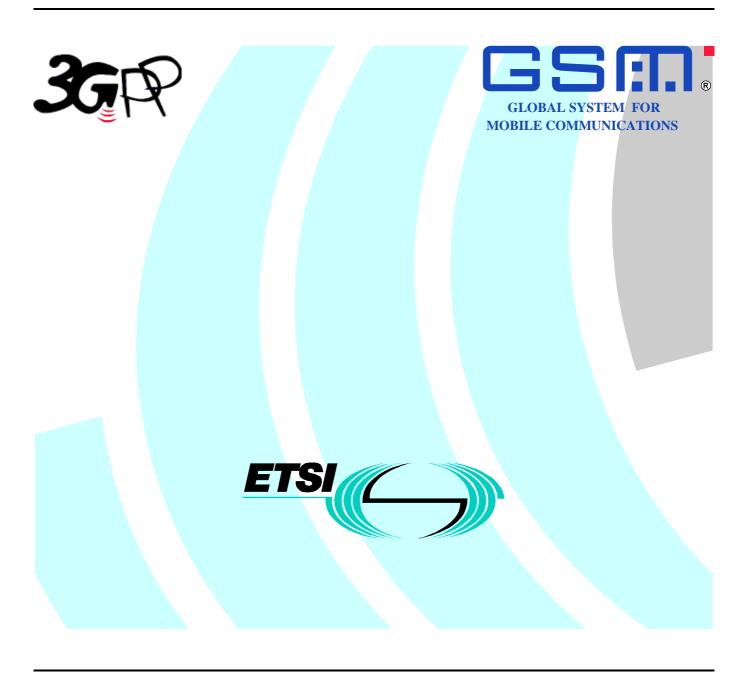
# ETSITS 101 955 V7.0.1 (2001-05)

Technical Specification

Digital cellular telecommunications system (Phase 2+); Test specification for SIM API for Java card (3GPP TS 11.13 version 7.0.1 Release 1998)



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## **Foreword**

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#### where:

- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
  - 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.

## 1 Scope

The present document covers the minimum characteristics considered necessary in order to provide compliance to GSM 03.19 "SIM API for Java Card TM" [7].

The present document describes the technical characteristics and methods of test for testing the SIM API for Java Card (TM) [7] implemented in the subscriber identity modules (SIMs) for GSM. It specifies the following parts:

- test applicability
- test environment description
- tests format
- test area reference
- conformance requirements
- test auite 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]	(void)
[2]	(void)
[3]	GSM 11.11: "Digital cellular telecommunication system (Phase 2+); Specification of the Subscriber Identity Module - Mobile Equipment (SIM - ME) interface".
[4]	GSM 11.14: "Digital cellular telecommunications system (Phase 2+); Specification of the SIM application toolkit for the Subscriber Identity Module – Mobile Equipment (SIM – ME) interface".
[5]	GSM 11.17: "Subscriber Identity Module" (SIM) conformance test specification".
[6]	(void)
[7]	GSM 03.19 version 7.4.0: "Digital cellular telecommunications system (Phase 2+); Subscriber Identity Module Application Programming Interface (SIM API); SIM API for Java Card <sup>TM</sup> ; Stage 2".
[8]	GSM 03.48 version 8.4.0: "Digital cellular telecommunications system (Phase 2+); Security Mechanisms for the SIM application toolkit; Stage 2"

[9]	ISO/IEC 7816-3 (1997) " Identification cards - Integrated circuit(s) cards with contacts, Part 3: Electronic signals and transmission protocols"
[10]	GSM 02.19 "Digital cellular telecommunications system (Phase 2+, Release 98); Subscriber Identity Module Application Programming Interface (SIM API); Service description; Stage 1"
[11]	SUN Java Card Specification "Java Card 2.1 API Specification "
[12]	SUN Java Card Specification "Java Card 2.1 Runtime Environment Specification"
[13]	SUN Java Card Specification "Java Card 2.1 VM Architecture Specification"
[14]	ETSI TS 101 220 v3.0.0 "Numbering System for Telecommunication IC card applications"
[15]	GSM 11.10-1: "Digital cellular telecommunication system (Phase 2+); Mobile Station (MS) conformance specification; Part 1: Conformance specification".

## 3 Definitions and abbreviations

## 3.1 Definitions

The definitions specified in GSM 11.10-1 [15] clause 3.3 shall apply, unless otherwise specified in the present clause.

**Applet:** An Applet is an application built up using a number of classes which will run under the control of the Java Card virtual machine.

**Applet installation parameters:** Default values for applet installation parameters.

Applet loading script: File containing the APDU commands that will load and install the test applet in the card.

CleanUp Script file: File containing the APDU commands that will restore the Default Initial Conditions on the SIM

Conformance Requirement Reference: Description of the expected card behaviour according to 03.19 specification.

**Expected state:** the state in which the 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, framework behaviour,...) of the 03.19 specification.

Test Case: Elementary test that checks for compliance with one or more Conformance Requirement References.

Test Output file: TBD.

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

Test Script file: File containing the APDU commands that will execute and verify the test results.

**Test Toolkit Applet:** Applet designed to test a specific functionality of the SIM API 03.19 specification.

## 3.2 Abbreviations

For the purpose of the present document, the following abbreviations apply, in addition to those listed in GSM 01.04 [2]:

AC Application Code
AID Application Identifier

APDU Application Protocol Data Unit API Application Programming Interface

CAD Card Acceptance Device

FFS	For Further Study
IFD	Interface Device
ICRE	Java CardTM Run 7

JCRE Java Card<sup>TM</sup> Run Time Environment

JVM Java Virtual Machine SIM Subscriber Identity Module

SE Sending Entity

## 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

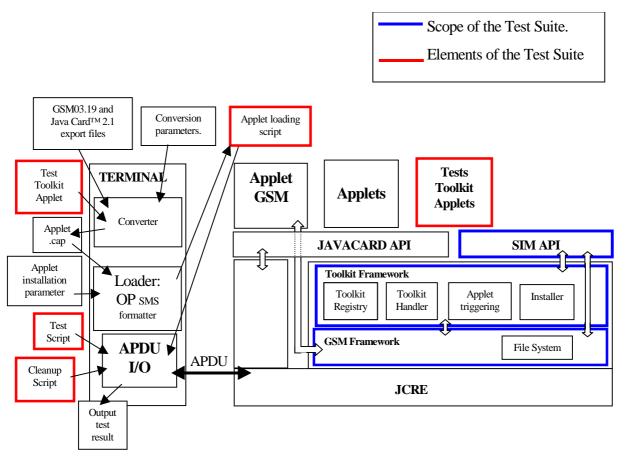
The tests defined in this specification shall be performed taking into account the services supported by the card as specified in the  $EF_{SST}$  file.

This specification contains tests that test interoperability at the API level. This specification does not currently contain tests for interoperability at the SIM API framework and at the byte code level. These are for further study.

The test defined in this specification are applicable to cards implementing TS 03.19 [7] version 7.4.0 unless otherwise stated.

## 4.2 Test environment description

The general architecture for the test environment is:



Note: This diagram shows the test architecture required to test interoperability at both API and bytcode level. The latter is currently not included in the current specification. The diagram is for information.

## 4.3 Tests format

## 4.3.1 Test Area Reference

Each test area is referenced as follows:

```
API Testing:: 'API_[package name]_[classname]_[methodname]' where
package name:
    sim.access package: '1'
    sim.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.

FWK: framework testing
    [TBD]

LDR: loader testing
[TBD]
```

## 4.3.1.1 Conformance requirements

The conformance requirements are expressed in the following way:

- Method prototype as listed in GSM 03.19 [7]specification.
- 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 Script: [Test Area Reference]_[Test script number].scr
    Test Applet: [Test Area Reference]_[Test applet number].java
    Load Script: [Test Area Reference]_[Load Script number].ldr
```

Cleanup Script: [Test Area Reference]\_[Cleanup Script number].clr

The test script, applet, installation parameters, load script, cleanup script and conversion parameters numbers start from '1'.

The test script, load script and cleanup script shall share a common syntax and format (see Annex B).

Scripts file shall be run in the following order:

```
[Test Area Reference]_1.ldr
[Test Area Reference]_1.scr
[Test Area Reference]_1.clr
[Test Area Reference]_2.ldr
[Test Area Reference]_2.scr
[Test Area Reference]_2.clr
....
[Test Area Reference]_n.ldr
[Test Area Reference]_n.scr
[Test Area Reference]_n.scr
```

In case that one of the files is not needed, it shall be skipped during the tests execution.

### 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								
ld	Description	API Expectation	APDU Expectation						
	Test Case detailed description	,	Expected response at APDU level.						

## 4.3.1.4 Test Coverage

The table at the end of 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 SIM prior to the execution of testing. For each test procedure described in this 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 the "Default Prepersonalisation" paragraph;
- 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:

**sim.test.access.[Test Area Reference]:** Java Card packages containing Test Area References for the GSM 03.19 sim.access package.

**sim.test.framework.[Test Area Reference]:** Java Card packages containing Test Area References for the GSM 03.19 framework.

sim.test.util: for the Test util package defined in this Test Suite.

**sim.test.toolkit.[Test Area Reference]:** Java Card packages containing Test Area References for the GSM 03.19[7] sim.toolkit package.

Example:

The package ../sim.test.access.[Test Area Reference] creates the following directory structure ../sim/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 API Test Packages, Applet classes and Applet shall be as specified in TS 101 220 [14]. In addition, the following TAR values are defined for use within the present document:

TAR Coding (3 bytes/ 24 bits):

b1	b2	b3	1	b4	b5	t	06		b2	1	b2	2	b23	3	b24	
																Specific Test Applet Name  Test Package Identifier

Test package Identifier(bits b1-b3):

000 reserved (as TAR= '00.00.00' is reserved for Card Manager)

001 API

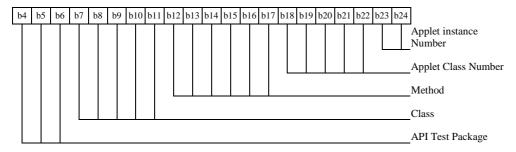
010 Framework

011 Loader

111 sim.test.util

other values are RFU

Specific applet test name (bits b4-b24):



for API test package(3 bits)

001 sim.access

010 sim.toolkit

other are RFU

Class (5 bits): need to be assigned specification order see Annex A for the full list

Method (6 bits): need to be assigned specification order see Annex A for the full list

Applet Class number (5 bits): linked to Test Area, it shall start with 1 for classes and shall be 0 for package.

Applet Instance number (2 bits) defined in the test procedure it shall start with 01 for applet instance and shall be 0 for package and class.

Application Provider specific data (1 byte):

'00' for Package

'01' for Applet class

'02' for Applet Instance

For example, the AID of Package sim.test.util is 'A0 00 00 00 09 00 02 FF FF FF FF 89 E0 00 00 00'

## 4.7 Test Equipment

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

## 4.7.1 APDU tool

This test tool shall meet the following requirements:

- be able to send command to the card TPDU;
- be able to check none, only a part, or all of the data returned;
- be able to check none, only part, or all of the status returned;
- be able to accept all valid status codes returned;
- be able to support Reader commands;
- be able to generate a log file for each test execution.
- if more data is returned than defined in the test specification, the tool shall continue;
- if less data is returned than defined in the test specification, the tool shall aborts and return an error;
- if there is an error in data or status returned, the tool shall abort and return an error.

The log file produced by the test tool shall include the following information:

- all commands issued;
- all data returned;
- all status returned;
- all errors codes;
- expected data and status in case of error;
- comments from the scripts;
- a log message to report success or failure of the test.

## 4.7.2 Util package

Annex D includes java source code for the sim.test.util package as well as loading , testing and cleaning script examples.

## 4.7.3 Applet installation parameters

## 4.7.3.1 Security parameters

Loading scripts shall use the following security parameters as stated in GSM 03.48 [8] for applet installation:

Parameter	Value in hexadecimal
SPI	0A 00
KIC	00
KID	11
TAR	00 00 00
CNTR	00 00 00 00 01
PCNTR	00
Key	01 23 45 67 89 AB CD EF

## 4.7.3.2 Loading components

Cap files in loading scripts shall not include the descriptor component as described in Java Card 2.1 VM Architecture Specification [13].

## 4.8 Testing methodology

## 4.8.1 Test interfaces and facilities

The SIM-ME interface provides the main transport interface for the purpose of performing conformance tests.

The SIM API interface provides the main test interface for the purpose of performing conformance tests.

## 5 Test plan

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

## 6 API Test Plan

## 6.1 Package sim.access:

## 6.1.1 Interface SIMView

Note: The Test applet shall be run on a class that implements this interface.

### 6.1.1.1 Constants

Test Area Reference: API\_1\_SVW\_CONST

## 6.1.1.1.1 Conformance Requirements

This section does not describe the conformance requirements for a method, but rather for the constants of the interface.

### Normal execution

CRRN1: The constants shall have the same name and value that is defined in GSM 03.19 [].

## 6.1.1.1.2 Test Suite Files

Additional requirements for the GSM personalisation: None

Test Script: API\_1\_SVW\_CONST\_1.scr

Test Applet: API\_1\_SVW\_CONST\_1.java

Load Script: API\_1\_SVW\_CONST\_1.ldr

Cleanup Script: API\_1\_SVW\_CONST\_1.clr

### 6.1.1.1.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
01	Check constant FID_MF = '3F00'	•	
02	Check constant FID_DF_TELECOM = '7F10'		
03	Check constant FID_DF_GSM = '7F20'		
04	Check constant FID_DF_DCS_1800 = '7F21'		
05	Check constant FID_DF_IS_41 = '7F22'		
06	Check constant FID_DF_FP_CTS = '7F23'		
07	Check constant FID_DF_GRAPHICS = '5F50'		
08	Check constant FID_DF_IRIDIUM = '5F30'		
09	Check constant FID_DF_GLOBALSTAR = '5F31'		
10	Check constant FID_DF_ICO = '5F32'		
11	Check constant FID_DF_ACES = '5F33'		
12	Check constant FID_DF_PCS_1900 = '5F40'		
13	Check constant FID_DF_CTS = '5F60'		
14	Check constant FID_DF_SOLSA = '5F70'		
15	Check constant FID_EF_ICCID = '2FE2'		
16	Check constant FID_EF_ELP = '2F05'		
17	Check constant FID_EF_ADN = '6F3A'		
18	Check constant FID_EF_FDN = '6F3B'		
19	Check constant FID_EF_SMS = '6F3C'		
20	Check constant FID_EF_CCP = '6F3D'		
21	Check constant FID_EF_MSISDN = '6F40'		
22	Check constant FID_EF_SMSP = '6F42'		
23	Check constant FID_EF_SMSS = '6F43'		
24	Check constant FID_EF_LND = '6F44'		
25	Check constant FID_EF_SDN = '6F49'		
26	Check constant FID_EF_EXT1 = '6F4A'		
27	Check constant FID_EF_EXT2 = '6F4B'		
28	Check constant FID_EF_EXT3 = '6F4C'		
29	Check constant FID_EF_BDN = '6F4D'		
30	Check constant FID_EF_EXT4 = '6F4E'		
31	Check constant FID_EF_SMSR = '6F47'		
32	Check constant FID_EF_IMG = '4F20'		
33	Check constant FID_EF_LP = '6F05'		
34	Check constant FID_EF_IMSI = '6F07'		
35	Check constant FID_EF_KC = '6F20'		
36	Check constant FID_EF_PLMNSEL = '6F30'		
37	Check constant FID_EF_HPLMN = '6F31'		
38	Check constant FID_EF_ACMMAX = '6F37'		
39	Check constant FID_EF_SST = '6F38'		
40	Check constant FID_EF_ACM = '6F39'		
41	Check constant FID_EF_GID1 = '6F3E'		
42	Check constant FID_EF_GID2 = '6F3F'		

ld	Description	API Expectation	APDU Expectation
43	Check constant FID_EF_SPN = '6F46'		
44	Check constant FID_EF_PUCT = '6F41'		
45	Check constant FID_EF_CBMI = '6F45'		
46	Check constant FID_EF_BCCH = '6F74'		
47	Check constant FID_EF_ACC = '6F78'		
48	Check constant FID_EF_FPLMN = '6F7B'		
49	Check constant FID_EF_LOCI = '6F7E'		
50	Check constant FID_EF_AD = '6FAD'		
51	Check constant FID_EF_PHASE = '6FAE'		
52	Check constant FID_EF_VGCS = '6FB1'		
53	Check constant FID_EF_VGCSS = '6FB2'		
54	Check constant FID_EF_VBS = '6FB3'		
55	Check constant FID_EF_VBSS = '6FB4'		
56	Check constant FID_EF_EMLPP = '6FB5'		
57	Check constant FID_EF_AAEM = '6FB6'		
58	Check constant FID_EF_CBMID = '6F48'		
59	Check constant FID_EF_ECC = '6FB7'		
60	Check constant FID_EF_CBMIR = '6F50'		
61	Check constant FID_EF_DCK = '6F2C'		
62	Check constant FID_EF_CNL = '6F32'		
63	Check constant FID_EF_NIA = '6F51'		
64	Check constant FID_EF_KCGPRS = '6F52'		
65	Check constant FID_EF_LOCIGPRS = '6F53'		
66	Check constant FID_EF_SUME = '6F54'		
67	Check constant FID_EF_SAI = '4F30'		
68	Check constant FID_EF_SLL = '4F31'		
69	Check constant REC_ACC_MODE_NEXT = '02'		
70	Check constant REC_ACC_MODE_PREVIOUS = '03'		
71	Check constant REC_ACC_MODE_ABSOLUTE_CURRENT = '04'		
72	Check constant SEEK_FROM_BEGINNING_FORWARD = '00'		
73	Check constant SEEK_FROM_END_BACKWARD = '01'		
74	Check constant SEEK_FROM_NEXT_FORWARD = '02'		
75	Check constant SEEK_FROM_PREVIOUS_BACKWARD = '03'		

## 6.1.1.1.4 Test Coverage

CRR Number	Test Case Number
CRRN1	1-75

## 6.1.1.2 Method select

Test Area Reference: API\_1\_SVW\_ SLCTS\_BSS

## 6.1.1.2.1 Conformance Requirements

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

#### Normal execution

CRRN1: If the desired file is selected, the length of the FCI (File Control Information) which has been written to the array fci is returned.

CRRN2: If the length fciLength is greater than or equal to the length of the FCI structure, the whole FCI structure is copied into the array fci and the length of the FCI which has been written to the array fci is returned.

CRRN3: If the length fciLength is less than the length of the FCI structure, the first part of the FCI structure is copied into the array fci and the length of the FCI which has been written to the array fci is returned.

CRRN4: After selecting a DF/MF no EF is selected.

CRRN5: After selecting a linear fixed EF no record is selected.

CRRN6: After selecting a cyclic EF the first record which is the last updated record is selected.

CRRN7: The current files (file context) of any other applets shall not be changed. See GSM 03.19 [] - §5.2. This will be tested during the testing of the framework.

CRRN8: The information returned by fci shall be formatted as described in GSM 11.11 [], §9.2.1.

CRRN9: The file with a File-ID that matches fid shall be found according to the following selection rules:

- 1) An immediate child EF or DF of the current MF/DF can be selected,
- 2) A sibling DF of the current DF can be selected,
- 3) The current MF/DF it self can be selected,
- 4) The parent MF/DF of the current DF can be selected,
- 5) The MF can always be selected.

#### Parameter errors

CRRP1: If the array fci is null, an instance of NullPointerException shall be thrown.

CRRP2: If fciOffset is less than 0, an instance of ArrayIndexOutOfBoundsException shall be thrown.

CRRP3: If fciLength is less than 0, an instance of ArrayIndexOutOfBoundsException shall be thrown.

CRRP4: If fciOffset plus fciLength is greater than the length of the array fci.length, or fciOffset equals fci.length, an instance of ArrayIndexOutOfBoundsException shall be thrown.

#### Context errors

CRRC1: If the file with a File-ID which matches fid could not be found according to the selection rules listed in CRRN9, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.FILE\_NOT\_FOUND.

CRRC2: If the method call causes a memory problem (e.g. memory access error), an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.MEMORY PROBLEM.

CRRC3: If the method call causes an error to occur that is not expected and thus not handled, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.INTERNAL\_ERROR.

#### 6.1.1.2.2 Test Suite Files

Additional requirements for the GSM personalisation: None

Test Script: API\_1\_SVW\_SLCTS\_BSS\_1.scr

Test Applet: API\_1\_SVW\_SLCTS\_BSS\_1.java

Load Script: API\_1\_SVW\_SLCTS\_BSS\_1.ldr

Cleanup Script: API\_1\_SVW\_SLCTS\_BSS\_1.clr

## 6.1.1.2.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
0	SIM Initialisation	Responses ignored.	<u> </u>
1	Select EFICCID in MF (Transparent EF)	No exception shall be thrown.	
	fid = SIMView.FID_EF_ICCID	Shall return a value not greater	
	<pre>byte[] fci = new byte[34] fciOffset = 0</pre>	than 20.	
	fciLength = 20	<description fci:<="" of="" th=""><th></th></description>	
	select()	XX XX	
		XX XX	
		2F E2	
		04	
		>	
2	Select EF <sub>ICCID</sub> in MF (Transparent EF)	No exception shall be thrown.	
	<pre>fid = SIMView.FID_EF_ICCID fciOffset = 0</pre>	Shall return 13.	
	fciLength = 13	fci shall contain the first 13 bytes of the FCI structure.	
	select()		
3	Select DF <sub>GSM</sub> in MF	No exception shall be thrown.	
	<pre>fid = SIMView.FID_DF_GSM fciOffset = 0</pre>	Shall return 7. fci shall contain the entire FCI	
	fciLength = 7	structure.	
	select()	<pre><description fci:<="" of="" pre=""></description></pre>	
		XX XX	
		XX XX	
		7F 20	
		02	
4	Select EF <sub>ACM</sub> in DF <sub>GSM</sub> (CyclicEF)	> No exception shall be thrown.	
-	fid = SIMView.FID_EF_ACM	Shall return a value between 15	
	fciOffset = 0	and 20. (Cyclic EF)	
	fciLength = 20	fci shall contain the first 15 or more	
	select()	bytes of the FCI structure.	
		fci[14] shall have the value 3	
5	Select MF	(length of record).  No exception shall be thrown.	
5	fid = SIMView.FID_MF	Shall return a value between 22	
	fciOffset = 0	and 34.	
	fciLength = 34	fci shall contain the entire FCI	
	select()	structure.	
6	Select DF <sub>TELECOM</sub> in MF	No exception shall be thrown.	
	<pre>fid = SIMView.FID_DF_TELECOM fci[0] = fci[1] = '05'</pre>	Shall return 20. fci shall contain the first 20 bytes of	
	fciOffset = 2	the FCI structure starting at index	
	fciLength = 20	2. The first two bytes shall (still)	
L	select()	have the value '05'.	
7	Select EF <sub>FDN</sub> in DF <sub>TELECOM</sub> (Linear FixedEF)	No exception shall be thrown.	
	fid = SIMView.FID_EF_FDN	Shall return 15.	
	<pre>fciOffset = 0 fciLength = 15</pre>	fci shall contain the first 15 bytes of	
	select()	the FCI structure. fci[14] shall have the value 28	
		(length of record).	
8	fci is null	Shall throw	
	fid = SIMView.FID_EF_FDN	java.lang.NullPointerException.	
	<pre>byte[] nullBuffer = null fciOffset = 0</pre>		
	fciLength = 15		
	select()		
9	fciOffset < 0	Shall throw	
	<pre>fid = SIMView.FID_EF_FDN fciOffset = -1</pre>	java.lang.ArrayIndexOutOfBoundsE	
	fciLength = 15	xception.	
	select()		
10	fciLength < 0	Shall throw	
	<pre>fid = SIMView.FID_EF_FDN fciOffset = 0</pre>	java.lang.ArrayIndexOutOfBoundsE	
	fciLength = -1	xception.	
	select()		
11	fciOffset + fciLength > fci.length	Shall throw	

ld	Description	API Expectation	APDU Expectation
	fid = SIMView.FID_EF_FDN	java.lang.ArrayIndexOutOfBoundsE	7.1 De Experienci.
	fciOffset = 20	xception.	
	<pre>fciLength = 15 select()</pre>	·	
12	fciOffset >= fci.length	Shall throw	
	fid = SIMView.FID_EF_FDN	java.lang.ArrayIndexOutOfBoundsE	
	fciOffset = 34	xception	
	<pre>fciLength = 1 select()</pre>		
13	Selection possibilities	1 – No exception shall be thrown.	
.0	1 - fid = SIMView.FID_MF	2 – No exception shall be thrown.	
	fciOffset = 0	3 – No exception shall be thrown.	
	fciLength = 15	4 – No exception shall be thrown.	
	<pre>select() 2 - fid = SIMView.FID_DF_TELECOM</pre>	5 - No exception shall be thrown.	
	select()	6 - No exception shall be thrown.	
	3 - fid = SIMView.FID_DF_GRAPHICS	7 – No exception shall be thrown.	
	select()	8 – No exception shall be thrown.	
	4 - fid = SIMView.FID_DF_TELECOM select()	9 – No exception shall be thrown.	
	5 - fid = SIMView.FID_DF_GRAPHICS		
	select()		
	<pre>6 - fid = SIMView.FID_MF select()</pre>		
	7 - fid = SIMView.FID_DF_GSM		
	select()		
	8 - fid = SIMView.FID_DF_TELECOM		
	<pre>select() 9 - fid = SIMView.FID_DF_TELECOM</pre>		
	select()		
	_		
14	EF not selected after MF/DF selection	1 - No exception shall be thrown.	
	<pre>1 - fid = SIMView.FID_MF select()</pre>	2 - Shall throw	
	fid = SIMView.FID_EF_ICCID	sim.access.SIMViewException with	
	select()	reason code NO_EF_SELECTED.	
	2 - fid = SIMView.FID_MF		
	<pre>select() readBinary()</pre>		
15	No selection of non-reachable file	1 – No exception shall be thrown.	
	1 - fid = SIMView.FID_MF	2 – Shall throw	
	select()	sim.access.SIMViewException with	
	<pre>2 - fid = SIMView.FID_EF_ACM select()</pre>	reason code FILE_NOT_FOUND.	
16	No record is selected after selecting linear	1 – No exception shall be thrown.	
	fixed EF	2 - No exception shall be thrown.	
	1 - fid = SIMView.FID_MF	3 - No exception shall be thrown.	
	select() 2 - fid - SIMView FID DE TELECOM	4 – Shall throw	
	<pre>2 - fid = SIMView.FID_DF_TELECOM select()</pre>	sim.access.SIMViewException with	
	3 - fid = SIMView.FID_EF_ADN	reason code	
	select()	RECORD_NUMBER_NOT_AVAIL ABLE.	
	4 - recNumber = 0 mode = REC_ACC_MODE_ABSOLUTE_CURRENT	ADLE.	
	readRecord()		
17	Record pointer in selected cyclic EF	1 - No exception shall be thrown.	
	1 - fid = SIMView.FID_MF	2 - No exception shall be thrown.	
	<pre>select() 2 - fid = SIMView.FID_DF_GSM</pre>	3 - No exception shall be thrown.	
		4 - No exception shall be thrown.	
	3 - fid = SIMView.FID_EF_ACM	5 - The contents of data1 and data2	
	select()	shall be identical.	
	4 - byte[] data1 = { 1,2,3 } mode = REC_ACC_MODE_PREVIOUS		
	updateRecord(data1)		
	5 - fid = SIMView.FID_EF_ACM		
	select()		
	readRecord(data2)		
	compare data1 to data2		

### 6.1.1.2.4 Test Coverage

CRR Number	Test Case Number
N1	1-7
N2	3, 5
N3	1, 2, 4, 6, 7
N4	14
N5	16
N6	17
N8	1, 3
N9	1-7, 13
P1	8
P2	9
P3	10
P4	11, 12
C1	15
C2, C3	Not Tested

### 6.1.1.3 Method select

Test Area Reference: API\_1\_SVW\_SLCTS

#### 6.1.1.3.1 Conformance Requirements

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

#### Normal execution

CRRN1: If the desired file is selected, no exception is thrown.

CRRN2: After selecting a DF/MF no EF is selected.

CRRN3: After selecting a linear fixed EF no record is selected.

CRRN4: After selecting a cyclic EF the first record which is the last updated record is selected.

CRRN5: The current files (file context) of any other applets shall not be changed [03.19 - §5.2]. This will be tested during the testing of the framework.

CRRN6: The file with a File-ID that matches fid shall be found according to the following selection rules:

- 1) An immediate child EF or DF of the current MF/DF can be selected,
- 2) A sibling DF of the current DF can be selected,
- 3) The current MF/DF it self can be selected,
- 4) The parent MF/DF of the current DF can be selected,
- 5) The MF can always be selected.

### Parameter errors

This method has no errors that occur due to parameters.

## Context errors

CRRC1: If the file with a File-ID which matches fid could not be found according to the selection rules listed in CCRN6, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.FILE\_NOT\_FOUND.

CRRC2: If the method call causes a memory problem (e.g. memory access error), an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.MEMORY\_PROBLEM.

CRRC3: If the method call causes an error to occur that is not expected and thus not handled, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.INTERNAL\_ERROR.

6.1.1.3.2 Test Suite Files

Additional requirements for the GSM personalisation: None

Test Script: API\_1\_SVW\_SLCTS\_1.scr

Test Applet: API\_1\_SVW\_SLCTS\_1.java

Load Script: API\_1\_SVW\_SLCTS\_1.ldr

Cleanup Script: API\_1\_SVW\_SLCTS\_1.clr

## 6.1.1.3.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
0	SIM Initialisation	Responses ignored.	•
	O L (FF ' NF (T	N c l III d	
1	Select EF <sub>ICCID</sub> in MF (Transparent EF)	No exception shall be thrown.	
	<pre>fid = SIMView.FID_EF_ICCID select()</pre>		
2	EF not selected after MF/DF selection	1 - No exception shall be thrown.	
	1 - fid = SIMView.FID_MF	2 - Shall throw	
	select()	sim.access.SIMViewException with	
	fid = SIMView.FID_EF_ICCID	reason code NO_EF_SELECTED.	
	select()	reason code NO_E1 _OEEEO1ED.	
	2 - fid = SIMView.FID_MF		
	<pre>select() readBinary()</pre>		
3	No record is selected after selecting linear	1 – No exception shall be thrown.	
3	fixed EF	2 – No exception shall be thrown.	
	1 - fid = SIMView.FID_MF	3 – No exception shall be thrown.	
	select()	4 – Shall throw	
	2 - fid = SIMView.FID_DF_TELECOM	sim.access.SIMViewException with	
	select()	reason code	
	3 - fid = SIMView.FID_EF_ADN	RECORD_NUMBER_NOT_AVAIL	
	<pre>select() 4 - recNumber = 0</pre>	ABLE.	
	4 - recnumber = U mode = REC_ACC_MODE_ABSOLUTE_CURRENT		
	readRecord()		
4	Record pointer in selected cyclic EF	1 - No exception shall be thrown.	
	1 - fid = SIMView.FID_MF	2 - No exception shall be thrown.	
	select()	3 - No exception shall be thrown.	
	2 - fid = SIMView.FID_DF_GSM	4 - No exception shall be thrown.	
	select()	5 - The contents of data1 and data2	
	<pre>3 - fid = SIMView.FID_EF_ACM select()</pre>	shall be identical.	
	4 - byte[] data1 = { 1,2,3 }		
	updateRecord(data1)		
	5 - fid = SIMView.FID_EF_ACM		
	select()		
	readRecord(data2) compare data1 to data2		
5	No Change to File Context		
5	This will be tested during the testing of the		
	framework.		
6	Selection possibilities	1 – No exception shall be thrown.	
	1 - fid = SIMView.FID_MF	2 – No exception shall be thrown.	
	select()	3 – No exception shall be thrown.	
	2 - fid = SIMView.FID_DF_TELECOM	4 – No exception shall be thrown.	
	select()	5 – No exception shall be thrown.	
	3 - fid = SIMView.FID_DF_GRAPHICS	6 – No exception shall be thrown.	
	<pre>select() 4 - fid = SIMView.FID_DF_TELECOM</pre>	7 – No exception shall be thrown.	
	select()	8 – No exception shall be thrown.	
	5 - fid = SIMView.FID_DF_GRAPHICS	9 – No exception shall be thrown.	
	select()		
	6 - fid = SIMView.FID_MF		
	<pre>select() 7 - fid = SIMView.FID_DF_GSM</pre>		
	8 - fid = SIMView.FID_DF_TELECOM		
	select()		
	9 - fid = SIMView.FID_DF_TELECOM		
-	select()	1. No expention shall be there.	
7	No selection of unreachable file	1 – No exception shall be thrown.	
	<pre>1 - fid = SIMView.FID_MF select()</pre>	2 – Shall throw	
	2 - fid = SIMView.FID_EF_ACM	sim.access.SIMViewException with	
L	select()	reason code FILE_NOT_FOUND.	

## 6.1.1.3.4 Test Coverage

CRR Number	Test Case Number
CRRN1	1
CRRN2	2
CRRN3	3
CRRN4	4

CRR Number	Test Case Number	
CRRN6	6	
CRRC1	7	
CRRC2, CRRC3	Not Tested	

### 6.1.1.4 Method status

Test Area Reference: API\_1\_SVW\_STAT\_BSS

#### 6.1.1.4.1 Conformance Requirements

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

#### Normal execution

CRRN1: The FCI (File Control Information) of the current DF (or MF) is returned in the same format as for a SELECT command in case of selecting an MF/DF (described in GSM 03.19 [], §9.2.1).

CRRN2: If the length fciLength is greater than or equal to the length of the FCI structure, the whole FCI structure is copied into the array fci and the length of the FCI which has been written to the array fci is returned.

CRRN3: If the length fciLength is less than the length of the FCI structure, the first part of the FCI structure is copied into the array fci and the length of the FCI which has been written to the array fci is returned.

## Parameter errors

CRRP1: If the array fci is null, an instance of NullPointerException shall be thrown.

CRRP2: If fciOffset is less than 0, an instance of ArrayIndexOutOfBoundsException shall be thrown.

CRRP3: If fciLength is less than 0, an instance of ArrayIndexOutOfBoundsException shall be thrown.

CRRP4: If fciOffset plus fciLength is greater than the length of the array fci.length, or fciOffset equals fci.length, an instance of ArrayIndexOutOfBoundsException shall be thrown.

#### Context errors

CRRC1: If the method call causes a memory problem (e.g. memory access error), an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.MEMORY PROBLEM.

CRRC2: If the method call causes an error to occur that is not expected and thus not handled, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.INTERNAL\_ERROR.

### 6.1.1.4.2 Test Suite Files

Additional requirements for the GSM personalisation:

Test Script: API\_1\_SVW\_STAT\_BSS\_1.scr

Test Applet: API\_1\_SVW\_STAT\_BSS\_1.java

Load Script: API\_1\_SVW\_STAT\_BSS\_1.ldr

Cleanup Script: API\_1\_SVW\_STAT\_BSS\_1.clr

## 6.1.1.4.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
0	SIM Initialisation	Responses ignored.	
1	Status of MF	No exception shall be thrown.	
	byte[] fci = new byte[34]	Shall return 7.	
	fciOffset = 0	fci shall contain the entire FCI	
	<pre>fciLength = 7 status()</pre>	structure.	
	scacus ( )	<description fci:<="" of="" th=""><th></th></description>	
		XX XX	
		XX XX	
		3F 00	
		01	
		>	
2	Status after select EF <sub>ICCID</sub> in MF	1 - No exception shall be thrown.	
	<pre>1 - fid = SIMView.FID_DF_GSM fciOffset = 0</pre>	Shall return a value between 22	
	fciLength = 34	and 34.	
	len = select()	2 - No exception shall be thrown.	
	2 - byte[] fci2 = new byte[34]	Shall return 22 or more.	
		3 - len and len2 shall be identical	
	len2 = status()	4 - fci and fci2 shall be identical	
	3 - Compare len and len2 4 - Compare the len bytes of fci and fci2		
3	Status of DF <sub>Telecom</sub>	1 - No exception shall be thrown.	
3	1 - fid = SIMView.FID_DF_TELECOM	Shall return a value between 22	
	select()	and 34.	
	2 - fciOffset = 0	2 - No exception shall be thrown.	
	fciLength = 100	Shall return a value between 22	
	status()	and34.	
		fci shall contain the entire FCI	
		structure (check that returned value	
		is equal to 13 plus the "length of	
		following data" - fci[12]).FID of the	
		returned fci (fci[4:5]) is	
		FID_DF_TELECOM.	
4	Status DF <sub>TELECOM</sub>	No exception shall be thrown.	
	fciOffset = 0	Shall return 7.	
	fciLength = 7	fci shall contain the first 7 bytes of	
	status()	the FCI structure starting at index	
		0.	
		FID of the returned fci (fci[4:5]) is	
		FID_DF_TELECOM.	
5	fci is null	Shall throw	
	byte[] nullBuffer = null	java.lang.NullPointerException.	
	fciOffset = 0 fciLength = 34		
	status()		
6	fciOffset < 0	Shall throw	
	fciOffset = -1	java.lang.ArrayIndexOutOfBoundsE	
	fciLength = 34	xception.	
-	status()	Ch all the rays	
7	fciOffset = 0	Shall throw	
	fciLength = -1	java.lang.ArrayIndexOutOfBoundsE	
	status()	xception.	
8	fciOffset + fciLength > fci.length	Shall throw	
	fciOffset = 20	java.lang.ArrayIndexOutOfBoundsE	
	fciLength = 15	xception.	
<u> </u>	status()		
9	fciOffset >= fci.length	Shall throw	
	<pre>fciOffset = 34 fciLength = 1</pre>	java.lang.ArrayIndexOutOfBoundsE	
	status()	xception.	

## 6.1.1.4.4 Test Coverage

CRR Number	Test Case Number
CRRN1	1-4
CRRN2	2, 3

CRR Number	Test Case Number
CRRN3	1, 4
CRRP1	5
CRRP2	6
CRRP3	7
CRRP4	8, 9
CRRC1, CRRC2	Not Tested

## 6.1.1.5 Method readBinary

Test Area Reference: API 1 SVW REDBS BSS

#### 6.1.1.5.1 Conformance Requirements

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

#### Normal execution

CRRN1: If data can be accessed at the specified offset, the value respOffset plus respLength are returned and the data bytes of the currently selected transparent file are returned in resp.

#### Parameter errors

- CRRP1: If fileOffset is less than 0, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.OUT\_OF\_FILE\_BOUNDARIES.
- CRRP2: If fileOffset plus respLength exceeds the length of the file, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.OUT\_OF\_FILE\_BOUNDARIES.
- CRRP3: If the array resp is null, an instance of NullPointerException shall be thrown.
- CRRP4: If respOffset is less than 0, an instance of ArrayIndexOutOfBoundsException shall be thrown.
- CRRP5: If respLength is less than 0, an instance of ArrayIndexOutOfBoundsException shall be thrown.
- CRRP6: If respOffset plus respLength is greater than the length of the array resp.length, an instance of ArrayIndexOutOfBoundsException shall be thrown.

#### Context errors

- CRRC1: If the calling applet has currently no EF selected, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.NO\_EF\_SELECTED.
- CRRC2: If the currently selected EF is not transparent, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.FILE\_INCONSISTENT.
- CRRC3: If the calling applet does not fulfil the access condition, READ, to perform this function, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.AC\_NOT\_FULFILLED.
- CRRC4: If the currently selected EF is invalidated and the file status of the EF does not allow for the reading of an invalidated file, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.INVALIDATION STATUS CONTRADICTION.
- CRRC5: If the method call causes a memory problem (e.g. memory access error), an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.MEMORY\_PROBLEM.
- CRRC6: If the method call causes an error to occur that is not expected and thus not handled, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.INTERNAL\_ERROR.

## 6.1.1.5.2 Test Suite Files

Additional requirements for the GSM personalisation: none.

Test Script: API\_1\_SVW\_REDBS\_BSS\_1.scr

Test Applet: API\_1\_SVW\_REDBS\_BSS\_1.java

Load Script: API\_1\_SVW\_REDBS\_BSS\_1.ldr

Cleanup Script: API\_1\_SVW\_REDBS\_BSS\_1.clr

## 6.1.1.5.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
0	SIM Initialisation	Responses ignored	
1	Read from EFICCID in MF (Transparent EF)  1 - fid = SIMView.FID_EF_ICCID select() 2 - fileOffset = 0 byte[] resp = new byte[20] resp[0:19] = '55' respOffset = 10 respLength = 10 readBinary()	1 - No exception shall be thrown. 2 - No exception shall be thrown. Shall return 20. resp shall contain the entire contents of EFICCID starting at index 10. <description 0f="" 55="" ff="" of="" resp:=""></description>	
2	Read from EFICCID in MF resp[0:19] = '55' fileOffset = 5 respOffset = 10 respLength = 5 readBinary()	No exception shall be thrown. Shall return 15. resp shall contain the last 5 bytes of EFICCID starting at index 10. <description 55="" 55<="" ff="" of="" resp:="" th=""><th></th></description>	
3	Offset into File out of bounds fileOffset = -1 respOffset = 0 respLength = 10 readBinary()	Shall throw sim.access.SIMViewException with reason code OUT_OF_FILE_BOUNDARIES.	
4	<pre>fileOffset + respLength &gt; EF length fileOffset = 9 respOffset = 0 respLength = 2 readBinary()</pre>	Shall throw sim.access.SIMViewException with reason code OUT_OF_FILE_BOUNDARIES.	
5	<pre>resp is null byte[] nullBuffer = null fileOffset = 0 respOffset = 0 respLength = 10 readBinary()</pre>	Shall throw java.lang.NullPointerException.	
6	<pre>respOffset &lt; 0 fileOffset = 0 respOffset = -1 respLength = 10 readBinary()</pre>	Shall throw java.lang. ArrayIndexOutOfBoundsException.	
7	<pre>respLength &lt; 0 fileOffset = 0 respOffset = 0 respLength = -1 readBinary()</pre>	Shall throw java.lang. ArrayIndexOutOfBoundsException.	
8	<pre>respOffset + respLength &gt; resp.length fileOffset = 0 respOffset = 10 respLength = 11 readBinary()</pre>	Shall throw java.lang. ArrayIndexOutOfBoundsException.	

ld	Description	API Expectation	APDU Expectation
9	<pre>EF is not Transparent 1 - fid = DFTELECOM select() 2 - fid = EFADN select() 3 - fileOffset = 0 respOffset = 0 respLength = 1 readBinary()</pre>	1 - No exception shall be thrown.     2 - No exception shall be thrown.     3 - Shall throw     sim.access.SIMViewException with reason code     FILE_INCONSISTENT.	
10	Access condition not fulfilled  1 - fid = DFSIMTTEST select() 2 - fid = EFTNR select() 3 - fileOffset = 0 respOffset = 0 respLength = 1 readBinary()	Shall throw sim.access.SIMViewException with reason code AC_NOT_FULFILLED.	
11	EF is invalidated  1 - fid = EFTNU invalidate()  2 - readBinary()  3 - rehabilitate()	1 - No exception shall be thrown.     2 - Shall throw     sim.access.SIMViewException with     reason code     INVALIDATION_STATUS_CONTR     ADICTION.     3 - No exception shall be thrown.	
12	No EF selected  1- fid = SIMView.FID_MF select() 2 readBinary()	No exception shall be thrown.     Shall throw     sim.access.SIMViewException with     reason code NO_EF_SELECTED.	

## 6.1.1.5.4 Test Coverage

CRR Number	Test Case Number	
CRRN1	1-2	
CRRP1	3	
CRRP2	4	
CRRP3	5	
CRRP4	6	
CRRP5	7	
CRRP6	8,	
CRRC1	12	
CRRC2	9	
CRRC3	10	
CRRC4	11	
CRRC5, CRRC6	Not Tested	

## 6.1.1.6 Method updateBinary

Test Area Reference: API\_1\_SVW\_UPDBS\_BSS

## 6.1.1.6.1 Conformance Requirements

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

### Normal execution

CRRN1: The currently selected transparent file is updated starting at fileOffset, with the string of dataLength bytes in the array data starting at dataOffset.

#### Parameter errors

CRRP1: If fileOffset is less than 0, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.OUT\_OF\_FILE\_BOUNDARIES.

CRRP2: If fileOffset plus dataLength exceeds the length of the file, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.OUT\_OF\_FILE\_BOUNDARIES.

CRRP3: If the array data is null, an instance of NullPointerException shall be thrown.

CRRP4: If dataOffset is less than 0, an instance of ArrayIndexOutOfBoundsException shall be thrown.

CRRP5: If dataLength is less than 0, an instance of ArrayIndexOutOfBoundsException shall be thrown.

CRRP6: If dataOffset plus dataLength greater than the length of the array data.length an instance of ArrayIndexOutOfBoundsException shall be thrown.

#### Context errors

CRRC1: If the calling applet has currently no EF selected, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.NO\_EF\_SELECTED.

CRRC2: If the currently selected EF is not transparent, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.FILE\_INCONSISTENT.

CRRC3: If the calling applet does not fulfil the access condition, UPDATE, to perform this function, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.AC NOT FULFILLED.

CRRC4: If the currently selected EF is invalidated and the file status of the EF does not allow for updating of an invalidated file, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.INVALIDATION STATUS CONTRADICTION.

CRRC5: If the method call causes a memory problem (e.g. memory access error), an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.MEMORY\_PROBLEM.

CRRC6: If the method call causes an error to occur that is not expected and thus not handled, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.INTERNAL\_ERROR.

#### 6.1.1.6.2 Test Suite Files

Additional requirements for the GSM personalisation: None

Test Script: API\_1\_SVW\_UPDBS\_BSS\_1.scr

Test Applet: API\_1\_SVW\_UPDBS\_BSS\_1.java

Load Script: API\_1\_SVW\_UPDBS\_BSS\_1.ldr

Cleanup Script: API\_1\_SVW\_UPDBS\_BSS\_1.clr

## 6.1.1.6.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
0	SIM Initialisation	Responses ignored.	
1	No EF selected	Shall throw	
	fileOffset = 0	sim.access.SIMViewException with	
	byte[] data = new byte[20]	reason code NO_EF_SELECTED.	
	data[0] = '55'		
	dataOffset = 0		
	dataLength = 10		
	updateBinary()	4 1 1 1 1	
2	Update Transparent EF	1 – No exception shall be thrown.	
	1 - fid = DFSIMTEST	2 – No exception shall be thrown.	
	select()	3 – No exception shall be thrown.	
	2 - fid = EFTARU select()	4 – No exception shall be thrown.	
	3 - fileOffset = 3	Data in resp[0] shall be '55'.	
	data[0] = '55'		
	dataOffset = 0		
	dataLength = 1		
	updateBinary()		
	4 - fileOffset = 3		
	respOffset = 0		
	respLength = 1		
	readBinary()		
3	1 - fileOffset = 254	1 - No exception shall be thrown.	
	data[0] = '55'	2 - No exception shall be thrown.	
	data[1] = 'AA'	Data in resp shall be	
	<pre>data[2] = '66' dataOffset = 0</pre>	resp[0] = '55'	
	dataOffset = 0 dataLength = 3	resp[1] = 'AA'	
	updateBinary()	resp[2] = '66'	
	2 - fileOffset = 254		
	respOffset = 0		
	respLength = 3		
	readBinary()		
4	Offset into File out of bounds	Shall throw	
	fileOffset = -1	sim.access.SIMViewException with	
	dataOffset = 0	reason code	
	dataLength = 10	OUT_OF_FILE_BOUNDARIES.	
	updateBinary()		
5	fileOffset + dataLength > EF length	Shall throw	
	fileOffset = 259	sim.access.SIMViewException with	
	<pre>dataOffset = 0 dataLength = 2</pre>	reason code	
	updateBinary()	OUT_OF_FILE_BOUNDARIES.	
6	data is null	Shall throw	
0	byte[] nullBuffer = null		
1	fileOffset = 0	java.lang.NullPointerException.	
1	dataOffset = 0		
1	dataLength = 10		
	updateBinary()		
7	dataOffset < 0	Shall throw	
1	fileOffset = 0	java.lang.	
1		ArrayIndexOutOfBoundsException.	
1	dataOffset = -1		
1	dataLength = 10		
_	updateBinary()	Ob all thereses	
8	dataLength < 0	Shall throw	
1	fileOffset = 0	java.lang.	
1	<pre>dataOffset = 0 dataLength = -1</pre>	ArrayIndexOutOfBoundsException.	
1	<pre>updateBinary()</pre>		
9	dataOffset + dataLength > data.length	Shall throw	
9	fileOffset = 0		
1	dataOffset = 10	java.lang.	
1	dataLength = 11	ArrayIndexOutOfBoundsException.	
1	updateBinary()		
	1 - 2 1 /	1	

ld	Description	API Expectation	APDU Expectation
10	<pre>EF is not Transparent 1 - fid = DFTELECOM select() 2 - fid = EFADN select() 3 - fileOffset = 0 data[0] = '55' dataOffset = 0 dataLength = 1 updateBinary()</pre>	No exception shall be thrown.     No exception shall be thrown.     Shall throw sim.access.SIMViewException with reason code  FILE_INCONSISTENT.	
	Access condition not fulfilled  1 - fid = DFSIMTEST select() fid = EFTNU select() 2 - fileOffset = 0 data[0] = '55' dataOffset = 0 dataLength = 1 updateBinary()	No exception shall be thrown.     Shall throw sim.access.SIMViewException with reason code AC_NOT_FULFILLED.	
12	<pre>EF is invalidated 1 - fid = EFTNR invalidate() 2 - fileOffset = 0 data[0] = '55' dataOffset = 0 dataLength = 1 updateBinary() 3 - rehabilitate()</pre>	No exception shall be thrown.     Shall throw     sim.access.SIMViewException with     reason code     INVALIDATION_STATUS_CONTR     ADICTION.     No exception shall be thrown.	

### 6.1.1.6.4 Test Coverage

CRR Number	Test Case Number	
CRRN1	2, 3	
CRRP1	4	
CRRP2	5	
CRRP3	6	
CRRP4	7	
CRRP5	8	
CRRP6	9	
CRRC1	1	
CRRC2	10	
CRRC3	11	
CRRC4	12	
CRRC5, CRRC6	Not Tested	

## 6.1.1.7 Method readRecord

Test Area Reference: API\_1\_SVW\_REDRSBS\_BSS

## 6.1.1.7.1 Conformance Requirements

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

### Normal execution

CRRN1: The data bytes from the record, specified by mode and recNumber of the currently selected linear fixed or cyclic EF, is read at recOffset. A total of respLength bytes of this data is copied to the array resp at respOffset.

CRRN2: If the access mode is REC\_ACC\_MODE\_ABSOLUTE\_CURRENT:

- if recNumber is not 0, the record addressed by recNumber will be read;
- if recNumber is 0 the current selected record will be read; and
- the current record pointer shall not change.

#### CRRN3: If the access mode is REC\_ACC\_MODE\_NEXT:

- the next record relative to the current selected record will be selected and read;
- if no current record is selected, the first record will be selected and read;
- if the current record pointer is set to the last record for a cyclic EF the record pointer is set to the first record and the record is read;
- the current record pointer of any other applet shall not be changed.

#### CRRN4: If the access mode is REC\_ACC\_MODE\_PREVIOUS:

- the previous record relative to the current selected record will be selected and read;
- if no current record is selected, the last record will be selected and read:
- if the current record pointer is set to the first record, for a linear fixed EF the method responses with an error exception and for a cyclic EF the record pointer is set to the last record and the record is read;
- the current record pointer of any other applet shall not be changed.

#### Parameter errors

- CRRP1: If the currently selected EF is linear fixed and the access mode is REC\_ACC\_MODE\_ABSOLUTE\_CURRENT and recNumber is less than 0 or greater than records available, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.RECORD\_NUMBER\_NOT\_AVAILABLE.
- CRRP2: If the currently selected EF is linear fixed and the access mode is REC\_ACC\_MODE\_ABSOLUTE\_CURRENT, recNumber is 0 and there is no current record selected, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.RECORD\_NUMBER\_NOT\_AVAILABLE.
- CRRP3: If the currently selected EF is linear fixed and the access mode is REC\_ACC\_MODE\_NEXT and the current record pointer is set to the last record, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.RECORD\_NUMBER\_NOT\_AVAILABLE.
- CRRP4: If the currently selected EF is linear fixed and the access mode is REC\_ACC\_MODE\_PREVIOUS and the current record pointer is set to the first record, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.RECORD\_NUMBER\_NOT\_AVAILABLE.
- CRRP5: If the specified offset into the selected record recOffset is less than 0, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.OUT\_OF\_RECORD\_BOUNDARIES.
- CRRP6: If recOffset plus respLength is greater than the record length, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.OUT\_OF\_RECORD\_BOUNDARIES.
- CRRP7: If the access mode is not between 2 and 4 inclusive (2 = REC\_ACC\_MODE\_NEXT, etc.), an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.INVALID MODE.
- CRRP8: If the array resp is null, an instance of NullPointerException shall be thrown.
- CRRP9: If respOffset is less than 0, an instance of ArrayIndexOutOfBoundsException shall be thrown.
- CRRP10: If respLength is less than 0, an instance of ArrayIndexOutOfBoundsException shall be thrown.
- CRRP11: If respOffset plus respLength is greater than the length of the array resp.length, or respOffset equals resp.length, an instance of ArrayIndexOutOfBoundsException shall be thrown.

#### Context errors

CRRC1: If the calling applet has currently no EF selected, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.NO\_EF\_SELECTED.

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- CRRC2: If the currently selected EF is neither linear fixed nor cyclic, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.FILE INCONSISTENT.
- CRRC3: If the calling applet does not fulfil the access condition, READ, to perform this function, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.AC\_NOT\_FULFILLED.
- CRRC4: If the currently selected EF is invalidated and the file status of the EF does not allow for reading an invalidated file, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.INVALIDATION STATUS CONTRADICTION.
- CRRC5: If the method call causes a memory problem (e.g. memory access error), an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.MEMORY\_PROBLEM.
- CRRC6: If the method call causes an error to occur that is not expected and thus not handled, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.INTERNAL ERROR.

#### 6.1.1.7.2 Test Suite Files

Additional requirements for the GSM personalisation: None

Test Script: API 1 SVW REDRSBS BSS 1.scr

Test Applet: API\_1\_SVW\_REDRSBS\_BSS\_1.java

Load Script: API\_1\_SVW\_REDRSBS\_BSS\_1.ldr

Cleanup Script: API\_1\_SVW\_REDRSBS\_BSS\_1.clr

#### 6.1.1.7.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
0	SIM Initialisation	Responses ignored.	
1	No EF selected	Shall throw	
	recNumber = 1	sim.access.SIMViewException with	
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT	reason code NO_EF_SELECTED.	
	recOffset = 0		
	<pre>byte[] resp = new byte[20]</pre>		
	respOffset = 0		
	respLength = 10		
	readRecord()		

ld	Description	API Expectation	APDU Expectation
2	Read Absolute and Current from Linear Fixed	1 - No exception shall be thrown.	
	EF	2 - No exception shall be thrown.	
	1 - fid = DFSIMTEST	3 - No exception shall be thrown.	
	select()	resp shall be:	
	2 - fid = EFLARU	resp[0] = '55'	
	select()	resp[1] = '55'	
	// Record pointer not set.		
	3 - recNumber = 0	resp[2] = '55'	
	mode = REC_ACC_MODE_NEXT	resp[3] = '55'	
	recOffset = 0	4 - No exception shall be thrown.	
	respOffset = 0	resp shall be:	
	respLength = 4	resp[0] = 'AA'	
	readRecord()	resp[1] = 'AA'	
	4 - recNumber = 2	resp[2] = 'AA'	
	<pre>mode = REC_ACC_MODE_ABSOLUTE_CURRENT readRecord()</pre>	resp[3] = 'AA'	
	5 - recNumber = 1	5 - No exception shall be thrown.	
	readRecord()	resp shall be:	
	6 - recNumber = 0	resp[0] = '55'	
	resp[0] = resp[1] = resp[2] = resp[3] =	resp[1] = '55'	
	00'		
	readRecord()	resp[2] = '55'	
		resp[3] = '55'	
		6 - No exception shall be thrown.	
		resp shall be:	
		resp[0] = '55'	
		resp[1] = '55'	
		resp[2] = '55'	
		resp[3] = '55'	
3	Read Next from Linear Fixed EF	No exception shall be thrown.	
	recNumber = 0	resp shall be:	
	mode = REC_ACC_MODE_NEXT	resp[0] = 'AA'	
	recOffset = 0	resp[1] = 'AA'	
	respOffset = 0	resp[2] = 'AA'	
	respLength = 4	resp[3] = 'AA'	
	readRecord()	resp[5] = AA	
_	Dood Newt from Linear Fixed FF	Oh - II th	
4	Read Next from Linear Fixed EF	Shall throw	
	recNumber = 0	sim.access.SIMViewException with	
	<pre>mode = REC_ACC_MODE_NEXT recOffset = 0</pre>	reason code	
	respOffset = 0	RECORD_NUMBER_NOT_AVAIL	
	respLength = 4	ABLE.	
	readRecord()		
5	Read Previous from Linear Fixed EF	No exception shall be thrown.	
	recNumber = 0	resp shall be:	
	mode = REC_ACC_MODE_PREVIOUS	resp[0] = '55'	
	recOffset = 0	resp[1] = '55'	
	respOffset = 0	resp[2] = '55'	
1	respLength = 4	resp[3] = '55'	
	readRecord()	  resh[s] = 55	
6	Read Previous from Linear Fixed EF	Shall throw	
U	recNumber = 0		
1	recnumber = 0 mode = REC ACC MODE PREVIOUS	sim.access.SIMViewException with	
	recOffset = 0	reason code	
	respOffset = 0	RECORD_NUMBER_NOT_AVAIL	
	respLength = 4	ABLE.	
1	readRecord()		
		•	

ld	Description	API Expectation	APDU Expectation
7	Read Absolute and Current from Cyclic EF	1 - No exception shall be thrown.	711 DO Expositation
•	1 - fid = EFCARU	2 - No exception shall be thrown.	
	select()	resp shall be:	
	2 - recNumber = 2	resp[0] = ' AA'	
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT	resp[1] = ' AA'	
	recOffset = 0	resp[2] = ' AA'	
	respOffset = 0	3 - No exception shall be thrown.	
	<pre>respLength = 3 readRecord()</pre>	resp shall be:	
	3 - recNumber = 1	resp[0] = '55'	
	readRecord()	resp[1] = '55'	
	4 - recNumber = 0	resp[2] = '55'	
	resp[0] = resp[1] = resp[2] = '00	4 - No exception shall be thrown.	
	readRecord()	resp shall be:	
		resp[0] = '55'	
		resp[1] = '55'	
		resp[2] = '55'	
8	Read Next from Cyclic EF	No exception shall be thrown.	
	recNumber = 0	resp shall be:	
	mode = REC_ACC_MODE_NEXT	resp[0] = 'AA'	
	recOffset = 0	resp[0] = AA resp[1] = 'AA'	
	respOffset = 0	resp[2] = 'AA'	
	respLength = 3	100p[2] - AA	
	readRecord()	No superfice shall d	
9	Read Next from Cyclic EF	No exception shall be thrown.	
	recNumber = 0 mode = REC_ACC_MODE_NEXT	resp shall be:	
	recOffset = 0	resp[0] = '55'	
	respOffset = 0	resp[1] = '55'	
	respLength = 3	resp[2] = '55'	
	readRecord()		
10	Read Previous from Cyclic EF	No exception shall be thrown.	
	recNumber = 0	resp shall be:	
	<pre>mode = REC_ACC_MODE_PREVIOUS recOffset = 0</pre>	resp[0] = 'AA'	
	respOffset = 0	resp[1] = 'AA'	
	respLength = 3	resp[2] = 'AA'	
	readRecord()		
11	Read Previous from Cyclic EF	No exception shall be thrown.	
	recNumber = 0 mode = REC_ACC_MODE_PREVIOUS	resp shall be:	
	recOffset = 0	resp[0] = '55'	
	respOffset = 0	resp[1] = '55'	
	respLength = 3	resp[2] = '55'	
	readRecord()		
12	Read Absolute from Linear Fixed EF beyond	1 – No exceptionshall be thrown.	
	Records	2 - Shall throw	
	1 - fid = EFLARU select()	sim.access.SIMViewException with	
	2 - recNumber = -1	reason code	
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT	RECORD_NUMBER_NOT_AVAIL	
	recOffset = 0	ABLE.	
	respOffset = 0	3 - Shall throw	
	respLength = 4 readRecord()	sim.access.SIMViewException with	
	readRecord() 3 - recNumber = 3	reason code RECORD_NUMBER_NOT_AVAIL	
	readRecord()	ABLE.	
12	No current record in linear fixed EF, read	1 - No exception shall be thrown.	
13	current	2 - Shall throw	
	1 - fid = EFLARU	sim.access.SIMViewException with	
	select() // No curr rec	reason code	
	2 - recNumber = 0 // curr rec	RECORD_NUMBER_NOT_AVAIL	
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT	ABLE.	
	recOffset = 0	/ ULL.	
	respOffset = 0 respLength = 4		
	readRecord()		
		1	

ld	Description	API Expectation	APDU Expectation
14	recOffset < 0	1 - No exception shall be thrown.	
	1 - fid = EFLARU	2 - Shall throw	
	select()	sim.access.SIMViewException with	
	2 - recNumber = 1 // rec 1	reason code	
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT	OUT_OF_RECORD_BOUNDARIE	
	recOffset = -1 respOffset = 0	S	
	respLength = 4		
	readRecord()		
15	recOffset + respLength > Record Length	1 - No exception shall be thrown.	
	1 - fid = EFLARU	2 - Shall throw	
	select()	sim.access.SIMViewException with	
	2 - recNumber = 1	reason code	
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT	OUT_OF_RECORD_BOUNDARIE	
	recOffset = 2	S.	
	respOffset = 0	0.	
	respLength = 4 readRecord()		
16	Reading with invalid mode	1 - No exception shall be thrown.	
10	1 - fid = EFLARU	2 - Shall throw	
	select()	sim.access.SIMViewException with	
	2 - recNumber = 0	reason code INVALID_MODE.	
	mode = 1	3 - Shall throw	
	recOffset = 0	sim.access.SIMViewException with	
	respOffset = 0	•	
	respLength = 4 readRecord()	reason code INVALID_MODE.	
	3 - mode = 5		
	readRecord()		
17	resp is null	Shall throw	
	byte[] nullBuffer = null	java.lang.NullPointerException.	
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT	javanangn tam emter zaceptiem	
	respOffset = 0		
	respLength = 10		
- 10	readRecord()	0. "."	
18	respOffset < 0	Shall throw	
	respOffset = -1	java.lang.	
	respLength = 10	ArrayIndexOutOfBoundsException.	
	readRecord ()		
19	respLength < 0	Shall throw	
_	respOffset = 0	java.lang.	
	respLength = -1	ArrayIndexOutOfBoundsException.	
	readRecord ()		
20	respOffset + respLength > resp.length	Shall throw	
	respOffset = 10	java.lang.	
	respLength = 11	ArrayIndexOutOfBoundsException.	
21	readRecord ()		
41	EE is noithar Cyclic nor Lincar Eivad	1 No exception shall be through	
	EF is neither Cyclic nor Linear Fixed  1 - fid = DESIMTEST	1 - No exception shall be thrown	
	EF is neither Cyclic nor Linear Fixed  1 - fid = DFSIMTEST select()	2 - No exception shall be thrown.	
	1 - fid = DFSIMTEST	<ul><li>2 - No exception shall be thrown.</li><li>3 - Shall throw</li></ul>	
	<pre>1 - fid = DFSIMTEST select() 2 - fid = EFTNU select()</pre>	<ul><li>2 - No exception shall be thrown.</li><li>3 - Shall throw sim.access.SIMViewException with</li></ul>	
	<pre>1 - fid = DFSIMTEST select() 2 - fid = EFTNU select() 3 - respOffset = 0</pre>	2 - No exception shall be thrown. 3 - Shall throw sim.access.SIMViewException with reason code	
	<pre>1 - fid = DFSIMTEST select() 2 - fid = EFTNU select() 3 - respOffset = 0 respLength = 4</pre>	<ul><li>2 - No exception shall be thrown.</li><li>3 - Shall throw sim.access.SIMViewException with</li></ul>	
20	<pre>1 - fid = DFSIMTEST select() 2 - fid = EFTNU select() 3 - respOffset = 0 respLength = 4 readRecord()</pre>	2 - No exception shall be thrown. 3 - Shall throw sim.access.SIMViewException with reason code FILE_INCONSISTENT.	
22	<pre>1 - fid = DFSIMTEST select() 2 - fid = EFTNU select() 3 - respOffset = 0 respLength = 4 readRecord()  Access condition not fulfilled</pre>	2 - No exception shall be thrown.     3 - Shall throw sim.access.SIMViewException with reason code FILE_INCONSISTENT.      1 - No exception shall be thrown.	
22	<pre>1 - fid = DFSIMTEST select() 2 - fid = EFTNU select() 3 - respOffset = 0 respLength = 4 readRecord()</pre>	2 - No exception shall be thrown.     3 - Shall throw sim.access.SIMViewException with reason code FILE_INCONSISTENT.      1 - No exception shall be thrown.     2 - Shall throw	
22	<pre>1 - fid = DFSIMTEST select() 2 - fid = EFTNU select() 3 - respOffset = 0 respLength = 4 readRecord()  Access condition not fulfilled</pre>	2 - No exception shall be thrown.     3 - Shall throw sim.access.SIMViewException with reason code FILE_INCONSISTENT.      1 - No exception shall be thrown.     2 - Shall throw sim.access.SIMViewException with	
22	<pre>1 - fid = DFSIMTEST select() 2 - fid = EFTNU select() 3 - respOffset = 0 respLength = 4 readRecord()</pre>	2 - No exception shall be thrown.     3 - Shall throw sim.access.SIMViewException with reason code FILE_INCONSISTENT.      1 - No exception shall be thrown.     2 - Shall throw sim.access.SIMViewException with reason code	
	<pre>1 - fid = DFSIMTEST select() 2 - fid = EFTNU select() 3 - respOffset = 0 respLength = 4 readRecord()</pre>	2 - No exception shall be thrown. 3 - Shall throw sim.access.SIMViewException with reason code FILE_INCONSISTENT.  1 - No exception shall be thrown. 2 - Shall throw sim.access.SIMViewException with reason code AC_NOT_FULFILLED.	
22	<pre>1 - fid = DFSIMTEST select() 2 - fid = EFTNU select() 3 - respOffset = 0 respLength = 4 readRecord()</pre>	2 - No exception shall be thrown. 3 - Shall throw sim.access.SIMViewException with reason code FILE_INCONSISTENT.  1 - No exception shall be thrown. 2 - Shall throw sim.access.SIMViewException with reason code AC_NOT_FULFILLED.  1 - No exception shall be thrown.	
	<pre>1 - fid = DFSIMTEST select() 2 - fid = EFTNU select() 3 - respOffset = 0 respLength = 4 readRecord()</pre>	2 - No exception shall be thrown. 3 - Shall throw sim.access.SIMViewException with reason code FILE_INCONSISTENT.  1 - No exception shall be thrown. 2 - Shall throw sim.access.SIMViewException with reason code AC_NOT_FULFILLED.  1 - No exception shall be thrown. 2 - Shall throw	
	<pre>1 - fid = DFSIMTEST select() 2 - fid = EFTNU select() 3 - respOffset = 0 respLength = 4 readRecord()</pre>	2 - No exception shall be thrown. 3 - Shall throw sim.access.SIMViewException with reason code FILE_INCONSISTENT.  1 - No exception shall be thrown. 2 - Shall throw sim.access.SIMViewException with reason code AC_NOT_FULFILLED.  1 - No exception shall be thrown. 2 - Shall throw sim.access.SIMViewException with	
	<pre>1 - fid = DFSIMTEST select() 2 - fid = EFTNU select() 3 - respOffset = 0 respLength = 4 readRecord()</pre>	2 - No exception shall be thrown. 3 - Shall throw sim.access.SIMViewException with reason code FILE_INCONSISTENT.  1 - No exception shall be thrown. 2 - Shall throw sim.access.SIMViewException with reason code AC_NOT_FULFILLED.  1 - No exception shall be thrown. 2 - Shall throw sim.access.SIMViewException with reason code	
	<pre>1 - fid = DFSIMTEST select() 2 - fid = EFTNU select() 3 - respOffset = 0 respLength = 4 readRecord()</pre>	2 - No exception shall be thrown. 3 - Shall throw sim.access.SIMViewException with reason code FILE_INCONSISTENT.  1 - No exception shall be thrown. 2 - Shall throw sim.access.SIMViewException with reason code AC_NOT_FULFILLED.  1 - No exception shall be thrown. 2 - Shall throw sim.access.SIMViewException with reason code INVALIDATION_STATUS_CONTR	
	<pre>1 - fid = DFSIMTEST select() 2 - fid = EFTNU select() 3 - respOffset = 0 respLength = 4 readRecord()</pre>	2 - No exception shall be thrown. 3 - Shall throw sim.access.SIMViewException with reason code FILE_INCONSISTENT.  1 - No exception shall be thrown. 2 - Shall throw sim.access.SIMViewException with reason code AC_NOT_FULFILLED.  1 - No exception shall be thrown. 2 - Shall throw sim.access.SIMViewException with reason code	

### 6.1.1.7.4 Test Coverage

CRR Number	Test Case Number
CRRN1	2-5, 7-11
CRRN2	2, 7
CRRN3	3, 8, 9
CRRN4	5, 10, 11
CRRP1	12
CRRP2	13
CRRP3	4
CRRP4	6
CRRP5	14
CRRP6	15
CRRP7	16
CRRP8	17
CRRP9	18
CRRP10	19
CRRP11	20
CRRC1	1
CRRC2	21
CRRC3	22
CRRC4	23
CRRC5, CRRC6	Not Tested

# 6.1.1.8 Method updateRecord

Test Area Reference: API\_1\_SVW\_UPDRSBS\_BSS

### 6.1.1.8.1 Conformance Requirements

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

### Normal execution

CRRN1: dataLength bytes of the record specified by mode and recNumber of the current selected linear fixed or cyclic EF are updated at recOffset, by using the string of bytes in the array data starting at dataOffset.

CRRN2: If the access mode is REC\_ACC\_MODE\_ABSOLUTE\_CURRENT and the file is a linear fixed EF:

- the record addressed by recNumber will be updated;
- if recNumber is 0 the current selected record will be updated; and
- the current record pointer shall not change.

CRRN3: If the access mode is REC\_ACC\_MODE\_NEXT and the file is a linear fixed EF:

- the next record relative to the current selected record will be selected and updated;
- if no current record is selected, the first record will be selected and updated;
- the current record pointer of any other applet shall not be changed.

CRRN4: If the access mode is REC\_ACC\_MODE\_PREVIOUS:

- the previous record relative to the current selected record will be selected and updated;
- if no current record is selected, the last record will be selected and updated;

- if a cyclic EF is updated, the oldest record will be updated independent of the current record pointer and this record becomes record number 1 and the current record;
- the current record pointer of any other applet shall not be changed in case of a linear fixed EF.

#### Parameter errors

- CRRP1: If the currently selected EF is linear fixed and the access mode is REC\_ACC\_MODE\_ABSOLUTE\_CURRENT and recNumber is less than 0 or greater than records available, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.RECORD\_NUMBER\_NOT\_AVAILABLE.
- CRRP2: If the currently selected EF is linear fixed and the access mode is REC\_ACC\_MODE\_ABSOLUTE\_CURRENT, recNumber is 0 and there is no current record selected, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.RECORD\_NUMBER\_NOT\_AVAILABLE.
- CRRP3: If the currently selected EF is linear fixed and the access mode is REC\_ACC\_MODE\_NEXT and the current record pointer is set to the last record, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.RECORD\_NUMBER\_NOT\_AVAILABLE.
- CRRP4: If the currently selected EF is linear fixed and the access mode is REC\_ACC\_MODE\_PREVIOUS and the current record pointer is set to the first record; an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.RECORD\_NUMBER\_NOT\_AVAILABLE.
- CRRP5: If the specified offset into the selected record recOffset is less than 0, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.OUT\_OF\_RECORD\_BOUNDARIES.
- CRRP6: If recOffset plus dataLength is greater than the record lengh, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.OUT\_OF\_RECORD\_BOUNDARIES.
- CRRP7: If the access mode is not between 2 and 4 inclusive (2 = REC\_ACC\_MODE\_NEXT, etc.), an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.INVALID\_MODE.
- CRRP8: If the currently selected EF is cyclic and the mode of record access mode is not REC\_ACC\_MODE\_PREVIOUS, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.INVALID\_MODE.
- CRRP9: If the array data is null, an instance of NullPointerException shall be thrown.
- CRRP10: If dataOffset is less than 0, an instance of ArrayIndexOutOfBoundsException shall be thrown.
- CRRP11: If dataLength is less than 0, an instance of ArrayIndexOutOfBoundsException shall be thrown.
- CRRP12: If dataOffset plus dataLength, is greater than the length of the array data.length, or dataOffset equals data.length, an instance of ArrayIndexOutOfBoundsException shall be thrown.

#### Context errors

- CRRC1: If the calling applet has currently no EF selected, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.NO\_EF\_SELECTED.
- CRRC2: If the currently selected EF is neither linear fixed nor cyclic, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.FILE\_INCONSISTENT.
- CRRC3: If the calling applet does not fulfil the access condition, UPDATE, to perform this function, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.AC\_NOT\_FULFILLED.
- CRRC4: If the currently selected EF is invalidated and the file status of the EF does not allow for updating an invalidated file, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.INVALIDATION\_STATUS\_CONTRADICTION.
- CRRC5: If the method call causes a memory problem (e.g. memory access error), an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.MEMORY PROBLEM.

CRRC6: If the method call causes an error to occur that is not expected and thus not handled, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.INTERNAL\_ERROR.

# 6.1.1.8.2 Test Suite Files

Additional requirements for the GSM personalisation: This test is based on the assumption that the contents of the EFs in  $DF_{SIMTEST}$  are identical to those defined in the default pre-personalisation and the current record pointers have not been altered.

Test Script: API\_1\_SVW\_UPDRSBS\_BSS\_1.scr

Test Applet: API\_1\_SVW\_UPDRSBS\_BSS\_1.java

Load Script: API\_1\_SVW\_UPDRSBS\_BSS\_1.ldr

Cleanup Script: API\_1\_SVW\_UPDRSBS\_BSS\_1.clr

#### 6.1.1.8.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
0	SIM Initialisation	Responses ignored.	•
1	No EF selected	Shall throw	
	recNumber = 1	sim.access.SIMViewException with	
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT	reason code NO_EF_SELECTED.	
	recOffset = 0	Teason code NO_E1 _OEEEOTED.	
	<pre>byte[] data = new byte[20]</pre>		
	dataOffset = 0		
	dataLength = 10		
	updateRecord()		
2	Update Absolute and Current from Linear	<ol> <li>No exception shall be thrown.</li> </ol>	
	Fixed EF	2 - No exception shall be thrown.	
	1 - fid = DFSIMTEST	3 - No exception shall be thrown.	
	select()	resp shall be:	
	2 - fid = EFLARU	resp[0] = '00'	
	select()	resp[1] = '00'	
	// Record pointer not set.	resp[2] = '00'	
	3 - recNumber = 0	resp[3] = '00'	
	<pre>mode = REC_ACC_MODE_NEXT recOffset = 0</pre>	4 - No exception shall be thrown.	
	data[0:3] = '00'	resp shall be:	
	dataOffset = 0	1 -	
	dataLength = 4	resp[0] = '11'	
	updateRecord()	resp[1] = '11'	
	respOffset = 0	resp[2] = '11'	
	respLength = 4	resp[3] = '11'	
	readRecord()	5 - No exception shall be thrown.	
	4 - recNumber = 2	resp shall be:	
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT	resp[0] = '22'	
	data[0:3] = '11'	resp[1] = '22'	
	updateRecord()	resp[2] = '22'	
	readRecord()	resp[3] = '22'	
	5 - recNumber = 0 data[0:3] = '22'	''	
	updateRecord()		
	readRecord()		
3	Update Next from Linear Fixed EF	No exception shall be thrown.	
,	recNumber = 0	resp shall be:	
	mode = REC_ACC_MODE_NEXT	resp[0] = '33'	
	recOffset = 0		
	data[0:3] = '33'	resp[1] = '33'	
	dataOffset = respOffset = 0	resp[2] = '33'	
	dataLength = respLength = 4	resp[3] = '33'	
	updateRecord()		
	readRecord()		
4	Update Next from Linear Fixed EF	Shall throw	
	recNumber = 0	sim.access.SIMViewException with	
	mode = REC_ACC_MODE_NEXT	reason code	
	recOffset = 0	RECORD_NUMBER_NOT_AVAIL	
	data[0:3] = '33'	ABLE.	
	dataOffset = 0		
	<pre>dataLength = 4 updateRecord()</pre>		
5	Update Previous from Linear Fixed EF	No exception shall be thrown.	
၁	Opuale Frevious Holli Lilleal Fixed EF	nio exception shall be thrown.	

ld	Description	API Expectation	APDU Expectation
	recNumber = 0	resp shall be:	
	mode = REC_ACC_MODE_PREVIOUS	resp[0] = '44'	
	recOffset = 0 data[0:3] = '44	resp[1] = '44'	
	dataOffset = respOffset = 0	resp[2] = '44'	
	dataLength = respLength = 4	resp[3] = '44'	
	updateRecord()		
	readRecord()		
6	Update Previous from Linear Fixed EF	Shall throw	
	recNumber = 0	sim.access.SIMViewException with	
	<pre>mode = REC_ACC_MODE_PREVIOUS recOffset = 0</pre>	reason code	
	data[0:3] = '44'	RECORD_NUMBER_NOT_AVAIL	
	dataOffset = respOffset = 0	ABLE.	
	dataLength = respLength = 4		
	updateRecord()		
7	Update Previous from Cyclic EF	1 - No exception shall be thrown.	
	1 - fid = DFSIMTEST	2 - No exception shall be thrown.	
	select() 2 - fid = EFCARU	3 - No exception shall be thrown.	
	select()	4 - No exception shall be thrown.	
	3 - recNumber = 2	5 - No exception shall be thrown.	
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT	resp shall be:	
	recOffset = 0	resp[0] = data[0]	
	readRecord()	resp[1] = data[1]	
	4 - recNumber = 2	resp[2] = data[2]	
	mode = REC_ACC_MODE_PREVIOUS		
	data[0:2] = resp[0:2] ^ 'FF' dataOffset = 0		
	dataLength = 3		
	updateRecord()		
	5 - recNumber = 0		
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT		
	respOffset = 0		
	respLength = 3		
_	readRecord()	4. No exception shall be through	
8	Update Absolute from Linear Fixed EF beyond Records	2 - Shall throw	
	1 - fid = EFLARU		
	select()	sim.access.SIMViewException with	
	2 -recNumber = -1	reason code	
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT	RECORD_NUMBER_NOT_AVAIL ABLE.	
	recOffset = 0	3 - Shall throw	
	dataOffset = 0		
	dataLength = 4	sim.access.SIMViewException with	
	<pre>updateRecord() 2 - recNumber = 3</pre>	reason code	
	updateRecord()	RECORD_NUMBER_NOT_AVAIL   ABLE.	
9	No current record in linear fixed EF, update	1 - No exception shall be thrown.	
9	current	2 - Shall throw	
	1 - fid = EFLARU	sim.access.SIMViewException with	
	select() // No curr rec	reason code	
	2 - recNumber = 0 // curr rec	RECORD_NUMBER_NOT_AVAIL	
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT	ABLE.	
	recOffset = 0	<del></del>	
	dataOffset = 0 dataLength = 4		
	updateRecord()		
10	recOffset < 0	1 - No exception shall be thrown.	
	1 - fid = EFLARU	2 - Shall throw	
	select()	sim.access.SIMViewException with	
	2 - recNumber = 1 // rec 1	reason code	
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT	OUT_OF_RECORD_BOUNDARIE	
	recOffset = -1 dataOffset = 0	S.	
	dataOffset = 0 dataLength = 4		
	updateRecord()		
11	recOffset + dataLength > Record Length	1 - No exception shall be thrown.	
	1 - fid = EFLARU	2 - Shall throw	
	select()	sim.access.SIMViewException with	
	2 - recNumber = 1	reason code	
	<pre>mode = REC_ACC_MODE_ABSOLUTE_CURRENT recOffset = 2</pre>	OUT_OF_RECORD_BOUNDARIE	
	dataOffset = 0	S	
	dataLength = 4		
		i	

updateRecord()	
12 Updating with invalid mode 1 - No exception shall be th	rown.
1 - fid = EFLARU 2 - Shall throw	
select() 2 - recNumber = 0 sim.access.SIMViewExcept	
reason code INVALID_MOD	JE.
recOffset = 0 dataOffset = 0 sim.access.SIMViewExcept	tion with
dataLength = 4 reason code INVALID_MOD	DE.
<pre>updateRecord() 3 - mode = 5</pre>	
updateRecord()	
13 Updating Cyclic EF with invalid mode 1 - fid = DFSIMTEST 1 - No exception shall be the cycle of the cycle	
1 - fid = DFSIMTEST 2 - No exception shall be th select() 3 - Shall throw	nown.
2 - fid = EFCARU sim.access.SIMViewExcept select()	tion with
3 - recNumber = 0   reason code INVALID_MOL	DE.
mode = REC_ACC_MODE_NEXT 4 - Shall throw sim.access.SIMViewExcept	tion with
recOffset = 0   SIM.access.SIMViewExcept   data[0:2] = '00'   reason code INVALID_MOI	
dataOffset = 0 5 - Shall throw	
dataLength = 3 sim.access.SIMViewExcept	
4 - recNumber = 0	JE.
<pre>mode = REC_ACC_MODE_ABSOLUTE_CURRENT updateRecord()</pre>	
5 - recNumber = 2	
<pre>mode = REC_ACC_MODE_ABSOLUTE_CURRENT updateRecord()</pre>	
14 data is null Shall throw	
byte[] nullBuffer = null java.lang.NullPointerExcept	tion.
dataOffset = 0 dataLength = 10	
updateRecord()	
15 dataOffset < 0 Shall throw java.lang.	
dataLength = 10 ArrayIndexOutOfBoundsEx	ception.
updateRecord()  16	
dataOffset = 0 java.lang.	
dataLength = -1	ception.
17 dataOffset + dataLength > data.length Shall throw	
dataOffset = 10 java.lang.	
dataLength = 11	ception.
18 EF is neither Cyclic nor Linear Fixed 1 - No exception shall be the	
1 - fid = DFSIMTEST 2 - No exception shall be th	rown.
2 - fid = EFTNR sim.access.SIMViewExcept	tion with
select() 3 - dataOffset = 0  reason code	
dataLength = 4 FILE_INCONSISTENT.	
updateRecord()  19 Access condition not fulfilled 1 - No exception shall be th	irown
1 - fid = EFCNU 2 - Shall throw	
select() sim.access.SIMViewExcept	tion with
2 - updateRecord() 3 - fid = EFLNU reason code	
select() 4 - regnumber = 1  AC_NOT_FULFILLED. 3 - No exception shall be th	rown.
4 - recNumber = 1   3 - No exception shall be the mode = REC_ACC_MODE_ABSOLUTE_CURRENT   4 - Shall throw	
recOffset = 0 sim.access.SIMViewExcept	tion with
dataOffset = 0 reason code dataLength = 4 AC_NOT_FULFILLED.	
updateRecord()	
20 EF is invalidated 1 - No exception shall be th 1 - fid = EFCNR 2 - Shall throw	irown.
invalidate() sim.access.SIMViewExcept	tion with
2 - updateRecord() reason code	
INVALIDATION_STATUS_0	CONTR
ADICTION. 3 - No exception shall be th	rown.

### 6.1.1.8.4 Test Coverage

CRR Number	Test Case Number	
CRRN1	2, 3, 5, 7	
CRRN2	2,	
CRRN3	3, 4	
CRRN4	5, 6, 7	
CRRP1	8	
CRRP2	9	
CRRP3	4	
CRRP4	6	
CRRP5	10	
CRRP6	11	
CRRP7	12	
CRRP8	13	
CRRP9	14	
CRRP10	15	
CRRP11	16	
CRRP12	17	
CRRC1	1	
CRRC2	18	
CRRC3	19	
CRRC4	20	
CRRC5, CRRC6	Not Tested	

### 6.1.1.9 Method seek

Test Area Reference: API\_1\_SVW\_SEEKB\_BSS

# 6.1.1.9.1 Conformance Requirements

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

#### Normal execution

CRRN1: If the pattern in patt with the length pattLength at offset pattOffset is found in the record being specified by mode, the current record pointer is set to that record and the record number is returned. The record pointer of any other applet is not changed. This will be tested during the testing of the framework.

CRRN2: If mode is SEEK\_FROM\_BEGINNING\_FORWARD, the search starts with the first record forward towards the end of the file.

CRRN3: If mode is SEEK\_FROM\_END\_BACKWARD, the search starts with the last record backward towards the beginning of the file.

CRRN4: If mode is SEEK\_FROM\_NEXT\_FORWARD, the search starts from the next record after the current record pointer forward towards the end of file. If no current record pointer is selected, the search starts with the first record.

CRRN5: If mode is SEEK\_FROM\_PREVIOUS\_BACKWARD, the search starts from the previous record before the current record pointer backward towards the beginning of the file. If no current record pointer is selected the search starts with the last record.

CRRN6: If pattern in patt is not found, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.PATTERN\_NOT\_FOUND.

CRRN7: If mode is SEEK\_FROM\_NEXT\_FORWARD and the record pointer is at the last record, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.PATTERN\_NOT\_FOUND.

CRRN8: If mode is SEEK\_FROM\_PREVIOUS\_BACKWARD and the record pointer is at the first record, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.PATTERN\_NOT\_FOUND.

#### Parameter errors

CRRP1: If mode is not between 0 and 3 inclusive (0 = SEEK\_FROM\_BEGINNING\_FORWARD, etc.), an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.INVALID\_MODE.

CRRP2: If the pattern array patt is null, an instance of NullPointerException shall be thrown.

CRRP3: If pattOffset is less than 0, an instance of ArrayIndexOutOfBoundsException shall be thrown.

CRRP4: If pattLength is less than 0, an instance of ArrayIndexOutOfBoundsException shall be thrown.

CRRP5: If pattLength is greater than the size of the record of the currently selected EF, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.OUT\_OF\_RECORD\_BOUNDARIES.

CRRP6: If pattOffset plus pattLength is greater than the length of the pattern array patt.length, an instance of ArrayIndexOutOfBoundsException shall be thrown.

### Context errors

CRRC1: If the calling applet has currently no EF selected, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.NO EF SELECTED.

CRRC2: If the currently selected EF is not linear fixed, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.FILE\_INCONSISTENT.

CRRC3: If the calling applet does not fulfil the access condition, READ, to perform this function, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.AC\_NOT\_FULFILLED.

CRRC4: If the currently selected EF is invalidated and the file status of the EF does not allow for reading an invalidated file, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.INVALIDATION\_STATUS\_CONTRADICTION.

CRRC5: If the method call causes a memory problem (e.g. memory access error), an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.MEMORY\_PROBLEM.

CRRC6: If the method call causes an error to occur that is not expected and thus not handled, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.INTERNAL\_ERROR.

# 6.1.1.9.2 Test Suite Files

Additional requirements for the GSM personalisation: None

Test Script: API\_1\_SVW\_SEEKB\_BSS\_1.scr

Test Applet: API\_1\_SVW\_SEEKB\_BSS\_1.java

Load Script: API\_1\_SVW\_SEEKB\_BSS\_1.ldr

Cleanup Script: API\_1\_SVW\_SEEKB\_BSS\_1.ldr

#### 6.1.1.9.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
0	SIM Initialisation	Responses ignored.	
	No EF selected  Byte[] patt = new byte[20]  pattOffset = 0  pattLength = 10  mode = SEEK_FROM_BEGINNING_FORWARD  seek()	Shall throw sim.access.SIMViewException with reason code NO_EF_SELECTED.	
2	Pattern not Found	1 - No exception shall be thrown.	

ld	Description	API Expectation	APDU Expectation
Iu	1 - fid = DFSIMTEST		AF DO EXPECTATION
	-	2 - No exception shall be thrown.	
	2 - fid = EFLARU	3 - Shall throw	
	select()	sim.access.SIMViewException with	
	3 - patt[0] = 'DA'	reason code	
	pattOffset = 0	PATTERN_NOT_FOUND.	
	pattLength = 1		
	mode = SEEK_FROM_BEGINNING_FORWARD		
	seek()		
3	Seek without affecting another record pointer		
	This will be tested during the testing of		
	the framework.		
4	Seek from Beginning Forward	No exception shall be thrown. Shall	
	patt[0:2] = '55'	return 1	
	pattOffset = 0		
	pattLength = 3		
	mode = SEEK_FROM_BEGINNING_FORWARD		
	seek()		
5	Seek from End Backward	No exception shall be thrown. Shall	
	patt[0:2] = '55'	return 1	
	pattOffset = 0		
	pattLength = 3		
	mode = SEEK_FROM_END_BACKWARD		
	seek()	N	
6	Seek from Next Forward	No exception shall be thrown. Shall	
	patt[0:2] = 'AA'	return 2	
	pattOffset = 0		
	<pre>pattLength = 3 mode = SEEK_FROM_NEXT_FORWARD</pre>		
	seek()		
7	Last Record, Seek from Next Forward	Shall throw	
'	mode = SEEK_FROM_NEXT_FORWARD	sim.access.SIMViewException with	
	seek()		
		reason code	
0	Cook from Drovious Destructed	PATTERN_NOT_FOUND.	
8	Seek from Previous Backward	No exception shall be thrown. Shall	
	<pre>patt[0:2] = '55' pattOffset = 0</pre>	return 1	
	<pre>pattOffset = 0 pattLength = 3</pre>		
	mode = SEEK_FROM_PREVIOUS_BACKWARD		
	seek()		
9	First Record, Seek from Previous Backward	Shall throw	
	SEEK_FROM_PREVIOUS_BACKWARD	sim.access.SIMViewException with	
	seek()	reason code	
		PATTERN_NOT_FOUND.	
10	Pattern not Found (out of reach)		
10	patt[0:2] = '55'	Shall throw	
	pattOffset = 0	sim.access.SIMViewException with	
	pattLength = 3	reason code	
	mode = SEEK_FROM_NEXT_FORWARD	PATTERN_NOT_FOUND.	
	seek()		
11	Invalid mode	1 - Shall throw	
1	1 - mode = 4	sim.access.SIMViewException with	
	seek()	reason code INVALID_MODE	
	2 - mode = -1	2 - Shall throw	
	seek()	sim.access.SIMViewException with	
		reason code INVALID_MODE	
12	patt is null	Shall throw	
12	patt is null  byte[] nullBuffer = null		
	mode = SEEK_FROM_BEGINNING_FORWARD	java.lang.NullPointerException.	
	seek ()		
13	pattOffset < 0	Shall throw	
.0	patt[0:2] = '55'	java.lang.	
	pattOffset = -1	ArrayIndexOutOfBoundsException	
	pattLength = 3	/ maymus/OutorboundsException	
	mode = SEEK_FROM_BEGINNING_FORWARD		
L	seek()		
14	pattLength < 0	Shall throw	
	patt[0:2] = '55'	java.lang.	
	pattOffset = 0	ArrayIndexOutOfBoundsException	
	pattLength = -1		
	mode = SEEK_FROM_BEGINNING_FORWARD		
4-	seek()	Oh all the save	
15	pattLength > size of record	Shall throw	

ld	Description	API Expectation	APDU Expectation
	<pre>patt[0:3] = '55' pattOffset = 0 pattLength = 4 mode = SEEK_FROM_BEGINNING_FORWARD seek()</pre>	sim.access.SIMViewException with reason code OUT_OF_RECORD_BOUNDARIE S	
16	<pre>pattOffset + pattLength &gt; patt.length patt[0:2] = '55' pattOffset = 1 pattLength = 3 mode = SEEK_FROM_BEGINNING_FORWARD seek()</pre>	Shall throw java.lang. ArrayIndexOutOfBoundsException	
17	EF is not Linear Fixed  1 - fid = EFTNU select() 2 - pattOffset = 0 pattLength = 3 mode = SEEK_FROM_BEGINNING_FORWARD seek() 3 - fid = EFCNU select() seek()  Access condition not fulfilled  1 - fid = EFLNR select() 2 - patt[0] = '55' pattOffset = 0 pattLength = 1 mode = SEEK_FROM_BEGINNING_FORWARD seek()	1 - No exception shall be thrown.     2 - Shall throw     sim.access.SIMViewException with     reason code     FILE_INCONSISTENT     3 - Shall throw     sim.access.SIMViewException with     reason code     FILE_INCONSISTENT     1 - No exception shall be thrown.     2 - Shall throw     sim.access.SIMViewException with     reason code     AC_NOT_FULFILLED.	
19	EF is invalidated  1 - fid = EFLARU select() 2 - invalidate() 3 - patt[0] = '55 pattOffset = 0 pattLength = 1 mode = SEEK_FROM_BEGINNING_FORWARD seek() 4 - rehabilitate()	No exception shall be thrown.     No exception shall be thrown.     Shall throw     sim.access.SIMViewException with reason code     INVALIDATION_STATUS_CONTR ADICTION.     No exception shall be thrown.	

# 6.1.1.9.4 Test Coverage

CRR Number	Test Case Number
CRRN1	2, 4 - 7, 8
CRRN2	4
CRRN3	5
CRRN4	6
CRRN5	8
CRRN6	2, 7, 9, 10
CRRN7	7
CRRN8	9
CRRP1	11
CRRP2	12
CRRP3	13
CRRP4	14
CRRP5	15
CRRP6	16
CRRC1	1
CRRC2	17
CRRC3	18
CRRC4	19
CRRC5, CRRC6	Not Tested

# 6.1.1.10 Method increase

Test Area Reference: API\_1\_SVW\_INCR\_BS\_BS

# 6.1.1.10.1 Conformance Requirements

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

#### Normal execution

CRRN1: The value in the array incr is added to the value of the last increased / updated record in the currently selected cyclic EF. The result is stored in the oldest record and returned in the array resp. The updated record becomes record number 1 and is selected as current record. The number of bytes of valid data in resp is returned.

#### Parameter errors

CRRP1: If the array incr is null, an instance of NullPointerException shall be thrown.

CRRP2: If incrOffset is less than 0, an instance of ArrayIndexOutOfBoundsException shall be thrown.

CRRP3: If incrOffset plus the value 3, is greater than the length of the array incr.length, an instance of ArrayIndexOutOfBoundsException shall be thrown.

CRRP4: If the result of the addition is greater than the maximum value of the record (represented by all bytes set to 'FF'), an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.MAX\_VALUE\_REACHED.

CRRP5: If the array resp is null, an instance of NullPointerException shall be thrown.

CRRP6: If respOffset is less than 0, an instance of ArrayIndexOutOfBoundsException shall be thrown.

CRRP7: If the remaining length of the array resp at the offset respOffset is less than the length of the record, an instance of ArrayIndexOutOfBoundsException shall be thrown.

#### Context errors

CRRC1: If the calling applet has currently no EF selected, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.NO\_EF\_SELECTED.

CRRC2: If the currently selected EF is not cyclic, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.FILE\_INCONSISTENT.

CRRC3: If increase is not allowed as indicated by the FCI byte 8 (GSM 11.11: FCI structure of an EF returned by the SELECT command), an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.FILE\_INCONSISTENT.

CRRC4: If the calling applet does not fulfil the access condition, INCREASE, to perform this function, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.AC\_NOT\_FULFILLED.

CRRC5: If the currently selected EF is invalidated, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.INVALIDATION\_STATUS\_CONTRADICTION.

CRRC6: If the method call causes a memory problem (e.g. memory access error), an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.MEMORY\_PROBLEM.

CRRC7: If the method call causes an error to occur that is not expected and thus not handled, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.INTERNAL\_ERROR.

#### 6.1.1.10.2 Test Suite Files

Additional requirements for the GSM personalisation: None

Test Script: API\_1\_SVW\_INCR\_BS\_BS\_1.scr
Test Applet: API\_1\_SVW\_INCR\_BS\_BS\_1.java

Load Script: API\_1\_SVW\_INCR\_BS\_BS\_1.ldr

Cleanup Script: API\_1\_SVW\_INCR\_BS\_BS\_1.clr

# 6.1.1.10.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
0	SIM Initialisation	Responses ignored.	AI DO EXPONICION
1	No EF selected	Shall throw	
'	byte[] incr = new byte[4]	sim.access.SIMViewException with	
	byte[] resp = new byte[4]	reason code NO_EF_SELECTED.	
	incrOffset = 0	reason code NO_EF_SELECTED.	
	respOffset = 0		
	increase()		
2	Increase Cyclic EF	1 - No exception shall be thrown.	
	1 - fid = DFSIMTEST	2 - No exception shall be thrown.	
	select()	3 - No exception shall be thrown.	
	2 - fid = EFCARU	4 - No exception shall be thrown.	
	select()	resp[] shall contain {0,0,1,0}.	
	3 - //Set both records to 00 00 00	(e,e,:,e):	
	mode = REC_ACC_MODE_PREVIOUS		
	<pre>data[0:3] = 0 dataOffset = 0</pre>		
	dataLength = 3		
	updateRecord()		
	updateRecord()		
	4 - incrOffset = 0		
	incr[2] = 1		
	respOffset = 0		
<u></u>	increase()		
3	1 - incrOffset = 1	1 - No exception shall be thrown.	
	incr[2] = 0, incr[3] = 2	resp[] shall contain {0,0,0,3}.	
	respOffset = 1	2 - No exception shall be thrown.	
	increase()	resp[] shall contain {0,0,3,0}.	
	[2 - resp[3] = 0	(0,0,0,0,0	
	recNumber = 0		
	<pre>mode = REC_ACC_MODE_ABSOLUTE_CURRENT recOffset = 0</pre>		
	respOffset = 0		
	respLength = 0		
	readRecord()		
4	incr is null	Shall throw	
	<pre>byte[] nullBuffer = null</pre>	java.lang.NullPointerException.	
	incrOffset = 0	January ground and a second and a	
	respOffset = 0		
	increase()		
5	incrOffset < 0	Shall throw	
	incrOffset = -1	java.lang.	
	respOffset = 0	ArrayIndexOutOfBoundsException.	
	increase()	OL III II	
6	incrOffset + 3 > incr.length	Shall throw	
	incrOffset = 2	java.lang.	
	<pre>respOffset = 0 increase()</pre>	ArrayIndexOutOfBoundsException.	
7	Reach Maximum Value	Shall throw	
'	incr[0] = incr[1] = incr[2] = 'FF'	sim.access.SIMViewException with	
	<pre>incr(0) = Incr(1) = Incr(2) = FF incr(0) = 0</pre>	I - I	
	respOffset = 0	reason code	
	increase()	MAX_VALUE_REACHED.	
8	resp is null	Shall throw	
1	incr[0] = incr[1] = 0x00'	java.lang.NullPointerException.	
	incr[2] = '02'	,	
	incrOffset = 0		
	<pre>byte[] respNull = null</pre>		
	respOffset = 0		
<u>_</u>	increase()	St. II d	
9	respOffset < 0	Shall throw	
	incrOffset = 0	java.lang.	
	respOffset = -1	ArrayIndexOutOfBoundsException.	
40	increase()	Chall throw	
10	respOffset + recordLength > resp.length	Shall throw	
	<pre>incrOffset = 0 respOffset = 2</pre>	java.lang.	
	<pre>increase()</pre>	ArrayIndexOutOfBoundsException.	
	LITTEL CUBE ( )		

ld	Description	API Expectation	APDU Expectation
11	EF is not Cyclic	1 - No exception shall be thrown.	
	1 - fid = EFTARU	2 - Shall throw	
	select()	sim.access.SIMViewException with	
	2 - incrOffset = 0	reason code	
	respOffset = 0 increase()	FILE_INCONSISTENT.	
	3 - fid = EFLARU	3 - No exception shall be thrown.	
	select()	4 - Shall throw	
	4 - incrOffset = 0	sim.access.SIMViewException with	
	respOffset = 0	reason code	
	increase()	FILE_INCONSISTENT.	
12	Access condition not fulfilled	1 - No exception shall be thrown.	
	1 - fid = EFCNIC	2 - Shall throw	
	select()	sim.access.SIMViewException with	
	2 - incrOffset = 0	reason code	
	<pre>respOffset = 0 increase()</pre>	AC_NOT_FULFILLED.	
13	EF is invalidated	1 - No exception shall be thrown.	
13	1 - fid = EFCARU	2 - No exception shall be thrown.	
	select()	3 - Shall throw	
	2 - invalidate()	sim.access.SIMViewException with	
	3 - incrOffset = 0	reason code	
	respOffset = 0	INVALIDATION STATUS CONTR	
	increase()	ADICTION.	
	4 - rehabilitate()	4 - No exception shall be thrown.	

# 6.1.1.10.4 Test Coverage

CRR Number	Test Case Number
CRRN1	2, 3
CRRP1	4
CRRP2	5
CRRP3	6
CRRP4	7
CRRP5	8
CRRP6	9
CRRP7	10
CRRC1	1
CRRC2	11
CRRC3	Cannot be tested in an Implementation independent way
CRRC4	12
CRRC5	13
CRRC6, CRRC7	Not Tested

# 6.1.1.11 Method invalidate

Test Area Reference: API\_1\_SVW\_INVL

# 6.1.1.11.1 Conformance Requirements

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

# Normal execution

CRRN1: The currently selected EF of the calling applet shall be invalidated, i.e. the flag in the EF file status shall be changed accordingly.

# Parameter errors

This method has no parameters.

#### Context errors

CRRC1: If the calling applet has currently no EF selected, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.NO\_EF\_SELECTED.

CRRC2: If the calling applet does not fulfil the access condition, INVALIDATE, to perform this function, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.AC\_NOT\_FULFILLED.

CRRC3: If the currently selected EF is already invalidated, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.INVALIDATION\_STATUS\_CONTRADICTION.

CRRC4: If the method call causes a memory problem (e.g. memory access error), an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.MEMORY PROBLEM.

CRRC5: If the method call causes an error to occur that is not expected and thus not handled, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.INTERNAL\_ERROR.

#### 6.1.1.11.2 Test Suite Files

Additional requirements for the GSM personalisation: None

Test Script: API\_1\_SVW\_INVL\_1.scr

Test Applet: API\_1\_SVW\_INVL\_1.java

Load Script: API\_1\_SVW\_INVL\_1.ldr

Cleanup Script: API\_1\_SVW\_INVL\_1.clr

#### 6.1.1.11.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
0	SIM Initialisation	Responses ignored.	
1	No EF is selected	1 - Shall throw	
	1 - invalidate()	sim.access.SIMViewException with	
		reason code NO_EF_SELECTED.	
2	Invalidate EF	1 - No exception shall be thrown.	
	1 - fid = DFSIMTEST	2 - No exception shall be thrown.	
	select()	3 - No exception shall be thrown.	
	2 - fid = EFTNR	4 - No exception shall be thrown.	
	select()	'	
	3 - invalidate()		
_	4 - rehabilitate()	4 81 6 1 111 11	
3	Access condition not fulfilled	1 - No exception shall be thrown.	
	1 - fid = EFCNIV	2 - Shall throw	
	select()	sim.access.SIMViewException with	
	2 - invalidate()	reason code	
		AC_NOT_FULFILLED.	
4	EF is already invalidated	1 - No exception shall be thrown.	
	1 - fid = EFTNR	2 - No exception shall be thrown.	
	select()	3 - Shall throw	
	2 - invalidate()	sim.access.SIMViewException with	
	3 - invalidate()	reason code	
		INVALIDATION_STATUS_CONTR	
		ADICTION.	

#### 6.1.1.11.4 Test Coverage

CRR number	Test Case Number
CRRN1	2
CRRC1	1
CRRC2	3
CRRC3	4
CRRC4, CRRC5	Not Tested

### 6.1.1.12 Method rehabilitate

Test Area Reference: API\_1\_SVW\_REHA

### 6.1.1.12.1 Conformance Requirements

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

#### Normal execution

CRRN1: The currently selected EF of the calling applet shall be rehabilitated, i.e. the flag in the EF file status shall be changed accordingly.

#### Parameter errors

This method has no parameters.

#### Context errors

CRRC1: If the calling applet has currently no EF selected, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.NO\_EF\_SELECTED.

CRRC2: If the calling applet does not fulfil the access condition, REHABILITATE, to perform this function, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.AC\_NOT\_FULFILLED.

CRRC3: If the currently selected EF is not invalidated, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.INVALIDATION\_STATUS\_CONTRADICTION.

(Explanation for removal) CRRC4: If the method call causes a memory problem (e.g. memory access error), an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.MEMORY\_PROBLEM.

CRRC5: If the method call causes an error to occur that is not expected and thus not handled, an instance of SIMViewException shall be thrown. The reason code shall be SIMViewException.INTERNAL ERROR.

### 6.1.1.12.2 Test Suite Files

Additional requirements for the GSM personalisation: None

Test Script: API\_1\_SVW\_REHA\_1.scr

Test Applet: API\_1\_SVW\_REHA\_1.java

Load Script: API\_1\_SVW\_REHA\_1.ldr

Cleanup Script: API\_1\_SVW\_REHA\_1.clr

#### 6.1.1.12.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
0	SIM Initialisation	Responses ignored.	
1	No EF is selected	1 - Shall throw	
	1 - rehabilitate()	sim.access.SIMViewException with	
		reason code NO_EF_SELECTED.	
2	Rehabilitate invalidated File	1 - No exception shall be thrown.	
	1 - fid = DFSIMTEST	2 - No exception shall be thrown.	
	select()	3 - No exception shall be thrown.	
	2 - fid = EFCNR	4 - No exception shall be thrown.	
	select()	5 - No exception shall be thrown.	
	3 - invalidate()	·	
	4 - rehabilitate()	Shall return 1.	

ld	Description	API Expectation	APDU Expectation
	<pre>5 - byte[] incr = new byte[1] = 1 incrOffset = 0 byte[] resp = new byte[1] = 1 respOffset = 0 increase()</pre>		·
3	Access condition not fulfilled  1 - fid = EFCNRH select() 2 - rehabilitate()	No exception shall be thrown.     Shall throw     sim.access.SIMViewException with     reason code     AC_NOT_FULFILLED	
4	Rehabilitate validated File  1 - fid = EFCNR select() 2 - rehabilitate()	1 - No exception shall be thrown. 2 - Shall throw sim.access.SIMViewException with reason code INVALIDATION_STATUS_CONTR ADICTION.	

### 6.1.1.12.4 Test Coverage

CRR number	Test Case Number
CRRN1	2
CRRC1	1
CRRC2	3
CRRC3	4
CRRC5, CRRC6	Not Tested

# 6.1.2 Class SIMSystem

# 6.1.2.1 Method getTheSIMView

Test Area Reference: API\_1\_SSY\_GETS

# 6.1.2.1.1 Conformance Requirement:

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

public static SIMView getTheSIMView()

# Normal execution

CRRN1: returns a reference to class which implements the SIMView interface

### Parameters error

No requirements

### Context errors

No requirements

# 6.1.2.1.2 Test suite files

No additional requirements for the GSM personalisation:

Test Script: API\_1\_SSY\_GETS\_1.scr

Test Applet: API\_1\_SSY\_GETS\_1.java

Installation parameter: API\_1\_SSY\_GETS.install (Same as default applet)

Load Script: API\_1\_SSY\_GETS.ldr

#### 6.1.2.1.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
1	reference not equal null after execute	The returned reference shall be not null after execute	
2	reference to the GSM interface	Returned a reference to the GSM interface	

### 6.1.2.1.4 Test Coverage

CRR number	Test case number
N1	1,2

# 6.1.3 Class SIMViewException

# 6.1.3.1 Method throwIt

Test Area Reference: API\_1\_SVE\_THITS

# 6.1.3.1.1 Conformance Requirement:

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

#### Normal execution

CRRN1: Throws the JCRE instance of SIMViewException with the specified reason

CRRN2: extends Java card.framework.CardRuntimeException

#### Parameters error

No requirements

### Context errors

No requirements

#### 6.1.3.1.2 Test suite files

No additional requirements for the GSM personalisation

Test Script: API\_1\_SVE\_THITS\_1.scr

Test Applet: API\_1\_SVE\_THITS\_1 .java

 $In stall at ion parameter: \qquad API\_1\_SVE\_THITS. in stall \ (Same \ as \ default \ applet \ )$ 

Load Script: API\_1\_SVE\_THITS.ldr

### 6.1.3.1.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
1	Throws the JCRE instance of	Reason (specified)	
	SIMViewException with the specified reason		
2	SIMViewException extends	Reason (specified)	
	javacard.framework.CardRuntimeException		
	•		

# 6.1.3.1.4 Test Coverage

CRR number	Test case number
N1	1
N2	2

# 6.1.3.2 Constructor

Test Area Reference: API\_1\_SVE\_COORS

### 6.1.3.2.1 Conformance Requirement:

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

#### Normal execution

CRRN1: Construct a SIMViewException with the specified reason

#### Parameters error

No requirements

# Context errors

No requirements

#### 6.1.3.2.2 Test suite files

No additional requirements for the GSM personalisation

Test Script: API\_1\_SVE\_COORS\_1.scr

Test Applet: API\_1\_SVE\_COORS\_1.java

Installation parameter: API\_1\_SVE\_COORS.install (Same as default applet )

Load Script: API\_1\_SVE\_COORS.ldr

# 6.1.3.2.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
1	SIMViewException with the specified reason	Reason (specified)	
	(The reason shall set with setReason and		
	compare the Exception with getReason)		
			ļ

# 6.1.3.2.4 Test Coverage

CRR number	Test case number
N1	1

# 6.1.3.3 Reason Codes

Test Area Reference: API\_1\_SVE\_CONS

# 6.1.3.3.1 Conformance Requirement:

There is no API, only constants. This constants shall compliant to its definition in the API.

### Normal execution

CRRN1: The Constants of the class SIMViewException shall all have the same name and value defined in the GSM03.19

CRRN2: Constructs SIMViewException a Exception with the specified reason

#### Parameters error

None

### Context errors

None

#### 6.1.3.3.2 Test suite files

Additional requirements for the GSM personalisation: None

Test Script: API\_1\_SVE\_CONS\_1.scr

Test Applet: API\_1\_SVE\_CONS\_1.java

Installation parameter: API\_1\_SVE\_CONS.install

Same as default applet

Load Script: API\_1\_SVE\_CONS.ldr

# 6.1.3.3.3 Test Procedure

ld	Description
01	Check constant NO_EF_SELECTED = 1;
02	Check constant FILE_INCONSISTENT = 2
03	Check constant AC_NOT_FULFILLED = 3
04	Check constant FILE_NOT_FOUND = 4
05	Check constant INTERNAL_ERROR = 5
06	Check constant INVALIDATION_STATUS_CONTRADICTION = 6
07	Check constant OUT_OF_FILE_BOUNDARIES = 7
08	Check constant OUT_OF_RECORD_BOUNDARIES = 8
09	Check constant RECORD_NUMBER_NOT_AVAILABLE = 9
10	Check constant INVALID_MODE = 10
11	Check constant PATTERN_NOT_FOUND = 11
12	Check constant MAX_VALUE_REACHED = 12
13	Check constant MEMORY_PROBLEM = 13

# 6.1.3.3.4 Test Coverage

CRR number	Test case number
N1	1-13
N2	1-13

# 6.2 Package sim.toolkit

# 6.2.1 Interface ToolkitConstants

### 6.2.1.1 Constants

Test Area Reference: API\_2\_TKC\_CONS

### 6.2.1.1.1 Conformance Requirement:

There is no API, only constants. This constants shall be compare to its definition in the API.

### Normal execution

CRRN1: The Toolkit Constants shall all have the same name and value defined in the GSM03.19 normalization.

### Parameters error

None

#### Context errors

None

#### 6.2.1.1.2 Test suite files

No additional requirements for the GSM personalisation.

Test Script: API\_2\_TKC\_CONS\_1.scr

Test case trigger: 1- first applet check the first 80 constants

2- second applet checked the 66 others.

Test Applet: API\_2\_TKC\_CONS\_1.java

Load Script: API\_2\_TKC\_CONS\_1.ldr

Cleaning script: API\_2\_TKC\_CONS\_1.clr

# 6.2.1.1.3 Test Procedure

First applet triggered:

Test Case		
ld	Test purpose	
01	Check constant EVENT_PROFILE_DOWNLOAD=1	
02	Check constant EVENT_FORMATTED_SMS_PP_ENV=2	
03	Check constant EVENT_FORMATTED_SMS_PP_UPD=3	
04	Check constant EVENT_UNFORMATTED_SMS_PP_ENV=4	
05	Check constant EVENT_UNFORMATTED_SMS_PP_UPD=5	
06	Check constant EVENT_UNFORMATTED_SMS_CB=6	
07	Check constant EVENT_MENU_SELECTION=7	
08	Check constant EVENT_MENU_SELECTION_HELP_REQUEST=8	
09	Check constant EVENT_CALL_CONTROL_BY_SIM=9	
10	Check constant EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM=10	

11	Check constant EVENT_TIMER_EXPIRATION=11
12	Check constant EVENT_EVENT_DOWNLOAD_MT_CALL12
13	Check constant EVENT_EVENT_DOWNLOAD_CALL_CONNECTED=13
14	Check constant EVENT_EVENT_DOWNLOAD_CALL_DISCONNECTED=14
15	Check constant EVENT_EVENT_DOWNLOAD_LOCATION_STATUS=15
16	Check constant EVENT_EVENT_DOWNLOAD_USER_ACTIVITY=16
17	Check constant EVENT_EVENT_DOWNLOAD_IDLE_SCREEN_AVAILABLE=17
18	Check constant EVENT_EVENT_DOWNLOAD_CARD_READER_STATUS=18
