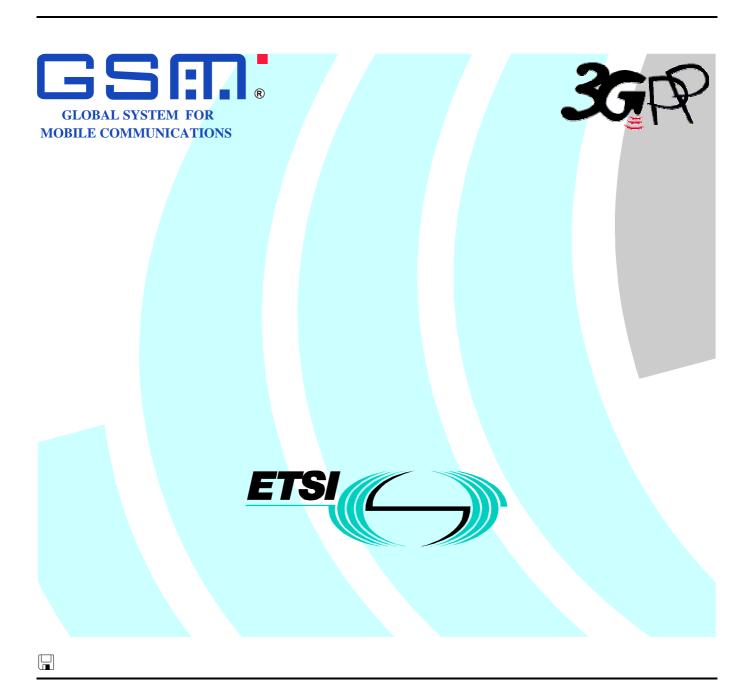
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where:

- x the first digit:
 - 1 presented to TSG for information;
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- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
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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 TM ; 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

JCRE Java CardTM 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

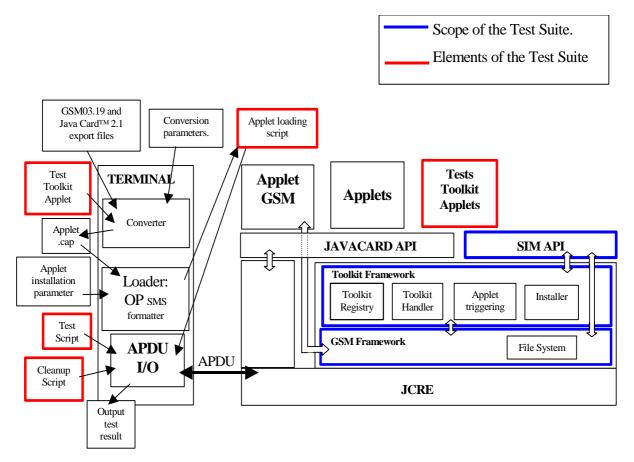
The tests defined in this specification shall be performed taking into account the services supported by the card as specified in the EF_{SST} file.

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.

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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	Id Description API Expectation APDU Expectation		APDU Expectation	
	Test Case detailed description	API expected behavior.	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.

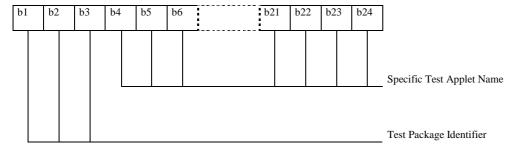
Example:

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):



Test package Identifier(bits b1-b3):

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

001 API

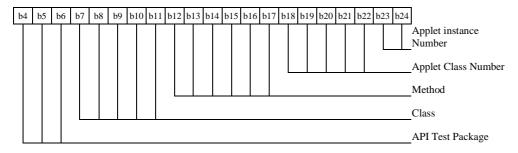
010 Framework

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 [7].

6.1.1.1.2 Test Suite Files

None.

6.1.1.1.3 Test Procedure

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

6.1.1.2 Method select(short fid, byte[] fci, short fciOffset, short fciLength)

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 [7] - §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 [3], §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.	-
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		
	select()	<description fci:<="" of="" th=""><th></th></description>	
		XX XX	
		XX XX 2F E2	
		04	
		>	
2	Select EF _{ICCID} in MF (Transparent EF)	No exception shall be thrown.	
	fid = SIMView.FID_EF_ICCID	Shall return 13.	
	fciOffset = 0	fci shall contain the first 13 bytes of	
	<pre>fciLength = 13 select()</pre>	the FCI structure.	
3	Select DF _{GSM} in MF	No exception shall be thrown.	
_	fid = SIMView.FID_DF_GSM	Shall return 7.	
	fciOffset = 0	fci shall contain the entire FCI	
	<pre>fciLength = 7 select()</pre>	structure.	
	BCICCC()	<description fci:<="" of="" th=""><th></th></description>	
		XX XX	
		XX XX	
		7F 20 02	
		02 >	
4	Select EF _{ACM} in DF _{GSM} (CyclicEF)	No exception shall be thrown.	
	fid = SIMView.FID_EF_ACM	Shall return a value between 15	
	fciOffset = 0	and 20. (Cyclic EF)	
	<pre>fciLength = 20 select()</pre>	fci shall contain the first 15 or more	
	select()	bytes of the FCI structure.	
		fci[14] shall have the value 3	
_	Colort ME	(length of record).	
5	Select MF fid = SIMView.FID_MF	No exception shall be thrown. Shall return a value between 22	
	fciOffset = 0	and 34.	
	fciLength = 34	fci shall contain the entire FCI	
	select()	structure.	
6	Select DF _{TELECOM} in MF	No exception shall be thrown.	
	fid = SIMView.FID_DF_TELECOM	Shall return 20.	
	<pre>fci[0] = fci[1] = '05' fciOffset = 2</pre>	fci shall contain the first 20 bytes of	
	fciLength = 20	the FCI structure starting at index	
	select()	2. The first two bytes shall (still) have the value '05'.	
7	Select EF _{FDN} in DF _{TELECOM} (Linear FixedEF)	No exception shall be thrown.	
'	fid = SIMView.FID_EF_FDN	Shall return 15.	
	fciOffset = 0	fci shall contain the first 15 bytes of	
	fciLength = 15	the FCI structure.	
	select()	fci[14] shall have the value 28	
		(length of record).	
8	fci is null	Shall throw	
	<pre>fid = SIMView.FID_EF_FDN byte[] nullBuffer = null</pre>	java.lang.NullPointerException.	
	fciOffset = 0		
	fciLength = 15		
	select()	Chall throw	
9	fciOffset < 0 fid = SIMView.FID_EF_FDN	Shall throw	
	fciOffset = -1	java.lang.ArrayIndexOutOfBoundsException.	
	fciLength = 15	Acception.	
	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	-
	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	
	fciLength = 1	The second secon	
L	select()		
13	Selection possibilities 1 - fid = SIMView.FID_MF	1 – No exception shall be thrown.	
	fciOffset = 0	2 – No exception shall be thrown.	
	fciLength = 15	3 – No exception shall be thrown.	
	select()	4 – No exception shall be thrown.5 – No exception shall be thrown.	
	2 - fid = SIMView.FID_DF_TELECOM	6 – No exception shall be thrown.	
	select()	7 – No exception shall be thrown.	
	<pre>3 - fid = SIMView.FID_DF_GRAPHICS select()</pre>	8 – No exception shall be thrown.	
	4 - fid = SIMView.FID_DF_TELECOM	9 – No exception shall be thrown.	
	select()	The enterprise of the wife	
	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		
	select()		
	9 - fid = SIMView.FID_DF_TELECOM select()		
	-		
14	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	
	<pre>fid = SIMView.FID_EF_ICCID select()</pre>	reason code NO_EF_SELECTED.	
	2 - fid = SIMView.FID_MF		
	select()		
45	readBinary()	A No supporting the House	
15	No selection of non-reachable file 1 - fid = SIMView.FID_MF	1 – No exception shall be thrown.	
	select()	2 – Shall throw sim.access.SIMViewException with	
	2 - fid = SIMView.FID_EF_ACM	reason code FILE_NOT_FOUND.	
	select()		
16	No record is selected after selecting linear	1 – No exception shall be thrown.	
	fixed EF	2 – No exception shall be thrown.	
	<pre>1 - fid = SIMView.FID_MF select()</pre>	3 – No exception shall be thrown.	
	2 - fid = FID_DF_SIMTEST	4 – Shall throw	
	select()	sim.access.SIMViewException with reason code	
	3 - fid = FID_EF_LARU	RECORD_NUMBER_NOT_AVAIL	
	select() 4 - recNumber = 0	ABLE.	
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT		
	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.	
	select()	3 - No exception shall be thrown.	
	2 - fid = FID_DF_SIMTEST select()	4 - No exception shall be thrown.	
	3 - fid = FID_EF_CARU	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 (short fid)

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

No requirements.

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.	
1	Select EF _{ICCID} in MF (Transparent EF) fid = SIMView.FID_EF_ICCID select()	No exception shall be thrown.	
2	<pre>EF not selected after MF/DF selection 1 - fid = SIMView.FID_MF select() fid = SIMView.FID_EF_ICCID select() 2 - fid = SIMView.FID_MF select() readBinary()</pre>	No exception shall be thrown. Shall throw sim.access.SIMViewException with reason code NO_EF_SELECTED.	
3	No record is selected after selecting linear	1 – No exception shall be thrown.	
	<pre>fixed EF 1 - fid = SIMView.FID_MF select() 2 - fid = FID_DF_SIMTEST select() 3 - fid =FID_EF_LARU select() 4 - recNumber = 0 mode = REC_ACC_MODE_ABSOLUTE_CURRENT readRecord()</pre>	2 – No exception shall be thrown. 3 – No exception shall be thrown. 4 – Shall throw sim.access.SIMViewException with reason code RECORD_NUMBER_NOT_AVAIL ABLE.	
4	Record pointer in selected cyclic EF 1 - fid = SIMView.FID MF	1 - No exception shall be thrown.2 - No exception shall be thrown.	
	<pre>select() 2 - fid = SIMView.FID_DF_GSM select() 3 - fid = SIMView.FID_EF_ACM select() 4 - byte[] datal = { 1,2,3 } updateRecord(datal) 5 - fid = SIMView.FID_EF_ACM select() readRecord(data2) compare datal to data2</pre>	3 - No exception shall be thrown.4 - No exception shall be thrown.5 - The contents of data1 and data2 shall be identical.	
5	Selection possibilities 1 - fid = SIMView.FID_MF	1 – No exception shall be thrown.2 – No exception shall be thrown.	
	<pre>select() 2 - fid = SIMView.FID_DF_TELECOM select() 3 - fid = SIMView.FID_DF_GRAPHICS select() 4 - fid = SIMView.FID_DF_TELECOM select() 5 - fid = SIMView.FID_DF_GRAPHICS select() 6 - fid = SIMView.FID_MF select() 7 - fid = SIMView.FID_DF_GSM select() 8 - fid = SIMView.FID_DF_TELECOM select() 9 - fid = SIMView.FID_DF_TELECOM select() select()</pre>	3 – No exception shall be thrown. 4 – No exception shall be thrown. 5 – No exception shall be thrown. 6 – No exception shall be thrown. 7 – No exception shall be thrown. 8 – No exception shall be thrown. 9 – No exception shall be thrown.	
6	No selection of unreachable file	1 – No exception shall be thrown.	
	<pre>1 - fid = SIMView.FID_MF select() 2 - fid = SIMView.FID_EF_ACM select()</pre>	2 – Shall throw sim.access.SIMViewException with reason code FILE_NOT_FOUND.	

6.1.1.3.4 Test Coverage

CRR Number	Test Case Number	
N1	1	
N2	2	
N3	3	
N4	4	
N6	5	
C1	6	
C2, C3	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 [7], §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.	
	<pre>byte[] fci = new byte[34]</pre>	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	
	0	>	
2	Status after select EF _{ICCID} 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	
		4 - fci and fci2 shall be identical	
	len2 = status()	4 - ICI and ICIZ Shall be identical	
1	3 - Compare len and len2 4 - Compare the len bytes of fci and fci2		
3	Status of DF _{Telecom}	1 - No exception shall be thrown.	
	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.	
	Status DE	No expension shall be through	
4	Status DF _{TELECOM} fciOffset = 0	No exception shall be thrown. 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	
1		FID_DF_TELECOM.	
5	fci is null	Shall throw	
	byte[] nullBuffer = null	java.lang.NullPointerException.	
1	fciOffset = 0		
1	<pre>fciLength = 34 status()</pre>		
6	fciOffset < 0	Shall throw	
0	fciOffset = -1	java.lang.ArrayIndexOutOfBoundsE	
	fciLength = 34	xception.	
	status()		
7	fciLength < 0	Shall throw	
1	fciOffset = 0	java.lang.ArrayIndexOutOfBoundsE	
1	<pre>fciLength = -1 status()</pre>	xception.	
8	fciOffset + fciLength > fci.length	Shall throw	
	fciOffset = 20	java.lang.ArrayIndexOutOfBoundsE	
1	fciLength = 15	xception.	
	status()		
9	fciOffset >= fci.length	Shall throw	
	fciOffset = 34	java.lang.ArrayIndexOutOfBoundsE	
	fciLength = 1	xception.	
	status()		

6.1.1.4.4 Test Coverage

CRR Number	Test Case Number	
N1	1-4	
N2	2, 3	
N3	1, 4	
P1	5	
P2	6	
P3	7	
P4	8, 9	
C1, C2	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="" ff="" of="" resp:=""></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 > 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 < 0 fileOffset = 0 respOffset = -1 respLength = 10 readBinary()</pre>	Shall throw java.lang. ArrayIndexOutOfBoundsException.	
7	<pre>respLength < 0 fileOffset = 0 respOffset = 0 respLength = -1 readBinary()</pre>	Shall throw java.lang. ArrayIndexOutOfBoundsException.	

ld	Description	API Expectation	APDU Expectation
8	respOffset + respLength > resp.length	Shall throw	
	fileOffset = 0	java.lang.	
	respOffset = 10	ArrayIndexOutOfBoundsException.	
	respLength = 11	, ,	
	readBinary()		
9	EF is not Transparent	1 - No exception shall be thrown.	
	1 - fid = FID_DF_SIMTEST	2 - No exception shall be thrown.	
	select()	3 - Shall throw	
	2 - fid = FID_EF_LARU	sim.access.SIMViewException with	
	<pre>select() 3 - fileOffset = 0</pre>	reason code	
	respOffset = 0	FILE_INCONSISTENT.	
	respLength = 1		
	readBinary()		
10	Access condition not fulfilled	Shall throw	
	1 - fid = DFSIMTTEST	sim.access.SIMViewException with	
	select()	reason code	
	2 - fid = EFTNR	AC_NOT_FULFILLED.	
	select()	AO_NOT_I OLITELED.	
	3 - fileOffset = 0		
	respOffset = 0		
	respLength = 1		
	readBinary()		
11	EF is invalidated	1 - No exception shall be thrown.	
	1 - fid = EFTNU	2 - Shall throw	
	invalidate()	sim.access.SIMViewException with	
	2 - readBinary() 3 - rehabilitate()	reason code	
	5 - remadificate()	INVALIDATION_STATUS_CONTR	
		ADICTION.	
		3 - No exception shall be thrown.	
12	No EF selected	1 - No exception shall be thrown.	
	1- fid = SIMView.FID_MF	2 - Shall throw	
	select()	sim.access.SIMViewException with	
	2 readBinary()	reason code NO_EF_SELECTED.	

6.1.1.5.4 Test Coverage

CRR Number	Test Case Number
N1	1-2
P1	3
P2	4
P3	5
P4	6
P5	7
P6	8,
C1	12
C2	9
C3	10
C4 11	
C5, C6	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	
	<pre>byte[] data = new byte[20]</pre>	reason code NO_EF_SELECTED.	
	data[0] = '55'	1000011 0000 110_21 _02220120.	
	dataOffset = 0		
	dataLength = 10		
	updateBinary()		
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	4 – No exception shall be thrown.	
	select()	Data in resp[0] shall be '55'.	
	3 - fileOffset = 3	Data in resp[o] snail be 33.	
	data[0] = '55'		
	dataOffset = 0		
	dataLength = 1		
	updateBinary()		
1	4 - fileOffset = 3 respOffset = 0		
	respLength = 1		
1	readBinary()		
3	1 - fileOffset = 254	1 - No exception shall be thrown.	
٥	data[0] = '55'	2 - No exception shall be thrown.	
1	data[1] = 'AA'		
	data[2] = '66'	Data in resp shall be	
	dataOffset = 0	resp[0] = '55'	
	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() fileOffset + dataLength > EF length	Shall throw	
5	fileOffset = 259		
	dataOffset = 0	sim.access.SIMViewException with	
	dataLength = 2	reason code	
	updateBinary()	OUT_OF_FILE_BOUNDARIES.	
6	data is null	Shall throw	
"	byte[] nullBuffer = null	java.lang.NullPointerException.	
	fileOffset = 0	Javanang.i tam omtorexoeption.	
1	dataOffset = 0		
	dataLength = 10		
	updateBinary()		
7	dataOffset < 0	Shall throw	
	fileOffset = 0	java.lang.	
		ArrayIndexOutOfBoundsException.	
	dataOffset = -1	,	
	dataLength = 10		
<u></u>	updateBinary()	01 11 11	
8	dataLength < 0	Shall throw	
1	fileOffset = 0	java.lang.	
	dataOffset = 0	ArrayIndexOutOfBoundsException.	
1	dataLength = -1		
9	updateBinary() dataOffset + dataLength > data.length	Shall throw	
9	fileOffset = 0		
1	dataOffset = 10	java.lang.	
1	dataLength = 11	ArrayIndexOutOfBoundsException.	
	updateBinary()		

ld	Description	API Expectation	APDU Expectation
10	<pre>EF is not Transparent 1 - fid = FID_DF_SIMTEST select() 2 - fid = FID_EF_LARU 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
N1	2, 3
P1	4
P2	5
P3	6
P4	7
P5	8
P6	9
C1	1
C2	10
C3	11
C4	12
C5, C6	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.
- 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()		

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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.	resp[2] = '55'	
	3 - recNumber = 0	resp[3] = '55'	
	mode = REC_ACC_MODE_NEXT		
	recOffset = 0 respOffset = 0	4 - No exception shall be thrown.	
	respLength = 4	resp shall be:	
	readRecord()	resp[0] = 'AA'	
	4 - recNumber = 2	resp[1] = 'AA'	
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT	resp[2] = 'AA'	
	readRecord()	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'	resp[2] = '55'	
	readRecord()	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()	lesp[o] = AA	
4	Read 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	
	respOffset = 0	ABLE.	
	respLength = 4	ADLE.	
	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 respOffset = 0	resp[1] = '55'	
	respLength = 4	resp[2] = '55'	
	readRecord()	resp[3] = '55'	
	100014()	_	
6	Read Previous from Linear Fixed EF	Shall throw	
	recNumber = 0	sim.access.SIMViewException with	
	mode = REC_ACC_MODE_PREVIOUS	reason code	
	recOffset = 0	RECORD_NUMBER_NOT_AVAIL	
	respOffset = 0	ABLE.	
	respLength = 4		
	readRecord()		

ld	Description	API Expectation	APDU Expectation
7	Read Absolute and Current from Cyclic EF	1 - No exception shall be thrown.	-
	1 - fid = EFCARU	2 - No exception shall be thrown.	
	<pre>select() 2 - recNumber = 2</pre>	resp shall be:	
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT	resp[0] = ' AA'	
	recOffset = 0	resp[1] = ' AA'	
	respOffset = 0	resp[2] = ' AA'	
	respLength = 3	3 - No exception shall be thrown.	
	readRecord()	resp shall be:	
	3 - recNumber = 1 readRecord()	resp[0] = '55'	
	4 - recNumber = 0	resp[1] = '55'	
	resp[0] = resp[1] = resp[2] = '00	resp[2] = '55' 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[1] = 'AA'	
	respOffset = 0 respLength = 3	resp[2] = 'AA'	
	readRecord()		
9	Read Next from Cyclic EF	No exception shall be thrown.	
	recNumber = 0	resp shall be:	
	mode = REC_ACC_MODE_NEXT	resp[0] = '55'	
	recOffset = 0 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 recNumber = 0	No exception shall be thrown.	
	mode = REC_ACC_MODE_PREVIOUS	resp shall be:	
	recOffset = 0	resp[0] = '55'	
	respOffset = 0	resp[1] = '55' resp[2] = '55'	
	respLength = 3	lesp[2] = 33	
40	readRecord() Read Absolute from Linear Fixed EF beyond	4. No everetional all he through	
12	Records	1 – No exceptionshall be thrown.2 - Shall throw	
	1 - fid = EFLARU	sim.access.SIMViewException with	
	select()	reason code	
	2 - recNumber = -1	RECORD_NUMBER_NOT_AVAIL	
	<pre>mode = REC_ACC_MODE_ABSOLUTE_CURRENT recOffset = 0</pre>	ABLE.	
	respOffset = 0	3 - Shall throw	
	respLength = 4	sim.access.SIMViewException with	
	readRecord()	reason code	
	<pre>3 - recNumber = 3 readRecord()</pre>	RECORD_NUMBER_NOT_AVAIL	
10	` '	ABLE.	
13	No current record in linear fixed EF, read	1 - No exception shall be thrown.	
	1 - fid = EFLARU	2 - Shall throw 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 respOffset = 0		
	respLength = 4		
	readRecord()		

ld	Description	API Expectation	APDU Expectation
14	recOffset < 0	1 - No exception shall be thrown.	
	1 - fid = EFLARU	2 - Shall throw	
	<pre>select() 2 - recNumber = 1 // rec 1</pre>	sim.access.SIMViewException with	
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT	reason code	
	recOffset = -1	OUT_OF_RECORD_BOUNDARIE	
	respOffset = 0	S.	
	respLength = 4		
	readRecord()		
15	recOffset + respLength > Record Length	1 - No exception shall be thrown.	
	1 - fid = EFLARU select()	2 - Shall throw	
	2 - recNumber = 1	sim.access.SIMViewException with	
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT	reason code	
	recOffset = 2	OUT_OF_RECORD_BOUNDARIE	
	respOffset = 0	S.	
	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 respOffset = 0	sim.access.SIMViewException with	
	respLength = 4	reason code INVALID MODE.	
	readRecord()	_	
	3 - mode = 5		
	readRecord()		
17	resp is null	Shall throw	
	<pre>byte[] nullBuffer = null mode = REC_ACC_MODE_ABSOLUTE_CURRENT</pre>	java.lang.NullPointerException.	
	respOffset = 0		
	respLength = 10		
	readRecord()		
18	respOffset < 0	Shall throw	
	magnoffact - 1	java.lang.	
	respOffset = -1 respLength = 10	ArrayIndexOutOfBoundsException.	
	readRecord ()		
19	respLength < 0	Shall throw	
	respOffset = 0	java.lang.	
	respLength = -1	ArrayIndexOutOfBoundsException.	
20	readRecord () respOffset + respLength > resp.length	Shall throw	
20	respOffset = 10	java.lang.	
	respLength = 11	ArrayIndexOutOfBoundsException.	
	readRecord ()	7 triaymacxodtorboundsException.	
21	EF is neither Cyclic nor Linear Fixed	1 - No exception shall be thrown.	
	1 - fid = DFSIMTEST	2 - No exception shall be thrown.	
	select() 2 - fid = EFTNU	3 - Shall throw	
		sim.access.SIMViewException with	
	3 - respOffset = 0	reason code	
	respLength = 4	FILE_INCONSISTENT.	
-	readRecord()	A N	
22	Access condition not fulfilled 1 - fid = EFCNR	1 - No exception shall be thrown.	
	- = EFCNR 	2 - Shall throw	
	2 - respLength = 3	sim.access.SIMViewException with reason code	
	readRecord()	AC_NOT_FULFILLED.	
23	EF is invalidated	1 - No exception shall be thrown.	
	1 - fid = EFCNU	2 - Shall throw	
	invalidate()	sim.access.SIMViewException with	
	2 - readRecord()	reason code	
	3 - rehabilitate()	INVALIDATION_STATUS_CONTR	
		ADICTION.	
		3 - No exception shall be thrown.	
	1		

