Envelope. | The USAT Framework answers to the Envelope with a PoR which is retrieved and checked. The PoR has the application data posted by the application.<br>The USAT Framework answers with status words 91xx to issue the Display Text "TEST". |
| 8  | <p align="center"><b>Envelope(USSD) formatted</b></p> Ciphering;<br>Cryptographic checksum;<br>proof of receipt response shall be sent and it shall be ciphred<br><br>Data in plain text = "TEST"  | The applet posts application data and calls the ProactiveHandler.send() method to send a "Display Text" proactive command with the data received in the Envelope. | The USAT Framework answers to the Envelope with a PoR which is retrieved and checked. The PoR has the application data posted by the application.<br>The USAT Framework answers with status words 91xx to issue the Display Text "TEST". |

## 5.3.9 Concatenated SMS

### 5.3.9.1 Concatenation processing

Test Area Reference: Ufw\_Csm\_Proc

## 5.3.9.1.1 Conformance requirements:

## 5.3.9.1.1.1 Normal execution

- CRRN1: When a Short Message is received as a Concatenated Short Message as defined in TS 23.040 [11], it is the responsibility of the (U)SAT Framework to link single Short Messages to reassemble the original message before any further processing.
- CRRN2: The concatenation control headers, used to reassemble the short messages in the correct order, shall not be present in the SMS TPDU.
- CRRN3: The TP-elements of the SMS TPDU and the Address (TS-Service-Centre-Address) shall correspond to the ones in the last received Short Message (independently of the Sequence number of Information-Element-Data).
- CRRN4: The original Short Message shall be placed in one SMS TPDU TLV (with TP-UDL field coded on one octet) included in the USATEnvelopeHandler.
- CRRN5: The (U)SAT Framework shall be able to process messages with the following properties as a minimum requirement:
  - the Information Element Identifier is equal to the 8-bit reference number
  - it contains uncompressed 8 bit data or uncompressed UCS2 data

## 5.3.9.2 Test area files

Test Source: Test\_Ufw\_Csm\_Proc.java

Test Applet: Ufw\_Csm\_Proc\_1.java

Cap File: ufw\_csm\_proc.cap

## 5.3.9.3 Test coverage

| CRR number | Test case number                                      |
|------------|---|
| N1         | 1,2, 3, 4, , 7, 8, 9,10, , 13, 14, 15, 18, 19, 21, 22 |
| N2         | 5,17  |
| N3         | 8,11, 20, 19  |
| N4         | 5,17  |
| N5         | 12,24   |

## 5.3.9.4 Test procedure

| Id | Description   | API/(U)SAT Framework Expectation | APDU Expectation |
|----|---|----------------------------------|------------------|
|    | <p style="text-align: center;"><b>Applet registration to EVENT_FORMATTED_SMS_PP_ENV and triggering</b></p> <p>Applet is registered to EVENT_FORMATTED_SMS_PP_ENV and EVENT_UNFORMATTED_SMS_PP_ENV events</p> <p>A concatenated formatted SMS_PP is sent to the (U)SIM (composed of three segments).</p> |                                  |                  |
| 1  | The second segment of a concatenated short message is sent to the (U)SIM.   | Applet is not triggered.         |                  |
| 2  | The first segment of the concatenated short message is sent to the (U)SIM.  | Applet is not triggered.         |                  |
| 3  | The third segment of the concatenated short message is sent to the (U)SIM   | Applet is triggered.             |                  |