19	Check constant EVENT_STATUS_COMMAND=127
20	Check constant EVENT_UNRECOGNIZED_ENVELOPE=-1
21	Check constant BTAG_PROACTIVE_SIM_COMMAND='D0'
22	Check constant BTAG_SMS_PP_DOWNWLOAD='D1'
23	Check constant BTAG_CELL_BROADCAST_DOWNLOAD='D2'
24	Check constant BTAG_MENU_SELECTION='D3'
25	Check constant BTAG_CALL_CONTROL='D4'
26	Check constant BTAG_MO_SHORT_MESSAGE_CONTROL='D5'
27	Check constant BTAG_EVENT_DOWNLOAD='D6'
28	Check constant BTAG_TIMER_EXPIRATION='D7'
29	Check constant TAG_COMMAND_DETAILS='01'
30	Check constant TAG_DEVICE_IDENTITIES='02'
31	Check constant TAG_RESULT='03'
32	Check constant TAG_DURATION='04'
33	Check constant TAG_ALPHA_IDENTIFIER='05'
34	Check constant TAG_ADDRESS='06'
35	Check constant TAG_CAPABILITY_CONFIGURATION_PARAMETERS='07'
36	Check constant TAG_CALLED_PARTY_SUBADDRESS='08'
	Check constant TAG_SS_STRING='09'
37	Check constant TAG_USSD_STRING='0A'
38	
39	Check constant TAG_SMS_TPDU='0B'
40	Check constant TAG_CELL_BROADCAST_PAGE='0C'
41	Check constant TAG_TEXT_STRING='0D'
42	Check constant TAG_TONE='0E'
43	Check constant TAG_ITEM='0F'
44	Check constant TAG_ITEM_IDENTIFIER='10'
45	Check constant TAG_RESPONSE_LENGTH='11'
46	Check constant TAG_FILE_LIST='12'
47	Check constant TAG_LOCATION_INFORMATION='13'
48	Check constant TAG_IMEI='14'
49	Check constant TAG_HELP_REQUEST='15'
50	Check constant TAG_NETWORK_MEASUREMENT_RESULTS='16'
51	Check constant TAG_DEFAULT_TEXT='17'
52	Check constant TAG_ITEMS_NEXT_ACTION_INDICATOR='18'
53	Check constant TAG_EVENT_LIST='19'
54	Check constant TAG_CAUSE='1A'
55	Check constant TAG_LOCATION_STATUS='1B'
56	Check constant TAG_TRANSACTION_IDENTIFIER='1C'
57	Check constant TAG_BCCH_CHANNEL_LIST='1D'
58	Check constant TAG_ICON_IDENTIFIER='1E'
59	Check constant TAG_ITEM_ICON_IDENTIFIER_LIST='1F'
60	Check constant TAG_CARD_READER_STATUS='20'
61	Check constant TAG_CARD_ATR='21'
62	Check constant TAG C APDU='22'
	Check constant TAG_R_APDU='23'
63	Check constant TAG_TIMER_IDENTIFIER='24'
64	
65	Check constant TAG_TIMER_VALUE='25'
66	Check constant TAG_DATE_TIME_AND_TIME_ZONE='26'
67	Check constant TAG_CALL_CONTROL_REQUESTED_ACTION='27'
68	Check constant TAG_AT_COMMAND='28'
69	Check constant TAG_AT_RESPONSE='29'
70	Check constant TAG_BC_REPEAT_INDICATOR='2A'
71	Check constant TAG_IMMEDIATE_RESPONSE='2B'
72	Check constant TAG_DTMF_STRING='2C'
73	Check constant TAG_SET_CR='80'
74	Check constant TAG_SET_NO_CR='7F'
75	Check constant TLV_LENGTH_CODED_2BYTES='81'

76	Check constant TLV_NOT_FOUND='00'
77	Check constant TLV_FOUND_CR_SET='01'
78	Check constant TLV_FOUND_CR_NOT_SET='02'
79	Check constant PRO_CMD_REFRESH='01'
80	Check constant PRO_CMD_MORE_TIME='02'

# Second applet triggered:

	Test Case		
ld	Test purpose		
01	Check constant PRO_CMD_SET_UP_CALL='10'		
02	Check constant PRO_CMD_SEND_SS='11'		
03	Check constant PRO_CMD_SEND_USSD='12'		
04	Check constant PRO_CMD_SEND_SHORT_MESSAGE='13'		
05	Check constant PRO_CMD_SEND_DTMF='14'		
06	Check constant PRO_CMD_PLAY_TONE='20'		
07	Check constant PRO_CMD_DISPLAY_TEXT='21'		
08	Check constant PRO_CMD_GET_INKEY='22'		
09	Check constant PRO_CMD_GET_INPUT='23'		
10	Check constant PRO_CMD_SELECT_ITEM='24'		
11	Check constant PRO_CMD_PROVIDE_LOCAL_INFORMATION='26'		
12	Check constant PRO_CMD_TIMER_MANAGEMENT='27'		
13	Check constant PRO_CMD_SET_UP_IDLE_MODE_TEXT='28'		
14	Check constant PRO_CMD_PERFORM_CARD_APDU='30'		
15	Check constant PRO_CMD_POWER_ON_CARD='31'		
16	Check constant PRO_CMD_POWER_OFF_CARD='32'		
17	Check constant PRO_CMD_GET_READER_STATUS='33'		
18	Check constant PRO_CMD_RUN_AT_COMMAND='34'		
19	Check constant DEV_ID_KEYPAD='01'		
20	Check constant DEV_ID_DISPLAY='02'		
21	Check constant DEV_ID_EARPIECE='03'		
22	Check constant DEV_ID_ADDITIONAL_CARD_READER_0='10'		
23	Check constant DEV_ID_ADDITIONAL_CARD_READER_1='11'		
24	Check constant DEV_ID_ADDITIONAL_CARD_READER_2='12'		
25	Check constant DEV_ID_ADDITIONAL_CARD_READER_3='13'		
26	Check constant DEV_ID_ADDITIONAL_CARD_READER_4='14'		
27	Check constant DEV_ID_ADDITIONAL_CARD_READER_5='15'		
28	Check constant DEV_ID_ADDITIONAL_CARD_READER_6='16'		
29	Check constant DEV_ID_ADDITIONAL_CARD_READER_7='17'		
30	Check constant DEV_ID_SIM='81'		
31	Check constant DEV_ID_ME='82'		
32	Check constant DEV_ID_NETWORK='83'		
33	Check constant DCS_DEFAULT_ALPHABET='00'		
34	Check constant DCS_8_BIT_DATA='04'		
35	Check constant DCS_UCS2='08'		
36	Check constant SW1_RP_ERROR='9E'		
37	Check constant SW1_RP_ACK='9F'		
38	Check constant POLL_NO_DURATION=0		
39	Check constant POLL_SYSTEM_DURATION=(-1)		
40	Check constant RES_CMD_PERF='00'		
41	Check constant RES_CMD_PERF_PARTIAL_COMPR='01'		
42	Check constant RES_CMD_PERF_MISSING_INFO='02'		
43	Check constant RES_CMD_PERF_REFRESH_ADD_EF_READ='03'		
44	Check constant RES_CMD_PERF_REQ_ICON_NOT_DISP='04'		
45	Check constant RES_CMD_PERF_MODIF_CC_SIM='05'		
46	Check constant RES_CMD_PERF_SESSION_TERM_USER='10'		
47	Check constant RES_CMD_PERF_BACKWARD_MOVE_REQ='11'  Check constant RES_CMD_PERF_NO_RESP_FROM_USER='12'		
48	Check constant RES_CMD_PERF_NO_RESP_FROM_USER='12'  Check constant RES_CMD_PERF_HELP_INFO_REQ='13'		
49	Check constant RES_CMD_PERF_HELP_INFO_REQ='13'  Check constant RES_CMD_PERF_USSD_TRANSAC_TERM='14'		
50	Check constant RES_TEMP_PB_ME_UNABLE_PROC='20'		
51			
52 53	Check constant RES_TEMP_PB_SESSION_TERM_USER='21' Check constant RES_TEMP_PB_USER_REJECT_CALL_REQ='22'		
53			
54	Check constant RES_TEMP_PB_USER_CLEAR_CALL='23'		

55	Check constant RES_TEMP_PB_IN_CONTR_TIMER_STATE='24'
56	Check constant RES_TEMP_PB_INTERACT_CC_BY_SIM='25'
57	Check constant RES_ERROR_CMD_BEYOND_ME_CAPAB='30'
58	Check constant RES_ERROR_CMD_TYP_NOT_UNDERSTOOD='31'
59	Check constant RES_ERROR_CMD_DATA_NOT_UNDERSTOOD='32'
60	Check constant RES_ERROR_CMD_NUMBER_NOT_KNOWN='33'
61	Check constant RES_ERROR_SS_RETURN_ERROR='34'
62	Check constant RES_ERROR_SMS_RP_ERROR='35'
63	Check constant RES_ERROR_REQ_VALUES_MISS='36'
64	Check constant RES_ERROR_USSD_RETURN_ERROR='37'
65	Check constant RES_ERROR_MULTIPLE_CARD_ERROR='38'
66	Check constant RES_ERROR_INTERACT_CC_SMSMO_BY_SIM='39'

We expect for each case the comparison is true

### 6.2.1.1.4 Test Coverage

CRR number	Test case number
1	each case of the two
	applets

# 6.2.2 Interface ToolkitInterface

# 6.2.2.1 Method processToolkit

Test Area Reference: API\_1\_PRTKB

# 6.2.2.1.1 Conformance Requirement:

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

#### Normal execution

CRRN1: This interface must be implemented by a Toolkit applet (which extends the javacard.framework.Applet class) so that it can be triggered by the Toolkit Handler according to the registration information.

CRRN2: The Toolkit applet will have to implement the processToolkit shared method so that the following events can be notified:

Event	Description
EVENT_PROFILE_DOWNLOAD	Terminal Profile command reception
EVENT_FORMATTED_SMS_PP_ENV	03.48 formatted envelope SMS-PP Data
	Download reception
EVENT_FORMATTED_SMS_PP_UPD	03.48 formatted Update Record EF SMS
EVENT_UNFORMATTED_SMS_PP_ENV	Unformatted Envelope SMS-PP Data Download
	reception
EVENT_UNFORMATTED_SMS_PP_UPD	Unformatted Update Record EF SMS
EVENT_UNFORMATTED_SMS_CB	Unformatted Cell Broadcast Data Download
	command reception
EVENT_MENU_SELECTION	Envelope Menu Selection command reception
EVENT_MENU_SELECTION_HELP_REQUEST	Envelope Menu Selection Help Request
	command reception
EVENT_CALL_CONTROL_BY_SIM	Envelope Call Control by SIM command
	reception
EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM	Envelope MO Short Message Control by SIM
	command reception
EVENT_TIMER_EXPIRATION	Envelope Timer Expiration
EVENT_EVENT_DOWNLOAD_MT_CALL	Envelope Event Download - MT call
EVENT_EVENT_DOWNLOAD_CALL_CONNECTED	Envelope Event Download - Call connected
EVENT_EVENT_DOWNLOAD_CALL_DISCONNECTED	Event Download - Call disconnected
EVENT_EVENT_DOWNLOAD_LOCATION_STATUS	Envelope Event Download - Location status
EVENT_EVENT_DOWNLOAD_USER_ACTIVITY	Envelope Event Download - User activity
EVENT_EVENT_DOWNLOAD_IDLE_SCREEN_AVAILABLE	Envelope Event Download - Idle screen available
EVENT_EVENT_DOWNLOAD_CARD_READER_STATUS	Envelope Event Download - Card Reader Status
EVENT_STATUS_COMMAND	Status APDU command event
EVENT_UNRECOGNIZED_ENVELOPE	Unrecognized Envelope command reception

### Parameters error

No requirements

### Context errors

No requirements

### 6.2.2.1.2 Test suite files

The method is tested in the Framework

# 6.2.2.1.3 Test Coverage

CRR number	Test case number
CRRN1	Tested in Framework
CRRN2	Tested in Framework

# 6.2.3 Class EditHandler

It is not possible to test the methods provided by this class as it is declared 'abstract'; it will be done in the class inheriting it: EnvelopeResponseHandler, ProactiveHandler.

# 6.2.4 Class EnvelopeHandler

# 6.2.4.1 sim.tookit.EnvelopeHandler.getEnvelopeTag\_1

Test Area Reference: API\_2\_ENH\_GENT

# 6.2.4.1.1 Conformance Requirement:

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

public byte getEnvelopeTag()

#### Normal execution

CRRN1: The method shall return the Envelope BER-TLV tag.

CRRN2: The Envelope BER TAG is available for all triggered toolkit applets from the invocation to the termination of their processToolkit method if the EnvelopeHandler is available.

#### Parameters error

#### Context errors

6.2.4.1.2 Test suite files

Test Script: API\_2\_ENH\_GENT\_1.scr

Test Applet: API\_2\_ENH\_GENT\_1.java

Load Script: API\_2\_ENH\_GENT\_1.ldr

Clean-up Script: API\_2\_ENH\_GENT\_1.clr

#### 6.2.4.1.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
	getEnvelopeTag called just after triggering of the application.	Returns 0xD1	
	getEnvelopeTag called after a proactive command.	Returns 0xD1	
3	getEnvelopeTag called after a second proactive command.	Returns 0xD1	

### 6.2.4.1.4 Test Coverage

CRR number	Test case number
N1	1, 2, 3
N2	1, 2, 3

# 6.2.4.2 sim.tookit.EnvelopeHandler.getItemIdentifier\_1

Test Area Reference: API\_2\_ENH\_GIID

# 6.2.4.2.1 Conformance Requirement:

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

### 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 EnvelopeHandler is available.

# Parameters error

# 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 Simple TLV.

6.2.4.2.2 Test suite files

Test Script: API\_2\_ENH\_GIID\_1.scr

Test Applet: API\_2\_ENH\_GIID\_1.java

Load Script: API\_2\_ENH\_GIID\_1.ldr

Clean-up Script: API\_2\_ENH\_GIID\_1.clr

### 6.2.4.2.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
1	Send envelope SMS-PP Formatted with item	Returns 03	
	identifier TLV and identifier value of 03		
2	Send envelope SMS-PP Formatted with two item	Returns FF	
	identifier TLV with first value FF and second 44		
3	Send envelope SMS-PP Formatted with two item	Returns 81	
	identifier TLV with first value 81 and second 44,	Returns 81	
	call twice the method getItemIdentifier		
4	Send envelope SMS-PP Formatted with item	getItemIdentifier=getValueByte	
	identifier TLV and value of 66. FindTLV with TAG		
	02. getItemIdentifier and then getValueByte with		
	offset 0		
5	Send envelope SMS-PP Formatted without item	ToolkitException	
	identifier TLV and getItemIdentifier	(UNAVAILABLE_ELEMENT)	
6	Send Envelope SMS-PP Formatted with item	Returns 66	
	identifier TLV (66), send proactive command. Then		
	getItemIdentifier		
7	Send Envelope SMS-PP Formatted with item	ToolkitException	
	identifier TLV but without item number	(OUT_OF_TLV_BOUNDARIES)	

### 6.2.4.2.4 Test Coverage

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

# 6.2.4.3 sim.tookit.EnvelopeHandler.getSecuredDataLength\_1

Test Area Reference: API\_2\_ENH\_GSDL

# 6.2.4.3.1 Conformance Requirement:

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

#### Normal execution

CRRN1: The method shall return the length of the secured data contained in a SMS TPDU TLV.

CRRN2: The length is from the first SMS TPDU 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 GSM03.48.

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 GSM03.48.

CRRN6: If the method is successful, the selected TLV should be the SMS TPDU TLV.

#### Parameters error

#### Context errors

 $CRRC1: The \ method \ shall \ thrown \ ToolkitException \ (UNAVAILABLE\_ELEMENT) \ in \ case \ of \ unavailable \ SMS \ TPDU \ TLV \ element.$ 

CRRC2: The method shall thrown ToolkitException (UNAVAILABLE\_ELEMENT) in case of missing Secured Data.

### 6.2.4.3.2 Test suite files

### Specific triggering:

- SMS CB
- FORMATTED SMS PP UPD
- UNFORMATED SMS PP ENV

Test Script: API\_2\_ENH\_GSDL\_1.scr

Test Applet: API\_2\_ENH\_GSDL\_1.java

Load Script: API\_2\_ENH\_GSDL\_1.ldr

Clean-up Script: API\_2\_ENH\_GSLD\_1.clr

### 6.2.4.3.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Test with various length of TP-OA	Returns 0x2A	
	1. Send a SMS PP with TP-OA =2	(for each sub case)	
	2. Send a SMS PP with TP-OA =6		
	3. Send a SMS PP with TP-OA =12		
2	Test with various length of RC/CC/DS	Returns 0x10	
	1. Send a SMS PP with RC/CC/DS = 0	(for each sub case)	
3	Test with PCNTR = 0	Returns 0x10	
4	Test with PCNTR = 7	Returns 0x05	
5	Test with SecuredDataLength = 00	Returns 0x00	
6	Test with UserDataLength = 0x33	Returns 0x33	
7	Test with UserDataLength = 0x 6C	Returns 0x 6C	
8	Test with UserDataLength = 0x 6D	Returns 0x 6D	
9	Test with UserDataLength = maximum length:	Returns 0x 79	
	0x79		
10	Verify it is the first TPDU TLV:	Returns 0x05	
	Send a SMS PP with 2 TPDU TLV and inside two		
	different secured data lengths: 5 and 10		

4.4	Same test as 1 but with	Returns 0x2A
11		Returns 0x2A
	FORMATTED_SMS_PP_UPD	
12	Same test as 2 but with	Returns 0x10
	FORMATTED_SMS_PP_UPD	
13	Same test as 3 but with	Returns 0x10
	FORMATTED_SMS_PP_UPD	
	Same test as 4 but with	Returns 0x05
	FORMATTED_SMS_PP_UPD	
	Same test as 5 but with	Returns 0x00
	FORMATTED_SMS_PP_UPD	
	Same test as 6 but with	Returns 0x33
	FORMATTED_SMS_PP_UPD	
17	Same test as 7 but with	Returns 0x 6C
	FORMATTED_SMS_PP_UPD	
18	Same test as 8 but with	Returns 0x 6D
	FORMATTED_SMS_PP_UPD	
19	Same test as 9 but with	Returns 0x 79
	FORMATTED_SMS_PP_UPD	
20	Same test as 10 but with	Returns 0x05
	FORMATTED_SMS_PP_UPD	
	Verify after call of the method the current TLV is	getValueByte returns 0x40
	the TPDU TLV:	
	findTLV device identities, getSecuredDataLength	
	and then getValueByte to verify that the current	
	TLV is the TPDU TLV	
22	Send an envelope SMS CB,	ToolkitException
	getSecuredDataLength	UNAVAILABLE_ELEMENT
23	Send an envelope SMS PP unformatted	ToolkitException
	·	UNAVAILABLE_ELEMENT

# 6.2.4.3.4 Test Coverage

This method has only been tested with SMS PP without security and the tests shall be improved during 03.48 tests.

CRR number	Test case number
N1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
N2	10
N3	3, 4
N4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10,
	25
N5	11, 12, 13, 14, 15, 16, 17,
	18, 19, 20
N6	21
C1	22
C2	23

# 6.2.4.4 sim.tookit.EnvelopeHandler.getSecuredDataOffset\_1

Test Area Reference: API\_2\_ENH\_GSDO

# 6.2.4.4.1 Conformance Requirement:

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

### Normal execution

CRRN1: The method shall return the offset of the secured data first byte contained 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 and if the SMS TP-UD is formatted according to GSM03.48.

CRRN4: The method can be used if the event is EVENT\_FORMATTED\_SMS\_PP\_UPD and if the SMS TP-UD is formatted according to GSM03.48.

CRRN5: If the method is successful, the selected TLV should be the SMS TPDU TLV.

#### Parameters error

#### Context errors

CRRC1: The method shall thrown ToolkitException (UNAVAILABLE\_ELEMENT) in case of unavailable SMS TPDU TLV element.

CRRC2: The method shall thrown ToolkitException (UNAVAILABLE\_ELEMENT) in case of missing Secured Data.

### 6.2.4.4.2 Test suite files

### Specific triggering:

SMS CB

FORMATTED SMS PP UPD UNFORMATED SMS PP ENV

Test Script: API\_2\_ENH\_GSDO\_1.scr

Test Applet: API\_2\_ENH\_GSDO\_1.java

Load Script: API\_2\_ENH\_GSDO\_1.ldr

Clean-up Script: API\_2\_ENH\_GSDO\_1.clr

#### 6.2.4.4.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
1	Test with TP-OA length of 2	Returns 0x21	711 DO EXPOSICATION
2	Test with TP-OA length of 6	Returns 0x23	
3	Test with TP-OA length of 12	Returns 0x26	
4	Test with RC/CC/DS length of 0	Returns 0x21	
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 with FORMATTED_SMS_PP_UPD	Returns 0x21	
7	Same test as 2 but with FORMATTED_SMS_PP_UPD	Returns 0x23	
8	Same test as 3 but with FORMATTED_SMS_PP_UPD	Returns 0x26	
9	Same test as 4 but with FORMATTED_SMS_PP_UPD	Returns 0x21	
10			
11	Same test as 5 but with FORMATTED_SMS_PP_UPD	Returns 0x24 ( the first offset )	
12	Verify after call of the method the current TLV is the TPDU TLV: findTLV device identities, getSecuredDataOffset and then getValueByte to verify that the current TLV is the TPDU TLV	Returns 0x40	
13	Send an envelope SMS CB, getSecuredDataOffset	ToolkitException UNAVAILABLE_ELEMENT	
14			
15	Send an envelope SMS PP unformatted	ToolkitException UNAVAILABLE_ELEMENT	
16	Send an envelope SMS-PP formatted with no secured data, getSecuredDataOffset	Returns 0x21	

### 6.2.4.4.4 Test Coverage

This method has only been tested with SMS PP without security and the tests shall be improved during 03.48 tests.

CRR number	Test case number	
N1	1, 2, 3, 4, 5, 14	
N2	5	
N3	1, 2, 3, 4, 5, 15	
N4	6, 7, 8, 9, 10	
N5	11	
C1	12	
C2	13	

# 6.2.4.5 sim.tookit.EnvelopeHandler.getTheHandler\_1

### 6.2.4.5.1 Conformance Requirements

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

#### Normal execution

CRRN1: The method shall return the single system instance of the EnvelopeHandler class.

CRRN2: The EnvelopeHandler is a Temporary JCRE Entry Point Object ( see Javacard 2.1 Runtime Environment (JCRE) Specification [12])

#### Parameters error

# Context errors

CRRC1: The method shall thrown ToolkitException (HANDLER\_NOT\_AVAILABLE) if the handler is busy.

6.2.4.5.2 Test suite files

Test Script: API\_2\_ENH\_GTHD\_1.scr

Test Applet: API\_2\_ENH\_GTHD\_1.java

Load Script: API\_2\_ENH\_GTHD\_1.ldr

Clean-up Script: API\_2\_ENH\_GTHD\_1.clr

#### 6.2.4.5.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
1	getTheHandler twice	The returned objects shall be the	
		same	
2	Verify that getTheHandler returns an	The reference returned shall be an	
	EnvelopeHandler	EnvelopeHandler (checkcast)	
	GetTheHandler		
3	Verify the returned value is not null	The reference returned shall not be	
	GetTheHandler	null.	

### 6.2.4.5.4 Test Coverage

CRR number	Test case number	
N1	1, 2, 3	
N2	To be checked in	
	Framework tests and	
	insert here cross	
	reference	
C1	To be checked in	
	Framework tests and	
	insert here cross	
	reference	

# 6.2.4.6 sim.tookit.EnvelopeHandler.getTPUDLOffset\_1

Test Area Reference: API\_2\_ENH\_GTPO

# 6.2.4.6.1 Conformance Requirement:

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

#### 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.

#### Parameters error

#### Context errors

CRRC1: The method shall thrown ToolkitException (UNAVAILABLE\_ELEMENT) in case of unavailable SMS TPDU TLV element.

CRRC2: The method shall thrown ToolkitException (UNAVAILABLE\_ELEMENT) if the TPUDL field does not exist.

#### 6.2.4.6.2 Test suite files

# Specific triggering:

FORMATTED SMS PP UPD UNFORMATTED SMS PP UPD UNFORMATTED SMS PP ENV SMS CB

Test Script: API\_2\_ENH\_GTPO\_1.scr

Test Applet: API\_2\_ENH\_GTPO\_1.java

Load Script: API\_2\_ENH\_GTPO\_1.ldr

Clean-up Script: API\_2\_ENH\_GTPO\_1.clr

# 6.2.4.6.3 Test procedure

ld	Description	API Expectation	APDU Expectation
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	
	Send a SMS PP with 2 TPDU TLV and inside two different UDL offsets	Returns 0x10 ( the first offset )	
	Same test as 1 but with FORMATTED_SMS_PP_UPD	Returns 0x0D	
	Same test as 2 but with FORMATTED_SMS_PP_UPD	Returns 0x0F	
7	Same test as 3 but with FORMATTED_SMS_PP_UPD	Returns 0x12	
8	Same test as 4 but with FORMATTED_SMS_PP_UPD	Returns 0x10 ( the first offset )	
9	Same test as 1 but with UNFORMATTED_SMS_PP_UPD	Returns 0x0D	
10	Same test as 2 but with UNFORMATTED_SMS_PP_UPD	Returns 0x0F	
11	Same test as 3 but with UNFORMATTED_SMS_PP_UPD	Returns 0x12	
12	Same test as 4 but with UNFORMATTED_SMS_PP_UPD	Returns 0x12 ( the first offset )	
13	Same test as 1 but with UNFORMATTED_SMS_PP_ENV	Returns 0x0D	
14	Same test as 2 but with UNFORMATTED_SMS_PP_ENV	Returns 0x0F	
15	Same test as 3 but with UNFORMATTED_SMS_PP_ENV	Returns 0x12	
16	Same test as 4 but with UNFORMATTED_SMS_PP_ENV	Returns 0x10 ( the first offset )	
	Verify after call of the method the current TLV is the TPDU TLV: findTLV device identities, getTPUDLOffset and then getValueByte to verify that the current TLV is the TPDU TLV	Returns 0x40	
18	Send an envelope SMS CB, getTPUDLOffset	ToolkitException UNAVAILABLE_ELEMENT	

# 6.2.4.6.4 Test Coverage

CRR number	Test case number
N1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10,
	11, 12, 13, 14, 15, 16, 17
N2	4
N3	1, 2, 3, 4, 17
N4	5, 6, 7, 8
N5	13, 14, 15, 16
N6	9, 10, 11, 12
N7	17
C1	18
C2	Don't no how to test

# 6.2.4.7 sim.tookit.EnvelopeHandler.getLength\_1

Test Area Reference: API\_2\_ENH\_GLEN

# 6.2.4.7.1 Conformance Requirement

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

public short getLength()

throws ToolkitException

#### Normal execution

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

#### Parameter Error

#### Context errors

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

### 6.2.4.7.2 Test Suite files

Specific triggering: None

Test Script: API\_2\_ENH\_GLEN\_1.scr

Test Applet: API\_2\_ENH\_GLEN\_1.java

Load Script: API\_2\_ENH\_GLEN\_1.ldr

Clean-up Script: API\_2\_ENH\_GLEN\_1.clr

#### 6.2.4.7.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
1	Send an envelope SMS PP with BER length of 0x31	Result of getLength() is 0x0031	
2	Send an envelope SMS PP with BER length of 0x7F	Result of getLength() is 0x007Fh	
3	Send an envelope SMS PP with BER length of 81 80	Result of getLength() is 0x0080h	
4	Send an envelope SMS PP with BER length of 81 FC	Result of getLength() is 0x00FCh	

#### 6.2.4.7.4 Test Coverage

CRR number	Test case number
N1	1, 2, 3, 4
C1	Does not apply for
	EnvelopeHandler

# 6.2.4.8 sim.tookit.EnvelopeHandler.copy\_1

Test Area Reference: API\_2\_ENH\_COPY\_BSS

# 6.2.4.8.1 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)

### Normal execution

CRRN1: copies the simple TLV list contained in the handler to the destination byte array.

CRRN2: returns dstOffset + dstLength.

#### 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 grater than the length of the simple TLV List, an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException. OUT\_OF\_TLV\_BOUNDARIES.

#### Context errors

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

# 6.2.4.8.2 Test Suite files

Specific triggering: None

Test Script: API\_2\_ENH\_COPY\_BSS\_1.scr

Test Applet: API\_2\_ENH\_COPY\_BSS\_1.java

Load Script: API\_2\_ENH\_COPY\_BSS\_1.ldr

Clean-up Script: API\_2\_ENH\_ COPY \_ BSS \_1.clr

#### 6.2.4.8.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
1	NULL as parameter to dstBuffer	NullPointerException is thrown	
2	dstOffset ≥ dstBuffer.length	ArrayIndexOutOfBoundsException is	
	dstBuffer.length = 5	thrown	
	dstOffset = 5		
3	dstLength = 1  dstOffset < 0	ArrayIndexOutOfBoundsException is	
3	dstBuffer.length = 5	thrown	
	dstOffset = -1	tillowii	
	dstLength = 1		
4	dstLength > dstBuffer.length	ArrayIndexOutOfBoundsException is	
	dstBuffer.length = 5	thrown	
	dstOffset = 0		
<u> </u>	dstLength = 6	A 1 1 0 (O/D 1 5 );	
5	DstOffset + dstLength > dstBuffer.length  DstBuffer.length = 5	ArrayIndexOutOfBoundsException is	
	DstOffset = 3	thrown	
	DstLength = 3		
6	dstLength < 0	ArrayIndexOutOfBoundsException is	
	dstBuffer.length = 5	thrown	
	dstOffset = 0		
	dstLength = -1		
7	DstLength > length of the simple TLV list	ToolkitException.OUT_OF_TLV_BO	
	DstBuffer.length = 48 DstOffset = 0	UNDARIES is thrown	
	DstLength = 48		
8	Successful call, dstBuffer is the whole buffer	Result of copy() is 0X0047	
	DstBuffer.length = 47	result of sopy() is show in	
	DstOffset = 0		
	DstLength = 47		
9	Compare the buffer	Result of arrayCompare() is 0	
10	Successful call, dstBuffer is part of a buffer	Result of copy() is 0X0032	
	DstBuffer.length = 50		
	dstOffset = 3 dstLength = 47		
11	Compare the whole buffer	Result of arrayCompare() is 0	
12	Successful call, dstBuffer is part of a buffer	Result of copy() is 0X0009	
'-	dstBuffer.length = 15	Treadit of copy() is oncoos	
	dstOffset = 3		
	L		

	dstLength = 6		
13	Compare the whole buffer	Result of arrayCompare() is 0	
14	Successful call, dstBuffer is part of a buffer	Result of copy() is 0X0104	
	dstBuffer.length = 260	·	
	dstOffset = 257		
	dstLength = 3		
15	Compare the whole buffer	Result of arrayCompare() is 0	
16	Successful call, copy with length =0	Result of copy() is 0x104	
	dstBuffer.length = 260		
	dstOffset = 260		
	dstLength = 0		

### 6.2.4.8.4 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 EnvelopeHandler

# 6.2.4.9 sim.tookit.EnvelopeHandler.findTLV\_1

Test Area Reference: API\_2\_ENH\_FINDBB

### 6.2.4.9.1 Conformance Requirement

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

#### 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.

#### 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.

#### Context errors

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

6.2.4.9.2 Test Suite files

Specific triggering: None

Test Script: API\_2\_ENH\_ENH\_FINDBB\_1.scr

Test Applet: API\_2\_ENH\_ENH\_FINDBB\_1.java

Load Script: API\_2\_ENH\_ENH\_FINDBB\_1.ldr

Clean-up Script: API\_2\_ENH\_FINDBB\_1.clr

# 6.2.4.9.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
	Trig the applet with SMS PP including one more	·	-
	tag 02 and one TAG 04		
1	Invalid input parameter	ToolkitException.BAD_INPUT_P	
	Occurrence = 0	ARAMETER is thrown	
2	Search 1st TLV	Result is TLV_FOUND_CR_SET	
	Tag = 02h		
_	Occurrence = 1	D #: 0.00	
3	Call the getValueLength() method	Result is 0x02	
4	Search 2nd TLV	Result is TLV_FOUND_CR_SET	
	Tag = 06h Occurrence = 1		
5	Call the getValueLength() method	Result is 0x05h	
6	Select a TLV (tag 02h)	result is 0x0511	
-	Search a wrong tag	Result is TLV_NOT_FOUND	
	Tag = 03h	Result is TEV_NOT_I COND	
	Occurrence = 1		
7	Call the getValueLength() method	ToolkitException.UNAVAILABLE	
		ELEMENT is thrown.	
8	Search a tag with wrong occurrence	Result is TLV_NOT_FOUND	
	Tag = 02h		
	Occurrence = 3		
9	Call the getValueLength() method	ToolkitException.UNAVAILABLE	
		_ELEMENT is thrown.	
10	Search the TLV	Result is	
	Tag = 02h	TLV_FOUND_CR_NOT_SET	
44	Occurrence = 2	Describée	
11	Search the TLV Tag = 04h	Result is	
	Occurrence = 1	TLV_FOUND_CR_NOT_SET	
12	Search tag 81h	Result is TLV_FOUND_CR_SET	
'-	Tag = 86h	1000.10 121_1 00112_01(_021	
	Occurrence = 1		
13	Search tag 84h	Result is	
	Tag = 84h	TLV_FOUND_CR_NOT_SET	
	Occurrence = 1		

# 6.2.4.9.4 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
	EnvelopeHandler

## 6.2.4.10 sim.tookit.EnvelopeHandler.getValueLength\_1

Test Area Reference: API\_2\_ENH\_GVLE

## 6.2.4.10.1 Conformance Requirement

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

#### 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.

#### Parameter errors

#### 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.

#### 6.2.4.10.2 Test Suite files

Specific triggering: None

Test Script: API\_2\_ENH\_GVLE\_1.scr

Test Applet: API\_2\_ENH\_GVLE\_1.java

Load Script: API\_2\_ENH\_GVLE\_1.ldr

Clean-up Script: API\_2\_ENH\_GVLE\_1.clr

## 6.2.4.10.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
	Fill the SMS PP with TLV: Tag 33, Length C8		
1	getValueLength()	ToolkitException.UNAVAILABLE	
		_ELEMENT is thrown	
2	Search TLV 02h		
	getValueLength()	Result is 0X0002	
3	Search TLV 0Bh		
	getValueLength()	Result is 0X0024	
4	Search TLV 33h		
	getValueLength()	Result is 0X00C8	

## 6.2.4.10.4 Test Coverage

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

## 6.2.4.11 sim.tookit.EnvelopeHandler.getValueByte\_1

Test Area Reference: API\_2\_ENH\_GVBYS

## 6.2.4.11.1 Conformance Requirement

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

#### Normal execution

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

#### 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.

#### 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.

#### 6.2.4.11.2 Test Suite files

Specific triggering: None

Test Script: API\_2\_ENH\_GVBY.scr

Test Applet: API\_2\_ENH\_GVBY\_1.java

Load Script: API\_2\_ENH\_GVBY.ldr

## 6.2.4.11.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
	Fill the SMS PP with TLV: Tag 33, Length C8		
	Value 01 02		
1	getValueByte(0)	ToolkitException.UNAVAILABLE	
		_ELEMENT is thrown	
2	Search TLV 02h		
	getValueByte(2)	ToolkitException.OUT_OF_TLV_	
		BOUNDARIES is thrown	
3	Search TLV 02h		
	getValueByte(1)	Result is 0x81	
4	Search TLV 02h (Device Identities TLV)		
	getValueByte(0)	Result is 83h (Source)	
5	Search TLV 33h		
	getValueByte(7E)	Result is 0x7F	
6	Search TLV 33h		
	getValueByte(80)	Result is 0x81	
7	getValueByte(7F)	Result is 0x80	
8	Search TLV B3h		
	getValueByte(C7)	Result is 0xC8	

## 6.2.4.11.4 Test Coverage

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

## 6.2.4.12 sim.tookit.EnvelopeHandler.copyValue\_1

Test Area Reference: API\_2\_ENH\_CPYVS\_BSS

## 6.2.4.12.1 Conformance Requirement

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

#### Normal execution

CRRN1: copies a part of the last TLV element which has been found, into a destination. buffer.

CRRN2: returns dstOffset + dstLength.

#### 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.

#### 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.

#### 6.2.4.12.3 Test Suite files

Specific triggering: None

Test Script: API\_2\_ENH\_CPYVS\_BSS\_1.scr

Test Applet: API\_2\_ENH\_CPYVS\_BSS\_1.java

Load Script: API\_2\_ENH\_CPYVS\_BSS\_1.ldr

Clean-up Script: API\_2\_ENH\_CPYVS\_BSS\_1.clr

# 6.2.4.12.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Search TLV 02h	•	•
	copyValue() with a null dstBuffer	NullPointerException is thrown	
2	Search TLV 0Bh		
	dstOffset ≥ dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	<pre>dstOffset = 5 dstLength = 1</pre>		
3	dstOffset < 0	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = -1		
	dstLength = 1	1 1 2 200	
4	dstLength >dstBuffer.length dstBuffer.length = 5	ArrayIndexOutOfBoundsExceptio	
	dstOffset = 0	n is thrown	
	dstLength = 6		
5	dstOffset + dstLength >dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	<pre>dstOffset = 3 dstLength = 3</pre>		
6	dstLength < 0	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = 0		
7	dstLength = -1		
_ 7	Search TLV 06h	ToolkitEvention OUT OF TIV	
	valueOffset ≥ TLV Length valueOffset = 6	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
	dstBuffer.length = 15	DOUIND WILE IS UITOWIT	
	dstOffset = 0		
	dstLength = 1	T HIS COUT OF THE	
8	<pre>valueOffset &lt; 0 valueOffset = -1</pre>	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
	dstBuffer.length = 15	BOONDAKIES IS UITOWIT	
	dstOffset = 0		
	dstLength = 1	T HIS COUT OF THE	
9	dstLength > TLV length valueOffset = 0	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
	dstBuffer.length = 15	BOUNDARIES IS UIIOWII	
	dstOffset = 0		
4.0	dstLength = 7	T 11:5 (1 OUT OF TIME	
10	valueOffset + dstLength > TLV length valueOffset = 2	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
	dstBuffer.length = 15	BOUNDARIES IS UIIOWII	
	dstOffset = 0		
	dstLength = 5		
_11	Search TLV 01h	ToolkitException.UNAVAILABLE	
	Copyvalue()	_ELEMENT is thrown on the	
		copyValue() method	
12	Search TLV 06h		
	Successful call	Result of copyValue() is 0x0006	
	valueOffset = 0		
	<pre>dstBuffer.length = 6 dstOffset = 0</pre>		
	dstUriset = 0 dstLength = 6		
13	Compare buffer	Result is 00h	
<u> </u>	buffer = 81 11 22 33 44 F5		
14	<pre>initialise dstBuffer dstBuffer = 55 55 55</pre>		
	Successful call	Result of copyValue() is 0x0007	
	valueOffset = 1	1353 5. 5567 (3135() 10 070007	
	dstBuffer.length = 20		
	<pre>dstOffset = 3 dstLength = 4</pre>		
15	Compare buffer	Result is 00h	
.5	buffer =	1. Codit to con	
	55 55 55 11 22		
	33 44 55 55 55 55 55 55 55 55		
	55 55 55 55 55		
16	Successful call, copy with length =0	Result of copyValue() is 20	
		1 V	

dstBuffer.length = 20	
dstOffset = 20	
dstLength = 0	

#### 6.2.4.12.4 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
	EnvelopeHandler
C2	11

## 6.2.4.13 sim.tookit.EnvelopeHandler.compareValue\_1

Test Area Reference: API\_2\_ENH\_CPRVS\_BSS

## 6.2.4.13.1 Conformance requirement

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

#### 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 simple TLV List is less than that in compareBuffer.

CRRN3: returns 1 if the first miscomparing byte in simple TLV List is greater than that in compareBuffer.

#### Parameter errors

 $CRRP1: if\ compare Buffer\ is\ null\ Null Pointer Exception\ shall\ be\ thrown.$ 

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.

#### 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.

#### 6.2.4.13.3 Test Suite files

Specific triggering: None

Test Script: API\_2\_ENH\_CPRVS\_BSS\_1.scr

Test Applet: API\_2\_ENH\_CPRVS\_BSS\_1.java

Load Script: API\_2\_ENH\_CPRVS\_BSS\_1.ldr

Clean-up Script: API\_2\_ENH\_CPRVS\_BSS\_1.clr

# 6.2.4.13.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Search TLV 02h	7 1 = 1   0   0   0   0   0   0   0   0   0	7 to 2 d 2 d 2 d 2 d 2 d 2 d 2 d 2 d 2 d 2
<u> </u>	compareValue() with a null compareBuffer	NullPointerException is thrown	
	oomparevalue() wrom a mair comparebarrer	14diii oliitei Exceptioii is tillowii	
2	Search TLV 0Bh		
	compareOffset ≥ compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length = 5	n is thrown	
	compareOffset = 5	III IO UII OWII	
	compareLength = 1		
3	compareOffset < 0	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length = 5	n is thrown	
	compareOffset = -1		
	compareLength = 1		
4	compareLength >compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length = 5	n is thrown	
	compareOffset = 0		
	compareLength = 6		
5	compareOffset + compareLength	ArrayIndexOutOfBoundsExceptio	
	>compareBuffer.length	n is thrown	
	compareBuffer.length = 5		
	compareOffset = 3		
	compareLength = 3		
6	compareLength < 0	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length = 5	n is thrown	
	compareOffset = 0		
	compareLength = -1		
7	Search TLV 06h		
	valueOffset ≥ TLV Length	ToolkitException.OUT_OF_TLV_	
	valueOffset = 6	BOUNDARIES is thrown	
	compareBuffer.length = 15		
	compareOffset = 0		
	compareLength = 1		
8	valueOffset < 0	ToolkitException.OUT_OF_TLV_	
	valueOffset = -1	BOUNDARIES is thrown	
	<pre>compareBuffer.length = 15 compareOffset = 0</pre>		
	compareLength = 1		
9	compareLength > TLV length	ToolkitException.OUT_OF_TLV_	
"	valueOffset = 0	BOUNDARIES is thrown	
	compareBuffer.length = 15	BOONDAKIES IS IIIIOWII	
	compareOffset = 0		
	compareLength = 7		
10	valueOffset + compareLength > TLV length	ToolkitException.OUT_OF_TLV_	
	valueOffset = 2	BOUNDARIES is thrown	
	compareBuffer.length = 15		
	compareOffset = 0		
	compareLength = 5		
11	Search TLV 01h	Result is TLV_NOT_FOUND	
	compareValue()	ToolkitException.UNAVAILABLE	
		_ELEMENT is thrown	
12	Search TLV 06h		
	Initialise compareBuffer		
	compareBuffer =		
	81 11 22 33 44 F5		
	Compare buffers	Result is 00h	
	valueOffset = 0		
	compareOffset = 0		
	compareLength = 6		
13	Initialise compareBuffer		
	compareBuffer =		
	7F 11 22 33 44 F5		
	Compare buffers with same parameters	Result is -1	

14	Initialise compareBuffer	
	compareBuffer =	
	83 11 22 33 44 F5	
	Compare buffers with same parameters	Result is -1
15	Initialise compareBuffer	
	compareBuffer =	
	55 55 55 81 11 22 33 44 F5	
	55 55 55 55	
	Compare buffers	Result is 00h
	<pre>valueOffset = 1</pre>	
	<pre>compareOffset = 4</pre>	
	compareLength = 5	
16	Initialise compareBuffer	
	compareBuffer =	
	55 55 55 81 10 22 33 44 F5	
	55 55 55 55	
	Compare buffers with same parameters	Result is +1
17	Initialise compareBuffer	
	compareBuffer =	
	55 55 55 81 12 22 33 44 F5	
	55 55 55 55	
	Compare buffers with same parameters	Result is -1
18	Successful call, compareValue with length =0	Result of compareValue() is 0
	CompareBuffer.length = 15	
	CompareOffset = 15	
	CompareLength = 0	

## 6.2.4.13.4 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
	EnvelopeHandler
C2	11

# 6.2.4.14 sim.tookit.EnvelopeHandler.findAndCopyValue\_1

Test Area Reference: API\_2\_ENH\_FACYB\_BS

## 6.2.4.14.1 Conformance requirement

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

#### 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.

## Parameter errors

CRRP1: if dstBuffer is null NullPointerException shall be thrown.

CRRP2: if dstOffset would cause access outside array bounds ArrayIndexOutOfBoundsException shall be thrown.

## Context errors

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

## 6.2.4.14.3 Test Suite files

Specific triggering: None

Test Script: API\_2\_ENH\_FACYB\_BS\_1.scr

Test Applet: API\_2\_ENH\_FACYB\_BS\_1.java

Load Script: API\_2\_ENH\_FACYB\_BS\_1.ldr

Clean-up Script: API\_2\_ENH\_FACYB\_BS\_1.clr

## 6.2.4.14.3 Test procedure

ld	Description	API Expectation	APDU Expectation
	Fill the SMS PP with TLV: Tag 02 Value 22 44		
	Tag 33, Length C4 Value 01 02		
1	FindAndCopyValue() with a null dstBuffer	NullPointerException is thrown	
2	dstOffset ≥ dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	tag = 06h dstBuffer.length = 06	n is thrown	
	dstBuller.length = 06 dstOffset = 06		
3	dstOffset < 0	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 06	n is thrown	
	dstOffset = -1		
4	length > dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	<pre>dstBuffer.length = 05 dstOffset = 0</pre>	n is thrown	
5	DstOffset + length >dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	DstBuffer.length = 06	n is thrown	
	DstOffset = 1		
6	Select a TLV (tag 02h)		
	findAndCopyValue() tag = 03h	ToolkitException.UNAVAILABLE ELEMENT is thrown	
	Call the getValueLength() method	ToolkitException.UNAVAILABLE	
		_ELEMENT is thrown.	
7	Successful call	Result of findAndCopyValue () is	
	Tag = 06h	0006	
	DstBuffer.length = 06 DstOffset = 0		
8	Compare buffer	Result is 00h	
	buffer = 81 11 22 33 44 F5	1.000.1.10	
9	initialise dstBuffer		
	dstBuffer = 55 55 55		
	Successful call	Result of findAndCopyValue () is	
	<pre>dstBuffer.length = 12 dstOffset = 2</pre>	0008	
10	Compare buffer	Result is 00h	
	buffer =		
	55 55 81 11 22 33 44 F5 55 55 55 55		
11	Successful call	Result of findAndCopyValue () is	
	tag = 02h	0002	
	dstBuffer.length = 2	l l	

	dstOffset = 0		
12	Compare buffer	Result is 00h	
	buffer = 83 81		
13	Successful call (with tag 82h)	Result of findAndCopyValue () is	
	tag = 82h	0002	
	dstBuffer.length = 02		
	dstOffset = 0		
14	Compare buffer	Result is 00h	
	buffer = 83 81		
15	Successful call (with tag B3h)	Result of findAndCopyValue () is	
	tag = B3h	00C4	
	dstBuffer.length = C4		
	dstOffset = 0		
16	Compare buffer	Result is 00h	
	buffer = 01 02 C4		

#### 6.2.4.14.4 Test Coverage

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

## 6.2.4.15 sim.tookit.EnvelopeHandler.findAndCopyValue\_2

Test Area Reference: API\_2\_ENH\_FACYBS\_BSS

## 6.2.4.15.1 Conformance requirement

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

#### 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.

## 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.

## Context errors

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

6.2.4.15.3 Test Suite files

Test Script: API\_2\_ENH\_FACYBS\_BSS\_1.scr

Test Applet: API\_2\_ENH\_FACYBS\_BSS\_1.java

Load Script: API\_2\_ENH\_FACYBS\_BSS\_1.ldr

Clean-up Script: API\_2\_ENH\_FACYBS\_BSS\_1.clr

# 6.2.4.15.3 Test procedure

ld	Description	API Expectation	APDU Expectation
	Fill the SMS PP with TLV: Tag 02 Value 22 44		-
	Tag 33, Length C4 Value 01 02		
1	findAndCopyValue() with a null dstBuffer	NullPointerException is thrown	
2	dstOffset ≥ dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	tag = 06h, occurrence = 1	n is thrown	
	<pre>valueOffset = 0 dstBuffer.length = 5</pre>		
	dstOffset = 5		
	dstLength = 1		
3	dstOffset < 0	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	<pre>dstOffset = -1 dstLength = 1</pre>		
4	dstLength >dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
7	dstBuffer.length = 5	n is thrown	
	dstOffset = 0	II IS UIIOWII	
	dstLength = 6		
5	dstOffset + dstLength >dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	<pre>dstOffset = 3 dstLength = 3</pre>		
6	dstLength < 0	ArrayIndexOutOfBoundsExceptio	
Ü	dstBuffer.length = 5	n is thrown	
	dstOffset = 0	II lo ullowii	
	dstLength = -1		
7	valueOffset ≥ Value Length	ToolkitException.OUT_OF_TLV_	
	<pre>tag = 06h, occurrence = 1 valueOffset = 6</pre>	BOUNDARIES is thrown	
	dstBuffer.length = 15		
	dstOffset = 0		
	dstLength = 1		
8	valueOffset < 0	ToolkitException.OUT_OF_TLV_	
	<pre>valueOffset = -1 dstBuffer.length = 15</pre>	BOUNDARIES is thrown	
	dstOffset = 0		
	dstLength = 1		
9	dstLength > Value length	ToolkitException.OUT_OF_TLV_	
	valueOffset = 0	BOUNDARIES is thrown	
	dstBuffer.length = 15		
	<pre>dstOffset = 0 dstLength = 7</pre>		
10	valueOffset + dstLength > Text String length	ToolkitException.OUT_OF_TLV_	
10	valueOffset = 2	BOUNDARIES is thrown	
	dstBuffer.length = 15		
	dstOffset = 0		
	dstLength = 5		
11	Select a TLV (tag 02h)		
	findAndCopyValue()	ToolkitException.UNAVAILABLE	

	tag = 06h	_ELEMENT is thrown	
	occurrence = 2		
	Call the getValueLength() method	ToolkitException.UNAVAILABLE _ELEMENT is thrown.	
12	Successful call	Result of findAndCopyValue() is	
	tag = 06h, occurrence = 1	6	
	<pre>valueOffset = 0 dstBuffer.length = 06</pre>		
	dstOffset = 0		
	dstLength = 06		
13	<b>Compare buffer</b> buffer = 81 11 22 33 44 F5	Result is 00h	
14	initialise dstBuffer dstBuffer = 55 55 55		
	Successful call	Result of findAndCopyValue () is	
	tag = 06h, occurrence = 1	0007	
	valueOffset = 2		
	<pre>dstBuffer.length = 12 dstOffset = 3</pre>		
	dstLength = 04		
15	Compare buffer	Result is 00h	
	buffer =		
16	55 55 55 22 33 44 F5 55 55 55 55 55 Successful call	Result of findAndCopyValue() is	
10	tag = 02h, occurrence = 1	0002	
	valueOffset = 0	0002	
	dstBuffer.length = 12		
	<pre>dstOffset = 0 dstLength = 2</pre>		
17	Compare buffer	Result is 00h	
	buffer = 83 81 55 55	1.100 (1.11)	
18	Successful call	Result of findAndCopyValue() is	
	<pre>tag = 02h, occurrence = 2 valueOffset = 0</pre>	0002	
	dstBuffer.length = 12		
	dstOffset = 0		
	dstLength = 2		
19	Compare buffer buffer = 22 44 55 55	Result is 00h	
20	Successful call (with tag 82h)	Result of findAndCopyValue () is	
	tag = 82h	0002	
	occurrence = 1		
	<pre>valueOffset = 0 dstBuffer.length = 12</pre>		
	dstOffset = 0		
	dstLength = 02		
21	Compare buffer	Result is 00h	
22	buffer = 83 81 55 55  Successful call (with tag 82h)	Result of findAndCopyValue () is	
22	tag = 82h	0002	
	occurrence = 2	0002	
	valueOffset = 0		
	<pre>dstBuffer.length = 12 dstOffset = 0</pre>		
	dstUngth = 02		
23	Compare buffer	Result is 00h	
24	Buffer = 22 44 55 55	Popult of find And Const / clus / \ is	
24	Successful call, findAndCopyValue with length =0	Result of findAndCopyValue () is 12	
	DstBuffer.length = 12	'-	
	dstOffset = 12		
1	dstLength = 0		

## 6.2.4.15.4 Test Coverage

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

## 6.2.4.16 sim.tookit.EnvelopeHandler.findAndCompareValue\_1

Test Area Reference: API\_2\_ENH\_FACRB\_BS

## 6.2.4.16.1 Conformance requirement

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

#### 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 simple TLV is less than that in compareBuffer returns -1.

CRRN5: if the first miscomparing byte in simple TLV is greater than that in compareBuffer returns 1.

CRRN6: The search method is comprehension required flag independent.

#### Parameter errors

CRRP1: if compareBuffer is null NullPointerException shall be thrown.

CRRP2: if compareOffset would cause access outside array bounds ArrayIndexOutOfBoundsException shall be thrown.

#### Context errors

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

6.2.4.16.3 Test Suite files

Test Script: API\_2\_ENH\_FACRB\_BS\_1.scr

Test Applet: API\_2\_ENH\_FACRB\_BS\_1.java

Load Script: API\_2\_ENH\_FACRB\_BS\_1.ldr

Clean-up Script: API\_2\_ENH\_FACRB\_BS\_1.clr

## 6.2.4.16.3 Test procedure

ld	Description	API Expectation	APDU Expectation
	Fill the SMS PP with TLV: Tag 02 Value 22 44	7.1. Expodution	Do Expodution
	Tag 33, Length C4 Value 01 02		
1	findAndCompareValue() with a null dstBuffer	NullPointerException is thrown	
2	compareOffset ≥ compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
	tag = 06h	n is thrown	
	<pre>compareBuffer.length = 12 compareOffset = 12</pre>		
3	compareOffset < 0	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length = 12	n is thrown	
	compareOffset = -1		
4	length > compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
	<pre>compareBuffer.length = 05 compareOffset = 0</pre>	n is thrown	
5	compareOffset + length >	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length	n is thrown	
	compareBuffer.length = 12		
6	compareOffset = 7		
6	Select a TLV (tag 02h) findAndCompareValue()	ToolkitException.UNAVAILABLE	
	tag = 03h	_ELEMENT is thrown	
	Call the getValueLength() method	ToolkitException.UNAVAILABLE	
	zan me gerranas <b>z</b> enigini() memed	ELEMENT is thrown.	
7	Initialise compareBuffer		
	compareBuffer = 81 11 22 33 44 F5		
	Compare buffers	Result is 00h	
	<pre>tag = 06h compareOffset = 0</pre>		
8	Verify current TLV	Result is 06	
	getValueLength()		
9	Initialise compareBuffer		
<u> </u>	compareBuffer = 81 11 22 33 44 F4	Popult in 14	
10	Compare buffers with same parameters Initialise compareBuffer	Result is +1	
10	compareBuffer = 81 11 22 33 44 F6		
	Compare buffers with same parameters	Result is -1	
11	Initialise compareBuffer		
	compareBuffer =		
	55 55 81 11 22 33 44 F5 55 55 55 55 Compare buffers	Result is 00h	
	compareOffset = 2	TOGGIL IS OUT	
12	Initialise compareBuffer		
	compareBuffer =		
	55 55 83 81 55 55 55 55 55 55 55 55 55 <b>Compare buffers</b>	Result is 00h	
	compareOffset = 2	Vesnii is noi!	
13	Initialise compareBuffer		
	compareBuffer =		
-	55 55 83 80 55 55 55 55 55 55 55 55 55 55 55 55 55	Deput is 14	
	Compare buffers compareOffset = 2	Result is +1	
14	Initialise compareBuffer		
	compareBuffer =		
<u> </u>	55 55 83 82 55 55 55 55 55 55 55		
	Compare buffers compareOffset = 2	Result is -1	
15	Initialise compareBuffer		
	compareBuffer =		
	83 81 55 55 55 55 55 55 55 55		
	Successful call (with tag 02h)	Result is 00h	
	<pre>tag = 02h compareBuffer.length = 12</pre>		
1	compareOffset = 0		
Ī			
16	Initialise compareBuffer		
16	Initialise compareBuffer CompareBuffer = 01 02 C4	Describis 00h	
16	Initialise compareBuffer	Result is 00h	

CompareBuffer.length = C4	
CompareOffset = 0	

## 6.2.4.16.4 Test Coverage

CRR number	Test case number
N1	6
N2	8
N3	7, 11, 12
N4	9, 13
N5	10, 14
N6	15, 16
P1	1
P2	2, 3, 4, 5
C1	Does not apply for EnvelopeHandler

## 6.2.4.17 sim.tookit.EnvelopeHandler.findAndCompareValue 2

Test Area Reference: API\_2\_ENH\_FACRBBS\_BSS

## 6.2.4.17.1 Conformance requirement

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

## 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 simple TLV is less than that in compareBuffer -1 is returned.

CRRN5: if the first miscomparing byte in simple TLV is greater than that in compareBuffer 1 is returned

CRRN6: The search method is comprehension required flag independent.

## 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. occurence = 0) an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException BAD\_INPUT\_PARAMETER.

## Context errors

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

6.2.4.17.3 Test Suite files

Test Script: API\_2\_ENH\_FACRBBS\_BSS\_1.scr

Test Applet: API\_2\_ENH\_FACRBBS\_BSS\_1.java

Load Script: API\_2\_ENH\_FACRBBS\_BSS\_1.ldr

Clean-up Script: API\_2\_ENH\_FACRBBS\_BSS\_1.clr

## 6.2.4.17.3 Test procedure

ld	Description	API Expectation	APDU Expectation
	Fill the SMS PP with TLV: Tag 02 Value 22 44	-	•
	Tag 33, Length C4 Value 01 02		
1	findAndCompareValue() with a null compareBuffer	NullPointerException is thrown	
2	<pre>compareOffset ≥ compareBuffer.length tag = 06h, occurrence = 1 valueOffset = 0 compareBuffer.length = 6 compareOffset = 6 compareLength = 1</pre>	ArrayIndexOutOfBoundsException is thrown	
3	<pre>compareOffset &lt; 0 compareBuffer.length = 6 compareOffset = -1 compareLength = 1</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
4	<pre>compareLength &gt;compareBuffer.length compareBuffer.length = 5 compareOffset = 0 compareLength = 6</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
5	<pre>compareOffset + compareLength</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
6	<pre>compareLength &lt; 0 compareBuffer.length = 5 compareOffset = 0 compareLength = -1</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
7	<pre>valueOffset ≥ Value Length tag = 06h, occurrence = 1 valueOffset = 6 compareBuffer.length = 15 compareOffset = 0 compareLength = 1</pre>	ToolkitException.OUT_OF_TLV_BOUNDARIES is thrown	
8	<pre>valueOffset &lt; 0 valueOffset = -1 compareBuffer.length = 15 compareOffset = 0 compareLength = 1</pre>	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
9	<pre>compareLength &gt; Value length valueOffset = 0 compareBuffer.length = 15 compareOffset = 0 compareLength = 7</pre>	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
10	<pre>valueOffset + compareLength &gt; Value length valueOffset = 2 compareBuffer.length = 15 compareOffset = 0 compareLength = 5</pre>	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
11	Invalid parameter occurrence = 0	ToolkitException.BAD_INPUT_P ARAMETER is thrown	
12	Select a TLV (tag 02h)		
	findAndCompareValue() tag = 06h	ToolkitException.UNAVAILABLE _ELEMENT is thrown	

Call the getValueLength() method	ı	occurrence = 2	1	İ
Initialise compareBuffer   compareBuffer   compareBuffer   st.   1.1			ToolkitException.UNAVAILABLE	
Designation   Compare		3		
findAndCompareValue()   tag = 58h, occurrence = 1   valueOffset = 0   compareDeffset = 0   tag = 20   compareDeffset = 0   compareDeffse	13			
Lag = 08h, occurrence = 1   valueOffset = 0   compareNoffset = 81 11 22 33 44 84   compareNoffset = 81 11 22 33 44 86   compareNoffset = 8			Popult is 00h	
valueoffset = 0			Result is our	
CompareEuroph				
14				
Section   Sect	14	1 3	Result is 0006	
Comparebuffer   31 11   22   33   44   F4		getValueLength()	Tresum is seed	
Compare buffers with same parameters   Result is +1	15			
Initialise compareBuffer   St. 11 22 33 44 F5		-	Davillia 14	
Compare buffer with same parameters	16		Result is +1	
Compare buffers with same parameters   Result is -1	10			
CompareBuffer			Result is -1	
S   S   S   S   S   S   S   S   S   S	17			
Compare buffers   valueoffset = 2   compareDiffer   stage   compareDiffer   stage				
valueOffset = 2   compareOffset = 3			Result is 00h	
CompareLenath = 4   18		valueOffset = 2		
Initialise compareBuffer		_		
CompareButfer	10			
Society   Soci	10			
19		55 55 55 22 33 45 F5 55 55 55 55		
CompareBuffer =   55 55 55 22 23 43 F5 55 55 55     Compare buffers with same parameters   Result is +1     Initialise compareBuffer   CompareBuffer   Si 83 81 55 55 55 55 55 55 55 55 55 55 55 55 55			Result is -1	
S 55 55 52 23 34 38 75 55 55 55 55     Compare buffers with same parameters     Compare buffer     Compare buffer     S 38 15 55 55 55 55 55 55 55 55 55 55 55 55	19			
Compare buffers with same parameters   Result is +1				
CompareButfer =   3   15   55   55   55   55   55   55			Result is +1	
### ### ### ### #### #### ############	20			
findAndCompareValue()   tag = 02h, occurrence = 1   valueOffset = 0   compareOffset = 0   compareLength = 2   21		-		
tag = 02h, occurrence = 1 valueOffset = 0 compareOffset = 0 compareOffset = 0 compareBuffer = 22 44 55 55 55 55 55 55 55 55 55 55 55 55			Result is 00h	
compareOffset = 0			Troodit io oon	
Initialise compareBuffer compareBuffer = 22 44 55 55 55 55 55 55 55 55 55  findAndCompareValue() tag = 02h, occurrence = 2 valueOffset = 0 compareLength = 2  Initialise compareBuffer compareBuffer = 22 45 55 55 55 55 55 55 55 55  findAndCompareValue() tag = 02h, occurrence = 2 valueOffset = 0 compareBuffer = 22 45 55 55 55 55 55 55 55 55  findAndCompareValue() tag = 02h, occurrence = 2 valueOffset = 0 compareLength = 2  Initialise compareBuffer compareBuffer = 83 81 55 55 55 55 55 55 55 55  Successful call (with tag 02h) tag = 02h, occurrence = 1 valueOffset = 0 compareBuffer,length = 12 compareOffset = 0 compareBuffer = 0 to 2 C4  Successful call (with tag B3h) tag = B3h, occurrence = 1 valueOffset = 0 compareBuffer.length = 0004				
Initialise compareBuffer compareBuffer   22 44 55 55 55 55 55 55 55 55 55 55 55 55				
compareBuffer = 22 44 55 55 55 55 55 55 55 55 55 55 55 55	21			
findAndCompareValue() Result is 00h   tag = 02h, occurrence = 2 valueOffset = 0 compareOffset = 0   compareLength = 2 Initialise compareBuffer compareBuffer =   22 45 55 55 55 55 55 55 55 55 55 55 55 Result is -1   tag = 02h, occurrence = 2 valueOffset = 0 Result is -1   compareOffset = 0 compareOffset = 0 compareOffset = 0   compareBuffer = 83 81 55 55 55 55 55 55 55 55 55 Result is 00h   Successful call (with tag 02h)   tag = 02h, occurrence = 1 valueOffset = 0 compareOffset = 0   compareOffset = 0 compareOffset = 0 Result is 00h    Result is 00h  Result is		compareBuffer =		
tag = 02h, occurrence = 2 valueOffset = 0 compareOffset = 0 compareLength = 2  Initialise compareBuffer compareBuffer = 22 45 55 55 55 55 55 55 55 55  findAndCompareValue() tag = 02h, occurrence = 2 valueOffset = 0 compareOffset = 0 compareOffset = 0 compareDuffer = 83 81 55 55 55 55 55 55 55 55  Successful call (with tag 02h) tag = 02h, occurrence = 1 valueOffset = 0 compareDuffer = 12 compareOffset = 0 compareDuffer = 0			Popult in 00h	
valueOffset = 0 compareOffset = 0 compareDength = 2  22			Result is our	
compareLength = 2  Initialise compareBuffer compareBuffer = 22 45 55 55 55 55 55 55 55 55 55 55 55 55		valueOffset = 0		
Initialise compareBuffer compareBuffer compareBuffer = 22 45 55 55 55 55 55 55 55 55 55 55 55 55		-		
CompareBuffer = 22 45 55 55 55 55 55 55 55 55 55 55 55 55	22			
findAndCompareValue() tag = 02h, occurrence = 2 valueOffset = 0 compareOffset = 0 compareLength = 2  23		compareBuffer =		
tag = 02h, occurrence = 2 valueOffset = 0 compareOffset = 0 compareEungth = 2  23  Initialise compareBuffer compareBuffer = 83 81 55 55 55 55 55 55 55 55 55  Successful call (with tag 02h) tag = 02h, occurrence = 1 valueOffset = 0 compareBuffer.length = 12 compareOffset = 0 compareLength = 2  24  Initialise compareBuffer compareBuffer = 01 02 C4  Successful call (with tag B3h) tag = B3h, occurrence = 1 valueOffset = 0 compareBuffer.length = 0004			D #: 4	
<pre>valueOffset = 0 compareOffset = 0 compareLength = 2  23</pre>			Kesult Is -1	
compareLength = 2  Initialise compareBuffer compareBuffer = 83 81 55 55 55 55 55 55 55 55 55 55 55 55 55				
Initialise compareBuffer  compareBuffer = 83 81 55 55 55 55 55 55 55 55 55 55 55 55 55		_		
compareBuffer = 83 81 55 55 55 55 55 55 55 55 55 55 55 55 55	22			
## Successful call (with tag 02h)    tag = 02h, occurrence = 1	23			
<pre>tag = 02h, occurrence = 1 valueOffset = 0 compareBuffer.length = 12 compareOffset = 0 compareLength = 2  24</pre>		83 81 55 55 55 55 55 55 55 55 55		
<pre>valueOffset = 0 compareBuffer.length = 12 compareOffset = 0 compareLength = 2  24</pre>			Result is 00h	
<pre>compareBuffer.length = 12 compareOffset = 0 compareLength = 2  24</pre>		-		
compareLength = 2  24		compareBuffer.length = 12		
Initialise compareBuffer compareBuffer = 01 02 C4  Successful call (with tag B3h) tag = B3h, occurrence = 1 valueOffset = 0 compareBuffer.length = 00C4  Result is 00h				
compareBuffer = 01 02 C4  Successful call (with tag B3h) tag = B3h, occurrence = 1 valueOffset = 0 compareBuffer.length = 00C4  Result is 00h	24			
<pre>tag = B3h, occurrence = 1 valueOffset = 0 compareBuffer.length = 00C4</pre>				
<pre>valueOffset = 0 compareBuffer.length = 00C4</pre>			Result is 00h	
compareBuffer.length = 00C4				

	compareLength = 00C4		
25	Successful call, findAndCompareValue with	Result of findAndCompareValue()	
	length =0	is 00h	
	DstBuffer.length = C4		
	DstOffset = C4		
	DstLength = 0		

## 6.2.4.17.4 Test Coverage

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

# 6.2.5 Class EnvelopeResponseHandler

## 6.2.5.1 sim.tookit.EnvelopeResponseHandler.getTheHandler\_1

Test Area Reference: API\_2\_ERH\_GTHD

## 6.2.5.1.1 Conformance requirement:

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

#### Normal execution

CRRN1: The method shall return the single system instance of the EnvelopeResponseHandler class.

CRRN2: The EnvelopeResponseHandler is a Temporary JCRE Entry Point Object ( see Javacard 2.1 Runtime Environment (JCRE) Specification [12])

#### Parameter errors

#### Context errors

CRRC1: The method shall thrown ToolkitException (HANDLER\_NOT\_AVAILABLE) if the handler is busy.

CRRC2: After the first invocation of the ProactiveHandler.send method the EnvelopeResponseHandler is no more available

6.2.5.1.2 Test suite files

Test Script: API\_2\_ERH\_GTHD\_1.scr

Test Applet: API\_2\_ERH\_GTHD\_1.java

Load Script: API\_2\_ERH\_GTHD\_1.ldr

Clean-up Script: API\_2\_ERH\_GTHD\_1.clr

## 6.2.5.1.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	getTheHandler twice	The returned objects shall be the	
		same	
2	Verify that getTheHandler returns an	The reference returned shall be an	
	EnvelopeHandler	EnvelopeResponseHandler	
	getTheHandler	(checkcast)	
3	Verify the returned value is not null	The reference returned shall not be	
	getTheHandler	null.	
4	getTheHandler, then send a proactive	ToolkitException	
	command, and then, appendTLV	HANDLER_NOT_AVAILABLE is	
		thrown	

#### 6.2.5.1.4 Test Coverage

CRR number	Test case number
N1	1, 2, 3
N2	To be checked in
	Framework tests and
	insert here cross
	reference
C1	To be checked in
	Framework tests and
	insert here cross
	reference
C2	4

## 6.2.5.2 sim.tookit.EnvelopeResponseHandler.post\_1

Test Area Reference: API\_2\_ERH\_POSTB

## 6.2.5.2.1 Conformance requirement

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

#### Normal execution

CRRN1: When the method is called, the toolkit applet can continue it's processing (e.g. prepare a proactive command).

CRRN2: The byte statusType is SW1 of the status.

CRRN3: If the send method is called after a post method, the posted data are the first sent to the ME.

CRRN4: The SIM Toolkit Framework shall take the optional Application Data posted by the triggered toolkit applet if present, secure and send the response packet the SIM Toolkit Framework will return the response APDU defined by the toolkit applet.

## Parameter error

## Context errors

CRRC1: The method shall thrown ToolkitException (HANDLER\_NOT\_AVAILABLE) if the handler is busy.

#### 6.2.5.2.2 Test suite files

Test Script: API\_2\_ERH\_POSTB\_1.scr

All SMS PP sent to the applet are not securedwith SPI = 0800

Test Applet: API\_2\_ERH\_POSTB\_1.java

Load Script: API\_2\_ERH\_POSTB\_1.ldr

Clean-up Script: API\_2\_ERH\_POSTB\_1.clr

## 6.2.5.2.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	getTheHandler and then post (the handler is empty)		9000
2	Fill the handler (appendTLV to have bytes in it ) and then post data with status 9F		9FFD data are retrieved with GET RESPONSE command
3	Verify that after a post the handler is no more available appendTLV, post and then appendTLV	ToolkitException HANDLER_NOT_AVAILABL E is thrown on the second appendTLV	
4	construct the response (appendTLV with 0x10 data) and post it with status 9E and then send a display text		9E12 and posted data retrieved by a GET RESPONSE with status 9113 and display text retrieved by a FETCH
5	Verify that it is possible to send a proactive command after a post getTheHandler and post , then send a display text		91 13 and display text is retrieved by a FETCH
6	Verify it is not possible to post after a proactive command getTheHandler, appendTLV, send a display text, post.	ToolkitException HANDLER_NOT_AVAILABL E is thrown	
7	Verify that the handler is no more available after a post getTheHandler, appendTLV, post with status 9E, post with status 9F	ToolkitException HANDLER_NOT_AVAILABL E is thrown	9E12 and posted data retrieved by a GET RESPONSE

## 6.2.5.2.4 Test Coverage

CRR number	Test case number
N1	3, 4, 7
N2	1, 2, 4, 7
N3	4, 5
N4	To be checked in
	Framework tests and
	insert here cross
	reference
C1	6

# 6.2.5.3 sim.tookit.EnvelopeResponseHandler.postAsBERTLV\_1

Test Area Reference: API\_2\_ERH\_POSTBB

## 6.2.5.3.1 Conformance Requirement

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

 $\label{eq:public_void} \begin{array}{ccc} \texttt{postAsBERTLV}(\texttt{byte statusType}, \\ & \texttt{byte tag}) \\ & \texttt{throws ToolkitException} \end{array}$ 

#### Normal execution

CRRN1: When the method is called, the toolkit applet can continue it's processing (e.g. prepare a proactive command) the SIM Toolkit Framework will return the response APDU defined by the toolkit applet.

CRRN2: The byte statusType is SW1 of the status

CRRN3: If the send method is called after a postAsBERTLV method, the posted data are the first sent to the ME.

CRRN4: The byte tag is the BER Tag at the beginning of the simple TLV list.

## Parameter errors

## Context errors

CRRC1: The method shall thrown ToolkitException (HANDLER\_NOT\_AVAILABLE) if the handler is busy.

## 6.2.5.3.2 Test suite files

Specific triggering: Call control

Test Script: API\_2\_ERH\_POSTBB\_1.scr

Test Applet: API\_2\_ERH\_POSTBB\_1.java

Load Script: API\_2\_ERH\_POSTBB\_1.ldr

Clean-up Script: API\_2\_ERH\_POSTBB\_1.clr

## 6.2.5.3.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	getTheHandler and then postAsBERTLV		9F02 data are retrieved with
	(the handler is empty)		GET RESPONSE command.
			the tag shall be 33 and the
			length is 00
2	Fill the handler and then postAsBERTLV		9FFF data are retrieved with
	the data with status 9F, and tag 33		GET RESPONSE command,
	, ,		the tag shall be 33
3	appendTLV, postAsBERTLV and then	ToolkitException	-
	appendTLV	HANDLER_NOT_AVAILABLE is	
		thrown on the second appendTLV	
4	construct the response (appendTLV with		9E14 and posted data
	0x10 data) and postAsBERTLV it with		retrieved by a GET
	status 9E, tag 75 and then send a display		RESPONSE the tag shall be
	text		75 with status 9113 and
			display text retrieved by a
			FETCH
5	getTheHandler and postAsBERTLV, then		9E02 and posted data
	send a display text		retrieved by a GET
			RESPONSE the tag 33 (and
			the length 00) with status
			9113 and display text is
	V 16 11 1 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1	T 110E 0	retrieved by a FETCH
6	Verify it is not possible to postAsBERTLV	ToolkitException	
	after a proactive command getTheHandler, appendTLV, send a	HANDLER_NOT_AVAILABLE is	
	display text, postAsBERTLV.	thrown on the postAsBERTLV	
7	Verify that the handler is no more available	ToolkitException	9E14 and posted data
'	after a postAsBERTLV	HANDLER_NOT_AVAILABLE is	retrieved by a GET
	getTheHandler, appendTLV(with data	thrown on the second postAsBERTLV	RESPONSE the tag shall be
	length = 0x10, postAsBERTLV with status		56 with status 9000
	9E, tag 56, postAsBERTLV with status		2 2
1	9F, tag 28		

## 6.2.5.3.4 Test Coverage

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

# 6.2.5.4 Method getLength

Test Area Reference: API\_2\_ERH\_GLEN

## 6.2.5.4.1 Conformance requirement

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

public short getLength()

throws ToolkitException

## Normal execution

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

#### Parameter errors

#### Context errors

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

## 6.2.5.4.3 Test Suite files

Test Script: API\_2\_ERH\_GLEN\_1.scr

Test Applet: API\_2\_ERH\_GLEN\_1.java

Load Script: API\_2\_ERH\_GLEN\_1.ldr

Clean-up Script: API\_2\_ERH\_GLEN\_1.clr

## 6.2.5.4.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Clear the handler	Result of getLength() is 0	
	getLength()		
2	appendTLV with length of 7	Result of getLength() is 9	
	getLength()		
3	Clear the handler and appendTLV with Length	Result of getLength() is 256	
	of 253		
	getLength()		
4	Build a 7Fh Envelope response handler	Result of getLength() is 81h	
	getLength()		
5	Build a 80h Envelope response handler	Result of getLength() is 83h	
	getLength()		

## 6.2.5.4.4 Test Coverage

CRR number	Test case number
N1	1, 2, 3, 4,5
C1	Does not apply for
	Envelope response
	handler

## 6.2.5.5 Method copy

Test Area Reference: API\_2\_ERH\_COPY\_BSS

## 6.2.5.5.1 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

## Normal execution

CRRN1: copies the simple TLV list contained in the handler to the destination byte array.

CRRN2: returns dstOffset + dstLength.

#### 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 simple TLV List, an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException. OUT\_OF\_TLV\_BOUNDARIES.

#### Context errors

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

6.2.5.5.3 Test Suite files

Test Script: API\_2\_ERH\_COPY\_BSS\_1.scr

Test Applet: API\_2\_ERH\_COPY\_BSS\_1.java

Load Script: API\_2\_ERH\_COPY\_BSS\_1.ldr

Clean-up Script: API\_2\_ERH\_COPY\_BSS\_1.clr

# 6.2.5.5.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	NULL as parameter to dstBuffer	NullPointerException is thrown	- P
2	appendTLV with value length of 7		
	dstOffset ≥ dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = 5		
	dstLength = 1		
3	dstOffset < 0	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = -1		
	dstLength = 1		
4	dstLength > dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = 0		
_	dstLength = 6	A many dead as Cost Of Designed a Fisca and in	
5	<pre>dstOffset + dstLength &gt; dstBuffer.length dstBuffer.length = 5</pre>	ArrayIndexOutOfBoundsExceptio	
	dstOffset = 3	n is thrown	
	dstLength = 3		
6	dstLength < 0	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = 0		
	dstLength = -1		
7	dstLength > length of the simple TLV list	ToolkitException.OUT_OF_TLV_	
	dstBuffer.length = 10	BOUNDARIES is thrown	
	dstOffset = 0		
	dstLength = 10	D 1: ( 0: 0	
8	Successful call, dstBuffer is the whole buffer dstBuffer.length = 9	Result of copy() is 9	
	dstOffset = 0		
	dstLength = 9		
9	Compare the buffer	Result of arrayCompare() is 0	
10	Successful call, dstBuffer is part of a buffer	Result of copy() is 12	
	dstBuffer.length = 15	1100dit 01 00p)() 10 12	
	dstOffset = 3		
	dstLength = 9		
11	Compare the whole buffer	Result of arrayCompare() is 0	
12	Successful call, dstBuffer is part of a buffer	Result of copy() is 9	
	dstBuffer.length = 15		
	dstOffset = 3		
40	dstLength = 6	Described annual Community (1)	
13	Compare the whole buffer	Result of arrayCompare() is 0	
14	Successful call, copy with length =0	Result of copy() is 15	
	<pre>dstBuffer.length = 15 dstOffset = 15</pre>		
	dstOffset = 15 dstLength = 0		
L	apenengen - 0		

# 6.2.5.5.4 Test Coverage

CRR number	Test case number
N1	9, 11, 13
N2	8, 10, 12, 14
P1	1
P2	2, 3, 4, 5, 6
P3	7
C1	Does not apply for
	Envelope response
	handler

# 6.2.5.6 Method findTLV

Test Area Reference: API\_2\_ERH\_FINDBB

## 6.2.5.6.1 Conformance requirement

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

#### 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.

#### 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.

#### Context errors

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

6.2.5.6.3 Test Suite files

Test Script: API\_2\_ERH\_FINDBB\_1.scr

Test Applet: API\_2\_ERH\_FINDBB\_1.java

Load Script: API\_2\_ERH\_FINDBB\_1.ldr

Clean-up Script: API\_2\_ERH\_FINDBB\_1.clr

## 6.2.5.6.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	append the handler with TLVs:		
	81 03 11 22 33		
	82 02 99 77		
	Invalid input parameter	ToolkitException.BAD_INPUT_P	
	Occurrence = 0	ARAMETER is thrown	
2			
	Search 1st TLV	Result is TLV_FOUND_CR_SET	
	Tag = 01h		
	Occurrence = 1		
3	Call the getValueLength() method	Result is 03h	
4	Search 2nd TLV	Result is TLV_FOUND_CR_SET	
	Tag = 02h		
	Occurrence = 1		
5	Call the getValueLength() method	Result is 02h	
6	Select a TLV (tag 02h)		
	Search a wrong tag	Result is TLV_NOT_FOUND	
	Tag = 03h		
	Occurrence = 1		

7	Call the getValueLength() method	ToolkitException.UNAVAILABLE	
		_ELEMENT is thrown.	
8	Search a tag with wrong occurrence	Result is TLV_NOT_FOUND	
	Tag = 01h		
	Occurrence = 2		
9	Call the getValueLength() method	ToolkitException.UNAVAILABLEELEMENT is thrown.	
10	Append a TLV with tag=02h		
	Search the TLV	Result is	
	Tag = 02h	TLV FOUND CR NOT SET	
	Occurrence = 2		
11	Append a TLV with tag=04h		
	Search the TLV	Result is	
	Tag = 04h	TLV_FOUND_CR_NOT_SET	
	Occurrence = 1		
12	Search tag 81h	Result is TLV_FOUND_CR_SET	
	Tag = 81h		
	Occurrence = 1		
13	Search tag 84h	Result is	
	Tag = 84h	TLV_FOUND_CR_NOT_SET	
	Occurrence = 1	·	

## 6.2.5.6.4 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
	Envelope response
	handler

# 6.2.5.7 Method getValueLength

Test Area Reference: API\_2\_ERH\_GVLE

## 6.2.5.7.1 Conformance requirement

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

## 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.

## Parameter errors

## 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.

6.2.5.7.3 Test Suite files

Test Script: API\_2\_ERH\_GVLE\_1.scr

Test Applet: API\_2\_ERH\_GVLE\_1.java

Load Script: API\_2\_ERH\_GVLE\_1.ldr

Clean-up Script: API\_2\_ERH\_GVLE\_1.clr

6.2.5.7.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	appendTLV 02 02 02 02 findTLV with TAG 03		
	getValueLength()	ToolkitException.UNAVAILABLE _ELEMENT is thrown	
2	appendTLV with TAG 0D and length 00		
	Search TLV 0Dh		
	getValueLength()	Result is 00h	
3	Clear the handler and append TLV with TAG 0D and length 02		
	Search TLV 0Dh		
	getValueLength()	Result is 02h	
4	Clear the handler and append TLV with TAG 0D and length 0x7F		
	Search TLV 0Dh		
	getValueLength()	Result is 7Fh	
5	Clear the handler and append TLV with TAG 0D and length 0x80		
	Search TLV 0Dh		
	<pre>getValueLength()</pre>	Result is 80h	
6	Clear the handler and append TLV with TAG 0D and length 0xF1		
	Search TLV 0Dh		
	<pre>getValueLength()</pre>	Result is F1h	

## 6.2.5.7.4 Test Coverage

CRR number	Test case number
N1	2, 3, 4, 5, 6
C1	Does not apply for EnvelopeResponseHandl
	er
C2	1

# 6.2.5.8 Method getValueByte

Test Area Reference: API\_2\_ERH\_GVBYS

## 6.2.5.8.1 Conformance requirement

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

#### Normal execution

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

## 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.

#### 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.

6.2.5.8.3 Test Suite files

Test Script: API\_2\_ERH\_GVBYS\_1.scr

Test Applet: API\_2\_ERH\_GVBYS\_1.java

Load Script: API\_2\_ERH\_GVBYS\_1.ldr

Clean-up Script: API\_2\_ERH\_GVBYS\_1.clr

## 6.2.5.8.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	appendTLV 82 02 81 82, appendTLV 81 03 11 22 FE		•
ļ	findTLV with TAG 03		
	<pre>getValueByte(0)</pre>	ToolkitException.UNAVAILABLE _ELEMENT is thrown	
2	Search TLV 01h		
	getValueByte(3)	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
3	Search TLV 01h		
	getValueByte(2)	Result is FEh	
4	Search TLV 02h		
	getValueByte(0)	Result is 81h	
5	appendTLV with TAG 0D, Length 0x7E, Value: 00, 01,, 7D		
	getValueByte(7D)	Result is 7Dh	
6	clear the handler, appendTLV with TAG 0D, Length 0x80, Value: 00, 01,, 7F		
	getValueByte(7E)	Result is 7Eh	
7	getValueByte(7F)	Result is 7Fh	
8	clear the handler, appendTLV with TAG 0D, Length 0xF1, Value: 00, 01,, F0		
	getValueByte(F0)	Result is F0h	

## 6.2.5.8.4 Test Coverage

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

## 6.2.5.9 Method copyValue

Test Area Reference: API\_2\_ERH\_CPYVS\_BSS

## 6.2.5.9.1 Conformance requirement

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

#### Normal execution

CRRN1: copies a part of the last TLV element which has been found, into a destination. buffer.

CRRN2: returns dstOffset + dstLength.

#### 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.

#### 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.

6.2.5.9.3 Test Suite files

Test Script: API\_2\_ERH\_CPYVS\_BSS\_1.scr

Test Applet: API\_2\_ERH\_CPYVS\_BSS\_1.java

Load Script: PI\_2\_ERH\_CPYVS\_BSS\_1.ldr

Clean-up Script: PI\_2\_ERH\_CPYVS\_BSS\_1.clr

# 6.2.5.9.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Initialise the handler	Al I Expectation	AI DO EXPECIATION
'	Select a TLV		
	copyValue() with a null dstBuffer	NullPointerException is thrown	
2	appendTLV with TAG: 0D and length 16	Train onto Exception to the wif	
_	Select Text String TLV		
	dstOffset ≥ dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = 5		
	dstLength = 1		
3	dstOffset < 0	ArrayIndexOutOfBoundsExceptio	
	<pre>dstBuffer.length = 5 dstOffset = -1</pre>	n is thrown	
	dstLength = 1		
4	dstLength >dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = 0		
5	dstLength = 6 dstOffset + dstLength >dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
٦	dstBuffer.length = 5	n is thrown	
	dstOffset = 3		
	dstLength = 3		
6	dstLength < 0	ArrayIndexOutOfBoundsExceptio	
	<pre>dstBuffer.length = 5 dstOffset = 0</pre>	n is thrown	
	dstLength = -1		
7	clear the handler, appendTLV with TAG: 0D		
	and length 6		
	Select Text String TLV		
	valueOffset ≥ Text String Length	ToolkitException.OUT_OF_TLV_	
	valueOffset = 6	BOUNDARIES is thrown	
	<pre>dstBuffer.length = 15 dstOffset = 0</pre>		
	dstLength = 1		
8	valueOffset < 0	ToolkitException.OUT_OF_TLV_	
	valueOffset = -1	BOUNDARIES is thrown	
	<pre>dstBuffer.length = 15 dstOffset = 0</pre>		
	dstOffset = 0 dstLength = 1		
9	dstLength > Text String length	ToolkitException.OUT_OF_TLV_	
	valueOffset = 0	BOUNDARIES is thrown	
	dstBuffer.length = 15		
	<pre>dstOffset = 0 dstLength = 7</pre>		
10	valueOffset + dstLength > Text String length	ToolkitException.OUT_OF_TLV_	
'	valueOffset = 2	BOUNDARIES is thrown	
	dstBuffer.length = 15		
	dstOffset = 0		
11	dstLength = 5 Initialise the handler	+	
H	copyValue()	ToolkitException.UNAVAILABLE	
		_ELEMENT is thrown	
12	clear the handler, appendTLV with TAG: 0D		
	and value: 04 00 01 0F		
	Select Text String TLV		
	Successful call	Result of copyValue() is 17	
	<pre>valueOffset = 0 dstBuffer.length = 17</pre>		
	dstBuffer.length = 1/		
L	dstLength = 17		
13	Compare buffer	Result is 00h	
	buffer = 04 00 01 0F		
L .	haldelles Lop (C)		
14	initialise dstBuffer		
<u> </u>	dstBuffer = 55 55 55  Successful call	Result of copyValue() is 15	
	valueOffset = 2	result of copy value() is 15	
	dstBuffer.length = 20		
	dstOffset = 3		
	dstLength = 12	1	

15	Compare buffer	Result is 00h
	buffer =	
	55 55 55 01 02	
	03 04 05 06 07	
	08 09 0A 0B 0C	
	55 55 55 55	
16	Successful call, copyValue with length =0	Result of copyValue() is 20
	dstBuffer.length = 20	
	dstOffset = 20	
	dstLength = 0	

## 6.2.5.9.4 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
	EnvelopeResponseHandl
	er
C2	11

## 6.2.5.10 Method compareValue

Test Area Reference: API\_2\_ERH\_CPRVS\_BSS

## 6.2.5.10.1 Conformance requirement

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

## 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 simple TLV List is less than that in compareBuffer.

CRRN3: returns 1 if the first miscomparing byte in simple TLV List is greater than that in compareBuffer.

## 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.

#### 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.

6.2.5.10.3 Test Suite files

Test Script: API\_2\_ERH\_CPRVS\_BSS\_1.scr

Test Applet: API\_2\_ERH\_CPRVS\_BSS\_1.java

Load Script: API\_2\_ERH\_CPRVS\_BSS\_1.ldr

Clean-up Script: API\_2\_ERH\_CPRVS\_BSS\_1.clr

## 6.2.5.10.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Initialise the handler		
	Select a TLV		
	compareValue() with a null compareBuffer	NullPointerException is thrown	
2	appendTLV with TAG: 0D and length 16		
	Select Text String TLV		
	compareOffset ≥ compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
	<pre>compareBuffer.length = 5</pre>	n is thrown	
	compareOffset = 5		
	compareLength = 1	A	
3	<pre>compareOffset &lt; 0 compareBuffer.length = 5</pre>	ArrayIndexOutOfBoundsExceptio	
	compareOffset = -1	n is thrown	
	compareLength = 1		
4	compareLength >compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
-	compareBuffer.length = 5	n is thrown	
	compareOffset = 0		
	compareLength = 6		
5	compareOffset + compareLength	ArrayIndexOutOfBoundsExceptio	
	>compareBuffer.length	n is thrown	
	compareBuffer.length = 5		
	<pre>compareOffset = 3 compareLength = 3</pre>		
6	compareLength < 0	ArrayIndexOutOfBoundsExceptio	
U	compareBuffer.length = 5	n is thrown	
	compareOffset = 0	II IS UIIOWII	
	compareLength = -1		
7	appendTLV with TAG: 0D and length 6		
	Select Text String TLV		
	valueOffset ≥ Text String Length	ToolkitException.OUT_OF_TLV_	
	<pre>valueOffset = 6</pre>	BOUNDARIES is thrown	
	compareBuffer.length = 15		
	<pre>compareOffset = 0 compareLength = 1</pre>		
8	valueOffset < 0	ToolkitException.OUT_OF_TLV_	
O	valueOffset = -1	BOUNDARIES is thrown	
	compareBuffer.length = 15	DOUNDAIGIEO IS UIIOWII	
	compareOffset = 0		
	compareLength = 1		
9	compareLength > Text String length	ToolkitException.OUT_OF_TLV_	
	valueOffset = 0	BOUNDARIES is thrown	
	<pre>compareBuffer.length = 15 compareOffset = 0</pre>		
	compareLength = 7		
10	valueOffset + compareLength > Text String	ToolkitException.OUT_OF_TLV_	
	length	BOUNDARIES is thrown	
	valueOffset = 2		
	<pre>compareBuffer.length = 15</pre>		
	<pre>compareOffset = 0</pre>		
	compareLength = 5		
	Initialise the handler		
11			
11	compareValue()	ToolkitException.UNAVAILABLE	
	compareValue()	_ELEMENT is thrown	
11			

	Select Text String TLV		
	Initialise compareBuffer		
	compareBuffer =		
	04 00 01 OF		
	Compare buffers	Result is 00h	
	<pre>valueOffset = 0</pre>		
	<pre>compareOffset = 0</pre>		
	compareLength = 17		
13	Initialise compareBuffer		
	compareBuffer =		
	04 00 01 02 03 04 05 06 07 08		
	05 0A 0B 0C 0D		
	0E 10		
	Compare buffers with same parameters	Result is -1	
14	Initialise compareBuffer		
	compareBuffer =		
	03 00 01 OF		
	Compare buffers with same parameters	Result is +1	
15	Initialise compareBuffer		
	compareBuffer =		
	55 55 55 01 02		
	03 04 05 06 07		
	08 09 0A 0B 0C		
	55 55 55 55 55 Compare buffers	Result is 00h	
	valueOffset = 2	Result is out	
	compareOffset = 3		
	compareLength = 12		
16	Initialise compareBuffer		
	compareBuffer =		
	55 55 55 02 01		
	03 04 05 06 07		
	08 09 0A 0B 0C		
	55 55 55 55 55	Deput in 4	
17	Compare buffers with same parameters	Result is -1	
17	Initialise compareBuffer compareBuffer =		
	55 55 55 01 02		
	03 04 05 06 07		
	08 09 0A 0A 0D		
	55 55 55 55		
	Compare buffers with same parameters	Result is +1	
18	Successful call, compareValue with length =0	Result of compareValue() is 0	
	compareBuffer.length = 15		
	compareOffset = 15		
	compareLength = 0		

# 6.2.5.10.4 Test Coverage

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

# 6.2.5.11 Method findAndCopyValue(byte tag, byte[] dstBuffer, short valueOffset)

Test Area Reference: API\_2\_ERH\_FACYB\_BS

## 6.2.5.11.1 Conformance requirement

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

#### 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.

#### Parameter errors

CRRP1: if dstBuffer is null NullPointerException shall be thrown.

CRRP2: if dstOffset would cause access outside array bounds ArrayIndexOutOfBoundsException shall be thrown.

#### Context errors

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

6.2.5.11.3 Test Suite files

Test Script: API\_2\_ERH\_FACYB\_BS\_1.scr

Test Applet: API\_2\_ERH\_FACYB\_BS\_1.java

Load Script: API\_2\_ERH\_FACYB\_BS\_1.ldr

Clean-up Script: API\_2\_ERH\_FACYB\_BS\_1.clr

## 6.2.5.11.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Initialise the handler		-
	findAndCopyValue() with a null dstBuffer	NullPointerException is thrown	
2	appendTLV with TAG: 0D and length 16 Select Text String TLV		
	<pre>dstOffset ≥ dstBuffer.length tag = 0Dh dstBuffer.length = 20 dstOffset = 20</pre>	ArrayIndexOutOfBoundsException is thrown	
3	<pre>dstOffset &lt; 0 dstBuffer.length = 20 dstOffset = -1</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
4	<pre>dstOffset + length &gt;dstBuffer.length dstBuffer.length = 20 dstOffset = 5</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
5	<pre>length &gt; dstBuffer.length dstBuffer.length = 15 dstOffset = 0</pre>	ArrayIndexOutOfBoundsException is thrown	

6	clear the handler, appendTLV with TAG 02	1	T
О	and Length 02		
	Select a TLV (tag 02h)		
	findAndCopyValue()	ToolkitException.UNAVAILABLE	
	tag = 03h	_ELEMENT is thrown	
	Call the getValueLength() method	ToolkitException.UNAVAILABLE _ELEMENT is thrown.	
7	appendTLV with TAG: 0D and value: 04 00 01		
	0F		
	Successful call	Result of findAndCopyValue() is	
	Tag = 0Dh	17	
	dstBuffer.length = 17		
	dstOffset = 0	D It : OOI	
8	Compare buffer buffer = 04 00 01 0F	Result is 00h	
9	initialise dstBuffer		
	dstBuffer = 55 55 55		
	Successful call	Result of findAndCopyValue() is	
	<pre>dstBuffer.length = 20 dstOffset = 2</pre>	19	
10	Compare buffer	Result is 00h	
	buffer =		
	55 55 04 00 01 02 03 04 05 06		
	07 08 09 0A 0B		
	OC OD OE OF 55		
11	clear the handler, appendTLV with TAG: 0D		
	and value: 04 00 01 0F		
	append a 2 <sup>nd</sup> Text String TLV		
	Successful call	Result of findAndCopyValue() is	
	tag = 0Dh	17	
	<pre>dstBuffer.length = 17 dstOffset = 0</pre>		
12	Compare buffer	Result is 00h	
12	buffer = 04 00 01 0F	ivesuit is oon	
13	clear the handler, appendTLV with TAG: 0D		
	and value: 04 00 01 0F		
	Successful call (with tag 8Dh)	Result of findAndCopyValue() is	
	tag = 8Dh	17	
	dstBuffer.length = 17	' '	
	dstOffset = 0		
14	Compare buffer	Result is 00h	
	buffer = 04 00 01 0F		
15	Append tag 0Fh buffer = 00 01 0F		
	Successful call (with tag 8Fh)	Result of findAndCopyValue() is	
	tag = 8Fh	16	
	dstBuffer.length = 16		
10	dstOffset = 0	Deput is 00h	
16	Compare buffer buffer = 00 01 0F	Result is 00h	

# 6.2.5.11.4 Test Coverage

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

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

Test Area Reference: API\_2\_ERH\_FACYBBS\_BSS

## 6.2.5.12.1 Conformance requirement

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

#### 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.

## 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.

## Context errors

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

6.2.5.12.3 Test Suite files

Test Script: API\_2\_ERH\_FACYBBS\_BSS\_1.scr

Test Applet: API\_2\_ERH\_FACYBBS\_BSS\_1.java

Load Script: API\_2\_ERH\_FACYBBS\_BSS\_1.ldr

Clean-up Script: API\_2\_ERH\_FACYBBS\_BSS\_1.clr

#### 6.2.5.12.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Initialise the handler		
	findAndCopyValue() with a null dstBuffer	NullPointerException is thrown	
2	appendTLV with TAG: 0D and length 16		
	dstOffset ≥ dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	tag = 0Dh, occurrence = 1	n is thrown	

	valueOffset = 0		
	<pre>dstBuffer.length = 5 dstOffset = 5</pre>		
	dstLength = 1		
3	dstOffset < 0	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = -1		
	dstLength = 1		
4	dstLength >dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	<pre>dstBuffer.length = 5 dstOffset = 0</pre>	n is thrown	
	dstLength = 6		
5	dstOffset + dstLength >dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = 3		
	dstLength = 3		
6	dstLength < 0	ArrayIndexOutOfBoundsExceptio	
	<pre>dstBuffer.length = 5 dstOffset = 0</pre>	n is thrown	
	dstLength = -1		
7	appendTLV with TAG: 0D and length 6		
	valueOffset ≥ Text String Length	ToolkitException.OUT_OF_TLV_	
	tag = 0Dh, occurrence = 1	BOUNDARIES is thrown	
	valueOffset = 6		
	dstBuffer.length = 15		
	dstOffset = 0		
8	dstLength = 1  valueOffset < 0	ToolkitException.OUT_OF_TLV_	
"	valueOffset = -1	BOUNDARIES is thrown	
	dstBuffer.length = 15	BOOMB/ INTEG IS II II OWIT	
	dstOffset = 0		
	dstLength = 1		
9	dstLength > Text String length valueOffset = 0	ToolkitException.OUT_OF_TLV_	
	dstBuffer.length = 15	BOUNDARIES is thrown	
	dstOffset = 0		
	dstLength = 7		
10	valueOffset + dstLength > Text String length	ToolkitException.OUT_OF_TLV_	
	valueOffset = 2	BOUNDARIES is thrown	
	<pre>dstBuffer.length = 15 dstOffset = 0</pre>		
	dstLength = 5		
11	clear the handler, appendTLV with TAG 02		
	and Length 02		
	Select a TLV (tag 02h)		
	findAndCopyValue()	ToolkitException.UNAVAILABLE	
	<pre>tag = 0Dh occurrence = 2</pre>	_ELEMENT is thrown	
	Call the getValueLength() method	ToolkitEveention LINAVAILABLE	
	January Contraction of the Contr	ToolkitException.UNAVAILABLE ELEMENT is thrown.	
12	clear the handler and appendTLV with TAG:		
'-	0D and value: 04 00 01 0F		
	Successful call	Result of findAndCopyValue() is	
	tag = 0Dh, occurrence = 1	17	
	valueOffset = 0		
	dstBuffer.length = 17		
	<pre>dstOffset = 0 dstLength = 17</pre>		
13	Compare buffer	Result is 00h	
.5	buffer = 04 00 01 0F	1.0001.10.0011	
14	initialise dstBuffer		
	dstBuffer = 55 55 55		
	Successful call	Result of findAndCopyValue() is	
	tag = 0Dh, occurrence = 1	15	
	<pre>valueOffset = 2 dstBuffer.length = 20</pre>		
	dstOffset = 3		
	dstLength = 12		
15	Compare buffer	Result is 00h	
	buffer =		
	55 55 55 01 02 03 04 05 06 07		
	08 09 0A 0B 0C		
	55 55 55 55		

16	Append a Text String TLV		
10	tag = 0D		
	buffer = 00 11 22 33 44 55 (no specific		
	DCS byte)		
	Successful call	Result of findAndCopyValue() is	
	tag = 0Dh, occurrence = 1	17	
	valueOffset = 0		
	dstBuffer.length = 20		
	dstOffset = 0		
17	dstLength = 17  Compare buffer	Result is 00h	
17	buffer = 04 00 01 0F	Result is our	
18	Successful call	Result of findAndCopyValue() is	
10	tag = 0Dh, occurrence = 2	6	
	valueOffset = 0	l o	
	dstBuffer.length = 6		
	dstOffset = 0		
	dstLength = 6		
19	Compare buffer	Result is 00h	
	buffer = 00 11 22 33 44 55		
20	clear the handler and appendTLV with TAG:		
	0D and value: 04 00 01 0F		
	Successful call (with tag 8Dh)	Result of findAndCopyValue () is	
	tag = 8Dh occurrence = 1	17	
	valueOffset = 0		
	dstBuffer.length = 17		
	dstOffset = 0		
	dstLength = 17		
21	Compare buffer	Result is 00h	
	buffer = 04 00 01 0F		
22	Append tag 0Fh		
	buffer = 00 01 0F		
	Successful call (with tag 8Fh)	Result of findAndCopyValue () is	
	tag = 8Fh occurrence = 1	16	
	valueOffset = 0		
	dstBuffer.length = 16		
	dstOffset = 0		
	dstLength = 16		
23	Compare buffer	Result is 00h	
	buffer = 00 01 0F		
24	Successful call, findAndCopyValue with	Result of findAndCopyValue () is	
	length =0	16	
	dstBuffer.length = 16		
	dstOffset = 16		
	dstLength = 0		

# 6.2.5.12.4 Test Coverage

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

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

Test Area Reference: API\_2\_ERH\_FACRB\_BS

# 6.2.5.13.1 Conformance requirement

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

#### 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 simple TLV is less than that in compareBuffer returns -1.

CRRN5: if the first miscomparing byte in simple TLV is greater than that in compareBuffer returns 1.

CRRN6: The search method is comprehension required flag independent.

#### Parameter errors

CRRP1: if compareBuffer is null NullPointerException shall be thrown.

CRRP2: if compareOffset would cause access outside array bounds ArrayIndexOutOfBoundsException shall be thrown.

### Context errors

CRRC1: if the handler is busy an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException HANDLER NOT AVAILABLE.

6.2.5.13.3 Test Suite files

Test Script: API\_2\_ERH\_FACRB\_BS\_1.scr

Test Applet: API\_2\_ERH\_FACRB\_BS\_1.java

Load Script: API\_2\_ERH\_FACRB\_BS\_1.ldr

Clean-up Script: API\_2\_ERH\_FACRB\_BS\_1.clr

#### 6.2.5.13.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Initialise the handler		
	findAndCompareValue() with a null dstBuffer	NullPointerException is thrown	
2	appendTLV with TAG: 0D and length 16		
	<pre>compareOffset ≥ compareBuffer.length tag = 0Dh compareBuffer.length = 20 compareOffset = 20</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
3	<pre>compareOffset &lt; 0 compareBuffer.length = 20 compareOffset = -1</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
4	<pre>compareOffset + length &gt;     compareBuffer.length compareBuffer.length = 20</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	

		·T	
<u> </u>	compareOffset = 5		
5	length > compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length = 15	n is thrown	
	compareOffset = 0		
6	clear the handler, appendTLV with TAG 02	<del>                                     </del>	
	and Length 02		
<u> </u>		1	
	Select a TLV (tag 02h)	Tabline of the second	
1	findAndCompareValue()	ToolkitException.UNAVAILABLE	
L_	tag = 03h	_ELEMENT is thrown	
7	Verify current TLV	ToolkitException.UNAVAILABLE	
	getValueLength()	_ELEMENT is thrown.	
8	clear the handler and appendTLV with TAG:		
١	0D and value: 04 00 01 0F		
	Initialise compareBuffer	+	
	•		
	compareBuffer =		
	04 00 01 0F	Docult is 001	
1	Compare buffers	Result is 00h	
1	tag = 0Dh		
	compareOffset = 0	Popult is 17	
9	Verify current TLV	Result is 17	
4-	getValueLength()	+	
10	Initialise compareBuffer		
I	compareBuffer =		
<b>—</b>	04 00 01 10	Dogult in 1	
<u> </u>	Compare buffers with same parameters	Result is -1	
11	Initialise compareBuffer		
1	compareBuffer =		
	03 00 01 0F		
	Compare buffers with same parameters	Result is +1	
12	Initialise compareBuffer		
1	compareBuffer =		
1	55 55 04 00 01		
ĺ	02 03 04 05 06		
1	07 08 09 0A 0B		
<u> </u>	OC OD OE OF 55		
_	Compare buffers	Result is 00h	
<u></u>	compareOffset = 2		
13	append a Text String TLV		
1	tag = 0Dh		
	buffer = 00 11 22 33 44 55		
1	Initialise compareBuffer		
1	compareBuffer =		
ĺ	55 55 04 00 01		
	02 03 04 05 06		
	07 08 09 0A 0B		
<u> </u>	OC OD OE OF 55		
1	Compare buffers	Result is 00h	
	compareOffset = 2		
14	Initialise compareBuffer		
	compareBuffer =		
ĺ	55 55 04 01 01		
	02 03 04 05 06		
	07 08 09 0A 0B		
	OC OD OE OF 55	Described 4	
	Compare buffers	Result is -1	
<u> </u>	compareOffset = 2		
15	Initialise compareBuffer		
	compareBuffer =		
	55 55 04 00 01		
	02 03 04 05 06		
	07 08 09 0A 0B		
	OC OD OD 10 55	<u> </u>	
	Compare buffers	Result is +1	
	compareOffset = 2	+	
16	clear the handler and appendTLV with TAG:		
	0D and value: 04 00 01 0F		
_	Initialise compareBuffer		
	compareBuffer = 04 00 01 OF		
	Successful call (with tag 8Dh)	Result is 00h	<del></del>
	tag = 8Dh		
	compareBuffer.length = 17		
	compareOffset = 0	1	
		·	

17	Append tag 0Fh		
	buffer = 00 01 0F		
	Initialise compareBuffer		
	compareBuffer = 00 01 0F		
	Successful call (with tag 8Fh)	Result is 00h	
	tag = 8Fh		
	compareBuffer.length = 16		
	compareOffset = 0		

#### 6.2.5.13.4 Test Coverage

CRR number	Test case number
N1	6,7
N2	7,9
N3	8, 13, 12
N4	10, 14
N5	11, 15
N6	17, 16
P1	1
P2	2, 3, 4, 5
C1	Does not apply for
	Envelope response
	handler

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

Test Area Reference: API\_2\_ERH\_FACRBBS\_BSS

# 6.2.5.14.1 Conformance requirement

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

## 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 simple TLV is less than that in compareBuffer -1 is returned.

CRRN5: if the first miscomparing byte in simple TLV is greater than that in compareBuffer 1 is returned

CRRN6: The search method is comprehension required flag independent.

## 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.

# Context errors

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

6.2.5.14.3 Test Suite files

Test Script: API\_2\_ERH\_FACRBBS\_BSS\_1.scr

Test Applet: API\_2\_ERH\_FACRBBS\_BSS\_1.java

Load Script: API\_2\_ERH\_FACRBBS\_BSS\_1.ldr

Clean-up Script: API\_2\_ERH\_FACRBBS\_BSS\_1.clr

# 6.2.5.14.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Initialise the handler		
	findAndCompareValue() with a null	NullPointerException is thrown	
	compareBuffer		
2	clear the handler and appendTLV with TAG:		
	0D and value: 04 00 01 0F		
	compareOffset ≥ compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
	tag = 0Dh, occurrence = 1	n is thrown	
	<pre>valueOffset = 0 compareBuffer.length = 5</pre>		
	compareOffset = 5		
	compareLength = 1		
3	compareOffset < 0	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length = 5	n is thrown	
	compareOffset = -1		
_	compareLength = 1	A	
4	<pre>compareLength &gt;compareBuffer.length compareBuffer.length = 5</pre>	ArrayIndexOutOfBoundsException is thrown	
	compareOffset = 0	n is thrown	
	compareLength = 6		
5	compareOffset + compareLength	ArrayIndexOutOfBoundsExceptio	
	>compareBuffer.length	n is thrown	
	compareBuffer.length = 5		
	compareOffset = 3		
6	<pre>compareLength = 3 compareLength &lt; 0</pre>	ArrayIndexOutOfBoundsExceptio	
0	compareBuffer.length = 5	n is thrown	
	compareOffset = 0	II is tillowii	
	compareLength = -1		
7	clear the handler and appendTLV with TAG		
	and length of 6		
	valueOffset ≥ Text String Length	ToolkitException.OUT_OF_TLV_	
	tag = 0Dh, occurrence = 1	BOUNDARIES is thrown	
	<pre>valueOffset = 6 compareBuffer.length = 15</pre>		
	compareOffset = 0		
	compareLength = 1		
8	valueOffset < 0	ToolkitException.OUT_OF_TLV_	
	valueOffset = -1	BOUNDARIES is thrown	
	compareBuffer.length = 15		
	<pre>compareOffset = 0 compareLength = 1</pre>		
	Comparenenden - I		

9	compareLength > Text String length	ToolkitException.OUT_OF_TLV_	
1	valueOffset = 0	BOUNDARIES is thrown	
1	compareBuffer.length = 15		
Ì	compareOffset = 0		
	compareLength = 7		
10	valueOffset + compareLength > Text String	ToolkitException.OUT_OF_TLV_	
10			
	length	BOUNDARIES is thrown	
	valueOffset = 2		
	compareBuffer.length = 15		
	compareOffset = 0		
	compareLength = 5		
11	Invalid parameter	ToolkitException.BAD_INPUT_P	
	occurrence = 0	ARAMETER is thrown	
12	appendTLV with TAG 02 and length 02		
12			
	Select a TLV (tag 02h)		
	findAndCompareValue()	ToolkitException.UNAVAILABLE	
	tag = 0Dh	_ELEMENT is thrown	
	occurrence = 2		
13	Verify current TLV	ToolkitException.UNAVAILABLE	
	getValueLength()	_ELEMENT is thrown.	
14	clear the handler and appendTLV with TAG:		
1	0D and value: 04 00 01 0F		
-			
	Initialise compareBuffer		
	compareBuffer =		