6.1.1.7.4 Test Coverage

CRR Number	Test Case Number	
N1	2-5, 7-11	
N2	2, 7	
N3	3, 8, 9	
N4	5, 10, 11	
P1	12	
P2	13	
P3	4	
P4	6	
P5	14	
P6	15	
P7	16	
P8	17	
P9	18	
P10	19	
P11	20	
C1	1	
C2	21	
C3	22	
C4	23	
C5, C6	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		
	<pre>byte[] data = new byte[20] dataOffset = 0</pre>		
	dataOffset = 0 dataLength = 10		
	updateRecord()		
2	Update Absolute and Current from Linear	1 - No exception shall be thrown.	= 4
	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] = '11'	
	select()	Resp[1] = '11'	
	// Record pointer not set.	Resp[2] = '11'	
	3 - recNumber = 2	Resp[3] = '11'	
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT		
	data[0:3] = '11'		
	recOffset = 0		
	dataOffset = 0		
	<pre>dataLength = 4 updateRecord()</pre>		
	respOffset = 0		
	respLength = 0		
	readRecord()		
3	Update Current from Linear Fixed EF	1 - No exception shall be thrown.	
	<pre>1 - fid = DFSIMTEST select()</pre>	2 - No exception shall be thrown.	
	2 - fid = EFLARU	3 - No exception shall be thrown.	
	select()	4 - No exception shall be thrown.	
	// Set record pointer with mode "next".	resp shall be:	
	3 - recNumber = 0	resp[0] = '22'	
	mode = REC_ACC_MODE_NEXT	resp[1] = '22'	
	recOffset = 0 data[0:3] = '00'	resp[2] = '22'	
	dataOffset = 0	resp[3] = '22'	
	dataLength = 4		
	updateRecord()		
	// write data with mode "current"		
	4 - recNumber = 0		
	data[0:3] = '22'		
	<pre>mode = REC_ACC_MODE_ABSOLUTE_CURRENT updateRecord()</pre>		
	// read result with mode "absolute"		
	respOffset = 0		
	respLength = 4		
	recNumber = 1		
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT		
1	readRecord()	1 No execution shall be through	
4	Update Next from Linear Fixed EF, no record pointer set	1 - No exception shall be thrown.2- No exception shall be thrown.	
	pointer set 1 - fid = FID_DF_SIMTEST	3 - No exception shall be thrown.	
		Resp shall be:	
	2 - fid = FID_EF_LARU	Resp[0] = '33'	
	select	Resp[1] = '33'	
	3 - recNumber = 0	Resp[2] = '33'	
	<pre>mode = REC_ACC_MODE_NEXT recOffset = 0</pre>	Resp[3] = '33'	
	data[0:3] = '33'		
	dataOffset = respOffset = 0		
	dataLength = respLength = 4		
	updateRecord()		
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT		
_	readRecord()	4. No expension of all be there	
5	Update Next from Linear Fixed EF, record	1 - No exception shall be thrown.	
	pointer set 1 - recNumber = 0	2 - No exception shall be thrown.	
	mode = REC_ACC_MODE_NEXT	resp shall be:	
	recOffset = 0	resp[0] = '44'	
	data[0:3] = '44'	resp[1] = '44'	
		resp[2] = '44'	

ld	Description	API Expectation	APDU Expectation
	dataOffset = 0	resp[3] = '44'	
	dataLength = 4		
	updateRecord()		
	2 - mode = REC_ACC_MODE_ABSOLUTE_CURRENT		
	readRecord()		

ld	Description	API Expectation	APDU Expectation
6	Update Next from Linear Fixed EF, no more	Shall throw	
	records	sim.access.SIMViewException with	
	recNumber = 0	reason code	
	mode = REC_ACC_MODE_NEXT	RECORD_NUMBER_NOT_AVAIL	
	recOffset = 0	ABLE.	
	<pre>data[0:3] = '55' dataOffset = 0</pre>		
	dataLength = 4		
	updateRecord()		
7	Update Previous from Linear Fixed EF, no	1 - No exception shall be thrown.	
	record pointer set	2 - No exception shall be thrown.	
	1 - fid = DFSIMTEST	3 - No exception shall be thrown.	
	select()	4 - No exception shall be thrown.	
	2 - fid = EFLARU select()	resp shall be:	
	3 - recNumber = 0	resp[0] = '66'	
	mode = REC_ACC_MODE_PREVIOUS	resp[1] = '66'	
	recOffset = 0	resp[2] = '66'	
	data[0:3] = '66'	resp[3] = '66'	
	<pre>dataOffset = respOffset = 0 dataLength = respLength = 4</pre>		
	updateRecord()		
	4 - mode = REC_ACC_MODE_ABSOLUTE_CURRENT		
	readRecord()		
8	I = -	1 - No exception shall be thrown	
	pointer set	2 - No exception shall be thrown.	
	1 - recNumber = 0	Resp shall be:	
	<pre>mode = REC_ACC_MODE_PREVIOUS recOffset = 0</pre>	Resp[0] = '7744'	
	data[0:3] = '77'	Resp[1] = '7744'	
	dataOffset = respOffset = 0	Resp[2] = '7744'	
	dataLength = respLength = 4	Resp[3] = '7744'	
	updateRecord()		
	<pre>readRecord() 2 - mode = REC_ACC_MODE_ABSOLUTE_CURRENT</pre>		
9	Update Previous from Linear Fixed EF, no	Shall throw	
3	more records	sim.access.SIMViewException with	
	recNumber = 0	reason code	
	mode = REC_ACC_MODE_PREVIOUS	RECORD_NUMBER_NOT_AVAIL	
	recOffset = 0	ABLE.	
	<pre>data[0:3] = '88' dataOffset = respOffset = 0</pre>		
	dataLength = respLength = 4		
	updateRecord()		
10	Update Previous from Cyclic EF	1 - No exception shall be thrown.	
	1 - fid = FID_DF_SIMTEST	2 - No exception shall be thrown.	
	select()	3 - No exception shall be thrown.	
	2 - fid = FID_EF_CARU 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]	
	respOffset = 0 respLength = 3	resp[1] = data[1] resp[2] = data[2]	
	readRecord()	i copizi = uaiaizi	
	4 - recNumber = 2		
	mode = REC_ACC_MODE_PREVIOUS		
	data[0:2] = resp[0:2] ^ 'FF'		
	<pre>dataOffset = 0 dataLength = 3</pre>		
	updateRecord()		
	5 - recNumber = 0		
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT		
	respOffset = 0 respLength = 3		
	readRecord()		
11		1 – No exception shall be thrown.	
	Records	2 - Shall throw	
	1 - fid = EFLARU	sim.access.SIMViewException with	
	select()	reason code	
	2 -recNumber = -1 mode = REC_ACC_MODE_ABSOLUTE_CURRENT	RECORD_NUMBER_NOT_AVAIL	
	recOffset = 0	ABLE.	
	dataOffset = 0	3 - Shall throw	
	dataLength = 4	sim.access.SIMViewException with	

ld	Description	API Expectation	APDU Expectation
	2 - recNumber = 3	reason code RECORD_NUMBER_NOT_AVAIL ABLE.	

ld	Description	API Expectation	APDU Expectation
12	No current record in linear fixed EF, update	1 - No exception shall be thrown.	•
	current	2 - Shall throw	
	1 - fid = EFLARU	sim.access.SIMViewException with	
	select() // No curr rec	reason code	
	2 - recNumber = 0 // curr rec mode = REC_ACC_MODE_ABSOLUTE_CURRENT	RECORD_NUMBER_NOT_AVAIL	
	recOffset = 0	ABLE.	
	dataOffset = 0		
	dataLength = 4		
4.0	updateRecord()	4 1 1 1 1	
13	recOffset < 0	1 - No exception shall be thrown.	
	1 - fid = EFLARU select()	2 - Shall throw	
	2 - recNumber = 1 // rec 1	sim.access.SIMViewException with	
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT	reason code OUT_OF_RECORD_BOUNDARIE	
	recOffset = -1	S.	
	dataOffset = 0	J.	
	<pre>dataLength = 4 updateRecord()</pre>		
14	recOffset + dataLength > Record Length	1 - No exception shall be thrown.	
1	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 = 2	S	
	dataLength = 4		
	updateRecord()		
15	Updating with invalid mode	1 - No exception shall be thrown.	
	1 - fid = EFLARU	2 - Shall throw	
	select() 2 - recNumber = 0	sim.access.SIMViewException with	
	mode = 1	reason code INVALID_MODE.	
	recOffset = 0	3 - Shall throw	
	dataOffset = 0	sim.access.SIMViewException with	
	dataLength = 4	reason code INVALID_MODE.	
	updateRecord() 3 - mode = 5		
	updateRecord()		
16	Updating Cyclic EF with invalid mode	1 - No exception shall be thrown.	
	1 - fid = DFSIMTEST	2 - No exception shall be thrown.	
	select()	3 - Shall throw	
	2 - fid = EFCARU select()	sim.access.SIMViewException with	
	3 - recNumber = 0	reason code INVALID_MODE.	
	mode = REC_ACC_MODE_NEXT	4 - Shall throw	
	recOffset = 0	sim.access.SIMViewException with	
	data[0:2] = '00' dataOffset = 0	reason code INVALID_MODE.	
	dataLength = 3	5 - Shall throw	
	updateRecord()	sim.access.SIMViewException with reason code INVALID_MODE.	
	4 - recNumber = 0	INVALID_WODE.	
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT		
1	<pre>updateRecord() 5 - recNumber = 2</pre>		
	mode = REC_ACC_MODE_ABSOLUTE_CURRENT		
	updateRecord()		
17	data is null	Shall throw	
1	byte[] nullBuffer = null	java.lang.NullPointerException.	
	<pre>dataOffset = 0 dataLength = 10</pre>		
	updateRecord()		
18	dataOffset < 0	Shall throw	
1	dataOffset = -1	java.lang.	
	dataLength = 10	ArrayIndexOutOfBoundsException.	
19	updateRecord() dataLength < 0	Shall throw	
19	dataLength < 0 dataOffset = 0	java.lang.	
1	dataLength = -1	ArrayIndexOutOfBoundsException.	
	updateRecord()		
20	dataOffset + dataLength > data.length	Shall throw	
	dataOffset = 10	java.lang.	
1	<pre>dataLength = 11 updateRecord()</pre>	ArrayIndexOutOfBoundsException.	
21	EF is neither Cyclic nor Linear Fixed	1 - No exception shall be thrown.	
	= 10 Holling Oyollo Hol Elliodi i ixod	1. 140 ONOOPHOH SHAIL DE HITOWII.	

ld	Description	API Expectation	APDU Expectation
22	<pre>1 - fid = DFSIMTEST select() 2 - fid = EFTNR select() 3 - dataOffset = 0 dataLength = 4 updateRecord()</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. 3 - No exception shall be thrown. 4 - Shall throw sim.access.SIMViewException with reason code AC_NOT_FULFILLED.	Ai Do Expectation
23	<pre>updateRecord()</pre>	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.	

6.1.1.8.4 Test Coverage

CRR Number	Test Case Number
N1	2, 3,4, 5, 7, 8, 10
N2	2, 3
N3	5, 6
N4	7, 8, 9, 10
P1	11
P2	12
P3	6
P4	9
P5	13
P6	14
P7	15
P8	16
P9	17
P10	18
P11	19
P12	20
C1	1
C2	21
C3	22
C4	23
C5, C6	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.

short pattOffset,
 short pattLength)
throws java.lang.NullPointerException,
 java.lang.ArrayIndexOutOfBoundsException,
 SIMViewException

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.	•
1	No EF selected	Shall throw	
	Byte[] patt = new byte[20]	sim.access.SIMViewException with	
	pattOffset = 0	reason code NO_EF_SELECTED.	
	pattLength = 10		
	mode = SEEK_FROM_BEGINNING_FORWARD		
	seek()		
2	Pattern not Found	1 - No exception shall be thrown.	
	1 - fid = DFSIMTEST	2 - No exception shall be thrown.	
	<pre>select() 2 - fid = EFLARU</pre>	3 - Shall throw	
		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 from Beginning Forward	No exception shall be thrown. Shall	
	patt[0:2] = '55'	return 1	
	pattOffset = 0		
	pattLength = 3		
	mode = SEEK_FROM_BEGINNING_FORWARD		
4	seek () Seek from End Backward	No evention shall be thrown. Chall	
4	patt[0:2] = '55'	No exception shall be thrown. Shall	
	pattOffset = 0	return 1	
	pattLength = 3		
	mode = SEEK_FROM_END_BACKWARD		
	seek()		
5	Seek from Next Forward	No exception shall be thrown. Shall	
	patt[0:2] = 'AA'	return 2	
	pattOffset = 0		
	pattLength = 3		
	mode = SEEK_FROM_NEXT_FORWARD		
	seek()	Chall through	
6	Last Record, Seek from Next Forward	Shall throw	
	<pre>mode = SEEK_FROM_NEXT_FORWARD seek()</pre>	sim.access.SIMViewException with	
	Beer ()	reason code	
<u> </u>		PATTERN_NOT_FOUND.	
7	Seek from Previous Backward	No exception shall be thrown. Shall	
	patt[0:2] = '55'	return 1	
	pattOffset = 0		
	<pre>pattLength = 3 mode = SEEK_FROM_PREVIOUS_BACKWARD</pre>		
	seek()		
8	First Record, Seek from Previous Backward	Shall throw	
	i ii st itoosiu, oeek ii oiii i Tevious Dackwalu	Onan unow	

ld	Description	API Expectation	APDU Expectation
	SEEK_FROM_PREVIOUS_BACKWARD	sim.access.SIMViewException with	-
	seek()	reason code	
	5 () () ()	PATTERN_NOT_FOUND.	
9	Pattern not Found (out of reach)	Shall throw	
	pattOffset = 0	sim.access.SIMViewException with reason code	
	pattLength = 3	PATTERN_NOT_FOUND.	
	mode = SEEK_FROM_NEXT_FORWARD	TATTERN_NOT_TOOND.	
10	seek() Invalid mode	1 - Shall throw	
10	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	
11	patt is null	Shall throw	
	<pre>byte[] nullBuffer = null mode = SEEK_FROM_BEGINNING_FORWARD</pre>	java.lang.NullPointerException.	
	seek ()		
12	pattOffset < 0	Shall throw	
	patt[0:2] = '55'	java.lang.	
	<pre>pattOffset = -1 pattLength = 3</pre>	ArrayIndexOutOfBoundsException	
	mode = SEEK_FROM_BEGINNING_FORWARD		
	seek()		
13	pattLength < 0	Shall throw	
	<pre>patt[0:2] = '55' pattOffset = 0</pre>	java.lang.	
	pattLength = -1	ArrayIndexOutOfBoundsException	
	mode = SEEK_FROM_BEGINNING_FORWARD		
4.4	seek()	OL III	
14	<pre>pattLength > size of record patt[0:4] = '55'</pre>	Shall throw sim.access.SIMViewException with	
	pattOffset = 0	reason code	
	pattLength = 4	OUT_OF_RECORD_BOUNDARIE	
	<pre>mode = SEEK_FROM_BEGINNING_FORWARD seek()</pre>	s	
15	pattOffset + pattLength > patt.length	Shall throw	
	patt[0:2] = '55'	java.lang.	
	<pre>pattOffset = 1 pattLength = 3</pre>	ArrayIndexOutOfBoundsException	
	mode = SEEK_FROM_BEGINNING_FORWARD		
	seek()		
16	EF is not Linear Fixed	1 - No exception shall be thrown.	
	1 - fid = EFTNU select()	2 - Shall throw	
	2 - pattOffset = 0	sim.access.SIMViewException with reason code	
	pattLength = 3	FILE_INCONSISTENT	
	<pre>mode = SEEK_FROM_BEGINNING_FORWARD seek()</pre>	3 - Shall throw	
	3 - fid = EFCNU	sim.access.SIMViewException with	
	select()	reason code	
	seek()	FILE_INCONSISTENT	
17	Access condition not fulfilled	1 - No exception shall be thrown.	
	1 - fid = EFLNR select()	2 - Shall throw sim.access.SIMViewException with	
	2 - patt[0] = '55'	reason code	
	pattOffset = 0	AC_NOT_FULFILLED.	
	<pre>pattLength = 1 mode = SEEK_FROM_BEGINNING_FORWARD</pre>		
	seek()		
18	EF is invalidated	1 - No exception shall be thrown.	
	1 - fid = EFLARU select()	2 - No exception shall be thrown.	
	2 - invalidate()	3 - Shall throw	
	3 - patt[0] = '55	sim.access.SIMViewException with reason code	
	pattOffset = 0	INVALIDATION_STATUS_CONTR	
	<pre>pattLength = 1 mode = SEEK_FROM_BEGINNING_FORWARD</pre>	ADICTION.	
	seek()	4 - No exception shall be thrown.	
	4 - rehabilitate()	·	

6.1.1.9.4 Test Coverage

CRR Number	Test Case Number
N1	2, 3 - 6, 7
N2	3
N3	4
N4	5
N5	7
N6	2, 6, 8, 9
N7	6
N8	8
P1	10
P2	11
P3	12
P4	13
P5	14
P6	15
C1	1
C2	16
C3	17
C4	18
C5, C6	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.	
2	No EF selected byte[] incr = new byte[4] byte[] resp = new byte[4] incrOffset = 0 respOffset = 0 increase() Increase, verify response 1 - fid = DFSIMTEST select() 2 - fid = EFCARU select()	Shall throw sim.access.SIMViewException with reason code NO_EF_SELECTED. 1 - No exception shall be thrown. 2 - No exception shall be thrown. 3 - No exception shall be thrown. 4 - No exception shall be thrown.	
	<pre>3 - //Set both records to 00 00 00 mode = REC_ACC_MODE_PREVIOUS data[0:3] = 0 dataOffset = 0 dataLength = 3 updateRecord() updateRecord() 4 - incrOffset = 0 incr[2] = 1 respOffset = 0 increase()</pre>	resp[] shall contain {0,0,1,0}.	
3	<pre>Increase, verify file 1 - incrOffset = 1 incr[2] = 0, incr[3] = 2 respOffset = 1 increase() 2 - resp[3] = 0 recNumber = 0 mode = REC_ACC_MODE_ABSOLUTE_CURRENT</pre>	1 - No exception shall be thrown. resp[] shall contain {0,0,0,3}. 2 - No exception shall be thrown. resp[] shall contain {0,0,3,0}.	

ld	Description	API Expectation	APDU Expectation
	recOffset = 0	•	•
	respOffset = 0		
	respLength = 0		
4	readRecord() incr is null	Shall throw	
	byte[] nullBuffer = null	java.lang.NullPointerException.	
	incrOffset = 0	java.lang.rvalii olinterException.	
	respOffset = 0		
	increase()		
5	incrOffset < 0	Shall throw	
	<pre>incrOffset = -1 respOffset = 0</pre>	java.lang.	
	increase()	ArrayIndexOutOfBoundsException.	
6	incrOffset + 3 > incr.length	Shall throw	
	incrOffset = 2	java.lang.	
	respOffset = 0	ArrayIndexOutOfBoundsException.	
	increase()		
7	Reach Maximum Value incr[0] = incr[1] = incr[2] = 'FF'	Shall throw	
	<pre>incrOffset = 0</pre>	sim.access.SIMViewException with	
	respOffset = 0	reason code MAX_VALUE_REACHED.	
	increase()		
8	resp is null	Shall throw	
	incr[0] = incr[1] = 0x00' incr[2] = '02'	java.lang.NullPointerException.	
	<pre>incr[2] = '02' incrOffset = 0</pre>		
	byte[] respNull = null		
	respOffset = 0		
	increase()		
9	respOffset < 0	Shall throw	
	<pre>incrOffset = 0 respOffset = -1</pre>	java.lang.	
	increase()	ArrayIndexOutOfBoundsException.	
10	respOffset + recordLength > resp.length	Shall throw	
	incrOffset = 0	java.lang.	
	respOffset = 2	ArrayIndexOutOfBoundsException.	
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	FILE_INCONSISTENT.	
	increase() 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 select()	2 - Shall throw	
	2 - incrOffset = 0	sim.access.SIMViewException with	
	respOffset = 0	reason code AC_NOT_FULFILLED.	
	increase()		
13	EF is invalidated	1 - No exception shall be thrown.	
	1 - fid = EFCARU select()	2 - No exception shall be thrown.	
	2 - invalidate()	3 - Shall throw	
	3 - incrOffset = 0	sim.access.SIMViewException with	
	respOffset = 0	reason code INVALIDATION_STATUS_CONTR	
	increase()	ADICTION.	
	4 - rehabilitate()	4 - No exception shall be thrown.	
14	Check increase not allowed from FCI	1 - No exception shall be thrown.	
	1 - fciOffset = 0	Bit 7 of resp[7] shall not be set (0),	
	fciLength = 8	indicating that increase is not	
	select (FID_EF_CINA, fci)	allowed.	
	Verify FCI byte 8 (fci[7])	2 - Shall throw	
	2 - incrOffset = 0	sim.access.SIMViewException with	
	respOffset = 0	reason code	
		FILE_INCONSISTENT	
	increase()		

6.1.1.10.4 Test Coverage

CRR Number	Test Case Number
N1	2, 3
P1	4
P2	5
P3	6
P4	7
P5	8
P6	9
P7	10
C1	1
C2	11
C3	14
C4	12
C5	13
C6, C7	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

No requirements.

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()	·	
	<pre>3 - invalidate() 4 - rehabilitate()</pre>		
_	Access condition not fulfilled	4. No expendion about he demoves	
3	1 - fid = EFCNIV	1 - No exception shall be thrown.	
	-	2 - Shall throw	
	2 - invalidate()	sim.access.SIMViewException with	
	IIIVaIIados ()	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() 3 - invalidate()	sim.access.SIMViewException with	
	3 - Ilivariuace()	reason code	
		INVALIDATION_STATUS_CONTR	
		ADICTION.	

6.1.1.11.4 Test Coverage

CRR number	Test Case Number	
N1	2	
C1	1	
C2	3	
C3	4	
C4, C5	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

No requirements.

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.

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.	
	<pre>3 - invalidate() 4 - rehabilitate()</pre>	resp[] shall contain {0,0,1}.	
	5 - byte[] incr = new byte[3] = {0,0,1}	(3,7,7)	
	incrOffset = 0		
	<pre>byte[] resp = new byte[1] = 1</pre>		
	respOffset = 0		
	increase()		
3	Access condition not fulfilled	 No exception shall be thrown. 	
	1 - fid = EFCNRH	2 - Shall throw	
	select()	sim.access.SIMViewException with	
	2 - rehabilitate()	reason code	
		AC_NOT_FULFILLED	
4	Rehabilitate validated File	1 - No exception shall be thrown.	
	1 - fid = EFCNR	2 - Shall throw	
	select()	sim.access.SIMViewException with	
	2 - rehabilitate()	reason code	
		INVALIDATION_STATUS_CONTR	
		ADICTION.	

6.1.1.12.4 Test Coverage

CRR number	Test Case Number	
N1	2	
C1	1	
C2	3	
C3	4	
C4, C5	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

Load Script: API_1_SSY_GETS_1.ldr

Cleanup Script: API_1_SSY_GETS_1.clr

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 throwlt

Test Area Reference: API_1_SVE_THITS

6.1.3.1.1 Conformance Requirement:

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

Normal execution

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

CRRN2: Extends javacard.framework.CardRuntimeException

Parameter errors

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

Load Script: API_1_SVE_THITS_1.ldr

Cleanup Script: API_1_SVE_THITS_1.clr

6.1.3.1.3 Test Procedure

ld	Description	API Expectation	APDU Expectation
1	Throws the JCRE instance of	Reason = 0	
	SIMViewException with the specified reason		
2	Throws the JCRE instance of	Reason = 1	
	SIMViewException with the specified reason		
3	Throws the JCRE instance of	Reason = 15	
	SIMViewException with the specified reason		
4	SIMViewException extends	Reason = 0	
	javacard.framework.CardRuntimeException		
5	SIMViewException extends	Reason = 1	
	javacard.framework.CardRuntimeException		
6	SIMViewException extends	Reason = 15	
	javacard.framework.CardRuntimeException		

6.1.3.1.4 Test Coverage

CRR number	Test case number
N1	1,2,3
N2	4,5,6

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

Load Script: API_1_SVE_COORS.ldr

Cleanup Script: API_1_SVE_COORS.clr

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)		

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

No requirements

Context errors

No requirements

6.1.3.3.2 Test suite files

None

6.1.3.3.3 Test Procedure

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

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

No requirements

Context errors

No requirements

6.2.1.1.2 Test suite files

None

6.2.1.1.3 Test Procedure

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

6.2.2 Interface ToolkitInterface

6.2.2.1 Method processToolkit

Test Area Reference: API_1_TKI_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
N1	Tested in Framework
N2	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 Method getEnvelopeTag

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

Cleanup Script: API_2_ENH_GENT_1.clr

6.2.4.1.3 Test Procedure

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

6.2.4.1.4 Test Coverage

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

6.2.4.2 Method getItemIdentifier

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

No requirements.

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

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

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

No requirements

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
- For Formatted triggering if CC/RC/DS is used, the security parameters are the one used for downloading applications.

Test Script: API_2_ENH_GSDL_1.scr
Test Applet: API_2_ENH_GSDL_1.java
Load Script: API_2_ENH_GSDL_1.ldr
Cleanup Script: API_2_ENH_GSDL_1.clr

6.2.4.3.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Test with TP-OA length of 2	Returns 0x2A	
2	Test with TP-OA length of 6	Returns 0x2A	
3	Test with TP-OA length of 12	Returns 0x2A	
4	Test with RC/CC/DS length of 0	Returns 0x10	
5	Test with RC/CC/DS length of 8	Returns 0x10	
6	Test with PCNTR = 0	Returns 0x10	

7	Test with PCNTR = 7	Returns 0x05
	Test with SecuredDataLength = 00	Returns 0x00
	Test with UserDataLength = 0x33	Returns 0x33
	Test with UserDataLength = 0x 6C	Returns 0x 6C
	Test with UserDataLength = 0x 6D	Returns 0x 6D
12	Test with UserDataLength = maximum length:	Returns 0x 79
	0x79	
13	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	
14	Same test as 1 but with	Returns 0x2A
	FORMATTED_SMS_PP_UPD	
15	Same test as 2 but with	Returns 0x2A
	FORMATTED_SMS_PP_UPD	
16	Same test as 3 but with	Returns 0x2A
	FORMATTED_SMS_PP_UPD	
17	Same test as 4 but with	Returns 0x10
	FORMATTED_SMS_PP_UPD	
18	Same test as 5 but with	Returns 0x10
	FORMATTED_SMS_PP_UPD	
19	Same test as 3 but with	Returns 0x10
	FORMATTED_SMS_PP_UPD	Trotaino oxio
20	Same test as 4 but with	Returns 0x05
20	FORMATTED_SMS_PP_UPD	Notario oxoo
21	Same test as 5 but with	Returns 0x00
- '	FORMATTED_SMS_PP_UPD	Inclums 6x66
22	Same test as 6 but with	Returns 0x33
	FORMATTED_SMS_PP_UPD	INCIUITS 0X00
23	Same test as 7 but with	Returns 0x 6C
23	FORMATTED_SMS_PP_UPD	Retuins 0x 0C
24		Poturno Ov 6D
24	Same test as 8 but with	Returns 0x 6D
25	FORMATTED_SMS_PP_UPD	Deturno Ov 70
25	Same test as 9 but with	Returns 0x 79
-00	FORMATTED_SMS_PP_UPD	Datum - 0.05
26	Same test as 10 but with	Returns 0x05
	FORMATTED_SMS_PP_UPD	N/ 1 D / 1 0 10
27	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	
28	Send an envelope SMS CB,	ToolkitException
	getSecuredDataLength	UNAVAILABLE_ELEMENT
29	Send an envelope SMS PP unformatted	ToolkitException
		UNAVAILABLE_ELEMENT

6.2.4.3.4 Test Coverage

This method has only been tested with call control 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,
	11, 12, 13
N2	13
N3	6, 7
N4	1, 2, 3, 4, 5, 6, 7, 8, 9, 10,
	11, 12, 13, 25
N5	14, 15, 16, 17, 18, 19, 20,
	21, 22, 23, 24, 25, 26
N6	27
C1	28
C2	29

6.2.4.4 Method getSecuredDataOffset

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

No requirements

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

For Formatted triggering if CC/RC/DS is used, the security parameters are the one used for downloading applications.

Test Script: API_2_ENH_GSDO_1.scr

Test Applet: API_2_ENH_GSDO_1.java

Load Script: API_2_ENH_GSDO_1.ldr

Cleanup 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	
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	Test with RC/CC/DS length of 8	Returns 0x29	
6	Send a SMS PP with 2 TPDU TLV and inside two	Returns 0x24 (the first offset)	
	different secured data offsets		

7	Same test as 1 but with	Returns 0x21
8	FORMATTED_SMS_PP_UPD Same test as 2 but with	Returns 0x23
9	FORMATTED_SMS_PP_UPD Same test as 3 but with	Returns 0x26
9	FORMATTED_SMS_PP_UPD	Returns 0x20
10	Same test as 4 but with FORMATTED_SMS_PP_UPD	Returns 0x21
11	Same test as 5 but with FORMATTED_SMS_PP_UPD	Returns 0x29
	Same test as 6 but with FORMATTED_SMS_PP_UPD	Returns 0x24 (the first offset)
13	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
14	Send an envelope SMS CB, getSecuredDataOffset	ToolkitException UNAVAILABLE_ELEMENT
	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 call control and the tests shall be improved during 03.48 tests.