|    |  |  |  |
|----|--|--|--|
| 4  | Call USATEnvelopeHandlerSystem.getTheHandler().  | No exception is thrown.  |  |
| 5  | Call the USATEnvelopeHandler.findTLV() to select the Dev Id, the address and the TPDU TLV and the USATEnvelopeHandler.compareValue() to check each content.  | Check that the message has been re-assembled in the correct order. Check that TP-UDL field is coded in one octet. Check that the concatenation control header is not present in the message. Check the integrity of the message. |  |
| 6  | A new concatenated formatted short message is sent to the USIM composed of three segments. The Address fields of the first, second and the third segment are different.  | Applet is triggered.   |  |
| 7  | Call USATEnvelopeHandlerSystem.getTheHandler().  | No exception is thrown.  |  |
| 8  | Call USATEnvelopeHandlerSystem.findTLV() to select the address TLV and the USATEnvelopeHandler.compareValue() to check its content.  | Check that the address field of the message is equal to the address field of the third segment.  |  |
| 9  | A new concatenated formatted short message is sent to the (U)SIM composed of three segments. Some TP elements of the TPDU of the first, second and third segment are different among themselves.   | Applet is triggered.   |  |
| 10 | Call USATEnvelopeHandlerSystem.getTheHandler().  | No exception is thrown.  |  |
| 11 | Call USATEnvelopeHandler.findTLV() to select the TP_DU TLV and USATEnvelopeHandler.compareValue() to check its TP elements.  | Check that the TP elements of the message are equal to the ones of the third segment.  |  |
| 12 | Send a concatenated formatted short message (composed of 3 segments) with uncompressed 8 bit data.   | Applet is triggered.   |  |
|    | <p style="text-align: center;"><b>Applet registration to EVENT_UNFORMATTED_SMS_PP_ENV and triggering</b></p> <p>Same test as above but with an unformatted SMS_PP envelope.</p> <p>A concatenated unformatted SMS_PP is sent to the (U)SIM (composed of three segments).</p> |  |  |
| 13 | The second segment of a concatenated short message is sent to the (U)SIM.  | Applet is not triggered.   |  |
| 14 | The first segment of the concatenated short message is sent to the (U)SIM.   | Applet is not triggered.   |  |
| 15 | The third segment of the concatenated short message is sent to the (U)SIM.   | Applet is triggered.   |  |
| 16 | Call USATEnvelopeHanlderSystem.getTheHandler()   | No exception is thrown.  |  |
| 17 | Call USATEnvelopeHandler.findTLV() to select the Dev Id, the address and the TPDU TLV and the USATEnvelopeHandler.compareValue() to check each content.  | Check that the message has been reassembled in the correct order. Check that TP-UDL field is coded one octet. Check that the concatenation control header is not present in the message. Check the integrity of the message.     |  |
| 18 | A new concatenated formatted short message is sent to the (U)SIM composed of three segments. The Address field of the first segment is different from the address field in the second segment.   | Applet is triggered.   |  |
| 19 | Call USATEnvelopeHandlerSystem.getTheHandler().  | No exception is thrown.  |  |
| 20 | Call USATEnvelopeHandler.findTLV() to select the address TLV and the USATEnvelopeHandler.compareValue() to check its content.  | Check that the address field of the message is equal to the address field of the second segment.   |  |



|    |   |   |  |
|----|---|---|--|
| 21 | A new concatenated unformatted short message is sent to the (U)SIM composed of two segments. Some TP elements of the TPDU of the first, second and third segment are different. | Applet is triggered.  |  |
| 22 | Call USATEnvelopeHandlerSystem.getTheHandler()  | No exception is thrown.   |  |
| 23 | Call USATEnvelopeHandler.findTLV() to select the TPDU TLV and the USATEnvelopeHandler.compareValue() to check its TP elements.  | Check that the TP elements of the message are equal to the ones of the third segment. |  |
| 24 | Send a concatenated unformatted short message (composed of 3 segments) with uncompressed UCS2 data.   | Applet is triggered.  |  |

## 5.3.10 Cell Broadcast Service

### 5.3.10.1 Multiple message reassembling

Test Area Reference: Ufw\_Cbs\_Mmra

#### 5.3.10.1.1 Conformance requirements:

##### 5.3.10.1.1.1 Normal execution

- CRRN1: When a Cell Broadcast Message is received as multiple pages as defined in TS 23.041 [6], it is the responsibility of the (U)SAT Framework to link single pages together to re- assemble the original message before any further processing.
- CRRN2: The original Cell Broadcast message shall be placed in one Cell Broadcast page TLV included in the USATEnvelopeHandler.
- CRRN3: The message parameters shall correspond to the ones in the last received Cell Broadcast page (independently of the Page Parameter).