	04 00 01 0F		
Ì	findAndCompareValue()	Result is 00h	
	tag = 0Dh, occurrence = 1		
	valueOffset = 0		
Ì	compareOffset = 0		
	compareLength = 17		
15	Verify current TLV	Result is 17	
	getValueLength()		
16	Initialise compareBuffer		
'	compareBuffer =		
	04 00 01 10		
	Compare huffers with same parameters	Result is -1	
17	Compare buffers with same parameters	Result is -1	
17	Initialise compareBuffer	Result is -1	
17	Initialise compareBuffer compareBuffer =	Result is -1	
17	Initialise compareBuffer compareBuffer = 03 00 01 0F		
	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters	Result is -1  Result is +1	
17	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters Initialise compareBuffer		
	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer =		
	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02		
	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07		
	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C		
	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55 55	Result is +1	
	Initialise compareBuffer  compareBuffer =  03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer =  55 55 55 01 02  03 04 05 06 07  08 09 0A 0B 0C  55 55 55 55 55  Compare buffers		
	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55 55  Compare buffers  valueOffset = 2	Result is +1	
	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55 55  Compare buffers  valueOffset = 2 compareOffset = 3	Result is +1	
18	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55 55  Compare buffers  valueOffset = 2 compareOffset = 3 compareLength = 12	Result is +1	
	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55 55  Compare buffers  valueOffset = 2 compareOffset = 3 compareLength = 12  Initialise compareBuffer	Result is +1	
18	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55  Compare buffers  valueOffset = 2 compareOffset = 3 compareLength = 12  Initialise compareBuffer  compareBuffer =	Result is +1	
18	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 05 55 55 55 55 55  Compare buffers  valueOffset = 2 compareOffset = 3 compareOffset = 12  Initialise compareBuffer  compareBuffer = 55 55 55 55 02 01	Result is +1	
18	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55  Compare buffers  valueOffset = 2 compareOffset = 3 compareLength = 12  Initialise compareBuffer  compareBuffer =	Result is +1	
18	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 05 55 55 55 55 55  Compare buffers  valueOffset = 2 compareOffset = 3 compareOffset = 12  Initialise compareBuffer  compareBuffer = 55 55 55 55 02 01	Result is +1	
18	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55  Compare buffers  valueOffset = 2 compareOffset = 3 compareLength = 12  Initialise compareBuffer  compareBuffer = 55 55 55 02 01 03 04 05 06 07	Result is +1	
18	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55 55  Compare buffers  valueOffset = 2 compareOffset = 3 compareLength = 12  Initialise compareBuffer  compareBuffer = 55 55 55 02 01 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55 55 55 55 55 55 55 55 55 55	Result is +1  Result is 00h	
19	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55 55  Compare buffers  valueOffset = 2 compareOffset = 3 compareLength = 12  Initialise compareBuffer  compareBuffer = 55 55 55 55 01 02 01 03 04 05 06 07 08 09 0A 0B 0C 05 55 55 55 55 55 00 00 00 00 00 00 00	Result is +1	
18	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55  Compare buffers  valueOffset = 2 compareOffset = 3 compareLength = 12  Initialise compareBuffer  compareBuffer = 55 55 55 02 01 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55  Compare buffers with same parameters  Initialise compareBuffer	Result is +1  Result is 00h	
19	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55  Compare buffers  valueOffset = 2 compareOffset = 3 compareLength = 12  Initialise compareBuffer  compareBuffer = 55 55 55 02 01 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer =	Result is +1  Result is 00h	
19	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55  Compare buffers  valueOffset = 2 compareOffset = 3 compareLength = 12  Initialise compareBuffer  compareBuffer = 55 55 55 55 55  Compare buffers  some pareBuffer = 55 55 55 55 55  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 55 55  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 55 01 02	Result is +1  Result is 00h	
19	Initialise compareBuffer  compareBuffer =  03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer =  55 55 55 01 02  03 04 05 06 07  08 09 0A 0B 0C  55 55 55 55 55  Compare buffers  valueOffset = 2  compareOffset = 3  compareLength = 12  Initialise compareBuffer   compareBuffer =  55 55 55 02 01  03 04 05 06 07  08 09 0A 0B 0C  55 55 55 55 55  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer =  55 55 55 55 55 55  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer =  55 55 55 51 02 03  03 04 05 06 07	Result is +1  Result is 00h	
19	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55  Compare buffers  valueOffset = 2 compareOffset = 3 compareLength = 12  Initialise compareBuffer  compareBuffer = 55 55 55 02 01 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 55  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0A 0D	Result is +1  Result is 00h	
19	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 05 55 55 55 55 02 01 02 03 04 05 06 07 08 09 0A 0B 0C 05 55 55 55 55 02 01 03 04 05 06 07 08 09 0A 0B 0C 05 55 55 55 55 02 01 03 04 05 06 07 08 09 0A 0B 0C 05 55 55 55 55 02 01 03 04 05 06 07 08 09 0A 0B 0C 05 55 55 55 55 02 01 02 03 04 05 06 07 08 09 0A 0A 0D 05 55 55 55 55 55 55 55 55 55 55 55 55	Result is +1  Result is 00h  Result is -1	
19	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 05 55 55 55 55 02 01 02 03 04 05 06 07 08 09 0A 0B 0C 05 55 55 55 55 02 01 03 04 05 06 07 08 09 0A 0B 0C 05 55 55 55 55 02 01 03 04 05 06 07 08 09 0A 0B 0C 05 55 55 55 55 02 01 03 04 05 06 07 08 09 0A 0B 0C 05 55 55 55 55 02 02 02 03 04 05 06 07 08 09 0A 0B 0C 05 55 55 55 55 55 00 02 03 04 05 06 07 08 09 0A 0A 0D 05 55 55 55 55 55 55 55 55 55 55 55 55	Result is +1  Result is 00h	
19	Initialise compareBuffer  compareBuffer =  03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer =  55 55 55 01 02  03 04 05 06 07  08 09 0A 0B 0C  55 55 55 55 55  Compare buffers  valueOffset = 2  compareOffset = 3  compareLength = 12  Initialise compareBuffer   compareBuffer =  55 55 55 02 01  03 04 05 06 07  08 09 0A 0B 0C  55 55 55 55 55  Compare buffers with same parameters  Initialise compareBuffer   compareBuffer =  55 55 55 01 02  03 04 05 06 07  08 09 0A 0A 0D  55 55 55 55 55 55  Compare buffers with same parameters  append a Text String TLV	Result is +1  Result is 00h  Result is -1	
19	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 05 55 55 55 55 55  Compare buffers  valueOffset = 2 compareBuffer  compareLength = 12  Initialise compareBuffer  compareBuffer = 55 55 55 50 2 01 03 04 05 06 07 08 09 0A 0B 0C 05 55 55 55 55  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0A 0D 05 55 55 55 55 55  Compare buffers with same parameters  append a Text String TLV  tag = 0Dh	Result is +1  Result is 00h  Result is -1	
19	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 05 55 55 55 55 02 01 02 03 04 05 06 07 08 09 0A 0B 0C 05 55 55 55 02 01 03 04 05 06 07 08 09 0A 0B 0C 05 55 55 55 02 01 03 04 05 06 07 08 09 0A 0B 0C 05 55 55 55 01 02 01 03 04 05 06 07 08 09 0A 0B 0C 05 55 55 55 55 01 02 01 03 04 05 06 07 08 09 0A 0B 0C 05 55 55 55 55 01 02 01 03 04 05 06 07 08 09 0A 0B 0C 05 05 05 05 05 05 05 05 05 05 05 05 05	Result is +1  Result is 00h  Result is -1	
19	Initialise compareBuffer	Result is +1  Result is 00h  Result is -1	
19	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55  Compare buffers  valueOffset = 2 compareOffset = 3 compareLength = 12  Initialise compareBuffer  compareBuffer = 55 55 55 02 01 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55 55  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 55 55  Compare buffers with same parameters  append a Text String TLV  tag = 0Dh  buffer = 00 11 22 33 44 55  Initialise compareBuffer  compareBuffer =	Result is +1  Result is 00h  Result is -1	
19	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55  Compare buffers  valueOffset = 2 compareOffset = 3 compareLength = 12  Initialise compareBuffer  compareBuffer = 55 55 55 55 55  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 55 55  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 55 55  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 55 55  Compare buffers with same parameters  append a Text String TLV  tag = 0Dh  buffer = 00 11 22 33 44 55  Initialise compareBuffer  compareBuffer = 04 00 01 0F	Result is +1  Result is 00h  Result is -1	
19	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55  Compare buffers  valueOffset = 2 compareOffset = 3 compareLength = 12  Initialise compareBuffer  compareBuffer = 55 55 55 55 55  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 55  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55 55  Compare buffers with same parameters  append a Text String TLV  tag = 0Dh buffer = 00 11 22 33 44 55  Initialise compareBuffer  compareBuffer = 04 00 01 0F  findAndCompareValue()	Result is +1  Result is 00h  Result is -1	
19	Initialise compareBuffer  compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55  Compare buffers  valueOffset = 2 compareOffset = 3 compareLength = 12  Initialise compareBuffer  compareBuffer = 55 55 55 55 55  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 55 55  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 55 55  Compare buffers with same parameters  Initialise compareBuffer  compareBuffer = 55 55 55 55 55  Compare buffers with same parameters  append a Text String TLV  tag = 0Dh  buffer = 00 11 22 33 44 55  Initialise compareBuffer  compareBuffer = 04 00 01 0F	Result is +1  Result is 00h  Result is -1	

	compareOffset = 0		
	compareLength = 17		
22	Initialise compareBuffer		
	compareBuffer =		
	00 11 22 33 44 55		
	findAndCompareValue()	Result is 00h	
	tag = 0Dh, occurrence = 2		
	valueOffset = 0		
	compareOffset = 0		
	compareLength = 6		
23	Initialise compareBuffer		
	compareBuffer =		
	00 11 22 33 44 66		
	findAndCompareValue()	Result is -1	
	tag = 0Dh, occurrence = 2	result is 1	
	valueOffset = 0		
	compareOffset = 0		
	compareLength = 6		
24	clear the handler and appendTLV with TAG:		
'	0D and value: 04 00 01 0F		
	Initialise compareBuffer		
	compareBuffer = 04 00 01 0F		
	_	Result is 00h	
	Successful call (with tag 8Dh)	Result is our	
	tag = 8Dh, occurrence = 1		
	valueOffset = 0		
	compareBuffer.length = 17		
	compareOffset = 0		
	compareLength = 17		
25	Append tag 0Fh		
	buffer = 00 01 0F		
	Initialise compareBuffer		
	compareBuffer = 00 01 0F		
	Successful call (with tag 8Fh)	Result is 00h	
	tag = 8Fh, occurrence = 1		
	<pre>valueOffset = 0</pre>		
	compareBuffer.length = 16		
	compareOffset = 0		
	compareLength = 16		
26	Successful call, findAndCompareValue with	Result of findAndCompareValue	
	length =0	() is 00	
	CompareBuffer.length = 16		
	compareOffset = 16		
	compareLength = 0		
	CompareBuffer.length = 16 compareOffset = 16	() is 00	

# 6.2.5.14.4 Test Coverage

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

# 6.2.5.15 Method appendArray

Test Area Reference: API\_2\_ERH\_APDA\_BSS

# 6.2.5.15.1 Conformance requirement:

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

#### Normal execution

CRRN1: appends a buffer into the EditHandler buffer

CRRN2: a successful append does not modify the TLV selected

#### 6.2.5.15.2.2 Parameters error

CRRP1: if buffer is null, a java.lang.NullPointerException is thrown

CRRP2: if offset or length or both would cause access outside the array bounds, or if length is negative, a java.lang.ArrayIndexOutOfBoundsException is thrown.

#### Context errors

CRRC1: if the EditHandler buffer is too small to append the requested data, a ToolkitException is thrown with reason code HANDLER\_OVERFLOW

CRRC2: if the EditHandler buffer is busy, a ToolkitException is thrown with reason code HANDLER\_NOT\_AVAILABLE

6.2.5.15.2 Test suite files

Test Script: API\_2\_ERH\_APDA\_BSS\_1.scr

Test Applet: API\_2\_ERH\_APDA\_BSS\_1.java

Load Script: API\_2\_ERH\_APDA\_BSS\_1.ldr

Clean-up Script: API\_2\_ERH\_APDA\_BSS\_1.clr

# 6.2.5.15.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Null buffer	NullPointerException is thrown	-
2	offset ≥ buffer.length	ArrayIndexOutOfBoundsExceptio	
	buffer.length = 5	n is thrown	
	offset = 5		
	length = 1		
3	offset < 0	ArrayIndexOutOfBoundsExceptio	
	buffer.length = 5	n is thrown	
	offset = -1		
4	length > buffer.length	ArrayIndexOutOfBoundsExceptio	
-	buffer.length = 5	n is thrown	
	offset = 0	II IS UIIOWII	
	length = 6		
5	offset + length > buffer.length	ArrayIndexOutOfBoundsExceptio	
	buffer.length = 5	n is thrown	
	offset = 3		
	length = 3		
6	length < 0	ArrayIndexOutOfBoundsExceptio	
	<pre>buffer.length = 5 offset = 0</pre>	n is thrown	
	length = -1		
7	Handler overflow	ToolkitException.HANDLER_OV	
'	buffer.length = 256	ERFLOW is thrown	
	offset = 0	LIG LOW IS UNOWIT	
	length = 256		

8	append the handler with TLVs:	
0	81 03 11 22 33	
	82 02 99 77	
	findTLV 0x81	
	Successful call	
	buffer = FF FE F8	
	offset = 0	
	length = 8	D 4: 001
	Verify Current TLV: Call getValueLength()	Result is 03h
9	Clear the handler	
	Successful call	
	buffer = FF FE F8	
	offset = 0	
	length = 8	
	Call copy() method	
	Compare handler	Result is 00h
	compareBuffer = FF FE F8	
10	Successful call	
	buffer = 00 01 07	
	offset = 2	
	length = 6	
	Call copy() method	
	Compare handler	Result is 00h
	compareBuffer = FF FE F8 02 03 07	
11	Successful call	
	buffer = 11 22 88	
	offset = 2	
	length = 4	
	Call copy() method	
	Compare handler	Result is 00h
	compareBuffer = FF FE F8 02 03 07 33	
	44 55 66	

# 6.2.5.15.4 Test Coverage

CRR number	Test case number	
N1	9, 10, 11	
N2	8	
N3		
P1	1	
P2	2, 3, 4, 5, 6	
C1	7	
C2	Does not apply for	
	EnvelopeResponseHandl	
	er	

# 6.2.5.16 Method appendTLV(byte tag, byte value)

Test Area Reference: API\_2\_ERH\_APTLBB

# 6.2.5.16.1 Conformance requirement:

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

# Normal execution

CRRN1: Appends a TLV element to the current TLV list (1-byte element).

CRRN2: A successful append does not modify the TLV selected.

#### Parameters error

None

# Context errors

CRRC1: if the EditHandler buffer is too small to append the requested data, a ToolkitException is thrown with reason code HANDLER\_OVERFLOW

CRRC2: if the EditHandler buffer is busy, a ToolkitException is thrown with reason code HANDLER\_NOT\_AVAILABLE

6.2.5.16.2 Test suite files

Test Script: API\_2\_ERH\_APTLBB\_1.scr

Test Applet: API\_2\_ERH\_APTLBB\_1.java

Load Script: API\_2\_ERH\_APTLBB\_1.ldr

Clean-up Script: API\_2\_ERH\_APTLBB\_1.clr

# 6.2.5.16.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Call appendArray()		•
	length = 251		
	Handler Overflow: Call the appendTLV()	ToolkitException.HANDLER_OV	
	method	ERFLOW is thrown	
2	append the handler with TLVs:		
	81 03 11 22 33		
	82 02 99 77		
	Select Command Details TLV		
	Call the appendTLV() method		
	Verify Current TLV: Call getValueLength()	Result is 03h	
3	Clear the handler		
	Successful call		
	tag = 84h		
	value = 00h		
	Call copy() method		
	Compare handler	Result is 00h	
	compareBuffer = 84 01 00		
4	Successful call		
	tag = 01h		
	value = FEh		
	Call copy() method		
	Compare handler	Result is 00h	
	compareBuffer = 84 01 00 01 01 FE		

# 6.2.5.16.4 Test Coverage

CRR number	Test case number	
N1	3, 4	
N2	2	
C1	1	
C2	Does not apply for	
	EnvelopeResponseHandl	
	er	

# 6.2.5.17 Method appendTLV(byte tag, byte value1, byte value2)

Test Area Reference: API\_2\_ERH\_APTLBBB

# 6.2.5.17.1 Conformance requirements:

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

void appendTLV (byte tag, byte value1,byte value2)

throws ToolkitException

#### Normal execution

CRRN1: Appends a TLV element to the current TLV list (2-byte element).

CRRN2: A successful append does not modify the TLV selected.

#### Parameters error

None

#### Context errors

CRRC1: if the EditHandler buffer is too small to append the requested data, a ToolkitException is thrown with reason code HANDLER\_OVERFLOW

CRRC2: if the EditHandler buffer is busy, a ToolkitException is thrown with reason code HANDLER\_NOT\_AVAILABLE

6.2.5.17.2 Test suite files

Test Script: API\_2\_ERH\_APTLBBB\_1.scr

Test Applet: API\_2\_ERH\_APTL BBB\_1.java

Load Script: API\_2\_ERH\_APTL BBB\_1.ldr

Clean-up Script: API\_2\_ERH\_APTLBBB\_1.clr

6.2.5.17.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Call the appendTLV with length of 253		
	Handler Overflow: Call the appendTLV()	ToolkitException.HANDLER_OV	
	method	ERFLOW is thrown	
2	clear the handler, append the handler with		
	TLVs:		
	81 03 11 22 33		
	82 02 99 77		
	Select Command Details TLV		
	Call the appendTLV() method		
	Verify Current TLV: Call getValueLength()	Result is 03h	
3	Clear the handler		
	Successful call		
	tag = 84h		
	value1 = 00h		
	value2 = 01h		
	Call copy() method	D 4: 001	
	Compare handler compareBuffer = 84 02 00 01	Result is 00h	
4	Successful call		
4	tag = 01h		
	value1 = FEh		
	value2 = FDh		
	Call copy() method		
	Compare handler	Result is 00h	
	compareBuffer = 84 02 00 01 01 02 FE FD		

# 6.2.5.17.4 Test Coverage

CRR number	Test case number	
N1	3, 4	
N2	2	
C1	1	
C2	Does not apply for	
	EnvelopeResponseHand	
	er	

# 6.2.5.18 Method appendTLV(byte tag, byte[] value, short valueoffset, short valuelength)

Test Area Reference: API\_2\_ERH\_APTLB\_BSS

# 6.2.5.18.1 Conformance requirement:

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

#### Normal execution

CRRN1: Appends a TLV element to the current TLV list (byte-array element).

CRRN2: A successful append does not modify the TLV selected.

#### Parameters error

CRRP1: if value is null, a java.lang.NullPointerException is thrown

CRRP2: if valueoffset or valuelength or both would cause access outside the array bounds, or if length is negative, a java.lang.ArrayIndexOutOfBoundsException is thrown.

#### Context errors

CRRC1: if the EditHandler buffer is too small to append the requested data, a ToolkitException is thrown with reason code HANDLER\_OVERFLOW

CRRC2: if the EditHandler buffer is busy, a ToolkitException is thrown with reason code HANDLER\_NOT\_AVAILABLE

CRRC3: if valuelength is greater than 255, a ToolkitException is thrown with reason code BAD\_INPUT\_PARAMETER

6.2.5.18.2 Test suite files

Test Script: API\_2\_ERH\_APTLB\_BSS\_1.scr

Test Applet: API\_2\_ERH\_APTLB\_BSS\_1.java

Load Script: API\_2\_ERH\_APTLB\_BSS\_1.ldr

Clean-up Script: API\_2\_ERH\_APTLB\_BSS\_1.clr

# 6.2.5.18.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Null value	NullPointerException is thrown	Al DO Expediation
2	valueOffset ≥ value.length	ArrayIndexOutOfBoundsExceptio	
~	value.length = 5	n is thrown	
	valueOffset = 5	II IS UIIOWII	
	valueLength = 1		
3	valueOffset < 0	ArrayIndexOutOfBoundsExceptio	
	value.length = 5	n is thrown	
	valueOffset = -1		
	valueLength = 1		
4	valueLength > value.length	ArrayIndexOutOfBoundsExceptio	
	value.length = 5	n is thrown	
	valueOffset = 0		
5	valueLength = 6 valueOffset + valueLength > value.length	A recorded Action of Double Cycontin	
3	value.length = 5	ArrayIndexOutOfBoundsExceptio n is thrown	
	valueOffset = 3	II IS UIIOWII	
	valueLength = 3		
6	valueLength < 0	ArrayIndexOutOfBoundsExceptio	
	value.length = 5	n is thrown	
	valueOffset = 0		
<u></u>	valueLength = -1		
7	Handler overflow	ToolkitException.HANDLER_OV	
	<pre>value.length = 254 valueOffset = 0</pre>	ERFLOW is thrown	
8	valueLength = 254  Bad parameter	ToolkitException.BAD_INPUT_P	
0	value.length = 256	ARAMETER is thrown	
	valueOffset = 0	ARAIVIETER IS UITOWIT	
	valueLength = 256		
9	clear the handler, append the handler with		
	TLVs:		
	81 03 11 22 33		
	82 02 99 77		
	Select Command Details TLV		
	Successful call		
	tag = 04		
	<pre>value = FF FE F8 valueOffset = 0</pre>		
	valueLength = 8		
	Verify Current TLV: Call getValueLength()	Result is 03h	
10	Clear the handler	Treedit le cell	
	Successful call		
	tag = 04		
	value = FF FE F8		
	<pre>valueOffset = 0</pre>		
	valueLength = 8		
	Call copy() method		
	Compare handler	Result is 00	
4.4	compareBuffer = 04 08 FF FE F8		
11	Successful call		
	tag = 85h value = 00 01 07		
	valueOffset = 2		
	valueLength = 6		
	Call copy() method		
	Compare handler	Result is 00	
	compareBuffer = 04 08 FF FE F8 85 06 02		
	03 07		
12	Successful call		
	tag = 01		
	<pre>value = 11 22 88 valueOffset = 2</pre>		
	valueOffset = 2 valueLength = 4		
	Call copy() method		
	Compare handler	Result is 00	
	compareBuffer = 04 08 FF FE F8 85 06 02	Tresult is ou	
	03 07 01 04 33 44 55 66		
13	Clear the handler		
	Successful call		
	tag = 04		
		•	

value = 00 01 7F		
<pre>valueOffset = 0</pre>		
valueLength = 80h		
Call copy() method		
Compare handler	Result is 00	
compareBuffer = 04 81 80 00 017F		

### 6.2.5.18.4 Test Coverage

CRR number	Test case number	
N1	10, 11, 12, 13	
N2	9	
P1	1	
P2	2, 3, 4, 5, 6	
C1	7	
C2	Does not apply for	
	EnvelopeResponseHandl	
	er	
C3	8	

# 6.2.5.19 Method appendTLV(byte tag, byte value1, byte[] value2, short value2offset, short value2length)

Test Area Reference: API\_2\_ERH\_APTLBB\_BSS

# 6.2.5.19.1 Conformance requirement:

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

# Normal execution

CRRN1: Appends a TLV element to the current TLV list (1 byte and a byte-array element).

CRRN2: A successful append does not modify the TLV selected.

#### Parameters error

CRRP1: if value2 is null, a java.lang.NullPointerException is thrown

CRRP2: if value2offset or value2length or both would cause access outside the array bounds, or if length is negative, a java.lang.ArrayIndexOutOfBoundsException is thrown.

#### Context errors

CRRC1: if the EditHandler buffer is too small to append the requested data, a ToolkitException is thrown with reason code HANDLER\_OVERFLOW

CRRC2: if the EditHandler buffer is busy, a ToolkitException is thrown with reason code HANDLER\_NOT\_AVAILABLE

CRRC3: if valuelength is greater than 255, a ToolkitException is thrown with reason code BAD\_INPUT\_PARAMETER

6.2.5.19.2 Test suite files

Test Script: API\_2\_ERH\_APTLVBB\_BSS\_1.scr

Test Applet: API\_2\_ERH\_APTLVBB\_BSS\_1.java

Load Script: API\_2\_ERH\_APTLVBB\_BSS\_1.ldr

Clean-up Script: API\_2\_ERH\_APTLVBB\_BSS\_1.clr

# 6.2.5.19.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Null value2	NullPointerException is thrown	
2	value2Offset ≥ value2.length	ArrayIndexOutOfBoundsExceptio	
	value2.length = 5	n is thrown	
	value20ffset = 5		
	value2Length = 1		
3	value2Offset < 0	ArrayIndexOutOfBoundsExceptio	
	value2.length = 5	n is thrown	
	value2Offset = -1		
	value2Length = 1		
4	value2Length > value2.length	ArrayIndexOutOfBoundsExceptio	
	value2.length = 5	n is thrown	
	<pre>value2Offset = 0 value2Length = 6</pre>		
-	value2Offset + value2Length > value2.length	ArroyIndovOutOfPoundoEvocatio	
5	value2.length = 5	ArrayIndexOutOfBoundsExceptio	
	value20ffset = 3	n is thrown	
	value2Length = 3		
6	value2Length < 0	ArrayIndexOutOfBoundsExceptio	
~	value2.length = 5	n is thrown	
	value20ffset = 0		
	value2Length = -1		
7	Handler overflow	ToolkitException.HANDLER_OV	
	value2.length = 254	ERFLOW is thrown	
	value2Offset = 0		
	value2Length = 254		
8	Bad parameter	ToolkitException.BAD_INPUT_P	
	value2.length = 256	ARAMETER is thrown	
	value20ffset = 0		
_	value2Length = 256		
9	clear the handler, append the handler with TLVs:		
	82 02 99 77		
	Select Command Details TLV		
	Successful call		
	tag = 04		
	value1 = 05		
	value2 = FF FE F8		
	value2Offset = 0		
	value2Length = 8		
	Verify Current TLV: Call getValueLength()	Result is 03h	
10	Clear the handler		
	Successful call		
	tag = 04		
	value1 = 05		
	<pre>value2 = FF FE F8 value20ffset = 0</pre>		
	value2Length = 8		
	Call copy() method		
	Compare handler	Result is 00	
	Compare nander  CompareBuffer = 04 09 05 FF FE F8	IVESUIT IS OO	
11	Successful call		
''	tag = 85h		
	value1 = 55h		
	value2 = 00 01 07		
	value2Offset = 2		
	value2Length = 6		
	Call copy() method		
	Compare handler	Result is 00	

	compareBuffer =		
	04 09 05 FF FE F8		
	85 07 55 02 03 07		
12	Successful call		
	tag = 01		
	value1 = 44h		
	value2 = 11 22 88		
	<pre>value20ffset = 2</pre>		
	value2Length = 4		
	Call copy() method		
	Compare handler	Result is 00	
	CompareBuffer =		
	04 09 05 FF FE F8		
	85 07 55 02 03 <b></b> 07		
	01 05 44 33 44 55 66		
13	Clear the handler		
	Successful call		
	tag = 04		
	value1 = 00		
	value2 = 01 7F		
	value2Offset = 0		
	value2Length = 7Fh		
	Call copy() method		
	Compare handler	Result is 00	
	compareBuffer = 04 81 80 00 017F		

# 6.2.5.19.4 Test Coverage

CRR number	Test case number
N1	10, 11, 12, 13
N2	9
P1	1
P2	2, 3, 4, 5, 6
C1	7
C2	Does not apply for EnvelopeResponseHandl er
C3	8

# 6.2.5.20 Method clear

Test Area Reference: API\_2\_ERH\_CLER

# 6.2.5.20.1 Conformance requirement:

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

# Normal execution

CRRN1: Clears the TLV list of an EditHandler and resets the current TLV selected.

#### Parameters error

No requirements

# Context errors

CRRC1: if the EditHandler buffer is busy, a ToolkitException is thrown with reason code HANDLER\_NOT\_AVAILABLE

# 6.2.5.20.2 Test suite files

Test Script: API\_2\_ERH\_CLER\_1.scr

Test Applet: API\_2\_ERH\_CLER\_1.java

Load Script: API\_2\_ERH\_CLER\_1.ldr

Clean-up Script: API\_2\_ERH\_CLER\_1.clr

6.2.5.20.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	append the handler with TLVs:	Result of getLength() is not null	
	81 03 11 22 33		
	82 02 99 77		
	Select Command Details TLV		
	Call the getLength() method		
	Clear the handler	Result of getLength() is 0	
	Call the getLength() method		
2	Call the getValueLength() method	ToolkitException.UNAVAILABLE	
		_ELEMENT is thrown	

# 6.2.5.20.4 Test Coverage

CRR number	Test case number
N1	1, 2
C1	Does not apply for
	EnvelopeResponseHandl
	er

# 6.2.6 Class MEProfile

# 6.2.6.1 Method check (byte index)

Test Area Reference: API\_2\_MEP\_CHECB

# 6.2.6.1.1 Conformance requirement:

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

# Normal execution

CRRN1: The method checks a facility in the handset profile: returns true if supported and false if not.

# Parameters error

CRRP1: The method shall throw ME\_PROFILE\_NOT\_AVAILABLE ToolkitException if Terminal Profile data are not available

#### Context errors

None

# 6.2.6.1.2 Test suite files

No Additional requirements for the GSM personalisation:

Test Script: API\_2\_MEP\_CHECB\_1.scr

Test Applet: API\_2\_MEP\_CHECB\_1.java

Load Script: API\_2\_MEP\_CHECB\_1.ldr (the applet is loaded without INI after the reset (RST)

Cleaning Script: API\_2\_MEP\_CHECB\_1.clr

# 6.2.6.1.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	No Terminal Profile is registered	ME_PROFILE_NOT_AVAILABLE	
	Triggered by formated SMS	ToolkitException is thrown	
	Index = 1	·	
2	Terminal Profile, Facility is supported	true is returned by the method	
	index = 0		
3	Terminal Profile, Facility is not supported	false is returned by the method	
	Index = 15	-	

#### 6.2.6.1.4 Test Coverage

CRR number	Test case number
N1	2,3
P1	1

# 6.2.6.2 Method check (byte [] mask, short offset, short length)

Test Area Reference: API\_2\_MEP\_CHEC\_BSS

# 6.2.6.2.1 Conformance requirement:

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

# Normal execution

CRRN1: The method checks all the facilities corresponding to bits set to 1 in the mask buffer: returns true if they are all supported and false if not.

CRRN2: The method returns true if the length to check is 0.

### Parameters error

CRRP1: The method shall throw java.lang.NullPointerException if mask is null.

CRRP2: The method shall throw java.lang.ArrayIndexOutOfBoundsException if offset or length or both would cause access outside array bounds.

CRRP3: The method shall throw ME\_PROFILE\_NOT\_AVAILABLE ToolkitException if Terminal Profile data are not available.

#### Context errors

None

# 6.2.6.2.2 Test suite files

No Additional requirements for the GSM personalisation:

Test Script: API\_2\_MEP\_CHEC\_BSS\_1.scr

Test Applet: API\_2\_MEP\_CHEC\_BSS\_1.java

index 15 not supported)

API\_2\_MEP\_CHEC\_BSS\_1.ldr (the applet is loaded without INI after the reset (RST)) Load Script:

Cleaning Script: API\_2\_MEP\_CHEC\_BSS\_1.clr

#### 6.2.6.2.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	No Terminal Profile is registered Triggered by formated SMS Mask = 0xFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF	ME_PROFILE_NOT_AVAIL ABLE ToolkitException is thrown	·
2	NULL as parameter to check mask= NULL	NullPointerException is thrown	
3	Offset > mask.length mask = 0xFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF	ArrayIndexOutOfBoundsExc eption is thrown	
4	Offset < 0 mask = 0xFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF	ArrayIndexOutOfBoundsExc eption is thrown	
5	Length > mask.length mask = 0xFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF	ArrayIndexOutOfBoundsExc eption is thrown	
6	Offset + length > mask.length  Mask = 0xFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF	ArrayIndexOutOfBoundsExc eption is thrown	
7	<pre>length = 0 mask = 0xfffffffffffffffffffffffffffffffffff</pre>	true is returned	
8	Check all the Terminal Profile mask = 0xFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF	false is returned by the method because facility 15 is not supported	
9	Check a part of the Terminal Profile mask = 0xFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF	true is returned by the method: the 16 first facilities except facility 15 have been successfully checked	
10	Check a part of the Terminal Profile mask = 0x0080 Offset = 0 Length = 2	false is returned by the method only facility 15 is checked and not supported.	

#### 6.2.6.2.4 **Test Coverage**

CRR number	Test case number
N1	8,9,10
N2	7
P1	2
P2	3,4,5,6
P3	1

#### 6.2.7 Class ProactiveHandler

#### 6.2.7.1 Method getTheHandler

Test Area Reference: API\_2\_PAH\_GTHD

# 6.2.7.1.1 Conformance requirement

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

#### Normal execution

CRRN1: The method shall return the single system instance of the ProactiveHandler class.

CRRN2: The EnvelopeHandler is a Temporary JCRE Entry Point Object

#### Parameter errors

#### Context errors

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

# 6.2.7.1.3 Test Suite files

Test Script: API\_2\_PAH\_GTHD\_1.scr

Test Applet: API\_2\_PAH\_GTHD\_1.java

Load Script: API\_2\_PAH\_GTHD\_1.ldr

Clean-up Script: API\_2\_PAH\_GTHD\_1.clr

# 6.2.7.1.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	getTheHandler() twice	The returned objects shall be the	
		same	
2	getTheHandler()	The reference shall be a	
	- "	ProactiveHandler	
3	getTheHandler()	The reference shall not be null	
	- "		

# 6.2.7.1.4 Test Coverage

CRR number	Test case number
N1	1, 2, 3
N2	To be checked in
	Framework tests and
	insert here cross
	reference
C1	To be checked in
	Framework tests and
	insert here cross
	reference

# 6.2.7.2 Method init

Test Area Reference: API\_2\_PAH\_INITBBB

# 6.2.7.2.1 Conformance requirement

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

# Normal execution

CRRN1: The init() method initialises the next Proactive command in the ProactiveHandler, with Command details and Device Identities TLV. The source device is always the SIM Card (81h). The Comprehension Required flags are set.

CRRN2: The Command number may take any value between 01h and FEh.

CRRN3: The init() method clears the ProactiveHandler before initialising it.

CRRN4: No TLV is selected after a call to the method.

CRRN5: The handler is not sent to the mobile by the init() method.

#### Parameter errors

#### Context errors

6.2.7.2.3 Test Suite files

Test Script: API\_2\_PAH\_INITBBB\_1.scr

Test Applet: API\_2\_PAH\_INITBBB\_1.java

Load Script: API\_2\_PAH\_INITBBB\_1.ldr

Clean-up Script: API\_2\_PAH\_INITBBB\_1.clr

# 6.2.7.2.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Call the init() method		-
	type = 01h		
	qualifier = 02h		
	dstDevice = 03h		
		Verify each simple TLV of the	
		handler by using ViewHandler	
		methods	
2	Verify the command number value	01h-FEh	
	•		
3	Call the init() method		
	type = FFh		
	qualifier = FEh		
	destination = FDh		
		Verify each simple TLV of the	
		handler by using ViewHandler	
		methods	
4	Select the 1st TLV in the handler		
	Call the init() method with any value		
	Call the getValueLength() method	UNAVAILABLE_ELEMENT	
		ToolkitException is thrown by	
		getValueLength()	

# 6.2.7.2.4 Test Coverage

CRR number	Test case number
N1	1, 3
N2	2
N3	3
N4	4
N5	1, 3

# 6.2.7.3 Method initDisplayText

Test Area Reference: API\_2\_PAH\_INDTBB\_BSS

# 6.2.7.3.1 Conformance requirement

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

#### Normal execution

CRRN1: The method shall build a DISPLAY TEXT proactive command in the ProactiveHandler, using qualifier, dcs and buffer parameters. Comprehension required flags are set.

CRRN2: A call to this method clears the handler then initialises it.

CRRN3: No TLV is selected after a call to the method.

CRRN4: The DISPLAY TEXT command is not sent by the method.

CRRN5: The Command Number may take any value between 01h and FEh.

#### Parameter errors

CRRP1: The method shall throw NullPointerException if buffer is null.

CRRP2: If offset or length or both would cause access outside array bounds, an ArrayIndexOutOfBoundsException shall be thrown.

#### Context errors

CRRC1: A ToolkitException.HANDLER\_OVERFLOW shall be thrown if the ProactiveHandler is too small to put the requested data.

6.2.7.3.3 Test Suite files

Test Script: API\_2\_PAH\_INDTBB\_BSS\_1.scr

Test Applet: API\_2\_PAH\_INDTBB\_BSS\_1.java

Load Script: API\_2\_PAH\_INDTBB\_BSS\_1.ldr

Clean-up Script: API\_2\_PAH\_INDTBB\_BSS\_1.clr

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# 6.2.7.3.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	NULL as parameter to buffer	NullPointerException is thrown	71 DO Expostation
'	buffer = NULL	Train enterException is anown	
2	offset > buffer.length	ArrayIndexOutOfBoundsExceptio	
	buffer = "Text"	n is thrown	
	offset = 5		
	length = 0		
3	offset < 0	ArrayIndexOutOfBoundsExceptio	
	buffer = "Text"	n is thrown	
4	offset = -1  length > buffer.length	ArrayIndexOutOfBoundsExceptio	
-	buffer = "Text"	n is thrown	
	offset = 0	II is tillowii	
	length = 5		
5	offset + length > buffer.length	ArrayIndexOutOfBoundsExceptio	
	<pre>buffer = "Text"</pre>	n is thrown	
	offset = 3		
_	length = 2	A manufactory of Control of Control	
6	<pre>length &lt; 0 buffer = "Text"</pre>	ArrayIndexOutOfBoundsExceptio	
	offset = 3	n is thrown	
	length = -1		
7	Successful call, buffer is the whole buffer	No exception is thrown	
	qualifier = 0		
	dcs = 4		
	buffer = "TextA"		
	offset = 0		
	length = 5 Verify the command number value	01h-FEh	
	verify the command number value	UIII-FEII	
8	Send the command		DISPLAY TEXT Proactive
0	Send the Command		command
			Command
			qualifier = 00h
			dcs = 4
			Text = "TextA"
9	Succesfull call, buffer is part of a buffer with		DISPLAY TEXT Proactive
	the end part		command
	Send the command		qualifier = 00h
	qualifier = 0 dcs = 4		dcs = 4
	buffer = "12TextB"		Text = "TextB"
	offset = 2		
	length = 5		
10	Succesfull call, buffer is part of a buffer with		DISPLAY TEXT Proactive
	the first part		command
	Send the command		
	qualifier = 0		qualifier = 00h
	dcs = 4		dcs = 4 Text = "TextC"
	<pre>buffer = "TextC12" offset = 0</pre>		TCAC - TCACC
	length = 5		
11	Succesfull call, buffer is part of a buffer		DISPLAY TEXT Proactive
	Send the command		command
	qualifier = 0		
	dcs = 4		qualifier = 00h
	buffer = "12TextD34"		dcs = 4
	offset = 2 length = 5		Text = "TextD"
12	Succesfull call, qualifier = 81h		DISPLAY TEXT Proactive
'-	Send the command		command
	qualifier = 81h		- Communa
	dcs = 4		qualifier = 81h
	<pre>buffer = "TextE"</pre>		dcs = 4
	offset = 0		Text = "TextE"
	length = 5		
13	Succesfull call, DCS=0 (7 bits)		DISPLAY TEXT Proactive
	Send the command		command
	qualifier = 0		1.51
	<pre>dcs = 0 buffer = "TextF"</pre>		qualifier = 00h dcs = 0
	offset = 0		dcs = U Text = "TextF"
	01100 - 0	1	ICAC TOACE

	length = 5		
14	Succesfull call, DCS=8 (UCS2)		DISPLAY TEXT Proactive
' '	Send the command		command
	qualifier = 0		
	dcs = 8		qualifier = 00h
	buffer = "TextG"		dcs = 8
	offset = 0 length = 5		Text = "TextG"
15			DISDLAY TEVT Dropotice
15	Call the init() method with any value		DISPLAY TEXT Proactive
	Then build and send a DISPLAY TEXT command		command
	qualifier = 0		qualifier = 00h
	dcs = 4		dcs = 4
	buffer = "TextHTextH"		Text = "TextHTextH"
	offset = 0		
	length = 10		DIODI AVCTENCE D
16	Successful call, text length is null		DISPLAY TEXT Proactive
	Send the command		command
	qualifier = 0 dcs = 4		qualifier = 00h
	buffer = "" (not null buffer)		Text String TLV = 8D 00
	offset = 0		
	length = 0		
17	Select a TLV in the ProactiveHandler	UNAVAILABLE_ELEMENT	
	Call the initDisplayText() method	ToolkitException is thrown by	
	Call the getValueLength() method	getValueLength()	
10	Successful call, buffer length = 7Eh		DISPLAY TEXT Proactive
18	Succession can, butter length = /En		command
	qualifier = 0		Command
	dcs = 4		Text String TLV =
	buffer = "UUU"		8D 7F 04 55 55
	offset = 0 length = 7Eh		
19	Successful call, buffer length = 7Fh		DISPLAY TEXT Proactive
19	Caccesiai can, baner lengar – 71 II		command
	qualifier = 0		Johnnana
	dcs = 4		Text String TLV = 8D 81
	buffer = "UUU"		80 04 55 55
	offset = 0 length = 7Fh		
20	Successful call, buffer length = 240		DISPLAY TEXT Proactive
	- Latoootal dall, Mallor lollylli - Lato		command
	Qualifier = 0		
	dcs = 4		Text String TLV =
	buffer = "UUU"		8D 81 F1 04 55 55
	offset = 0 length = 240		
21	Call the initDisplayText() method with a too	HANDLER_OVERFLOW	
- '	long buffer	ToolkitException is thrown	
	qualifier = 0		
	dcs = 4		
	<pre>buffer = "XXXX"</pre>		
	offset = 0		
22	length = 241  Call the initDisplayText() without sending the		No proactive command
~~	can the inituisplay rext() without sending the		shall be sent expected
	Commanu		status is '9000'
L		<u>l</u>	Status 15 3000

# 6.2.7.3.4 Test Coverage

CRR number	Test case number
N1	8, 9, 10, 11, 12, 13, 14,
	15, 16, 18, 19, 20
N2	15
N3	17
N4	22
N5	7
P1	1
P2	2, 3, 4, 5, 6
C1	21

# 6.2.7.4 Method initGetInkey

Test Area Reference: API\_2\_PAH\_INGKBB\_BSS

# 6.2.7.4.1 Conformance requirement

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

#### Normal execution

CRRN1: The method shall build a GET INKEY proactive command in the ProactiveHandler, using qualifier, dcs and buffer parameters. Comprehension Required flags are set.

CRRN2: A call to this method clears the handler then initialises it.

CRRN3: No TLV is selected after a call to the method.

CRRN4: The GET INKEY command is not sent by the method.

CRRN5: The Command Number may take any value between 01h and FEh.

#### Parameter errors

CRRP1: The method shall throw NullPointerException if buffer is null.

CRRP1: If offset or length or both would cause access outside array bounds, a ArrayIndexOutOfBoundsException shall be thrown.

#### Context errors

CRRC1: A ToolkitException.HANDLER\_OVERFLOW shall be thrown if the ProactiveHandler is to small to put the requested data.

6.2.7.4.3 Test Suite files

Test Script: API\_2\_PAH\_INGKBB\_BSS\_1.scr

Test Applet: API\_2\_PAH\_INGKBB\_BSS\_1.java

Load Script: API\_2\_PAH\_INGKBB\_BSS\_1.ldr

Clean-up Script: API\_2\_PAH\_INGKBB\_BSS\_1.clr

# 6.2.7.4.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	NULL as parameter to buffer	NullPointerException is thrown	Ar DO Expectation
	buffer = NULL	Null officerException is thown	
2	offset ≥ buffer.length	ArrayIndexOutOfBoundsExceptio	
	buffer = "Text"	n is thrown	
	offset = 4	II IS UIIOWII	
3	offset < 0	ArrayIndexOutOfBoundsExceptio	
	<pre>buffer = "Text"</pre>	n is thrown	
	offset = -1		
4	length > buffer.length	ArrayIndexOutOfBoundsExceptio	
	<pre>buffer = "Text"</pre>	n is thrown	
	offset = 0		
	length = 5	A 1 1 0 (0(D 1 E ))	
5	<pre>offset + length &gt; buffer.length buffer = "Text"</pre>	ArrayIndexOutOfBoundsExceptio	
	offset = 3	n is thrown	
	length = 2		
6	length < 0	ArrayIndexOutOfBoundsExceptio	
	buffer = "Text"	n is thrown	
	offset = 3		
	length = -1		
7	Successful call, buffer is the whole buffer	No exception is thrown	
	qualifier = 0 dcs = 4		
	dcs = 4 buffer = "TextA"		
	offset = 0		
	length = 5		
	Verify the command number value	01h-FEh	
8	Send the command		GET INKEY Proactive
			command
			qualifier = 00h
			dcs = 4
	0 1		Text = "TextA"
9	Successfull call, buffer is part of a buffer		GET INKEY Proactive
	Send the command		command
	qualifier = 0 dcs = 4		qualifier = 00h
	buffer = "12TextB"		dcs = 4
	offset = 2		Text = "TextB"
	length = 5		
10	Succesfull call, buffer is part of a buffer		GET INKEY Proactive
	Send the command		command
	qualifier = 0		1.5.
	<pre>dcs = 4 buffer = "TextC12"</pre>		qualifier = 00h dcs = 4
	offset = 0		Text = "TextC"
	length = 5		
11	Succesfull call, buffer is part of a buffer		GET INKEY Proactive
	Send the command		command
	qualifier = 0		
	dcs = 4		qualifier = 00h
	<pre>buffer = "12TextD34" offset = 2</pre>		dcs = 4 Text = "TextD"
	length = 5		TEXT - TEXTD
12	Succesfull call, qualifier = 81h		GET INKEY Proactive
'-	qualifier = 81h		command
	dcs = 4		
	<pre>buffer = "TextE"</pre>		qualifier = 81h
	offset = 0		dcs = 4
	length = 5		Text = "TextE"
40	Cusesofull cell DOC 0/7 hits)		OFT INIVEN Describes
13	Succesfull call, DCS=0 (7 bits) qualifier = 0		GET INKEY Proactive
	dcs = 0		command
	buffer = "TextF"		qualifier = 00h
	offset = 0		dcs = 0
	length = 5		Text = "TextF"
14	Succesfull call, DCS=8 (UCS2)		GET INKEY Proactive
	qualifier = 0		command
	dcs = 8		
	· · · · · · · · · · · · · · · · · · ·		

	buffer = "TextG"		qualifier = 00h
	offset = 0		dcs = 8
	length = 5		Text = "TextG"
15	Call the init() method with any value		GET INKEY Proactive
	Then build and send a GET INKEY command		command
	qualifier = 0		
	dcs = 4		qualifier = 00h
	<pre>buffer = "TextHTextH"</pre>		dcs = 4
	offset = 0		Text = "TextHTextH"
	length = 10		
16	Successful call, text length is null		GET INKEY Proactive
	Send the command		command
	qualifier = 0		7.5.
	dcs = 4 buffer = ""		qualifier = 00h Text String TLV = 8D 00
	offset = 0		Text String TLV = 8D 00
	length = 0		
17	Select a TLV in the ProactiveHandler	UNAVAILABLE_ELEMENT	
1	Call the initGetInkey() method	ToolkitException is thrown by	
	Call the getValueLength() method	getValueLength()	
	oun the getralactorigm() method	got value zorigin()	
18	Successful call, buffer length = 7Eh		GET INKEY Proactive
10	oucocciai can, banci longai = 7211		command
	qualifier = 0		Command
	dcs = 4		Text String TLV =
	buffer = "UUU"		8D 7F 04 55 55
	offset = 0		
	length = 7Eh		
19	Successful call, buffer length = 7Fh		GET INKEY Proactive
			command
	qualifier = 0 dcs = 4		mart Chaire mill - OD 01
	buffer = "UUU"		Text String TLV = 8D 81 80 04 55 55
	offset = 0		00 01 33 33
	length = 7Fh		
20	Successful call, buffer length = 240		GET INKEY Proactive
	_		command
	Qualifier = 0		
	dcs = 4		Text String TLV =
	<pre>buffer = "UUU" offset = 0</pre>		8D 81 F1 04 55 55
	length = 240		
21	Call the initGetInkey() method with a too long	HANDLER OVERFLOW	
- '	buffer	ToolkitException is thrown	
	qualifier = 0	Tookitexception is tillown	
	dcs = 4		
	buffer = "XXXX"		
	offset = 0		
	length = 241		
22	Call the initGetInkey() without sending the		No proactive command
	command		shall be sent expected
			status is '9000'
		l .	

# 6.2.7.4.4 Test Coverage

CRR number	Test case number
N1	8, 9, 10, 11, 12, 13, 14,
	15, 16, 18, 19, 20
N2	15
N3	17
N4	22
N5	7
P1	1
P2	2, 3, 4, 5, 6
C1	21

# 6.2.7.5 Method initGetInput

Test Area Reference: API\_2\_PAH\_INGPBB\_BSSSS

# 6.2.7.5.1 Conformance requirement

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

#### Normal execution

CRRN1: The method shall build a GET INPUT proactive command in the ProactiveHandler, using qualifier, dcs, buffer, minRespLength and maxRespLength parameters. Comprehension Required flags are set.

CRRN2: A call to this method clears the handler then initialises it.

CRRN3: No TLV is selected after a call to the method.

CRRN4: The GET INPUT command is not sent by the method.

CRRN5: The Command Number may take any value between 01h and FEh.

#### Parameter errors

CRRP1: The method shall throw NullPointerException if buffer is null.

CRRP2: If offset or length or both would cause access outside array bounds, a ArrayIndexOutOfBoundsException shall be thrown.

#### Context errors

CRRC1: A ToolkitException.HANDLER\_OVERFLOW shall be thrown if the ProactiveHandler is to small to put the requested data.

#### 6.2.7.5.3 Test Suite files

Test Script: API\_2\_PAH\_INGPBB\_BSSSS\_1.scr

Test Applet: API\_2\_PAH\_INGPBB\_BSSSS\_1.java

Load Script: API\_2\_PAH\_INGPBB\_BSSSS\_1.ldr

Clean-up Script: API\_2\_PAH\_INGPBB\_BSSSS\_1.clr

# 6.2.7.5.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	NULL as parameter to buffer	NullPointerException is thrown	Al Do Expectation
'	buffer = NULL	14dili olitter Exception is tillown	
2	offset ≥ buffer.length	ArrayIndexOutOfBoundsExceptio	
-	buffer = "Text"	n is thrown	
	offset = 4		
3	offset < 0	ArrayIndexOutOfBoundsExceptio	
	<pre>buffer = "Text"</pre>	n is thrown	
	offset = -1		
4	length > buffer.length	ArrayIndexOutOfBoundsExceptio	
	<pre>buffer = "Text"</pre>	n is thrown	
	offset = 0		
	length = 5		
5	offset + length > buffer.length	ArrayIndexOutOfBoundsExceptio	
	<pre>buffer = "Text"</pre>	n is thrown	
	offset = 3 length = 2		
6	length < 0	Array Inday Out Of Day and a Expansion	
0	buffer = "Text"	ArrayIndexOutOfBoundsException is thrown	
	offset = 3	n is thrown	
	length = -1		
7	Successful call, buffer is the whole buffer	No exception is thrown	
		. to exception to union	
	qualifier = 0		
	dcs = 4		
	<pre>buffer = "TextA"</pre>		
	offset = 0		
	<pre>length = 5 minRespLength = 00h</pre>		
	maxRespLength = 00H maxRespLength = FFh		
	Verify the command number value	01h-FEh	
8	Send the command	OTII-I EII	GET INPUT Proactive
0	Sena the Command		command
			Command
			qualifier = 00h
			dcs = 4
			Text = "TextA"
			Min Length = 00h
			Max Length = FFh
9	Succesfull call, buffer is part of a buffer		GET INPUT Proactive
	Send the command		command
	qualifier = 0		3.151
	dcs = 4 buffer = "12TextB"		qualifier = 00h
	offset = 2		dcs = 4 Text = "TextB"
	length = 5		Min Length = 10h
	minRespLength = 10h		Max Length = FFh
	maxRespLength = FFh		
10	Succesfull call, buffer is part of a buffer		GET INPUT Proactive
	Send the command		command
	qualifier = 0		
	dcs = 4		qualifier = 00h
	buffer = "TextC12"		dcs = 4
	offset = 0 length = 5		Text = "TextC" Min Length = FFh
	minRespLength = FFh		Max Length = FFh
	maxRespLength = FFh		Hax Bengen - FFn
11	Succesfull call, buffer is part of a buffer		GET INPUT Proactive
.	Send the command		command
	qualifier = 0		
	dcs = 4		qualifier = 00h
	buffer = "12TextD34"		dcs = 4
	offset = 2		Text = "TextD"
	length = 5		Min Length = 00h
	minRespLength = 00h maxRespLength = 00h		Max Length = 00h
12	Succesfull call, qualifier = 81h		GET INPUT Proactive
12	qualifier = 81h		command
	dcs = 4		Command
	buffer = "TextE"		qualifier = 81h
	offset = 0		dcs = 4
	length = 5		Text = "TextE"
	minRespLength = 00h		

	maxRespLength = 10h		Min Length = 00h
			Max Length = 10h
13	Succesfull call, DCS=0 (7 bits)		GET INPUT Proactive
	qualifier = 0		command
	dcs = 0		
	buffer = "TextF"		qualifier = 00h
	offset = 0		dcs = 0
	length = 5		Text = "TextF"
	minRespLength = 10h		Min Length = 10h
	maxRespLength = 10h		Max Length = 10h
14	Succesfull call, DCS=8 (UCS2)		GET INPUT Proactive
	qualifier = 0		command
	dcs = 8		
	buffer = "TextG"		qualifier = 00h
	offset = 0		dcs = 8
	length = 5		Text = "TextG"
	minRespLength = 00h		Min Length = 00h
	maxRespLength = FFh		Max Length = FFh
15	Call the init() method with any value		GET INPUT Proactive
	Then build and send a GET INPUT command		command
	qualifier = 0		
	dcs = 4		qualifier = 00h
	<pre>buffer = "TextHTextH"</pre>		dcs = 4
	offset = 0		Text = "TextHTextH"
	length = 10		Min Length = 00h
	minRespLength = 00h		Max Length = 10h
4.0	maxRespLength = 10h		CET INDUE Drop of the
16	Successful call, text length is null		GET INPUT Proactive
	Send the command		command
	qualifier = 0 dcs = 4		
	dcs = 4   buffer = ""		qualifier = 00h
	offset = 0		Text String TLV = 8D 00 Min Length = 00h
	length = 0		Max Length = 10h
	minRespLength = 00h		Max Beligeli - 1011
	maxRespLength = 10h		
17	Select a TLV in the ProactiveHandler	UNAVAILABLE_ELEMENT	
	Call the initGetInput() method	ToolkitException is thrown by	
	Call the getValueLength() method	getValueLength()	
	Can the get value Length () method	get value Length()	
18	Successful call, buffer length = 7Eh		GET INPUT Proactive
10	Successiul call, buller leligill = 7 Ell		
	qualifier = 0		command
	dcs = 4		Text String TLV =
	buffer = "UUU"		8D 7F 04 55 55
	offset = 0		Min Length = 00h
	length = 7Eh		Max Length = 10h
	minRespLength = 00h		
	maxRespLength = 10h		
19	Successful call, buffer length = 7Fh		GET INPUT Proactive
			command
	qualifier = 0		
	dcs = 4		Text String TLV = 8D 81
	buffer = "UUU"		80 04 55 55
	offset = 0		Min Length = 00h
	length = 7Fh		Max Length = 10h
	minRespLength = 00h		
20	maxRespLength = 10h Successful call, buffer length = 236		GET INPUT Proactive
20	Succession can, butter length = 230		
	Oualifier = 0		command
	dcs = 4		Toyt Chrise TIV -
	buffer = "UUU"		Text String TLV = 8D 81 ED 04 55 55
	offset = 0		00 01 ED 04 00 05
	length = 236		
	minRespLength = 00h		
	maxRespLength = 10h		
21	Call the initGetInput() method with a too long	HANDLER_OVERFLOW	
	buffer	ToolkitException is thrown	
	qualifier = 0	- I Share to provide a nown	
	dcs = 4		
		Ì	
	buffer = "XXXX"		

	offset = 0	
	length = 237	
	minRespLength = 00h	
	maxRespLength = 10h	
22	Call the initGetInput() without sending the	No proactive command
	command	shall be sent expected
		status is '9000'

# 6.2.7.5.4 Test Coverage

CRR number	Test case number
N1	8, 9, 10, 11, 12, 13, 14,
	15, 16, 18, 19, 20
N2	15
N3	17
N4	22
N5	7
P1	1
P2	2, 3, 4, 5, 6
C1	21

# 6.2.7.6 Method send

Test Area Reference: API\_2\_PAH\_SEND

# 6.2.7.6.1 Conformance requirement

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

public byte send()

#### Normal execution

CRRN1: The send() method send the current proactive command to the mobile.

CRRN2: The returned byte is equal to general result of the command (first byte of Result TLV in Terminal Response).

CRRN3: The handler remains unchanged after a call to send() method until the use of initXX() or appendTLV().

CRRN4: There is no invocation of select() or deselect() method.

CRRN5: A pending toolkit applet transaction at the method invocation is aborted.

# Parameter errors

# Context errors

CRRC1: A ToolkitException.UNAVAILABLE\_ELEMENT shall be thrown is the Result Simple TLV is missing in Terminal Response.

CRRC2: A ToolkitException.OUT\_OF\_TLV\_BOUNDARIES shall be thrown if the general result byte is missing in the Result Simple TLV in Terminal Response.

6.2.7.6.3 Test Suite files

Test Script: API\_2\_PAH\_SEND\_1.scr

Test Applet: API\_2\_PAH\_SEND\_1.java

Load Script: API\_2\_PAH\_SEND\_1.ldr

Clean-up Script: API\_2\_PAH\_SEND\_1.clr

# 6.2.7.6.3 Test procedure

ld	Description	API Expectation	APDII Expectation
1	Build and send a DISPLAY TEXT command	AFI Expectation	APDU Expectation DISPLAY TEXT Proactive
'	qualifier = 00h		command
	dcs = 04h		Command
	buffer = 'Text'		
2	Terminal Response with General Result = 00	Result of send() is 00h	
	D 1. 5777 02 01 00 / 1 5 1		
	Result TLV = 03 01 00 (command performed successfully)		
3	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
	qualifier = 00h		command
	dcs = 04h		
	buffer = 'Text'		
4	Terminal Response with General Result = 01,	Result of send() is 01h	
	without Additional information on result		
	Result TLV = 03 01 01 (command performed		
	with partial comprehension)		
5	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
	qualifier = 00h		command
	dcs = 04h		
6	buffer = 'Text'  Terminal Peanance with Conoral Peault - 01	Result of send() is 01h	
6	Terminal Response with General Result = 01, with Additional information on result	Result of Setia() is OTA	
	with Additional information on result		
	Result TLV = 03 02 01 55 (command		
	performed with partial comprehension)		
7	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
	qualifier = 00h dcs = 04h		command
	dcs = U4n   buffer = 'Text'		
8	Terminal Response with General Result = 02	Result of send() is 02h	
ľ		rtodak di dana() la dan	
	Result TLV = 03 04 02 65 43 21 (Missing		
	information)		DIODI AVCESVE D
9	Build and send a 7Fh byte command		DISPLAY TEXT Proactive
	(DISPLAY TEXT) qualifier = 00h		command
	dcs = 04h		BER-TLV = D0 7F
	buffer = "UUUUU"		Text String TLV = 8D 74
	length = 73h		04 55 55 55
10	Build and send a 80h byte command		DISPLAY TEXT Proactive
	(DISPLAY TEXT) qualifier = 00h		command
	dcs = 04h		BER-TLV = D0 81 80
	buffer = "UUUUU"		Text String TLV = 8D 75
	length = 74h		04 55 55 55
11	Build and send a maximum length command		DISPLAY TEXT Proactive
	(length of the handler should be 253)		command
	DISPLAY TEXT:		BER-TLV = D0 81 FD
	Oualifier = 0		Text String TLV = 8D 81
	dcs = 4		F1 04 55 55
	buffer = "UUU"		
	offset = 0		
12	length = 240  Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
'-	Sand and School Dior LAT TEXT Command		command
		Verify ProactiveHandler was not	
		modified	
13	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
	Verify there is no invocation of select() or		command
	deselect() method.		
14	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
			command
		10:	
	Terminal Response with 2 Result TLV	Result of send() is 02h	
	1st Result TLV = 03 02 02 12		
	2nd Result TLV = 03 02 02 12		
15	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
		į.	•

			command
	Terminal Response without Result Simple TLV	ToolkitException.UNAVAILABLE _ELEMENT is thrown by send()	
16	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive command
	Terminal Response without general result byte in the Simple TLV	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown by send()	
	Result TLV = 03 00		

# 6.2.7.6.4 Test Coverage

CRR number	Test case number
N1	1, 3, 5, 7, 9, 10, 11, 12,
	13, 14
N2	2, 4, 6, 8, 14
N3	12
N4	13
N5	To be checked in
	Framework tests and
	insert here cross
	reference
C1	15
C2	16

# 6.2.7.7 Method getLength

Test Area Reference API\_2\_PAH\_GLEN

# 6.2.7.7.1 Conformance requirement

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

# Normal execution

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

# Parameter errors

## Context errors

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

6.2.7.7.3 Test Suite files

Test Script: API\_2\_PAH\_GLEN\_1.scr

Test Applet: API\_2\_PAH\_GLEN\_1.java

Load Script: API\_2\_PAH\_GLEN\_1.ldr

Clean-up Script: API\_2\_PAH\_GLEN\_1.clr

# 6.2.7.7.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Clear the handler getLength()	Result of getLength() is 0	
2	Call the init() method getLength()	Result of getLength() is 9	
3	Call the initDisplayText() method, with buffer length = 240 getLength()	Result of getLength() is 253	
4	Build a 7Fh Proactive Handler getLength()	Result of getLength() is 7Fh	
5	Build a 80h Proactive Handler getLength()	Result of getLength() is 80h	

#### 6.2.7.7.4 Test Coverage

CRR number	Test case number
N1	1, 2, 3, 4,5
C1	Does not apply for
	Proactive Handler

# 6.2.7.8 Method copy

Test Area Reference API\_2\_PAH\_COPY\_BSS

# 6.2.7.8.1 Conformance requirement

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

# Normal execution

CRRN1: copies the simple TLV list contained in the handler to the destination byte array.

CRRN2: returns dstOffset + dstLength.

# 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 grater than the length of the simple TLV List, an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException. OUT\_OF\_TLV\_BOUNDARIES.

# Context errors

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

6.2.7.8.3 Test Suite files

Test Script: API\_2\_PAH\_COPY\_BSS\_1.scr

Test Applet: API\_2\_PAH\_ COPY\_BSS\_1.java

Load Script: API\_2\_PAH\_ COPY\_BSS\_1.ldr

Clean-up Script: API\_2\_PAH\_ COPY\_BSS\_1.clr

# 6.2.7.8.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	NULL as parameter to dstBuffer	NullPointerException is thrown	-
2	Call the init() method		
	dstOffset > dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	<pre>dstOffset = 5 dstLength = 0</pre>		
3	dstOffset < 0	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = -1		
	dstLength = 1		
4	dstLength > dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	<pre>dstOffset = 0 dstLength = 6</pre>		
5	dstOffset + dstLength > dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = 3	II IS UIIOWII	
	dstLength = 3		
6	dstLength < 0	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = 0		
7	dstLength = -1  dstLength > length of the simple TLV list	ToolkitException.OUT_OF_TLV_	
′	dstBuffer.length = 10	BOUNDARIES is thrown	
	dstOffset = 0	BOONDAKIES IS IIIIOWII	
	dstLength = 10		
8	Successful call, dstBuffer is the whole buffer	Result of copy() is 9	
	dstBuffer.length = 9		
	dstOffset = 0		
9	dstLength = 9	Popult of arrayCompara() is 0	
10	Compare the buffer Successful call, dstBuffer is part of a buffer	Result of arrayCompare() is 0	
10	dstBuffer.length = 15	Result of copy() is 12	
	dstOffset = 3		
	dstLength = 9		
11	Compare the whole buffer	Result of arrayCompare() is 0	
12	Successful call, dstBuffer is part of a buffer	Result of copy() is 9	
	dstBuffer.length = 15		
	dstOffset = 3		
13	dstLength = 6  Compare the whole buffer	Result of arrayCompare() is 0	
10	Compare the whole build	result of allaycompare() is 0	

# 6.2.7.8.4 Test Coverage

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

# 6.2.7.9 Method findTLV

Test Area Reference API\_2\_PAH\_FINDBB

# 6.2.7.9.1 Conformance requirement

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

#### 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.

#### 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.

# Context errors

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

6.2.7.9.3 Test Suite files

Test Script: API\_2\_PAH\_FINDBB\_1.scr

Test Applet: API\_2\_PAH\_FINDBB\_1.java

Load Script: API\_2\_PAH\_FINDBB\_1.ldr

Clean-up Script: API\_2\_PAH\_FINDBB\_1.clr

# 6.2.7.9.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Initialise the handler		•
	Invalid input parameter	ToolkitException.BAD_INPUT_P	
	Occurrence = 0	ARAMETER is thrown	
2	Call the init() method		
	Search 1st TLV	Result is TLV_FOUND_CR_SET	
	Tag = 01h		
	Occurrence = 1	D It i - 00I-	
3	Call the getValueLength() method	Result is 03h	
4	Search 2nd TLV	Result is TLV_FOUND_CR_SET	
	<pre>Tag = 02h Occurrence = 1</pre>		
5	Call the getValueLength() method	Result is 02h	
6	Select a TLV (tag 02h)	110001110 0211	
	Search a wrong tag	Result is TLV_NOT_FOUND	
	Tag = 03h	TROUBLE TEV_IVOT_I COIVE	
	Occurrence = 1		
7	Call the getValueLength() method	ToolkitException.UNAVAILABLE	
		_ELEMENT is thrown.	
8	Search a tag with wrong occurrence	Result is TLV_NOT_FOUND	
	Tag = 01h		
	Occurrence = 2		
9	Call the getValueLength() method	ToolkitException.UNAVAILABLE	
		_ELEMENT is thrown.	
10	Append a TLV with tag=02h	I D	
	Search the TLV	Result is	
	Tag = 02h Occurrence = 2	TLV_FOUND_CR_NOT_SET	
11	Append a TLV with tag=04h	+	
	Search the TLV	Result is	
	Tag = 04h	TLV_FOUND_CR_NOT_SET	
	Occurrence = 1		
12	Search tag 81h	Result is TLV_FOUND_CR_SET	
	Tag = 81h		
L	Occurrence = 1		
13	Search tag 84h	Result is	
	Tag = 84h	TLV_FOUND_CR_NOT_SET	
	Occurrence = 1		

# 6.2.7.9.4 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
	Proactive Handler

# 6.2.7.10 Method getValueLength

Test Area Reference API\_2\_PAH\_GVLEN

# 6.2.7.10.1 Conformance requirement

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

### 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.

#### Parameter errors

### 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.

6.2.7.10.3 Test Suite files

Test Script: API\_2\_PAH\_GVLEN\_1.scr

Test Applet: API\_2\_PAH\_GVLEN\_1.java

Load Script: API\_2\_PAH\_GVLEN\_1.ldr

Clean-up Script: API\_2\_PAH\_GVLEN\_1.clr

# 6.2.7.10.3 Test procedure

Description	API Expectation	APDU Expectation
Call the init() method		-
getValueLength()	ToolkitException.UNAVAILABLE _ELEMENT is thrown	
Call the initDisplayText() method length = 0		
Search TLV 0Dh (Text String TLV)		
getValueLength()	Result is 00h	
Call the initDisplayText() method length = 1 (+ dcs byte)		
Search TLV 0Dh (Text String TLV)		
getValueLength()	Result is 02h	
Call the initDisplayText() method length = 7Eh (+ dcs byte)		
Search TLV 0Dh (Text String TLV)		
getValueLength()	Result is 7Fh	
Call the initDisplayText() method length = 7Fh (+ dcs byte)		
Search TLV 0Dh (Text String TLV)		
getValueLength()	Result is 80h	
Call the initDisplayText() method length = F0h (maximum text length)		
getValueLength()	Result is F1h	
	Call the initDisplayText() method length = 0 Search TLV 0Dh (Text String TLV) getValueLength()  Call the initDisplayText() method length = 1 (+ dcs byte) Search TLV 0Dh (Text String TLV) getValueLength()  Call the initDisplayText() method length = 7Eh (+ dcs byte) Search TLV 0Dh (Text String TLV) getValueLength()  Call the initDisplayText() method length = 7Fh (+ dcs byte) Search TLV 0Dh (Text String TLV) getValueLength()  Call the initDisplayText() method length = 7Fh (+ dcs byte) Search TLV 0Dh (Text String TLV) getValueLength()  Call the initDisplayText() method	ToolkitException.UNAVAILABLE ELEMENT is thrown  Call the initDisplayText() method length = 0  Search TLV 0Dh (Text String TLV) getValueLength()  Call the initDisplayText() method length = 1 (+ dcs byte)  Search TLV 0Dh (Text String TLV) getValueLength()  Result is 02h  Call the initDisplayText() method length = 7Eh (+ dcs byte)  Search TLV 0Dh (Text String TLV) getValueLength()  Call the initDisplayText() method length = 7Fh (+ dcs byte)  Search TLV 0Dh (Text String TLV) getValueLength()  Result is 7Fh  Call the initDisplayText() method length = 7Fh (+ dcs byte)  Search TLV 0Dh (Text String TLV) getValueLength()  Result is 80h  Call the initDisplayText() method length = F0h (maximum text length)  Search TLV 0Dh (Text String TLV)

### 6.2.7.10.4 Test Coverage

CRR number	Test case number
N1	2, 3, 4, 5, 6
C1	Does not apply for Proactive Handler
C2	1

# 6.2.7.11 Method getValueByte

Test Area Reference API\_2\_PAH\_GVBYTS

# 6.2.7.11.1 Conformance requirement

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

#### Normal execution

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

#### 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.

#### 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.

6.2.7.11.3 Test Suite files

Test Script: API\_2\_PAH\_GVBYTS\_1.scr

Test Applet: API\_2\_PAH\_GVBYTS\_1.java

Load Script: API\_2\_PAH\_GVBYTS\_1.ldr

Clean-up Script: API\_2\_PAH\_GVBYTS\_1.clr

# 6.2.7.11.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Call the init() method		
	type = FFh		
	qualifier = FEh		
	destination = FDh	T 1135 3 11010 (A11 A D) 5	
	getValueByte(0)	ToolkitException.UNAVAILABLE	
	0 1 71 1/0/1 /0 15 / 11 71 10	_ELEMENT is thrown	
2	Search TLV 01h (Command Details TLV)		
	getValueByte(3)	ToolkitException.OUT_OF_TLV_	
		BOUNDARIES is thrown	
3	Search TLV 01h (Command Details TLV)		
	getValueByte(2)	Result is FEh (qualifier)	
4	Search TLV 02h (Device Identities TLV)		
	getValueByte(0)	Result is 81h (Source)	
5	initDisplayText()		
	buffer = 00 01 7D		
	length = 7Eh		
	Search TLV 0Dh (Text String TLV)		
	getValueByte(7E)	Result is 7Dh	
6	initDisplayText()		
	buffer = 00 01 7D 7E		
	length = 7Fh		
	Search TLV 0Dh (Text String TLV)		
	getValueByte(7E)	Result is 7Dh	
7	getValueByte(7F)	Result is 7Eh	
<u></u>			
8	initDisplayText()		
	buffer = 00 01 EF length = F0h		
	Search TLV ODh (Text String TLV)		
	getValueByte(F0)	Result is EFh	
	ger value byte (1 0)	TOOUR IS ET IT	

# 6.2.7.11.4 Test Coverage

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

# 6.2.7.12 Method copyValue

Test Area Reference API\_2\_PAH\_CPYVS\_BSS

# 6.2.7.12.1 Conformance requirement

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

## Normal execution

CRRN1: copies a part of the last TLV element which has been found, into a destination. buffer.

CRRN2: returns dstOffset + dstLength.

#### 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.

### 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.

6.2.7.12.3 Test Suite files

Test Script: API\_2\_PAH\_CPYVS\_BSS\_1.scr

Test Applet: API\_2\_PAH\_CPYVS\_BSS\_1.java

Load Script: API\_2\_PAH\_CPYVS\_BSS\_1.ldr

Clean-up Script: API\_2\_PAH\_CPYVS\_BSS\_1.clr

# 6.2.7.12.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Initialise the handler		
	Select a TLV		
	copyValue() with a null dstBuffer	NullPointerException is thrown	
2	initDisplayText() with length = 15		
	Select Text String TLV	A 1 1 0 10/D 1 5 1;	
	dstOffset ≥ dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	<pre>dstBuffer.length = 5 dstOffset = 5</pre>	n is thrown	
3	dstLength = 1  dstOffset < 0	ArrayIndexOutOfBoundsExceptio	
3	dstBuffer.length = 5	n is thrown	
	dstOffset = -1	n is thrown	
	dstLength = 1		
4	dstLength >dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = 0	II IS UII OWII	
	dstLength = 6		
5	dstOffset + dstLength >dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = 3		
	dstLength = 3		
6	dstLength < 0	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = 0		
	dstLength = -1		
7	initDisplayText() with length = 5		
<b>'</b>	Select Text String TLV		
	valueOffset ≥ Text String Length	ToolkitException.OUT_OF_TLV_	
	valueOffset = 6	BOUNDARIES is thrown	
	dstBuffer.length = 15		
	dstOffset = 0		
	dstLength = 1		
8	[Select Text String TLV]	ToolkitException.OUT_OF_TLV_	

	valueOffset < 0valueOffset = -1	DOLINDADIEC :a th revers
	dstBuffer.length = 15	BOUNDARIES is thrown
	dstOffset = 0	
	dstLength = 1	
9	[Select Text String TLV]	ToolkitException.OUT_OF_TLV_
	dstLength > Text String length	BOUNDARIES is thrown
	valueOffset = 0	BOONDAKIES IS IIIIOWII
	dstBuffer.length = 15	
	dstOffset = 0	
	dstLength = 7	
10	[Select Text String TLV]	ToolkitException.OUT_OF_TLV_
	valueOffset + dstLength > Text String	BOUNDARIES is thrown
	length	
	valueOffset = 2	
	dstBuffer.length = 15	
	dstOffset = 0	
	dstLength = 5	
11	Initialise the handler	
	copyValue()	ToolkitException.UNAVAILABLE
		_ELEMENT is thrown
12	initDisplayText()	
	dcs = 4	
	buffer = 00 01 0F	
	Select Text String TLV	
	Successful call	Result of copyValue() is 17
	valueOffset = 0	
	dstBuffer.length = 17	
	dstOffset = 0	
	dstLength = 17	
13	Compare buffer	Result is 00h
	buffer = 04 00 01 0F	
L	1 11 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
14	initialise dstBuffer	
	dstBuffer = 55 55 55	
	Successful call	Result of copyValue() is 15
	valueOffset = 2	
	dstBuffer.length = 20	
	dstOffset = 3	
15	dstLength = 12  Compare buffer	Result is 00h
'	buffer =	1.Count is con
	55 55 55 01 02	
	03 04 05 06 07	
	08 09 0A 0B 0C	
	55 55 55 55 55	

# 6.2.7.12.4 Test Coverage

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

# 6.2.7.13 Method compareValue

Test Area Reference API\_2\_PAH\_CPRVS\_BSS

# 6.2.7.13.1 Conformance requirement

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

public byte compareValue(short valueOffset,

#### 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 simple TLV List is less than that in compareBuffer.

CRRN3: returns 1 if the first miscomparing byte in simple TLV List is greater than that in compareBuffer.

#### 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.

#### 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.

6.2.7.13.3 Test Suite files

Test Script: API\_2\_PAH\_CPRVS\_BSS\_1.scr

Test Applet: API\_2\_PAH\_CPRVS\_BSS\_1.java

Load Script: API\_2\_PAH\_CPRVS\_BSS\_1.ldr

Clean-up Script: API\_2\_PAH\_CPRVS\_BSS\_1.clr

# 6.2.7.13.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Initialise the handler Select a TLV		
	compareValue() with a null compareBuffer	NullPointerException is thrown	
2	<pre>initDisplayText() with length = 15 Select Text String TLV</pre>		
	<pre>compareOffset ≥ compareBuffer.length compareBuffer.length = 5 compareOffset = 5 compareLength = 1</pre>	ArrayIndexOutOfBoundsException is thrown	
3	<pre>compareOffset &lt; 0 compareBuffer.length = 5 compareOffset = -1 compareLength = 1</pre>	ArrayIndexOutOfBoundsException is thrown	
4	<pre>compareLength &gt;compareBuffer.length compareBuffer.length = 5 compareOffset = 0 compareLength = 6</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
5	compareOffset + compareLength	ArrayIndexOutOfBoundsExceptio	

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1			
	>compareBuffer.length	n is thrown	
	compareBuffer.length = 5		
	compareOffset = 3		
	-		
	compareLength = 3		
6	compareLength < 0	ArrayIndexOutOfBoundsExceptio	
l	compare Ruffer Ionath — 5	n is thrown	
	compareBuffer.length = 5	n is thrown	
	compareOffset = 0		
	compareLength = -1		
7	initDisplayText() with length = 5		
	Select Text String TLV		
<b>—</b>		Toollite weeting OUT OF TIM	
	valueOffset ≥ Text String Length	ToolkitException.OUT_OF_TLV_	
	<pre>valueOffset = 6</pre>	BOUNDARIES is thrown	
	compareBuffer.length = 15		
	compareOffset = 0		
	compareLength = 1		
8	[Select Text String TLV]	ToolkitException.OUT_OF_TLV_	
	valueOffset < 0	BOUNDARIES is thrown	
	valueOffset = -1	BOOTED WILLS TO WILLOW!	
	compareBuffer.length = 15		
	compareOffset = 0		
	compareLength = 1		
9	[Select Text String TLV]	ToolkitException.OUT_OF_TLV_	
1	compareLength > Text String length	BOUNDARIES is thrown	
		DOUNDAKIES IS INTOWN	
	valueOffset = 0		
	compareBuffer.length = 15		
	compareOffset = 0		
	compareLength = 7		
40	[Select Text String TLV]	TablishEvention OUT OF TIV	
10		ToolkitException.OUT_OF_TLV_	
	valueOffset + compareLength > Text String	BOUNDARIES is thrown	
	length		
	valueOffset = 2		
	compareBuffer.length = 15		
	compareOffset = 0		
	compareLength = 5		
11	Initialise the handler		
H		TablidEventing UNIANAU ADI E	
1	compareValue()	ToolkitException.UNAVAILABLE	
1	•		
L		_ELEMENT is thrown	
12	initDisplavText()	ELEIVIEIN I IS TNYOWN	
12	initDisplayText()	ELEIVIEIN I IS TNIOWN	
12	dcs = 4	ELEMENT IS thrown	
12	dcs = 4 buffer = 00 01 0F	_ELEMEN   IS thrown	
12	dcs = 4 buffer = 00 01 OF Select Text String TLV	ELEMEN I IS thrown	
12	dcs = 4 buffer = 00 01 OF Select Text String TLV	ELEIVIEIN I IS THYOWN	
12	dcs = 4 buffer = 00 01 0F Select Text String TLV Initialise compareBuffer	ELEMENT IS thrown	
12	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer =	ELEMEN I IS thrown	
12	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F		
12	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers	Result is 00h	
12	<pre>dcs = 4 buffer = 00 01 0F Select Text String TLV</pre>		
12	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers		
12	<pre>dcs = 4 buffer = 00 01 0F Select Text String TLV</pre>		
12	<pre>dcs = 4 buffer = 00 01 0F Select Text String TLV</pre>		
	<pre>dcs = 4 buffer = 00 01 0F Select Text String TLV</pre>		
12	<pre>dcs = 4 buffer = 00 01 0F Select Text String TLV</pre>		
	<pre>dcs = 4 buffer = 00 01 0F Select Text String TLV</pre>		
	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers valueOffset = 0 compareOffset = 0 compareLength = 17  Initialise compareBuffer		
	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers valueOffset = 0 compareOffset = 0 compareLength = 17  Initialise compareBuffer compareBuffer = 04 00 01 02 03		
	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers valueOffset = 0 compareOffset = 0 compareLength = 17  Initialise compareBuffer compareBuffer = 04 00 01 02 03 04 05 06 07 08		
	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers valueOffset = 0 compareOffset = 0 compareLength = 17  Initialise compareBuffer compareBuffer = 04 00 01 02 03 04 05 06 07 08 05 0A 0B 0C 0D		
	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers valueOffset = 0 compareOffset = 0 compareLength = 17  Initialise compareBuffer compareBuffer = 04 00 01 02 03 04 05 06 07 08 05 0A 0B 0C 0D 0E 10	Result is 00h	
	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers valueOffset = 0 compareOffset = 0 compareLength = 17  Initialise compareBuffer compareBuffer = 04 00 01 02 03 04 05 06 07 08 05 0A 0B 0C 0D		
	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers valueOffset = 0 compareOffset = 0 compareLength = 17  Initialise compareBuffer compareBuffer = 04 00 01 02 03 04 05 06 07 08 05 0A 0B 0C 0D 0E 10	Result is 00h	
13	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers valueOffset = 0 compareOffset = 0 compareLength = 17  Initialise compareBuffer compareBuffer = 04 00 01 02 03 04 05 06 07 08 05 0A 0B 0C 0D 0E 10  Compare buffers with same parameters	Result is 00h	
	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers valueOffset = 0 compareOffset = 0 compareLength = 17  Initialise compareBuffer compareBuffer = 04 00 01 02 03 04 05 06 07 08 05 0A 0B 0C 0D 0E 10  Compare buffers with same parameters  Initialise compareBuffer	Result is 00h	
13	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers valueOffset = 0 compareOffset = 0 compareLength = 17  Initialise compareBuffer compareBuffer = 04 00 01 02 03 04 05 06 07 08 05 0A 0B 0C 0D 0E 10  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 01 00 00 00 00 00 00 00 00 00 00 00 00	Result is 00h	
13	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers valueOffset = 0 compareOffset = 0 compareLength = 17  Initialise compareBuffer compareBuffer = 04 00 01 02 03 04 05 06 07 08 05 0A 0B 0C 0D 0E 10  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 03 00 01 0F	Result is 00h	
13	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers valueOffset = 0 compareOffset = 0 compareLength = 17  Initialise compareBuffer compareBuffer = 04 00 01 02 03 04 05 06 07 08 05 0A 0B 0C 0D 0E 10  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 03 00 01 0F	Result is 00h  Result is -1	
13	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers valueOffset = 0 compareOffset = 0 compareLength = 17  Initialise compareBuffer compareBuffer = 04 00 01 02 03 04 05 06 07 08 05 0A 0B 0C 0D 0E 10  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 01 00 00 00 00 00 00 00 00 00 00 00 00	Result is 00h	
13	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers valueOffset = 0 compareOffset = 0 compareLength = 17  Initialise compareBuffer compareBuffer = 04 00 01 02 03 04 05 06 07 08 05 0A 0B 0C 0D 0E 10  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 03 00 01 0F  Compare buffers with same parameters	Result is 00h  Result is -1	
13	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers valueOffset = 0 compareOffset = 0 compareLength = 17  Initialise compareBuffer compareBuffer = 04 00 01 02 03 04 05 06 07 08 05 0A 0B 0C 0D 0E 10  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer	Result is 00h  Result is -1	
13	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers valueOffset = 0 compareOffset = 0 compareLength = 17  Initialise compareBuffer compareBuffer = 04 00 01 02 03 04 05 06 07 08 05 0A 0B 0C 0D 0E 10  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 03 00 01 0F	Result is 00h  Result is -1	
13	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers valueOffset = 0 compareOffset = 0 compareLength = 17  Initialise compareBuffer compareBuffer = 04 00 01 02 03 04 05 06 07 08 05 0A 0B 0C 0D 0E 10  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer	Result is 00h  Result is -1	
13	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers valueOffset = 0 compareOffset = 0 compareLength = 17  Initialise compareBuffer compareBuffer = 04 00 01 02 03 04 05 06 07 08 05 0A 0B 0C 0D 0E 10  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 03 00 01 0F	Result is 00h  Result is -1	
13	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers  valueOffset = 0 compareOffset = 0 compareLength = 17  Initialise compareBuffer compareBuffer = 04 00 01 02 03 04 05 06 07 08 05 0A 0B 0C 0D 0E 10  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 55 55 55 01 02 03 04 05 06 07	Result is 00h  Result is -1	
13	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers  valueOffset = 0 compareLength = 17  Initialise compareBuffer compareBuffer = 04 00 01 02 03 04 05 06 07 08 05 0A 0B 0C 0D 0E 10  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C	Result is 00h  Result is -1	
13	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers  valueOffset = 0 compareLength = 17  Initialise compareBuffer compareBuffer = 04 00 01 02 03 04 05 06 07 08 05 0A 0B 0C 0D 0E 10  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55 55	Result is 00h  Result is -1  Result is +1	
13	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers  valueOffset = 0 compareLength = 17  Initialise compareBuffer compareBuffer = 04 00 01 02 03 04 05 06 07 08 05 0A 0B 0C 0D 0E 10  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55 55  Compare buffers	Result is 00h  Result is -1	
13	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers  valueOffset = 0 compareOffset = 0 compareLength = 17  Initialise compareBuffer  compareBuffer = 04 00 01 02 03 04 05 06 07 08 05 0A 0B 0C 0D 0E 10  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 55 55 50 10 2 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55 55  Compare buffers  valueOffset = 2	Result is 00h  Result is -1  Result is +1	
13	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers  valueOffset = 0 compareLength = 17  Initialise compareBuffer compareBuffer = 04 00 01 02 03 04 05 06 07 08 05 0A 0B 0C 0D 0E 10  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55 55  Compare buffers	Result is 00h  Result is -1  Result is +1	
13	dcs = 4 buffer = 00 01 0F Select Text String TLV  Initialise compareBuffer compareBuffer = 04 00 01 0F  Compare buffers  valueOffset = 0 compareOffset = 0 compareLength = 17  Initialise compareBuffer  compareBuffer = 04 00 01 02 03 04 05 06 07 08 05 0A 0B 0C 0D 0E 10  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 03 00 01 0F  Compare buffers with same parameters  Initialise compareBuffer compareBuffer = 55 55 50 10 2 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55 55  Compare buffers  valueOffset = 2	Result is 00h  Result is -1  Result is +1	

16	Initialise compareBuffer		
	compareBuffer =		
	55 55 55 02 01		
	03 04 05 06 07		
	08 09 0A 0B 0C		
	55 55 55 55		
	Compare buffers with same parameters	Result is -1	
17	Initialise compareBuffer		
	compareBuffer =		
	55 55 55 01 02		
	03 04 05 06 07		
	08 09 0A 0A 0D		
	55 55 55 55		
	Compare buffers with same parameters	Result is +1	
18	Initialise compareBuffer		
	compareBuffer =		
	55 55 55 99 03		
	03 04 05 06 07		
	08 09 0A 0B 0C		
	55 55 55 55		
	Compare buffers with same parameters	Result is +1	

## 6.2.7.13.4 Test Coverage

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

# 6.2.7.14 Method findAndCopyValue(byte tag, byte[] dstBuffer, short valueOffset)

Test Area Reference API\_2\_PAH\_FACYB\_BS

# 6.2.7.14.1 Conformance requirement

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

# 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.

### Parameter errors

CRRP1: if dstBuffer is null NullPointerException shall be thrown.

CRRP2: if dstOffset would cause access outside array bounds ArrayIndexOutOfBoundsException shall be thrown.

### Context errors

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

6.2.7.14.3 Test Suite files

Test Script: API\_2\_PAH\_FACYB\_BS\_1.scr

Test Applet: API\_2\_PAH\_FACYB\_BS\_1.java

Load Script: API\_2\_PAH\_FACYB\_BS\_1.ldr

Clean-up Script: API\_2\_PAH\_FACYB\_BS\_1.clr

# 6.2.7.14.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Initialise the handler		
	FindAndCopyValue() with a null dstBuffer	NullPointerException is thrown	
2	InitDisplayText() with length = 15		
	<pre>dstOffset ≥ dstBuffer.length tag = 0Dh dstBuffer.length = 20 dstOffset = 20</pre>	ArrayIndexOutOfBoundsException is thrown	
3	<pre>dstOffset &lt; 0 dstBuffer.length = 20 dstOffset = -1</pre>	ArrayIndexOutOfBoundsException is thrown	
4	<pre>length &gt; dstBuffer.length dstBuffer.length = 15 dstOffset = 0</pre>	ArrayIndexOutOfBoundsException is thrown	
5	DstOffset + length >dstBuffer.length  DstBuffer.length = 20  DstOffset = 5	ArrayIndexOutOfBoundsException is thrown	
6	initDisplayText()		
	Select a TLV (tag 02h)		
	findAndCopyValue() tag = 03h	ToolkitException.UNAVAILABLE _ELEMENT is thrown	
	Call the getValueLength() method	ToolkitException.UNAVAILABLE _ELEMENT is thrown.	
7	initDisplayText() dcs = 4 buffer = 00 01 0F		
	Successful call  Tag = 0Dh  DstBuffer.length = 17  DstOffset = 0	Result of findAndcopyValue() is 17	
8	Compare buffer buffer = 04 00 01 0F	Result is 00h	
9	initialise dstBuffer dstBuffer = 55 55 55		
	Successful call dstBuffer.length = 20 dstOffset = 2	Result of findAndcopyValue() is 19	
10	Compare buffer  buffer = 55 55 04 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 55	Result is 00h	

11	initDianloyToyt()		
11	initDisplayText()		
	buffer = 00 01 0F		
	append a 2nd Text String TLV		
-		D 14 (6: 1A 1 1/1 ():	
	Successful call	Result of findAndcopyValue() is	
	tag = 0Dh	17	
	dstBuffer.length = 17		
40	dstOffset = 0	Darrik ia 00k	
12	Compare buffer	Result is 00h	
	buffer = 04 00 01 0F		
13	initDisplayText()		
	dcs = 4		
	buffer = 00 01 0F		
	Successful call (with tag 8Dh)	Result of findAndcopyValue() is	
	tag = 8Dh	17	
	dstBuffer.length = 17		
L	dstOffset = 0		
14	Compare buffer	Result is 00h	
	buffer = 04 00 01 0F		
15	Append tag 0Fh		
	buffer = 00 01 0F		
	Successful call (with tag 8Fh)	Result of findAndcopyValue() is	
	tag = 8Fh	16	
	dstBuffer.length = 16		
	dstOffset = 0		
16	Compare buffer	Result is 00h	
	buffer = 00 01 0F		

## 6.2.7.14.4 Test Coverage

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

# 6.2.7.15 Method findAndCopyValue(byte tag, byte occurence, short valueOffset, byte[] dstBuffer, short dstOffset, short dstLength)

Test Area Reference API\_2\_PAH\_FACYBS\_BSS

### 6.2.7.15.1 Conformance requirement

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

# 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.

#### 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.

### Context errors

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

6.2.7.15.3 Test Suite files

Test Script: API\_2\_PAH\_FACYBS\_BSS\_1.scr

Test Applet: API\_2\_PAH\_FACYBS\_BSS\_1.java

Load Script: API\_2\_PAH\_FACYBS\_BSS\_1.ldr

Clean-up Script: API\_2\_PAH\_FACYBS\_BSS\_1.clr

### 6.2.7.15.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Initialise the handler		
	findAndCopyValue() with a null dstBuffer	NullPointerException is thrown	
2	initDisplayText() with length = 15		
	dstOffset ≥ dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	tag = 0Dh, occurrence = 1	n is thrown	
	<pre>valueOffset = 0</pre>		
	dstBuffer.length = 5		
	dstOffset = 5		
_	dstLength = 1	1 1 1 0 10/5	
3	dstOffset < 0	ArrayIndexOutOfBoundsExceptio	
	<pre>dstBuffer.length = 5 dstOffset = -1</pre>	n is thrown	
	dstOffset = -1 dstLength = 1		
4	dstLength >dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
4	dstBuffer.length = 5	n is thrown	
	dstOffset = 0	II IS UIIOWII	
	dstLength = 6		
5	dstOffset + dstLength >dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = 3		
	dstLength = 3		
6	dstLength < 0	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = 0		
	dstLength = -1		
7	initDisplayText() with length = 5		
		ToolkitEveention OUT OF TIV	
	valueOffset ≥ Text String Length tag = 0Dh, occurrence = 1	ToolkitException.OUT_OF_TLV_	
	<pre>rtag = UDn, occurrence = 1 valueOffset = 6</pre>	BOUNDARIES is thrown	
	dstBuffer.length = 15		
L	dacbarrer.rengen - 15		

Selection   Sele		dstOffset = 0		
B				
distribution   15   dist	8			
datLength = 1  9				
dest_length > Text String length				
valueOffset = 0   datiAngifs : length = 15   datiOffset = 0   datiAngifs = 7   datiOffset = 0   datiAngifs = 7   datiOffset = 0   datiOffset				
data	9			
datoEsset = 0   datoEsset = 1   datoEsset = 2   datoEsset =			BOUNDARIES is thrown	
datLength = 7   10   valueOffset + dstLength > Text String length   10   valueOffset + dstLength = 15   dstDefset = 2   dstDefset - Length = 15   dstDefset = 2   dstDefset - Length = 15   dstDefset = 2   dstDefset - Length = 15   dstDefset = 2   dstDef				
valueoffeet = 2   distantifeet   2   distantifeet   2   distantifeet   3   distoffeet   4   distoffeet   5   distoffeet   5   distoffeet   5   distoffeet   6   distoffeet   6				
dasbuffer   length = 15   dasbuffer = 0   dasbuffer   length = 5	10			
dstoffeet = 0   dstLength = 5			BOUNDARIES is thrown	
Select a TLV (tag 02h)				
Select a TLV (tag 02h)	4.4	lui(Dianta-Facto		
findAndCopyValue()	11		-	
Call the getValueLength() method			ToolkitEvention LINAVALLARIE	
Call the getValueLength() method				
Cos		occurrence = 2		
12		Call the getValueLength() method		
dcs = 4   buffer = 00 01 0F   Successful call   tag = 00h, occurrence = 1   valueOffset = 0   derBuffer.length = 17   datOffset = 0   detBuffer = 04 00 01 0F   Result is 00h	40	initDianlayTay4/\	ELEMENT is thrown.	
Duffer = 00 01 0F	12			
tag = 00h, occurrence = 1 valueOffset = 0 dstBuffer_length = 17 dstOffset = 0 dstLength = 17  13	L			
valueOffset = 0   dstEngth = 17   dstEngth = 18   Successful call tag = 0Dh, occurrence = 1   valueOffset = 2   dstEngth = 12   dstEngth = 17   dstEngth = 10   dstEngth = 10   dstEngth = 16   dstEngth = 6   dstEngth = 16   dstEngth = 6   dstEngth = 16   dstEngth = 6   dstEngth = 16   dstEngth = 6   dstEngth = 6		Successful call	Result of findAndCopyValue() is	
dstBuffer.length = 17   dstOffset = 0   dstLength = 17			17	
dstDeffeet = 0   dstLength = 17				
Compare buffer		_		
buffer = 04 00 01 0F			l l l l l l l l l l l l l l l l l l l	
14	13		Result is 00h	
dstBuffer = 55 55 55		Daller - 04 00 01 Ur		
Successful call   tag = 0Dh, occurrence = 1				
tag = 0Dh, occurrence = 1 valueOffset = 2 dstBuffer.length = 20 dstOffset = 3 dstLength = 12  15  Compare buffer  buffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55 55 55  16  Append a Text String TLV  tag = 0D buffer = 00 11 22 33 44 55 (no specific DCS byte)  Successful call tag = 0Dh, occurrence = 1 valueOffset = 0 dstBuffer.length = 17 dstOffset = 0 dstLength = 17  Compare buffer buffer = 04 00 01 0F  Result is 00h  Result of findAndCopyValue() is 17 Result is 00h  Result is 00h  Result is 00h  Result is 00h  Result of findAndCopyValue() is 6  Result of findAndCopyValue() is 7 Result is 00h  Result is 00h  Result of findAndCopyValue() is 6 Result of findAndCopyValue() is 7 Result is 00h  Result of findAndCopyValue() is 8 Result of findAndCopyValue() is 9 Result of findAndCopyValue() is 18 Result of findAndCopyValue() is 18 Result of findAndCopyValue() is 19 Result of findAndCopyValue() is 10 Result of findAndCopyValue() is 11 Result of findAndCopyValue() is 12 Result of findAndCopyValue() is 13 Result of findAndCopyValue() is 14 Result of findAndCopyValue() is 15 Result is 00h  Result is 00h	14			
valueOffset = 2   dstDeffset   20   dstOffset = 3   dstLength = 12	14	dstBuffer = 55 55 55	Described for IA.	
dstOffset = 3   dstLength = 12	14	dstBuffer = 55 55 55  Successful call		
dstLength = 12	14	dstBuffer = 55 55 55  Successful call tag = 0Dh, occurrence = 1		
15	14	dstBuffer = 55 55 55  Successful call  tag = 0Dh, occurrence = 1  valueOffset = 2 dstBuffer.length = 20		
Duffer =	14	dstBuffer = 55 55 55  Successful call  tag = 0Dh, occurrence = 1  valueOffset = 2  dstBuffer.length = 20  dstOffset = 3		
03 04 05 06 07   08 09 0A 0B 0C   55 55 55 55 55   55     16		dstBuffer = 55 55 55  Successful call  tag = 0Dh, occurrence = 1  valueOffset = 2  dstBuffer.length = 20  dstOffset = 3  dstLength = 12	15	
08 09 0A 0B 0C   55 55 55 55 55   55   55   55   55		dstBuffer = 55 55 55  Successful call  tag = 0Dh, occurrence = 1  valueOffset = 2 dstBuffer.length = 20 dstOffset = 3 dstLength = 12  Compare buffer  buffer =	15	
S5 55 55 55 55   S5   S5   S5   S5		dstBuffer = 55 55 55  Successful call  tag = 0Dh, occurrence = 1  valueOffset = 2 dstBuffer.length = 20 dstOffset = 3 dstLength = 12  Compare buffer  buffer = 55 55 55 01 02	15	
tag = 0D buffer = 00 11 22 33 44 55 (no specific DCS byte)  Successful call tag = 0Dh, occurrence = 1 valueOffset = 0 dstBuffer.length = 17 dstOffset = 0 dstLength = 17  Tompare buffer buffer = 04 00 01 0F  18 Successful call tag = 0Dh, occurrence = 2 valueOffset = 0 dstBuffer.length = 6 dstOffset = 0 dstBuffer.length = 6 dstOffset = 0 dstLength = 6  19 Compare buffer buffer = 00 11 22 33 44 55  Result of findAndCopyValue() is 6  Result of findAndCopyValue() is 7  Result is 00h Result of findAndCopyValue() is 8  Result of findAndCopyValue() is 9  Result of findAndCopyValue() is 9  Result of findAndCopyValue() is 9  Result is 00h		dstBuffer = 55 55 55  Successful call  tag = 0Dh, occurrence = 1  valueOffset = 2 dstBuffer.length = 20 dstOffset = 3 dstLength = 12  Compare buffer  buffer = 55 55 55 01 02 03 04 05 06 07	15	
buffer = 00 11 22 33 44 55 (no specific DCS byte)  Successful call tag = 0Dh, occurrence = 1 valueOffset = 0 dstBuffer.length = 17 dstoffset = 0 dstLength = 17  Compare buffer buffer = 04 00 01 0F  Result is 00h  Result is 00h  Result of findAndCopyValue() is 17  Result is 00h  Result of findAndCopyValue() is 6  Result is 00h  Result of findAndCopyValue() is 6  Result of findAndCopyValue() is 6  Result of findAndCopyValue() is 7  Result of findAndCopyValue() is 8 Result of findAndCopyValue() is 9 Result of		dstBuffer = 55 55 55  Successful call  tag = 0Dh, occurrence = 1  valueOffset = 2 dstBuffer.length = 20 dstOffset = 3 dstLength = 12  Compare buffer  buffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55 55	15	
Successful call tag = 0Dh, occurrence = 1 valueOffset = 0 dstBuffer.length = 17 dstOffset = 0 dstLength = 17  17 Compare buffer buffer = 04 00 01 0F  18 Successful call tag = 0Dh, occurrence = 2 valueOffset = 0 dstBuffer.length = 6 dstOffset = 0 dstBuffer.length = 6 dstOffset = 0 dstBuffer = 00 11 22 33 44 55  Result of findAndCopyValue() is  Result is 00h	15	dstBuffer = 55 55 55  Successful call  tag = 0Dh, occurrence = 1  valueOffset = 2 dstBuffer.length = 20 dstOffset = 3 dstLength = 12  Compare buffer  buffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55 55  Append a Text String TLV	15	
tag = 0Dh, occurrence = 1 valueOffset = 0 dstBuffer.length = 17 dstOffset = 0 dstLength = 17  17  Compare buffer buffer = 04 00 01 0F  Result is 00h  Result of findAndCopyValue() is tag = 0Dh, occurrence = 2 valueOffset = 0 dstBuffer.length = 6 dstOffset = 0 dstLength = 6  19  Compare buffer buffer = 00 11 22 33 44 55  Result is 00h  Result is 00h  Result is 00h	15	dstBuffer = 55 55 55  Successful call  tag = 0Dh, occurrence = 1  valueOffset = 2 dstBuffer.length = 20 dstOffset = 3 dstLength = 12  Compare buffer  buffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55 55  Append a Text String TLV  tag = 0D	15	
<pre>valueOffset = 0 dstBuffer.length = 17 dstOffset = 0 dstLength = 17  17</pre>	15	dstBuffer = 55 55 55  Successful call  tag = 0Dh, occurrence = 1  valueOffset = 2 dstBuffer.length = 20 dstOffset = 3 dstLength = 12  Compare buffer  buffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55  Append a Text String TLV  tag = 0D buffer = 00 11 22 33 44 55 (no specific	Result is 00h	
dstBuffer.length = 17 dstOffset = 0 dstLength = 17  17	15	dstBuffer = 55 55 55  Successful call  tag = 0Dh, occurrence = 1  valueOffset = 2 dstBuffer.length = 20 dstOffset = 3 dstLength = 12  Compare buffer  buffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55  Append a Text String TLV  tag = 0D buffer = 00 11 22 33 44 55 (no specific DCS byte)  Successful call	Result is 00h  Result of findAndCopyValue() is	
dstOffset = 0 dstLength = 17  17	15	dstBuffer = 55 55 55   Successful call     tag = 0Dh, occurrence = 1     valueOffset = 2     dstBuffer.length = 20     dstOffset = 3     dstLength = 12     Compare buffer     buffer = 55 55 55 01 02     03 04 05 06 07     08 09 0A 0B 0C     55 55 55 55 55     Append a Text String TLV     tag = 0D     buffer = 00 11 22 33 44 55 (no specific DCS byte)     Successful call     tag = 0Dh, occurrence = 1	Result is 00h  Result of findAndCopyValue() is	
Tompare buffer buffer buffer buffer = 04 00 01 0F    Successful call tag = 0Dh, occurrence = 2 valueOffset = 0 dstBuffer.length = 6 dstOffset = 0 dstLength = 6    Compare buffer buffer buffer = 00 11 22 33 44 55   Result is 00h	15	dstBuffer = 55 55 55  Successful call  tag = 0Dh, occurrence = 1 valueOffset = 2 dstBuffer.length = 20 dstOffset = 3 dstLength = 12  Compare buffer  buffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55 55  Append a Text String TLV  tag = 0D buffer = 00 11 22 33 44 55 (no specific DCS byte)  Successful call  tag = 0Dh, occurrence = 1 valueOffset = 0	Result is 00h  Result of findAndCopyValue() is	
buffer = 04 00 01 0F  18	15	dstBuffer = 55 55 55	Result is 00h  Result of findAndCopyValue() is	
18	15	dstBuffer = 55 55 55   Successful call     tag = 0Dh, occurrence = 1     valueOffset = 2     dstBuffer.length = 20     dstOffset = 3     dstLength = 12     Compare buffer     buffer =	Result is 00h  Result of findAndCopyValue() is 17	
tag = 0Dh, occurrence = 2 valueOffset = 0 dstBuffer.length = 6 dstOffset = 0 dstLength = 6  19  Compare buffer buffer = 00 11 22 33 44 55  6  Result is 00h	15	dstBuffer = 55 55 55   Successful call     tag = 0Dh, occurrence = 1     valueOffset = 2     dstBuffer.length = 20     dstOffset = 3     dstLength = 12     Compare buffer     buffer =	Result is 00h  Result of findAndCopyValue() is 17	
<pre>valueOffset = 0 dstBuffer.length = 6 dstOffset = 0 dstLength = 6  19</pre>	15	dstBuffer = 55 55 55   Successful call     tag = 0Dh, occurrence = 1     valueOffset = 2     dstBuffer.length = 20     dstOffset = 3     dstLength = 12     Compare buffer     buffer =	Result is 00h  Result of findAndCopyValue() is 17	
dstBuffer.length = 6 dstOffset = 0 dstLength = 6  19	16	Successful call	Result is 00h  Result of findAndCopyValue() is 17  Result is 00h	
dstOffset = 0 dstLength = 6  19	16	Successful call	Result is 00h  Result of findAndCopyValue() is 17  Result is 00h  Result of findAndCopyValue() is	