CRR number	Test case number
N1	1, 2, 3, 4, 5, 6, 16
N2	6, 12
N3	1, 2, 3, 4, 5, 6, 16
N4	7, 8, 9, 10, 11
N5	13
C1	14
C2	15

6.2.4.5 Method getTheHandler

Test Area Reference: API_2_ENH_GTHD

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

No requirements

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

Cleanup 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 Method getTPUDLOffset

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

No requirements

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

Cleanup 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	
	Test with TP-OA length of 6	Returns 0x0F	
3	Test with TP-OA length of 12	Returns 0x12	
4	Send a SMS PP with 2 TPDU TLV and inside two different UDL offsets	Returns 0x10 (the first offset)	
5	Same test as 1 but with FORMATTED_SMS_PP_UPD	Returns 0x0D	
6	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)	
17	Verify after call of the method the current TLV is the TPDU TLV: findTLV device identities, getTPUDLOffset and then	Returns 0x40	

	getValueByte to verify that the current TLV is the TPDU TLV		
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 Method getLength

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.

throws ToolkitException

Normal execution

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

Parameter Error

No requirements

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

Cleanup 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 Method copy

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.

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

Cleanup 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	
	<pre>dstBuffer.length = 5 dstOffset = 5</pre>	thrown	
	dstLength = 1		
3	dstOffset < 0	ArrayIndexOutOfBoundsException is	
	dstBuffer.length = 5	thrown	
	dstOffset = -1		
	dstLength = 1	A was the device of Device de Everenties in	
4	<pre>dstLength > dstBuffer.length dstBuffer.length = 5</pre>	ArrayIndexOutOfBoundsException is thrown	
	dstOffset = 0	UIIOWII	
	dstLength = 6		
5	DstOffset + dstLength > dstBuffer.length	ArrayIndexOutOfBoundsException is	
	DstBuffer.length = 5	thrown	
	DstOffset = 3		
6	DstLength = 3 dstLength < 0	ArrayIndexOutOfBoundsException is	
0	dstBuffer.length = 5	thrown	
	dstOffset = 0	unown	
	dstLength = -1		
7	DstLength > length of the simple TLV list	ToolkitException.OUT_OF_TLV_BO	
	DstBuffer.length = 48	UNDARIES is thrown	
	DstOffset = 0 DstLength = 48		
8	Successful call, dstBuffer is the whole buffer	Result of copy() is 0X0047	
0	DstBuffer.length = 47	result of copy() is oxoo+1	
	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		
	dstOffset = 3		
13	dstLength = 6 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	Trocall of dopy() is one for	
	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		
	dstorrset = 260 dstLength = 0		
	I	1	

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 Method findTLV

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

Cleanup 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		
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)		
	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 = 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	
	Occurrence = 2		
11	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 = 86h		
	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 Method getValueLength

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

No requirements

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

Cleanup 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 Method getValueByte

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.

 $\label{eq:public_public} \mbox{public byte getValueByte(short valueOffset)} \\ \mbox{throws ToolkitException}$

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

Cleanup Script: API_2_ENH_GVBY_1.clr

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

6.2.4.12 Method copyValue

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

Cleanup 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	
	dstOffset = 5		
	dstLength = 1		
3	dstOffset < 0	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = -1		
	dstLength = 1	A da O tO fD d F ti	
4	dstLength >dstBuffer.length dstBuffer.length = 5	ArrayIndexOutOfBoundsExceptio	
	dstOffset = 0	n is thrown	
	dstLength = 6		
5	dstOffset + dstLength >dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
J	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		
	dstLength = -1		
7	Search TLV 06h		
	valueOffset ≥ TLV Length	ToolkitException.OUT_OF_TLV_	
	valueOffset = 6	BOUNDARIES is thrown	
	dstBuffer.length = 15		
	<pre>dstOffset = 0 dstLength = 1</pre>		
8	valueOffset < 0	ToolkitEveentien OUT OF TIV	
0	valueOffset = -1	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
	dstBuffer.length = 15	DOUNDARIES IS UIIOWII	
	dstOffset = 0		
	1	1	

	dstLength = 1		
9	dstLength > TLV length	ToolkitException.OUT_OF_TLV_	
٦	valueOffset = 0	BOUNDARIES is thrown	
	dstBuffer.length = 15	BOUNDARIES IS INIOWN	
	dstOffset = 0		
	dstLength = 7		
10	valueOffset + dstLength > TLV length	ToolkitException.OUT_OF_TLV_	
'0	valueOffset = 2	BOUNDARIES is thrown	
	dstBuffer.length = 15	BOONDAKIES IS IIIIOWII	
	dstOffset = 0		
	dstLength = 5		
11	Search TLV 01h		
	copyValue()	ToolkitException.UNAVAILABLE	
		ELEMENT is thrown on the	
		copyValue() method	
12	Search TLV 06h	copy value() method	
12	Successful call	Result of copyValue() is 0x0006	
	valueOffset = 0	Result of copy value() is 0x0000	
	dstBuffer.length = 6		
	dstOffset = 0		
	dstLength = 6		
13	Compare buffer	Result is 00h	
	buffer = 81 11 22 33 44 F5		
14	initialise dstBuffer		
	dstBuffer = 55 55 55		
	Successful call	Result of copyValue() is 0x0007	
	valueOffset = 1		
	dstBuffer.length = 20		
	dstOffset = 3		
	dstLength = 4		
15	Compare buffer	Result is 00h	
	buffer =		
	55 55 55 11 22		
	33 44 55 55 55		
	55 55 55 55		
4.0	55 55 55 55 55	D	
16	Successful call, copy with length =0	Result of copyValue() is 20	
	<pre>dstBuffer.length = 20 dstOffset = 20</pre>		
	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 Method compareValue

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 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.

6.2.4.13.3 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

Cleanup 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 ii Expositation	7.1 DO Expodiano.
•	compareValue() with a null compareBuffer	NullPointerException is thrown	
2	Search TLV 0Bh		
	<pre>compareOffset ≥ compareBuffer.length compareBuffer.length = 5 compareOffset = 5 compareLength = 1</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
3	<pre>compareOffset < 0 compareBuffer.length = 5 compareOffset = -1 compareLength = 1</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
4	<pre>compareLength >compareBuffer.length compareBuffer.length = 5 compareOffset = 0 compareLength = 6</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
5	<pre>compareOffset + compareLength</pre>	ArrayIndexOutOfBoundsException is thrown	
6	<pre>compareLength < 0 compareBuffer.length = 5</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	

		1	
	compareOffset = 0		
7	compareLength = -1 Search TLV 06h		
/		To all it Free and in a OUT OF TIVE	
	valueOffset ≥ TLV Length	ToolkitException.OUT_OF_TLV_	
	<pre>valueOffset = 6 compareBuffer.length = 15</pre>	BOUNDARIES is thrown	
	compareOffset = 0		
	compareLength = 1		
8	valueOffset < 0	ToolkitException.OUT_OF_TLV_	
	valueOffset = -1	BOUNDARIES is thrown	
	compareBuffer.length = 15		
	compareOffset = 0		
	compareLength = 1		
9	compareLength > TLV length	ToolkitException.OUT_OF_TLV_	
	valueOffset = 0	BOUNDARIES is thrown	
	compareBuffer.length = 15		
	compareOffset = 0		
10	compareLength = 7 valueOffset + compareLength > TLV length	ToolkitException.OUT_OF_TLV_	
10	valueOffset = 2	BOUNDARIES is thrown	
	compareBuffer.length = 15	BOUNDARIES IS UITOWIT	
	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	Decidé a 4	
4.4	Compare buffers with same parameters	Result is -1	
14	Initialise compareBuffer compareBuffer =		
	compareBuiler		
	Compare buffers with same parameters	Result is -1	
15	Initialise compareBuffer	result is -1	
13	compareBuffer =		
	55 55 55 81 11 22 33 44 F5		
	55 55 55 55		
	Compare buffers	Result is 00h	
	valueOffset = 1		
	compareOffset = 4		
	compareLength = 5		
16	Initialise compareBuffer		
	compareBuffer =		
	55 55 55 81 10 22 33 44 F5 55 55 55 55 55		
-	Compare buffers with same parameters	Result is +1	
17	Initialise compareBuffer	INGOUIL IO T I	
17	compareBuffer =		
	55 55 55 81 12 22 33 44 F5		
	55 55 55 55 55		
	Compare buffers with same parameters	Result is -1	
	The state of the s		
18	Successful call, compareValue with length =0	Result of compareValue() is 0	
	CompareBuffer.length = 15	in the state of th	
	CompareOffset = 15		
L	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 Method findAndCopyValue(byte tag, byte[] dstBuffer, short dstOffset)

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

Cleanup 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	n is thrown	
	<pre>dstBuffer.length = 06 dstOffset = 06</pre>		
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	
5	DstBuffer.length = 06	n is thrown	
	DstOffset = 1		
6	Select a TLV (tag 02h)		
	findAndCopyValue()	ToolkitException.UNAVAILABLE	
	tag = 03h	_ELEMENT is thrown	
	Call the getValueLength() method	ToolkitException.UNAVAILABLE	
7	Successful call	_ELEMENT is thrown. Result of findAndCopyValue () is	
'	Tag = 06h	0006	
	DstBuffer.length = 06	0000	
	DstOffset = 0		
8	Compare buffer	Result is 00h	
9	buffer = 81 11 22 33 44 F5 initialise dstBuffer		
9	dstBuffer = 55 55 55		
	Successful call	Result of findAndCopyValue () is	
	dstBuffer.length = 12	0008	
	dstOffset = 2		
10	Compare buffer	Result is 00h	
	buffer = 55 55 81 11 22 33 44 F5 55 55 55 55		
	00 00 01 11 12 00 11 10 00 00 00		
11	Successful call	Result of findAndCopyValue () is	
	tag = 02h	0002	
	<pre>dstBuffer.length = 2 dstOffset = 0</pre>		
12	Compare buffer	Result is 00h	
12	buffer = 83 81	Tresuit is out	
13	Successful call (with tag 82h)	Result of findAndCopyValue () is	
	tag = 82h	0002	
	dstBuffer.length = 02		
14	dstoffset = 0 Compare buffer	Result is 00h	
'-	buffer = 83 81	TOGULIS OUT	
15	Successful call (with tag B3h)	Result of findAndCopyValue () is	
	tag = B3h	00C4	
	dstBuffer.length = C4		
16	dstOffset = 0 Compare buffer	Result is 00h	
10	buffer = 01 02 C4	Mesuit is UUII	
	Daller - 01 02 C1	1	

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

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

Cleanup 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	NullDeinterFreentier is the	
1	findAndCopyValue() with a null dstBuffer	NullPointerException is thrown	
2	<pre>dstOffset ≥ dstBuffer.length tag = 06h, occurrence = 1</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
	valueOffset = 0		
	<pre>dstBuffer.length = 5 dstOffset = 5</pre>		
	dstLength = 1		
3	<pre>dstOffset < 0 dstBuffer.length = 5</pre>	ArrayIndexOutOfBoundsExceptio	
	dstBuller.length = 5 dstOffset = -1	n is thrown	
	dstLength = 1		
4	<pre>dstLength >dstBuffer.length dstBuffer.length = 5</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
	dstOffset = 0	II IS UIIOWII	
	dstLength = 6		
5	<pre>dstOffset + dstLength >dstBuffer.length dstBuffer.length = 5</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
	dstOffset = 3	II IS UIIOWII	
	dstLength = 3	1 1 1 0 10/5	
6	<pre>dstLength < 0 dstBuffer.length = 5</pre>	ArrayIndexOutOfBoundsExceptio	
	dstOffset = 0	II IS UIIOWII	
7	dstLength = -1	TablistEvantion OUT OF TIV	
7	valueOffset ≥ Value Length tag = 06h, occurrence = 1	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
	valueOffset = 6	DOONDANIES IS UNIOWIT	
	dstBuffer.length = 15		
	<pre>dstOffset = 0 dstLength = 1</pre>		
8	valueOffset < 0	ToolkitException.OUT_OF_TLV_	
	<pre>valueOffset = -1 dstBuffer.length = 15</pre>	BOUNDARIES is thrown	
	dstOffset = 0		
	dstLength = 1	T 1175 17 01 T 05 T) V	
9	dstLength > Value length valueOffset = 0	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
	dstBuffer.length = 15	BOONDAINEO IS UITOWIT	
	<pre>dstOffset = 0 dstLength = 7</pre>		
10	valueOffset + dstLength > Text String length	ToolkitException.OUT_OF_TLV_	
	<pre>valueOffset = 2</pre>	BOUNDARIES is thrown	
	<pre>dstBuffer.length = 15 dstOffset = 0</pre>		
L	dstLength = 5		
11	Select a TLV (tag 02h)		
	findAndCopyValue() tag = 06h	ToolkitException.UNAVAILABLE	
	occurrence = 2	_ELEMENT is thrown	
	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		
13	dstLength = 06 Compare buffer	Result is 00h	
	buffer = 81 11 22 33 44 F5		
14	initialise dstBuffer		
	dstBuffer = 55 55 55 Successful call	Result of findAndCopyValue () is	
	tag = 06h, occurrence = 1	0007	
	<pre>valueOffset = 2</pre>		

	dstBuffer.length = 12		
	dstOffset = 3		
	dstLength = 04		
15	Compare buffer	Result is 00h	
	buffer =	1 toodit to oot.	
	55 55 55 22 33 44 F5 55 55 55 55 55		
16	Successful call	Result of findAndCopyValue() is	
. •	tag = 02h, occurrence = 1	0002	
	valueOffset = 0	0002	
	dstBuffer.length = 12		
	dstOffset = 0		
	dstLength = 2		
17	Compare buffer	Result is 00h	
	buffer = 83 81 55 55		
18	Successful call	Result of findAndCopyValue() is	
	tag = 02h, occurrence = 2	0002	
	<pre>valueOffset = 0</pre>		
	dstBuffer.length = 12		
	dstOffset = 0		
	dstLength = 2		
19	Compare buffer	Result is 00h	
	buffer = 22 44 55 55		
20	Successful call (with tag 82h)	Result of findAndCopyValue () is	
	tag = 82h	0002	
	occurrence = 1		
	<pre>valueOffset = 0</pre>		
	dstBuffer.length = 12		
	dstOffset = 0		
21	dstLength = 02	Result is 00h	
21	Compare buffer buffer = 83 81 55 55	Result is oon	
22	Successful call (with tag 82h)	Deput of find And ConvA (alue () is	
22	tag = 82h	Result of findAndCopyValue () is	
	occurrence = 2	0002	
	valueOffset = 0		
	dstBuffer.length = 12		
	dstOffset = 0		
	dstLength = 02		
23	Compare buffer	Result is 00h	
	Buffer = 22 44 55 55		
24	Successful call, findAndCopyValue with	Result of findAndCopyValue () is	
	length =0	12	
	DstBuffer.length = 12		
	dstOffset = 12		
	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 Method findAndCompareValue(byte tag, byte[] compareBuffer, short compareOffset)

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

Cleanup 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		
	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	
	compareBuffer.length = 12		
	compareOffset = 12		
3	compareOffset < 0	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length = 12	n is thrown	
	compareOffset = -1		
4	length > compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length = 05	n is thrown	
	compareOffset = 0		
5	compareOffset + length >	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length	n is thrown	
	compareBuffer.length = 12		
	compareOffset = 7		
6	Select a TLV (tag 02h)		

	<pre>findAndCompareValue() tag = 03h</pre>	ToolkitException.UNAVAILABLE ELEMENT is thrown	
	Call the getValueLength() method	ToolkitException.UNAVAILABLE _ELEMENT is thrown.	
7	Initialise compareBuffer compareBuffer = 81 11 22 33 44 F5		
	Compare buffers	Result is 00h	
	tag = 06h		
	compareOffset = 0	Describle 00	
8	Verify current TLV getValueLength()	Result is 06	
9	Initialise compareBuffer		
3	compareBuffer = 81 11 22 33 44 F4		
	Compare buffers with same parameters	Result is +1	
10	Initialise compareBuffer		
	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 compareOffset = 2	Result is 00h	
12	Initialise compareBuffer		
12	compareBuffer =		
	55 55 83 81 55 55 55 55 55 55 55		
	Compare buffers	Result is 00h	
	<pre>compareOffset = 2</pre>		
13	Initialise compareBuffer		
	compareBuffer =		
	55 55 83 80 55 55 55 55 55 55 55 55 Compare buffers	Result is +1	
	compareOffset = 2	Result is +1	
14	Initialise compareBuffer		
	compareBuffer =		
	55 55 83 82 55 55 55 55 55 55 55		
	Compare buffers	Result is -1	
4 =	compareOffset = 2		
15	Initialise compareBuffer compareBuffer =		
	83 81 55 55 55 55 55 55 55 55 55		
	Successful call (with tag 02h)	Result is 00h	
	tag = 02h		
	compareBuffer.length = 12		
	compareOffset = 0		
16	Initialise compareBuffer		
	CompareBuffer = 01 02 C4	Dogult in OOh	
	Successful call (with tag B3h) Tag = B3h	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 Method findAndCompareValue(byte tag, byte occurrence, short valueOffset, byte[] compareBuffer, short compareOffset, short compareLength)

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
Cleanup Script: API_2_ENH_FACRBBS_BSS_1.clr

6.2.4.17.3 Test procedure

Fill the SMS PP with TV. Tag 02 Value 22 44 Tag 32, counger Collable 91 02 findAncCompareBuffer compareBuffer compareBuffer compareBuffer March MullPointerException is thrown compareBuffer MullPointerException ArrayIndexOutOlBoundsException is thrown compareBuffer Length = 6 compareBuffer in thrown in thrown compareBuffer compareBuffer in thrown in thro	lal	Description	API Expectation	ADDII Expectation
Tag 33, Length C4 Value 01 02 1	ld		API Expectation	APDU Expectation
compareBuffer t ag = 06h, occurrence = 1 valueOffset > 0 compareBuffer comp		Tag 33, Length C4 Value 01 02		
cag = 06h, occurrence = 1 valueOffset < 0 compareOffset = 0	1		NullPointerException is thrown	
cag = 06h, occurrence = 1 valueOffset < 0 compareOffset = 0	2	compareOffset ≥ compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
compareOffset = 6 compareOffset = 1 3				
compareoffset = 6 compareoffset < 0 compareoffset < 0 compareoffset = 1 valueoffset = 1 compareoffset = 1 compareoffset = 1 compareoffset = 1 compareoffset = 0 compareoffset		valueOffset = 0		
compareLength = 1 compareOffset < 0		<pre>compareBuffer.length = 6</pre>		
CompareDiffect OccupareOffset Occu		-		
compareJuffer Jength = 6 compareJength = 1 compareJength = 0 compareJength = 1 compareJeng				
compareLength = 1 compareLength = 1 compareLength = 1 compareDeffset = 0 compareDeffset = 3 compareDeffset = 3 compareDeffset = 3 compareDeffset = 3 compareDeffset = 0 compareDeffset =	3		ArrayIndexOutOfBoundsExceptio	
d compareLength > compareBuffer.length d compareBuffer length = 5 compareOffset = 0 compareDeffset > compareOffset + compareLength compareBuffer length = 5 compareOffset = 3 compareLength = 3 6			n is thrown	
CompareBuffer CompareBuffe		-		
compareDiffert = 0 compareDiffert = 0 compareDiffert = 0 compareDiffert = 0 compareDiffert + compareDiffert comp	4		A many day day (O) stOfD a vanda Even anti-	
compareOffset = 0 compareLength 5 compareBuffer.length compareBuffer.length sompareBuffer.length sompareLength	4			
compareLength = 6		-	n is thrown	
CompareOffset + compareLength				
ScompareBuffer.length = 5	5		ArrayIndexOutOfBoundsExceptio	
compareBuffer: length = 5 compareLength = 3 compareLength = 3 compareLength = 3 6			· · · · · · · · · · · · · · · · · · ·	
compareLength = 3 compareLength < 0 compareLength = 5 compareLength = 5 compareDeffect = 0 compareLength = 1 compareDeffect = 0 compareDeff				
CompareBuffer Length 5 CompareBuffer 11 Length 12 Length 12 Length 13 CompareBuffer 14 Length 14 Le				
compareButfer length = 5 compareLength = -1				
compareOffset = 0 compareLength = -1	6			
compareLength = -1			n is thrown	
ToolkitException.OUT_OF_TLV_BOUNDARIES is thrown ToolkitException.OUT_OF_TLV_BOUNDARIES is thr		-		
tag = 06h, occurrence = 1 valueOffset = 6 compareBuffer, length = 15 compareDeffset = 0 valueOffset = -1 compareDeffset = 0 compareLength = 1 9			T 11:15 1: 01 T 05 T1 1/	
valueOffset = 6 compareButfer,length = 15 compareOffset = 0 compareIntfer,length = 15 compareDest = -1 compareButfer,length = 15 compareButfer,length = 15 compareButfer,length = 15 compareButfer,length = 15 compareLength = 1 9	/			
compareBuffer.length = 15 compareOffset = 0 valueOffset = -1 compareSuffer.length = 15 compareOffset = 0 valueOffset = -1 compareOffset = 0 compareIngth = 15 compareOffset = 0 compareLength = 1 CompareLength = 1 CompareLength = 1 CompareLength = 15 compareOffset = 0 compareOffse		-	BOUNDARIES IS INFOWN	
compareDefiset = 0 compareDefiset < 0 valueOffset = -1 compareBuffer length = 15 compareDefiset = 0				
CompareLength = 1				
valueOffset = -1 compareBuffer.length = 15 compareOffset = 0 compareLength > Value length valueOffset = 0 compareLength > Value length valueOffset = 0 compareDengter = 0 compareDengter = 0 compareDengter = 0 compareOffset = 0 compareOffset = 0 compareDength > Value length valueOffset + compareLength > Value length valueOffset + compareLength > Value length valueOffset = 0 compareOffset = 0 compareDengter = 0		-		
compareBuffer.length = 15 compareDeffset = 0 compareLength > Value length valueOffset = 0 compareBuffer.length = 15 compareDeffset = 0 compareBuffer.length = 15 compareDeffset = 0 compareDeffset = 81 11 22 33 44 F5 Initialise compareBuffer compareDeffset = 0 compareDeffset = 81 11 22 33 44 F4 Verify current TLV getValueDeffset = 81 11 22 33 44 F4 CompareDeffset = 81	8	valueOffset < 0	ToolkitException.OUT_OF_TLV_	
compareDeffset = 0 compareLength > Value length valueOffset = 0 compareDeffer.length = 15 compareDeffer.length = 15 compareDeffer.length = 15 compareDeffer.length = 7 10			BOUNDARIES is thrown	
compareLength = 1				
CompareLength > Value length valueOffset = 0 compareOffset = 0 compareOffset = 15 compareOffset = 0 compareOffset = 2 compareOffset = 0 compareOffset = 0 compareOffset = 0 compareOffset = 0 compareLength = 5 Initialise compareOffset = 0 compa				
valueOffset = 0 compareBuffer.length = 15 compareOffset = 0 compareLength = 7 10	0		ToolkitEvention OUT OF TIV	
compareBuffer.length = 15 compareIngth = 7 10	9			
compareOffset = 0 compareLength = 7 10			BOONDAINEO IS UNOWIT	
ToolkitException.OUT_OF_TLV_BOUNDARIES is thrown		-		
valueOffset = 2 compareBuffer.length = 15 compareOffset = 0 compareOffset = 81 11 22 33 44 F4 CompareOffset = 81 1				
compareDuffer.length = 15 compareOffset = 0 compareLength = 5 11	10			
compareOffset = 0 compareLength = 5 11			BOUNDARIES is thrown	
CompareLength = 5		-		
Invalid parameter ToolkitException.BAD_INPUT_P ARAMETER is thrown				
Occurrence = 0	11		ToolkitException BAD_INPLIT_P	
Select a TLV (tag 02h) findAndCompareValue() tag = 06h occurrence = 2 ToolkitException.UNAVAILABLE _ELEMENT is thrown	' '	<u>-</u>		
findAndCompareValue() tag = 06h occurrence = 2 Call the getValueLength() method Initialise compareBuffer compareBuffer = 81 11 22 33 44 F5 findAndCompareValue() tag = 06h, occurrence = 1 valueOffset = 0 compareDength = 6 Verify current TLV getValueLength() Initialise compareBuffer compareBuffer = 81 11 22 33 44 F4 Compare buffers with same parameters Result is 00h Result is 00h Result is 0006 Result is 0006 Result is 0006	12	Select a TLV (tag 02h)		
tag = 06h occurrence = 2 Call the getValueLength() method Initialise compareBuffer compareBuffer = 81 11 22 33 44 F5 findAndCompareValue() tag = 06h, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 6 Verify current TLV getValueLength() Is initialise compareBuffer compareBuffer = 81 11 22 33 44 F4 Compare buffers with same parameters Result is 0006 Result is 0006 Result is 0006 Result is 0006	<u> </u>		ToolkitException,UNAVAILABLE	
Call the getValueLength() method				
		occurrence = 2	_	
Initialise compareBuffer compareBuffer = 81 11 22 33 44 F5 findAndCompareValue() tag = 06h, occurrence = 1 valueOffset = 0 compareLength = 6 14 Verify current TLV getValueLength() 15 Initialise compareBuffer compareBuffer = 81 11 22 33 44 F4 Compare buffers with same parameters Result is 0006 Result is 0006		Call the getValueLength() method	ToolkitException.UNAVAILABLE	
compareBuffer = 81 11 22 33 44 F5 findAndCompareValue() tag = 06h, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 6 14 Verify current TLV getValueLength() 15 Initialise compareBuffer compareBuffer = 81 11 22 33 44 F4 Compare buffers with same parameters Result is 0006			_ELEMENT is thrown.	
findAndCompareValue() tag = 06h, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 6 14	13			
tag = 06h, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 6 14				
valueOffset = 0 compareOffset = 0 compareLength = 6 14			Result is 00h	
compareOffset = 0 compareLength = 6 14		-		
compareLength = 6 14				
14 Verify current TLV getValueLength() 15 Initialise compareBuffer compareBuffer = 81 11 22 33 44 F4 Compare buffers with same parameters Result is 0006 Result is 0006 Result is +1		-		
getValueLength() 15 Initialise compareBuffer compareBuffer = 81 11 22 33 44 F4 Compare buffers with same parameters 16 Initialise compareBuffer	14		Result is 0006	
15 Initialise compareBuffer compareBuffer = 81 11 22 33 44 F4 Compare buffers with same parameters Result is +1 16 Initialise compareBuffer		=		
compareBuffer = 81 11 22 33 44 F4 Compare buffers with same parameters Result is +1 16 Initialise compareBuffer	15	Initialise compareBuffer		
16 Initialise compareBuffer		compareBuffer = 81 11 22 33 44 F4		
			Result is +1	
compareBuffer = 81 11 22 33 44 F6	16			
		compareBuffer = 81 11 22 33 44 F6	l l	

	Compare buffers with same parameters	Result is -1	
17	Initialise compareBuffer	ivesuit is - i	
''	compareBuffer =		
	55 55 55 22 33 44 F5 55 55 55 55		
	Compare buffers	Result is 00h	
	valueOffset = 2	Nesult is oon	
	compareOffset = 3		
	compareLength = 4		
18	Initialise compareBuffer		
10	compareBuffer =		
	55 55 55 22 33 45 F5 55 55 55 55		
	Compare buffers with same parameters	Result is -1	
19	Initialise compareBuffer	result is 1	
19	compareBuffer =		
	55 55 55 22 33 43 F5 55 55 55 55		
	Compare buffers with same parameters	Result is +1	
20	Initialise compareBuffer	Nesult is +1	
20	compareBuffer =		
1	83 81 55 55 55 55 55 55 55 55 55		
	findAndCompareValue()	Result is 00h	
	tag = 02h, occurrence = 1	IVESUIT IS OOH	
	valueOffset = 0		
	compareOffset = 0		
	compareLength = 2		
21	Initialise compareBuffer		
	compareBuffer =		
	22 44 55 55 55 55 55 55 55 55 55		
	findAndCompareValue()	Result is 00h	
	tag = 02h, occurrence = 2		
	valueOffset = 0		
	compareOffset = 0		
	compareLength = 2		
22	Initialise compareBuffer		
	compareBuffer =		
	22 45 55 55 55 55 55 55 55 55		
	findAndCompareValue()	Result is -1	
	tag = 02h, occurrence = 2		
	<pre>valueOffset = 0</pre>		
	compareOffset = 0		
	compareLength = 2		
23	Initialise compareBuffer		
	compareBuffer = 83 81 55 55 55 55 55 55 55 55 55		
<u> </u>		Result is 00h	
	Successful call (with tag 02h) tag = 02h, occurrence = 1	IVESUIT IS OOH	
	valueOffset = 0		
	compareBuffer.length = 12		
	compareOffset = 0		
	compareLength = 2		
24	Initialise compareBuffer		
	compareBuffer = 01 02 C4		
	Successful call (with tag B3h)	Result is 00h	
	tag = B3h, occurrence = 1		
	<pre>valueOffset = 0</pre>		
	<pre>compareBuffer.length = 00C4</pre>		
	compareOffset = 0		
	compareLength = 00C4		
25	Successful call, findAndCompareValue with	Result of findAndCompareValue()	
	length =0	is 00h	
	DstBuffer.length = C4		
	DstOffset = C4		
1	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 Method getTheHandler

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

No requirements

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

Cleanup 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 Method post

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

No requirements

Context errors

CRRC1: The method shall thrown ToolkitException (HANDLER_NOT_AVAILABLE) if the handler is busy.