### 5.3.10.2 Test area files

Test Source: Test\_Ufw\_Cbs\_Mmra.java

Test Applet: Ufw\_Cbs\_Mmra\_1.java

Cap File: Ufw\_Cbs\_Mmra.cap

### 5.3.10.3 Test coverage

| CRR number | Test case number |
|------------|------------------|
| N1         | 1 – 10           |
| N2         | 5, 10            |
| N3         | 5, 10            |

#### 5.3.10.4 Test procedure

| Id | Description   | API/(U)SAT Framework Expectation | APDU Expectation |
|----|---|----------------------------------|------------------|
|    | <p><b>Applet registration to EVENT_FORMATTED_SMS_CB and triggering</b></p> <p>Applet is registered to EVENT_FORMATTED_SMS_CB_ENV and EVENT_UNFORMATTED_SMS_CB_ENV events</p> <p>A multi page formatted SMS_CB is sent to the (U)SIM (composed of three segments).</p> |                                  |                  |

|    |  |  |  |
|----|--|--|--|
| 1  | The first segment of a multi page formatted CB short message is sent to the (U)SIM.  | Applet is not triggered.   |  |
| 2  | The second segment of a multi page formatted CB short message is sent to the USIM.   | Applet is not triggered.   |  |
| 3  | The third segment of the multi page formatted CB short message is sent to the USIM.  | Applet is triggered.   |  |
| 4  | Call USATEnvelopeHandlerSystem.getTheHandler().  | No exception is thrown.  |  |
| 5  | Call USATEnvelopeHandler.compareValue() to check message parameter, message integrity and message content.   | The message is re- assembled in the correct order with Message Parameter of the third SMS_CB which was sent at last. |  |
|    | <b>Applet registration to EVENT_UNFORMATTED_SMS_CB and triggering</b><br><br>A multi page unformatted SMS_CB is sent to the (U)SIM (composed of three segments). |  |  |
| 6  | The second segment of a multi page unformatted SMS_CB is sent to the (U)SIM.   | Applet is not triggered.   |  |
| 7  | The third segment of a multi page unformatted SMS_CB is sent to the (U)SIM.  | Applet is not triggered.   |  |
| 8  | The first segment of a concatenated unformatted SMS_CB is sent to the (U)SIM.  | Applet is triggered.   |  |
| 9  | Call USATEnvelopeHandlerSystem.getTheHandler().  | No exception is thrown.  |  |
| 10 | Call USATEnvelopeHandler.compareValue() to check message parameter, message integrity and message content.   | The message is re- assembled in the correct order with Page Parameter of first SMS_CB which was sent at last.        |  |

## 5.3.11 Concatenated USSD

### 5.3.11.1 Concatenation processing

Test Area Reference: Ufw\_Fusd\_Proc

#### 5.3.11.1.1 Conformance requirements:

##### 5.3.11.1.1.1 Normal execution

- CRRN1: When a USSD Message is received as concatenated as defined in TS 31.115 [X], it is the responsibility of the (U)SAT Framework to link single USSD Messages together to re-assemble the original message before any further processing.
- CRRN2: The original USSD message shall be placed in one USSD String TLV included in the USATEnvelopeHandle.
- CRRN3: The USSD String parameters (DCS, PFI, CCF) shall correspond to the ones in the last received USSD String (independently of the CCF Sequence number).
- CRRN4: The (U)SAT Framework shall be able to process messages with the following properties as a minimum requirement:
  - the Information Element Identifier is equal to the 8-bit reference number
  - it contains uncompressed 8 bit data or uncompressed UCS2 data

### 5.3.11.2 Test area files

Test Source: Test\_Ufw\_Fusd\_Proc.java

Test Applet: Ufw Fusd Proc\_1.java

Cap File: ufw fusd proc.cap

### 5.3.11.3 Test coverage

| CRR number | Test case number |
|------------|------------------|
| N1         | 1 to 9,          |
| N2         | 1 to 9           |
| N3         | 6, 10 to 18      |
| N4         | 9,18             |