19	16	dstBuffer = 55 55 55  Successful call  tag = 0Dh, occurrence = 1 valueOffset = 2 dstBuffer.length = 20 dstOffset = 3 dstLength = 12  Compare buffer  buffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55 55  Append a Text String TLV  tag = 0D buffer = 00 11 22 33 44 55 (no specific DCS byte)  Successful call  tag = 0Dh, occurrence = 1 valueOffset = 0 dstBuffer.length = 17 dstOffset = 0 dstLength = 17  Compare buffer  buffer = 04 00 01 0F  Successful call  tag = 0Dh, occurrence = 2 valueOffset = 0	Result is 00h  Result of findAndCopyValue() is 17  Result is 00h  Result of findAndCopyValue() is	
buffer = 00 11 22 33 44 55	16	dstBuffer = 55 55 55  Successful call  tag = 0Dh, occurrence = 1  valueOffset = 2 dstBuffer.length = 20 dstOffset = 3 dstLength = 12  Compare buffer  buffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55  Append a Text String TLV  tag = 0D buffer = 00 11 22 33 44 55 (no specific DCS byte)  Successful call  tag = 0Dh, occurrence = 1 valueOffset = 0 dstBuffer.length = 17 dstOffset = 0 dstLength = 17  Compare buffer  buffer = 04 00 01 0F  Successful call  tag = 0Dh, occurrence = 2 valueOffset = 0 dstBuffer.length = 6	Result is 00h  Result of findAndCopyValue() is 17  Result is 00h  Result of findAndCopyValue() is	
	15 16 17 18	dstBuffer = 55 55 55  Successful call  tag = 0Dh, occurrence = 1  valueOffset = 2 dstBuffer.length = 20 dstoffset = 3 dstLength = 12  Compare buffer  buffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55  Append a Text String TLV  tag = 0D buffer = 00 11 22 33 44 55 (no specific DCS byte)  Successful call  tag = 0Dh, occurrence = 1 valueOffset = 0 dstBuffer.length = 17 dstoffset = 0 dstLength = 17  Compare buffer  buffer = 04 00 01 0F  Successful call  tag = 0Dh, occurrence = 2 valueOffset = 0 dstBuffer.length = 6 dstOffset = 0 dstBuffer.length = 6 dstOffset = 0 dstLength = 6	Result is 00h  Result of findAndCopyValue() is 17  Result is 00h  Result of findAndCopyValue() is 6	
20 initDisplayText()	15 16 17 18	dstBuffer = 55 55 55  Successful call  tag = 0Dh, occurrence = 1  valueOffset = 2 dstBuffer.length = 20 dstoffset = 3 dstLength = 12  Compare buffer  buffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55  Append a Text String TLV  tag = 0D buffer = 00 11 22 33 44 55 (no specific DCS byte)  Successful call  tag = 0Dh, occurrence = 1 valueOffset = 0 dstBuffer.length = 17 dstoffset = 0 dstLength = 17  Compare buffer  buffer = 04 00 01 0F  Successful call  tag = 0Dh, occurrence = 2 valueOffset = 0 dstBuffer.length = 6 dstOffset = 0 dstBuffer.length = 6 dstOffset = 0 dstLength = 6  Compare buffer	Result is 00h  Result of findAndCopyValue() is 17  Result is 00h  Result of findAndCopyValue() is 6	
	15 16 17 18	dstBuffer = 55 55 55  Successful call  tag = 0Dh, occurrence = 1  valueOffset = 2 dstBuffer.length = 20 dstoffset = 3 dstLength = 12  Compare buffer  buffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55  Append a Text String TLV  tag = 0D buffer = 00 11 22 33 44 55 (no specific DCS byte)  Successful call  tag = 0Dh, occurrence = 1 valueOffset = 0 dstBuffer.length = 17 dstoffset = 0 dstLength = 17  Compare buffer  buffer = 04 00 01 0F  Successful call  tag = 0Dh, occurrence = 2 valueOffset = 0 dstBuffer.length = 6 dstOffset = 0 dstBuffer.length = 6 dstOffset = 0 dstLength = 6  Compare buffer	Result is 00h  Result of findAndCopyValue() is 17  Result is 00h  Result of findAndCopyValue() is 6	

	dcs = 4		
	buffer = 00 01 0F		
-		D 14 (C 1A 1 )/ 1 ():	
	Successful call (with tag 8Dh)	Result of findAndcopyValue() is	
	tag = 8Dh	17	
	occurrence = 1		
	<pre>valueOffset = 0</pre>		
	dstBuffer.length = 17		
	dstOffset = 0		
	dstLength = 17		
21	Compare buffer	Result is 00h	
	buffer = 04 00 01 0F		
22	Append tag 0Fh		
	buffer = 00 01 0F		
	Successful call (with tag 8Fh)	Result of findAndcopyValue() is	
	tag = 8Fh	16	
	occurrence = 1		
	<pre>valueOffset = 0</pre>		
	dstBuffer.length = 16		
	dstOffset = 0		
	dstLength = 16		
23	Compare buffer	Result is 00h	
	buffer = 00 01 0F		
20	•	Troductio dott	

## 6.2.7.15.4 Test Coverage

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

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

Test Area Reference API\_2\_PAH\_FACRB\_BS

# 6.2.7.16.1 Conformance requirement

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

#### 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 simple TLV is less than that in compareBuffer returns -1.

CRRN5: if the first miscomparing byte in simple TLV is greater than that in compareBuffer returns 1.

CRRN6: The search method is comprehension required flag independent.

#### Parameter errors

CRRP1: if compareBuffer is null NullPointerException shall be thrown.

CRRP2: if compareOffset would cause access outside array bounds ArrayIndexOutOfBoundsException shall be thrown.

### Context errors

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

6.2.7.16.3 Test Suite files

Test Script: API\_2\_PAH\_FACRB\_BS\_1.scr

Test Applet: API\_2\_PAH\_FACRB\_BS\_1.java

Load Script: API\_2\_PAH\_FACRB\_BS\_1.ldr

Clean-up Script: API\_2\_PAH\_FACRB\_BS\_1.clr

# 6.2.7.16.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Initialise the handler		-
	findAndCompareValue() with a null dstBuffer	NullPointerException is thrown	
2	initDisplayText() with length = 15		
	<pre>compareOffset ≥ compareBuffer.length tag = 0Dh compareBuffer.length = 20 compareOffset = 20</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
3	<pre>compareOffset &lt; 0 compareBuffer.length = 20 compareOffset = -1</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
4	<pre>length &gt; compareBuffer.length compareBuffer.length = 15 compareOffset = 0</pre>	ArrayIndexOutOfBoundsException is thrown	
5	<pre>compareOffset + length &gt; compareBuffer.length compareBuffer.length = 20 compareOffset = 5</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
6	InitDisplayText()		
	Select a TLV (tag 02h)		
	findAndCompareValue() tag = 03h	ToolkitException.UNAVAILABLE _ELEMENT is thrown	
	Call the getValueLength() method	ToolkitException.UNAVAILABLE _ELEMENT is thrown.	
7	initDisplayText() dcs = 4 buffer = 00 01 0F		
	Initialise compareBuffer compareBuffer = 04 00 01 0F		
	Compare buffers tag = 0Dh compareOffset = 0	Result is 00h	
8	Verify current TLV getValueLength()	Result is 17	
9	<pre>Initialise compareBuffer compareBuffer = 04 00 01 10</pre>		

Compare buffers with same parameters	
CompareBuffer =   03 00 01 0F	
Compare buffers with same parameters   Result is +1	
Compare buffers with same parameters	
Initialise compareBuffer	
CompareBuffer	
S5   S5   O4   O0   O1     O2   O3   O4   O5   O6     O7   O8   O9   OA   OB     OC   OD   OE   OF   S5     CompareOffset   = 2     Result is   O0h     Tag   Each   Each   Each   Each     Tag   Each   Each   Each   Each   Each   Each   Each     Tag   Each   Each   Each   Each   Each   Each   Each   Each   Each     Tag   Each     Tag   Each   Each	
07 08 09 0A 0B   0C 0D 0E 0F 55   Compare buffers   CompareOffset = 2   Result is 00h	
OC 0D 0E 0F 55   Compare buffers   CompareOffset = 2   Result is 00h	
Compare buffers   Compare buffers   Result is 00h	
12	
tag = 0Dh buffer = 00 11 22 33 44 55    Initialise compareBuffer	
tag = 0Dh buffer = 00 11 22 33 44 55    Initialise compareBuffer	
Initialise compareBuffer	
CompareBuffer =   55 55 04 00 01   02 03 04 05 06   07 08 09 0A 0B   0C 0D 0E 0F 55	
55 55 04 00 01   02 03 04 05 06   07 08 09 0A 0B   0C 0D 0E 0F 55	
07 08 09 0A 0B 0C 0D 0E 0F 55  Compare buffers compareOffset = 2  Initialise compareBuffer compareBuffer = 55 55 04 01 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 55  Compare buffers compareOffset = 2  Result is 00h  Result is -1	
C OD OE OF 55   Compare buffers   Result is 00h	
CompareOffset = 2	
Initialise compareBuffer	
compareBuffer =	
55 55 04 01 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 55   Compare buffers compareOffset = 2  Result is -1  Initialise compareBuffer compareBuffer = 55 55 04 00 01 02 03 04 05 06 07 08 09 0A 0B	
02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F 55 Compare buffers compareOffset = 2  Result is -1  Initialise compareBuffer compareBuffer = 55 55 04 00 01 02 03 04 05 06 07 08 09 0A 0B	
OC OD OE OF 55  Compare buffers compareOffset = 2  Result is -1  Initialise compareBuffer compareBuffer = 55 55 04 00 01 02 03 04 05 06 07 08 09 0A 0B	
Compare buffers compareOffset = 2  14	
compareOffset = 2  14	
compareBuffer = 55 55 04 00 01 02 03 04 05 06 07 08 09 0A 0B	
compareBuffer = 55 55 04 00 01 02 03 04 05 06 07 08 09 0A 0B	
55 55 04 00 01 02 03 04 05 06 07 08 09 0A 0B	
07 08 09 0A 0B	
0C 0D 0D 10 55	
Compare buffers Result is +1	
15 initDisplayText()	
dcs = 4 buffer = 00 01 0F	
Initialise compareBuffer	
CompareBuffer = 04 00 01 0F  Successful call (with tag 8Dh)  Result is 00h	
Successful call (with tag 8Dh)  tag = 8Dh  Result is 00h	
compareBuffer.length = 17	
compareOffset = 0  16 Append tag 0Fh	
buffer = 00 01 0F	
Initialise compareBuffer	
compareBuffer = 00 01 0F  Successful call (with tag 8Fh)  Result is 00h	
tag = 8Fh	
compareBuffer.length = 16 compareOffset = 0	
17   Initialise compareBuffer	
compareBuffer = 00 99 01 03 0F	
Successful call (with tag 8Fh)  tag = 8Fh  Result is +1	
compareBuffer.length = 16	
compareOffset = 0	

### 6.2.7.16.4 Test Coverage

CRR number	Test case number
N1	6
N2	8
N3	7, 11, 12
N4	9, 13
N5	10, 14
N6	15, 16
P1	1
P2	2, 3, 4, 5
C1	Does not apply for
	Proactive Handler

# 6.2.7.17 Method findAndCompareValue(byte tag, byte occurence, short valueOffset, byte[] compareBuffer, short compareOffset, short compareLength)

Test Area Reference API\_2\_PAH\_FACRBBS\_BSS

### 6.2.7.17.1 Conformance requirement

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

#### 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 simple TLV is less than that in compareBuffer -1 is returned.

CRRN5: if the first miscomparing byte in simple TLV is greater than that in compareBuffer 1 is returned

CRRN6: The search method is comprehension required flag independent.

### 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. occurence = 0) an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException BAD\_INPUT\_PARAMETER.

# Context errors

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

6.2.7.17.3 Test Suite files

Test Script: API\_2\_PAH\_FACRBBS\_BSS\_1.scr

Test Applet: API\_2\_PAH\_FACRBBS\_BSS\_1.java

Load Script: API\_2\_PAH\_FACRBBS\_BSS\_1.ldr

Clean-up Script: API\_2\_PAH\_FACRBBS\_BSS\_1.clr

# 6.2.7.17.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Initialise the handler		•
	findAndCompareValue() with a null compareBuffer	NullPointerException is thrown	
2	initDisplayText() with length = 15		
	<pre>compareOffset ≥ compareBuffer.length tag = 0Dh, occurrence = 1 valueOffset = 0 compareBuffer.length = 5 compareOffset = 5 compareLength = 1</pre>	ArrayIndexOutOfBoundsException is thrown	
3	<pre>compareOffset &lt; 0 compareBuffer.length = 5 compareOffset = -1 compareLength = 1</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
4	<pre>compareLength &gt;compareBuffer.length compareBuffer.length = 5 compareOffset = 0 compareLength = 6</pre>	ArrayIndexOutOfBoundsException is thrown	
5	<pre>compareOffset + compareLength &gt;compareBuffer.length compareBuffer.length = 5 compareOffset = 3 compareLength = 3</pre>	ArrayIndexOutOfBoundsException is thrown	
6	<pre>compareLength &lt; 0 compareBuffer.length = 5 compareOffset = 0 compareLength = -1</pre>	ArrayIndexOutOfBoundsException is thrown	
7	initDisplayText() with length = 5		
	<pre>valueOffset ≥ Text String Length tag = 0Dh, occurrence = 1 valueOffset = 6 compareBuffer.length = 15 compareOffset = 0 compareLength = 1</pre>	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
8	<pre>valueOffset &lt; 0 valueOffset = -1 compareBuffer.length = 15 compareOffset = 0 compareLength = 1</pre>	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
9	<pre>compareLength &gt; Text String length valueOffset = 0 compareBuffer.length = 15 compareOffset = 0 compareLength = 7</pre>	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
10	<pre>valueOffset + compareLength &gt; Text String</pre>	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	

11	Invalid parameter occurrence = 0	ToolkitException.BAD_INPUT_P ARAMETER is thrown	
12	InitDisplayText()		
12	Select a TLV (tag 02h)		
	findAndCompareValue()	ToolkitException.UNAVAILABLE	
	tag = 0Dh	_ELEMENT is thrown	
	occurrence = 2	LLEWENT IS UNOWN	
	Call the getValueLength() method	ToolkitException.UNAVAILABLE _ELEMENT is thrown.	
13	initDisplayText()		
	dcs = 4		
	buffer = 00 01 0F		
	Initialise compareBuffer		
	compareBuffer = 04 00 01 0F		
	findAndCompareValue()	Result is 00h	
	tag = 0Dh, occurrence = 1	Result is oon	
	valueOffset = 0		
	compareOffset = 0		
	compareLength = 17		
14	Verify current TLV	Result is 17	
	getValueLength()		
15	Initialise compareBuffer		
	compareBuffer = 04 00 01 10		
	Compare buffers with same parameters	Result is -1	
	Compare barrers with same parameters	Tresuit is 1	
16	Initialise compareBuffer		
	compareBuffer =		
	03 00 01 OF		
	Compare buffers with same parameters	Result is +1	
17	Initialise compareBuffer		
	compareBuffer =		
	55 55 55 01 02 03 04 05 06 07		
	08 09 0A 0B 0C		
	55 55 55 55		
	Compare buffers	Result is 00h	
	<pre>valueOffset = 2</pre>		
	compareOffset = 3		
	compareLength = 12		
18	Initialise compareBuffer		
10	compareBuffer =		
	55 55 55 02 01		
	03 04 05 06 07		
	08 09 0A 0B 0C		
	55 55 55 55		
	Compare buffers with same parameters	Result is -1	
10	Initialiae compare Puffer		
19	Initialise compareBuffer compareBuffer =		
	55 55 55 01 02		
	03 04 05 06 07		
	08 09 0A 0A 0D		
-	55 55 55 55 55 Common buffers with some personators	Describie of	
	Compare buffers with same parameters	Result is +1	
20	append a Text String TLV		
20	tag = 0Dh		
	buffer = 00 11 22 33 44 55		
	Initialise compareBuffer		
	compareBuffer =		
	04 00 01 0F	I D. H. L. OC.	
	findAndCompareValue()	Result is 00h	
	<pre>tag = 0Dh, occurrence = 1 valueOffset = 0</pre>		
	compareOffset = 0		
	compareLength = 17		
	<u> </u>	<u>t</u>	I

04	Initialiae comparaDuffer	
21	Initialise compareBuffer	
	compareBuffer =	
	00 11 22 33 44 55	Deput is 00h
	findAndCompareValue()	Result is 00h
	<pre>tag = 0Dh, occurrence = 2 valueOffset = 0</pre>	
	compareOffset = 0	
	compareLength = 6	
	Comparedengen - 0	
22	Initialise compareBuffer	
22	compareBuffer =	
	00 11 22 33 44 66	
	findAndCompareValue()	Result is –1
	tag = 0Dh, occurrence = 2	1765uit 15 – 1
	valueOffset = 0	
	compareOffset = 0	
	compareLength = 6	
23	initDisplayText()	
	dcs = 4	
	buffer = 00 01 0F	
	Initialise compareBuffer	
	CompareBuffer = 04 00 01 0F	
	Successful call (with tag 8Dh)	Result is 00h
	tag = 8Dh, occurrence = 1	
	<pre>valueOffset = 0</pre>	
	compareBuffer.length = 17	
	compareOffset = 0	
	compareLength = 17	
24	Append tag 0Fh	
	buffer = 00 01 0F	
	Initialise compareBuffer	
	compareBuffer = 00 01 0F	
	Successful call (with tag 8Fh)	Result is 00h
	tag = 8Fh, occurrence = 1	
	valueOffset = 0	
	compareBuffer.length = 16	
	compareOffset = 0	
	compareLength = 16	

# 6.2.7.17.4 Test Coverage

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

# 6.2.7.18 Method appendArray

Test Area Reference: API\_2\_PAH\_APDA

# 6.2.7.18.1 Conformance requirement:

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

 ${\tt java.lang.ArrayIndexOutOfBoundsException,} \\ {\tt ToolkitException}$ 

#### Normal execution

CRRN1: appends a buffer into the Edithandler buffer

CRRN2: a successful append does not modify the TLV selected

#### Parameters error

CRRP1: if buffer is null, a java.lang.NullPointerException is thrown

CRRP2: if offset or length or both would cause access outside the array bounds, or if length is negative, a java.lang.ArrayIndexOutOfBoundsException is thrown.

#### Context errors

CRRC1: if the EditHandler buffer is too small to append the requested data, a ToolkitException is thrown with reason code HANDLER\_OVERFLOW

CRRC2: if the EditHandler buffer is busy, a ToolkitException is thrown with reason code HANDLER\_NOT\_AVAILABLE

6.2.7.18.2 Test suite files

Test Script: API\_2\_PAH\_APDA\_1.scr

Test Applet: API\_2\_PAH\_APDA\_1.java

Load Script: API\_2\_PAH\_APDA\_1.ldr

Clean-up Script: API\_2\_PAH\_APDA\_1.clr

# 6.2.7.18.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Null buffer		AFDO Expectation
		NullPointerException is thrown	
2	offset > buffer.length	ArrayIndexOutOfBoundsExceptio	
	<pre>buffer.length = 5 offset = 6</pre>	n is thrown	
	length = 0		
3	offset < 0	ArrayIndexOutOfBoundsExceptio	
١	buffer.length = 5	n is thrown	
	offset = -1	II IS UIIOWII	
	length = 1		
4	length > buffer.length	ArrayIndexOutOfBoundsExceptio	
	buffer.length = 5	n is thrown	
	offset = 0		
	length = 6		
5	offset + length > buffer.length	ArrayIndexOutOfBoundsExceptio	
	buffer.length = 5	n is thrown	
	offset = 3		
	length = 3		
6	length < 0	ArrayIndexOutOfBoundsExceptio	
	buffer.length = 5	n is thrown	
	offset = 0		
7	length = -1  Handler overflow	TablistEvention HANDLED OV	
<b>'</b>	buffer.length = 256	ToolkitException.HANDLER_OV   FRFLOW is thrown	
	offset = 0	ERFLOW IS UNOWN	
	length = 256		
8	Initialise handler		
	Select Command Details TLV		
	Successful call		
	buffer = FF FE F8		
	offset = 0		
	length = 8		
	Verify Current TLV: Call getValueLength()	Result is 03h	

9	Clear the handler	
	Successful call	
	buffer = FF FE F8	
	offset = 0	
	length = 8	
	Call copy() method	
	Compare the arrays	Result of
	compareBuffer = FF FE F8	javacard.framework.Util.arrayCo
		mpare() is 00h
10	Successful call	
	buffer = 00 01 07	
	offset = 2	
	length = 6	
	Call copy() method	
	Compare the arrays	Result of
	compareBuffer = FF FE F8 02 03 07	javacard.framework.Util.arrayCo
		mpare() is 00h
11	Successful call	
	buffer = 11 22 88	
	offset = 2	
	length = 4	
	Call copy() method	
	Compare the arrays	Result of
	compareBuffer = FF FE F8 02 03 07 33	javacard.framework.Util.arrayCo
	44 55 66	mpare() is 00h

# 6.2.7.18.4 Test Coverage

CRR number	Test case number
N1	9, 10, 11
N2	8
P1	1
P2	2, 3, 4, 5, 6
C1	7
C2	Does not apply for
	ProactiveHandler

# 6.2.7.19 Method appendTLV(byte tag, byte value)

Test Area Reference: API\_2\_PAH\_APTLBB

# 6.2.7.19.1 Conformance requirement:

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

#### Normal execution

CRRN1: Appends a TLV element to the current TLV list (1-byte element).

CRRN2: A successful append does not modify the TLV selected.

Parameters error

None

## Context errors

CRRC1: if the EditHandler buffer is too small to append the requested data, a ToolkitException is thrown with reason code HANDLER\_OVERFLOW

CRRC2: if the EditHandler buffer is busy, a ToolkitException is thrown with reason code HANDLER\_NOT\_AVAILABLE

6.2.7.19.2 Test suite files

Test Script: API\_2\_PAH\_APTLBB\_1.scr

Test Applet: API\_2\_PAH\_APTLBB\_1.java

Load Script: API\_2\_PAH\_APTLBB\_1.ldr

Clean-up Script: API\_2\_PAH\_APTLBB\_1.clr

### 6.2.7.19.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Call appendArray() length = 251		
	Handler Overflow: Call the appendTLV()	ToolkitException.HANDLER_OV	
	method	ERFLOW is thrown	
2	Initialise handler		
	Select Command Details TLV		
	Call the appendTLV() method		
	Verify Current TLV: Call getValueLength()	Result is 03h	
3	Clear the handler		
	Successful call		
	tag = 84h		
	value = 00h		
	Call copy() method		
	Compare the arrays	Result of	
	compareBuffer = 84 01 00	javacard.framework.Util.arrayCo	
		mpare() is 00h	
4	Successful call		
	tag = 01h		
	value = FEh		
	Call copy() method		
	Compare the arrays	Result of	
	compareBuffer = 84 01 00 01 01 FE	javacard.framework.Util.arrayCo	
		mpare() is 00h	

# 6.2.7.19.4 Test Coverage

CRR number	Test case number	
N1	3, 4	
N2	2	
C1	1	
C2	Does not apply for Proactive Handler	

# 6.2.7.20 Method appendTLV(byte tag, byte value1, byte value2)

Test Area Reference: API\_2\_PAH\_APTLBBB

# 6.2.7.20.1 Conformance requirements:

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

#### Normal execution

CRRN1: Appends a TLV element to the current TLV list (2-byte element).

CRRN2: A successful append does not modify the TLV selected.

Parameters error

None

### Context errors

CRRC1: if the EditHandler buffer is too small to append the requested data, a ToolkitException is thrown with reason code HANDLER\_OVERFLOW

CRRC2: if the EditHandler buffer is busy, a ToolkitException is thrown with reason code HANDLER\_NOT\_AVAILABLE

6.2.7.20.2 Test suite files

Test Script: API\_2\_PAH\_APTLBBB\_1.scr

Test Applet: API\_2\_PAH\_APTLBBB\_1.java

Load Script: API\_2\_PAH\_APTLBBB\_1.ldr

Clean-up Script: API\_2\_PAH\_APTLBBB\_1.clr

# 6.2.7.20.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Call the initDisplayText()		
	length = 250		
	Handler Overflow: Call the appendTLV()	ToolkitException.HANDLER_OV	
	method	ERFLOW is thrown	
2	Initialise handler		
	Select Command Details TLV		
	Call the appendTLV() method		
	Verify Current TLV: Call getValueLength()	Result is 03h	
3	Clear the handler		
	Successful call		
	tag = 84h		
	value1 = 00h		
	value2 = 01h		
	Call copy() method		
	Compare the arrays	Result of	
	compareBuffer = 84 02 00 01	javacard.framework.Util.arrayCo	
		mpare() is 00h	
4	Successful call		
	tag = 01h		
	value1 = FEh		
	value2 = FDh		
	Call copy() method		
	Compare the arrays	Result of	
	compareBuffer = 84 02 00 01 01 02 FE FD	javacard.framework.Util.arrayCo	
		mpare() is 00h	

# 6.2.7.20.4 Test Coverage

CRR number	Test case number	
N1	3, 4	
N2	2	
C1	1	
C2 Does not apply for		
	Proactive Handler	

# 6.2.7.21 Method appendTLV(byte tag, byte[] value, short valueoffset, short valuelength)

Test Area Reference: API\_2\_PAH\_APTLBBSS

# 6.2.7.21.1 Conformance requirement:

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

### Normal execution

CRRN1: Appends a TLV element to the current TLV list (byte-array element).

CRRN2: A successful append does not modify the TLV selected.

#### Parameters error

CRRP1: if value is null, a java.lang.NullPointerException is thrown

CRRP2: if valueoffset or valuelength or both would cause access outside the array bounds, or if length is negative, a java.lang.ArrayIndexOutOfBoundsException is thrown.

#### Context errors

CRRC1: if the EditHandler buffer is too small to append the requested data, a ToolkitException is thrown with reason code HANDLER\_OVERFLOW

CRRC2: if the EditHandler buffer is busy, a ToolkitException is thrown with reason code HANDLER\_NOT\_AVAILABLE

CRRC3: if valuelength is greater than 255, a ToolkitException is thrown with reason code BAD\_INPUT\_PARAMETER

## 6.2.7.21.2 Test suite files

Test Script: API\_2\_PAH\_APTLBBSS\_1.scr

Test Applet: API\_2\_PAH\_APTLBBSS\_1.java

Load Script: API\_2\_PAH\_APTLBBSS\_1.ldr

Clean-up Script: API\_2\_PAH\_APTLBBSS\_1.clr

# 6.2.7.21.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Null value	NullPointerException is thrown	C =Apotation
2	valueOffset ≥ value.length	ArrayIndexOutOfBoundsExceptio	
~	value.length = 5	n is thrown	
	valueOffset = 5	J	
	valueLength = 1		
3	valueOffset < 0	ArrayIndexOutOfBoundsExceptio	
	<pre>value.length = 5 valueOffset = -1</pre>	n is thrown	
	<pre>valueOffset = -1 valueLength = 1</pre>		
4	valueLength > value.length	ArrayIndexOutOfBoundsExceptio	
•	value.length = 5	n is thrown	
	valueOffset = 0		
	valueLength = 6		
5	valueOffset + valueLength > value.length	ArrayIndexOutOfBoundsExceptio	
	<pre>value.length = 5 valueOffset = 3</pre>	n is thrown	
	valueLength = 3		
6	valueLength < 0	ArrayIndexOutOfBoundsExceptio	
	value.length = 5	n is thrown	
	valueOffset = 0		
	valueLength = -1	ToolkitEventing HANDLED OX	
7	Handler overflow	ToolkitException.HANDLER_OV	
	<pre>value.length = 254 valueOffset = 0</pre>	ERFLOW is thrown	
	valueLength = 254		
8	Bad parameter	ToolkitException.BAD_INPUT_P	
	value.length = 256	ARAMETER is thrown	
	valueOffset = 0		
0	valueLength = 256	+	
9	Initialise handler Select Command Details TLV		
	Successful call	+	
	tag = 04		
	value = FF FE F8		
	valueOffset = 0		
	valueLength = 8		
	Verify Current TLV: Call getValueLength()	Result is 03h	
10	Clear the handler		
	Successful call		
	tag = 04 value = FF FE F8		
	valueOffset = 0		
	valueLength = 8		
	Call copy() method		
	Compare the arrays	Result of	
	compareBuffer = 04 08 FF FE F8	javacard.framework.Util.arrayCo	
		mpare() is 00h	
11	Successful call		
	tag = 85h value = 00 01 07		
	valueOffset = 2		
	valueLength = 6		
	Call copy() method		
	Compare the arrays	Result of	
	compareBuffer = 04 08 FF FE F8 85 06 02	javacard.framework.Util.arrayCo	
	03 07	mpare() is 00h	
12	Successful call		
	tag = 01 value = 11 22 88		
	value = 11 22 88 valueOffset = 2		
	valueLength = 4		
	Call copy() method		
	Compare the arrays	Result of	
	compareBuffer = 04 08 FF FE F8 85 06 02	javacard.framework.Util.arrayCo	
	03 07 01 04 33 44 55 66	mpare() is 00h	
13	Clear the handler		
	Successful call		
	tag = 04		
1	value = 00 01 7F	ı	

<pre>valueOffset = 0</pre>		
valueLength = 80h		
Call copy() method		
Compare the arrays	Result of	
compareBuffer = 04 81 80 00 017F	javacard.framework.Util.arrayCo	
	mpare() is 00h	

## 6.2.7.21.4 Test Coverage

CRR number	Test case number
N1	10, 11, 12, 13
N2	9
P1	1
P2	2, 3, 4, 5, 6
C1	7
C2	Does not apply for
	Proactive Handler
C3	8

# 6.2.7.22 Method appendTLV(byte tag, byte value1, byte[] value2, short value2offset, short value2length)

Test Area Reference: API\_2\_PAH\_APTLBB\_BSS

#### 6.2.7.22.1 Conformance requirement:

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

#### Normal execution

CRRN1: Appends a TLV element to the current TLV list (1 byte and a byte-array element).

CRRN2: A successful append does not modify the TLV selected.

## Parameters error

CRRP1: if value2 is null, a java.lang.NullPointerException is thrown

CRRP2: if value2offset or value2length or both would cause access outside the array bounds, or if length is negative, a java.lang.ArrayIndexOutOfBoundsException is thrown.

#### Context errors

CRRC1: if the EditHandler buffer is too small to append the requested data, a ToolkitException is thrown with reason code HANDLER\_OVERFLOW

CRRC2: if the EditHandler buffer is busy, a ToolkitException is thrown with reason code HANDLER\_NOT\_AVAILABLE

CRRC3: if valuelength is greater than 255, a ToolkitException is thrown with reason code BAD\_INPUT\_PARAMETER

6.2.7.22.2 Test suite files

Test Script: API\_2\_PAH\_APTLBB\_BSS\_1.scr

Test Applet: API\_2\_PAH\_APTLBB\_BSS\_1.java

Load Script: API\_2\_PAH\_APTLBB\_BSS\_1.ldr

Clean-up Script: API\_2\_PAH\_APTLBB\_BSS\_1.clr

# 6.2.7.22.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Null value2	NullPointerException is thrown	<u> </u>
2	value2Offset ≥ value2.length	ArrayIndexOutOfBoundsExceptio	
	value2.length = 5	n is thrown	
	value20ffset = 5		
	value2Length = 1	A 1 1 0 10/D 1 5 1:	
3	value2Offset < 0	ArrayIndexOutOfBoundsExceptio	
	<pre>value2.length = 5 value20ffset = -1</pre>	n is thrown	
	value2Length = 1		
4	value2Length > value2.length	ArrayIndexOutOfBoundsExceptio	
	value2.length = 5	n is thrown	
	value2Offset = 0		
	value2Length = 6		
5	value2Offset + value2Length > value2.length	ArrayIndexOutOfBoundsExceptio	
	<pre>value2.length = 5 value20ffset = 3</pre>	n is thrown	
	value2Length = 3		
6	value2Length < 0	ArrayIndexOutOfBoundsExceptio	
	value2.length = 5	n is thrown	
	value2Offset = 0	-	
<u> </u>	value2Length = -1		
7	Handler overflow	ToolkitException.HANDLER_OV	
	<pre>value2.length = 254 value20ffset = 0</pre>	ERFLOW is thrown	
	value2Length = 254		
8	Bad parameter	ToolkitException.BAD_INPUT_P	
	value2.length = 256	ARAMETER is thrown	
	value2Offset = 0		
	value2Length = 256		
9	Initialise handler		
	Select Command Details TLV		
	Successful call		
	tag = 04 value1 = 05		
	value2 = FF FE F8		
	<pre>value20ffset = 0</pre>		
	value2Length = 8		
	Verify Current TLV: Call getValueLength()	Result is 03h	
10	Clear the handler		
	Successful call		
	tag = 04 value1 = 05		
	value2 = FF FE F8		
	<pre>value20ffset = 0</pre>		
	value2Length = 8		
	Call copy() method		
	Compare the arrays	Result of	
	CompareBuffer = 04 09 05 FF FE F8	javacard.framework.Util.arrayCo mpare() is 00h	
11	Successful call		
	tag = 85h		
	value1 = 55h		
	<pre>value2 = 00 01 07 value20ffset = 2</pre>		
	value2Length = 6		
	Call copy() method		
	Compare the arrays	Result of	
	compareBuffer =	javacard.framework.Util.arrayCo	
	04 09 05 FF FE F8	,	

	85 07 55 02 03 <b></b> 07	mpare() is 00h
12	Successful call	
	tag = 01	
	value1 = 44h	
	value2 = 11 22 88	
	value2Offset = 2	
	value2Length = 4	
	Call copy() method	
	Compare the arrays	Result of
	CompareBuffer =	javacard.framework.Util.arrayCo
	04 09 05 FF FE F8	mpare() is 00h
	85 07 55 02 03 <b></b> 07	
	01 05 44 33 44 55 66	
13	Clear the handler	
	Successful call	
	tag = 04	
	value1 = 00	
	value2 = 01 7F	
	value2Offset = 0	
	value2Length = 7Fh	
	Call copy() method	
	Compare the arrays	Result of
	compareBuffer = 04 81 80 00 017F	javacard.framework.Util.arrayCo
		mpare() is 00h

# 6.2.7.22.4 Test Coverage

CRR number	Test case number	
N1	10, 11, 12, 13	
N2	9	
P1	1	
P2	2, 3, 4, 5, 6	
C1	7	
C2	Does not apply for	
	Proactive Handler	
C3	8	

# 6.2.7.23 Method clear

Test Area Reference: API\_2\_PAH\_CLR

# 6.2.7.23.1 Conformance requirement:

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

#### Normal execution

CRRN1: Clears the TLV list of an EditHandler and resets the current TLV selected.

## Parameters error

No requirements

# Context errors

 $CRRC1: if the \ Edit Handler \ buffer \ is \ busy, \ a \ Toolkit Exception \ is \ thrown \ with \ reason \ code \\ HANDLER\_NOT\_AVAILABLE$ 

# 6.2.7.23.2 Test suite files

Test Script: API\_2\_PAH\_CLR\_1.scr

Test Applet: API\_2\_PAH\_CLR\_1.java

Load Script: API\_2\_PAH\_CLR\_1.ldr

Clean-up Script: API\_2\_PAH\_CLR\_1.clr

### 6.2.7.23.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Initialise the handler	Result of getLength() is not null	
	Select Command Details TLV		
	Call the getLength() method		
	Clear the handler	Result of getLength() is 0	
	Call the getLength() method		
2	Call the getValueLength() method	ToolkitException.UNAVAILABLE	
		_ELEMENT is thrown	

#### 6.2.7.23.4 Test Coverage

CRR number	Test case number
N1	1, 2
C1	Does not apply for
	Proactive Handler

# 6.2.8 Class ProactiveResponseHandler

# 6.2.8.1 Method copyAdditionalInformation

Test Area Reference: API\_2\_PRH\_CPAI\_BSS

### 6.2.8.1.1 Conformance requirement

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

#### Normal execution

CRRN1: The copyAdditionalInformation() method shall copy a part of the additional information field from Result TLV element in dstBuffer, using dstOffset and dstLength.

CRRN2: dstBuffer shall only be modified from dstOffset to (dstOffset + dstLength – 1) (included).

CRRN3: The method returns (dstOffset + dstLength).

CRRN4: If a Result TLV element is available, it becomes the TLV selected after a call to the method.

CRRN5: The method shall copy from the first Result TLV.

#### Parameter errors

CRRP1: A NullPointerException shall be thrown if dstBuffer is null.

CRRP2: An ArrayIndexOutOfBoundsException shall be thrown if dstOffset or dstLength or both would cause access outside array bounds.

# Context errors

CRRC1: A ToolkitException.UNAVAILABLE\_ELEMENT shall be thrown in case of unavailable Result TLV element.

CRRC2: A ToolkitException.OUT\_OF\_TLV\_BOUNDARIES shall be thrown if dstLength is greater than the value field of the available TLV.

# 6.2.8.1.3 Test Suite files

# 6.2.8.1.3 Test procedure

Id     Description     API Expectation     APDU Ex       1     Build and send a DISPLAY TEXT command qualifier = 0 dcs = 4 buffer = "Text"     DISPLAY TEX command	pectation (T Proactive
dcs = 4	
buffer = "Text"	
Terminal Response with 11 additional bytes	
Result TLV = 03 0C 01 01 23 45 67 89 AB CD EF 01 23 45	
NULL as parameter to dstBuffer   NullPointerException is thrown   dstBuffer = NULL	
2 dstOffset ≥ dstBuffer.length ArrayIndexOutOfBoundsExceptio	
dstBuffer.length = 10   n is thrown	
dstOffset = 10	
dstLength = 1	
3 dstOffset < 0 ArrayIndexOutOfBoundsExceptio	
dstBuffer.length = 10	
dstOffset = -1 dstLength = 1	
4 dstLength > dstBuffer.length ArrayIndexOutOfBoundsExceptio	
dstBuffer.length = 10   n is thrown	
dstoffset = 0	
dstLength = 11	
5 dstOffset + dstLength > dstBuffer.length ArrayIndexOutOfBoundsExceptio	
dstBuffer.length = 10	
dstOffset = 6	
dstLength = 5 6 dstLength < 0 ArrayIndexOutOfBoundsExceptio	
6 dstLength < 0 ArrayIndexOutOfBoundsExceptio n is thrown	
dstOffset = 6	
dstLength = -1	
7 Build and send a DISPLAY TEXT command DISPLAY TEXT	T Proactive
command	
Terminal Response with 5 additional bytes	
Result TLV = 03 06 01 01 23 45 67 89	
Successfull call, dstBuffer is the whole buffer result of	
dstBuffer.length = 5 copyAdditionalInformation() is	
dstOffset = 0   05h.	
dstLength = 5	
8 Compare dstBuffer using arrayCompare() result of arrayCompare() is 00h.	
<pre>src = {01, 23, 45, 67, 89} srcOffset = 00</pre>	
dest = dstBuffer	
destOffset = 0	
length = 5	
9 Call the getValueLength() method Result is 06h.	
10 Build and send a DISPLAY TEXT command DISPLAY TEXT command	T Proactive
Terminal Response with 6 additional bytes	
Result TLV = 03 07 01 AB CD EF FE DC BA	
Successfull call, dstBuffer is part of a buffer result of	
dstBuffer.length = 7 copyAdditionalInformation() is	
dstOffset = 2 07h.	
dstLength = 5	

11	Compare dstBuffer using arrayCompare()	result of arrayCompare() is 00h.	
	<pre>src = {AB, CD, EF, FE, DC} srcOffset = 00</pre>		
	dest = dstBuffer		
	destOffset = 2		
12	length = 5  Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
12			command
	Terminal Response with 7 additional bytes		
	Result TLV = 03 08 01 FE DC BA 98 76 54 32		
	Successfull call, dstBuffer is part of a buffer	result of	
	<pre>dstBuffer.length = 7 dstOffset = 0</pre>	copyAdditionalInformation() is 05h.	
	dstLength = 5		
13	Compare dstBuffer using arrayCompare()	result of arrayCompare() is 00h.	
	$src = {FE, DC, BA, 98, 76}$		
	<pre>srcOffset = 00 dest = dstBuffer</pre>		
	destOffset = 0		
14	length = 5  Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
			command
	Terminal Response with 8 additional bytes		
	Result TLV = 03 09 01 00 11 22 33 44 55 66 77		
	Successfull call, dstBuffer is the whole buffer	result of	
	<pre>dstBuffer.length = 9 dstOffset = 2</pre>	copyAdditionalInformation() is 07h.	
	dstLength = 5		
15	Compare dstBuffer using arrayCompare()	result of arrayCompare() is 00h.	
	$src = \{00, 11, 22, 33, 44\}$		
	<pre>srcOffset = 00 dest = dstBuffer</pre>		
	destOffset = 2		
16	length = 5  Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
			command
	Terminal Response with F2h additional bytes		
	Result TLV = 03 81 F3 01 00 01 02 03		
	Successfull call to the method dstBuffer.length = F2h	result of copyAdditionalInformation() is	
	dstOffset = 0	F2h.	
17	dstLength = F2h  Compare dstBuffer using arrayCompare()	result of arrayCompare() is 00h.	
.,		reduit of array compare() to com	
	<pre>src = {00, 01, 02, 03, 04} srcOffset = 00</pre>		
	dest = dstBuffer		
	<pre>destOffset = 0 length = F2h</pre>		
18	Call the getValueLength() method	Result is F3h.	
19	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive command
	Terminal Response with 5 additional bytes		
	Result TLV = 03 06 01 00 11 22 33 44		
	dstLength > data available	OUT_OF_TLV_BOUNDARIES	
	<pre>dstBuffer.length = 6 dstOffset = 0</pre>	ToolkitException is thrown	
	dstLength = 6		
20	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive command
			Joannand
	Terminal Response with 5 additional bytes		

	Initialise dstBuffer		
	dstBuffer = {00h, 01h, 02h, 03h}		
	Call the copyAdditionalInformation() method		
	dstBuffer.length = 20		
	dstOffset = 5		
	dstLength = 5		
	Compare dstBuffer using arrayCompare()	result of arrayCompare() is 00h	
	src = {	result of affayCompare() is our	
	00h, 01h, 02h, 03h, 04h,		
	00h, 11h, 22h, 33h, 44h,		
	0Ah, 0Bh, 0Ch, 0Dh, 0Eh,		
	0Fh, 10h, 11h, 12h, 13h}		
	srcOffset = 0		
	<pre>dest = dstBuffer destOffset = 0</pre>		
	length = 20		DIODI AVCTEVE D
21	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
			command
	Terminal Response with 2 Result TLV		
	elements		
	1st Result TLV = 03 06 01 01 23 45 67 89		
	2nd Result TLV = 03 01 00		
	Successfull call to	result of	
		copyAdditionalInformation() is	
	copyAdditionalInformation()		
	<pre>dstBuffer.length = 5 dstOffset = 0</pre>	05h.	
	dstLength = 5	1, ( )	
22	Compare dstBuffer using arrayCompare()	result of arrayCompare() is 00h.	
	$src = \{01, 23, 45, 67, 89\}$		
	srcOffset = 00		
	dest = dstBuffer		
	destOffset = 0		
	length = 5		
23	Call the getValueLength() method	Result is 06h.	
L			
24	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
			command
-	Terminal Response without Result Simple	ToolkitEveention LINIAN/AU ADLE	
		ToolkitException.UNAVAILABLE	
	TLV	_ELEMENT is thrown by send()	
	copyAdditionalInformation()	ToolkitException.UNAVAILABLE	
	.,	ELEMENT is thrown	
		1	

# 6.2.8.1.4 Test Coverage

CRR number	Test case number	
N1	8, 11, 13, 15, 17, 20, 22	
N2	20	
N3	7, 10, 12, 14, 16, 21	
N4	9, 18, 23	
N5	21, 22, 23	
P1	1	
P2	2, 3, 4, 5, 6	
C1	24	
C2	19	

# 6.2.8.2 Method copyTextString

Test Area Reference: API\_2\_PRH\_CPTS\_BS

# 6.2.8.2.1 Conformance requirement

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

#### Normal execution

CRRN1: The copyTextString() method copies the text string value from the first Text String TLV element, using dstBuffer and dstOffset.

CRRN2: If a Text String TLV element is available, it becomes the TLV selected.

CRRN3: The method returns (dstOffset + length of copied value).

#### Parameter errors

CRRP1: A NullPointerException shall be thrown if dstBuffer is null.

CRRP2: A ArrayIndexOutOfBoundsException shall be thrown if dstOffset or dstOffset + (length of the TextString to be copied, without the Data Coding Scheme included), as specified for the returned value, would cause access outside array bounds.

#### Context errors

CRRC1: A ToolkitException.UNAVAILABLE\_ELEMENT shall be thrown in case of unavailable Text String TLV element.

6.2.8.2.3 Test Suite files

Test Script: API\_2\_PRH\_CPTS\_BS\_1.scr

Test Applet: API\_2\_PRH\_CPTS\_BS\_1.java

Load Script: API\_2\_PRH\_CPTS\_BS\_1.ldr

Clean-up Script: API\_2\_PRH\_CPTS\_BS\_1.clr

# 6.2.8.2.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Build and send a GET INPUT command	7 11 12 A B C C C C C C C C C C C C C C C C C C	GET INPUT Proactive
'	qualifier = 00h		command
	dcs = 04h		Communa
	buffer = 'Text'		
	minRespLength = 00h		
	maxRespLength = FFh		
	Terminal Response		
	Text String TLV = 0D 02 04 41		
	ProactiveResponseHandler.getTheHandler(); call the copyTextString() method with a null	NullPointerException is thrown	
	dstBuffer		
	dstBuffer = null		
	dstOffset = 0		
2	Build and send a GET INPUT command		GET INPUT Proactive
			command
			Proactive
	Terminal Response		
	Text String TLV = 0D 04 04 "ABC"		
	dstOffset + text length > dstBuffer.length	ArrayIndexOutOfBoundsException is thrown	
	dstBuffer.length = 04h	13 thown	
	dstOffset = 02h		
3	dstOffset < 0	ArrayIndexOutOfBoundsException	
		is thrown	
	dstBuffer.length = 04h		
	dstOffset = -1		

4	Build and send a DISPLAY TEXT command qualifier = 00h dcs = 04h buffer = 'Text'		GET INPUT Proactive command Proactive
	Terminal Response without Text String TLV		
	<pre>ProactiveResponseHandler.getTheHandler(); call the copyTextString() method</pre>	UNAVAILABLE_ELEMENT ToolkitException is thrown	
5	Build and send a GET INPUT command		GET INPUT Proactive command Proactive
	Terminal Response with a null Text String TLV  Text String TLV = 0D 00		
	Initialise dstBuffer		
	dstBuffer = {00h, 01h, 02h, 03h}  Call the copyTextString() method  dstBuffer.length = 04h	Result of copyTextString() is 02h	
	dstOffset = 02h		
6	<pre>compare dstBuffer using arrayCompare() src = {00h, 01h, 02h, 03h} srcOffset = 00h dest = dstBuffer destOffset = 00h</pre>	Result of arrayCompare() is 00h	
7	length = 04h  Build and send a GET INPUT command		GET INPUT Proactive
,			command Proactive
	Terminal Response with text length = 01h		
	Text String TLV = 0D 02 04 41		
	Initialise dstBuffer dstBuffer = {00h, 01h, 02h, 03h}		
	Call the copyTextString() method  dstBuffer.length = 04h	Result of copyTextString() is 01h	
8	dstOffset = 00h  Compare dstBuffer using arrayCompare()	Result of arrayCompare() is 00h	
	<pre>src = {41h, 01h, 02h, 03h} srcOffset = 00h dest = dstBuffer</pre>	Troodic or arrayoumpare() is com	
	destOffset = 00h length = 04h		
9	Build and send a GET INPUT command		GET INPUT Proactive command Proactive
	Terminal Response with text length = 02h		
	Text String TLV = 0D 03 04 42 43		
	Initialise dstBuffer dstBuffer = {00h, 01h, 02h, 03h}		
	Call the copyTextString() method	Result of copyTextString() is 04h	
	<pre>dstBuffer.length = 04h dstOffset = 02h</pre>		
10	Compare dstBuffer using arrayCompare()	Result of arrayCompare() is 00h	
	<pre>src = {00h, 01h, 42h, 43h} srcOffset = 00h dest = dstBuffer destOffset = 00h</pre>		
11	length = 04h  Call the getValueLength() method	Result is 03h	
		Troodic to Con	
12	Build and send a GET INPUT command		GET INPUT Proactive command
	Terminal Response with text length = 7Eh		-
	Text String TLV = 0D 7F 04 01 02 7E		

	Initialise dstBuffer		
	dstBuffer = {00h, 00h 00h}		
	Call the copyTextString() method	Result of copyTextString() is 7Eh	
	dstBuffer.length = 7Eh dstOffset = 00h		
13	Compare dstBuffer using arrayCompare()	Result of arrayCompare() is 00h	
	<pre>src = {01h,, 7Eh} srcOffset = 00h dest = dstBuffer destOffset = 00h length = 7Eh</pre>		
14	Call the getValueLength() method	Result is 7Fh	
15	Build and send a GET INPUT command		GET INPUT Proactive
			command
	Terminal Response with text length = 7Fh		
	Text String TLV = 0D 81 80 04 01 027F		
	Initialise dstBuffer		
	dstBuffer = {00h, 01h FFh}  Call the copyTextString() method	Result of copyTextString() is 8Fh	
	.,	same supplementally to on the	
	<pre>dstBuffer.length = FFh dstOffset = 10h</pre>		
16	Compare dstBuffer using arrayCompare()	Result of arrayCompare() is 00h	
	<pre>src = {00h, 01h, 0Fh, 01h,7Fh, 8Fh, FFh} src0ffset = 00h dest = dstBuffer destOffset = 00h length = FFh</pre>		
17	Build and send a GET INPUT command		GET INPUT Proactive
			command
	Terminal Response with text length = EFh		
	Text String TLV = 0D 81 F0 04 01 02 EF		
	Initialise dstBuffer		
	dstBuffer = {00h, 00h 00h}  Call the copyTextString() method	Result of copyTextString() is EFh	
	can the copy rextoring() method	Result of copy restoring() is ET II	
	<pre>dstBuffer.length = FFh dstOffset = 00h</pre>		
18	Compare dstBuffer using arrayCompare()	Result of arrayCompare() is 00h	
	<pre>src = {01h,EFh, 00h 00h } srcOffset = 00h dest = dstBuffer destOffset = 00h length = FFh</pre>		
19	Build and send a GET INPUT command		GET INPUT Proactive
	Terminal Response with two Text String TLV		command
	1st Text String TLV = 0D 03 04 42 43 2nd Text String TLV = 0D 02 04 44		
	Initialise dstBuffer		
	dstBuffer = {00h, 01h, 02h, 03h}  Call the copyTextString() method	Result of copyTextString() is 04h	
	dstBuffer.length = 04h		
20	dstoffset = 02h  Compare dstBuffer using arrayCompare()	Result of arrayCompare() is 00h	
	<pre>src = {00h, 01h, 42h, 43h} srcOffset = 00h dest = dstBuffer destOffset = 00h length = 04h</pre>		
21	Call the getValueLength() method	Result is 03h	
1			

### 6.2.8.2.4 Test Coverage

CRR number	Test case number
N1	6, 8, 10, 13, 16, 18, 20
N2	11, 14, 21
N3	5, 7, 9, 12, 15, 17, 19
P1	1
P2	2, 3
C1	4

# 6.2.8.3 Method getAdditionalInformationLength

Test Area Reference: API\_2\_PRH\_GTIL

#### 6.2.8.3.1 Conformance requirement

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

#### Normal execution

CRRN1: This method returns the length of the additional information field from the first Result TLV in the ProactiveResponseHandler.

CRRN2: After a successful execution of the method, the Result TLV becomes the selected TLV of the ProactiveResponseHandler.

#### Parameter errors

#### Context errors

CRRC1: A ToolkitException.UNAVAILABLE\_ELEMENT shall be thrown in case of unavailable Result TLV element.

6.2.8.3.3 Test Suite files

Test Script: API\_2\_PRH\_GTIL\_1.scr

Test Applet: API\_2\_PRH\_GTIL\_1.java

Load Script: API\_2\_PRH\_GTIL\_1.ldr

Clean-up Script: API\_2\_PRH\_GTIL\_1.clr

# 6.2.8.3.3 Test procedure

Build and send a DISPLAY TEXT command described by the service of the getValueLength () method   DISPLAY TEXT proactive command	ld	Description	API Expectation	APDU Expectation
Qualifier = 10th   dos = 0th   dos = 0th	-			
Terminal Response without additional information  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformation.Length() method  3 Build and send a DISPLAY TEXT command  Terminal Response with 1 additional byte command  Terminal Response with 1 additional byte described by the proactive ResponseHandler (); call the getValueLength() method  4 Call the getValueLength() method  5 Build and send a DISPLAY TEXT command  Terminal Response with 7Fh additional bytes Result is 02h  Call the getValueLength() method  6 Call the getValueLength() method  7 ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  8 Result TIV = 03 02 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getValueLength() method  7 Build and send a DISPLAY TEXT command  Terminal Response with 7Fh additional bytes Result is 7Fh  Build and send a DISPLAY TEXT command  Terminal Response with 7Fh additional bytes Result is 7Fh  Call the getValueLength() method  8 Call the getValueLength() method  9 Build and send a DISPLAY TEXT command  Terminal Response with 80h additional bytes Result is 7Fh  Call the getValueLength() method  Terminal Response with 80h additional bytes Result IX = 0.3 81 81 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getValueLength() method  Terminal Response with 80h additional bytes Result IX = 0.3 81 81 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getValueLength() method  Terminal Response with 80h additional bytes Result IX = 0.3 81 81 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getValueLength() method  Terminal Response with F2h additional bytes Result IX = 0.3 81 81 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getValueLength() method  Terminal Response with F2h additional bytes Result IX = 0.3 81 81 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getValueLength() method  Terminal Response with F2h additional bytes Result IX = 0.3 81 81 02 55 55 5				
Terminal Response without additional information				
Information   ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method   Result is 01h				
ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  2				
call the getAdditionalInformationLength() method  2		illiormation		
call the getAdditionalInformationLength() method  2		ProactiveResponseHandler.getTheHandler();	Result is 00h	
Method   Result is 01h   DISPLAY TEXT   Proactive Proactive Command   Proactive				
Build and send a DISPLAY TEXT command  Terminal Response with 1 additional byte  Result TIV = 03 02 02 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  4				
ProactiveProactive command   ProactiveProactive command	2	Call the getValueLength() method	Result is 01h	
ProactiveProactive command   ProactiveProactive command				
Terminal Response with 1 additional byte  Result TIM = 03 02 02 55  ProactiveResponseHandler.getTheHandler(); call the getValueLength() method  4 Call the getValueLength() method  5 Build and send a DISPLAY TEXT command  Terminal Response with 7Eh additional bytes  Result TIM = 03 7F 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getValueLength() method  6 Call the getValueLength() method  7 Build and send a DISPLAY TEXT command  Call the getValueLength() method  8 Result is 7Fh  DISPLAY TEXT Proactive command  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  Terminal Response with 7Fh additional bytes  Result TIM = 03 81 80 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  8 Call the getValueLength() method  8 Call the getValueLength() method  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  9 Build and send a DISPLAY TEXT command  Terminal Response with 80h additional bytes  Result TIM = 03 81 81 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getValueLength() method  10 Call the getValueLength() method  Result is 80h  11 Build and send a DISPLAY TEXT command  Terminal Response with F2h additional bytes  Result TIM = 03 81 F3 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getValueLength() method  11 Build and send a DISPLAY TEXT command  Terminal Response with F2h additional bytes  Result TIM = 03 81 F3 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getValueLength() method  12 Call the getValueLength() method  13 Build and send a DISPLAY TEXT command  DISPLAY TEXT Proactive  DISPLAY TEXT Proactive  CommandProactive  DISPLAY TEXT Proactive  CommandProactive	3	Build and send a DISPLAY TEXT command		
Terminal Response with 1 additional byte   Result TIV = 03 02 02 55				
Result TLV = 03 02 02 55		Terminal Peanance with 1 additional buts		command
ProactiveResponseHandler,getTheHandler(); call the getAdditionalInformationLength() method   Call the getValueLength() method   Result is 02h		reminal Response with additional byte		
call the getAdditionalInformationLength() method  4		Result TLV = 03 02 02 55		
Method   Call the getValueLength() method   Result is 02h		ProactiveResponseHandler.getTheHandler();	Result is 01h	
4 Call the getValueLength() method 5 Build and send a DISPLAY TEXT command		call the getAdditionalInformationLength()		
DISPLAY TEXT   Proactive Proactive   Command   DISPLAY TEXT   Proactive Proactive   Proa				
Terminal Response with 7Eh additional bytes  Result TLV = 03 7F 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  7 Build and send a DISPLAY TEXT command  Terminal Response with 7Fh additional bytes  Result TLV = 03 81 80 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  8 Call the getValueLength() method  8 Call the getValueLength() method  9 Build and send a DISPLAY TEXT command  Terminal Response with 80h additional bytes  Result TLV = 03 81 80 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  Terminal Response with 80h additional bytes  Result TLV = 03 81 81 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  Terminal Response with 7th additional bytes  Result TLV = 03 81 81 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  Terminal Response with F2h additional bytes  Result TLV = 03 81 83 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getValueLength() method  Terminal Response with F2h additional bytes  Result TLV = 03 81 83 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  Terminal Response with F2h additional bytes  Result TLV = 03 81 83 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  Terminal Response with F2h additional bytes  Result TLV = 03 81 83 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  Terminal Response with F2h additional bytes  Result TLV = 03 81 83 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  Terminal Response with F2h additional bytes  Result TLV = 03 81 81 80 02 55 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditio			Result is 02h	
Terminal Response with 7Eh additional bytes  Result TLV = 03 7F 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  Call the getValueLength() method  Result is 7Fh  DISPLAY TEXT Proactive commandProactive  Terminal Response with 7Fh additional bytes Result TLV = 03 81 80 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  Result is 80h  Build and send a DISPLAY TEXT command  Call the getValueLength() method  Result is 80h  DISPLAY TEXT Proactive commandProactive  Terminal Response with 80h additional bytes Result TLV = 03 81 81 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  Call the getValueLength() method  Result is 80h  DISPLAY TEXT Proactive commandProactive  Terminal Response with F2h additional bytes Result TLV = 03 81 F3 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getValueLength() method  Terminal Response with F2h additional bytes Result TLV = 03 81 F3 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getValueLength() method  Call the getValueLength() method  Result is F2h call the getValueLength() method  Call the getValueLength() method  Result is F3h  DISPLAY TEXT Proactive commandProactive	5	Build and send a DISPLAY TEXT command		
Terminal Response with 7Eh additional bytes Result TLV = 03 7F 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  Call the getValueLength() method  Result is 7Fh  DISPLAY TEXT Proactive commandProactive  Terminal Response with 7Fh additional bytes Result TLV = 03 81 80 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getValueLength() method  Result is 80h  Build and send a DISPLAY TEXT command  Terminal Response with 80h additional bytes Result TLV = 03 81 80 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getValueLength() method  Result is 80h  DISPLAY TEXT Proactive commandProactive  Terminal Response with 80h additional bytes Result TLV = 03 81 81 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getValueLength() method  Call the getValueLength() method  Result is 80h  DISPLAY TEXT Proactive commandProactive  Terminal Response with F2h additional bytes Result TLV = 03 81 F3 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getValueLength() method  Terminal Response with F2h additional bytes Result TLV = 03 81 F3 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getValueLength() method  Call the getValueLength() method  Result is F2h call the getAdditionalInformationLength() method  Call the getValueLength() method  Result is F3h  DISPLAY TEXT Proactive				
Result TLV = 03 7F 02 55 55 55   ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method		Torminal Passance with 7Eh additional butes		command
ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  Call the getValueLength() method  Result is 7Fh  Build and send a DISPLAY TEXT command  Terminal Response with 7Fh additional bytes Result TLV = 03 81 80 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  Call the getValueLength() method  Build and send a DISPLAY TEXT command  Terminal Response with 80h additional bytes Result TLV = 03 81 81 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() real the getAdditionalInformationLength() real the getAdditionalInformationLength() real the getAdditionalInformationLength() real the getAdditionalInformationLength() remethod  Build and send a DISPLAY TEXT command  Call the getValueLength() method  Terminal Response with F2h additional bytes Result TLV = 03 81 F3 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getValueLength() method  Call the getValueLength() method  Call the getAdditionalInformationLength() responseHandler.getTheHandler(); call the getAdditionalInformationLength() method  DISPLAY TEXT Proactive commandProactive  Call the getValueLength() method  DISPLAY TEXT Proactive commandProactive  DISPLAY TEXT Proactive commandProactive		reminal Response with 7En additional bytes		
call the getAdditionalInformationLength() method  6				
Method   Result is 7Fh   DISPLAY TEXT Proactive commandProactive		ProactiveResponseHandler.getTheHandler();	Result is 7Eh	
6 Call the getValueLength() method Result is 7Fh  7 Build and send a DISPLAY TEXT command DISPLAY TEXT Proactive commandProactive  Terminal Response with 7Fh additional bytes Result TLV = 03 81 80 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  8 Call the getValueLength() method Result is 80h  9 Build and send a DISPLAY TEXT command DISPLAY TEXT proactive commandProactive  Terminal Response with 80h additional bytes Result TLV = 03 81 81 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  10 Call the getValueLength() method Result is 81h  11 Build and send a DISPLAY TEXT command DISPLAY TEXT proactive commandProactive  Terminal Response with F2h additional bytes Result TLV = 03 81 F3 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  Terminal Response with F2h additional bytes Result TLV = 03 81 F3 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  12 Call the getValueLength() method  DISPLAY TEXT Proactive		call the getAdditionalInformationLength()		
Terminal Response with 7Fh additional bytes Result TLV = 03 81 80 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getValueLength() method  8 Call the getValueLength() method  9 Build and send a DISPLAY TEXT command  Terminal Response with 80h additional bytes Result TLV = 03 81 81 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  10 Call the getValueLength() method  Result is 80h  11 Build and send a DISPLAY TEXT command  Terminal Response with F2h additional bytes Result TLV = 03 81 F3 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getValueLength() method  Result is 81h  DISPLAY TEXT Proactive commandProactive  Terminal Response with F2h additional bytes Result TLV = 03 81 F3 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  Call the getValueLength() method  Result is F2h call the getValueLength() method  Result is F3h  DISPLAY TEXT Proactive  DISPLAY TEXT Proactive				
Terminal Response with 7Fh additional bytes  Result TLV = 03 81 80 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  Result is 80h  Build and send a DISPLAY TEXT command  Terminal Response with 80h additional bytes Result TLV = 03 81 81 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  Call the getValueLength() method  Result is 80h  Call the getValueLength() method  Result is 81h  DISPLAY TEXT Proactive commandProactive  Terminal Response with F2h additional bytes Result TLV = 03 81 F3 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getValueLength() method  Result is 81h  DISPLAY TEXT Proactive commandProactive  Terminal Response with F2h additional bytes Result TLV = 03 81 F3 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  Call the getValueLength() method  Result is F3h  DISPLAY TEXT Proactive	6	Call the getValueLength() method	Result is 7Fh	
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11 Build and send a DISPLAY TEXT command  Terminal Response with F2h additional bytes  Result TLV = 03 81 F3 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  12 Call the getValueLength() method  Result is F3h  DISPLAY TEXT Proactive	10		Pocult is 81h	
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Terminal Response with F2h additional bytes  Result TLV = 03 81 F3 02 55 55 55  ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method  12 Call the getValueLength() method  Result is F3h  DISPLAY TEXT Proactive	11	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
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method  12 Call the getValueLength() method Result is F3h  13 Build and send a DISPLAY TEXT command DISPLAY TEXT Proactive			Result is FZII	
12     Call the getValueLength() method     Result is F3h       13     Build and send a DISPLAY TEXT command     DISPLAY TEXT Proactive				
13 Build and send a DISPLAY TEXT command DISPLAY TEXT Proactive	12		Result is F3h	
		, gg(,		
commandProactive	13	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
				commandProactive

	Terminal Response with 2 Result TLV		
	1st Result TLV = 03 03 02 01 23 2nd Result TLV = 03 01 00		
	ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method	Result is 02h	
14	Call the getValueLength() method	Result is 03h	
15	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive command Proactive
	Terminal Response without Result Simple TLV	ToolkitException.UNAVAILABLE_E LEMENT is thrown by send()	
	Get ProactiveResponseHandler		
	Call the getAdditionalInformationLength() method	ToolkitException.UNAVAILABLE_E LEMENT is thrown by getAdditionalInformationLength ()	

### 6.2.8.3.4 Test Coverage

CRR number	Test case number
N1	1, 3, 5, 7, 9, 11, 13
N2	2, 4, 6, 8, 10, 12, 14
C1	15

# 6.2.8.4 Method getGeneralResult

Test Area Reference: API\_2\_PRH\_GTGR

### 6.2.8.4.1 Conformance requirement

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

#### Normal execution

CRRN1: This method returns the general result of a proactive command.

CRRN2: After a successful execution of the method, the Result TLV becomes the selected TLV of the ProactiveResponseHandler.

#### Parameter errors

#### Context errors

CRRC1: A ToolkitException.UNAVAILABLE\_ELEMENT shall be thrown in case of unavailable Result TLV element.

CRRC2: A ToolkitException.OUT\_OF\_TLV\_BOUNDARIES shall be thrown if the general result byte is missing in the Result Simple TLV.

6.2.8.4.3 Test Suite files

Test Script: API\_2\_PRH\_GTGR\_1.scr

Test Applet: API\_2\_PRH\_GTGR\_1.java

Load Script: API\_2\_PRH\_GTGR\_1.ldr

Clean-up Script: API\_2\_PRH\_GTGR\_1.clr

# 6.2.8.4.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Build and send a DISPLAY TEXT command	AFIEXPECIATION	DISPLAY TEXT Proactive
1	qualifier = 00h		
	dcs = 04h		command
	buffer = 'Text'		
	Terminal Response with General Result = 00		
	(command performed successfully)		
	ProactiveResponseHandler.getTheHandler()	Result of getGeneralResult() is 00h	
	Call the getGeneralResult() method	Treesant or genoemeral recall () to con-	
	· ·		
2	Call the getValueLength() method	Result is 01h	
3	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
			command
	Terminal Response with General Result = 01,		
	without Additional information on result		
	(command performed with partial		
	comprehension)		
	ProactiveResponseHandler.getTheHandler()	Result of getGeneralResult() is 01h	
	Call the getGeneralResult() method		
4	Call the getValueLength() method	Result is 01h	
5	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
			command
	Terminal Response with General Result = 01,		
	with Additional information on result		
	Result TLV = 03 02 01 55 (command		
	performed with partial comprehension)	D	
	ProactiveResponseHandler.getTheHandler()	Result of getGeneralResult() is 01h	
	Call the getGeneralResult() method		
6	Call the getValueLength() method	Result is 02h	
0	Can the getvaluetength() method	Result is 0211	
7	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
'	Dulid and Send a Dioi LAT TEXT Command		command
			Command
	Terminal Response with General Result = 02		
	02		
	Result TLV = 03 04 02 65 43 21 (Missing		
	information)	D	
	ProactiveResponseHandler.getTheHandler()	Result of getGeneralResult() is 02h	
	Call the getGeneralResult() method		
0	Call the getValueLength() method	Result is 04h	
8	Can the getvalueLength() method	Result is 0411	
9	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
	Dulid and Send a Dioi LAT TEXT Command		command
			- Communa
	Terminal Response with 7Fh additional bytes		
	Result TLV = 03 81 80 02 55 55 55		
	ProactiveResponseHandler.getTheHandler();	Result is 02h	
	call the getGeneralResult() method		
<u> </u>			
10	Call the getValueLength() method	Result is 80h	
<u> </u>	B W.L. L. L. BIODI AVETY		DIODI AVETTICA
11	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
			command
	Terminal Response with 2 Result TLV		
	1st Result TLV = 03 02 02 12		
	2nd Result TLV = 03 02 02 12		
	ProactiveResponseHandler.getTheHandler() ;	Result is 02h	
	call the getGeneralResult() method		
			•

12	Call the getValueLength() method	Result is 02h	
13	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive command
	Terminal Response without Result Simple TLV	ToolkitException.UNAVAILABLE_E LEMENT is thrown by send()	
	ProactiveResponseHandler.getTheHandler(); call the getGeneralResult() method	UNAVAILABLE_ELEMENT ToolkitException is thrown	
14	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive command
	Terminal Response without General Result Byte in Result Simple TLV	ToolkitException.UNAVAILABLE_E LEMENT is thrown by send()	
	<pre>ProactiveResponseHandler.getTheHandler(); call the getGeneralResult() method</pre>	OUT_OF_TLV_BOUNDARIES ToolkitException is thrown	
	Result TLV = 03 00		

### 6.2.8.4.4 Test Coverage

CRR number	Test case number	
N1	1, 3, 5, 7, 9, 11	
N2	2, 4, 6, 8, 10, 12	
C1	13	
C2	14	

# 6.2.8.5 Method getItemIdentifier

Test Area Reference: API\_2\_PRH\_GTII

# 6.2.8.5.1 Conformance requirement

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

#### Normal execution

CRRN1: The method returns the item identifier byte value from the first Item Identifier TLV element.

CRRN2: If an Item Identifier TLV element is available, it becomes the TLV selected.

#### Parameter errors

## Context errors

CRRC1: A ToolkitException.UNAVAILABLE\_ELEMENT shall be thrown in case of unavailable Item Identifier TLV element.

CRRC2: A ToolkitException.OUT\_OF\_TLV\_BOUNDARIES shall be thrown if the item identifier byte is missing in the Item Identifier Simple TLV.

6.2.8.5.3 Test Suite files

Test Script: API\_2\_PRH\_GTII\_1.scr

Test Applet: API\_2\_PRH\_GTII\_1.java

Load Script: API\_2\_PRH\_GTII\_1.ldr

Clean-up Script: API\_2\_PRH\_GTII\_1.clr

6.2.8.5.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive command
	Terminal Response (no Item Identifier TLV available)		
	Call to getItemIdentifier() with unavailable Item Identifier TLV	UNAVAILABLE_ELEMENT ToolkitException is thrown	
2	Build and send a SELECT ITEM command with 2 items (ID=01, 02)		SELECT ITEM Proactive command
	Terminal Response with Item 1 selected		
	Call the getItemIdentifier() method	Result is 01h	
3	Call the getValueByte() method valueOffset = 00h	Result is 01h	
4	Build and send a SELECT ITEM command with 3 items (ID=03, 05, 07)		SELECT ITEM Proactive command
	Terminal Response with Item 5 selected		
	Item Identifier TLV = 10 01 05  Call the getItemIdentifier() method	Result is 05h	
5	Call the getValueByte() method valueOffset = 00h	Result is 05h	
6	Build and send a SELECT ITEM command with 3 items (ID=FDh, FEh, FFh)		SELECT ITEM Proactive command
	Terminal Response with Item FFh selected		
	Item Identifier TLV = 10 01 FF		
7	Call the getItemIdentifier() method	Result is FFh	
7	Call the getValueByte() method valueOffset = 00h	Result is FFh	
8	Build and send a SELECT ITEM command with 3 items (ID=FDh, FEh, FFh)		SELECT ITEM Proactive command
	Terminal Response with 2 Item Identifier TLV  1st Item Identifier TLV = 10 01 FFh		
	2nd Item Identifier TLV = 10 01 FEh		
	Call the getItemIdentifier() method Call the getValueByte() method	Result is FFh Result is FFh	
9	valueOffset = 00h	Result is FFN	
10	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive command
	Terminal Response without item identifier in the Item Identifier Simple TLV		
	Item Identifier TLV = 10 00		
	Call to getItemIdentifier()	OUT_OF_TLV_BOUNDARIES ToolkitException is thrown	

#### 6.2.8.5.4 **Test Coverage**

CRR number	Test case number
N1	2, 4, 6, 8
N2	3, 5, 7, 9
C1	1
C2	10

186

#### 6.2.8.6 Method getTextStringCodingScheme

Test Area Reference: API\_2\_PRH\_GTCS

#### 6.2.8.6.1 Conformance requirement

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

public byte getTextStringCodingScheme() throws ToolkitException

#### Normal execution

CRRN1: This method returns the data coding scheme from the first Text String TLV element.

CRRN2: If a Text String TLV element is available, it becomes the TLV selected.

#### Parameter errors

#### Context errors

CRRC1: A ToolkitException.UNAVAILABLE\_ELEMENT shall be thrown in case of unavailable Text String TLV element.

CRRC2: A ToolkitException.OUT\_OF\_TLV\_BOUNDARIES shall be thrown if the Text String TLV is present with a length of 0.

6.2.8.6.3 **Test Suite files** 

Test Script: API\_2\_PRH\_GTCS\_1.scr

Test Applet: API\_2\_PRH\_GTCS\_1.java

Load Script: API\_2\_PRH\_GTCS\_1.ldr

Clean-up Script: API\_2\_PRH\_GTCS\_1.clr

#### 6.2.8.6.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
			command
	Terminal Response (no Text String TLV		
	element available)		
	,		
	Call to getTextStringCodingScheme() with	UNAVAILABLE_ELEMENT	
	unavailable Text String TLV	ToolkitException is thrown	
2	Build and send a GET INPUT command		GET INPUT Proactive
			command
	Terminal Response with a null Text String TLV		
	Text String TLV = 0D 00		
	Call the getTextStringCodingScheme()	OUT_OF_TLV_BOUNDARIES	
	method	ToolkitException is thrown	

3	Build and send a GET INPUT command		GET INPUT Proactive command
	Terminal Response with text length = 01h, DCS = 04h		
	Text String TLV = 0D 02 04 "A"  Call the getTextStringCodingScheme() method	Result is 04h	
4	Call the getValueLength() method	Result is 02h	
5	Build and send a GET INPUT command		GET INPUT Proactive command
	Terminal Response with text length = 02h, DCS = 00h		
	Text String TLV = 0D 03 00 "BB"  Call the getTextStringCodingScheme()  method	Result is 00h	
6	Call the getValueLength() method	Result is 03h	
7	Build and send a GET INPUT command		GET INPUT Proactive command
	Terminal Response with text length = 7Eh, DCS = 08h		
	Text String TLV = 0D 7F 08 01 02 7E  Call the getTextStringCodingScheme()	Result is 08h	
	method	inesuit is oon	
8	Call the getValueLength() method	Result is 7Fh	
9	Build and send a GET INPUT command		GET INPUT Proactive command
	Terminal Response with text length = 7Fh, DCS = 04h		
	Text String TLV = 0D 81 80 04 01 02 7F  Call the getTextStringCodingScheme()  method	Result is 04h	
10	Call the getValueLength() method	Result is 80h	
11	Build and send a GET INPUT command		GET INPUT Proactive command
	Terminal Response with text length = EFh, DCS = 08h		
	Text String TLV = 0D 81 F0 08 01 02 EE EF		
	Call the getTextStringCodingScheme() method	Result is 08h	
12	Call the getValueLength() method	Result is F0h	
13	Build and send a GET INPUT command		GET INPUT Proactive command
	Terminal Response with 2 Text String TLV		
	1st Text String TLV = 0D 02 04 41 2nd Text String TLV = 0D 03 08 42 43		

	Call the getTextStringCodingScheme() method	Result is 04h	
14	Call the getValueLength() method	Result is 02h	

#### 6.2.8.6.4 Test Coverage

CRR number	number Test case number	
N1	3, 5, 7, 9, 11, 13	
N2	4, 6, 8, 10, 12, 14	
C1	1	
C2	2	

# 6.2.8.7 Method GetTextStringLength

Test Area Reference: API\_2\_PRH\_GTTL

### 6.2.8.7.1 Conformance requirement

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

#### Normal execution

CRRN1: The getTextStringLength() method returns the text string length value from the first Text String TLV element.

CRRN2: If a Text String TLV element is available, it becomes the TLV selected.

#### Parameter errors

#### Context errors

CRRC1: A ToolkitException.UNAVAILABLE\_ELEMENT shall be thrown in case of unavailable Text String TLV element.

6.2.8.7.3 Test Suite files

Test Script: API\_2\_PRH\_GTTL\_1.scr

Test Applet: API\_2\_PRH\_GTTL\_1.java

Load Script: API\_2\_PRH\_GTTL\_1.ldr

Clean-up Script: API\_2\_PRH\_GTTL\_1.clr

# 6.2.8.7.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Build and send a DISPLAY TEXT command	· Exposition	DISPLAY TEXT Proactive command
	Terminal Response (no Text String TLV element available)		
	Call to getTextStringLength() with unavailable Text String TLV	UNAVAILABLE_ELEMENT ToolkitException is thrown	
2	Build and send a GET INPUT command		GET INPUT Proactive command
	Terminal Response with a null Text String TLV Text String TLV = 0D 00		
	Call the getTextStringLength() method	Result is 00h	
3	Call the getValueLength() method	Result is 00h	
4	Build and send a GET INPUT command		GET INPUT Proactive command
	Terminal Response with text length = 01h,  DCS = 04h  Text String TLV = 0D 02 04 "A"		
	Call the getTextStringLength() method	Result is 01h	
5	Call the getValueLength() method	Result is 02h	
6	Build and send a GET INPUT command		GET INPUT Proactive command
	Terminal Response with text length = 02h, DCS = 00h		
	Text String TLV = 0D 03 00 "BB"  Call the getTextStringLength() method	Result is 02h	
7	Call the getValueLength() method	Result is 03h	
8	Build and send a GET INPUT command		GET INPUT Proactive command
	Terminal Response with text length = 7Eh,  DCS = 08h  Text String TLV = 0D 7F 08 01 02 7E		
	Call the getTextStringLength() method	Result is 7Eh	
9	Call the getValueLength() method	Result is 7Fh	
10	Build and send a GET INPUT command		GET INPUT Proactive command
	Terminal Response with text length = 7Fh,  DCS = 04h  Text String TLV = 0D 81 80 04 01 02 7F		
	Call the getTextStringLength() method	Result is 7Fh	
11	Call the getValueLength() method	Result is 80h	
12	Build and send a GET INPUT command		GET INPUT Proactive command
	Terminal Response with text length = EFh, DCS = 04h		
	Text String TLV = 0D 81 F0 04 01 02 EE		

	EF		
	Call the getTextStringLength() method	Result is EFh	
13	Call the getValueLength() method	Result is F0h	
14	Build and send a GET INPUT command		GET INPUT Proactive
			command
	Terminal Response with 2 Text String TLV		
	1st Text String TLV = 0D 02 04 41		
	2nd Text String TLV = 0D 03 08 42 43		
	Call the getTextStringLength() method	Result is 01h	
15	Call the getValueLength() method	Result is 02h	

### 6.2.8.7.4 Test Coverage

CRR number	Test case number	
1	2, 4, 6, 8, 10, 12, 14	
2	3, 5, 7, 9, 11, 13, 15	
3	1	

# 6.2.8.8 Method getTheHandler

Test Area Reference: API\_2\_PRH\_GTHD

#### 6.2.8.8.1 Conformance requirement

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

# Normal execution

CRRN1: The method shall return the single system instance of the ProactiveHandler class.

CRRN2: The EnvelopeHandler is a Temporary JCRE Entry Point Object

#### Parameter errors

#### Context errors

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

6.2.8.8.3 Test Suite files

Test Script: API\_2\_PRH\_GTHD\_1.scr

Test Applet: API\_2\_PRH\_GTHD\_1.java

Load Script: API\_2\_PRH\_GTHD\_1.ldr

Clean-up Script: API\_2\_PRH\_GTHD\_1.clr

### 6.2.8.8.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	<b>Build and send a Proactive Command</b>		Proactive Command
	Terminal Response		
	getTheHandler() twice	The returned objects shall be the	
		same	
2	getTheHandler()	The reference shall be a	
		ProactiveResponseHandler	
3	getTheHandler()	The reference shall not be null	
	-		

### 6.2.8.8.4 Test Coverage

CRR number	Test case number	
N1	1, 2, 3	
N2	To be checked in	
	Framework tests and	
	insert here cross	
	reference	
C1	To be checked in	
	Framework tests and	
	insert here cross	
	reference	

# 6.2.8.9 Method getLength

Test Area Reference API\_2\_PRH\_GLEN

#### 6.2.8.9.1 Conformance requirement

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

#### Normal execution

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

#### Parameter errors

#### Context errors

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

6.2.8.9.3 Test Suite files

Test Script: API\_2\_PRH\_GLEN\_1.scr

Test Applet: API\_2\_PRH\_GLEN\_1.java

Load Script: API\_2\_PRH\_GLEN\_1.ldr

Clean-up Script: API\_2\_PRH\_GLEN\_1.clr

#### 6.2.8.9.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Build and send a Display Text command		DISPLAY TEXT Proactive
			command
	Terminal Response without additional		
	information in General Result TLV		
	ProactiveResponseHandler.getTheHandler()	Result of getLength() is 12	
	getLength()		
2	Build and send a Display Text command		DISPLAY TEXT Proactive
			command
	Terminal Response with F2h additional		
	information in General Result TLV		
	ProactiveResponseHandler.getTheHandler()	Result of getLength() is FFh	
	getLength()		

#### 6.2.8.9.4 Test Coverage

CRR number	Test case number	
N1	1, 2	
C1	Does not apply for	
	Proactive Response	
	Handler	

# 6.2.8.10 Method copy

Test Area Reference API\_2\_PRH\_COPY\_BSS

#### 6.2.8.10.1 Conformance requirement

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

#### Normal execution

CRRN1: copies the simple TLV list contained in the handler to the destination byte array.

CRRN2: returns dstOffset + dstLength.

### 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 grater than the length of the simple TLV List, an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException. OUT\_OF\_TLV\_BOUNDARIES.

## Context errors

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

6.2.8.10.3 Test Suite files

Test Script: API\_2\_PRH\_COPY\_BSS\_1.scr
Test Applet: API\_2\_PRH\_COPY\_BSS\_1.java

Load Script: API\_2\_PRH\_COPY\_BSS\_1.ldr

Clean-up Script: API\_2\_PRH\_COPY\_BSS\_1.clr

6.2.8.10.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Send a DISPLAY TEXT command	•	DISPLAY TEXT Proactive
-			command
	Terminal Response without Additional		
	Information in General Result TLV:		
	01 03 01 21 00 02 02 82 81 03 01 00		
	01 03 01 21 00 02 02 01 03 01 00		
	ProactiveResponseHandler.getTheHandler()	NullPointerException is thrown	
	copy() with NULL as parameter to dstBuffer	Train onto Excoption is another	
	oopy() with Nozz do parameter to detailer		
2	dstOffset ≥ dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = 5		
	dstLength = 1		
3	dstOffset < 0	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = -1		
	dstLength = 1		
4	dstLength > dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = 0		
	dstLength = 6	1 1 0 10/0	
5	dstOffset + dstLength > dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	<pre>dstOffset = 3 dstLength = 3</pre>		
6	dstLength < 0	ArrayIndexOutOfBoundsExceptio	
O	dstBuffer.length = 5	n is thrown	
	dstOffset = 0	n is thrown	
	dstLength = -1		
7	dstLength > length of the simple TLV list	ToolkitException.OUT_OF_TLV_	
•	dstBuffer.length = 13	BOUNDARIES is thrown	
	dstOffset = 0	BOOMB/ INTEG TO UTIOWIT	
	dstLength = 13		
8	Successful call, dstBuffer is the whole buffer	Result of copy() is 12	
	dstBuffer.length = 12		
	dstOffset = 0		
	dstLength = 12		
9	Compare the buffer with buffer:	Result of arrayCompare() is 0	
	01 03 01 21 00 02 02 82 81 03 01 00		
10	Successful call, dstBuffer is part of a buffer	Result of copy() is 15	
	dstBuffer.length = 20		
	dstOffset = 3		
11	dstLength = 12  Compare the whole buffer	Posult of array(Compare() is 0	
12	Successful call, dstBuffer is part of a buffer	Result of arrayCompare() is 0 Result of copy() is 12	
12	dstBuffer.length = 20	Result of copy() is 12	
	dstOffset = 3		
	dstLength = 9		
13	Compare the whole buffer	Result of arrayCompare() is 0	
10	Joinpare the Whole ballet	Troodic of allayouthpare() is 0	1

# 6.2.8.10.4 Test Coverage

CRR number	Test case number	
N1	9, 11, 13	
N2	8, 10, 12	
P1	1	
P2	2, 3, 4, 5, 6	
P3	7	
C1	Does not apply for	
	Proactive Response	
	Handler	

#### 6.2.8.11 Method findTLV

Test Area Reference API\_2\_PRH\_FINDBB

### 6.2.8.11.1 Conformance requirement

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

#### 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.

#### 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.

#### Context errors

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

6.2.8.11.3 Test Suite files

Test Script: API\_2\_PRH\_FINDBB\_1.scr

Test Applet: API\_2\_PRH\_FINDBB\_1.java

Load Script: API\_2\_PRH\_FINDBB\_1.ldr

Clean-up Script: API\_2\_PRH\_FINDBB\_1.clr

# 6.2.8.11.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Send a DISPLAY TEXT command		DISPLAY TEXT Proactive
			command
	Terminal Response with 2 General Result TLV		
	01 03 01 21 00		
	82 02 82 81		
	03 01 00		
	03 02 01 12		
	findTLV() with Invalid input parameter	ToolkitException.BAD_INPUT_P	
	occurrence = 0	ARAMETER is thrown	
2	Search 1st TLV	Result is	
	tag = 01h	TLV_FOUND_CR_NOT_SET	
	occurrence = 1		
3	Call the getValueLength() method	Result is 03h	
4	Search 2nd TLV	Result is TLV_FOUND_CR_SET	

_			
	tag = 02h		
	occurrence = 1		
5	Call the getValueLength() method	Result is 02h	
6	Select a TLV (tag 02h)		
	Search a wrong tag	Result is TLV_NOT_FOUND	
	tag = 04h		
	occurrence = 1		
7	Call the getValueLength() method	ToolkitException.UNAVAILABLE	
		_ELEMENT shall be thrown	
8	Search a tag with wrong occurrence	Result is TLV_NOT_FOUND	
	tag = 01h		
	occurrence = 2		
9	Call the getValueLength() method	ToolkitException.UNAVAILABLE	
		ELEMENT shall be thrown.	
10	Search 3rd TLV	Result is	
	tag = 03h	TLV_FOUND_CR_NOT_SET	
	occurrence = 1	121_1 00115_011_1101_021	
11	Call the getValueLength() method	Result is 01h	
12	Search 3rd TLV	Result is	
	tag = 03h	TLV_FOUND_CR_NOT_SET	
	occurrence = 2	121_1 00115_011_1101_021	
13	Call the getValueLength() method	Result is 02h	
14	Search tag 81h	Result is	
	tag = 81h	TLV FOUND CR NOT SET	
	occurrence = 1		
15	Search tag 82h	Result is TLV_FOUND_CR_SET	
	tag = 82h	_	
	occurrence = 1		

# 6.2.8.11.4 Test Coverage

CRR number	Test case number
N1	3, 5, 11, 13
N2	2, 4
N3	10, 12
N4	6, 7,8, 9
N5	14,15
P1	1
C1	Does not apply for
	Proactive Response
	Handler

# 6.2.8.12 Method getValueLength

Test Area Reference API\_2\_PRH\_GVLEN

# 6.2.8.12.1 Conformance requirement

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

### 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.

#### Parameter errors

#### 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.

6.2.8.12.3 Test Suite files

Test Script: API\_2\_PRH\_GVLEN\_1.scr

Test Applet: API\_2\_PRH\_GVLEN\_1.java

Load Script: API\_2\_PRH\_GVLEN\_1.ldr

Clean-up Script: API\_2\_PRH\_GVLEN\_1.clr

# 6.2.8.12.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Send a GET INPUT command		GET INPUT Proactive
			command
	Terminal Response		
	Text String TLV = 0D 00		
	ProactiveResponseHandler.getTheHandler() getValueLength()	ToolkitException.UNAVAILABLE ELEMENT is thrown	
	geevarachengen()	ELEIVIEINT IS UIIOWII	
2	Search TLV 0Dh		
	getValueLength()	Result is 00h	
3	Send a GET INPUT command		GET INPUT Proactive
			command
	Terminal Response		
	Text String TLV = 0D 02 04 41		
	Search TLV 0Dh (Text String TLV)		
	<pre>getValueLength()</pre>	Result is 02h	
4	Send a GET INPUT command		GET INPUT Proactive
			command
	Terminal Response, Text String length = 7Eh Text String TLV = 0D 7F 04 01 02 7E		
	Search TLV 0Dh (Text String TLV)		
	getValueLength()	Result is 7Fh	
5	Send a GET INPUT command		GET INPUT Proactive
			command
	Terminal Response, Text String length = 7Fh		
	Text String TLV = 0D 81 80 04 01 02 7E		
	Search TLV 0Dh (Text String TLV)		
	getValueLength()	Result is 80h	
	joordangen()	Tresuit is out	
6	Send a GET INPUT command		GET INPUT Proactive
			command
	Terminal Response, Text String length = EFh		
	Text String TLV = 0D 81 F0 04 01 02 EF		
	Search TLV 0Dh (Text String TLV)		
	getValueLength()	Result is F0h	
	1	l .	1

#### 6.2.8.12.4 Test Coverage

CRR number	Test case number
N1	2, 3, 4, 5, 6
C1	Does not apply for Proactive Response
	Handler
C2	1

# 6.2.8.13 Method getValueByte

Test Area Reference API\_2\_PRH\_GVBYTS

# 6.2.8.13.1 Conformance requirement

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

#### Normal execution

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

#### 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.

#### 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.

6.2.8.13.3 Test Suite files

Test Script: API\_2\_PRH\_GVBYTS\_1.scr

Test Applet: API\_2\_PRH\_GVBYTS\_1.java

Load Script: API\_2\_PRH\_GVBYTS\_1.ldr

Clean-up Script: API\_2\_PRH\_GVBYTS\_1.clr

# 6.2.8.13.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Send a GET INPUT command		GET INPUT Proactive
			command
	Terminal Response, Text String length = 7Eh		
	Text String TLV = 0D 7F 04 01 02 7E		
	ProactiveResponseHandler.getTheHandler()		
	getValueByte(0)	ToolkitException.UNAVAILABLE	
		_ELEMENT is thrown	
2	Search TLV 01h (Command Details TLV)		
	getValueByte(3)	ToolkitException.OUT_OF_TLV_	
		BOUNDARIES is thrown	
3	Search TLV 01h (Command Details TLV)		
	getValueByte(2)	Result is 00h (qualifier)	
4	Search TLV 02h (Device Identities TLV)		
	getValueByte(0)	Result is 82h (Source)	
5	Search TLV 0Dh (Text String TLV)		
	getValueByte(7E)	Result is 7Eh	
6	Send a GET INPUT command		GET INPUT Proactive command
	Terminal Response, Text String length = EFh		
	Text String TLV = 0D 81 F0 04 01 02 7E		
	7F EF		
	Search TLV 0Dh (Text String TLV)		
	getValueByte(7E)	Result is 7Eh	
7	getValueByte(7F)	Result is 7Fh	
8	getValueByte(EF)	Result is EFh	
	I	i e e e e e e e e e e e e e e e e e e e	

### 6.2.8.13.4 Test Coverage

CRR number	Test case number
N1	3, 4, 5, 6, 7, 8
P1	2
C1	Does not apply for
	Proactive Response
	Handler
C2	1

# 6.2.8.14 Method copyValue

Test Area Reference API\_2\_PRH\_CPYVS\_BSS

# 6.2.8.14.1 Conformance requirement

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

#### Normal execution

CRRN1: copies a part of the last TLV element which has been found, into a destination. buffer.

CRRN2: returns dstOffset + dstLength.

#### 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.

#### 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.

6.2.8.14.3 Test Suite files

Test Script: API\_2\_PRH\_CPYVS\_BSS\_1.scr

Test Applet: API\_2\_PRH\_CPYVS\_BSS\_1.java

Load Script: API\_2\_PRH\_CPYVS\_BSS\_1.ldr

Clean-up Script: API\_2\_PRH\_CPYVS\_BSS\_1.clr

#### 6.2.8.14.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Send a GET INPUT command	7 to 1 2 specialism	GET INPUT Proactive command
	Terminal Response, Text String length = 5 Text String TLV = 0D 06 04 01 02 05		
	ProactiveResponseHandler.getTheHandler() Select Text String TLV		
	copyValue() with a null dstBuffer	NullPointerException is thrown	
2	<pre>dstOffset ≥ dstBuffer.length dstBuffer.length = 5 dstOffset = 5 dstLength = 1</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
3	<pre>dstOffset &lt; 0 dstBuffer.length = 5 dstOffset = -1 dstLength = 1</pre>	ArrayIndexOutOfBoundsException is thrown	
4	<pre>dstLength &gt;dstBuffer.length dstBuffer.length = 5 dstOffset = 0 dstLength = 6</pre>	ArrayIndexOutOfBoundsException is thrown	
5	<pre>dstOffset + dstLength &gt;dstBuffer.length dstBuffer.length = 5 dstOffset = 3 dstLength = 3</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
6	<pre>dstLength &lt; 0 dstBuffer.length = 5 dstOffset = 0 dstLength = -1</pre>	ArrayIndexOutOfBoundsException is thrown	
7	<pre>valueOffset ≥ Text String Length valueOffset = 6 dstBuffer.length = 15 dstOffset = 0 dstLength = 1</pre>	ToolkitException.OUT_OF_TLV_BOUNDARIES is thrown	
8	valueOffset < 0	ToolkitException.OUT_OF_TLV_	

9	<pre>valueOffset = -1 dstBuffer.length = 15 dstOffset = 0 dstLength = 1  dstLength &gt; Text String length valueOffset = 0 dstBuffer.length = 15 dstOffset = 0</pre>	BOUNDARIES is thrown  ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
10	<pre>dstLength = 7  valueOffset + dstLength &gt; Text String length valueOffset = 2 dstBuffer.length = 15 dstOffset = 0 dstLength = 5</pre>	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
11	Send a GET INPUT command		GET INPUT Proactive command
	Terminal Response, Text String length = 16		
	Text String TLV = 0D 11 04 00 01 0F		
	ProactiveResponseHandler.getTheHandler		
	copyValue()	ToolkitException.UNAVAILABLE _ELEMENT is thrown	
12	Select Text String TLV		
	Successful call valueOffset = 0 dstBuffer.length = 17 dstOffset = 0 dstLength = 17	Result of copyValue() is 17	
13	Compare buffer buffer = 04 00 01 0F	Result is 00h	
14	initialise dstBuffer		
	dstBuffer = 55 55 55  Successful call  valueOffset = 2 dstBuffer.length = 20 dstOffset = 3 dstLength = 12	Result of copyValue() is 15	
15	Compare buffer  buffer =  55 55 55 01 02  03 04 05 06 07  08 09 0A 0B 0C  55 55 55 55 55	Result is 00h	

# 6.2.8.14.4 Test Coverage

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

# 6.2.8.15 Method compareValue

Test Area Reference API\_2\_PRH\_CPRVS\_BSS

# 6.2.8.15.1 Conformance requirement

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

public byte compareValue(short valueOffset,

#### 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 simple TLV List is less than that in compareBuffer.

CRRN3: returns 1 if the first miscomparing byte in simple TLV List is greater than that in compareBuffer.

#### 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.

#### 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.

6.2.8.15.3 Test Suite files

Test Script: API\_2\_PRH\_CPRVS\_BSS\_1.scr

Test Applet: API\_2\_PRH\_CPRVS\_BSS\_1.java

Load Script: API\_2\_PRH\_CPRVS\_BSS\_1.ldr

Clean-up Script: API\_2\_PRH\_CPRVS\_BSS\_1.clr

# 6.2.8.15.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Send a GET INPUT command		GET INPUT Proactive
			command
	Terminal Response, Text String length = 5		
	Text String TLV = 0D 06 04 01 02 05		
	ProactiveResponseHandler.getTheHandler()		
	Select Text String TLV		
	compareValue() with a null compareBuffer	NullPointerException is thrown	
2	compareOffset ≥ compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length = 5	n is thrown	
	compareOffset = 5		
	compareLength = 1		
3	compareOffset < 0	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length = 5	n is thrown	
	compareOffset = -1		
	compareLength = 1		
4	compareLength >compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length = 5	n is thrown	
	compareOffset = 0		

	compareLength = 6		
5	compareOffset + compareLength	ArrayIndexOutOfBoundsExceptio	
	>compareBuffer.length	n is thrown	
	compareBuffer.length = 5		
	compareOffset = 3		
6	compareLength = 3	A wrould do y O : + O {D a · · ·	
ь	<pre>compareLength &lt; 0 compareBuffer.length = 5</pre>	ArrayIndexOutOfBoundsExceptio	
	compareOffset = 0	n is thrown	
	compareLength = -1		
7	valueOffset ≥ Text String Length	ToolkitException.OUT_OF_TLV_	
	valueOffset = 6	BOUNDARIES is thrown	
	compareBuffer.length = 15		
	compareOffset = 0		
0	compareLength = 1  valueOffset < 0	TablishEvention OUT OF TIV	
8	valueOffset = -1	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
	compareBuffer.length = 15	BOUNDARIES IS INIOWN	
	compareOffset = 0		
	compareLength = 1		
9	compareLength > Text String length	ToolkitException.OUT_OF_TLV_	
	valueOffset = 0	BOUNDARIES is thrown	
	<pre>compareBuffer.length = 15 compareOffset = 0</pre>		
	compareOffset = 0 compareLength = 7		
10	valueOffset + compareLength > Text String	ToolkitException.OUT_OF_TLV_	
10	length	BOUNDARIES is thrown	
	valueOffset = 2		
	compareBuffer.length = 15		
	compareOffset = 0		
	compareLength = 5		
44	Cond o CET INDUT commond		OFT INDUT Describes
11	Send a GET INPUT command		GET INPUT Proactive
	Torminal Boonenas Toyt Ctring laugth 40		command
	Terminal Response, Text String length = 16 Text String TLV = 0D 11 04 00 01 0F		
	ProactiveResponseHandler.getTheHandler()		
	compareValue()	ToolkitException.UNAVAILABLE	
		ELEMENT is thrown	
12	Select Text String TLV		
	Initialise compareBuffer		
	compareBuffer =		
	04 00 01 0F		
	Compare buffers	Result is 00h	
	valueOffset = 0		
	<pre>compareOffset = 0 compareLength = 17</pre>		
	Comparencing - 1/		
13	Initialise compareBuffer		
'3	compareBuffer =		
	04 00 01 10		
	Compare buffers with same parameters	Result is -1	
14	Initialise compareBuffer		
	compareBuffer =		
-	Compare buffers with same parameters	Result is +1	
	Compare buners with Same parameters	IVESUIL IS TI	
15	Initialise compareBuffer		
'	compareBuffer =		
	55 55 55 01 02		
	03 04 05 06 07		
	08 09 0A 0B 0C		
-	55 55 55 55 55 <b>Compare buffers</b>	Result is 00h	
	valueOffset = 2	Result is our	
	compareOffset = 3		
	compareLength = 12		
L			
16	Initialise compareBuffer		
	compareBuffer =		
1	55 55 55 02 01		

	03 04 05 06 07	
	08 09 0A 0B 0C	
	55 55 55 55	
	Compare buffers with same parameters	Result is -1
17	Initialise compareBuffer	
	<pre>compareBuffer =</pre>	
	55 55 55 01 02	
	03 04 05 06 07	
	08 09 0A 0A 0D	
	55 55 55 55	
	Compare buffers with same parameters	Result is +1

### 6.2.8.15.4 Test Coverage

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

# 6.2.8.16 Method findAndCopyValue(byte tag, byte[] dstBuffer, short valueOffset)

Test Area Reference API\_2\_PRH\_FACYB\_BS

#### 6.2.8.16.1 Conformance requirement

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

#### 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.

#### Parameter errors

CRRP1: if dstBuffer is null NullPointerException shall be thrown.

CRRP2: if dstOffset would cause access outside array bounds ArrayIndexOutOfBoundsException shall be thrown.

### Context errors

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

6.2.8.16.3 Test Suite files

Test Script: API\_2\_PRH\_FACYB\_BS\_1.scr

Test Applet: API\_2\_PRH\_FACYB\_BS\_1.java

Load Script: API\_2\_PRH\_FACYB\_BS\_1.ldr

Clean-up Script: API\_2\_PRH\_FACYB\_BS\_1.clr

### 6.2.8.16.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Send a GET INPUT command	_	GET INPUT Proactive
			command
	Terminal Response, Text String length = 15		
	Text String TLV = 0D 10 04 01 02 0F		
	ProactiveResponseHandler.getTheHandler()		
	findAndCopyValue() with a null dstBuffer	NullPointerException is thrown	
2	dstOffset ≥ dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	<pre>tag = 0Dh dstBuffer.length = 20</pre>	n is thrown	
	dstOffset = 20		
3	dstOffset < 0	ArrayIndexOutOfBoundsExceptio	
Ü	dstBuffer.length = 20	n is thrown	
	dstOffset = -1	II lo tillowii	
4	length > dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	<pre>dstBuffer.length = 15 dstOffset = 0</pre>	n is thrown	
5	dstOffset + length >dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 20	n is thrown	
	dstOffset = 5		
6	Send a GET INPUT command		GET INPUT Proactive command
	Terminal Response, Text String length = 16		
	Text String TLV = 0D 11 04 00 01 0F		
	ProactiveResponseHandler.getTheHandler()		
	Select a TLV (tag 02h)		
	findAndCopyValue()	ToolkitException.UNAVAILABLE	
	tag = 04h	_ELEMENT is thrown	
	Call the getValueLength() method	ToolkitException.UNAVAILABLE	
		_ELEMENT is thrown.	
7	Successful call	Result of findAndcopyValue() is	
	tag = 0Dh	17	
	dstBuffer.length = 17		
	dstOffset = 0	Dorothio 00b	
8	Compare buffer buffer = 04 00 01 0F	Result is 00h	
	buller = 04 00 or or		
9	initialise dstBuffer		
	dstBuffer = 55 55 55		
	Successful call	Result of findAndcopyValue() is	
	<pre>dstBuffer.length = 20 dstOffset = 2</pre>	19	
10	Compare buffer	Result is 00h	
10	buffer =	1.00dit io ooii	
	55 55 04 00 01		
	02 03 04 05 06		
	07 08 09 0A 0B		
	OC OD OE OF 55		
11	Send a GET INPUT command		GET INPUT Proactive

			command
	Terminal Response, with 2 Text String TLV		
	OD 11 04 00 01 OF		
	OD 02 04 41		
	ProactiveResponseHandler.getTheHandler()		
	Successful call	Result of findAndcopyValue() is	
	tag = 0Dh	17	
	dstBuffer.length = 17		
	dstOffset = 0		
12	Compare buffer	Result is 00h	
	buffer = 04 00 01 0F		
13	Send a GET INPUT command		GET INPUT Proactive
			command
	Terminal Response, Text String length = 16		
	Text String TLV = 0D 11 04 00 01 0F		
	ProactiveResponseHandler.getTheHandler()		
	Successful call (with tag 8Dh)	Result of findAndcopyValue() is	
	tag = 8Dh	17	
	dstBuffer.length = 17		
	dstOffset = 0		
14	Compare buffer	Result is 00h	
	buffer = 04 00 01 0F		

#### 6.2.8.16.4 Test Coverage

CRR number	Test case number	
N1	8, 10, 12	