6.2.5.2.2 Test suite files

Specific triggering: Call control

Test Script: API_2_ERH_POSTB_1.scr

Test Applet: API_2_ERH_POSTB_1.java

Load Script: API_2_ERH_POSTB_1.ldr

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

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 Method postAsBERTLV

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.

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

No requirements

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

Cleanup 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
			retrieved by a FETCH
6	Verify it is not possible to postAsBERTLV	ToolkitException	
	after a proactive command	HANDLER_NOT_AVAILABLE is	
	getTheHandler, appendTLV, send a	thrown on the postAsBERTLV	
7	display text, postAsBERTLV.	ToolkitEvantian	0E14 and pasted data
'	Verify that the handler is no more available after a postAsBERTLV	ToolkitException HANDLER_NOT_AVAILABLE is	9E14 and posted data retrieved by a GET
	getTheHandler, appendTLV(with data	thrown on the second postAsBERTLV	RESPONSE the tag shall be
	length = 0x10, postAsBERTLV with status	I IIIOWII OII IIIE SECONU POSIASDEKTEV	56 with status 9000
	9E, tag 56, postAsBERTLV with status		JU WILLI SLALUS 3000
	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

No requirements

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

Specific triggering: Unrecognized Envelope

Test Script: API_2_ERH_GLEN_1.scr

Test Applet: API_2_ERH_GLEN_1.java

Load Script: API_2_ERH_GLEN_1.ldr

Cleanup 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 253	
	of 250		
	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()		

Note: Test case 3 is limited to 253 and not 256 because the current 03.19 [7] is not clear enough on this point. So this test allows the two possible implementations.

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.

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

Specific triggering: Unrecognized Envelope

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
Cleanup Script: API_2_ERH_COPY_BSS_1.clr

6.2.5.5.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	appendTLV with value length of 7		
	NULL as parameter to dstBuffer	NullPointerException is thrown	
2			
	dstOffset ≥ dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = 5		
3	dstLength = 1 dstOffset < 0	ArrayIndexOutOfBoundsExceptio	
٥	dstBuffer.length = 5	n is thrown	
	dstOffset = -1	II is tillowii	
	dstLength = 1		
4	dstLength > dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = 0		
5	dstLength = 6 dstOffset + dstLength > dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
3	dstBuffer.length = 5	n is thrown	
	dstOffset = 3	II is tillowii	
	dstLength = 3		
6	dstLength < 0	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	<pre>dstOffset = 0 dstLength = -1</pre>		
7	dstLength > length of the simple TLV list	ToolkitException.OUT_OF_TLV_	
′	dstBuffer.length = 10	BOUNDARIES is thrown	
	dstOffset = 0	BOOMB/ INTEG IS THOWN	
	dstLength = 10		
8	Successful call, dstBuffer is the whole buffer	Result of copy() is 9	
	dstBuffer.length = 9		
	<pre>dstOffset = 0 dstLength = 9</pre>		
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		
	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	
	<pre>dstBuffer.length = 15 dstOffset = 3</pre>		
	dstLength = 6		
13	Compare the whole buffer	Result of arrayCompare() is 0	
14	Successful call, copy with length =0	Result of copy() is 15	
	dstBuffer.length = 15		
	dstOffset = 15		
	dstLength = 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

Specific triggering: Unrecognized Envelope

Test Script: API_2_ERH_FINDBB_1.scr

Test Applet: API_2_ERH_FINDBB_1.java

Load Script: API_2_ERH_FINDBB_1.ldr

Cleanup 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	

	m 0.21		
	Tag = 03h		
	Occurrence = 1		
7	Call the getValueLength() method	ToolkitException.UNAVAILABLE	
1	J. J	ELEMENT is thrown.	
	0 1 1 1 1 1 1 1		
8	Search a tag with wrong occurrence	Result is TLV_NOT_FOUND	
	Tag = 01h		
	Occurrence = 2		
9	Call the getValueLength() method	ToolkitException.UNAVAILABLE	
	Jan. 11.1 gerrana – 11. g. 11. () 11. 11. 11. 11. 11. 11. 11. 11. 11. 11	ELEMENT is thrown.	
4.0	A I . TI . /	_LLLIVILIAT IS UITOWIT.	
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	12V_1 00NB_0N_NO1_021	
12	Search tag 81h	Result is TLV_FOUND_CR_SET	
	Tag = 81h		
	Occurrence = 1		
13	Search tag 84h	Result is	
13	Tag = 84h		
	3	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

No requirements

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

Specific triggering: Unrecognized Envelope

Test Script: API_2_ERH_GVLE_1.scr

Test Applet: API_2_ERH_GVLE_1.java

Load Script: API_2_ERH_GVLE_1.ldr

Cleanup Script: API_2_ERH_GVLE_1.clr

6.2.5.7.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1		AFTEXPECIATION	APDO Expectation
1	appendTLV 02 02 02 02 findTLV with TAG 03		
		TH:4FtiLINIAN/AH ADI F	
	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		
	getValueLength()	Result is 80h	
6	Clear the handler and append TLV with TAG		
	0D and length 0xF1		
	Search TLV 0Dh		
	getValueLength()	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.

 $\label{eq:public_byte} \mbox{public byte getValueByte(short valueOffset)} \\ \mbox{throws ToolkitException}$

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

Specific triggering: Unrecognized Envelope

Test Script: API_2_ERH_GVBYS_1.scr

Test Applet: API_2_ERH_GVBYS_1.java

Load Script: API_2_ERH_GVBYS_1.ldr

Cleanup 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		
	findTLV with TAG 03		
	getValueByte(0)	ToolkitException.UNAVAILABLE _ELEMENT is thrown	
2	Search TLV 01h		
	<pre>getValueByte(3)</pre>	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

Specific triggering: Unrecognized Envelope

Test Script: API_2_ERH_CPYVS_BSS_1.scr
Test Applet: API_2_ERH_CPYVS_BSS_1.java

Load Script: API_2_ERH_CPYVS_BSS_1.ldr

Cleanup Script: API_2_ERH_CPYVS_BSS_1.clr

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6.2.5.9.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	appendTLV with TAG: 0D and length 16	AFTEXPECTATION	AF DO Expectation
'	Select Text String TLV		
	copyValue() with a null dstBuffer	Null Dointer Evention in thrown	
2	copyvarue() with a null ustbuller	NullPointerException is thrown	
	detOffeet > detDiiffee leveth	A recyle doy Out Of Doy and Expontin	
	dstOffset ≥ dstBuffer.length dstBuffer.length = 5	ArrayIndexOutOfBoundsException is thrown	
	dstOffset = 5	II IS UIIOWII	
	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	
	dstBuffer.length = 5	n is thrown	
	<pre>dstOffset = 0 dstLength = -1</pre>		
	aschengen – 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	
	dstBuffer.length = 15		
	dstOffset = 0		
_	dstLength = 1	Tablitana dia OUT OF TIV	
8	<pre>valueOffset < 0 valueOffset = -1</pre>	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
	dstBuffer.length = 15	BOUNDARIES IS INIOWN	
	dstOffset = 0		
	dstLength = 1		
9	dstLength > Text String length	ToolkitException.OUT_OF_TLV_	
	valueOffset = 0	BOUNDARIES is thrown	
	<pre>dstBuffer.length = 15 dstOffset = 0</pre>		
	dstlength = 7		
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		
11	copyValue()	ToolkitException.UNAVAILABLE	
	- COP1 * GIAC ()	ELEMENT is thrown	
12	clear the handler, appendTLV with TAG: 0D	LLLIVILIVI IS UITOWII	
'-	and value: 04 00 01 0F		
	Select Text String TLV		
	Successful call	Result of copyValue() is 17	
	<pre>valueOffset = 0</pre>		
	dstBuffer.length = 17		
	dstOffset = 0		
13	dstLength = 17 Compare buffer	Result is 00h	
13	buffer = 04 00 01 0F	IVESUIT IS ON!	
	2011 - 01 00 01 m 0F		
14	initialise dstBuffer		
' '	dstBuffer = 55 55 55		
	Successful call	Result of copyValue() is 15	
	<pre>valueOffset = 2</pre>	, , , ,	
	dstBuffer.length = 20		
	<pre>dstOffset = 3 dstLength = 12</pre>		
l	uschength = 12	ı	

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

Specific triggering: Unrecognized Envelope

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

Cleanup Script: API_2_ERH_CPRVS_BSS_1.clr

6.2.5.10.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	appendTLV with TAG: 0D and length 16 Select Text String TLV		
	compareValue() with a null compareBuffer	NullPointerException is thrown	
2			
	<pre>compareOffset ≥ compareBuffer.length compareBuffer.length = 5 compareOffset = 5 compareLength = 1</pre>	ArrayIndexOutOfBoundsException is thrown	
3	<pre>compareOffset < 0 compareBuffer.length = 5 compareOffset = -1 compareLength = 1</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
4	<pre>compareLength >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 < 0 compareBuffer.length = 5 compareOffset = 0 compareLength = -1</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
7	appendTLV with TAG: 0D and length 6 Select Text String TLV		
	<pre>valueOffset ≥ Text String Length valueOffset = 6 compareBuffer.length = 15 compareOffset = 0 compareLength = 1</pre>	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
8	<pre>valueOffset < 0 valueOffset = -1 compareBuffer.length = 15 compareOffset = 0 compareLength = 1</pre>	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
9	<pre>compareLength > Text String length valueOffset = 0 compareBuffer.length = 15 compareOffset = 0 compareLength = 7</pre>	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
10	<pre>valueOffset + compareLength > Text String</pre>	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
11	Initialise the handler compareValue()	ToolkitException.UNAVAILABLE ELEMENT is thrown	
12	appendTLV with TAG: 0D and value: 04 00 01		

	0F	
	Select Text String TLV	
	Initialise compareBuffer	
	compareBuffer =	
	04 00 01 OF	
	Compare buffers	Result is 00h
	<pre>valueOffset = 0</pre>	
	compareOffset = 0	
	compareLength = 17	
13	Initialise compareBuffer	
	<pre>compareBuffer =</pre>	
	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	
	<pre>compareBuffer =</pre>	
	03 00 01 0F	
	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	
	Compare buffers	Result is 00h
	valueOffset = 2	
	<pre>compareOffset = 3</pre>	
	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	
	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	. "
	<pre>compareOffset = 15</pre>	
	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

Specific triggering: Unrecognized Envelope

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

Cleanup 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>	ArrayIndexOutOfBoundsExceptio n is thrown	
3	<pre>dstOffset < 0 dstBuffer.length = 20 dstOffset = -1</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
4	<pre>dstOffset + length >dstBuffer.length dstBuffer.length = 20 dstOffset = 5</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
5	<pre>length > dstBuffer.length dstBuffer.length = 15</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	

		T	
	dstOffset = 0		
	along the handler engaged IV with TAC CO		
6	clear the handler, appendTLV with TAG 02 and Length 02		
-	Select a TLV (tag 02h)		
	findAndCopyValue()	ToolkitEveentien LINAVAII ADI E	
	tag = 03h	ToolkitException.UNAVAILABLEELEMENT is thrown	
	Call the getValueLength() method	ToolkitException.UNAVAILABLE	
	3. (_ELEMENT is thrown.	
7	appendTLV with TAG: 0D and value: 04 00 01		
	0F		
	Successful call	Result of findAndCopyValue() is	
	Tag = 0Dh	17	
	<pre>dstBuffer.length = 17 dstOffset = 0</pre>		
8	Compare buffer	Result is 00h	
	buffer = 04 00 01 0F	Treating out	
	· · · · · · · · · · · · · · · · · · ·		
9	initialise dstBuffer		
	dstBuffer = 55 55 55		
	Successful call	Result of findAndCopyValue() is	
	dstBuffer.length = 20	19	
	dstOffset = 2		
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		
	l and - · a· · -· ·		
<u> </u>	append a 2 nd Text String TLV		
	Successful call	Result of findAndCopyValue() is	
	<pre>tag = 0Dh dstBuffer.length = 17</pre>	17	
	dstBuller.length = 1/ dstOffset = 0		
12	Compare buffer	Result is 00h	
L'	buffer = 04 00 01 0F		
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	
	<pre>dstBuffer.length = 17 dstOffset = 0</pre>		
14	Compare buffer	Result is 00h	
' -	buffer = 04 00 01 OF	1 TOOGIL IS OOT	
15	Append tag 0Fh		
L	buffer = 00 01 0F		
	Successful call (with tag 8Fh)	Result of findAndCopyValue() is	
	tag = 8Fh	16	
	dstBuffer.length = 16		
16	dstOffset = 0	Popult is 00h	
16	Compare buffer buffer = 00 01 0F	Result is 00h	
	DUTTET = 00 OT " OL		

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
EnvelopeResponseHa	
	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

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

Specific triggering: Unrecognized Envelope

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

Cleanup 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	II lo ullowii	
	dstBuffer.length = 5		
	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	
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	1 1 0 1015	
6	<pre>dstLength < 0 dstBuffer.length = 5</pre>	ArrayIndexOutOfBoundsExceptio	
	dstBuller.length = 5 dstOffset = 0	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		
_	dstLength = 1	T 11:15 (: OUT OF TI)/	
8	<pre>valueOffset < 0 valueOffset = -1</pre>	ToolkitException.OUT_OF_TLV_	
	dstBuffer.length = 15	BOUNDARIES is thrown	
	dstOffset = 0		
	dstLength = 1		
9	dstLength > Text String length	ToolkitException.OUT_OF_TLV_	
	<pre>valueOffset = 0</pre>	BOUNDARIES is thrown	
	dstBuffer.length = 15		
	dstOffset = 0		
10	dstLength = 7 valueOffset + dstLength > Text String length	ToolkitException.OUT_OF_TLV_	
10	valueOffset = 2	BOUNDARIES is thrown	
	dstBuffer.length = 15	DOGNOANIEG IS UITOWIT	
	dstOffset = 0		
	dstLength = 5		
11	clear the handler, appendTLV with TAG 02		
	and Length 02		
	Select a TLV (tag 02h)	T 110E 0 101111111	
	<pre>findAndCopyValue() tag = 0Dh</pre>	ToolkitException.UNAVAILABLE	
	occurrence = 2	_ELEMENT is thrown	
	Call the getValueLength() method	ToolkitException.UNAVAILABLE	
	5	_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		

	dstOffset = 0		
	dstLength = 17		
13	Compare buffer	Result is 00h	
	buffer = 04 00 01 0F		
14	initialise dstBuffer		
	dstBuffer = 55 55 55		
	Successful call	Result of findAndCopyValue() is	
	tag = 0Dh, occurrence = 1	15	
	valueOffset = 2		
	dstBuffer.length = 20		
	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		
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	17	
	dstBuffer.length = 20		
	dstOffset = 0		
	dstLength = 17		
17	Compare buffer	Result is 00h	
	buffer = 04 00 01 0F		
18	Successful call	Result of findAndCopyValue() is	
	tag = 0Dh, occurrence = 2	6	
	<pre>valueOffset = 0</pre>		
	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	17	
	occurrence = 1		
	valueOffset = 0		
	<pre>dstBuffer.length = 17 dstOffset = 0</pre>		
	dstUriset = 0		
21	Compare buffer	Result is 00h	
- '	buffer = 04 00 01 0F	1300it is ooil	
22	Append tag 0Fh		
~~	buffer = 00 01 0F		
	Successful call (with tag 8Fh)	Result of findAndCopyValue () is	
	tag = 8Fh	16	
	occurrence = 1	1.5	
	<pre>valueOffset = 0</pre>		
	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		
1	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

Specific triggering: Unrecognized Envelope

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

Cleanup Script: API_2_ERH_FACRB_BS_1.clr

6.2.5.13.3 Test procedure

2	Description appendTLV with TAG: 0D and length 16 findAndCompareValue() with a null dstBuffer and tag 0Dh compareOffset ≥ compareBuffer.length	API Expectation NullPointerException is thrown	APDU Expectation
	findAndCompareValue() with a null dstBuffer and tag 0Dh compareOffset ≥ compareBuffer.length	NullPointerException is thrown	
	tag 0Dh compareOffset ≥ compareBuffer.length	Train Giner Exception to the mi	
	compareOffset ≥ compareBuffer.length		
3		A 1 1 0 101D 1 5 11	
3		ArrayIndexOutOfBoundsExceptio	
3	tag = 0Dh	n is thrown	
3	compareBuffer.length = 20		
- 3	compareOffset = 20	A 1 1 0 10'D 1 5 1:	
"	compareOffset < 0	ArrayIndexOutOfBoundsExceptio	
	<pre>compareBuffer.length = 20 compareOffset = -1</pre>	n is thrown	
		A de de CostOfD - cos de Fore esti-	
4	compareOffset + length >	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length	n is thrown	
	<pre>compareBuffer.length = 20 compareOffset = 5</pre>		
-		A may the day Out Of Day and a Type anti-	
5	<pre>length > compareBuffer.length compareBuffer.length = 15</pre>	ArrayIndexOutOfBoundsExceptio	
	compareOffset = 0	n is thrown	
6	clear the handler, appendTLV with TAG 02		
٥	and Length 02		
	Select a TLV (tag 02h)	Tablide and LINIAYAN ABLE	
	<pre>findAndCompareValue() tag = 03h</pre>	ToolkitException.UNAVAILABLE	
	3	_ELEMENT is thrown	
7	Verify current TLV	ToolkitException.UNAVAILABLE	
	getValueLength()	_ELEMENT is thrown.	
8	clear the handler and appendTLV with TAG:		
	0D and value: 04 00 01 0F		
	Initialise compareBuffer		
	compareBuffer =		
	04 00 01 OF		
	Compare buffers	Result is 00h	
	tag = 0Dh		
	compareOffset = 0		
9	Verify current TLV	Result is 17	
	getValueLength()		
10	Initialise compareBuffer		
	compareBuffer =		
	04 00 01 10	D 11: 4	
	Compare buffers with same parameters	Result is -1	
11	Initialise compareBuffer		
	compareBuffer =		
	03 00 01 0F	Docult is 14	
40	Compare buffers with same parameters	Result is +1	
12	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		
13	append a Text String TLV		
	tag = 0Dh		
	buffer = 00 11 22 33 44 55		
İ	Initialise compareBuffer		
	compareBuffer =		
	55 55 04 00 01		
	02 03 04 05 06		
	07 08 09 0A 0B		
	OC OD OE OF 55	D W. OOL	
	Compare buffers	Result is 00h	

	<pre>compareOffset = 2</pre>		
14	Initialise compareBuffer		
	compareBuffer =		
	55 55 04 01 01		
	02 03 04 05 06		
	07 08 09 0A 0B		
	OC OD OE OF 55		
	Compare buffers	Result is -1	
	compareOffset = 2		
15	Initialise compareBuffer		
	compareBuffer =		
	55 55 04 00 01		
	02 03 04 05 06		
	07 08 09 0A 0B		
	0C 0D 0D 10 55	D 16: 4	
	Compare buffers	Result is +1	
16	compareOffset = 2 clear the handler and appendTLV with TAG:		
16	0D and value: 04 00 01 0F		
	Initialise compareBuffer compareBuffer = 04 00 01 0F		
	Successful call (with tag 8Dh)	Result is 00h	
	tag = 8Dh	Result is out	
	compareBuffer.length = 17		
	compareOffset = 0		
17	Append tag 0Fh		
1	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

Specific triggering: Unrecognized Envelope

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

Cleanup 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	AFTEXPECTATION	Ar Do Expectation
-	findAndCompareValue() with a null	NullPointerException is thrown	
	compareBuffer	NullPointerException is thrown	
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	
	valueOffset = 0	II IS UIIOWII	
	<pre>compareBuffer.length = 5</pre>		
	compareOffset = 5		
	compareLength = 1	1 1 1 0 10/5	
3	<pre>compareOffset < 0 compareBuffer.length = 5</pre>	ArrayIndexOutOfBoundsExceptio	
	compareOffset = -1	n is thrown	
	compareLength = 1		
4	compareLength >compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
	<pre>compareBuffer.length = 5</pre>	n is thrown	
	compareOffset = 0		
	compareLength = 6	A mouth day Out Of Day and Evantia	
5	compareOffset + compareLength >compareBuffer.length	ArrayIndexOutOfBoundsExceptio n is thrown	
	compareBuffer.length = 5	II IS UIIOWII	
	compareOffset = 3		
	compareLength = 3		
6	compareLength < 0	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length = 5	n is thrown	
	compareOffset = 0 compareLength = -1		
	Comparenerigen1		
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</pre>		
	compareBuffer.length = 15		
	<pre>compareOffset = 0 compareLength = 1</pre>		
8	valueOffset < 0	ToolkitException.OUT_OF_TLV_	
	valueOffset = -1	BOUNDARIES is thrown	
	<pre>compareBuffer.length = 15</pre>		
	compareOffset = 0		
9	compareLength = 1 compareLength > Text String length	ToolkitException.OUT_OF_TLV_	
9	valueOffset = 0	BOUNDARIES is thrown	
	compareBuffer.length = 15	BOOND/IRIEO IS UIIOWII	
	<pre>compareOffset = 0</pre>		
4.0	compareLength = 7	T 11:55 .: OUT OF TIME	
10	valueOffset + compareLength > Text String	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
	<pre>length valueOffset = 2</pre>	POONDAKIES IS (IIIOMI)	
	compareBuffer.length = 15		
	compareOffset = 0		
	compareLength = 5	T 1125 0 545 0050 5	
11	Invalid parameter	ToolkitException.BAD_INPUT_P	
40	occurrence = 0	ARAMETER is thrown	
12	appendTLV with TAG 02 and length 02 Select a TLV (tag 02h)		
<u> </u>	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:		
	0D and value: 04 00 01 0F		
	Initialise compareBuffer		
	<pre>compareBuffer = 04 00 01 0F</pre>		
	findAndCompareValue()	Result is 00h	
	tag = 0Dh, occurrence = 1		