### 5.3.11.4 Test procedure

| Id | Description   | API/(U)SAT Framework Expectation   | APDU Expectation |
|----|---|--|------------------|
|    | <p><b>Applet registration to EVENT_FORMATTED_USSD and triggering</b></p> <p>Applet is registered to EVENT_FORMATTED_USSD and EVENT_UNFORMATTED_USSD events</p> <p>A concatenated formatted USSD is sent to the (U)SIM (composed of three segments).</p> |  |                  |
| 1  | The second segment of a concatenated USSD is sent to the (U)SIM.  | Applet is not triggered.   |                  |
| 2  | The first segment of the concatenated USSD is sent to the (U)SIM.   | Applet is not triggered.   |                  |
| 3  | The third segment of the concatenated USSD is sent to the (U)SIM  | Applet is triggered.   |                  |
| 4  | Call USATEnvelopeHandlerSystem.getTheHandler().   | No exception is thrown.  |                  |
| 5  | Call the USATEnvelopeHandler.findTLV() to select the Dev Id, the alpha id and the USSD String and the USATEnvelopeHandler.compareValue() to check each content.   | Check that the message has been re-assembled in the correct order. Check that TP-UDL field is coded in one octet. Check that the concatenation control header is not present in the message. Check the integrity of the message. |                  |
| 6  | A new concatenated formatted USSD is sent to the (U)SIM composed of three segments. DCS, PFI, CCF of the of the first, second and third segment are different among themselves.   | Applet is triggered.   |                  |
| 7  | Call USATEnvelopeHandlerSystem.getTheHandler().   | No exception is thrown.  |                  |
| 8  | Call USATEnvelopeHandler.findTLV() to select the TP_DU TLV and USATEnvelopeHandler.compareValue() to check its TP elements.   | Check that the TP elements of the message are equal to the ones of the third segment.  |                  |
| 9  | Send a concatenated USSD (composed of 3 segments) with uncompressed 8 bit data.   | Applet is triggered.   |                  |
|    | <p><b>Applet registration to EVENT_UNFORMATTED_USSD and triggering</b></p> <p>Same test as above but with an unformatted USSD</p> <p>A concatenated unformatted SMS_PP is sent to the (U)SIM (composed of three segments).</p>                          |  |                  |

|    |  |  |  |
|----|--|--|--|
| 10 | The second segment of a concatenated USSD message is sent to the (U)SIM.   | Applet is not triggered.   |  |
| 11 | The first segment of the concatenated USSD message is sent to the (U)SIM.  | Applet is not triggered.   |  |
| 12 | The third segment of the concatenated USSD message is sent to the (U)SIM.  | Applet is triggered.   |  |
| 13 | Call USATEnvelopeHanlderSystem.getTheHandler()   | No exception is thrown.  |  |
| 14 | Call USATEnvelopeHandler.findTLV() to select the Dev Id, USSD String TLV and the USATEnvelopeHandler.compareValue() to check each content.                             | Check that the message has been reassembled in the correct order. Check that TP-UDL field is coded one octet. Check that the concatenation control header is not present in the message. Check the integrity of the message. |  |
| 15 | A new concatenated unformatted USSD is sent to the (U)SIM composed of two segments. Some TP_elements of the TPDU of the first, second and third segment are different. | Applet is triggered.   |  |
| 16 | Call USATEnvelopeHandlerSystem.getTheHandler()   | No exception is thrown.  |  |
| 17 | Call USATEnvelopeHandler.findTLV()to select the TPDU TLV and the USATEnvelopeHandler.compareValue() to check its TP elements.  | Check that the TP elements of the message are equal to the ones of the third segment.  |  |
| 18 | Send a concatenated unformatted USSD (composed of 3 segments) with uncompressed UCS2 data.   | Applet is triggered.   |  |

## Annex A (normative): Class, methods and USATFramework tests acronyms

### A.1 Toolkit part

|                           |     |
|---------------------------|-----|
| USATEnvelopeHandler       | Ueh |
| USATEnvelopeHandlerSystem | Ues |
| ToolkitRegistry           | Tkr |