N2	6	
N3	7, 9, 11	
N4	13, 14	
P1	1	
P2	2, 3, 4, 5	
C1	Does not apply for	
	Proactive Response	
	Handler	

# 6.2.8.17 Method findAndCopyValue(byte tag, byte occurence, short valueOffset, byte[] dstBuffer, short dstOffset, short dstLength)

Test Area Reference API\_2\_PRH\_FACYBBS\_BSS

# 6.2.8.17.1 Conformance requirement

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

public short findAndCopyValue(byte tag,

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

#### 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.

#### 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.

#### Context errors

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

6.2.8.17.3 Test Suite files

Test Script: API\_2\_PRH\_FACYBBS\_BSS\_1.scr

Test Applet: API\_2\_PRH\_FACYBBS\_BSS\_1.java

Load Script: API\_2\_PRH\_FACYBBS\_BSS\_1.ldr

Clean-up Script: API\_2\_PRH\_FACYBBS\_BSS\_1.clr

## 6.2.8.17.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Send a GET INPUT command		GET INPUT Proactive
			command
	Terminal Response, Text String length = 15		
	Text String TLV = 0D 10 04 01 02 0F		
	ProactiveResponseHandler.getTheHandler()		
	findAndCopyValue() with a null dstBuffer	NullPointerException is thrown	
2	dstOffset ≥ dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	tag = 0Dh, occurrence = 1	n is thrown	
	<pre>valueOffset = 0</pre>		
	dstBuffer.length = 5		
	dstOffset = 5		
	dstLength = 1	1 1 1 0 10'5	
3	dstOffset < 0	ArrayIndexOutOfBoundsExceptio	
	<pre>dstBuffer.length = 5 dstOffset = -1</pre>	n is thrown	
	dstUngth = 1		
4	dstLength > dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = 0		
	dstLength = 6		
5	dstOffset + dstLength > dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = 3		
_	dstLength = 3	A	
6	dstLength < 0	ArrayIndexOutOfBoundsExceptio	
	<pre>dstBuffer.length = 5 dstOffset = 0</pre>	n is thrown	
	dstLength = -1		
	abelengen – 1		
7	Send a GET INPUT command		GET INPUT Proactive
			command
	Terminal Response, Text String length = 5		Communic
	Text String TLV = 0D 06 04 01 02 05		
	ProactiveResponseHandler.getTheHandler()		
			1

	<pre>valueOffset ≥ Text String Length tag = 0Dh, occurrence = 1</pre>	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
	<pre>valueOffset = 6</pre>	BOUNDARIES IS thrown	
	dstBuffer.length = 15		
	<pre>dstOffset = 0 dstLength = 1</pre>		
8	valueOffset < 0	ToolkitException.OUT_OF_TLV_	
	valueOffset = -1	BOUNDARIES is thrown	
	<pre>dstBuffer.length = 15 dstOffset = 0</pre>		
	dstLength = 1		
9	dstLength > Text String length	ToolkitException.OUT_OF_TLV_	
	<pre>valueOffset = 0 dstBuffer.length = 15</pre>	BOUNDARIES is thrown	
	dstOffset = 0		
40	dstLength = 7	Tablist Counties OUT OF TIV	
10	<pre>valueOffset + dstLength &gt; Text String length valueOffset = 2</pre>	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
	dstBuffer.length = 15	BOOND, II NEO IO II II OWII	
	<pre>dstOffset = 0 dstLength = 5</pre>		
	usthength - 5		
11	Send a GET INPUT command		GET INPUT Proactive
			command
	Terminal Response, Text String length = 16 Text String TLV = 0D 11 04 00 01 0F		
	ProactiveResponseHandler.getTheHandler()		
	Select a TLV (tag 02h)		
	findAndCopyValue()	ToolkitException.UNAVAILABLE	
	tag = 0Dh occurrence = 2	_ELEMENT is thrown	
	Call the getValueLength() method	ToolkitException.UNAVAILABLE	
- 10		_ELEMENT is thrown.	
12	Successful call tag = 0Dh, occurrence = 1	Result of findAndCopyValue() is 17	
	valueOffset = 0	17	
	dstBuffer.length = 17		
	<pre>dstOffset = 0 dstLength = 17</pre>		
13	Compare buffer	Result is 00h	
	buffer = 04 00 01 0F		
14	initialise dstBuffer		
17	dstBuffer = 55 55 55		
	Successful call	Result of findAndcopyValue() is	
	<pre>tag = 0Dh, occurrence = 1 valueOffset = 2</pre>	15	
	dstBuffer.length = 20		
	dstOffset = 3		
15	dstLength = 12  Compare buffer	Result is 00h	
.	buffer =		
	55 55 55 01 02 03 04 05 06 07		
	08 09 0A 0B 0C		
	55 55 55 55		
16	Send a GET INPUT command		GET INPUT Proactive command
	Terminal Response, with 2 Text String TLV		
	0D 11 04 00 01 02 0F		
	OD 06 00 11 22 33 44 55 (no specific DCS byte)		
	ProactiveResponseHandler.getTheHandler()		
	Successful call	Result of findAndCopyValue() is	
	<pre>tag = 0Dh, occurrence = 1 valueOffset = 0</pre>	17	
	dstBuffer.length = 17		
	dstOffset = 0		
17	dstLength = 17  Compare buffer	Result is 00h	
''	buffer = 04 00 01 0F	Traditio doll	
4.5			
18	Successful call	Result of findAndCopyValue() is	

	<pre>tag = 0Dh, occurrence = 2 valueOffset = 0 dstBuffer.length = 6 dstOffset = 0 dstLength = 6</pre>	6	
19	Compare buffer buffer = 00 11 22 33 44 55	Result is 00h	
20	Send a GET INPUT command		GET INPUT Proactive command
	Terminal Response, Text String length = 16		
	Text String TLV = 0D 11 04 00 01 0F		
	ProactiveResponseHandler.getTheHandler()		
	Successful call (with tag 8Dh)	Result of findAndcopyValue() is	
	tag = 8Dh, occurrence = 1	17	
	<pre>valueOffset = 0</pre>		
	dstBuffer.length = 17		
	dstOffset = 0		
	dstLength = 17		
21	Compare buffer	Result is 00h	
	buffer = 04 00 01 0F		

### 6.2.8.17.4 Test Coverage

CRR number	Test case number
N1	13, 15, 17, 19
N2	11
N3	12, 14, 16, 18
N4	20, 21
P1	1
P2	2, 3, 4, 5, 6
P3	7, 8, 9, 10
C1	Does not apply for
	Proactive Response
	Handler

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

Test Area Reference API\_2\_PRH\_FACRB\_BS

### 6.2.8.18.1 Conformance requirement

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

#### 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 simple TLV is less than that in compareBuffer returns -1.

CRRN5: if the first miscomparing byte in simple TLV is greater than that in compareBuffer returns 1.

CRRN6: The search method is comprehension required flag independent.

#### Parameter errors

CRRP1: if compareBuffer is null NullPointerException shall be thrown.

CRRP2: if compareOffset would cause access outside array bounds ArrayIndexOutOfBoundsException shall be thrown.

#### Context errors

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

6.2.8.18.3 Test Suite files

Test Script: API\_2\_PRH\_FACRB\_BS\_1.scr

Test Applet: API\_2\_PRH\_FACRB\_BS\_1.java

Load Script: API\_2\_PRH\_FACRB\_BS\_1.ldr

Clean-up Script: API\_2\_PRH\_FACRB\_BS\_1.clr

# 6.2.8.18.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Send a GET INPUT command		GET INPUT Proactive
			command
	Terminal Response, Text String length = 15		
	Text String TLV = 0D 10 04 01 02 0F		
	ProactiveResponseHandler.getTheHandler()		
	findAndCompareValue() with a null dstBuffer	NullPointerException is thrown	
2	compareOffset ≥ compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
	tag = 0Dh	n is thrown	
	compareBuffer.length = 20		
	compareOffset = 20		
3	compareOffset < 0	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length = 20	n is thrown	
	compareOffset = -1		
4	length > compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length = 15	n is thrown	
_	compareOffset = 0	A manufacture of the same da Francisco	
5	compareOffset + length >	ArrayIndexOutOfBoundsExceptio	
	<pre>compareBuffer.length compareBuffer.length = 20</pre>	n is thrown	
	compareOffset = 5		
	Compared Fisco		
6	Send a GET INPUT command		GET INPUT Proactive
			command
	Terminal Response, Text String length = 16		
	Text String TLV = 0D 11 04 00 01 0F		
	ProactiveResponseHandler.getTheHandler()		
	Select a TLV (tag 02h)		
	findAndCompareValue()	ToolkitException.UNAVAILABLE	
	tag = 04h	_ELEMENT is thrown	
	Call the getValueLength() method	ToolkitException.UNAVAILABLE	
		_ELEMENT is thrown.	
7	Initialise compareBuffer		
	compareBuffer =		
	04 00 01 OF		
	Compare buffers	Result is 00h	
	tag = 0Dh		
	compareOffset = 0		

8	Verify current TLV getValueLength()	Result is 17	
9	Initialise compareBuffer		
9	compareBuffer =		
	04 00 01 10		
	Compare buffers with same parameters	Result is -1	
10	Initialise compareBuffer		
	<pre>compareBuffer = 03 00 01 0F</pre>		
	Compare buffers with same parameters	Result is +1	
	Compare buriers with same parameters	Tresuit is +1	
11	Initialise compareBuffer		
	compareBuffer =		
	55 55 04 00 01 02 03 04 05 06		
	07 08 09 0A 0B		
	OC OD OE OF 55		
	Compare buffers	Result is 00h	
	compareOffset = 2		
12	Send a GET INPUT command		GET INPUT Proactive
			command
	Terminal Response, with 2 Text String TLV		
	0D 11 04 00 01 0F 0D 06 00 11 22 33 44 55		
	ProactiveResponseHandler.getTheHandler()		
	Initialise compareBuffer		
	compareBuffer =		
	55 55 04 00 01		
	02 03 04 05 06		
	07 08 09 0A 0B 0C 0D 0E 0F 55		
	Compare buffers	Result is 00h	
	compareOffset = 2	Tresum is som	
40	Initialian annuan Duffer		
13	Initialise compareBuffer compareBuffer =		
	55 55 04 01 01		
	02 03 04 05 06		
	07 08 09 0A 0B		
	OC OD OE OF 55	Deput is 4	
	Compare buffers compareOffset = 2	Result is -1	
	- 00mpa10011000 - 1		
14	Initialise compareBuffer		
	compareBuffer =		
	55 55 04 00 01 02 03 04 05 06		
	07 08 09 0A 0B		
	0C 0D 0D 10 55		
	Compare buffers	Result is +1	
	<pre>compareOffset = 2</pre>		
4-	Oranda OFT INDUT		OFT INDUT B
15	Send a GET INPUT command		GET INPUT Proactive command
	Terminal Response, Text String length = 16		Commanu
	Text String TLV = 0D 11 04 00 01 0F		
	ProactiveResponseHandler.getTheHandler()		
	Initialise compareBuffer		
	CompareBuffer =		
	04 00 01 0F	Decut is 00h	
	Compare buffers (with tag 8Dh) tag = 8Dh	Result is 00h	
	compareOffset = 0		
	<u> </u>	1	i e e e e e e e e e e e e e e e e e e e

#### 6.2.8.18.4 Test Coverage

CRR number	Test case number
N1	6
N2	8
N3	7, 11, 12
N4	9, 13
N5	10, 14
N6	15
P1	1
P2	2, 3, 4, 5
C1	Does not apply for
Proactive Response	
	Handler

# 6.2.8.19 Method findAndCompareValue(byte tag, byte occurence, short valueOffset, byte[] compareBuffer, short compareOffset, short compareLength)

Test Area Reference API\_2\_PRH\_FACRBBS\_BSS

#### 6.2.8.19.1 Conformance requirement

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

#### 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 simple TLV is less than that in compareBuffer -1 is returned.

CRRN5: if the first miscomparing byte in simple TLV is greater than that in compareBuffer 1 is returned

CRRN6: The search method is comprehension required flag independent.

#### 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. occurence = 0) an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException BAD\_INPUT\_PARAMETER.

### Context errors

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

6.2.8.19.3 Test Suite files

Test Script: API\_2\_PRH\_FACRBBS\_BSS\_1.scr

Test Applet: API\_2\_PRH\_FACRBBS\_BSS\_1.java

Load Script: API\_2\_PRH\_FACRBBS\_BSS\_1.ldr

Clean-up Script: API\_2\_PRH\_FACRBBS\_BSS\_1.clr

### 6.2.8.19.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Send a GET INPUT command	•	GET INPUT Proactive
			command
	Terminal Response, Text String length = 15		
	Text String TLV = 0D 10 04 01 02 0F		
	ProactiveResponseHandler.getTheHandler()		
	findAndCompareValue() with a null compareBuffer	NullPointerException is thrown	
2	<pre>compareOffset ≥ compareBuffer.length tag = 0Dh, occurrence = 1 valueOffset = 0 compareBuffer.length = 5 compareOffset = 5 compareLength = 1</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
3	compareOffset < 0	ArrayIndexOutOfBoundsExceptio	
3	compareBuffer.length = 5 compareOffset = -1 compareLength = 1	n is thrown	
4	<pre>compareLength &gt;compareBuffer.length compareBuffer.length = 5 compareOffset = 0 compareLength = 6</pre>	ArrayIndexOutOfBoundsException is thrown	
5	compareOffset + compareLength	ArrayIndexOutOfBoundsExceptio	
	<pre>&gt;compareBuffer.length compareBuffer.length = 5 compareOffset = 3 compareLength = 3</pre>	n is thrown	
6	compareLength < 0	ArrayIndexOutOfBoundsExceptio	
	<pre>compareBuffer.length = 5 compareOffset = 0 compareLength = -1</pre>	n is thrown	
7	Send a GET INPUT command		GET INPUT Proactive command
	Terminal Response, Text String length = 5		
	Text String TLV = 0D 06 04 01 02 05		
	ProactiveResponseHandler.getTheHandler()		
	<pre>valueOffset ≥ Text String Length tag = 0Dh, occurrence = 1 valueOffset = 6 compareBuffer.length = 15 compareOffset = 0 compareLength = 1</pre>	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
8	valueOffset < 0	ToolkitException.OUT_OF_TLV_	
_	<pre>valueOffset = -1 compareBuffer.length = 15 compareOffset = 0 compareLength = 1</pre>	BOUNDARIES is thrown	
9	<pre>compareLength &gt; Text String length valueOffset = 0 compareBuffer.length = 15 compareOffset = 0 compareLength = 7</pre>	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	

10	valueOffset + compareLength > Text String	ToolkitException.OUT_OF_TLV_	
10	length	BOUNDARIES is thrown	
	valueOffset = 2	S S S T S T T T T T T T T T T T T T T T	
	compareBuffer.length = 15		
	compareOffset = 0		
	compareLength = 5		
44	Invalid parameter	Tablists continuo DAD INDLIT D	
11	Invalid parameter occurrence = 0	ToolkitException.BAD_INPUT_P ARAMETER is thrown	
	occurrence - v	ARAWETER IS UTOWIT	
12	Send a GET INPUT command		GET INPUT Proactive
			command
	Terminal Response, Text String length = 16		
	Text String TLV = 0D 11 04 00 01 0F		
	ProactiveResponseHandler.getTheHandler()		
	Select a TLV (tag 02h)	Tablitana atian HNAVAH ADI E	
	findAndCompareValue() tag = 0Dh	ToolkitException.UNAVAILABLE _ELEMENT is thrown	
	occurrence = 2	_ELEIVIEINT IS UITOWIT	
	Call the getValueLength() method	ToolkitException.UNAVAILABLE	
	- "	_ELEMENT is thrown.	
13	Initialise compareBuffer		
	compareBuffer = 04 00 01 0F		
	findAndCompareValue()	Result is 00h	
	tag = 0Dh, occurrence = 1	Troodit io oon	
	<pre>valueOffset = 0</pre>		
	<pre>compareOffset = 0 compareLength = 17</pre>		
	compareLength = 1/		
14	Verify current TLV	Result is 17	
'-	getValueLength()	Treating 17	
15	Initialise compareBuffer		
	compareBuffer =		
	Compare buffers with same parameters	Result is -1	
	Compare variors with same parameters		
16	Initialise compareBuffer		
	compareBuffer =		
	03 00 01 0F  Compare buffers with same parameters	Result is +1	
	Compare bullers with same parameters	Result is +1	
17	Initialise compareBuffer		
	compareBuffer =		
	55 55 55 01 02		
	03 04 05 06 07 08 09 0A 0B 0C		
	55 55 55 55		
	Compare buffers	Result is 00h	
	<pre>valueOffset = 2 compareOffset = 3</pre>		
	compareUnset = 3 compareLength = 12		
	-		
18	Initialise compareBuffer		
	compareBuffer = 55 55 55 02 01		
	03 04 05 06 07		
	08 09 0A 0B 0C		
	55 55 55 55	   D	
	Compare buffers with same parameters	Result is -1	
19	Initialise compareBuffer		
13	compareBuffer =		
	55 55 55 01 02		
	03 04 05 06 07		
	08 09 0A 0A 0D 55 55 55 55 55		
	Compare buffers with same parameters	Result is +1	
20	Send a GET INPUT command		GET INPUT Proactive
1			command

	Terminal Response, with 2 Text String TLV		
	0D 11 04 00 01 0F 0D 06 00 11 22 33 44 55		
	ProactiveResponseHandler.getTheHandler()		
	Initialise compareBuffer		
	compareBuffer =		
	04 00 01 OF		
	findAndCompareValue()	Result is 00h	
	tag = 0Dh, occurrence = 1		
	valueOffset = 0		
	compareOffset = 0		
	compareLength = 17		
21	Initialise compareBuffer		
	compareBuffer =		
	00 11 22 33 44 55		
	findAndCompareValue()	Result is 00h	
	tag = 0Dh, occurrence = 2	1 Court is oon	
	valueOffset = 0		
	compareOffset = 0		
	compareLength = 6		
	Compareneigen - 0		
22	Initialise compareBuffer		
22	compareBuffer =		
	00 11 22 33 44 66		
	findAndCompareValue()	Result is -1	
	inidAndComparevalue()	Result is -1	
	<pre>tag = 0Dh, occurrence = 2 valueOffset = 0</pre>		
	compareOffset = 0		
	compareLength = 6		
	O L OFT INDUT		OFT MIDUE D
23	Send a GET INPUT command		GET INPUT Proactive
			command
	Terminal Response, Text String length = 16		
	Text String TLV = 0D 11 04 00 01 0F		
	ProactiveResponseHandler.getTheHandler()		
	Initialise compareBuffer		
	CompareBuffer =		
	04 00 01 OF		
	Compare buffers (with tag 8Dh)	Result is 00h	
	tag = 8Dh, occurrence = 1		
	valueOffset = 0		
l	compareOffset = 0		
	ProactiveResponseHandler.getTheHandler()  Initialise compareBuffer  CompareBuffer = 04 00 01 0F  Compare buffers (with tag 8Dh)  tag = 8Dh, occurrence = 1	Result is 00h	

# 6.2.8.19.4 Test Coverage

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

# 6.2.9 Class ToolkitRegistry

### 6.2.9.1 Method allocateTimer

Test Area Reference: API\_2\_TKR\_ATIM

#### 6.2.9.1.1 Conformance requirement:

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

public byte allocateTimer() throws ToolkitException

#### Normal execution

CRRN1: the returned timer identifier shall be between 01 and 08 inclusive.

CRRN2: the returned timer identifier shall be different from a previously allocated but not released one.

CRRN3: The SIM Toolkit Framework shall trigger the applet when receiving an ENVELOPE(TIMER EXPIRATION) command for the allocated timer.

CRRN4: A call to isEventSet() method for EVENT\_TIMER\_EXPIRATION should return true if the applet has at least one timer allocated.

#### Parameters error

No requirements

#### Context errors

CRRC1: Shall throw a ToolkitException with reason NO\_TIMER\_AVAILABLE if all the timers are allocated.

CRRC2: Shall throw a ToolkitException with reason NO\_TIMER\_AVAILABLE if the maximum number of timers have been allocated to this applet according to installation parameter.

6.2.9.1.2 Test suite files

Test Script: API\_2\_TKR\_ATIM\_1.scr

Test Applet: 1. API\_2\_TKR\_ATIM\_1.java

2. API\_2\_TKR\_ATIM\_2.java

3. API\_2\_TKR\_ATIM\_3.java

#### Installation parameters:

For this test procedure the non-volatile memory of each instance is 200 (Hexa).

The maximum timer parameter value is as follows for each applet:

applet 1 (API\_2\_TKR\_ATIM\_1): 8 timers

applet 2 (API\_2\_TKR\_ATIM\_2): 4 timers

- applet 3 (API\_2\_TKR\_ATIM\_3): 0 timer

Load Script: API\_2\_TKR\_ATIM\_1.ldr

The load script installs the 6 instances.

Cleanup Script: API\_2\_TKR\_ATIM\_1.clr

### 6.2.9.1.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Allocates up to 8 timers	No exception shall be thrown.	
	(applet 1)	Timer ID returned shall be between	
	8 * allocateTimer().	01 and 08 inclusive. It shall be different after each call.	
2	Allocate timers more than the maximum	Shall throw a ToolkitException with	
	(applet 1)	reason NO_TIMER_AVAILABLE.	
	The applet 1 allocates 1 more timer.		
3	Check applet is Triggered by ENVELOPE(TIMER_EXPIRATION) command (applet1) Send ENVELOPE(TIMER EXPIRATION) with all timers id (not in an increase order).  Calls releaseTimer(id) each time a timer expires.	Shall trigger each time an ENVELOPE(TIMER EXPIRATION) is sent to the SIM, for Timer ID = '01' to '08'.	
4	Allocate up to 4 timers		
	<pre>(applet 2) 4 * allocateTimer().</pre>	No exception shall be thrown. Each time, the returned timer identifier shall be between '01' and '08' inclusive. It shall be different after each call.	
5	Allocate timers more than the maximum (applet 3)	Shall throw a ToolkitException with reason NO_TIMER_AVAILABLE.	
	The applet 3 allocates 1 more timer.		

### 6.2.9.1.4 Test Coverage

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

# 6.2.9.2 Method changeMenuEntry

Test Area Reference: API\_2\_TKR\_CMETB\_BSSBZBS

### 6.2.9.2.1 Conformance requirement:

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

#### Normal execution

CRRN1: The SIM Toolkit Framework shall automatically update the menu stored in the ME by issuing a SET UP MENU proactive command. The later will reflect the changes done for the entry. The SIM Toolkit Framework shall use the data of the EF sume file in order to build the SET UP MENU command.

CRRN2: The default state of the changed menu entry is 'enabled'.

CRRN3: a call to isEventSet() method on EVENT\_MENU\_SELECTION shall return true before and after the call.

CRRN4: if helpSupported was true then a call to isEventSet() method on EVENT MENU SELECTION HELP REQUEST event shall return true.

CRRN5: if helpSupported was true then after the completion of the SETUP MENU command, if an ENVELOPE(MENU\_SELECTION\_HELP\_REQUEST) command is received by the SIM for this entry, then the SIM Toolkit framework shall trigger the applet.

CRRN6: if help supported was true, the SIM Toolkit Framework shall issue a SETUP MENU command with command qualifier = '80'

CRRN7: if helpSupported was false and if no entries is supporting help then a call to isEventSet() method on EVENT\_MENU\_SELECTION\_HELP\_REQUEST event shall return false .

CRRN8: if helpSupported was false and if no entries is supporting help then after the completion of the SETUP MENU command, if an ENVELOPE(MENU\_SELECTION\_HELP\_REQUEST) command is received by the SIM, then the SIM Toolkit framework shall not trigger the applet.

CRRN9: The SIM Toolkit Framework shall supply in the SET UP MENU command with the icon identifier provided in the icon identifier list within the item icon identifier list Simple TLV if all the applets registered to the EVENT\_MENU\_SELECTION provide it.

CRRN10: The SIM Toolkit Framework shall set in the SET UP MENU command with the Icon list qualifier transmitted to the ME as 'icon is not self explanatory' if one of the applet registered prefers this qualifier.

CRRN11: If Next Action Indicator was different from '00', the SIM Toolkit Framework shall issue a SETUP MENU proactive command containing an Items Next Action Indicator simple TLV with the comprehension flag set to 0 as defined in GSM 11.14 [4].

#### Parameters error

CRRP1: Shall throw java.lang.NullPointerException - if menuEntry is null

CRRP2: Shall throw java.lang.ArrayIndexOutOfBoundsException - if offset would cause access outside array bounds

CRRP3: Shall throw java.lang.ArrayIndexOutOfBoundsException - if length would cause access outside array bounds

CRRP4:Shall throw java.lang.ArrayIndexOutOfBoundsException - if both offset and length would cause access outside array bounds

### Context errors

CRRC1: Shall throw a ToolkitException with MENU\_ENTRY\_NOT\_FOUND reason if the Menu Identifier isn't associated to the calling applet instance.

CRRC2: Shall throw ALLOWED\_LENGTH\_EXCEEDED if the menu entry string is bigger than the allocated space.

### 6.2.9.2.2 Test suite files

Additional requirements for the GSM personalisation:

- content of EF sume shall be:

- Title Alpha Identifier: "TOOLKIT TEST"

Test Script: API\_2\_TKR\_CMETB\_BBSSBZBS\_1.scr

Test Applet: API\_2\_TKR\_CMETB\_BBSSBZBS\_1.java

- entry '01' is "Init1"

- entry '02' is "Init2"

Installation parameter:

Same as default applet but with:

- Maximum text length for a menu entry: 15

- Maximum number of menu entries: 2

- Position / Identifier for each menu entry: '01'/'01','02'/'02'

Load Script: API\_2\_TKR\_CMETB\_BBSSBZBS\_1.ldr

Cleanup Script: API\_2\_TKR\_CMETB\_BBSSBZBS\_1.clr

# 6.2.9.2.3 Test procedure

ld	Description	1	API Expectation	APDU Expectation
1	Applet changes the entry's title by menuEntry		AllExpediation	Al Do Expediation
•	buffer, with a greater length than the initial length			
	1- ChangeMenuEntry()with parameters:			
	<pre>Id = '02' MenuEntry = "UseAllBuffer" Offset = 0</pre>	1-	No exception shall be thrown.	
	Length = menuEntry.length NextAction = 0	2-	shall return true.	
	<pre>HelpSupported = false IconQualifier = 0 IconIdentifier = 0.</pre>	3-	shall return false.	
	2- isEventSet(EVENT_MENU_SELECTION).			The SIM shall issue a
	3- isEventSet(EVENT_MENU_SELECTION_HELP_R EQUEST).			SETUP MENU proactive command which contains the new text for entry ID '02'.
2	Changing the title with part of menuEntry buffer			
	1- changeMenuEntry()with parameters:			
	<pre>Id = '01' MenuEntry = "UsePartOfBuffer" Offset = 3</pre>	1-	No exception shall be thrown.	
	Length = 12 NextAction = 0		Shall return true.	
	<pre>HelpSupported = false IconQualifier = 0 IconIdentifier = 0.</pre>	3-	Shall return false.	
	2- isEventSet(EVENT_MENU_SELECTION).			The SIM shall issue a SETUP MENU proactive
	3- isEventSet(EVENT_MENU_SELECTION_HELP_R EQUEST)			command which contains the new text for entry ID '01'.
3	Length = 0			01.
	1- changeMenuEntry() for entry '01' and entry '02', with parameters:			
	<pre>Id = '01'/'02' MenuEntry = "LengthEquals0" Offset = 0 Length = 0</pre>	1-	No exception shall be thrown.	
	NextAction = 0 HelpSupported = false	2-	Shall return true.	
	<pre>IconQualifier = 0 IconIdentifier = 0.</pre>	3-	shall return false.	
	2- isEventSet(EVENT_MENU_SELECTION).			The SIM shall issue a
	<pre>3-     isEventSet(EVENT_MENU_SELECTION_HELP_R EQUEST).</pre>			SETUP MENU proactive command which contains for entry '01'and entry '02', no text part.
4	Setting a next action indicator != 0			
	1- changeMenuEntry()with parameters:		No exception shall be thrown.	
	<pre>Id = '02' MenuEntry = "NextActionIndic" Offset = 0 Length = menuEntry.length</pre>		Shall return true. Shall return false.	The SIM shall issue a SETUP MENU proactive command which contains an Items Next Action Indicator
	NextAction = '10' (SETUP CALL) HelpSupported = false			list.

	<pre>IconQualifier = 0</pre>		
	<pre>IconIdentifier = 0</pre>		
	2- isEventSet(EVENT_MENU_SELECTION).		
	3-		
	isEventSet(EVENT_MENU_SELECTION_HELP_R		
	EQUEST).		
5	Checking applet isn't triggered by a		
0	MENU_SELECTION_HELP_REQUEST	Applet is not trigged by a	
	WIENU_SELECTION_HELF_REQUEST	MENU SELECTION HELP REQU	
	Send ENVELOPE(MENU_SELECTION_HELP_REQUEST)	EST	
	with Item Identifier = '02'		
6	help supported=true		
	<pre>1- changeMenuEntry()with parameters:</pre>		
	Id = '02'		
	MenuEntry = "HelpSupported"	1- No exception shall be thrown.	
	Offset = 0	140 Oxooption shall be tillown.	
	Length = menuEntry.length	O Chall materies town	
	NextAction = 0	2- Shall return true.	
	HelpSupported = true		
	IconQualifier = 0	3- Shall return true.	
	_		
	<pre>IconIdentifier = 0</pre>		
1	2 - GETTON COL (EVENUE MENTI CELECETON)		
	2- isEventSet(EVENT_MENU_SELECTION).		
			The SIM shall issue a
	3-		
	isEventSet(EVENT_MENU_SELECTION_HELP_R		SETUP MENU proactive
	EQUEST).		command which contains a
L			command qualifier '80'.
7	Checking applet is triggered by a		
1	MENU SELECTION HELP REQUEST	Applet is trigged by a	
		MENU_SELECTION_HELP_REQU	
1	Send ENVELOPE(MENU_SELECTION_HELP_REQUEST)	EST	
	with Item Identifier = '02'		
8	Setting icons, help supported = false		
٥	Jetting Icons, help supported = laise		
	1 share as Manus First and ( ) for a section of		
	<pre>1- changeMenuEntry() for entries '01','02', with parameters:</pre>		
1	······································		
1	or , oz , with parameters.		
	Id = '01'/'02'		
	Id = '01'/'02' MenuEntry = "IconQualifier"		
	Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0	1- No exception shall be thrown.	
	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length</pre>	1- No exception shall be thrown.	
	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0</pre>		
	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false</pre>	<ul><li>1- No exception shall be thrown.</li><li>2- Shall return true.</li></ul>	
	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01'</pre>	2- Shall return true.	
	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false</pre>		
	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01'</pre>	2- Shall return true.	
	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01'</pre>	2- Shall return true.	
	Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01' IconIdentifier = '02' / '01'	2- Shall return true.	
	Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01' IconIdentifier = '02' / '01'	2- Shall return true.	The SIM shall issue a
	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01' IconIdentifier = '02' / '01'</pre> 2- isEventSet(EVENT_MENU_SELECTION).	<ul><li>2- Shall return true.</li><li>3- Shall return false.</li></ul>	The SIM shall issue a SETUP MENU proactive
	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01' IconIdentifier = '02' / '01'</pre> 2- isEventSet(EVENT_MENU_SELECTION).	<ul><li>2- Shall return true.</li><li>3- Shall return false.</li></ul>	
	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01' IconIdentifier = '02' / '01' 2- isEventSet(EVENT_MENU_SELECTION).</pre> 3- isEventSet(EVENT_MENU_SELECTION_HELP_R	<ul><li>2- Shall return true.</li><li>3- Shall return false.</li></ul>	SETUP MENU proactive command which contains an
	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01' IconIdentifier = '02' / '01' 2- isEventSet(EVENT_MENU_SELECTION). 3-     isEventSet(EVENT_MENU_SELECTION_HELP_R EQUEST).</pre>	<ul><li>2- Shall return true.</li><li>3- Shall return false.</li></ul>	SETUP MENU proactive
9	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01' IconIdentifier = '02' / '01' 2- isEventSet(EVENT_MENU_SELECTION).</pre> 3- isEventSet(EVENT_MENU_SELECTION_HELP_R	<ul><li>2- Shall return true.</li><li>3- Shall return false.</li></ul>	SETUP MENU proactive command which contains an
9	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01' IconIdentifier = '02' / '01' 2- isEventSet(EVENT_MENU_SELECTION). 3-     isEventSet(EVENT_MENU_SELECTION_HELP_R EQUEST).</pre> <pre>MenuEntry is disabled</pre>	<ul><li>2- Shall return true.</li><li>3- Shall return false.</li></ul>	SETUP MENU proactive command which contains an
9	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01' IconIdentifier = '02' / '01' 2- isEventSet(EVENT_MENU_SELECTION). 3-     isEventSet(EVENT_MENU_SELECTION_HELP_R EQUEST).</pre>	<ul><li>2- Shall return true.</li><li>3- Shall return false.</li></ul>	SETUP MENU proactive command which contains an
9	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01' IconIdentifier = '02' / '01' 2- isEventSet(EVENT_MENU_SELECTION).  3-     isEventSet(EVENT_MENU_SELECTION_HELP_REQUEST).  MenuEntry is disabled 1- disableMenuEntry('01').</pre>	<ul><li>2- Shall return true.</li><li>3- Shall return false.</li></ul>	SETUP MENU proactive command which contains an
9	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01' IconIdentifier = '02' / '01' 2- isEventSet(EVENT_MENU_SELECTION). 3-     isEventSet(EVENT_MENU_SELECTION_HELP_R EQUEST).</pre> <pre>MenuEntry is disabled</pre>	2- Shall return true. 3- Shall return false.	SETUP MENU proactive command which contains an
9	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01' IconIdentifier = '02' / '01' 2- isEventSet(EVENT_MENU_SELECTION). 3-     isEventSet(EVENT_MENU_SELECTION_HELP_R EQUEST).  MenuEntry is disabled  1- disableMenuEntry('01'). 2- changeMenuEntry()with parameters:</pre>	<ul><li>2- Shall return true.</li><li>3- Shall return false.</li></ul>	SETUP MENU proactive command which contains an
9	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01' IconIdentifier = '02' / '01'  2- isEventSet(EVENT_MENU_SELECTION).  3-</pre>	2- Shall return true. 3- Shall return false.	SETUP MENU proactive command which contains an
9	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01' IconIdentifier = '02' / '01'  2- isEventSet(EVENT_MENU_SELECTION).  3-</pre>	<ul><li>2- Shall return true.</li><li>3- Shall return false.</li><li>1- No exception shall be thrown.</li></ul>	SETUP MENU proactive command which contains an
9	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01' IconIdentifier = '02' / '01'  2- isEventSet(EVENT_MENU_SELECTION).  3-</pre>	2- Shall return true. 3- Shall return false.	SETUP MENU proactive command which contains an
9	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01' IconIdentifier = '02' / '01' 2- isEventSet(EVENT_MENU_SELECTION).  3- isEventSet(EVENT_MENU_SELECTION_HELP_REQUEST).  MenuEntry is disabled  1- disableMenuEntry('01'). 2- changeMenuEntry()with parameters: Id = '01' MenuEntry = "EnableEntry" Offset = 0 Length = menuEntry.length</pre>	<ol> <li>Shall return true.</li> <li>Shall return false.</li> <li>No exception shall be thrown.</li> <li>No exception shall be thrown.</li> </ol>	SETUP MENU proactive command which contains an
9	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01' IconIdentifier = '02' / '01' 2- isEventSet(EVENT_MENU_SELECTION).  3-</pre>	<ul><li>2- Shall return true.</li><li>3- Shall return false.</li><li>1- No exception shall be thrown.</li></ul>	SETUP MENU proactive command which contains an
9	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01' IconIdentifier = '02' / '01' 2- isEventSet(EVENT_MENU_SELECTION).  3-     isEventSet(EVENT_MENU_SELECTION_HELP_R EQUEST).  MenuEntry is disabled  1- disableMenuEntry('01'). 2- changeMenuEntry()with parameters: Id = '01' MenuEntry = "EnableEntry" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false</pre>	<ol> <li>Shall return true.</li> <li>Shall return false.</li> <li>No exception shall be thrown.</li> <li>No exception shall be thrown.</li> <li>Shall return true.</li> </ol>	SETUP MENU proactive command which contains an
9	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01' IconIdentifier = '02' / '01' 2- isEventSet(EVENT_MENU_SELECTION).  3-</pre>	<ol> <li>Shall return true.</li> <li>Shall return false.</li> <li>No exception shall be thrown.</li> <li>No exception shall be thrown.</li> </ol>	SETUP MENU proactive command which contains an
9	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01' IconIdentifier = '02' / '01' 2- isEventSet(EVENT_MENU_SELECTION).  3-     isEventSet(EVENT_MENU_SELECTION_HELP_R EQUEST).  MenuEntry is disabled  1- disableMenuEntry('01'). 2- changeMenuEntry()with parameters: Id = '01' MenuEntry = "EnableEntry" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false</pre>	<ol> <li>Shall return true.</li> <li>Shall return false.</li> <li>No exception shall be thrown.</li> <li>No exception shall be thrown.</li> <li>Shall return true.</li> </ol>	SETUP MENU proactive command which contains an Icon Identifier List.
9	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01' IconIdentifier = '02' / '01' 2- isEventSet(EVENT_MENU_SELECTION).  3-     isEventSet(EVENT_MENU_SELECTION_HELP_R EQUEST).</pre>	<ol> <li>Shall return true.</li> <li>Shall return false.</li> <li>No exception shall be thrown.</li> <li>No exception shall be thrown.</li> <li>Shall return true.</li> </ol>	SETUP MENU proactive command which contains an Icon Identifier List.  The SIM shall issue a
9	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01' IconIdentifier = '02' / '01' 2- isEventSet(EVENT_MENU_SELECTION).  3-     isEventSet(EVENT_MENU_SELECTION_HELP_R EQUEST).</pre>	<ol> <li>Shall return true.</li> <li>Shall return false.</li> <li>No exception shall be thrown.</li> <li>No exception shall be thrown.</li> <li>Shall return true.</li> </ol>	SETUP MENU proactive command which contains an Icon Identifier List.  The SIM shall issue a SETUP MENU proactive
9	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01' IconIdentifier = '02' / '01' 2- isEventSet(EVENT_MENU_SELECTION).  3-     isEventSet(EVENT_MENU_SELECTION_HELP_R EQUEST).</pre>	<ol> <li>Shall return true.</li> <li>Shall return false.</li> <li>No exception shall be thrown.</li> <li>No exception shall be thrown.</li> <li>Shall return true.</li> </ol>	SETUP MENU proactive command which contains an Icon Identifier List.  The SIM shall issue a
9	<pre>Id = '01'/'02' MenuEntry = "IconQualifier" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = '01' IconIdentifier = '02' / '01' 2- isEventSet(EVENT_MENU_SELECTION).  3-     isEventSet(EVENT_MENU_SELECTION_HELP_R EQUEST).</pre>	<ol> <li>Shall return true.</li> <li>Shall return false.</li> <li>No exception shall be thrown.</li> <li>No exception shall be thrown.</li> <li>Shall return true.</li> </ol>	SETUP MENU proactive command which contains an Icon Identifier List.  The SIM shall issue a SETUP MENU proactive

	isEventSet(EVENT_MENU_SELECTION_HELP_R		
	EQUEST).		
10	MenuEntry is null		
	-	Shall throw	
	<pre>changeMenuEntry()with: MenuEntry = NULL</pre>	java.lang.NullPointerException.	
	renamery - Nobb		
11	Offset causes access outside array bounds		
	Id = '01'		
	MenuEntry = "Violation"	Shall throw	
	Offset = menuEntry.length +1	java.lang.ArrayIndexOutOfBoundsE	
	Length = 0 NextAction = 0	xception.	
	HelpSupported = false		
	<pre>IconQualifier = 0 IconIdentifier = 0</pre>		
	Teomidementine		
12	Big Offset causes access outside array bounds		
	Id = '01'		
	MenuEntry = "Violation"	Shall throw	
	Offset = 255	java.lang.ArrayIndexOutOfBoundsE	
	Length = 1 NextAction = 0	xception.	
	HelpSupported = false		
	<pre>IconQualifier = 0 IconIdentifier = 0</pre>		
	redifficient - 0		
13	Offset < 0 causes access outside array bounds		
	Id = '01'		
	MenuEntry = "Violation"	Shall throw	
	Offset = -1 Length = 1	java.lang.ArrayIndexOutOfBoundsE	
	NextAction = 0	xception.	
	HelpSupported = false		
	<pre>IconQualifier = 0 IconIdentifier = 0</pre>		
14	Length causes access outside array bounds		
	Id = '01'		
	MenuEntry = "Violation"	Shall throw	
	Offset = 0 Length = MenuEntry.length + 1	java.lang.ArrayIndexOutOfBoundsException.	
	NextAction = 0	Acopus	
	HelpSupported = false IconQualifier = 0		
	<pre>IconIdentifier = 0.</pre>		
15	Length < 0 causes access outside array		
	bounds		
	Id = '01'		
	MenuEntry = "Violation" Offset = 0	Shall throw	
	Length = -1	java.lang.ArrayIndexOutOfBoundsException.	
	NextAction = 0 HelpSupported = false	, and a second s	
	IconQualifier = 0		
	<pre>IconIdentifier = 0.</pre>		
L			
16	Both offset and length causes access outside		
	array bounds		
	Id = '01'	Shall throw	
	MenuEntry = "Violation"	java.lang.ArrayIndexOutOfBoundsE	
	Offset ∈ [1, MenuEntry.length] Length = MenuEntry.length	xception.	
	NextAction = 1	·	
	HelpSupported = false IconQualifier = 0		
	IconQualifier = 0		
	<u> </u>		

47	Invalid ID used		
17	Invalid ID used  Id = '00' MenuEntry = contains text, != null Offset = 0 Length = menuEntry.length < 16 NextAction = 0 HelpSupported = false IconQualifier = 0 IconIdentifier = 0	Shall throw a ToolkitException with MENU_ENTRY_NOT_FOUND reason code.	
18	ID isn't allocated to a menu entry of this applet instance  Id = '0A' MenuEntry = contains text, != null Offset = 0 Length = menuEntry.length < 16 NextAction = 0 HelpSupported = false IconQualifier = 0 IconIdentifier = 0	Shall throw a ToolkitException with reason code: MENU_ENTRY_NOT_FOUND.	
19	The text is bigger than the allocated space  Id = '02' MenuEntry = contains text, != null Offset = 0 Length = menuEntry.length > 15 NextAction = 0 HelpSupported = false IconQualifier = 0 IconIdentifier = 0	Shall throw a ToolkitException with reason code: ALLOWED_LENGTH_EXCEEDED.	
20	<pre>With a smaller text length than the initial length 1. changeMenuEntry()with parameters:  Id = '02' MenuEntry = "Init" Offset = 0 Length = menuEntry.length NextAction = 0 HelpSupported = false IconQualifier = 0 IconIdentifier = 0 2. isEventSet(EVENT_MENU_SELECTION) 3.     isEventSet(EVENT_MENU_SELECTION_HELP_R EQUEST)</pre>	<ol> <li>No exception shall be thrown.</li> <li>Shall return true.</li> <li>Shall return false.</li> </ol>	The SIM shall issue a SETUP MENU proactive command which contains the new text for entry ID '02'.

### 6.2.9.2.4 Test Coverage

CRR number	Test case number	
N1	1,2,3,4,6,8,9,20	
N2	9	
N3	1,2,3,4,6,8,9,20	
N4	6	
N5	7	
N6	6	
N7	1,2,3,4,8,9,20	
N8	5	
N9	8	
N10	8	
N11	4	
P1	10	
P2	11,12,13	
P3	14,15	
P4	16	
C1	17,18	
C2	19	

#### 6.2.9.3 Method clearEvent

Test Area Reference: API\_2\_TKR\_CEVTB

#### 6.2.9.3.1 Conformance requirement:

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

#### Normal execution

CRRN1: A call to isEventSet() method for a cleared event should return false after a call to clearEvent.

CRRN2:The SIM Toolkit Framework shall not trigger the applet on the occurrence of the cleared event anymore.

CRRN3: if event was EVENT\_CALL\_CONTROL\_BY\_SIM and after the call, no applet is registered to it, The SIM Toolkit Framework shall allow an applet to register to this event.

CRRN4: if event was EVENT\_CALL\_CONTROL\_BY\_SIM and one applet is still registered to these event, The SIM Toolkit Framework shall not allow an applet to register to this event.

CRRN5: if event was EVENT\_MO\_SHORT\_MESSAGE\_CONTROL\_BY\_SIM and after the call, no applet is registered to it, The SIM Toolkit Framework shall allow an applet to register to this event.

CRRN6: if event was EVENT\_MO\_SHORT\_MESSAGE\_CONTROL\_BY\_SIM and one applet is still registered to these event, The SIM Toolkit Framework shall not allow an applet to set this event.

#### Parameters error

CRRP1: Shall throw a Toolkit Exception with reason EVENT\_NOT\_ALLOWED if event was EVENT MENU SELECTION.

CRRP2: Shall throw a Toolkit Exception with reason EVENT\_NOT\_ALLOWED if event was EVENT\_MENU\_SELECTION\_HELP\_REQUEST.

CRRP3: Shall throw a Toolkit Exception with reason EVENT\_NOT\_ALLOWED if event was EVENT\_TIMER\_EXPIRATION.

CRRP4: Shall throw a Toolkit Exception with reason EVENT\_NOT\_ALLOWED if event was EVENT\_STATUS\_COMMAND.

### Context errors

No requirements

6.2.9.3.2 Test suite files

Test Script: API\_2\_TKR\_CEVTB\_1.scr

Test Applet: API\_2\_TKR\_ CEVTB \_1.java

As default but applet registers to an event list which contains all defined events in GSM 03.19 [7] excepted those that aren't allowed or supported by setEvent().

Load Script: API\_2\_TKR\_ CEVTB\_1.ldr

Cleanup script: API\_2\_TKR\_ CEVTB\_1.clr

## 6.2.9.3.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Clear ALLOWED unregistered events  For events ranging from 1 to 127 excepted those that aren't allowed (EVENT_MENU_SELECTION, EVENT_MENU_SELECTION_HELP_REQUEST, EVENT_TIMER_EXPIRATION, EVENT_STATUS_COMMAND), the applet calls:  1- clearEvent() method  2- isEventSet() method	1- No exception is thrown each time.  2- Shall return false each time.	
2	Clear registered events  1- For each ALLOWED and SUPPORTED events, the applet calls setEvent() method.  2- For events ranging from 1 to 127 excepted those that aren't allowed, the applet calls:  2.1- clearEvent() method  2.2- isEventSet() method	<ol> <li>No exception shall be thrown.</li> <li>No exception shall be thrown.</li> <li>Shall return false.</li> </ol>	
3	Clearing NOT ALLOWED events  For each event among: EVENT_MENU_SELECTION, EVENT_MENU_SELECTION_HELP_REQUEST, EVENT_TIMER_EXPIRATION, EVENT_STATUS_COMMAND  1- The applet calls clearEvent(event) method.  Checking applet isn't triggered by an	1- Each time, clearEvent shall throw a Toolkit Exception with reason EVENT_NOT_ALLOWED.	
4	ENVELOPE(SMS-PP DOWNLOAD) command  An ENVELOPE(SMS-PP DOWNLOAD) is sent with a TAR referencing applet.	Applet is not trigged by an ENVELOPE(SMS-PP DOWNLOAD) command	

### 6.2.9.3.4 Test Coverage

CRR number	Test case number	
N1	1,2	
N2	4	
N3	Framework	
N4	Framework	
N5	Framework	
N6	Framework	
P1	3	
P2	3	
P3	3	
P4	3	

### 6.2.9.4 Method disableMenuEntry

Test Area Reference: API\_2\_TKR\_DMETB

#### 6.2.9.4.1 Conformance requirement:

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

#### Normal execution

CRRN1: A call to isEventSet() method on EVENT\_MENU\_SELECTION shall return the same result before and after the call to disableMenuEntry() method.

CRRN2: A call to isEventSet() method on EVENT\_MENU\_SELECTION\_HELP\_REQUEST shall return the same result before and after the call to disableMenuEntry() method.

CRRN3: After invocation of this method the SIM Toolkit Framework should dynamically update the menu stored in the ME .

CRRN4: After invocation of this method, if there is no more enabled menu entries then the SIM Toolkit framework shall issue a SETUP MENU proactive command containing Item Data Object for Item 1 TLV with a length of zero and no value part.

#### Parameters error

No requirements

### Context errors

CRRC1: shall throw a ToolkitException with reason = ENTRY\_NOT\_FOUND if the menu entry doesn't exist for this applet

#### 6.2.9.4.2 Test suite files

Additional requirements for the GSM personalisation:

- content of EF sume shall be:

- Title Alpha Identifier: "TOOLKIT TEST"

Test Script: API\_2\_TKR\_DMETB\_1.scr

Test Applet: API\_2\_TKR\_DMETB\_1.java

Installation parameter:

Same as default applet but with:

- Maximum text length for a menu entry: 15

- Maximum number of menu entries: 2

- Position / Identifier for each menu entry: '01'/'01', '02'/'02'

Load Script: API\_2\_TKR\_DMETB\_1.ldr

Cleanup script: API\_2\_TKR\_DMETB\_1.clr

### 6.2.9.4.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Check the menu state before disabling a previously enabled entry not registered to EVENT_MENU_SELECTION_HELP_REQUEST  1- reset and initialise the card 2- isEventSet(EVENT_MENU_SELECTION) 3- isEventSet(EVENT_MENU_SELECTION_HELP_REQUEST)	<ul><li>1- Shall return true</li><li>2- Shall return false</li></ul>	1- The SIM shall issue a SET UP MENU proactive command with entry '01' and '02'.
2	Check the menu state after disabling a previously enabled entry not registered to EVENT_MENU_SELECTION_HELP_REQUEST  1- disableMenuEntry('01') 2- isEventSet(EVENT_MENU_SELECTION) 3- isEventSet(EVENT_MENU_SELECTION_HELP_REQUEST)	<ol> <li>No exception shall be thrown.</li> <li>Shall return true.</li> <li>Shall return false.</li> </ol>	3- The SIM shall issue a SET UP MENU proactive command with entry '02' only.
3	Check the menu before disabling a previously enabled entry registered to EVENT_MENU_SELECTION_HELP_REQUEST  1- change Menu Entry '02' to indicate help supported 2- isEventSet(EVENT_MENU_SELECTION) 3- isEventSet(EVENT_MENU_SELECTION_HELP_R EQUEST)	<ul><li>2- Shall return true</li><li>3- Shall return true</li></ul>	3- The SIM shall issue a SET UP MENU proactive command with entry '02', indicating help supported.
4	Check the menu after disabling a previously enabled entry registered to EVENT_MENU_SELECTION_HELP_REQUEST  1- disableMenuEntry('02') 2- isEventSet(EVENT_MENU_SELECTION) 3- isEventSet(EVENT_MENU_SELECTION_HELP_R EQUEST)	<ol> <li>No exception shall be thrown.</li> <li>Shall return true.</li> <li>Shall return true.</li> </ol>	3- The SIM shall issue a SET UP MENU proactive command with 1st Item TLV with a length of 0.
5	Disabling invalid entries  For ID ranging from '00' to 'FF' except '01' and '02', the applet calls disableMenuEntry(ID) method.	Each time a Toolkit Exception with MENU_ENTRY_NOT_FOUND reason code shall be thrown.	

### 6.2.9.4.4 Test Coverage

CRR number	Test case number	
N1	1,2,3,4	
N2	1,2,3,4	
N3	2,4	
N4	4	
C1	5	

### 6.2.9.5 Method enableMenuEntry

Test Area Reference: API\_2\_TKR\_EMETB

#### 6.2.9.5.1 Conformance requirement:

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

#### Normal execution

CRRN1: A call to isEventSet() method on EVENT\_MENU\_SELECTION shall return the same result before and after the call to enableMenuEntry() method.

CRRN2: A call to isEventSet() method on EVENT\_MENU\_SELECTION\_HELP\_REQUEST shall return the same result before and after the call to enableMenuEntry() method.

CRRN3:The SIM Toolkit Framework should automatically issue a SETUP MENU proactive command which does contain an ITEM SIMPLE TLV object for this entry.

#### Parameters error

No requirements

### Context errors

CRRC1: shall throw a ToolkitException with reason = MENU\_ENTRY\_NOT\_FOUND if the menu entry doesn't exist for this applet

#### 6.2.9.5.2 Test suite files

Additional requirements for the GSM personalisation:

- content of EF sume shall be:

- Title Alpha Identifier: "TOOLKIT TEST"

Test Script: API\_2\_TKR\_EMETB\_1.scr

Test Applet: API\_2\_TKR\_EMETB\_1.java

Installation parameter:

Same as default applet but with:

- Maximum text length for a menu entry: 15

Maximum number of menu entries: 2

- Position / Identifier for each menu entry: '01'/'01', '02'/'02'

Load Script: API\_2\_TKR\_EMETB\_1.ldr

Cleanup script: API\_2\_TKR\_EMETB\_1.clr

# 6.2.9.5.3 Test procedure

ld	Description		API Expectation	APDU Expectation
1	Check menu state before enabling a previously disabled entry not registered to EVENT_MENU_SELECTION_HELP_REQUEST  1- isEventSet(EVENT_MENU_SELECTION) 2- isEventSet(EVENT_MENU_SELECTION_HELP_R EQUEST) 3- disableMenuEntry('01')	1- 2- 3-	Shall return true Shall return false No exception shall be thrown.	3- The SIM shall issue a SET UP MENU proactive command with entry '02' only.
2	Check menu state after enabling a previously disabled entry not registered to EVENT_MENU_SELECTION_HELP_REQUEST  1- enableMenuEntry('01') 2- isEventSet(EVENT_MENU_SELECTION) 3- isEventSet(EVENT_MENU_SELECTION_HELP_REQUEST)	1- 2- 3-	No exception shall be thrown. Shall return true. Shall return false.	3- The SIM shall issue a SET UP MENU proactive command with entry '01' and '02'.
3	Check menu state before enabling a previously enabled entry registered to EVENT_MENU_SELECTION_HELP_REQUEST  1- change Menu Entry '02' to indicate help supported 2- isEventSet(EVENT_MENU_SELECTION) 3- isEventSet(EVENT_MENU_SELECTION_HELP_R EQUEST) 4- disableMenuEntry('02')	2-3-	Shall return true Shall return true No exception shall be thrown	4- The SIM shall issue a SET UP MENU proactive command with entry '01' indicating help supported.
4	Check menu state after enabling a previously enabled entry registered to EVENT_MENU_SELECTION_HELP_REQUEST  1- enableMenuEntry('02'). 2- isEventSet(EVENT_MENU_SELECTION)  3- isEventSet(EVENT_MENU_SELECTION_HELP_R EQUEST)	1- 2-	No exception shall be thrown. Shall return true. Shall return true.	3- The SIM shall issue a SET UP MENU proactive command with entries '01' and '02' indicating help supported.
5	Enabling invalid entries  For ID ranging from '00' to 'FF' except '01' and '02', the applet calls enableMenuEntry(ID) method.	M	ach time a Toolkit Exception with ENU_ENTRY_NOT_FOUND ason code shall be thrown.	

# 6.2.9.5.4 Test Coverage

CRR number	Test case number
N1	1,2,3,4
N2	1,2,3,4
N3	1,2,3,4
C1	5

## 6.2.9.6 Method getEntry

Test Area Reference: API\_2\_TKR\_GETY

### 6.2.9.6.1 Conformance requirement:

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

#### Normal execution

CRRN1: returns a reference to the applet ToolkitRegistry object of the calling applet.

CRRN2: Each successive call to getEntry() method shall return the same object.

#### Parameters error

No requirements

6.2.9.6.2 Test suite files

Test Script: API\_2\_TKR\_GETY\_1.scr

Test Applet: API\_2\_TKR\_GETY\_1.java

Load Script: API\_2\_TKR\_GETY\_1.ldr

Cleanup script: API\_2\_TKR\_GETY\_1.clr

### 6.2.9.6.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Installalation	Returns a not null ToolkitRegistry	
	In the constructor, the applet instance calls the getEntry() method.	instance.	
2	Check it returns the same entry	Returns the same ToolkitRegistry	
	The applet calls the getEntry() method again.	instance as for test case 1.	

### 6.2.9.6.4 Test Coverage

CRR number	Test case number
N1	1
N2	2

### 6.2.9.7 Method getPollInterval

Test Area Reference: API\_2\_TKR\_GPOL

### 6.2.9.7.1 Conformance requirement:

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

public short getPollInterval()

### Normal execution

CRRN1: shall return a value between 1 and 15300 if applet is registered to EVENT\_STATUS\_COMMAND event.

CRRN2: shall return POLL\_NO\_DURATION value (0) if the toolkit applet is not registered to EVENT\_STATUS\_COMMAND event.

### Parameters error

No requirements.

### Context errors

No requirements.

6.2.9.7.2 Test suite files

Test Script: API\_2\_TKR\_GPOL\_1.scr

Test Applet: API\_2\_TKR\_ GPOL\_1.java

Load Script: API\_2\_TKR\_ GPOL\_1.ldr

Cleanup script: API\_2\_TKR\_ GPOL\_1.clr

### 6.2.9.7.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Applet isn't registered to EVENT_STATUS_COMMAND	Shall return 0.	
2	Requesting max duration		
	1- requestPollInterval(15300)	1- No exception shall be thrown.	
	2- Reset and initialize the card	3- Shall return a value between 1	
	3- getPollInterval()	and 15300.	
3	Requesting System Duration		
	<pre>1-     requestPollInterval(POLL_SYSTEM_DURATI ON)</pre>	1- No exception shall be thrown.	
	2- Reset and initialize the card	3- Shall return a value between 1 and 15300.	
	3- getPollInterval().		
4	Requesting no Duration		
	1- requestPollInterval(POLL_NO_DURATION)		
	2- Reset and initialize the card	<ul><li>1- No exception shall be thrown.</li><li>3- Shall return 0.</li></ul>	
	3- getPollInterval().		

### 6.2.9.7.4 Test Coverage

CRR number	Test case number	
N1	2,3	
N2	1,4	

### 6.2.9.8 Method initMenuEntry

Test Area Reference: API\_2\_TKR\_IMET\_BSSBZBS

### 6.2.9.8.1 Conformance requirement:

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

### Normal execution

CRRN1: The SIM Toolkit Framework shall automatically update the menu stored in the ME by issuing a SETUP MENU proactive command. The later will reflect the changes done for the entry. The SIM Toolkit Framework shall use the data of the EF sume file in order to build the SET UP MENU command.

CRRN2: a call to isEventSet() method on EVENT\_MENU\_SELECTION shall return true after the 1<sup>st</sup> successful call (without an exception).

CRRN3: if helpSupported was true then a following call to isEventSet() method on EVENT\_MENU\_SELECTION\_HELP\_REQUEST event shall return true .

CRRN4: if helpSupported was true then after the completion of the SETUP MENU command, if an ENVELOPE(MENU\_SELECTION\_HELP\_REQUEST) command is received by the SIM for this entry, then the SIM Toolkit framework shall trigger the applet.

CRRN5: if help supported was true, the SIM Toolkit Framework shall issue a SETUP MENU command with command qualifier = '80'

CRRN6: if helpSupported was false and there isn't any menu entry supporting help then a call to isEventSet() method on EVENT\_MENU\_SELECTION\_HELP\_REQUEST event shall return false.

CRRN7: The SIM Toolkit Framework shall supply in the SET UP MENU command with the icon identifier provided in the icon identifier list within the item icon identifier list Simple TLV if all the applets registered to the EVENT\_MENU\_SELECTION provide it.

CRRN8: The SIM Toolkit Framework shall set in the SET UP MENU command with the Icon list qualifier transmitted to the ME as 'icon is not self explanatory' if one of the applet registered prefers this qualifier.

CRRN9: If Next Action Indicator was different from '00', the SIM Toolkit Framework shall issue a SETUP MENU proactive command containing an Items Next Action Indicator simple TLV with the comprehension flag set to 0.

CRRN10: After the completion of the SETUP MENU command, if an ENVELOPE (MENU\_SELECTION) command is received by the SIM for this identifier, then the SIM Toolkit framework shall trigger the applet.

#### Parameters error

CRRP1: Shall throw java.lang.NullPointerException - if menuEntry is null

- CRRP2: Shall throw java.lang.ArrayIndexOutOfBoundsException if offset would cause access outside array bounds
- $CRRP3: Shall\ throw\ java.lang. ArrayIndexOutOfBounds Exception\ -\ if\ length\ would\ cause\ access\ outside\ array\ bounds$
- CRRP4:Shall throw java.lang.ArrayIndexOutOfBoundsException if both offset and length would cause access outside array bounds

#### Context errors

CRRC1: Shall throw ALLOWED\_LENGTH\_EXCEEDED if the menu entry string is bigger than the allocated space

CRRC2: Shall throw REGISTRY\_ERROR if the menu entry cannot be initialised (eg no more item data in applet loading parameter)

#### 6.2.9.8.2 Test suite files

Additional requirements for the GSM personalisation:

- content of EF sume shall be:
  - Title Alpha Identifier: "TOOLKIT TEST"
  - Test case trigger: 1- Applet instantiation
    - 2- Menu selection
    - 3- Menu selection Help Supported

Test Script: API\_2\_TKR\_IMET\_BSSBZBS\_1.scr

Test Applet: API\_2\_TKR\_IMET\_BSSBZBS\_1.java

Installation parameter:

Same as default applet but with:

- Maximum text length for a menu entry: 15

- Maximum number of menu entries: 6

Position / Identifier for each menu entry: '01'/'01', '02'/'02', '03'/'03', '04'/'04', '05'/'05', and '06'/'06'

Load Script: API\_2\_TKR\_IMET\_BSSBZBS\_1.ldr

Cleanup script: API\_2\_TKR\_IMET\_BSSBZBS\_1.clr

## 6.2.9.8.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	NULL as parameter to menuEntry	Shall throw a	
2	MenuEntry = NULL  Offset > menuEntry.length	java.lang.NullPointerException.	
-	Onset > menucha y.lenga	Shall throw	
	MenuEntry = "ToolkitTest"	java.lang.ArrayIndexOutOfBoundsE	
	Offset = 1112 Length = 0	xception.	
3	Offset < 0	Shall throw	
	MenuEntry = "ToolkitTest"	java.lang.ArrayIndexOutOfBoundsE	
	Offset = -1	xception.	
4	Length = 11  Offset = 255		
-	Oliset = 255	Shall throw	
	MenuEntry = "ToolkitTest" Offset = 255	java.lang.ArrayIndexOutOfBoundsE	
	Length = 11	xception.	
5	Length = menuEntry.length+1		
		Shall throw	
	MenuEntry = "ToolkitTest" Offset = 0	java.lang.ArrayIndexOutOfBoundsException.	
	Length = 12	Acception.	
6	Length < 0	Shall throw	
	MenuEntry = "ToolkitTest"	java.lang.ArrayIndexOutOfBoundsE	
	Offset = 0	xception.	
7	Length = -1 Offset + length > menuEntry.length		
1		Shall throw	
	<pre>MenuEntry = "ToolkitTest" Offset = 11</pre>	java.lang.ArrayIndexOutOfBoundsE	
	Length = 1	xception.	
8	MenuEntry.length > size allocated at loading		
0	for each menu entry		
	-	ALLOWED_LENGTH_EXCEEDED	
	<pre>MenuEntry = "ToolkitTest impossible" Offset = 0</pre>	ToolkitException is thrown.	
	Length = 16		
9	Successful call,		
3	menuEntry is the whole buffer		
	·		
	1- initMenuEntry()		
	MenuEntry = "TOOLKIT TEST 1"	1- No exception shall be thrown,	
	Offset = 0 Length = 14	Shall return ID '01'.	
	NextAction = '00'	2- Shall return true.	
	<pre>HelpSupported = false IconQualifier = '00'</pre>		
	IconIdentifier = 0		
	2- isEventSet(EVENT_MENU_SELECTION)		
10	Successful call, menuEntry part of a buffer		
	menucinity part of a buffer		
	1- initMenuEntry()		
	MenuEntry = "1234567TOOLKIT TEST 2"		
	Offset = 7	1- No exception shall be	
	Length = 14 NextAction = '00'	thrown,Shall return ID '02'.	
	HelpSupported = false	2- Shall return false.	
	<pre>IconQualifier = '00' IconIdentifier = 0</pre>		
	2- isEventSet(EVENT_MENU_SELECTION_HELP_R		
	EQUEST)		

	]		
11	Successful call, menuEntry with help supported		
	1- initMenuEntry()  MenuEntry = "TOOLKIT TEST 3"  Offset = 0 Length = 14  NextAction = '00' HelpSupported = true IconQualifier = '00' IconIdentifier = 0  2-	<ul><li>1- No exception shall be thrown,</li><li>Shall return ID '03'</li><li>2- Shall return true.</li></ul>	
12	Successful call, menuEntry with an Icon  MenuEntry = "TOOLKIT TEST 4"  Offset = 0 Length = 14 NextAction = '00' HelpSupported = false IconQualifier = '01' [icon not self explanatory] IconIdentifier = 1	No exception shall be thrown.     Shall return ID '04'	
13	Successful call, menuEntry with a next action indication  MenuEntry = "TOOLKIT TEST 5" Offset = 0 Length = 14 NextAction = '24' [Select Item] HelpSupported = false IconQualifier = '00' IconIdentifier = 0	<ul><li>1- No exception shall be thrown.</li><li>2- Shall return ID '05'</li></ul>	
14	Successful call, length = 0	No exception shall be thrown, Shall return ID '06'.	
	<pre>initMenuEntry()  MenuEntry = "ToolkitTest" Offset = 0 Length = 0 NextAction = '00' HelpSupported = false IconQualifier = '00' IconIdentifier = 0</pre>		
15	<pre>Initialize more entry than allocated at loading MenuEntry = "ToolkitTest" Offset = 0 Length = 11</pre>	REGISTRY_ERROR ToolkitException is thrown.	
16	Dynamic update of the menu stored by the ME Fetch		Card shall Send a SetUpMenu Proactive command: [CommandQualifier]=help supported [Alphald]="TOOLKIT TEST" [ItemId=1] = "TOOLKIT TEST 1" [ItemId=2] = "TOOLKIT TEST 2" [ItemId=3] = "TOOLKIT TEST 3" [ItemId=4] = "TOOLKIT TEST 4" [ItemId=5] = "TOOLKIT TEST 4" [ItemId=6] = ""

			[ItemsNextAction]=0600000 0002400
17	Check Applet is triggered by ENVELOPE(MENU_SELECTION) command  Menu Entry ID = '01'	Applet is trigged by an ENVELOPE(MENU_SELECTION) command & Menu Entry ID = '01'	
18	Check Applet is triggered by ENVELOPE(MENU_SELECTION) command  Menu Entry ID = '02'	Applet is trigged by an ENVELOPE(MENU_SELECTION) command & Menu Entry ID = '02'	
19	Check Applet is triggered by ENVELOPE(MENU_SELECTION) command  Menu Entry ID = '03'	Applet is trigged by an ENVELOPE(MENU_SELECTION) command & Menu Entry ID = '03'	
20	Check Applet is triggered by ENVELOPE(MENU_SELECTION) command  Menu Entry ID = '04'	Applet is trigged by an ENVELOPE(MENU_SELECTION) command & Menu Entry ID = '04'	
21	Check Applet is triggered by ENVELOPE(MENU_SELECTION) command  Menu Entry ID = '05'	Applet is trigged by an ENVELOPE(MENU_SELECTION) command & Menu Entry ID = '05'	
22	Check Applet is triggered by ENVELOPE (MENU_SELECTION_HELP_REQUEST) command		
	Menu Entry ID = '03'	Applet is trigged by an ENVELOPE(MENU_SELECTION_HELP_REQUEST) command & Menu Entry ID = '03'	
23	Check Applet is triggered by ENVELOPE(MENU_SELECTION) command  Menu Entry ID = '06'	Applet is trigged by an ENVELOPE(MENU_SELECTION) command & Menu Entry ID = '06'	

# 6.2.9.8.4 Test Coverage

CRR number	Test case number
N1	16
N2	9
N3	11
N4	22
N5	11,16
N6	10
N7	12,16
N8	12,16
N9	13,16
N10	9,10,11,12,13,14,17,18,19,20,2 1,23
P1	1
P2	2,3,4
P3	5,6
P4	7
C1	8
C2	14

### 6.2.9.9 Method is Event Set

Test Area Reference: API\_2\_TKR\_IEVSB

### 6.2.9.9.1 Conformance requirement:

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

public boolean isEventSet(byte event)

#### 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 isn't set in the Toolkit Registry for the applet

#### Parameters error

No requirements.

#### Context errors

No requirements

6.2.9.9.2 Test suite files

Test Script: API\_2\_TKR\_IEVSB\_1.scr

Test Applet: API\_2\_TKR\_ IEVSB \_1.java

Installation parameter:

Same as default applet but with:

- Maximum text length for a menu entry: 15

- Maximum number of menu entries: 1

- Position / Identifier for each menu entry: '01'/'01'

- Maximum number of timers:

Load Script: API\_2\_TKR\_ IEVSB\_1.ldr

Cleanup script: API\_2\_TKR\_ IEVSB\_1.clr

# 6.2.9.9.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Events aren't set		•
	Applet calls isEventSet() for each events ranging from 1 to 127 excepted EVENT_FORMATTED_SMS_PP_ENV and EVENT_MENU_SELECTION.	Shall return false each time.	
2	For EVENT_FORMATTED_SMS_PP_ENV		
	isEventSet (EVENT_FORMATTED_SMS_PP_ENV)	Shall return true.	
3	For EVENT_MENU_SELECTION		
	isEventSet (EVENT_MENU_SELECTION)	Shall return true	
4	After clearing EVENT_FORMATTED_SMS_PP_ENV		
	1- clearEvent(EVENT_FORMATTED_SMS_PP_ENV)	1- No exception shall be thrown.	
	2-	2- Shall return false.	
	isEventSet(EVENT_FORMATTED_SMS_PP_ENV)	2 Shan retarm raise.	
5	Setting events		
5	Setting events		
	1- For each SUPPORTED and ALLOWED events	1.1- No exception shall be	
	<pre>for setEvent(), applet calls:</pre>	thrown.	
	1.1- setEvent() method	1.2- Shall return true each time.	
	1.2- isEventSet() method.	1.2 Shan return true each time.	
6	For		
	EVENT_MENU_SELECTION_HELP_REQUEST		
	1- isEventSet	1- Shall return false.	
	(EVENT_MENU_SELECTION_HELP_REQUEST)  2- call changeMenuEntry with help		
	supported	3- Shall return true	
	3- isEventSet (EVENT_MENU_SELECTION_HELP_REQUEST)		
7	For EVENT_TIMER_EXPIRATION		
	   1- isEventSet(EVENT_TIMER_EXPIRATION)	1- Shall return false.	
	2- call allocateTimer()	3- Shall return true	
	3- isEventSet(EVENT_TIMER_EXPIRATION)		
8	For EVENT_STATUS_COMMAND		
	1- isEventSet(EVENT_STATUS_COMMAND)	1- Shall return false.	
	2- call	Chair totalir laise.	
	requestPollInterval(POLL_SYSTEM_DURATION)	3- Shall return true	
	3- isEventSet(EVENT_STATUS_COMMAND)		

# 6.2.9.9.4 Test Coverage

CRR number	Test case number	
N1	2,3,4,5,6,7,8	
N2	1,5,6,7,8	

### 6.2.9.10 Method releaseTimer

Test Area Reference: API\_2\_TKR\_RTIMB

### 6.2.9.10.1 Conformance requirement:

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

#### Normal execution

CRRN1: if it was the last allocated timer for the applet then a following call to isEventSet() method for EVENT\_TIMER\_EXPIRATION should return false.

CRRN2: if applet has timers allocated then a call to isEventSet(EVENT\_TIMER\_EXPIRATION) shall return true.

CRRN3: After invocation of the method the indicated timer shall be released and available for reallocation.

CRRN4: The applet is deregistered of the EVENT\_TIMER\_EXPIRATION for the indicated Timer Identifier.

#### Parameters error

CRRP1: shall throw a ToolkitException with INVALID\_TIMER\_ID reason if the timer identifier isn't between 1 and 8.

#### Context errors

CRRC1: shall throw a ToolkitException with INVALID\_TIMER\_ID reason if the timer is valid but isn't allocated to this applet.

6.2.9.10.2 Test suite files

Test Script: API\_2\_TKR\_RTIMB\_1.scr

Test Applet: API\_2\_TKR\_RTIMB\_1.java

Installation parameter:

As Default, except max timer which is set to 8.

Load Script: API\_2\_TKR\_RTIMB\_1.ldr

Cleanup script: API\_2\_TKR\_RTIMB\_1.clr

### 6.2.9.10.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Releasing not allocated timers  For each timer ID ranging from '00' to 'FF', applet calls releaseTimer(ID).	Each time, method shall throw a ToolkitException with reason code INVALID_TIMER_ID.	•
2	Releasing allocated timers		
	1- 8 * allocateTimer() .	<ul><li>1- No exception shall be thrown.</li><li>2- Each time, no exception shall be</li></ul>	
	2- 7 * releaseTimer(id).	thrown.	
	3- isEventSet(EVENT_TIMER_EXPIRATION)	3- Shall return true	
3	Releasing invalid timer ID	1- Shall throw a ToolkitException	
	1- releaseTimer('FF') method	with INVALID_TIMER_ID reason code.	
	2- isEventSet(EVENT_TIMER_EXPIRATION)	2- Shall return true.	
4	Releasing last timer		
	1- releaseTimer(last timer allocated)	1- No exception shall be thrown.	
	2- isEventSet(EVENT_TIMER_EXPIRATION)	2- Shall return false.	
5	Checking we can allocate timers after they have been released		
	8 * allocateTimer().	No exception shall be thrown.	
6	Releasing all timers.		
	For 1 to 8, releaseTimer(id).	No exception shall be thrown.	
7	Checking applet isn't triggered by ENVELOPE(TIMER_EXPIRATION) command Send ENVELOPE(TIMER_EXPIRATION)	Applet is not trigged by an ENVELOPE(TIMER_EXPIRATION) command	

### 6.2.9.10.4 Test Coverage

CRR number	Test case number	
N1	4	
N2	2,3	
N3	5,6	
N4	7	
P1	1,3	
C1	Framework	

# 6.2.9.11 Method requestPollInterval

Test Area Reference: API\_2\_TKR\_RPOLS

### 6.2.9.11.1 Conformance requirement:

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

### Normal execution

CRRN1: If duration is between 1 and 15300 or equal to POLL\_SYSTEM\_DURATION, the applet registers to EVENT\_STATUS\_COMMAND.

CRRN2: If duration is POLL\_NO\_DURATION, the applet is deregistered from EVENT\_STATUS\_COMMAND.

#### Parameters error

CRRP1: the method should throw a ToolkitException with REGISTRY\_ERROR reason if duration is > 15300 or is < -1 (POLL\_SYSTEM\_DURATION).

#### Context errors

No Requirements.

6.2.9.11.2 Test suite files

Test Script: API\_2\_TKR\_RPOLS\_1.scr

Test Applet: API\_2\_TKR\_RPOLS\_1.java

Load Script: API\_2\_TKR\_RPOLS\_1.ldr

Cleanup script: API\_2\_TKR\_RPOLS\_1.clr

### 6.2.9.11.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Requesting a value between 1 and 15300 s		
	1- isEventSet(EVENT_STATUS_COMMMAND)	1- Shall return false.	
	2- For duration ranging from 1 to 15300, requestPollInterval(duration).	2- No exception shall be thrown.	
	3- isEventSet(EVENT_STATUS_COMMAND).	3- Shall return true.	
2	<ul><li>1- Check Applet is triggered by a STATUS commandreset and card initialisation</li><li>2- Send STATUS command</li></ul>	2- Applet is trigged by a STATUS command	
3	Requesting POLL SYSTEM DURATION		
	1- isEventSet(EVENT_STATUS_COMMMAND).	1- Shall return true.	
	2- RequestPollInterval(POLL_SYSTEM_DURATI	2- No exception shall be thrown.	
	ON).  3- IsEventSet(EVENT_STATUS_COMMAND).	3- Shall return true.	
4	Check Applet is triggered by a STATUS command  1- reset and card initialisation 2- Send STATUS command	2- Applet is trigged by a STATUS command	
5	Requesting invalid duration  For duration ranging from 15301 to 15305, -2 requestPollInterval(duration)	Each time, a ToolkitException with REGISTRY_ERROR reason code, shall be thrown.	
6	Requesting POLL NO DURATION		
	1- isEventSet(EVENT_STATUS_COMMMAND)	1- Shall return true.	
	2- requestPollInterval(POLL_NO_DURATION)	2- No exception shall be thrown.	
	3- isEventSet(EVENT_STATUS_COMMAND)	3- Shall return false.	

7	Check Applet isn't triggered by an STATUS		
	II recet and dard initialization	2- Applet is not trigged by a STATUS command	

### 6.2.9.11.4 Test Coverage

CRR number	Test case number	
N1	1,2,3,4	
N2	6,7	
P1	5	

### 6.2.9.12 Method setEvent

Test Area Reference: API\_2\_TKR\_SEVTB

### 6.2.9.12.1 Conformance Requirement:

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

#### Normal execution

CRRN1: a following call to isEventSet() method with the same event id shall answer true for the applet.

CRRN2: the SIM Toolkit Framework shall trigger the applet if an occurrence of the set event happens.

CRRN3: this method shall accept all the events defined in GSM 0319 excepted: EVENT\_MENU\_SELECTION, EVENT\_MENU\_SELECTION\_HELP\_REQUEST, EVENT\_TIMER\_EXPIRATION, EVENT\_STATUS\_COMMAND

#### Parameters error

CRRP1: shall throw a ToolkitException with EVENT\_NOT\_SUPPORTED reason if event is 0 or event ranges from 20 to 127.

CRRP2: shall throw a ToolkitException with EVENT\_NOT\_ALLOWED reason if event is EVENT\_MENU\_SELECTION.

CRRP3: shall throw a ToolkitException with EVENT\_NOT\_ALLOWED reason if event is EVENT\_MENU\_SELECTION\_HELP\_REQUEST.

CRRP4: shall throw a ToolkitException with EVENT\_NOT\_ALLOWED reason if event is EVENT\_TIMER\_EXPIRATION.

CRRP5: shall throw a ToolkitException with EVENT\_NOT\_ALLOWED reason if event is EVENT\_STATUS\_COMMAND.

#### Context errors

CRRC1: shall throw a ToolkitException with EVENT\_ALREADY\_REGISTERED if event is EVENT\_CALL\_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 is already registered to it.

6.2.9.12.2 Test suite files

Test Script: API\_2\_TKR\_SEVTB\_1.scr

Test Applet: 1. API\_2\_TKR\_SEVTB\_1.java

2. API\_2\_TKR\_SEVTB\_2.java

Load Script: API\_2\_TKR\_SEVTB\_1.ldr

The load script installs the 2 instances.

Cleanup script: API\_2\_TKR\_SEVTB\_1.clr

### 6.2.9.12.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
1	Applet 1 is triggered by ENVELOPE(SMS_PP_FORMATTED) command.  Send ENVELOPE(SMS_PP_FORMATTED)	Applet 1 shall be triggered	
	Catting ALLOWED and CURRORTED avanta		
2	Setting ALLOWED and SUPPORTED events  1- For all events defined in GSM 0319 (from 1 to 19) and allowed: EVENT_PROFILE_DOWNLOAD, EVENT_FORMATTED_SMS_PP_ENV, EVENT_FORMATTED_SMS_PP_ENV, EVENT_UNFORMATTED_SMS_PP_UPD, EVENT_UNFORMATTED_SMS_PP_UPD, EVENT_UNFORMATTED_SMS_PP_UPD, EVENT_UNFORMATTED_SMS_CB, EVENT_CALL_CONTROL_BY_SIM, EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM, EVENT_EVENT_DOWNLOAD_MT_CALL, EVENT_EVENT_DOWNLOAD_CALL_CONNECTED, EVENT_EVENT_DOWNLOAD_LOCATION_STATUS, EVENT_EVENT_DOWNLOAD_USER_ACTIVITY, EVENT_EVENT_DOWNLOAD_IDLE_SCREEN_AVAILABL E, EVENT_EVENT_DOWNLOAD_CARD_READER_STATUS  1.1- clearEvent(event)  1.2- isEventSet(event)  1.4- isEventSet(event)  1.5- clearEvent(event)	<ul> <li>1.1- No exception shall be thrown.</li> <li>1.2- Shall return false.</li> <li>1.3- No exception shall be thrown.</li> <li>1.4- Shall return true.</li> <li>1.5- No exception shall be thrown.</li> </ul>	
3	Event 0  Call setEvent(0)	Shall throw a ToolkitException with EVENT_NOT_SUPPORTED reason	
		code.	
4	Events from 20 to 127  Call setEvent(event) with event = 20 to 127	Shall throw a ToolkitException with EVENT_NOT_SUPPORTED reason code.	
5	Setting EVENT_MENU_SELECTION  Call setEvent(EVENT_MENU_SELECTION)	Shall throw a ToolkitException with EVENT_NOT_ALLOWED reason code.	
6	Setting EVENT_MENU_SELECTION_HELP_REQUEST  Call setEvent(EVENT_MENU_SELECTION_HELP_REQUES T)	Shall throw a ToolkitException with EVENT_NOT_ALLOWED reason code.	
7	Setting EVENT_TIMER_EXPIRATION	Shall throw a ToolkitException with	

	Call setEvent(EVENT_TIMER_EXPIRATION)	EVENT_NOT_ALLOWED reason code.	
8	Setting EVENT_STATUS_COMMAND  Call setEvent(EVENT_STATUS_COMMAND)	Shall throw a ToolkitException with EVENT_NOT_ALLOWED reason code.	
9	Check applet is triggered by an ENVELOPE(CALL_CONTROL) setEvent(EVENT_CALL_CONTROL_BY_SIM) Trigger the applet	Applet is trigged by an ENVELOPE(CALL_CONTROL)	
10	Check applet is triggered by an ENVELOPE(MO_SHORT_MESSAGE_CONTRO L) setEvent(EVENT_MO_SHORT_MESSAGE_CONTROL_B Y_SIM) Trigger the Applet	Applet is trigged by an ENVELOPE(MO_SHORT_MESSAG E_CONTROL)	
11	Applet 2 is triggered by ENVELOPE(SMS_ PP_DOWNLOAD) command. Trigger the applet 2	Applet 2 is trigged by an ENVELOPE(SMS_ PP_DOWNLOAD) command	
12	Applet 2 registers to CALL_CONTROL but it is already assigned setEvent(EVENT_CALL_CONTROL_BY_SIM)	Shall throw a ToolkitException with EVENT_ALREADY_REGISTERED reason code.	
13	Applet 2 registers to MO_MESSAGE_CONTROL but it is already assigned setEvent(EVENT_MO_SHORT_MESSAGE_CONTROL_B Y_SIM)	Shall throw a ToolkitException with EVENT_ALREADY_REGISTERED reason code.	

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### 6.2.9.12.4 Test Coverage

CRR number	Test case number	
N1	2	
N2	1, 9,10,11	
N3	1, 9,10,11 2,5,6,7,8 3,4	
P1	3,4	
P2	5	
P3	6	
P4	7	
P5	8	
C1	12	
C2	13	

### 6.2.9.13 Method setEventList

Test Area Reference: API\_2\_TKR\_SEVL\_BSS

### 6.2.9.13.1 Conformance Requirement:

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

#### Normal execution

CRRN1: for all events set successfully by this method, a call to isEventSet() method should return true.

CRRN2: the SIM Toolkit Framework shall trigger the applet if an occurrence of one of the successfully registered events happens.

CRRN3: this method shall accept all the events defined in GSM 0319 excepted: EVENT\_MENU\_SELECTION, EVENT\_MENU\_SELECTION\_HELP\_REQUEST, EVENT\_TIMER\_EXPIRATION, EVENT STATUS COMMAND.

#### Parameters error

CRRP1: shall throw a java.lang.NullPointerException if eventList is null.

CRRP2: shall throw a java.lang.ArrayIndexOutOfBoundsException if offset would cause access outside array bounds.

CRRP3: shall throw a java.lang.ArrayIndexOutOfBoundsException if length would cause access outside array bounds.

CRRP4: shall throw a java.lang.ArrayIndexOutOfBoundsException if both offset and length would cause access outside array bounds.

CRRP5: shall throw a ToolkitException with EVENT\_NOT\_SUPPORTED reason if event is 0 or event ranges from 20 to 127.

CRRP6: shall throw a ToolkitException with EVENT\_NOT\_ALLOWED reason if eventList contains EVENT\_MENU\_SELECTION.

CRRP7: shall throw a ToolkitException with EVENT\_NOT\_ALLOWED reason if eventList contains EVENT\_MENU\_SELECTION\_HELP\_REQUEST.

CRRP8: shall throw a ToolkitException with EVENT\_NOT\_ALLOWED reason if eventList contains EVENT\_TIMER\_EXPIRATION.

CRRP9: shall throw a ToolkitException with EVENT\_NOT\_ALLOWED reason if eventList contains EVENT STATUS COMMAND.

#### Context errors

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

CRRC2: 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.

6.2.9.13.2 Test suite files

Test Script: API\_2\_TKR\_SEVL\_BSS\_1.scr

Test Applet: 1. API\_2\_TKR\_ SEVL\_BSS \_1.java

2. API\_2\_TKR\_ SEVL\_BSS \_2.java

Load Script: API\_2\_TKR\_ SEVL\_BSS\_1.ldr

The load script installs the 2 instances.

Cleanup script: API\_2\_TKR\_ SEVL\_BSS\_1.clr

#### 6.2.9.13.3 Test Procedure

ld	Description		API Expectation	APDU Expectation
1	Applet 1 Registering all eventList buffer	1-	No exception shall be thrown.	
	<pre>EventList = all allowed events defined in GSM 0319:</pre>	2-	No exception shall be thrown.	
	EVENT_PROFILE_DOWNLOAD, EVENT_FORMATTED_SMS_PP_ENV,	3-	Each time shall return true.	

	EVENT_FORMATTED_SMS_PP_UPD, EVENT_UNFORMATTED_SMS_PP_ENV, EVENT_UNFORMATTED_SMS_PP_UPD, EVENT_UNFORMATTED_SMS_CB, EVENT_CALL_CONTROL_BY_SIM, EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM, EVENT_EVENT_DOWNLOAD_MT_CALL, EVENT_EVENT_DOWNLOAD_CALL_DISCONNECTED, EVENT_EVENT_DOWNLOAD_LOCATION_STATUS, EVENT_EVENT_DOWNLOAD_USER_ACTIVITY, EVENT_EVENT_DOWNLOAD_IDLE_SCREEN_AVAILABLE, EVENT_EVENT_DOWNLOAD_CARD_READER_STATUS  1- For each event in EventList clearEvent(event)	4- No exception shall be thrown.	
	2- setEventList(eventList)		
	Offset = 0 Length = eventList.lentgh		
	<pre>3- For all events in eventList isEventSet(event)</pre>		
	4- For each event in EventList clearEvent(event)		
2	Registering part of eventList buffer		
	EventList = all allowed events defined in GSM 0319 (see test case 1).		
	1- For each event in EventList clearEvent(event)	1- No exception shall be thrown.	
	2- setEventList(eventList, offset, length)	2- No exception shall be thrown.	
	Offset > 0 Length = eventList.lentgh - offset	3- Each time shall return true for events ranging from offset to offset+length else shall return false.	
	<pre>3- For all events in eventList: isEventSet(event)</pre>	4- No exception shall be thrown.	
	4- For each event in EventList: clearEvent(event)		
3	Null buffer	01. ##	
	EventList = null	Shall throw a java.lang.NullPointerException Exception	
4	Out of bounds offset	Shall throw a	
	Offset = eventList.length Length = 1	java.lang.ArrayIndexOutOfBounds Exception	
5	Out of bounds and big offset	Shall throw a	
	Offset = 255 Length = 1	java.lang.ArrayIndexOutOfBounds Exception	
6	Offset < 0	Shall throw a	
	Offset = -1 Length = 1	java.lang.ArrayIndexOutOfBounds Exception	
7	Out of bounds length	Shall throw a	
	Offset = 0 Length = eventList.length + 1	java.lang.ArrayIndexOutOfBounds Exception	
8	Out of bounds and big length	Shall throw a java.lang.ArrayIndexOutOfBounds	

	Offset = 0	Exception	
	Length = 255		
9	Length < 0 Offset = 0 Length = -1	Shall throw a java.lang.ArrayIndexOutOfBounds Exception	
10	Out of bounds offset + Length  Offset + length > eventList.length + 1	Shall throw a java.lang.ArrayIndexOutOfBounds Exception	
11	Event 0  Call setEventList(eventList) with eventList indicating event 0	Shall throw a ToolkitException with EVENT_NOT_SUPPORTED reason code.	
12	Events from 20 to 127  Call setEventList(eventList) with eventList indicating all the events from 20 to 127	Shall throw a ToolkitException with EVENT_NOT_SUPPORTED reason code.	
13	EVENT_MENU_SELECTION  Call setEventList(eventList) with eventList indicating EVENT_MENU_SELECTION	Shall throw a ToolkitException with reason code EVENT_NOT_ALLOWED.	
14	EVENT_MENU_SELECTION_HELP_REQUEST  Call setEventList(eventList) with eventList indicating  EVENT_MENU_SELECTION_HELP_REQUEST	Shall throw a ToolkitException with reason code EVENT_NOT_ALLOWED.	
15	EVENT_TIMER_EXPIRATION  Call setEventList(eventList) with eventList indicating  EVENT_TIMER_EXPIRATION	Shall throw a ToolkitException with reason code EVENT_NOT_ALLOWED.	
16	EVENT_STATUS_COMMAND  Call setEventList(eventList) with eventList indicating EVENT_STATUS_COMMAND	Shall throw a ToolkitException with reason code EVENT_NOT_ALLOWED.	
17	Setting EVENT_CALL_CONTROL_BY_SIM  setEventList(List, 0, 2) with List containing EVENT_CALL_CONTROL_BY_SIM & EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM	Shall not throw an exception	
18	Check applet is triggered by an ENVELOPE(CALL_CONTROL)  Trigger the applet	Applet is trigged by an ENVELOPE(CALL_CONTROL)	
19	Check applet is triggered by an ENVELOPE(MO_SHORT_MESSAGE_CONTROL ) Trigger the applet	Applet is trigged by an ENVELOPE(MO_SHORT_MESSA GE_CONTROL)	
20	Applet 2 registers to CALL_CONTROL but it is already assigned setEventList(MonoEventList,0,1) with MonoEventList containing EVENT_CALL_CONTROL_BY_SIM	Shall throw a ToolkitException with EVENT_ALREADY_REGISTERED reason code.	
21	Applet 2 registers to  MO_SHORT_MESSAGE_CONTROL  but it is already assigned  setEventList(MonoEventList,0,1) with  MonoEventList containing  EVENT_MO_SHORT_MESSAGE_CONTROL_BY  _SIM	Shall throw a ToolkitException with EVENT_ALREADY_REGISTERED reason code.	

### 6.2.9.13.4 Test Coverage

CRR number	Test case number	
N1	1,2	
N2	17,18,19	
N3	1,2,11,12,13,14,15,16	
P1	3	
P2	4,5,6	
P3	7,8,9	
P4	10	
P5	11,12	
P6	13	
P7	14	
P8	15	
P9	16	
C1	20	
C2	21	

# 6.2.10 Class ViewHandler

It is not possible to test the methods provided by this class as it is declared 'abstract'; it will be done in the class inheriting it: EditHandler, EnvelopeHandler, ProactiveResponseHandler, ProactiveHandler.

# 6.2.11 Class ToolkitException

### 6.2.11.1 Exception Constants

Test Area Reference: API\_2\_TKE\_CONS

### 6.2.11.1.1 Conformance requirement:

There is no API, only constants.

### Normal execution

CRRN1: The Constants of the class ToolkitException shall all have the same name and value defined in the GSM03.19.

Parameters error

No requirements

#### Context errors

No requirements

### 6.2.11.1.2 Test suite files

No additional requirements for the GSM personalisation

Test Script: API\_2\_TKE\_CONS\_1.scrTest Applet: API\_2\_TKE\_CONS\_1.java

- Installation parameter: API\_2\_TKE\_CONS.install (Same as default applet)

- Load Script: API\_2\_TKE\_CONS.ldr

At the end of the script the applet is loaded but not instantiated.

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- Conversion parameter: API\_2\_TKE\_CONS.cnv

### 6.2.11.1.3 Test procedure

ld	Description
01	Check constant HANDLER_OVERFLOW=1
03	Check constant UNAVAILABLE_ELEMENT=3
04	Check constant MENU_ENTRY_NOT_FOUND=4
05	Check constant REGISTRY_ERROR=5
06	Check constant EVENT_NOT_SUPPORTED=6
07	Check constant EVENT_ALREADY_REGISTERED=7
08	Check constant OUT_OF_TLV_BOUDARIES=8
09	Check constant ME_PROFILE_NOT_AVAILABLE=9
10	Check constant ALLOWED_LENGTH_EXCEEDED=10
11	Check constant NO_TIMER_AVAILABLE=11
12	Check constant INVALID_TIMER_ID=12
13	Check constant EVENT_NOT_ALLOWED=13
14	Check constant BAD_INPUT_PARAMETER=14

### 6.2.11.1.4 Test Coverage

CRR number	Test case number	
N1	1-14	

### 6.2.11.2 Constructor ToolkitException

Test Area Reference: API\_2\_TKE\_COORS

### 6.2.11.2.1 Conformance requirement:

The constructor with following headershall compliant to its definition in the API.

public ToolkitException(short reason)

#### Normal execution

CRRN1: Construct a ToolkitException instance with the specified reason.

Parameters error

No requirements

### Context errors

No requirements

### 6.2.11.2.2 Test suite files

No additional requirements for the GSM personalisation:

Test Script: API\_2\_TKE \_COORS\_1.scr

Test Applet: API\_2\_TKE \_COORS\_1.java

Load Script: API\_2\_TKE \_COORS\_1.ldr

Cleaning script: API\_2\_TKE \_COORS\_1.clr

### 6.2.11.2.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	reason = (short) 19	ToolkitException.getReason() =	
		(short)19	

### 6.2.11.2.4 Test Coverage

CRR number	Test case number
N1	1

### 6.2.11.3 Method throwlt

Test Area Reference: API\_2\_TKE\_THITS

### 6.2.11.3.1 Conformance requirement:

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

#### Normal execution

CRRN1: Throws the JCRE instance of the ToolkitException class with the specified reason.

CRRN2: extends javacard.framework.CardRuntimeException

Parameters error

No requirements

#### Context errors

No requirements

#### 6.2.11.3.2 Test suite files

No additional requirements for the GSM personalisation:

Test Script: API\_2\_TKE\_ THITS.scr

Test Applet: API\_2\_TKE\_ THITS.java

Installation parameter: API\_2\_TKE\_ THITS.install (Same as default applet)

Load Script: API\_2\_TKE\_ THITS.ldr

Conversion parameter: API\_2\_TKE\_ THITS.cnv

### 6.2.11.3.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Throws the JCRE instance of ToolkitException with the specified reason	, ,	can't be checked because the status word's value is not specified
2	ToolkitException extends javacard.framework.CardRuntimeException	Reason (specified)	

### 6.2.11.3.4 Test Coverage

CRR number	Test case number	
N1	1	
N2	2	

# 6.3 SIM Toolkit Framework

Test Cases for the API and Framework have no interactions and are designed to be independant. The API Test Cases in the present specification shall be considered as completed although no framework tests have been agreed at the present time.

### System Handlers management

- minimum handler availability / status / content (+ response handling)

### Applet Triggering:

- for each event test separately:
  - Registration / de registration, and dynamic registration
  - triggering
  - multiple applet triggering
  - limitations
  - busy state
- Exception hiding to the mobile.
- Events combination.

Proactive commands sending

Envelope response sending

Toolkit applets installation

Access control

File system state

# Annex A (normative): Class and Methods AID numbering and acronyms

# A.1 Sim.access

Class Name	Acronyms	Numbering on 5 bits
SIMView	SVW	00001
SIMSystem	SSY	00010
SIMViewException	SVE	00011

# A.1.1 SIMView methods

Method Name	Acronyms	Numbering on 6 bits
static final Constants		000001
<pre>short increase(byte[] incr, short incrOffset, byte[]</pre>	INCR_BS_BS	000010
resp, short respOffset)		
<pre>void invalidate()</pre>	INVL	000011
<pre>void readBinary(short fileOffset, byte[] resp, short</pre>	REDBS_BSS	000100
respOffset, short respLength)		
short readRecord(short recNumber, byte mode, short	REDRSBS_BSS	000101
recOffset, byte[] resp, short respOffset, short		
respLength)		
<pre>void rehabilitate()</pre>	REHA	000110
<pre>short seek(byte mode, byte[] patt, short pattOffset,</pre>	SEEKB BSS	000111
short pattLength)		
<pre>void select(short fid)</pre>	SLCTS	001000
<pre>short select(short fid, byte[] fci, short fciOffset,</pre>	SLCTS_BSS	001001
short fciLength)		
short status(byte[] fci, short fciOffset, short	STAT_BSS	001010
fciLength)		
<pre>short updateBinary(short fileOffset, byte[] data,</pre>	UPDBS_BSS	001011
<pre>short dataOffset, short dataLength)</pre>	1	
<pre>void updateRecord(short recNumber, byte mode, short</pre>	UPDRSBS_BSS	001100
recOffset, byte[] data, short dataOffset, short	_	
dataLength)		

# A.1.2 SIMSystem methods

Method Name	Acronyms	Numbering on 6 bits
static SIMView getTheSIMView()	GETS	000001

# A.1.3 SIMViewException methods

Method Name	Acronyms	Numbering on 6 bits
static void throwIt(short reason)	THITS	000001
SIMViewException(short reason)	COORS	000010
Constants	CONS	000011

#### A.2 Sim.toolkit

Class Name	Acronyms	Numbering on 5 bits
ToolkitConstants	TKC	00001
ToolkitInterface	TKI	00010
EditHandler	EDH	00011
EnvelopeHandler	ENH	00100
EnvelopeResponseHandler	ERH	00101
MEProfile	MEP	00110
ProactiveHandler	PAH	00111
ProactiveResponseHandler	PRH	01000
ToolkitRegistry	TKR	01001
ViewHandler	VWH	01010
ToolkitException	TKE	01011

#### A.2.1 ToolkitConstants

Method Name	Acronyms	Numbering on 6 bits
Constants	CONS	000001

#### A.2.2 ToolkitInterface methods

Method Name	Acronyms	Numbering on 6 bits
<pre>void processToolkit (byte event)</pre>	PRTKB	000001

#### A.2.3 EditHandler methods

The numbering of the EditHandler methods it will be done in the classes inherit it: EnvelopeResponseHandler, ProactiveHandler, because the methods provided by this class as it is declared 'abstract'.

#### A.2.4 EnvelopeHandler methods

Method Name	Acronyms	Numbering on 6 bits	
<pre>byte getEnvelopeTag()</pre>	GENT	000001	
<pre>byte getItemIdentifier()</pre>	GIID	000010	
short getSecuredDataLength()	GSDL	000011	
short getSecuredDataOffset()	GSDO	000100	
EnvelopeHandler getTheHandler()	GTHD	000101	
short getTPUDLOffset()	GTPO	000110	
Inherited Method Name: ViewHandler			
Byte compareValue(short valueOffset,byte[] compareBuffer, short compareOffset, short compareLength)	CPRVS_BSS	000111	
Short copy(byte[] dstBuffer,short dstOffset,short dstLengt h)	COPY_BSS	001000	
Short copyValue(short valueOffset, byte[] dstBuffer,short dstOffset,short dstLength)	CPYVS_BSS	001001	
Byte findAndCompareValue(byte tag,byte[] compareBuffer,sh ort compareOffset)	FACRB_BS	001010	
Byte findAndCompareValue(byte tag,byte occurence, short valueOffset,byte[] compareBuffer,short compare Offset,short compareLength)	FACRBBS_BSS	001011	

Short FindAndCopyValue(byte tag,byte occurence,short value Offset, byte[] dstBuffer, short dstOffset, short dstLength)	FACYBBS_BSS	001100
Short findAndCopyValue(byte tag,byte[] dstBuffer,short dst Offset)	FACYB_BS	001101
Byte FindTLV(byte tag,byte occurrence)	FINDBB	001110
Short GetLength()	GLEN	001111
Byte GetValueByte(short valueOffset)	GVBYTS	010000
Short GetValueLength()	GVLEN	010001

## A.2.5 EnvelopeResponseHandler methods

Method Name	Acronym	Numbering on 6 bits	
EnvelopeResponseHandler getTheHandler()	GTHD	000001	
Void post(byte statusType)	POSTB	000010	
Void postAsBERTLV(byte statusType, byte tag)	POSTBB	000011	
Inherited Method Name: EditHandler			
Void appendArray(byte[] buffer, short offset, short length, short dstLength)	APDA	000100	
Void appendTLV(byte tag, byte value)	APTLVBB	000101	
Void appendTLV(byte tag, byte[] value, short valueOffset, short valueLength)	APTLVB_BSS	000110	
Void appendTLV(byte tag, byte value1, byte value2)	APTLVBBB	000111	
Void appendTLV(byte tag, byte value1, byte[] value2, short value2Offset, short value2Length)	APTLVBB_BSS	001000	
Void clear()	CLR	001001	
Inherited Method Name: ViewHandler			
Byte compareValue(short valueOffset,byte[] compareBuffer, short compareOffset, short compareLength)	CPRVS_BSS	001010	
Short Copy(byte[] dstBuffer,short dstOffset,short dstLengt h)	COPY_BSS	001011	
Short CopyValue(short valueOffset, byte[] dstBuffer,short dstOffset,short dstLength)	CPYVS_BSS	001100	
Byte FindAndCompareValue(byte tag,byte[] compareBuffer,sh ort compareOffset)	FACRB_BS	001101	
Byte findAndCompareValue(byte tag,byte occurence, short valueOffset,byte[] compareBuffer,short compare Offset,short compareLength)	FACRBBS_BSS	001110	
Short FindAndCopyValue(byte tag,byte occurence,short value Offset, byte[] dstBuffer, short dstOffset, short dstLength)	FACYBBS_BSS	001111	
Short findAndCopyValue(byte tag,byte[] dstBuffer,short dst Offset)	FACYB_BS	010000	
FindTLV(byte tag,byte occurrence)	FINDBB	010001	
Short GetLength()	GLEN	010010	
Byte GetValueByte(short valueOffset)	GVBYTS	010011	
Short GetValueLength()	GVLEN	010100	

#### A.2.6 MEProfile methods

Method Name	Acronym	Numbering on 6 bits
Static boolean check(byte index)	CHECB	000001
Static boolean check(byte[] mask, short offset, short length)	CHECBSS	000010

#### A.2.7 ProactiveHandler methods

Method Name	Acronyms	Numbering on 6 bits
GetTheHandler()	GTHD	000001
Init(byte type, byte qualifier, byte dstDevice)	INITBBB	000010
<pre>InitDisplayText(byte qualifier, byte dcs, byte[] buffer, short offset, short length)</pre>	INDTBB_BSS	000011
<pre>InitGetInkey(byte qualifier, byte dcs, byte[] buffer, short offset, short length)</pre>	INGKBB_BSS	000100
<pre>InitGetInput(byte qualifier, byte dcs, byte[] buffer, short offset, short length, short minRespLength, short maxRespLength)</pre>	INGPBB_BSSSS	000101
Byte send()	SEND	000110
Inherited Method Name: EditHandler		
Void appendArray(byte[] buffer, short offset, short length, short dstLength)	APDA	000111
Void appendTLV(byte tag, byte value)	APTLVBB	001000
Void appendTLV(byte tag, byte[] value, short valueOffset, short valueLength)	APTLVB_BSS	001001
Void appendTLV(byte tag, byte value1, byte value2)	APTLVBBB	001010
<pre>Void appendTLV(byte tag, byte value1, byte[] value2, short value2Offset, short value2Length)</pre>	APTLVBB_BSS	001011
Void clear()	CLR	001100
Inherited Method Name: ViewHandler		
Byte CompareValue(short valueOffset,byte[] compareBuffer,s hort compareOffset, short compareLength)	CPRVS_BSS	001101
Short Copy(byte[] dstBuffer,short dstOffset,short dstLength )	COPY_BSS	001110
Short CopyValue(short valueOffset, byte[] dstBuffer,short dstOffset,short dstLength)	CPYVS_BSS	001111
Byte FindAndCompareValue(byte tag,byte[] compareBuffer,sho rt compareOffset)	FACRB_BS	010000
Byte findAndCompareValue(byte tag,byte occurence, short valueOffset,byte[] compareBuffer,short compareO ffset,short compareLength)	FACRBBS_BSS	010001
Short FindAndCopyValue(byte tag,byte occurence,short value0 ffset, byte[] dstBuffer, short dstOffset, short dstLength)	FACYBBS_BSS	010010
Short findAndCopyValue(byte tag,byte[] dstBuffer,short dstO ffset)	FACYB_BS	010011
Byte FindTLV(byte tag,byte occurrence)	FINDBB	010100
Short GetLength()	GLEN	010101
Byte GetValueByte(short valueOffset)	GVBYTS	010110
Short GetValueLength()	GVLEN	010111

#### A.2.8 ProactiveResponseHandler methods

Method Name	Acronyms	Numbering on 6 bits	
Short CopyAdditionalInformation(byte[] dstBuffer, short dstOffset, short dstLength)	CPAI_BSS	000001	
Short copyTextString(byte[] dstBuffer, short dstOffset)	CPT_BS	000010	
Short getAdditionalInformationLength()	GTIL	000011	
Byte getGeneralResult()	GTGR	000100	
Byte getItemIdentifier()	GTII	000101	
Byte getTextStringCodingScheme()	GTCS	000110	
Short getTextStringLength()	GTTL	000111	
GetTheHandler()	GTHD	001000	
Inherited Method Name: ViewHandler			
Byte CompareValue(short valueOffset,byte[] compareBuffer,s hort compareOffset, short compareLength)	CPRVS_BSS	001001	
Short Copy(byte[] dstBuffer,short dstOffset,short dstLength )	COPY_BSS	001010	
Short CopyValue(short valueOffset, byte[] dstBuffer,short dstOffset,short dstLength)	CPYVS_BSS	001011	
Byte FindAndCompareValue(byte tag,byte[] compareBuffer,sho rt compareOffset)	FACRB_BS	001100	
Byte findAndCompareValue(byte tag,byte occurence, short valueOffset,byte[] compareBuffer,short compareO ffset,short compareLength)	FACRBBS_BSS	001101	
Short FindAndCopyValue(byte tag,byte occurence,short valueO ffset, byte[] dstBuffer, short dstOffset, short dstLength)	FACYBBS_BSS	001110	
Short findAndCopyValue(byte tag,byte[] dstBuffer,short dst0 ffset)	FACYB_BS	001111	
Byte FindTLV(byte tag,byte occurrence)	FINDBB	010000	
Short GetLength()	GLEN	010001	
Byte GetValueByte(short valueOffset)	GVBYTS	010010	
Short GetValueLength()	GVLEN	010011	

#### A.2.9 ToolkitRegistry methods

Method Name	Acronyms	Numbering on 6 bits
AllocateTimer()	ATIM	000001
<pre>changeMenuEntry(byte id, byte[] menuEntry, short</pre>	CMETB_BSSBZBS	000010
offset, short length, byte nextAction, boolean		
helpSupported, byte iconQualifier, short		
iconIdentifier)		
<pre>clearEvent(byte event)</pre>	CEVTB	000011
disableMenuEntry(byte id)	DMETB	000100
enableMenuEntry(byte id)	EMETB	000101
<pre>getEntry()</pre>	GETY	000110
<pre>getPollInterval()</pre>	GPOL	000111
<pre>initMenuEntry(byte[] menuEntry, short offset, short</pre>	IMET_BSSBZBS	001000
length, byte nextAction, boolean helpSupported, byte		
<pre>iconQualifier, short iconIdentifier)</pre>		
<pre>isEventSet(byte event)</pre>	IEVSB	001001
releaseTimer(byte timerIdentifier)	RTIM	001010
requestPollInterval(short duration)	RPOL	001011
setEvent(byte event)	SEVTB	001100
<pre>setEventList(byte[] eventList, short offset, short length)</pre>	SEVL_BSS	001101

#### A.2.10 ViewHandler methods

The numbering of the ViewHandler methods it will be done in the classes inherit it: EditHandler, EnvelopeHandler, ProactiveResponseHandler, ProactiveHandler, because the methods provided by this class as it is declared 'abstract'.

#### A.2.11 ToolkitException methods

Method Name	Acronyms	Numbering on 6 bits
Static void throwIt(short reason)	THITS	000001
ToolkitException(short reason)	COORS	000010
Constants	CONS	000011

#### Annex B (normative): Script file syntax and format description