		1	I
	<pre>valueOffset = 0</pre>		
	compareOffset = 0		
	compareLength = 17		
15	Verify current TLV	Result is 17	
10	getValueLength()	Trocur to 17	
10	Initialise compareBuffer		
16			
	compareBuffer =		
	04 00 01 10		
	Compare buffers with same parameters	Result is -1	
17	Initialise compareBuffer		
17	•		
	compareBuffer =		
	03 00 01 OF		
	Compare buffers with same parameters	Result is +1	
18	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	
	valueOffset = 2		
	compareOffset = 3		
	compareLength = 12		
40			
19	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	
20		TRESULT IS T	
20	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	
21			
21	append a Text String TLV		
21	append a Text String TLV tag = 0Dh		
21	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55		
21	append a Text String TLV tag = 0Dh		
21	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55		
21	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer		
21	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F	Result is 00h	
21	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue()	Result is 00h	
21	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1	Result is 00h	
21	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0	Result is 00h	
21	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0	Result is 00h	
	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 17	Result is 00h	
21	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 17 Initialise compareBuffer	Result is 00h	
	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareOffset = 17 Initialise compareBuffer compareBuffer =	Result is 00h	
	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareOffset = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55		
	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareOffset = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55	Result is 00h	
	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue()		
	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2		
	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0		
	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0		
22	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareOffset = 0 compareOffset = 0 compareOffset = 0 compareLength = 6		
	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareLength = 6 Initialise compareBuffer		
22	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareDuffer = 0		
22	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareDuffer = 0 compareDuffer = 0 compareDuffer = 0 lnitialise compareBuffer compareBuffer = 00 11 22 33 44 66	Result is 00h	
22	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareOffset = 6 Initialise compareBuffer compareBuffer = 0 compareDuffset = 0 compareOffset = 0 compareDuffset = 0 compareDuffset = 0 finitialise compareBuffer compareBuffer = 00 11 22 33 44 66 findAndCompareValue()		
22	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareOffset = 6 Initialise compareBuffer compareBuffer = 0 compareDuffset = 0 compareOffset = 0 compareDuffset = 0 compareDuffset = 0 finitialise compareBuffer compareBuffer = 00 11 22 33 44 66 findAndCompareValue()	Result is 00h	
22	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareDuffer = 0 compareDuffer = 0 compareDuffer = 0 lnitialise compareBuffer compareBuffer = 00 11 22 33 44 66	Result is 00h	
22	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareDuffset = 0 compareDuffset = 0 compareDuffer = 00 11 22 33 44 66 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0	Result is 00h	
22	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareDuffer = 0 compareBuffer = 0 compareDuffset = 0 compareDuffset = 0 compareDuffer = 0 compareBuffer = 0 11 22 33 44 66 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareOffset = 0 compareOffset = 0	Result is 00h	
22	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareOffset = 0 compareDuffset = 0 compareOffset = 0 compareDuffset = 0 compareOffset = 0 compareLength = 6	Result is 00h	
22	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareOffset = 0 compareBuffer = 00 11 22 33 44 66 Initialise compareBuffer compareBuffer = 00 11 22 33 44 66 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareBuffer = 00 11 22 33 44 66 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareOffset = 0 compareLength = 6 clear the handler and appendTLV with TAG:	Result is 00h	
22	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareOffset = 0 compareBuffer = 0 compareDuffer = 0 compareDuffer = 0 compareDuffset = 0 compareBuffer = 00 11 22 33 44 66 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareBuffer = 00 11 22 33 44 66 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareOffset = 0 compareOffset = 0 compareLength = 6 Clear the handler and appendTLV with TAG: 0D and value: 04 00 01 0F	Result is 00h	
22	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareOffset = 0 compareBuffer = 00 11 22 33 44 66 Initialise compareBuffer compareBuffer = 00 11 22 33 44 66 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareBuffer = 00 11 22 33 44 66 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareOffset = 0 compareLength = 6 clear the handler and appendTLV with TAG:	Result is 00h	
22	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareOffset = 0 compareBuffer = 0 compareDuffer = 0 compareDuffer = 0 compareDuffset = 0 compareBuffer = 00 11 22 33 44 66 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareBuffer = 00 11 22 33 44 66 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareOffset = 0 compareOffset = 0 compareLength = 6 Clear the handler and appendTLV with TAG: 0D and value: 04 00 01 0F	Result is 00h	
22	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareOffset = 0 compareBuffer = 00 11 22 33 44 66 Initialise compareBuffer compareBuffer = 00 11 22 33 44 66 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareDuffer = 00 11 22 33 44 66 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareOffset = 0 compareLength = 6 Clear the handler and appendTLV with TAG: 0D and value: 04 00 01 0F Initialise compareBuffer compareBuffer = 04 00 01 0F	Result is 00h Result is -1	
22	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareOffset = 0 compareBuffer = 0 compareDuffer = 0 compareBuffer = 0 oompareLength = 6 Initialise compareBuffer compareBuffer = 00 11 22 33 44 66 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareDuffer = 0 compareOffset = 0 compareOffset = 0 compareOffset = 0 compareOffset = 0 compareDuffset = 0 compareBuffer = 04 00 01 0F Successful call (with tag 8Dh)	Result is 00h	
22	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareOffset = 0 compareDuffset = 0 compareOffset = 0 compareDuffset = 0 compareBuffer compareBuffer compareBuffer = 04 00 01 0F Successful call (with tag 8Dh) tag = 8Dh, occurrence = 1	Result is 00h Result is -1	
22	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareOffset = 0 compareDuffset = 0 compareOffset = 0 compareDuffset = 0 compareBuffer compareBuffer compareBuffer = 04 00 01 0F Successful call (with tag 8Dh) tag = 8Dh, occurrence = 1 valueOffset = 0	Result is 00h Result is -1	
22	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareDeffset = 0 compareBuffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareDeffset = 04 00 01 0F Successful call (with tag 8Dh) tag = 8Dh, occurrence = 1 valueOffset = 0 compareBuffer.length = 17	Result is 00h Result is -1	
22	append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareOffset = 0 compareDuffset = 0 compareOffset = 0 compareDuffset = 0 compareBuffer compareBuffer compareBuffer = 04 00 01 0F Successful call (with tag 8Dh) tag = 8Dh, occurrence = 1 valueOffset = 0	Result is 00h Result is -1	

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		
	<pre>compareOffset = 0</pre>		
	compareLength = 16		
26	Successful call, findAndCompareValue with	Result of findAndCompareValue	
	length =0	() is 00	
	CompareBuffer.length = 16		
	<pre>compareOffset = 16</pre>		
	compareLength = 0		

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

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

 $CRRC2: if the \ Edit Handler \ buffer \ is \ busy, a \ Toolkit Exception \ is \ thrown \ with \ reason \ code \\ HANDLER_NOT_AVAILABLE$

6.2.5.15.2 Test suite files

Specific triggering: Unrecognized Envelope

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

Cleanup Script: API_2_ERH_APDA_BSS_1.clr

6.2.5.15.3 Test procedure

ld	Description	API Expectation	APDU Expectation
	Initialize the envelope response handler with a		
	TLV of length 1		
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	
	<pre>buffer.length = 5 offset = -1</pre>	n is thrown	
	length = 1		
4	length > buffer.length	ArrayIndexOutOfBoundsExceptio	
	buffer.length = 5	n is thrown	
	offset = 0		
	length = 6		
5	offset + length > buffer.length	ArrayIndexOutOfBoundsExceptio	
	<pre>buffer.length = 5 offset = 3</pre>	n is thrown	
	length = 3		
6	length < 0	ArrayIndexOutOfBoundsExceptio	
	buffer.length = 5	n is thrown	
	offset = 0		
	length = -1	T 1175 (1 11A1D) 5D 01/	
7	Handler overflow	ToolkitException.HANDLER_OV	
	<pre>buffer.length = 256 offset = 0</pre>	ERFLOW is thrown	
	length = 256		
8	append the handler with TLVs:		
	81 03 11 22 33		
	82 02 99 77		
	findTLV 0x81		
	Successful call		
	<pre>buffer = FF FE F8 offset = 0</pre>		
	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	Decult in OOh	
	Compare handler compareBuffer = FF FE F8	Result is 00h	
10	Successful call		
'0	buffer = 00 01 07		
	offset = 2		
	length = 6		
	Call copy() method		
	Compare handler	Result is 00h	
4.	compareBuffer = FF FE F8 02 03 07		
11	Successful call	1	

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

No requirements

Context errors

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

 $CRRC2: if the \ Edit Handler \ buffer \ is \ busy, \ a \ Toolkit Exception \ is \ thrown \ with \ reason \ code \\ HANDLER_NOT_AVAILABLE$

6.2.5.16.2 Test suite files

Specific triggering: Unrecognized Envelope

Test Script: API_2_ERH_APTLBB_1.scr
Test Applet: API_2_ERH_APTLBB_1.java
Load Script: API_2_ERH_APTLBB_1.ldr
Cleanup Script: API_2_ERH_APTLBB_1.clr

6.2.5.16.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Call appendArray()		-
	length = 253		
	Handler Overflow: Call twice the	ToolkitException.HANDLER_OV	
	appendTLV()method	ERFLOW is thrown by one of the	
		two.	
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		

Note: Test case 1 call twice appendTLV because the current 03.19 [7] is not clear enough on this point. So this test allows the two possible implementations.

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.

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

No requirements

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

Specific triggering: Unrecognized Envelope

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

Cleanup Script: API_2_ERH_APTLBBB_1.clr

6.2.5.17.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Call the appendArray 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		
	Compare handler	Result is 00h	
	compareBuffer = 84 02 00 01		
4	Successful call		
	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
	EnvelopeResponseHandl
	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

Specific triggering: Unrecognized Envelope

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

Cleanup 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	711 DO EXPOSITATION
2	valueOffset ≥ value.length	ArrayIndexOutOfBoundsExceptio	
_	value.length = 5	n is thrown	
	valueOffset = 5		
	valueLength = 1		
3	valueOffset < 0	ArrayIndexOutOfBoundsExceptio	
	<pre>value.length = 5 valueOffset = -1</pre>	n is thrown	
	valueLength = 1		
4	valueLength > value.length	ArrayIndexOutOfBoundsExceptio	
	value.length = 5	n is thrown	
	<pre>valueOffset = 0</pre>		
	valueLength = 6	A 1 1 0 10/D 1 5	
5	ValueOffset + valueLength > value.length value.length = 5	ArrayIndexOutOfBoundsExceptio	
	valueOffset = 3	n is thrown	
	valueLength = 3		
6	valueLength < 0	ArrayIndexOutOfBoundsExceptio	
	value.length = 5	n is thrown	
	<pre>valueOffset = 0 valueLength = -1</pre>		
7	Handler overflow	ToolkitException.HANDLER_OV	
'	value.length = 254	ERFLOW is thrown	
	<pre>valueOffset = 0</pre>	2.3. 2011 10 4110 1111	
	valueLength = 254		
8	Bad parameter	ToolkitException.BAD_INPUT_P	
	<pre>value.length = 256 valueOffset = 0</pre>	ARAMETER is thrown	
	valueOffset = 0 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 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 handler	Result is 00	
44	CompareBuffer = 04 08 FF FE F8		
11	Successful call tag = 85h		
	value = 00 01 07		
	valueOffset = 2		
L	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		
	value = 11 22 88		
	valueOffset = 2		
-	valueLength = 4 Call copy() method		
	Can copy() method Compare handler	Result is 00	
	compareBuffer = 04 08 FF FE F8 85 06 02	INGSUILIS OU	
	03 07 01 04 33 44 55 66		
13	Clear the handler		
	Successful call		
	tag = 04		

value = 00 01 7F		
valueOffset = 0		
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

Specific triggering: Unrecognized Envelope

Test Script: API_2_ERH_APTLBB_BSS_1.scr

Test Applet: API_2_ERH_APTLBB_BSS_1.java

Load Script: API_2_ERH_APTLBB_BSS_1.ldr

Cleanup Script: API_2_ERH_APTLBB_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		
3	value2Length = 1 value2Offset < 0	ArrayIndexOutOfBoundsExceptio	
3	value2.length = 5	n is thrown	
	value20ffset = -1	II IS UIIOWII	
	value2Length = 1		
4	value2Length > value2.length	ArrayIndexOutOfBoundsExceptio	
	value2.length = 5	n is thrown	
	<pre>value2Offset = 0 value2Length = 6</pre>		
5	value2Offset + value2Length > value2.length	ArrayIndexOutOfBoundsExceptio	
	value2.length = 5	n is thrown	
	<pre>value20ffset = 3</pre>		
	value2Length = 3	A 1 1 0 10/D 1 5	
6	<pre>value2Length < 0 value2.length = 5</pre>	ArrayIndexOutOfBoundsExceptio	
	value20ffset = 0	n is thrown	
	value2Length = -1		
7	Handler overflow	ToolkitException.HANDLER_OV	
	value2.length = 254	ERFLOW is thrown	
	value20ffset = 0		
8	value2Length = 254 Bad parameter	ToolkitException.BAD_INPUT_P	
0	value2.length = 256	ARAMETER is thrown	
	value20ffset = 0	ARAMETER IS UTOWIT	
	value2Length = 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		
	value1 = 05		
	<pre>value2 = FF FE F8 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		
	value2Offset = 0		
	value2Length = 8		
	Call copy() method		
	Compare handler	Result is 00	
11	CompareBuffer = 04 09 05 FF FE F8		
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	
	value2Offset = 2	
	value2Length = 4	
	Call copy() method	
	Compare handler	Result is 00
	CompareBuffer =	
	04 09 05 FF FE F8	
	85 07 55 02 03 07	
	01 05 44 33 44 55 66	
13	Clear the handler	
	Successful call	
	tag = 04	
	value1 = 00	
	value2 = 01 7F	
	value20ffset = 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

Specific triggering: Unrecognized Envelope

Test Script: API_2_ERH_CLER_1.scr

Test Applet: API_2_ERH_CLER_1.java

Load Script: API_2_ERH_CLER_1.ldr

Cleanup 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

No requirements

6.2.6.1.2 Test suite files

Specific triggering:

UNFORMATTED_SMS_PP_UPD

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)

Cleanup 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 unformatted 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

No requirements

6.2.6.2.2 Test suite files

Specific triggering:

UNFORMATTED_SMS_PP_UPD

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

Load Script: API_2_MEP_CHEC_BSS_1.ldr (the applet is loaded without INI after the reset (RST))

Cleanup 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 unformatted 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

No requirements

Context errors

CRRC1: The method shall throw ToolkitException.HANDLER_NOT_AVAILABLE if the handler is busy.

6.2.7.1.2 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

Cleanup 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

No requirements

Context errors

No requirements

6.2.7.2.2 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

Cleanup 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		
	Copy ProactiveHandler in a byte array (source)		
	Compare the byte array	source and reference are	
	reference = 81h 03h xxh 01h 02h	identical	
	82h 02h 81h 03h		
2	Verify the command number value	01h-FEh	
_	verify the command number value	OTH-FEIT	
3	Call the init() method		
	type = FFh qualifier = FEh		
	destination = FDh		
	Copy ProactiveHandler in a byte array		
	(source)		
	Compare the byte array	source and reference are	
	reference = 81h 03h xxh FFh FEh	identical	
	82h 02h 81h FDh		
4	Select the 1st TLV in the handler		
4	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.

6.2.7.3.2 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
Cleanup Script: API_2_PAH_INDTBB_BSS_1.clr

6.2.7.3.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	NULL as parameter to buffer	NullPointerException is thrown	•
	buffer = NULL	Amerika da (O. (OfDa) a da Fiya a di	
2	<pre>offset > buffer.length buffer = "Text"</pre>	ArrayIndexOutOfBoundsException is thrown	
	offset = 5	II IS UIIOWII	
	length = 0	A 1 1 0 (0/D 1 5);	
3	<pre>offset < 0 buffer = "Text"</pre>	ArrayIndexOutOfBoundsException is thrown	
	offset = -1	IT IS UTIOWIT	
4	length > buffer.length	ArrayIndexOutOfBoundsExceptio	
	<pre>buffer = "Text" offset = 0</pre>	n is thrown	
	length = 5		
5	offset + length > buffer.length	ArrayIndexOutOfBoundsExceptio	
	<pre>buffer = "Text" offset = 3</pre>	n is thrown	
	length = 2		
6	length < 0	ArrayIndexOutOfBoundsExceptio	
	<pre>buffer = "Text" offset = 3</pre>	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	Command number between 01h	
	voiny me command number value	and FEh	
8	Send the command		DISPLAY TEXT Proactive
			command
			qualifier = 00h
			dcs = 4
9	Succesfull call, buffer is part of a buffer with		Text = "TextA" DISPLAY TEXT Proactive
9	the end part		command
	Send the command		
	qualifier = 0		qualifier = 00h dcs = 4
	<pre>dcs = 4 buffer = "12TextB"</pre>		Text = "TextB"
	offset = 2		
10	Succesfull call, buffer is part of a buffer with		DISPLAY TEXT Proactive
10	the first part		command
	Send the command		Communa
	qualifier = 0		qualifier = 00h
	<pre>dcs = 4 buffer = "TextC12"</pre>		dcs = 4 Text = "TextC"
	offset = 0		
11	length = 5		DISPLAY TEXT Proactive
' '	Succesfull call, buffer is part of a buffer Send the command		command
	qualifier = 0		
	<pre>dcs = 4 buffer = "12TextD34"</pre>		qualifier = 00h dcs = 4
1	offset = 2		<pre>Text = "TextD"</pre>
	length = 5		
12	Succesfull call, qualifier = 81h Send the command		DISPLAY TEXT Proactive
1	qualifier = 81h		command
1	dcs = 4		qualifier = 81h
	<pre>buffer = "TextE" offset = 0</pre>		dcs = 4 Text = "TextE"
	length = 5		TONG TONGE
13	Succesfull call, DCS=0 (7 bits)		DISPLAY TEXT Proactive
	Send the command		command
	<pre>qualifier = 0 dcs = 0</pre>		qualifier = 00h
	<pre>buffer = "TextF"</pre>		dcs = 0
1	offset = 0		Text = "TextF"

	length = 5		
14	Succesfull call, DCS=8 (UCS2)		DISPLAY TEXT Proactive
	Send the command		command
	qualifier = 0		
	dcs = 8		qualifier = 00h
	<pre>buffer = "TextG" offert = 0</pre>		dcs = 8
	offset = 0 length = 5		Text = "TextG"
15	Call the initDisplayText() method with any		DISPLAY TEXT Proactive
13	value		command
	Then build and send a DISPLAY TEXT		Command
	command		qualifier = 00h
	qualifier = 0		dcs = 4
	dcs = 4		Text = "TextHTextH"
	<pre>buffer = "TextHTextH"</pre>		
	offset = 0		
16	Successful call, text length is null		DISPLAY TEXT Proactive
10	Send the command		command
	qualifier = 0		Communa
	dcs = 4		qualifier = 00h
	<pre>buffer = "" (not null buffer)</pre>		Text String TLV = 8D 00
	offset = 0		
17	Select a TLV in the ProactiveHandler	UNAVAILABLE ELEMENT	
''	Call the initDisplayText() method	ToolkitException is thrown by	
	Call the getValueLength() method	getValueLength()	
	Jan the getvalueLength() method	get value Length()	
18	Successful call, buffer length = 7Eh		DISPLAY TEXT Proactive
			command
	qualifier = 0		
	dcs = 4 buffer = "UUU"		Text String TLV =
	offset = 0		8D 7F 04 55 55
	length = 7Eh		
19	Successful call, buffer length = 7Fh		DISPLAY TEXT Proactive
	•		command
	qualifier = 0		
	dcs = 4 buffer = "UUU"		Text String TLV = 8D 81 80 04 55 55
	offset = 0		00 04 55 55
	length = 7Fh		
20	Successful call, buffer length = 240		DISPLAY TEXT Proactive
	0		command
	Qualifier = 0 dcs = 4		Tort Chring ELV
	buffer = "UUU"		Text String TLV = 8D 81 F1 04 55 55
	offset = 0		02 01 11 01 03 00
	length = 240		
21	Call the initDisplayText() method with a too	HANDLER_OVERFLOW	
	long buffer	ToolkitException is thrown	
	qualifier = 0 dcs = 4		
	buffer = "XXXX"		
	offset = 0		
	length = 241		
22	Call the initDisplayText() without sending the		No proactive command
	command		shall be sent expected
			status is '9000'

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.

6.2.7.4.2 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
Cleanup 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	71 DO Expodiction
	buffer = NULL	Train onto Exception is another	
2	offset > buffer.length	ArrayIndexOutOfBoundsExceptio	
	<pre>buffer = "Text"</pre>	n is thrown	
_	offset = 5	A	
3	<pre>offset < 0 buffer = "Text"</pre>	ArrayIndexOutOfBoundsException is thrown	
	offset = -1	IT IS UTIOWIT	
4	length > buffer.length	ArrayIndexOutOfBoundsExceptio	
	<pre>buffer = "Text"</pre>	n is thrown	
	offset = 0		
5	length = 5 offset + length > buffer.length	ArrayIndexOutOfBoundsExceptio	
3	buffer = "Text"	n is thrown	
	offset = 3	II IS UIIOWII	
	length = 2		
6	length < 0	ArrayIndexOutOfBoundsExceptio	
	<pre>buffer = "Text" offset = 3</pre>	n is thrown	
	length = -1		
7	Successful call, buffer is the whole buffer	No exception is thrown	
	qualifier = 0		
	dcs = 4		
	<pre>buffer = "TextA" offset = 0</pre>		
	length = 5		
	Verify the command number value	Command number between 01h	
	•	and FEh	
8	Send the command		GET INKEY Proactive
			command
			qualifier = 00h
			dcs = 4
			Text = "TextA"
9	Succesfull call, buffer is part of a buffer with		GET INKEY Proactive
	the end part		command
	qualifier = 0 dcs = 4		
	buffer = "12TextB"		qualifier = 00h dcs = 4
	offset = 2		Text = "TextB"
	length = 5		
10	Successfull call, buffer is part of a buffer with		GET INKEY Proactive
	the first part qualifier = 0		command
	dcs = 4		qualifier = 00h
	buffer = "TextC12"		dcs = 4
	offset = 0		Text = "TextC"
44	length = 5		CET INIVEN Dragative
11	Succesfull call, buffer is part of a buffer Send the command		GET INKEY Proactive command
	qualifier = 0		Command
	dcs = 4		qualifier = 00h
	buffer = "12TextD34"		dcs = 4
	offset = 2 length = 5		Text = "TextD"
12	Succesfull call, qualifier = 81h		GET INKEY Proactive
-	qualifier = 81h		command
	dcs = 4		
	<pre>buffer = "TextE" offset = 0</pre>		qualifier = 81h
	length = 5		dcs = 4 Text = "TextE"
	-		
13	Succesfull call, DCS=0 (7 bits)		GET INKEY Proactive
	qualifier = 0		command
	dcs = 0		
	<pre>buffer = "TextF" offset = 0</pre>		qualifier = 00h
	length = 5		dcs = 0 Text = "TextF"
	-		
14	Succesfull call, DCS=8 (UCS2)		GET INKEY Proactive
	qualifier = 0		command

	dcs = 8		command
	buffer = "TextG"		
	offset = 0		qualifier = 00h
	length = 5		dcs = 8
			Text = "TextG"
15	Call the initGetInkey() method with any value		GET INKEY Proactive
. •	Then build and send a GET INKEY command		command
			Command
	qualifier = 0		3.1.5.1
	dcs = 4		qualifier = 00h
	buffer = "TextHTextH"		dcs = 4
	offset = 0		Text = "TextHTextH"
	length = 10		
16	Successful call, text length is null		GET INKEY Proactive
10			
	Send the command		command
	qualifier = 0		
	dcs = 4		qualifier = 00h
	buffer = ""		Text String TLV = 8D 00
	offset = 0		
	length = 0		
47	-	LINIAN/AU ADI E ELEMENIT	
17	Select a TLV in the ProactiveHandler	UNAVAILABLE_ELEMENT	
	Call the initGetInkey() method	ToolkitException is thrown by	
	Call the getValueLength() method	getValueLength()	
	oun me gerruna zongm(, memeu	gottalaozongin()	
	0 (1 11 (1 1 1 1 1 1 1		
18	Successful call, buffer length = 7Eh		GET INKEY Proactive
			command
	qualifier = 0		
	dcs = 4		Text String TLV =
	buffer = "UUU"		8D 7F 04 55 55
	offset = 0		6D /F 04 55 55
—	length = 7Eh		
19	Successful call, buffer length = 7Fh		GET INKEY Proactive
			command
	qualifier = 0		
	dcs = 4		Text String TLV = 8D 81
	buffer = "UUU"		80 04 55 55
	offset = 0		00 01 33 33
	length = 7Fh		
			OFT BUCEVED
20	Successful call, buffer length = 240		GET INKEY Proactive
			command
	Qualifier = 0		
	dcs = 4		Text String TLV =
	buffer = "UUU"		8D 81 F1 04 55 55
	offset = 0		02 01 11 01 33 33
	length = 240		
04		LIANDI ED OVEDELOW	
21	Call the initGetInkey() method with a too long	HANDLER_OVERFLOW	
	buffer	ToolkitException is thrown	
	qualifier = 0		
	dcs = 4		
	buffer = "XXXX"		
	offset = 0		
<u></u>	length = 241		N
22	Call the initGetInkey() without sending the		No proactive command
	command		shall be sent expected
			status is '9000'
			31a1u3 13 3000

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.