#### A.1.1 USATEnvelopeHandler interface

| Method name  | Acronyms    |
|--|-------------|
| short getSecuredDataLength()   | Gsdl        |
| short getSecuredDataOffset()   | Gsdo        |
| short getShortMessageLength()  | Gsml        |
| short getShortMessageOffset()  | Gsmo        |
| short getTPUDLOffset()   | Gtpo        |
| short getUserDataLength()  | Gudl        |
| <b>Inherited method name: EnvelopeHandler</b>  |             |
| byte getChannelIdentifier()  | Gcid        |
| short getChannelStatus(byte channelIdentifier)   | Gcst        |
| byte getItemIdentifier()   | Giid        |
| <b>Inherited method name: BERTLVViewHandler</b>  |             |
| short getSize()  | Gtsz        |
| byte getTag()  | Gttg        |
| <b>Inherited method name: ViewHandler</b>  |             |
| byte compareValue(short valueOffset, byte[] compareBuffer, short compareOffset, short compareLength)                                   | Cprv        |
| short copy(byte[] dstBuffer, short dstOffset, short dstLength)   | Copy        |
| short copyValue(short valueOffset, byte[] dstBuffer, short dstOffset, short dstLength)   | Cpyv        |
| byte findAndCompareValue(byte tag, byte[] compareBuffer, short compareOffset)  | Facrb_Bs    |
| byte findAndCompareValue(byte tag, byte occurrence, short valueOffset, byte[] compareBuffer, short compareOffset, short compareLength) | Facrbbs_Bss |
| short findAndCopyValue(byte tag, byte[] dstBuffer, short dstOffset)  | Facyb_Bs    |
| short findAndCopyValue(byte tag, byte occurrence, short valueOffset, byte[] dstBuffer, short dstOffset, short dstLength)               | Facybbs_Bss |
| byte findTLV(byte tag, byte occurrence)  | Find        |
| short getCapacity()  | Gcap        |
| short getLength()  | Glen        |
| byte getValueByte(short valueOffset)   | Gvby        |
| short getValueLength()   | Gvle        |
| short getValueShort(short valueOffset)   | Gvsh        |

#### A.1.2 USATEnvelopeHandlerSystem method

| Method Name                                       | Acronyms |
|---|----------|
| public static USATEnvelopeHandler getTheHandler() | Gthd     |

### A.1.3 ToolkitRegistry methods

| Method Name  | Acronyms |
|--|----------|
| void clearEvent(short event)                                     | Cevt     |
| boolean isEventSet(short event)                                  | Ievs     |
| void setEvent(short event)                                       | Sevt     |
| void setEventList(short[] eventList, short offset, short length) | Sevl     |

---

## A.2 Acronyms for USATFramework tests

|  |     |
|--|-----|
| Minimum handler availability               | Mha |
| Handler integrity                          | Hin |
| Applet triggering                          | Apt |
| Exception handling                         | Exh |
| Envelope response posting                  | Erp |
| Toolkit installation                       | Tin |
| Other parts transferred from API to CAT RE | Api |
| Framework Security                         | Ufs |
| Concatenated SMS                           | Csm |
| Cell Broadcast Service                     | Cbs |

### A.2.1 Minimum handler availability

| Test Area within the chapter                     | Acronyms |
|--|----------|
| ProactiveHandler                                 | Pahd     |
| ProactiveResponseHandler                         | Prhd     |
| EnvelopeHandler                                  | Enhd     |
| EnvelopeResponseHandler                          | Erhd     |
| USATEnvelopeHandler                              | Uehd     |
| Applet triggering with ongoing proactive session | Rent     |

### A.2.2 Handler integrity

| Test Area within the chapter | Acronyms |
|------------------------------|----------|
| ProactiveResponseHandler     | Prhd     |
| EnvelopeHandler              | Enhd     |
| USATEnvelopeHandler          | Uehd     |

### A.2.3 Applet triggering

| Test Area within the chapter | Acronyms |
|------------------------------|----------|
|                              |          |

### A.2.4 Exception handling

| Method Name | Acronyms |
|-------------|----------|
|             |          |

|                                      |      |
|--------------------------------------|------|
| General Behaviour                    | Genb |
| Interaction with Multiple Triggering | Imtg |

## A.2.5 Envelope response posting

| Method Name                           | Acronyms |
|---------------------------------------|----------|
| EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM | Emcn     |

## A.2.6 Toolkit installation

| Method Name                                      | Acronyms |
|--|----------|
| Access Domain                                    | Acdo     |
| Minimum Security Level                           | Mslv     |
| TAR Value(s) of the Toolkit Application instance | Tarv     |

## A.2.7 Other parts transferred from API to CAT RE

| Method Name                                      | Acronyms |
|--|----------|
| A handler is a temporary JCRE Entry Point object | Hepo     |