```
CMD : Command to follow
RST : Resets and powers on the card
OFF: Powers off the card
INI : Performs the terminal profile with the following data. Afterwards, it shall perform all the
fetch and terminal response commands until there is no proactive session in progress.
REM : Used for comments
'\n': Empty lines are accepted
' ', '\t' : Can be used as separator
' \setminus ' : Continues on next line
XXX: each line beginning with 3 characters indicates other tool command.
[...] data to be checked, need to be present for an outgoing command. Bytes written as XX shall not be
checked by the APDU tool.
(...) status to be checked; when several status are valid they shall be separated by commas. Bytes
written as XX shall not be checked by the APDU tool.
REM this is an example
REM Case 1 example
CMD A0 C2 00 00 00 (91 33 , 69 XX)
REM Case 2 example
CMD A0 C2 00 00 B0 \
    [XX XX XX 55 55 XX 55](91 33 , 69 XX)
CMD A0 C2 00 00 B0 [] (91 33 , 69 XX)
CMD A0 C0 00 00 1F \
    [10 A0 00 00 00 09 00 02 FF FF FF FF 89 28 A4 05 \backslash
    02 OD CC ] \
    (90 00)
REM Case 3 example
CMD A0 C2 00 00 33
    D1 31 82 02 83 81 06 05 80 11 22 33 44 8B 24 40 \
    08 00 24 23 85 18 41 04 51 10 10 00 00 00 00 13 \
    02 70 00 00 0E 0D 00 00 00 00 28 A4 05 00 00 00 \
    00 00 00 \
    (90 00)
OFF
```

In order to show a common appearance all the scripts shall follow those format rules:

- start always with a 'RST' followed by an 'INI' command.
- The command, data to be checked and status to be checked shall be presented in the following order:

```
CMD COMMAND [EXPECTED DATA] (EXPECTED STATUS)
```

- APDU shall be presented with command (CLA INS P1 P2 P3) in one line and data (if present) in next line grouped 16 bytes per line (see example above).
- The expected data (if present) shall be presented in 16 bytes groups per line (see example above).

# Annex C (normative): Default Prepersonalisation

## C.1 General Default Prepersonalisation

This table shows the default prepersonalisation, the file system and the files' content, that the test SIM cards shall contain unless otherwise stated.

Name	Identifier	Default Value	Special Features
EFICCID	2FE2	OF FF FF FF FF FF FF FF	This value is not compliant with GSM 11.11
EF <sub>IMSI</sub>	6F07	FF FF FF FF FF FF FF	This value is not compliant with GSM 11.11
EFLP	6F05	01 FF FF FF	
EF <sub>Kc</sub>	6F20	FF FF FF FF FF FF FF 07	
EF <sub>PLMNsel</sub>	6F30	FF	
LIFLIVINSEI	01 00	FF	
EF <sub>HPLMN</sub>	6F31	05	
EF <sub>ACMmax</sub>	6F37	00 00 00	Access condition UPDATE: CHV1
EF <sub>SST</sub>	6F38	FF 3F C3 03 0C 00 FF 0F 00 33	
EF <sub>ACM</sub>	6F39	00 00 00	Access condition UPDATE: CHV1
EFPUCT	6F41	FF FF FF 00 00	Access condition UPDATE: CHV1
EF <sub>BCCH</sub>	6F74	FF	7 todaco condition of B7(12, criv)
LI BCCH	0171	FF FF FF FF	
EF <sub>ACC</sub>	6F78	00 00	
EF <sub>FPLMN</sub>	6F7B	FF	
EFLOCI	6F7E	FF FF FF FF 00 F0 00 00 00 FF 01	
EF <sub>AD</sub>	6FAD	00 FF FF	
EF <sub>Phase</sub>	6FAE	03	
EF <sub>FDN</sub>	6F3B	Default value in all the records:	Records: 5
- FDN	0.02	FF	Trocordo. o
		FF	
		FF FF FF FF	
EF <sub>SMSP</sub>	6F42	FF	Records: 1
		FF	
		FF	
EF <sub>LND</sub>	6F44	FF	Records: 1
LILIND	0144	FF	Necolus. 1
		FF FF FF FF	
EF <sub>SMSS</sub>	6F43	FF FF	
EF <sub>SMS</sub>	6F3C	1 <sup>st</sup> record: 00 FF FF(length 176)	Records: 3
		2 <sup>nd</sup> record:00 FF FF(length 176)	
		3 <sup>rd</sup> record: 00 FF FF(length 176)	
EF <sub>ADN</sub>	6F3A	FF	Records: 1
		FF	
EF <sub>CCP</sub>	6F3D	FF	
F1-CCb	0530	FF FF	
EF <sub>MSISDN</sub>	6F40	FF	Records: 1
MOIODIN		FF	
		FF FF FF FF	
EF <sub>SDN</sub>	6F41	FF	Records: 1
		FF	
	6F54	FF FF FF FF FF 85 0C 54 4F 4F 4C 4B 49 54 20 54 45	
EF <sub>SUME</sub>	υr54	53 54 FF FF FF FF	
EF <sub>CBMI</sub>	6F45	FF FF	
EF <sub>IM</sub>	4F20	FF	
LI IIVI	71 20		

The default value for the CHV1 shall be "0x31 0x31 0x31 0x31 0xFF 0xFF 0xFF 0xFF" and its state shall be 'disabled' during test applets execution.

# C.2 Sim.Access.SimView test default prepersonalisation

#### C.2.1 DF<sub>SIMTEST</sub> (SIM Test)

Identifier: '0319'

#### C.2.2 EF<sub>TNR</sub> (Transparent Never Read)

Identifier: '6F01'		Str	ucture: transparent	Mandatory	
File size: 3 bytes		Update activity: low			
Access Conditions:					
	READ		NEVER		
	UPDAT	E	ALWAYS		
	INVA	LIDATE	ADM		
	REHA	BILITATE	ADM		
Bytes	Description	1	Default Value	M/O	Length
1 – 3	Test Data		AA AA AA	М	3 bytes

#### C.2.3 EF<sub>TNU</sub> (Transparent Never Update)

Identifier: '6F02'		Str	ucture: transparent	Ma	andatory
	File size: 3 bytes	•	Update activity: low		
		Access Conditi	ions:		
	READ		ALWAYS		
	UPDA	\TE	NEVER		
	INV	ALIDATE	ADM		
	REH	IABILITATE	ADM		
Bytes	Description		Default Value	M/O	Length
1 - 3	Test Data		55 55 55	M	3 bytes

#### C.2.4 EF<sub>TARU</sub> (Transparent Always Read and Update)

Identifier: '6F03'		Str	Structure: transparent Mandatory		indatory	
	File size: 260 bytes	File size: 260 bytes Update activity: low				
	Access Conditions:					
READ		ALWAYS				
	UPDATE		ALWAYS			
		LIDATE	ADM			
	REH/	ABILITATE	ADM			
				1		
Bytes	Description		Default Value	M/O	Length	
1 - 260	Test Data		FF FF	М	260	
					bytes	

#### C.2.5 EF<sub>CNR</sub> (Cyclic Never Read)

Iden	tifier: '6F04'	Structure: cyclic Mandator			Mandatory	
R	ecord length: 3 bytes		Update	activity	: high	
	Access Conditions:					
	REAL	-	NEVER	•		
	UPDA	TE	ALWAY	S		
	INCRE	EASE	ALWAY	S		
	INV	ALIDATE	ADM			
	REH	HABILITATE	ADM			
Bytes	Description		Default Value	M/O	Length	
1 - 3	Test Data		00 00 00	М	3 bytes	
4 - 6	Test Data		00 00 00	M	3 bytes	

# C.2.6 EF<sub>CNU</sub> (Cyclic Never Update)

Iden	tifier: '6F05'	Structure: cyclic Ma			Mandatory		
R	ecord length: 3 bytes		Update	activity	: high		
	Access Conditions:						
	READ		ALWAY	-			
	UPD/	ATE	NEVER	₹			
	INCF	REASE	CHV1				
	INV	ALIDATE	ADM				
	REH	HABILITATE	ADM				
Bytes	Description		Default Value	M/O	Length		
1 - 3	Test Data		00 00 00	М	3 bytes		
4 - 6	Test Data		00 00 00	M	3 bytes		

## C.2.7 EF<sub>CNIC</sub> (Cyclic Never Increase)

Iden	Identifier: '6F06		Structure: cyclic Mandato		Mandatory		
R	ecord length: 3 bytes		Update	activity	: high		
	Access Conditions:						
	READ		ALWAY	S			
	UPDA	TE	ALWAY	S			
	INCR	EASE	NEVER	₹			
	INV	ALIDATE	ADM				
	REH	IABILITATE	ADM				
Bytes	Description		Default Value	M/O	Length		
1 - 3	Test Data		00 00 00	M	3 bytes		
4 - 6	Test Data		00 00 00	М	3 bytes		

#### C.2.8 EF<sub>CNIV</sub> (Cyclic Never Invalidate)

Ider	tifier: '6F07	Structure: cyclic			Mandatory		
R	Record length: 3 bytes		Updat	e activity	: high		
	Access Conditions:						
	READ		ALWA'	YS			
	UPDA <sup>-</sup>	ΤE	ALWA'	YS			
	INCRE	ASE	ALWA'	YS			
	INVAL	LIDATE	NEVE	R			
	REHA	BILITATE	ALWA'	YS			
Bytes	Description		Default Value	M/O	Length		
1 - 3	Test Data		00 00 00	М	3 bytes		
4 - 6	Test Data		00 00 00	M	3 bytes		

#### C.2.9 EF<sub>CNRH</sub> (Cyclic Never Rehabilitate)

Iden	tifier: '6F08'	Structure: cyclic Mandator			Mandatory		
R	ecord length: 3 bytes		Upda	te activity:	high		
	Access Conditions:						
	READ		ALWA	AYS			
	UPDA	TE	ALWA	AYS			
	INCRE	EASE	ALWA	AYS			
	INVAL	IDATE	ALWA	AYS			
	REH/	ABILITATE	NEV	ER			
Bytes	Description		Default Value	M/O	Length		
1 - 3	Test Data		00 00 00	М	3 bytes		
4 - 6	Test Data		00 00 00	М	3 bytes		

# C.2.10 EF<sub>CARU</sub> (Cyclic Always Read and Update)

Iden	tifier: '6F09'		Structure: cyclic		Mandatory		
R	ecord length: 3 bytes		Update	activity	: high		
	Access Conditions:						
	READ		ALWAY	S			
	UPDA	TE	ALWAY	S			
	INCRE	EASE	ALWAYS				
	INV	ALIDATE	ADM				
	REH	HABILITATE	ADM				
Bytes	Description		Default Value	M/O	Length		
1 - 3	Test Data	55 55 55 M		M	3 bytes		
4 - 6	Test Data		AA AA AA	М	3 bytes		

#### C.2.11 EF<sub>LNR</sub> (Linear Fixed Never Read)

Identifier: '6F0A'		Str	Structure: linear fixed Ma		<b>l</b> andatory		
Record length: 4 bytes			Update activity: low				
	Access Conditions:						
	READ		NEVER				
	UPDATI	E	ALWAYS				
	INVAI	LIDATE	ADM				
	REHA	BILITATE	ADM				
Bytes	Description		Default Value	M/O	Length		
1 - 4	Test Data - Record 1		FF FF FF FF	M	4 bytes		
5 -8	Test Data - Record 2		FF FF FF FF	M	4 bytes		

#### C.2.12 EF<sub>LNU</sub> (Linear Fixed Never Update)

Identifier: '6F0B'		Structure: linear fixed	Mandatory				
	Record length: 4 bytes	Update activity: low					
	Access Conditions:						
	READ	ALWAYS					
	UPDATE	NEVER					
	INVALIDAT	ΓE ADM					
	REHABILIT	ΓATE ADM					
Bytes	Description	Default Value	M/O	Length			
1 - 4	Test Data - Record 1	FF FF FF FF	М	4 bytes			
5 -8	Test Data - Record 2	FF FF FF	М	4 bytes			

## C.2.13 EF<sub>LARU</sub> (Linear Fixed Always Read and Update)

	Identifier: '6F0C'	Str	ructure: linear fixed	Mai	ndatory	
Record length: 4 bytes		Update activi	ty: low			
	Access Conditions:					
	READ		ALWAYS			
	UPDATI	E	ALWAYS			
	INVAL	LIDATE	ADM			
	REHA	BILITATE	ADM			
Bytes	Description		Default Value	M/O	Length	
1 - 4	Test Data - Record 1		55 55 55 55	M	4 bytes	
5 -8	Test Data - Record 2		AA AA AA AA	М	4 bytes	

# Annex D (normative): sim.test.util package and loading, testing and cleaning script examples.

#### See attached files:

- Annex\_D\_TestToolkitApplet.zip
- Annex\_D\_Examples.zip

# Annex E (normative): Test Area files.

The zip file containing script, applet, load and cleanup files for all Test Areas is expected to be included in the subsequent version of this document.

# Annex F (informative): Change history

The table below indicates all changes that have been made to the present document since drafting work began.

Change history								
Date	TSG#	TSG Doc	CR	Rev	Cat	Subject/Comment	Old	New
2000-10	-	-				Draft presented at T3#16		0.2.0
2000-12	TP-10	TP-000208				Presented to TSG-T #10 for information	0.2.0	1.0.0
2001-01	-	-				Input to T3 #17 resulting from T3 ad hoc #24	1.0.0	1.1.0
2001-03	-	-				Document presented for approval at T3#18	1.1.0	1.2.0
2001-03	TP-11	TP-010041				Doument presented for approval to TSG-T #11 (identical in technical content to v1.2.0)	1.2.0	2.0.0
2001-03						As approved at TSG-T #11 (identical in technical content to v2.0.0)	2.0.0	7.0.0
2001-05						Correction to date on cover page / headers	7.0.0	7.0.1

# History

Document history							
V7.0.1	May 2001	Publication					