6.2.7.5.2 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
Cleanup 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	The same exception to the wife	
2	offset > buffer.length	ArrayIndexOutOfBoundsExceptio	
	buffer = "Text"	n is thrown	
	offset = 5	1 1 1 0 10/2	
3	<pre>offset < 0 buffer = "Text"</pre>	ArrayIndexOutOfBoundsExceptio	
	offset = -1	n is thrown	
4	length > buffer.length	ArrayIndexOutOfBoundsExceptio	
	buffer = "Text"	n is thrown	
	offset = 0		
5	length = 5	A mouth dayOutOfPaundaEvaantia	
э	offset + length > buffer.length	ArrayIndexOutOfBoundsException is thrown	
	offset = 3	II is tillowii	
	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		
	<pre>dcs = 4 buffer = "TextA"</pre>		
	offset = 0		
	length = 5		
	minRespLength = 00h		
	maxRespLength = FFh		
	Verify the command number value	Command number between 01h	
0	Send the command	and -FEh	GET INPUT Proactive
8	Send 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 with		GET INPUT Proactive
	the end part		command
	Send the command		
	qualifier = 0		qualifier = 00h dcs = 4
	dcs = 4 buffer = "12TextB"		Text = "TextB"
	offset = 2		Min Length = 10h
	length = 5		Max Length = FFh
	minRespLength = 10h		
10	maxRespLength = FFh Succesfull call buffer is part of a buffer with		GET INPUT Proactive
10	Succesfull call, buffer is part of a buffer with the first part		command
	Send the command		Command
	qualifier = 0		qualifier = 00h
	dcs = 4		dcs = 4
	buffer = "TextC12"		Text = "TextC" Min Length = FFh
	offset = 0 length = 5		Max Length = FFh
	minRespLength = FFh		_
	maxRespLength = FFh		
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
'-	qualifier = 81h		command
	dcs = 4		
	•	•	·

	<pre>buffer = "TextE"</pre>		qualifier = 81h
i	offset = 0		dcs = 4
			-
	length = 5		Text = "TextE"
	minRespLength = 00h		Min Length = 00h
	1 2		_
	maxRespLength = 10h		Max Length = 10h
40	0(D00 0 (7)		OFT INDUTED (
13	Succesfull call, DCS=0 (7 bits)		GET INPUT Proactive
	qualifier = 0		command
	1 -		Command
	dcs = 0		
	buffer = "TextF"		qualifier = 00h
	offset = 0		
			dcs = 0
	length = 5		Text = "TextF"
	minRespLength = 10h		Min Length = 10h
	1 3		_
	maxRespLength = 10h		Max Length = 10h
			-
14	Succesfull call, DCS=8 (UCS2)		GET INPUT Proactive
	qualifier = 0		
	1 -		command
	dcs = 8		
	buffer = "TextG"		qualifier = 00h
			_
	offset = 0		dcs = 8
	length = 5		Text = "TextG"
1	minRespLength = 00h		Min Length = 00h
1	maxRespLength = FFh		Max Length = FFh
1	= -		
15	Call the initGetInput() method with any value		GET INPUT Proactive
'			
	Then build and send a GET INPUT command		command
	qualifier = 0		
	1		7.1.5.1
	dcs = 4		qualifier = 00h
	buffer = "TextHTextH"		dcs = 4
	offset = 0		Text = "TextHTextH"
	length = 10		Min Length = 00h
	minRespLength = 00h		Max Length = 10h
			Max Length - 1011
	maxRespLength = 10h		
16	Successful call, text length is null		GET INPUT Proactive
10	l · · · · · · · · · · · · · · · · · · ·		
	Send the command		command
	qualifier = 0		
	-		
	dcs = 4		qualifier = 00h
	buffer = ""		Text String TLV = 8D 00
			_
	offset = 0		Min Length = 00h
	length = 0		Max Length = 10h
	minRespLength = 00h		3
	maxRespLength = 10h		
17	Select a TLV in the ProactiveHandler	UNAVAILABLE ELEMENT	
1 ' '			
	Call the initGetInput() method	ToolkitException is thrown by	
	Call the getValueLength() method		
	Can the getvalueLength() method	getValueLength()	
10			
	Overseaful cell buffer levelle 75b		OFT INDUIT Day a still as
18	Successful call, buffer length = 7Eh		GET INPUT Proactive
10	Successful call, buffer length = 7Eh		
10	_		GET INPUT Proactive command
10	qualifier = 0		command
10	qualifier = 0 dcs = 4		
10	qualifier = 0 dcs = 4		<pre>command Text String TLV =</pre>
10	qualifier = 0 dcs = 4 buffer = "UUU"		command Text String TLV = 8D 7F 04 55 55
10	<pre>qualifier = 0 dcs = 4 buffer = "UUU" offset = 0</pre>		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h
10	qualifier = 0 dcs = 4 buffer = "UUU"		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h
10	<pre>qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh</pre>		command Text String TLV = 8D 7F 04 55 55
10	<pre>qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h</pre>		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h
10	qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h
	qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h
19	<pre>qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h</pre>		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive
	qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h
	qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive
	qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh qualifier = 0		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command
	qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh qualifier = 0 dcs = 4		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81
	<pre>qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh qualifier = 0 dcs = 4 buffer = "UUU"</pre>		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command
	qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh qualifier = 0 dcs = 4		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81 80 04 55 55
	<pre>qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh qualifier = 0 dcs = 4 buffer = "UUU" offset = 0</pre>		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81 80 04 55 55 Min Length = 00h
	<pre>qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Fh</pre>		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81 80 04 55 55
	<pre>qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Fh minRespLength = 00h</pre>		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81 80 04 55 55 Min Length = 00h
	<pre>qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Fh minRespLength = 00h</pre>		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81 80 04 55 55 Min Length = 00h
19	<pre>qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Fh minRespLength = 00h maxRespLength = 10h</pre>		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81 80 04 55 55 Min Length = 00h Max Length = 10h
	<pre>qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Fh minRespLength = 00h</pre>		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81 80 04 55 55 Min Length = 00h
19	<pre>qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Fh minRespLength = 00h maxRespLength = 10h</pre>		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81 80 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive
19	qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Fh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 236		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81 80 04 55 55 Min Length = 00h Max Length = 10h
19	<pre>qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Fh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 236 Qualifier = 0</pre>		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81 80 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command
19	qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Fh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 236		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81 80 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive
19	qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Fh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 236 Qualifier = 0 dcs = 4		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81 80 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81
19	<pre>qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Fh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 236 Qualifier = 0 dcs = 4 buffer = "UUU"</pre>		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81 80 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command
19	qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Fh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 236 Qualifier = 0 dcs = 4 buffer = "UUU" offset = 0		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81 80 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81
19	<pre>qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Fh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 236 Qualifier = 0 dcs = 4 buffer = "UUU"</pre>		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81 80 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81
19	qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Fh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 236 Qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 236		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81 80 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81
19	<pre>qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Fh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 236 Qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 236 minRespLength = 00h</pre>		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81 80 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81
20	<pre>qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Fh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 236 Qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 236 minRespLength = 00h maxRespLength = 00h maxRespLength = 00h maxRespLength = 10h</pre>		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81 80 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81
20	<pre>qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Fh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 236 Qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 236 minRespLength = 00h maxRespLength = 00h maxRespLength = 00h maxRespLength = 10h</pre>	HANDLER OVERFLOW	command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81 80 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81
19	qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Fh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 236 Qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 236 minRespLength = 00h maxRespLength = 00h maxRespLength = 10h Call the initGetInput() method with a too long	HANDLER_OVERFLOW	command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81 80 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81
20	<pre>qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Fh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 236 Qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 236 minRespLength = 00h maxRespLength = 00h maxRespLength = 00h maxRespLength = 10h</pre>	HANDLER_OVERFLOW ToolkitException is thrown	command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81 80 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81
19	qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Eh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 7Fh qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 7Fh minRespLength = 00h maxRespLength = 10h Successful call, buffer length = 236 Qualifier = 0 dcs = 4 buffer = "UUU" offset = 0 length = 236 minRespLength = 00h maxRespLength = 00h maxRespLength = 10h Call the initGetInput() method with a too long		command Text String TLV = 8D 7F 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81 80 04 55 55 Min Length = 00h Max Length = 10h GET INPUT Proactive command Text String TLV = 8D 81

	qualifier = 0	
	dcs = 4	
	<pre>buffer = "XXXX"</pre>	
	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

No requirements

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.

6.2.7.6.2 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

Cleanup Script: API_2_PAH_SEND_1.clr

6.2.7.6.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Build and send a DISPLAY TEXT command	All Expediation	DISPLAY TEXT Proactive
'	qualifier = 00h		command
	dcs = 04h		- Communication
	<pre>buffer = 'Text'</pre>		
2	Terminal Response with General Result = 00	Result of send() is 00h	
	Pogult TIV - 02 01 00 /gommand nowfarmed		
	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'	D 16 6 10 : 041	
4	Terminal Response with General Result = 01, without Additional information on result	Result of send() is 01h	
	D 1. TTT 00 07 07 /		
	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		
	buffer = 'Text'		
6	Terminal Response with General Result = 01,	Result of send() is 01h	
	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 = U4h buffer = 'Text'		
8	Terminal Response with General Result = 02	Result of send() is 02h	
	Result TLV = 03 04 02 65 43 21 (Missing		
<u> </u>	information)		DICOLAY TEXT Door of
9	Build and send a 7Fh byte command		DISPLAY TEXT Proactive command
	(DISPLAY TEXT) qualifier = 00h		Command
	dcs = 04h		BER-TLV = D0 7F
	<pre>buffer = "UUUUU"</pre>		Text String TLV = 8D 74
40	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
	<pre>buffer = "UUUUU"</pre>		Text String TLV = 8D 75
4.4	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
	Qualifier = 0		Text String TLV = 8D 81
	dcs = 4		F1 04 55 55
	<pre>buffer = "UUU" offset = 0</pre>		
	length = 240		
12	Verify that the Proactive Handler is not		
	modified after a send()		
	Build a DISPLAY TEXT command		
	Copy ProactiveHandler to source byte array		
	Send command		
	Copy ProactiveHandler to destination byte		
	array		
1	array	I	1

	Compare source and destination	Source and destination are identical	
13	Build and send a DISPLAY TEXT command Verify there is no invocation of select() or deselect() method.		DISPLAY TEXT Proactive command
14	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive command
	Terminal Response with 2 Result TLV	Result of send() is 02h	
	1st Result TLV = 03 02 02 12 2nd Result TLV = 03 03 03 34 56		
15	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive 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 Result TLV = 03 00	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown by send()	

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

No requirements

Context errors

CRRC1: if the handler is busy an instance of ToolkitException shall be thrown. The reason code shall be ToolkitException.HANDLER_NOT_AVAILABLE.

6.2.7.7.2 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

Cleanup 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.

6.2.7.8.2 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

Cleanup 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 = 6 dstLength = 0</pre>		
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	
	dstUriset = 0 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	
	dstUriset = 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		
8	Successful call, dstBuffer is the whole buffer	Result of copy() is 9	
	<pre>dstBuffer.length = 9 dstOffset = 0</pre>		
	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		
	dstOffset = 3		
44	dstLength = 9	D	
11	Compare the whole buffer	Result of arrayCompare() is 0 Result of copy() is 9	
12	Successful call, dstBuffer is part of a buffer dstBuffer.length = 15	Result of copy() is 9	
	dstOffset = 3		
	dstLength = 6		
13	Compare the whole buffer	Result of arrayCompare() 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.

6.2.7.9.2 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
Cleanup 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		
3	Occurrence = 1	Result is 03h	
4	Call the getValueLength() method Search 2nd TLV	Result is TLV_FOUND_CR_SET	
4	Tag = 02h	Result is TLV_FOUND_CR_SET	
	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 Call the getValueLength() method	ToolkitEveention UNIAVAILABLE	
9	Call the getvalueLength() method	ToolkitException.UNAVAILABLE ELEMENT is thrown.	
10	Append a TLV with tag=02h	_ELEIVIEIN I IS UTIOWIT.	
10	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		
13	Occurrence = 1 Search tag 84h	Result is	
13	Tag = 84h		
	Occurrence = 1	TLV_FOUND_CR_NOT_SET	
	· · · · · · · · · · · · · · · · · · ·	ı	

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_GVLE

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

No requirements

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.

6.2.7.10.2 Test Suite files

Test Script: API_2_PAH_GVLE_1.scr

Test Applet: API_2_PAH_GVLE_1.java

Load Script: API_2_PAH_GVLE_1.ldr

Cleanup Script: API_2_PAH_GVLE_1.clr

6.2.7.10.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Call the init() method	·	•
	getValueLength()	ToolkitException.UNAVAILABLE ELEMENT is thrown	
2	Call the appendTLV() method	_EEEMENT IS UNOWIT	
_	tag = 0D		
	valueOffset = 0		
	valueLength = 0		
	Search TLV 0Dh (Text String TLV)		
	getValueLength()	Result is 00h	
3	Call the initDisplayText() method		
3	length = 1 (+ dcs byte)		
	Search TLV 0Dh (Text String TLV)		
	getValueLength()	Result is 02h	
4	Call the initDisplayText() method		
	length = 7Eh (+ dcs byte)		
	Search TLV 0Dh (Text String TLV)		
	getValueLength()	Result is 7Fh	
5	Call the initDisplayText() method		
	length = 7Fh (+ dcs byte)		
	Search TLV 0Dh (Text String TLV)	Description 200h	
	getvalueLength()	Result is 80h	
6	Call the initDisplayText() method		
	length = F0h (maximum text length)		
	Search TLV 0Dh (Text String TLV)		
	getValueLength()	Result is F1h	

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_GVBYS

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.

6.2.7.11.2 Test Suite files

Test Script: API_2_PAH_GVBYS_1.scr

Test Applet: API_2_PAH_GVBYS_1.java

Load Script: API_2_PAH_GVBYS_1.ldr

Cleanup Script: API_2_PAH_GVBYS_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 HOSE CONTRACTOR	
	getValueByte(0)	ToolkitException.UNAVAILABLE	
	0 1 TIV 041 (0 1 D 4 11 TIV)	_ELEMENT is thrown	
2	Search TLV 01h (Command Details TLV)	T "" OUT OF TIM	
	getValueByte(3)	ToolkitException.OUT_OF_TLV_	
	0 1 71 / 041 / 0 1 1 71 1 0	BOUNDARIES is thrown	
3	Search TLV 01h (Command Details TLV)		
	getValueByte(2)	Result is FEh (qualifier)	
	0 1 71 7 001 75 1 11 117 7 7 7 7		
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	
	go:: a.ao_y:o(: _/	Treedit ie 7 Bii	
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	
′	gervaluebyte(7F)	Result is / Eli	
8	initDisplayText()		
	buffer = 00 01 EF		
	length = F0h		
	Search TLV 0Dh (Text String TLV)		
	getValueByte(F0)	Result is EFh	

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.

6.2.7.12.2 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

Cleanup 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		
	<pre>dstOffset > dstBuffer.length dstBuffer.length = 5 dstOffset = 6 dstLength = 0</pre>	ArrayIndexOutOfBoundsException is thrown	
3	<pre>dstOffset < 0 dstBuffer.length = 5 dstOffset = -1 dstLength = 1</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
4	<pre>dstLength >dstBuffer.length dstBuffer.length = 5 dstOffset = 0 dstLength = 6</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
5	<pre>dstOffset + dstLength >dstBuffer.length dstBuffer.length = 5 dstOffset = 3 dstLength = 3</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
6	<pre>dstLength < 0 dstBuffer.length = 5 dstOffset = 0 dstLength = -1</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
7	<pre>initDisplayText() with length = 5 Select Text String TLV</pre>		
	valueOffset > Text String Length valueOffset = 7	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	

	1.5.66		
	dstBuffer.length = 15		
	dstOffset = 0		
	dstLength = 0		
8	[Select Text String TLV]	ToolkitException.OUT_OF_TLV_	
	valueOffset < 0	BOUNDARIES is thrown	
	valueOffset = -1		
	dstBuffer.length = 15		
	dstOffset = 0		
	dstLength = 1		
9	[Select Text String TLV]	ToolkitException.OUT_OF_TLV_	
	dstLength > Text String length	BOUNDARIES is thrown	
	valueOffset = 0	BOOTED WILLO IO WILOWIT	
	dstBuffer.length = 15		
	dstOffset = 0		
	dstLength = 7		
10	[Select Text String TLV]	ToolkitException.OUT_OF_TLV_	
'0	valueOffset + dstLength > Text String	BOUNDARIES is thrown	
	length	BOUNDARIES IS UITOWIT	
	valueOffset = 2		
	dstBuffer.length = 15		
	dstOffset = 0		
	dstLength = 5		
	dschengen – 5		
	L.M.P. al. L. B.		
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	resource sopy rando() to the	
	dstBuffer.length = 17		
	dstOffset = 0		
	dstLength = 17		
13	Compare buffer	Result is 00h	
'	buffer = 04 00 01 0F	recount to con	
	Daller 01 00 01 01		
14	initialise dstBuffer		
14			
-	dstBuffer = 55 55 55	D 1: ()/ 1 (): 45	
	Successful call	Result of copyValue() is 15	
	valueOffset = 2		
	dstBuffer.length = 20		
	dstOffset = 3		
L	dstLength = 12		
15	Compare buffer	Result is 00h	
	buffer =		
	55 55 55 01 02		
	03 04 05 06 07		
1	08 09 0A 0B 0C		
1	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.

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.

6.2.7.13.2 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

Cleanup 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>		
	compareOffset > compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length = 5	n is thrown	
	compareOffset = 6		
	compareLength = 0		
3	<pre>compareOffset < 0 compareBuffer.length = 5</pre>	ArrayIndexOutOfBoundsExceptio	
	compareOffset = -1	n is thrown	
	compareLength = 1		
4	compareLength >compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length = 5	n is thrown	
	<pre>compareOffset = 0 compareLength = 6</pre>		
5	compareOffset + compareLength	ArrayIndexOutOfBoundsExceptio	
	>compareBuffer.length	n is thrown	
	compareBuffer.length = 5		
	compareOffset = 3		
6	<pre>compareLength = 3 compareLength < 0</pre>	ArrayIndexOutOfBoundsExceptio	
U	compareBuffer.length = 5	n is thrown	
	compareOffset = 0	I i i i i i i i i i i i i i i i i i i i	
	compareLength = -1		
7	initDisplayText() with length = 5		
	Select Text String TLV		
	valueOffset > Text String Length	ToolkitException.OUT_OF_TLV_	
	<pre>valueOffset = 7 compareBuffer.length = 15</pre>	BOUNDARIES is thrown	
	compareOffset = 0		
	compareLength = 0		
8	[Select Text String TLV]	ToolkitException.OUT_OF_TLV_	
	<pre>valueOffset < 0 valueOffset = -1</pre>	BOUNDARIES is thrown	
	compareBuffer.length = 15		
	compareOffset = 0		
	compareLength = 1	Tablide Constitution Out OF TIM	
9	[Select Text String TLV] compareLength > Text String length	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
	valueOffset = 0	BOUNDARIES IS UITOWIT	
	compareBuffer.length = 15		
	compareOffset = 0		
10	compareLength = 7 [Select Text String TLV]	ToolkitException.OUT_OF_TLV_	
10	valueOffset + compareLength > Text String	BOUNDARIES is thrown	
	length		
	valueOffset = 2		
	<pre>compareBuffer.length = 15 compareOffset = 0</pre>		
	compareLength = 5		
11	Initialise the handler	—	
	compareValue()	ToolkitException.UNAVAILABLE ELEMENT is thrown	
12	initDisplayText()		
	dcs = 4		
	buffer = 00 01 0F		
	Select Text String TLV Initialise compareBuffer		
	Select Text String TLV Initialise compareBuffer compareBuffer =		
	Select Text String TLV Initialise compareBuffer compareBuffer = 04 00 01 0F		
	Select Text String TLV Initialise compareBuffer compareBuffer = 04 00 01 0F Compare buffers	Result is 00h	
	Select Text String TLV Initialise compareBuffer compareBuffer = 04 00 01 0F Compare buffers valueOffset = 0	Result is 00h	
	Select Text String TLV Initialise compareBuffer compareBuffer = 04 00 01 0F Compare buffers	Result is 00h	
13	Select Text String TLV Initialise compareBuffer compareBuffer = 04 00 01 0F Compare buffers valueOffset = 0 compareOffset = 0 compareLength = 17	Result is 00h	

1	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		
17	compareBuffer =		
	03 00 01 OF		
	Compare buffers with same parameters	Result is +1	
	Compare bullers with same parameters	Result is +1	
	1.1.1.11		
15	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	
	valueOffset = 2		
	<pre>compareOffset = 3</pre>		
	compareLength = 12		
16	Initialise compareBuffer		
16	Initialise compareBuffer compareBuffer =		
16			
16	compareBuffer =		
16	compareBuffer = 55 55 55 02 01		
16	compareBuffer = 55 55 55 02 01 03 04 05 06 07		
16	compareBuffer = 55 55 55 02 01 03 04 05 06 07 08 09 0A 0B 0C 55 55 55 55 55	Result is -1	
16	compareBuffer = 55 55 55 02 01 03 04 05 06 07 08 09 0A 0B 0C	Result is -1	
16	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	Result is -1	
	compareBuffer =	Result is -1	
	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	Result is -1	
	compareBuffer =	Result is -1	
	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	Result is -1	
	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	Result is -1	
	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		
17	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 Compare buffers with same parameters	Result is -1 Result is +1	
	compareBuffer =		
17	compareBuffer =		
17	compareBuffer =		
17	compareBuffer =		
17	CompareBuffer =		
17	compareBuffer =		

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.

public short findAndCopyValue(byte tag,

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

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.

6.2.7.14.2 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

Cleanup 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 = 21</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
3	<pre>dstOffset < 0 dstBuffer.length = 20 dstOffset = -1</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
4	<pre>length > dstBuffer.length dstBuffer.length = 15 dstOffset = 0</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
5	DstOffset + length >dstBuffer.length DstBuffer.length = 20 DstOffset = 5	ArrayIndexOutOfBoundsExceptio n 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	Result of findAndcopyValue() is
	Tag = 0Dh	17
	DstBuffer.length = 17 DstOffset = 0	
8	Compare buffer	Result is 00h
0	buffer = 04 00 01 0F	Result is out
	Dullel - 04 00 01 or	
9	initialise dstBuffer	
	dstBuffer = 55 55 55	
	Successful call	Result of findAndcopyValue() is
	dstBuffer.length = 20	19
	dstOffset = 2	
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	initDisplayText()	
	dcs = 4	
	buffer = 00 01 0F	
	append a 2nd 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
'-	buffer = 04 00 01 0F	Troodic to con
13	initDisplayText()	
	dcs = 4	
	buffer = 00 01 0F	
	Successful call (with tag 8Dh)	Result of findAndcopyValue() is
	tag = 8Dh dstBuffer.length = 17	17
	dstBuller.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
	<pre>dstBuffer.length = 16 dstOffset = 0</pre>	
16	Compare buffer	Result is 00h
10	buffer = 00 01 0F	Izeanit ia non

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_FACYBBS_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.

6.2.7.15.2 Test Suite files

Test Script: API_2_PAH_FACYBBS_BSS_1.scr
Test Applet: API_2_PAH_FACYBBS_BSS_1.java

Load Script: API_2_PAH_FACYBBS_BSS_1.ldr

Cleanup Script: API_2_PAH_FACYBBS_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	
	valueOffset = 0		
	<pre>dstBuffer.length = 5 dstOffset = 6</pre>		
	dstLength = 0		
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	
٦	dstBuffer.length = 5	n is thrown	
	dstOffset = 3	11.13 tillowii	
	dstLength = 3		
6	dstLength < 0	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = 0		
	dstLength = -1		
7	initDienlayTayt/\ with langth = 5		
- '-	initDisplayText() with length = 5 valueOffset > Text String Length	ToolkitEveenties OUT OF TIV	
	tag = 0Dh, occurrence = 1	ToolkitException.OUT_OF_TLV_	
	valueOffset = 7	BOUNDARIES is thrown	
	dstBuffer.length = 15		
	dstOffset = 0		
	dstLength = 0		
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</pre>	BOUNDARIES is thrown	
	dstBuffer.length = 15		
	dstOffset = 0		
10	dstLength = 7	ToolkitEveention OUT OF TIV	
10	<pre>valueOffset + dstLength > Text String length valueOffset = 2</pre>	BOUNDARIES is thrown	
	dstBuffer.length = 15	BOUNDARIES IS INIOWN	
	dstOffset = 0		
	dstLength = 5		
11	InitDisplayText()		
	Select a TLV (tag 02h)		
	findAndCopyValue()	ToolkitException.UNAVAILABLE	
	tag = 0Dh	_ELEMENT is thrown	
<u> </u>	occurrence = 2	ToolkitEveenties UNIAVAU ADLE	
	Call the getValueLength() method	ToolkitException.UNAVAILABLE	
12	initDisplayText()	_ELEMENT is thrown.	
' _	dcs = 4		
	buffer = 00 01 0F		
	Successful call	Result of findAndCopyValue() is	
	tag = 0Dh, occurrence = 1	17	
	valueOffset = 0		
	dstBuffer.length = 17		
	dstOffset = 0		
40	dstLength = 17	Popult in 00h	
13	Compare buffer buffer = 04 00 01 0F	Result is 00h	
	Durrer = 04 00 01 OF		
1.4	initialise dstBuffer	+	
14	minanse usibuner	I I	

Successful call tag = 0th, occurrence = 1 valueOffset = 2 datBuffer1.ength = 20 datBuffer1.ength = 10 datBuffer1.ength = 10 datBuffer1.ength = 17 datOffset = 0 datBuffer1.ength = 10 datBuffer1.ength = 17 datBuffer = 10 datBuffer1.ength = 17 datBuffer1.ength = 10 datBuffer1.ength = 17 datBuffer1.ength = 10 datBuffer1.ength = 10 datBuffer1.ength = 10 datBuffer1.ength = 10 datBuffer1.ength = 16 dat		dstBuffer = 55 55 55		
Lag = 0Dh, occurrence = 1 valueoffset = 2 datBuffer Length = 20 datCatBuffer Length = 20 datCatBuffer Length = 12 datBuffer = 3 datLength = 12 datLength = 12 datLength = 17 datLength = 17 datLength = 18 datLength = 19 datLength = 17 datLength = 10 datLength = 16 datLength = 17 datLength = 10 datLength =		Successful call	Result of findAndcopyValue() is	
dstBuffer Length = 20 dstLength = 12		tag = 0Dh, occurrence = 1		
datOffset = 3 datLength = 12				
datLength = 12				
15				
buffer =	15	_	Deput is 00h	
S5 55 55 01 02 03 04 0 06 07 08 09 0A 0B 02 05 55 55 55 55 55 55 55 55 55 55 55 55	15		Result is oun	
03 04 05 06 07 08 09 00 08 0C 55 55 55 55 55 55 55 55 55 55 55 55 55				
08 09 0A 0B 0C S5 55 55 55 55 16				
Append a Text String TLV tag = 00 to 11 22 33 44 55 (no specific DCS byte)				
tag = 0D buffer = 00 11 22 33 44 55 (no specific DCS byte) Successful call tag = 00h, occurrence = 1 valueOffset = 0 distBuffer.length = 17 distOffset = 0 distLength = 17 Compare buffer buffer = 04 00 01 0p 18 Successful call tag = 00h, occurrence = 2 valueOffset = 0 distBuffer.length = 6 distOffset = 0 distBuffer.length = 6 distOffset = 0 distLength = 6 20 initDisplayText() dcs = 4 buffer = 00 01 0p Successful call (with tag 8Dh) tag = 80h occurrence = 1 valueOffset = 0 distBuffer.length = 17 distOffset = 0 distBuffer.length = 17 distOffset = 0 distBuffer.length = 17 distOffset = 0 distLength = 17 Successful call (with tag 8Dh) tag = 80h occurrence = 1 valueOffset = 0 distLength = 17 Successful call (with tag 8Dh) tag = 80h occurrence = 1 valueOffset = 0 distLength = 17 Successful call (with tag 8Ph) tag = 80h occurrence = 1 valueOffset = 0 distLength = 17 Successful call (with tag 8Ph) tag = 80h occurrence = 1 valueOffset = 0 distLength = 16 Compare buffer Result is 00h				
buffer = 00 11 22 33 44 55 (no specific DCS byte) Successful call tag = 0Dh, occurrence = 1 valueOffset = 0 dstBuffer.length = 17 dstOffset = 0 dstBuffer.length = 17 Successful call tag = 0Dh, occurrence = 2 valueOffset = 0 dstBuffer.length = 6 dstOffset = 0 dstBuffer.length = 6 dstOffset = 0 dstBuffer.length = 6 dstOffset = 0 dstBuffer = 00 11 22 33 44 55 Result is 00h	16			
DSS byte) Successful call tag = 0Dh, occurrence = 1 valueOffset = 0 detEufert.length = 17 detOffset = 0 0 1 0F Duffer = 00 10 1 0F Successful call tag = 0Dh, occurrence = 2 valueOffset = 0 detEugh = 17 Result is 00h Result of findAndCopyValue() is Result is 00h Result is 00h Result of findAndCopyValue() is Result is 00h Result of findAndcopyValue() is Result is 00h Result is 00h Result is 00h Result is 00h Result of findAndcopyValue() is Result of findAndcopyValue()		<u> </u>		
Successful call tag = 0Dh, occurrence = 1 valueOffset = 0 detBuffer.length = 17 detOffset = 0 detBuffer.length = 17 detOffset = 0 detBuffer.length = 17 detOffset = 0 detBuffer length = 18 Successful call tag = 0Dh, occurrence = 2 valueOffset = 0 detBuffer.length = 6 detDetDuffer = 00 to 11 22 33 44 55 Result is 00h				
tag = 0Dh, occurrence = 1 valueOffset = 0 datDuffer 17 datOffset = 0 datLeigth = 17 Tompare buffer buffer = 04 00 01 0F 18 Successful call tag = 0Dh, occurrence = 2 valueOffset = 0 dstBuffer.length = 6 dstOffset = 0 dstEuffer = 00 11 22 33 44 55 20 initDisplayText() dcs = 4 buffer = 00 01 0F Successful call (with tag 8Dh) tag = 8Dh occurrence = 1 valueOffset = 0 dstBuffer.length = 17 dstOffset = 0 dstBuffer = 04 00 01 0F Compare buffer buffer = 04 00 01 0F Result of findAndcopyValue() is 17 Result of findAndcopyValue() is 18 Result of findAndcopyValue() is 19 Result of findAndcopyValue() is 10 Result of findAndcopyValue() is 10 Result of findAndcopyValue() is 11 Result of findAndcopyValue() is 12 Result is 00h			Pecult of findAndConyAlue() is	
valueOffset = 0 dstEngth = 17 dstOffset = 0 dstEngth = 0 dstEngth = 6 dstOffset = 0 dstEngth = 17 dstOffset = 0 dstEngth = 18 dstOffset = 0 dstEngth = 19 dstOffset = 0 dstEngth = 10 dstEngth = 16 dstOffset = 0 dstEngth = 16 dst				
dstBuffer.length = 17 dstOffset = 0 dstLength = 17 Compare buffer buffer = 04 00 01 0F Result is 00h Result of findAndCopyValue() is 6 Result of findAndCopyValue() is 6 Result of findAndCopyValue() is 6 Result is 00h Result of findAndCopyValue() is 6 Result is 00h Result of findAndcopyValue() is 17 Result is 00h			17	
dstLength = 17 Compare buffer buffer = 04 00 01 0F 8		dstBuffer.length = 17		
17				
buffer = 04 00 01 0F Successful call tag = 00h, occurrence = 2 valueOffset = 0 dstBuffer.length = 6 dstOffset = 0 dstLength = 6 19 Compare buffer buffer = 00 11 22 33 44 55 20 initDisplayText() dcs = 4 buffer = 00 01 0F Successful call (with tag 8Dh) tag = 80h occurrence = 1 valueOffset = 0 dstBuffer.length = 17 dstOffset = 0 dstLength = 17 21 Compare buffer buffer = 00 01 0F 22 Append tag 0Fh buffer = 00 01 0F Successful call (with tag 8Fh) tag = 8Fh occurrence = 1 valueOffset = 0 dstBuffer.length = 17 dstOffset = 0 dstLength = 17 Compare buffer buffer = 00 01 0F Result is 00h Result of findAndcopyValue() is 17 Result is 00h Result is 00h Result of findAndcopyValue() is 16 Append tag 0Fh buffer = 00 01 0F Result of findAndcopyValue() is 16 Append tag 0Fh tag = 8Fh occurrence = 1 valueOffset = 0 dstBuffer.length = 16 dstOffset = 0 dstBuffer = 10 adstLength = 16 dstOffset = 0 dstLength = 16 Result is 00h				
18	17	<u>-</u>	Result is 00h	
tag = 0Dh, occurrence = 2 valueOffset = 0 dstBuffer.length = 6 dstOffset = 0 dstLength = 6 dstOffset = 0 dstLength = 6 19 Compare buffer buffer = 00 11 22 33 44 55 20 initDisplayText() dcs = 4 buffer = 00 01 0F Successful call (with tag 8Dh) tag = 8Dh occurrence = 1 valueOffset = 0 dstBuffer.length = 17 dstOffset = 0 dstLength = 17 21 Compare buffer buffer = 04 00 01 0F Result is 00h Result of findAndcopyValue() is 16 Result is 00h Result is 00h Result is 00h Result is 00h Result of findAndcopyValue() is 16 Result is 00h		buffer = 04 00 01 0F		
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23 Compare buffer Result is 00h	20	Compare buffer buffer = 00 11 22 33 44 55 initDisplayText() dcs = 4 buffer = 00 01 0F Successful call (with tag 8Dh) tag = 8Dh occurrence = 1 valueOffset = 0 dstBuffer.length = 17 dstOffset = 0 dstLength = 17 Compare buffer buffer = 04 00 01 0F Append tag 0Fh buffer = 00 01 0F Successful call (with tag 8Fh) tag = 8Fh occurrence = 1 valueOffset = 0 dstBuffer.length = 16	Result of findAndcopyValue() is 17 Result is 00h Result of findAndcopyValue() is	
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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.