## A.2.8 Framework security

| Method Name | Acronyms |
|-------------|----------|
| Input Data  | Inda     |
| Output Data | Ouda     |

## A.2.9 Concatenated SMS

| Method Name              | Acronyms |
|--------------------------|----------|
| Concatenation processing | Proc     |

## A.2.10 Cell Broadcast Service

| Method Name                   | Acronyms |
|-------------------------------|----------|
| Multiple message reassembling | Mmra     |

## Annex B (normative): Global prepersonalization

The file system used to pass the test suite is described in ETSI TS 102 268 [15] Annex B, with one exception for file EF<sub>SMS</sub>.

| Name              | Identifier | Description   | Special Notes   |
|-------------------|------------|---|---|
| EF <sub>SMS</sub> | 6F3C       | 1 <sup>st</sup> record: 00 FF ... FF (length 176)<br>2 <sup>nd</sup> record: 00 FF ... FF (length 176)<br>3 <sup>rd</sup> record: 00 FF ... FF (length 176) | The file EF <sub>SMS</sub> should be present under both MF/DF <sub>TELECOM</sub> and directly under ADF1. One of these two EF <sub>SMS</sub> files must be linked to the other one. |

Additionally, the following values must be used:

| Parameter          | Value in hexadecimal    |
|--------------------|-------------------------|
| KIC                | 11                      |
| KID                | 11                      |
| CNTR               | 00 00 00 00 01          |
| Key for cipherring | 01 41 42 7F DA E8 91 A7 |
| Key for RC/CC/DS   | 01 23 45 67 89 AB CD EF |

The value for Application PIN 1(Global PIN 1) shall be "0x31 0x31 0x31 0x31 0xFF 0xFF 0xFF 0xFF" and its state shall be 'disabled' during test applets execution.

The value for Application PIN 1 block shall be "0x33 0x33 0x33 0x33 0x33 0x33 0x33 0x33" and its state shall be 'disabled' during test applets execution.



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## Annex C (normative): Test file description

Every test source is written in JAVA™ and shall use methods defined in Annex D interfaces to communicate with the card, or to check status word or received data.

In order to be more readable, data specified as method string parameters shall be presented in 4 blocks of 4 bytes per line. Every block is separated by a space character. Every string line is appended to previous one and shall be aligned. An example is provided in Annex D.

Every test file shall start with a call to reset() method.

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## Annex D (normative): uicc.usim.test.util package, (U)SIM interfaces and testing script example

See attached files:

- Annex\_D\_UsimTestUtil.zip
- Annex\_D\_UsimInterfaces.zip
- Annex\_D\_Example.zip

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## Annex E (normative): Test Area files

See attached file:

- Annex\_E\_SourceCode.zip

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## Annex F (informative): Change history

| Date    | TSG # | TSG Doc.  | CR  | Rev | Subject/Comment                                     | New        |
|---------|-------|-----------|-----|-----|---|------------|
| 2007-03 | CT-35 | CP-070066 | -   | -   |   | 2.0.0      |
| 2007-03 | CT-35 | CP-070066 | -   | -   |   | 6.0.0      |
| 2007-06 | -     | -         | -   | -   | Update to Rel-7 version (MCC)                       | 7.0.0      |
| 2008-09 | CP-41 | CP-080589 | 002 | -   | Correction and completion of Java™ files in Annex D | 7.1.0      |
| 2009-03 | -     | -         | -   | -   | Update to Rel-8 version (MCC)                       | 8.0.0      |
| 2009-12 | -     | -         | -   | -   | Update to Rel-9 version (MCC)                       | 9.0.0      |
| 2010-03 | CP-47 | CP-100180 | 005 | 1   | References update and cleanup                       | 9.1.0      |
| 2010-03 | CP-47 | CP-100182 | 007 | 1   | Addition of Rel-7 tests                             | 9.1.0      |
| 2011-03 | SP-51 | -         | -   | -   | Update to Rel-10 version (MCC)                      | 10.0.<br>0 |

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# History

| <b>Document history</b> |          |             |
|-------------------------|----------|-------------|
| V10.0.0                 | May 2011 | Publication |
|                         |          |             |
|                         |          |             |
|                         |          |             |
|                         |          |             |