6.2.7.16.2 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

Cleanup 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		
	compareOffset > compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
	<pre>tag = 0Dh compareBuffer.length = 20</pre>	n is thrown	
	compareOffset = 21		
3	compareOffset < 0	ArrayIndexOutOfBoundsExceptio	
i	compareBuffer.length = 20	n is thrown	
4	compareOffset = -1 length > compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
4	compareBuffer.length = 15	n is thrown	
	compareOffset = 0		
5	compareOffset + length >	ArrayIndexOutOfBoundsExceptio	
	<pre>compareBuffer.length compareBuffer.length = 20</pre>	n is thrown	
	compareOffset = 5		
	_		
6	InitDisplayText()		
	Select a TLV (tag 02h)	ToolkitEvoortion LINIAN/AU ADLE	
	findAndCompareValue() tag = 03h	ToolkitException.UNAVAILABLE _ELEMENT is thrown	
	Call the getValueLength() method	ToolkitException.UNAVAILABLE	
	3	_ELEMENT is thrown.	
7	initDisplayText()		
	dcs = 4 buffer = 00 01 0F		
	Initialise compareBuffer		
	compareBuffer =		
	04 00 01 0F	D 1/1 001	
	Compare buffers tag = 0Dh	Result is 00h	
	compareOffset = 0		
8	Verify current TLV	Result is 17	
9	getValueLength() Initialise compareBuffer		
Э	compareBuffer =		
	04 00 01 10		
	Compare buffers with same parameters	Result is -1	
10	Initialise compareBuffer		
	compareBuffer =		
	Compare buffers with same parameters	Result is +1	
11	Initialise compareBuffer		
	compareBuffer = 55 55 04 00 01		
	02 03 04 05 06		
	07 08 09 0A 0B		
	OC 0D 0E 0F 55 Compare buffers	Result is 00h	
	compareOffset = 2	TOO WILL TO OUT	
12	append a Text String TLV		
12	tag = 0Dh		
	buffer = 00 11 22 33 44 55		
	Initialise compareBuffer		
	compareBuffer = 55 55 04 00 01		
	02 03 04 05 06		
	07 08 09 0A 0B		
l	OC OD OE OF 55	I I	

	Compare buffers	Result is 00h	
	compareOffset = 2		
13	Initialise compareBuffer		
13	compareBuffer =		
	-		
	55 55 04 01 01		
	02 03 04 05 06		
	07 08 09 0A 0B		
	OC OD OE OF 55		
	Compare buffers	Result is -1	
	compareOffset = 2		
14	Initialise compareBuffer		
	compareBuffer =		
	55 55 04 00 01		
	02 03 04 05 06		
	07 08 09 0A 0B		
	OC OD OD 10 55		
		Decult is 14	
	Compare buffers	Result is +1	
	compareOffset = 2		
15	initDisplayText()		
	dcs = 4		
	buffer = 00 01 0F		
	Initialise compareBuffer		
	CompareBuffer = 04 00 01 0F		
	Successful call (with tag 8Dh)	Result is 00h	
	tag = 8Dh	result is oon	
	compareBuffer.length = 17		
	compareOffset = 0		
16			
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)	Result is +1	
	tag = 8Fh		
	compareBuffer.length = 16		
	compareOffset = 0		
L	1	1	

6.2.7.16.4 Test Coverage

CRR number	Test case number
N1	6
N2	8
N3	7, 11, 12, 17
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.

public byte findAndCompareValue(byte tag,

byte occurence,
short valueOffset,
byte[] compareBuffer,
short compareOffset,
short compareLength)

throws java.lang.NullPointerException,

java.lang.ArrayIndexOutOfBoundsException,

ToolkitException

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.

6.2.7.17.2 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

Cleanup 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		C Exposition
	findAndCompareValue() with a null	NullPointerException is thrown	<u> </u>
	compareBuffer	Train onto Exception is tillowil	l
2	initDisplayText() with length = 15	†	
	compareOffset > compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
	tag = 0Dh, occurrence = 1	n is thrown	ı
	valueOffset = 0		ı
	compareBuffer.length = 5		l
	compareOffset = 6		l
3	compareLength = 0 compareOffset < 0	ArrayIndexOutOfBoundsExceptio	<u> </u>
3	compareBuffer.length = 5	n is thrown	
	compareOffset = -1	II IS UIIOWII	
	compareLength = 1		
4	compareLength >compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length = 5	n is thrown	
	<pre>compareOffset = 0 compareLength = 6</pre>		l
5	compareOffset + compareLength	ArrayIndexOutOfBoundsExceptio	
	>compareOffset + compareLength	n is thrown	
	compareBuffer.length = 5		l
	compareOffset = 3		l
	compareLength = 3	American de la Corp.	
6	<pre>compareLength < 0 compareBuffer.length = 5</pre>	ArrayIndexOutOfBoundsExceptio	
	compareOffset = 0	n is thrown	l
	compareLength = -1		l
		<u> </u>	l
7	initDisplayText() with length = 5		
	valueOffset > Text String Length	ToolkitException.OUT_OF_TLV_	
	tag = 0Dh, occurrence = 1	BOUNDARIES is thrown	
	valueOffset = 7		
	<pre>compareBuffer.length = 15 compareOffset = 0</pre>		
	compareLength = 0	<u> </u>	l
8	valueOffset < 0	ToolkitException.OUT_OF_TLV_	
	<pre>valueOffset = -1</pre>	BOUNDARIES is thrown	l
	compareBuffer.length = 15		
	<pre>compareOffset = 0 compareLength = 1</pre>		l
9	compareLength > Text String length	ToolkitException.OUT_OF_TLV_	
Ŭ	valueOffset = 0	BOUNDARIES is thrown	l
	<pre>compareBuffer.length = 15</pre>		l
	compareOffset = 0		l
10	compareLength = 7 valueOffset + compareLength > Text String	ToolkitEvention OUT OF TIV	
10	length	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
	valueOffset = 2	POONDAIVIES IS UITOWIT	l
	<pre>compareBuffer.length = 15</pre>		l
	compareOffset = 0		
	compareLength = 5		
11	Invalid parameter	ToolkitEvention BAD INDUT D	
1.1	occurrence = 0	ToolkitException.BAD_INPUT_P ARAMETER is thrown	
	1	ANAMIC LETA 19 HILOMII	l
12	InitDisplayText()		
_ · _	Select a TLV (tag 02h)	<u> </u>	
	findAndCompareValue()	ToolkitException.UNAVAILABLE	
	tag = 0Dh	_ELEMENT is thrown	l
	occurrence = 2		
	Call the getValueLength() method	ToolkitException.UNAVAILABLE	l
	1,551 1 = 10	_ELEMENT is thrown.	
13	initDisplayText()		
	dcs = 4 buffer = 00 01 0F		l
	Initialise compareBuffer	+	<u> </u>
	compareBuffer =		l
	04 00 01 0F		
	findAndCompareValue()	Result is 00h	

	T		
	tag = 0Dh, occurrence = 1		
	valueOffset = 0		
	compareOffset = 0		
	compareLength = 17		
14	Verify current TLV	Result is 17	
	getValueLength()		
15	Initialise compareBuffer		
13	compareBuffer =		
	04 00 01 10		
		Result is -1	
	Compare buffers with same parameters	Result is -1	
16	Initialise compareBuffer		
	compareBuffer =		
	03 00 01 0F	1	
	Compare buffers with same parameters	Result is +1	
17	Initialise compareBuffer		
	compareBuffer =		
	55 55 55 01 02		
1	03 04 05 06 07		
1	08 09 0A 0B 0C		
	55 55 55 55 55	I D. Ivi oci	
	Compare buffers	Result is 00h	
1	valueOffset = 2		
	compareOffset = 3		
	compareLength = 12		
L	1.00.0		
18	Initialise compareBuffer		
	compareBuffer =		
	55 55 55 02 01		
	03 04 05 06 07		
	08 09 0A 0B 0C		
	55 55 55 55	D 11: 4	
	Compare buffers with same parameters	Result is -1	
—			
19	Initialise compareBuffer		
19	compareBuffer =		
19	compareBuffer = 55 55 55 01 02		
19	compareBuffer = 55 55 55 01 02 03 04 05 06 07		
19	compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0A 0D		
19	compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0A 0D 55 55 55 55 55	Describing 4	
19	compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0A 0D	Result is +1	
	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	
19	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 append a Text String TLV	Result is +1	
	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 append a Text String TLV tag = 0Dh	Result is +1	
	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 append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55	Result is +1	
	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 append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer	Result is +1	
	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 append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer =	Result is +1	
	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 append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F		
	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 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	
	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 append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1		
	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 append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0		
	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 append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0		
	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 append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0		
20	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 append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 17		
	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 append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 17 Initialise compareBuffer		
20	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 append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer =		
20	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 append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareDuffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55	Result is 00h	
20	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 append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue()		
20	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 append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareDuffer = 00 compareDuffer = 00 compareDuffer = 00 compareDuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2	Result is 00h	
20	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 append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0	Result is 00h	
20	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 append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareDuffer = 00 11 22 33 44 55 Initialise compareBuffer compareDuffer = 00 compareDuffer = 00 compareDuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareOffset = 0 compareOffset = 0	Result is 00h	
20	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 append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0	Result is 00h	
20	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 append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0	Result is 00h	
20	compareBuffer = 55 55 55 01 02 03 04 05 06 07 08 09 0A 0A 0D 55 55 55 55 55 55 55 55 55 55 55 55 55	Result is 00h	
20	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 append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareDuffer = Initialise compareBuffer compareBuffer =	Result is 00h	
20	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 append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareBuffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 IndAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareOffset = 0 compareOffset = 0 compareOffset = 6 Initialise compareBuffer compareBuffer = 00 11 22 33 44 66	Result is 00h Result is 00h	
20	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 append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareBuffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 IndAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareOffset = 0 compareOffset = 6 Initialise compareBuffer compareBuffer = 00 11 22 33 44 66 findAndCompareValue()	Result is 00h	
20	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 append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareLength = 17 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 findAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareDeffset = 0 compareD	Result is 00h Result is 00h	
20	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 append a Text String TLV tag = 0Dh buffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 04 00 01 0F findAndCompareValue() tag = 0Dh, occurrence = 1 valueOffset = 0 compareOffset = 0 compareBuffer = 00 11 22 33 44 55 Initialise compareBuffer compareBuffer = 00 11 22 33 44 55 IndAndCompareValue() tag = 0Dh, occurrence = 2 valueOffset = 0 compareOffset = 0 compareOffset = 0 compareOffset = 6 Initialise compareBuffer compareBuffer = 00 11 22 33 44 66 findAndCompareValue()	Result is 00h Result is 00h	

	compareLength = 6		
23	initDisplayText()		
	dcs = 4		
	buffer = 00 01 0F		
	Initialise compareBuffer		
-	CompareBuffer = 04 00 01 0F	D 11: 001	
	Successful call (with tag 8Dh)	Result is 00h	
	tag = 8Dh, occurrence = 1		
	valueOffset = 0		
	<pre>compareBuffer.length = 17 compareOffset = 0</pre>		
	compareLength = 17		
24	Append tag 0Fh		
24	buffer = 00 01 0F		
	Initialise compareBuffer		
	compareBuffer = 00 01 0F		
	Successful call (with tag 8Fh)	Result is 00h	
	tag = 8Fh, occurrence = 1	resource con	
	valueOffset = 0		
	compareBuffer.length = 16		
	compareOffset = 0		
	compareLength = 16		
25	Initialise compareBuffer		
	compareBuffer =0099 02 OF		
	findAndCompareValue()	Result is +1	
	tag = 0Dh, occurrence = 1		
	<pre>valueOffset = 0</pre>		
	compareOffset = 0		
	compareLength = 17		

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	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.

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

Cleanup Script: API_2_PAH_APDA_1.clr

6.2.7.18.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Null buffer	NullPointerException is thrown	Al Do Expediation
2	<pre>offset > buffer.length buffer.length = 5 offset = 6 length = 0</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
3	<pre>offset < 0 buffer.length = 5 offset = -1 length = 1</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
4	<pre>length > buffer.length buffer.length = 5 offset = 0 length = 6</pre>	ArrayIndexOutOfBoundsException is thrown	
5	<pre>offset + length > buffer.length buffer.length = 5 offset = 3 length = 3</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
6	<pre>length < 0 buffer.length = 5 offset = 0 length = -1</pre>	ArrayIndexOutOfBoundsExceptio n is thrown	
7	Handler overflow buffer.length = 256 offset = 0 length = 256	ToolkitException.HANDLER_OV ERFLOW is thrown	
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	
40	Cupanantul call	Impare() is our	
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	Impare() is con	
' '	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	
12	Clear the handler		
'-			
	Successful call		
	buffer = 00 01 FC		
	offset = 0		
	length = 253		
	Call getLength() method	result = 253	
	oan gettength() method	100dit = 200	
	Call copy() method		
	Can copy() memod		
	Compare handler	Result of	
	compareBuffer = 00 01 FC	javacard.framework.Util.arrayCo	
		mpare() is 00h	

6.2.7.18.4 Test Coverage

CRR number	Test case number
N1	9, 10, 11, 12
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.

 $\begin{array}{ll} \mbox{void appendTLV} & \mbox{(byte tag, byte value)} \\ & \mbox{throws ToolkitException} \end{array}$

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

No requirements

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
Cleanup Script: API_2_PAH_APTLBB_1.clr

6.2.7.19.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Call appendArray()	7.1. Expedition	Do Exposition
•	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		
	Can copy() method Compare the arrays	Result of	
	compare the arrays compareBuffer = 84 01 00	javacard.framework.Util.arrayCo	
	Comparebuller - 04 01 00	mpare() is 00h	
4	Successful call		
	tag = 01h		
	value = FEh		
	Call copy() method		
	Compare the arrays compareBuffer = 84 01 00 01 01 FE	Result of	
	compareBuffer = 84 01 00 01 01 FE	javacard.framework.Util.arrayCo	
	Olean that handlen	mpare() is 00h	
5	Clear the handler		
	Call appendArray()		
	length = 250		
	buffer = 00 81 F7 03 04 F9 Successful call		
	tag = 84h		
	value = 00h		
	Call getLength() method	result = 253	
	Call copy() method		
	Compare the array	Result of	
	compareBuffer = 00 81 F7 03 04 F9 84 01	javacard.framework.Util.arrayCo	
	00	mpare() is 00h	

6.2.7.19.4 Test Coverage

CRR number	Test case number
N1	3, 4, 5
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

No requirements

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

Cleanup Script: API_2_PAH_APTLBBB_1.clr

6.2.7.20.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Call the initDisplayText()	7 ii Exposition	De Expositation
'	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	Dogult of	
	Compare the arrays compareBuffer = 84 02 00 01	Result of	
	Comparebuller = 84 02 00 01	javacard.framework.Util.arrayCo	
1	Successful call	mpare() is 00h	
4	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	
5	Clear the handler		
	Call appendArray()		
	length = 249		
	buffer = 00 81 F6 03 04 F8		
	Successful call		
	tag = 84h value1 = 00h		
	value2 = 00h		
	Call getLength() method	result = 253	
	3-1-0-13-1-()3-1-13-1-13-1-13-1-13-1-13-1-13-1-1		
	Call copy() method		
	Compare handler	Result of	
	compareBuffer = 00 81 F6 03 04 F8 84 02	javacard.framework.Util.arrayCo	
	00 01	mpare() is 00h	
	l.	1 /	

6.2.7.20.4 Test Coverage

CRR number	Test case number
N1	3, 4, 5
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_APTLB_BSS

6.2.7.21.1 Conformance requirement:

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

void appendTLV (byte tag,

byte[] value,
 short valueoffset,
 short valuelength)
throws java.lang.NullPointerException,
 java.lang.ArrayIndexOutOfBoundsException,
 ToolkitException

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_APTLB_BSS_1.scr

Test Applet: API_2_PAH_APTLB_BSS_1.java

Load Script: API_2_PAH_APTLB_BSS_1.ldr

Cleanup Script: API_2_PAH_APTLB_BSS_1.clr

6.2.7.21.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Null value	NullPointerException is thrown	-
2	valueOffset > value.length	ArrayIndexOutOfBoundsExceptio	
	value.length = 5	n is thrown	
	valueOffset = 6		
	valueLength = 0		
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		
	valueLength = 6		
5	valueOffset + valueLength > value.length	ArrayIndexOutOfBoundsExceptio	
	value.length = 5	n is thrown	
	valueOffset = 3		
L_	valueLength = 3	A 1 1 0 10'D 1 5 1'	
6	valueLength < 0	ArrayIndexOutOfBoundsExceptio	
	value.length = 5	n is thrown	
	valueOffset = 0		
	valueLength = -1	Tablitana dia HANDIED OV	
7	Handler overflow	ToolkitException.HANDLER_OV	
	<pre>value.length = 254 valueOffset = 0</pre>	ERFLOW is thrown	
	valueoliset = 0		

	realwal and h = 254	T	
8	valueLength = 254	ToolkitEveention DAD INDUT D	
0	Bad parameter value.length = 256	ToolkitException.BAD_INPUT_P ARAMETER is thrown	
	valueOffset = 0	ARAMETER IS thrown	
	valueLength = 256		
9	Initialise handler		
	Select Command Details TLV		
	Successful call		
	tag = 04		
	value = FF FE F8		
	<pre>valueOffset = 0</pre>		
	valueLength = 8		
	Verify Current TLV: Call getValueLength()	Result is 03h	
10	Clear the handler		
	Successful call		
	tag = 04		
	value = FF FE F8		
	<pre>valueOffset = 0 valueLength = 8</pre>		
	Call copy() method		
	Can copy() method Compare the arrays	Result of	
	compareBuffer = 04 08 FF FE F8	javacard.framework.Util.arrayCo	
	Comparedution - Of OO FF FE FO	mpare() is 00h	
11	Successful call	inpare() is our	
' '	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		
	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		
-13	Successful call		
	tag = 04		
	value = 00 01 7F		
	<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	
14	Clear the handler		
ļ			
	Successful call		
	tag = 04 value = 00 01 F9		
	value = 00 01 F9 valueOffset = 0		
	valueLength = 250		
	Call getLength() method	result = 253	
	Call copy() method		
	170		
	Compare handler	Result of	
	compareBuffer = 04 81 FA 00 01F9	javacard.framework.Util.arrayCo	
L		mpare() is 00h	
		1 1	

6.2.7.21.4 Test Coverage

CRR number	Test case number
N1	10, 11, 12, 13, 14
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.

throws java.lang.NullPointerException,

java.lang.ArrayIndexOutOfBoundsException,

ToolkitException

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

Cleanup 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	, c pootation
2	value2Offset > value2.length	ArrayIndexOutOfBoundsExceptio	
	value2.length = 5	n is thrown	
	<pre>value20ffset = 6</pre>		
	value2Length = 0	A	
3	<pre>value2Offset < 0 value2.length = 5</pre>	ArrayIndexOutOfBoundsExceptio	
	value20ffset = -1	n is thrown	
	value2Length = 1		
4	value2Length > value2.length	ArrayIndexOutOfBoundsExceptio	
	value2.length = 5	n is thrown	
	value2Offset = 0		
_	value2Length = 6	A de de control De control De control	
5	<pre>value2Offset + value2Length > value2.length value2.length = 5</pre>	ArrayIndexOutOfBoundsExceptio	
	value20ffset = 3	n is thrown	
	value2Length = 3		
6	value2Length < 0	ArrayIndexOutOfBoundsExceptio	
	value2.length = 5	n is thrown	
	value2Offset = 0		
	value2Length = -1 Handler overflow	ToolkitEveention LIANDLED OV	
7	value2.length = 254	ToolkitException.HANDLER_OV ERFLOW is thrown	
	value20ffset = 0	FIZE FOAM 19 (IIIIOMII	
	value2Length = 254		
8	Bad parameter	ToolkitException.BAD_INPUT_P	
	value2.length = 256	ARAMETER is thrown	
	value20ffset = 0		
9	value2Length = 256 Initialise handler		
9	Select Command Details TLV		
	Successful call		
	tag = 04		
	value1 = 05		
	value2 = FF FE F8		
	value20ffset = 0		
	value2Length = 8 Verify Current TLV: Call getValueLength()	Result is 03h	
10	Clear the handler	rtesuit is osii	
	Successful call		
	tag = 04		
	value1 = 05		
	value2 = FF FE F8		
	<pre>value2Offset = 0 value2Length = 8</pre>		
	Call copy() method		
	Compare the arrays	Result of	
	CompareBuffer = 04 09 05 FF FE F8	javacard.framework.Util.arrayCo	
L		mpare() is 00h	
11	Successful call		
	tag = 85h		
	value1 = 55h value2 = 00 01 07		
	value20ffset = 2		
L	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 07	mpare() is 00h	
12	Successful call		
'-	tag = 01		
	value1 = 44h		
	value2 = 11 22 88		
	<pre>value2Offset = 2 value2Length = 4</pre>		
	Call copy() method		
	Compare the arrays	Result of	
	CompareBuffer =	javacard.framework.Util.arrayCo	
	04 09 05 FF FE F8	mpare() is 00h	
L			

	85 07 55 02 03 07		
	01 05 44 33 44 55 66		
13	Clear the handler		
	Successful call		
	tag = 04		
	value1 = 00		
	value2 = 01 7F		
	<pre>value20ffset = 0</pre>		
	value2Length = 7Fh		
	Call copy() method		
	Compare the arrays	Result of	
	compareBuffer = 04 81 80 00 017F	javacard.framework.Util.arrayCo	
		mpare() is 00h	
14	Clear the handler		
1.			
	Successful call		
	tag = 04		
	value1 = 00		
	value2 = 01 F9		
	<pre>value20ffset = 0</pre>		
	value2Length = 249		
	Call getLength() method	result = 253	
	Call copy() method		
	Compare handler	Result of	
	compareBuffer = 04 81 FA 00 01F9	javacard.framework.Util.arrayCo	

6.2.7.22.4 Test Coverage

CRR number	Test case number
N1	10, 11, 12, 13, 14
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_CLER

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

CRRN2: 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

6.2.7.23.2 Test suite files

Test Script: API_2_PAH_CLER_1.scr

Test Applet: API_2_PAH_CLER_1.java

Load Script: API_2_PAH_CLER_1.ldr

Cleanup Script: API_2_PAH_CLER_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	
N2	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 <math>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.

6.2.8.1.2 Test Suite files

Test Script: API_2_PRH_CPAI_BSS_1.scr

Test Applet: API_2_PRH_CPAI_BSS _1.java

Load Script: API_2_PRH_CPAI_BSS _1.ldr

Cleanup Script: API_2_PRH_CPAI_BSS _1.clr

6.2.8.1.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
	qualifier = 0		command
	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 dstBuffer = NULL	NullPointerException is thrown	
2	dstOffset > dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 10	n is thrown	
	dstOffset = 11		
	dstLength = 0	1 1 0 10/5	
3	dstOffset < 0	ArrayIndexOutOfBoundsExceptio	
	<pre>dstBuffer.length = 10 dstOffset = -1</pre>	n is thrown	
	dstOffset = -1 dstLength = 1		
4	dstLength > dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
-	dstBuffer.length = 10	n is thrown	
	dstOffset = 0	II IS UII OWII	
	dstLength = 11		
5	dstOffset + dstLength > dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 10	n is thrown	
	dstOffset = 6		
	dstLength = 5		
6	dstLength < 0	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 10	n is thrown	
	dstOffset = 6		
7	dstLength = -1 Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
′	Build and send a DISPLAT TEXT command		command
	Terminal Response with 5 additional bytes		Command
	Tomma Reopence Will Cadamona Dytes		
	Result TLV = 03 06 01 01 23 45 67 89		
1	Į.	·	1

	Successfull call, dstBuffer is the whole buffer	result of	
	· ·		
1	dstBuffer.length = 5	copyAdditionalInformation() is	
	dstOffset = 0	05h.	
	dstLength = 5	0011.	
8	Compare dstBuffer using arrayCompare()	result of arrayCompare() is 00h.	
_			
	src = {01, 23, 45, 67, 89}		
	srcOffset = 00		
	dest = dstBuffer		
	destOffset = 0		
	length = 5		
9	Call the getValueLength() method	Result is 06h.	
9	Can the getvalueLengin() method	Result is odil.	
40	Build and send a DISPLAY TEXT command		DICDLAY TEXT Dragative
10	Dulla alla sella a Displat Text collillalla		DISPLAY TEXT Proactive
			command
	T 1 1 D 10 10 10 10 10 10 10 10 10 10 10 10 10		
	Terminal Response with 6 additional bytes		
	Danil - MIII - 02 07 01 ND 0D HE HE DO DA		
	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	0711.	
	_		
11	Compare dstBuffer using arrayCompare()	result of arrayCompare() is 00h.	
1 ''	25mpare action doing array compare()		
1			
1	<pre>src = {AB, CD, EF, FE, DC}</pre>		
1	srcOffset = 00		
1			
1	dest = dstBuffer		
	destOffset = 2		
1			
	length = 5		
12	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
12	Dulla alla Sella a Dioi LAT TEXT Collillalla		
			command
	Tarminal Dagnanas with 7 additional butas		
	Terminal Response with 7 additional bytes		
	Damed = MITT = 02 00 01 NN DO DA 00 76 F4		
	Result TLV = 03 08 01 FE DC BA 98 76 54		
	32		
	Supposefull call detBuffer is part of a buffer	requit of	
	Successfull call, dstBuffer is part of a buffer	result of	
	dstBuffer.length = 7	copyAdditionalInformation() is	
	dstOffset = 0		
		05h.	
	dstLength = 5		
13	Compare dstBuffer using arrayCompare()	result of arrayCompare() is 00h.	
13	John pare astibution asing arrayoom pare()	result of arraycompare() is oon.	
	src = {FE, DC, BA, 98, 76}		
	srcOffset = 00		
	dest = dstBuffer		
	destOffset = 0		
	length = 5		
14	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
			Didi Erri Terri Todolivo
	Tamainal Danasana with Carl ditional hadas		command
	l eleminal Response with a additional phase		command
	Terminal Response with 8 additional bytes		command
			command
	Result TLV = 03 09 01 00 11 22 33 44 55		command
	Result TLV = 03 09 01 00 11 22 33 44 55		command
	Result TLV = 03 09 01 00 11 22 33 44 55 66 77		command
	Result TLV = 03 09 01 00 11 22 33 44 55	result of	command
	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer		command
	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9	copyAdditionalInformation() is	command
	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2		command
	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9	copyAdditionalInformation() is	command
4.5	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2 dstLength = 5	copyAdditionalInformation() is 07h.	command
15	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2	copyAdditionalInformation() is	command
15	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2 dstLength = 5	copyAdditionalInformation() is 07h.	command
15	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2 dstLength = 5 Compare dstBuffer using arrayCompare()	copyAdditionalInformation() is 07h.	command
15	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2 dstLength = 5 Compare dstBuffer using arrayCompare() src = {00, 11, 22, 33, 44}	copyAdditionalInformation() is 07h.	command
15	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2 dstLength = 5 Compare dstBuffer using arrayCompare() src = {00, 11, 22, 33, 44} srcOffset = 00	copyAdditionalInformation() is 07h.	command
15	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2 dstLength = 5 Compare dstBuffer using arrayCompare() src = {00, 11, 22, 33, 44}	copyAdditionalInformation() is 07h.	command
15	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2 dstLength = 5 Compare dstBuffer using arrayCompare() src = {00, 11, 22, 33, 44} srcOffset = 00 dest = dstBuffer	copyAdditionalInformation() is 07h.	command
15	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2 dstLength = 5 Compare dstBuffer using arrayCompare() src = {00, 11, 22, 33, 44} srcOffset = 00 dest = dstBuffer destOffset = 2	copyAdditionalInformation() is 07h.	command
15	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2 dstLength = 5 Compare dstBuffer using arrayCompare() src = {00, 11, 22, 33, 44} srcOffset = 00 dest = dstBuffer destOffset = 2 length = 5	copyAdditionalInformation() is 07h.	command
	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2 dstLength = 5 Compare dstBuffer using arrayCompare() src = {00, 11, 22, 33, 44} srcOffset = 00 dest = dstBuffer destOffset = 2 length = 5	copyAdditionalInformation() is 07h.	
15	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2 dstLength = 5 Compare dstBuffer using arrayCompare() src = {00, 11, 22, 33, 44} srcOffset = 00 dest = dstBuffer destOffset = 2	copyAdditionalInformation() is 07h.	DISPLAY TEXT Proactive
	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2 dstLength = 5 Compare dstBuffer using arrayCompare() src = {00, 11, 22, 33, 44} srcOffset = 00 dest = dstBuffer destOffset = 2 length = 5	copyAdditionalInformation() is 07h.	
	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2 dstLength = 5 Compare dstBuffer using arrayCompare() src = {00, 11, 22, 33, 44} srcOffset = 00 dest = dstBuffer destOffset = 2 length = 5 Build and send a DISPLAY TEXT command	copyAdditionalInformation() is 07h.	DISPLAY TEXT Proactive
	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2 dstLength = 5 Compare dstBuffer using arrayCompare() src = {00, 11, 22, 33, 44} srcOffset = 00 dest = dstBuffer destOffset = 2 length = 5	copyAdditionalInformation() is 07h.	DISPLAY TEXT Proactive
	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2 dstLength = 5 Compare dstBuffer using arrayCompare() src = {00, 11, 22, 33, 44} srcOffset = 00 dest = dstBuffer destOffset = 2 length = 5 Build and send a DISPLAY TEXT command	copyAdditionalInformation() is 07h.	DISPLAY TEXT Proactive
	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2 dstLength = 5 Compare dstBuffer using arrayCompare() src = {00, 11, 22, 33, 44} srcOffset = 00 dest = dstBuffer destOffset = 2 length = 5 Build and send a DISPLAY TEXT command Terminal Response with F2h additional bytes	copyAdditionalInformation() is 07h.	DISPLAY TEXT Proactive
	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2 dstLength = 5 Compare dstBuffer using arrayCompare() src = {00, 11, 22, 33, 44} srcOffset = 00 dest = dstBuffer destOffset = 2 length = 5 Build and send a DISPLAY TEXT command Terminal Response with F2h additional bytes Result TLV = 03 81 F3 01 00 01 02 03	copyAdditionalInformation() is 07h. result of arrayCompare() is 00h.	DISPLAY TEXT Proactive
	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2 dstLength = 5 Compare dstBuffer using arrayCompare() src = {00, 11, 22, 33, 44} srcOffset = 00 dest = dstBuffer destOffset = 2 length = 5 Build and send a DISPLAY TEXT command Terminal Response with F2h additional bytes Result TLV = 03 81 F3 01 00 01 02 03	copyAdditionalInformation() is 07h. result of arrayCompare() is 00h.	DISPLAY TEXT Proactive
	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2 dstLength = 5 Compare dstBuffer using arrayCompare() src = {00, 11, 22, 33, 44} srcOffset = 00 dest = dstBuffer destOffset = 2 length = 5 Build and send a DISPLAY TEXT command Terminal Response with F2h additional bytes Result TLV = 03 81 F3 01 00 01 02 03 Successfull call to the method	copyAdditionalInformation() is 07h. result of arrayCompare() is 00h. result of	DISPLAY TEXT Proactive
	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2 dstLength = 5 Compare dstBuffer using arrayCompare() src = {00, 11, 22, 33, 44} srcOffset = 00 dest = dstBuffer destOffset = 2 length = 5 Build and send a DISPLAY TEXT 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 07h. result of arrayCompare() is 00h. result of copyAdditionalInformation() is	DISPLAY TEXT Proactive
	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2 dstLength = 5 Compare dstBuffer using arrayCompare() src = {00, 11, 22, 33, 44} srcOffset = 00 dest = dstBuffer destOffset = 2 length = 5 Build and send a DISPLAY TEXT command Terminal Response with F2h additional bytes Result TLV = 03 81 F3 01 00 01 02 03 Successfull call to the method	result of copyAdditionalInformation() is 07h. result of arrayCompare() is 00h. result of copyAdditionalInformation() is	DISPLAY TEXT Proactive
	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2 dstLength = 5 Compare dstBuffer using arrayCompare() src = {00, 11, 22, 33, 44} srcOffset = 00 dest = dstBuffer destOffset = 2 length = 5 Build and send a DISPLAY TEXT 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 dstOffset = 0	copyAdditionalInformation() is 07h. result of arrayCompare() is 00h. result of	DISPLAY TEXT Proactive
16	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2 dstLength = 5 Compare dstBuffer using arrayCompare() src = {00, 11, 22, 33, 44} srcOffset = 00 dest = dstBuffer destOffset = 2 length = 5 Build and send a DISPLAY TEXT 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 dstOffset = 0 dstLength = F2h	result of copyAdditionalInformation() is 07h. result of arrayCompare() is 00h. result of copyAdditionalInformation() is F2h.	DISPLAY TEXT Proactive
	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2 dstLength = 5 Compare dstBuffer using arrayCompare() src = {00, 11, 22, 33, 44} srcOffset = 00 dest = dstBuffer destOffset = 2 length = 5 Build and send a DISPLAY TEXT 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 dstOffset = 0 dstLength = F2h	result of copyAdditionalInformation() is 07h. result of arrayCompare() is 00h. result of copyAdditionalInformation() is F2h.	DISPLAY TEXT Proactive
16	Result TLV = 03 09 01 00 11 22 33 44 55 66 77 Successfull call, dstBuffer is the whole buffer dstBuffer.length = 9 dstOffset = 2 dstLength = 5 Compare dstBuffer using arrayCompare() src = {00, 11, 22, 33, 44} srcOffset = 00 dest = dstBuffer destOffset = 2 length = 5 Build and send a DISPLAY TEXT 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 dstOffset = 0	copyAdditionalInformation() is 07h. result of arrayCompare() is 00h. result of copyAdditionalInformation() is	DISPLAY TEXT Proactive

_	()	1	Ţ
	src = {00, 01, 02, 03, 04}		
	<pre>srcOffset = 00 dest = dstBuffer</pre>		
	destOffset = 0		
	length = F2h		
18	Call the getValueLength() method	Result is F3h.	
10	Can the getvalueLength() method	Result is FSII.	
40	Build and send a DISPLAY TEXT command		DICDLAY TEXT Dropostice
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	
	dstBuffer.length = 6	ToolkitException is thrown	
	dstOffset = 0		
	dstLength = 6		DIODLAY TEVT Doggading
20	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
			command
	Terminal Response with 5 additional bytes		
	- 7 00 05 05 00 11 00 00 14		
	Result TLV = 03 06 01 00 11 22 33 44		
	Initialise dstBuffer		
	dstBuffer = {00h, 01h, 02h, 03h}		
	Call the copyAdditionalInformation() method		
	dstBuffer.length = 20		
	dstOffset = 5		
	dstLength = 5	1, (0 0): 221	
	Compare dstBuffer using arrayCompare()	result of arrayCompare() is 00h	
	src = {		
	00h, 01h, 02h, 03h, 04h,		
	00h, 11h, 22h, 33h, 44h,		
	0Ah, 0Bh, 0Ch, 0Dh, 0Eh, 0Fh, 10h, 11h, 12h, 13h}		
	srcOffset = 0		
	dest = dstBuffer		
	destOffset = 0		
	length = 20		
21	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
			command
	Terminal Response with 2 Result TLV		
	elements		
	olomonia.		
	1st Result TLV = 03 06 01 01 23 45 67 89		
	2nd Result TLV = 03 01 00		
	Successfull call to	result of	
	copyAdditionalInformation()	copyAdditionalInformation() is	
	dstBuffer.length = 5	05h.	
	dstOffset = 0	oon.	
	dstLength = 5		
22	Compare dstBuffer using arrayCompare()	result of arrayCompare() is 00h.	
	$src = \{01, 23, 45, 67, 89\}$		
	<pre>srcOffset = 00</pre>		
	dest = dstBuffer		
	destOffset = 0		
	length = 5	D 11: 001	
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	ToolkitException.UNAVAILABLE	
	. TLV	_ELEMENT is thrown by send()	
	ProactiveResponseHandler, getTheHandler	ToolkitException.UNAVAILABLE	
	call copyAdditionalInformation()	_ELEMENT is thrown	
	can copy, tacinonaminormation()		į

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.

6.2.8.2.2 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

Cleanup 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	Al I Expediation	GET INPUT Proactive
1	qualifier = 00h		command
	dcs = 04h		Command
	buffer = 'Text'		
	minRespLength = 00h		
	maxRespLength = FFh		
	Terminal Response		
	•		
	Text String TLV = 0D 02 04 41		
	ProactiveResponseHandler.getTheHandler();	NullPointerException is thrown	
	call the copyTextString() method with a null		
	dstBuffer		
	1.5.66		
	dstBuffer = null		
2	dstOffset = 0 Build and send a GET INPUT command		GET INPUT Proactive
	Build and Send a GET INFOT Command		command
			Proactive
	Terminal Decrease		Floactive
	Terminal Response		
	Text String TLV = 0D 04 04 "ABC"		
	dstOffset + text length > dstBuffer.length	ArrayIndexOutOfBoundsException	
	and the state of t	is thrown	
	dstBuffer.length = 04h		
	dstOffset = 02h		
3	dstOffset < 0	ArrayIndexOutOfBoundsException	
		is thrown	
	dstBuffer.length = 04h		
	dstOffset = -1		DIODI AV TEVT
4	Build and send a DISPLAY TEXT command		DISPLAY TEXT
	qualifier = 00h dcs = 04h		Proactive command
	buffer = 'Text'		
	Terminal Response without Text String TLV		
	3		
	ProactiveResponseHandler.getTheHandler();	UNAVAILABLE ELEMENT	
	call the copyTextString() method	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 = {F00h, F01h, F02h, F03h}	Docult of constant Christin (A) in CO	
	Call the copyTextString() method	Result of copyTextString() is 02h	
	dstBuffer.length = 04h		
	dstOffset = 02h		
6	Compare dstBuffer using arrayCompare()	Result of arrayCompare() is 00h	
	src = {0F0h, 0F1h, 0F2h, 0F3h}		
	<pre>srcOffset = 00h dest = dstBuffer</pre>		
	dest = dstBuffer destOffset = 00h		
	length = 04h		
7	Build and send a GET INPUT command		GET INPUT Proactive
			command
			Proactive
	Terminal Response with text length = 01h		
	2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
	Text String TLV = 0D 02 04 41		
	Initialise dstBuffer		
	dstBuffer = {00h, 01h, 02h, 03h}		
	Call the copyTextString() method	Result of copyTextString() is 01h	
	dstBuffer.length = 04h		
l	dstOffset = 00h	I	I

8	Compare dstBuffer using arrayCompare()	Result of arrayCompare() is 00h	T
	src = {41h, 01h, 02h, 03h}		
1	<pre>srcOffset = 00h dest = dstBuffer</pre>		
	destOffset = 00h		
	length = 04h		
9	Build and send a GET INPUT command		GET INPUT Proactive
			command Proactive
	Terminal Response with text length = 02h	+	i ioactive
	·		
	Text String TLV = 0D 03 04 42 43	1	
	Initialise dstBuffer dstBuffer = {00h, 01h, 02h, 03h}		
	Call the copyTextString() method	Result of copyTextString() is 04h	
	dstBuffer.length = 04h dstOffset = 02h		
10	Compare dstBuffer using arrayCompare()	Result of arrayCompare() is 00h	
	<pre>src = {00h, 01h, 42h, 43h} srcOffset = 00h</pre>		
	dest = dstBuffer		
	destOffset = 00h		
11	length = 04h Call the getValueLength() method	Result is 03h	
' '	San in gottalas Longing method	1. Count to con	
12	Build and send a GET INPUT command		GET INPUT Proactive
<u> </u>	Torminal Deanance with tast levels 751	1	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	
	Can the copy restoring() method	Tresuit of copy restolling() is 7EII	
	dstBuffer.length = 7Eh		
13	dstOffset = 00h Compare dstBuffer using arrayCompare()	Result of arrayCompare() is 00h	+
	<pre>src = {01h,, 7Eh} srcOffset = 00h</pre>		
1	dest = dstBuffer		
	destOffset = 00h		
14	length = 7Eh Call the getValueLength() method	Result is 7Fh	+
14	Can the getvalueLength() method	INGSUILIS / I II	
15	Build and send a GET INPUT command		GET INPUT Proactive
<u> </u>			command
	Terminal Response with text length = 7Fh		
	Text String TLV = 0D 81 80 04 01 027F		
	Initialise dstBuffer		
<u> </u>	dstBuffer = {00h, 01h FFh} Call the copyTextString() method	Popult of convTovtString() is 95h	
	Can the copy rextotring() method	Result of copyTextString() is 8Fh	
	dstBuffer.length = FFh		
16	dstOffset = 10h Compare dstBuffer using arrayCompare()	Popult of arrayCompara() is 005	
16	Compare usibulier using arrayCompare()	Result of arrayCompare() is 00h	
	src = {00h, 01h, 0Fh,		
	01h,7Fh, 8Fh, FFh} srcOffset = 00h		
	dest = dstBuffer		
	destOffset = 00h		
17	length = FFh Build and send a GET INPUT command		GET INPUT Proactive
''	Dana and Scha a SET har OT Command		command
	Terminal Response with text length = EFh		
	-		
-	Text String TLV = 0D 81 F0 04 01 02 EF Initialise dstBuffer	-	
1	milanse usibuller	<u> </u>	

	dstBuffer = {00h, 00h 00h}		
	Call the copyTextString() method	Result of copyTextString() is EFh	
	dstBuffer.length = FFh		
	dstOffset = 00h		
18	Compare dstBuffer using arrayCompare()	Result of arrayCompare() is 00h	
	src = {01h,EFh, 00h 00h }		
	srcOffset = 00h		
	dest = dstBuffer		
	destOffset = 00h		
	length = FFh		
19	Build and send a GET INPUT command		GET INPUT Proactive
			command
	Terminal Response with two Text String TLV		
	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	
		30	
	dstBuffer.length = 04h		
	dstOffset = 02h		
20	Compare dstBuffer using arrayCompare()	Result of arrayCompare() is 00h	
	3 j		
	src = {00h, 01h, 42h, 43h}		
	srcOffset = 00h		
	dest = dstBuffer		
	destOffset = 00h		
	length = 04h		
21	Call the getValueLength() method	Result is 03h	
	I .		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

No requirements

Context errors

CRRC1: A ToolkitException.UNAVAILABLE_ELEMENT shall be thrown in case of unavailable Result TLV element.

6.2.8.3.2 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

Cleanup Script: API_2_PRH_GTIL_1.clr

6.2.8.3.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive
	qualifier = 00h		command
	dcs = 04h		
	buffer = 'Text' Terminal Response without additional		
	information		
	ProactiveResponseHandler.getTheHandler();	Result is 00h	
	call the getAdditionalInformationLength() method		
2	Call the getValueLength() method	Result is 01h	
3	Build and send a DISPLAY TEXT command		DISPLAY TEXT ProactiveProactive command
	Terminal Response with 1 additional byte		
	Result TLV = 03 02 02 55	Describie Odle	
	ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method	Result is 01h	
4	Call the getValueLength() method	Result is 02h	
5	Build and send a DISPLAY TEXT command		DISPLAY TEXT ProactiveProactive command
	Terminal Response with 7Eh additional bytes		
	Result TLV = 03 7F 02 55 55 55		
	ProactiveResponseHandler.getTheHandler();	Result is 7Eh	
	call the getAdditionalInformationLength()		
6	method Call the getValueLength() method	Result is 7Fh	
О	Can the getvalueLength() method	Result is 7Fff	
7	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive command
	Terminal Response with 7Fh additional bytes		
	Result TLV = 03 81 80 02 55 55 55 ProactiveResponseHandler.getTheHandler();	Result is 7Fh	
	call the getAdditionalInformationLength() method	result is 7Ff1	
8	Call the getValueLength() method	Result is 80h	
9	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive command
	Terminal Response with 80h additional bytes		
	Result TLV = 03 81 81 02 55 55 55		
	ProactiveResponseHandler.getTheHandler();	Result is 80h	

	call the getAdditionalInformationLength() method		
10	Call the getValueLength() method	Result is 81h	
11	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive command
	Terminal Response with F2h additional bytes		
	ProactiveResponseHandler.getTheHandler(); call the getAdditionalInformationLength() method	Result is F2h	
12	Call the getValueLength() method	Result is F3h	
13	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive command
	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
	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

No requirements

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.

6.2.8.4.2 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

Cleanup 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 qualifier = 00h dcs = 04h buffer = 'Text'		DISPLAY TEXT Proactive command
	Terminal Response with General Result = 00 (command performed successfully)		
	ProactiveResponseHandler.getTheHandler() Call the getGeneralResult() method	Result of getGeneralResult() is 00h	
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() Call the getGeneralResult() method	Result of getGeneralResult() is 01h	
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)		
	ProactiveResponseHandler.getTheHandler() Call the getGeneralResult() method	Result of getGeneralResult() is 01h	
6	Call the getValueLength() method	Result is 02h	
7	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive command
	Terminal Response with General Result = 02		
	Result TLV = 03 04 02 65 43 21 (Missing information)		
	ProactiveResponseHandler.getTheHandler() Call the getGeneralResult() method	Result of getGeneralResult() is 02h	
8	Call the getValueLength() method	Result is 04h	
9	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive

		T	
			command
	Terminal Response with 7Fh additional bytes		
	Result TLV = 03 81 80 02 55 55 55		
	ProactiveResponseHandler.getTheHandler();	Result is 02h	
	call the getGeneralResult() method	Troodit to 0211	
10	Call the getValueLength() method	Result is 80h	
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 03 03 34 56		
	<pre>ProactiveResponseHandler.getTheHandler(); call the getGeneralResult() method</pre>	Result is 02h	
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

No requirements

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.

6.2.8.5.2 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

Cleanup 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)		
	Oall to made and don't for a Control of the control	LINIAN/ALLADI E. EL ENTENT	
	Call to getItemIdentifier() with unavailable Item Identifier TLV	UNAVAILABLE_ELEMENT	
2	Build and send a SELECT ITEM command	ToolkitException is thrown	SELECT ITEM Proactive
_	with 2 items (ID=01, 02)		command
	with Z items (ID-VI, VZ)		Command
	Terminal Response with Item 1 selected		
	Item Identifier TLV = 10 01 01		
	Call the getItemIdentifier() method	Result is 01h	
2	Call the get/alus Puts/\ mathed	Docult is 04h	
3	Call the getValueByte() method valueOffset = 00h	Result is 01h	
4	Build and send a SELECT ITEM command		SELECT ITEM Proactive
	with 3 items (ID=03, 05, 07)		command
	. , , ,		
	Terminal Response with Item 5 selected		
	Item Identifier TLV = 10 01 05		
	Call the gettemIdentifier() method	Result is 05h	
5	Call the getValueByte() method	Result is 05h	
ا	valueOffset = 00h	Tresuit is USII	
6	Build and send a SELECT ITEM command		SELECT ITEM Proactive
	with 3 items (ID=FDh, FEh, FFh)		command
	Terminal Response with Item FFh selected		
	Item Identifier TLV = 10 01 FF		
	Call the getItemIdentifier() method	Result is FFh	
7	Call the getValueByte() method	Result is FFh	
'	valueOffset = 00h		
8	Build and send a SELECT ITEM command		SELECT ITEM Proactive
	with 3 items (ID=FDh, FEh, FFh)		command

	Terminal Response with 2 Item Identifier ${\scriptscriptstyle \mathrm{TLV}}$		
	1st Item Identifier TLV = 10 01 FFh		
	2nd Item Identifier TLV = 10 01 FEh		
	Call the getItemIdentifier() method	Result is FFh	
9	Call the getValueByte() method	Result is FFh	
	valueOffset = 00h		
10	Build and send a DISPLAY TEXT command		DISPLAY TEXT Proactive command
	Terminal Response without item identifier in the Item Identifier Simple TLV		
	<pre>Item Identifier TLV = 10 00</pre>		
	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

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.

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

No requirements

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.

6.2.8.6.2 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

Cleanup 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 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 getTextStringCodingScheme() method	OUT_OF_TLV_BOUNDARIES 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() method	Result is 08h	
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	
		I .	ı

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	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

No requirements

Context errors

CRRC1: A ToolkitException.UNAVAILABLE_ELEMENT shall be thrown in case of unavailable Text String TLV element.

6.2.8.7.2 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

Cleanup Script: API_2_PRH_GTTL_1.clr

6.2.8.7.3 Test procedure

اما	Dogorintion	ADI Expostation	ADDII Eventation
<u>ld</u> 1	Description Build and send a DISPLAY TEXT command	API Expectation	APDU Expectation DISPLAY TEXT Proactive
	Dunu anu senu a DISPLAT TEXT COMMAND		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.

 $\label{eq:public_static} \mbox{ ProactiveResponseHandler getTheHandler()} \\ \mbox{ throws ToolkitException}$

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

No requirements

Context errors

CRRC1: The method shall throw ToolkitException.HANDLER_NOT_AVAILABLE if the handler is busy.

6.2.8.8.2 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

Cleanup Script: API_2_PRH_GTHD_1.clr

6.2.8.8.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Build and send a Proactive Command		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.

6.2.8.9.2 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

Cleanup 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.

6.2.8.10.2 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

Cleanup 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: 81 03 01 21 00 02 02 82 81 03 01 00		
	ProactiveResponseHandler.getTheHandler()	NullPointerException is thrown	
	copy() with NULL as parameter to dstBuffer		
2	dstOffset > dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
_	dstBuffer.length = 5	n is thrown	
	dstOffset = 6		
3	dstLength = 0 dstOffset < 0	ArrayIndexOutOfBoundsExceptio	
3	dstBuffer.length = 5	n is thrown	
	dstOffset = -1		
4	dstLength = 1 dstLength > dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
4	dstBuffer.length = 5	n is thrown	
	dstOffset = 0		
5	dstLength = 6	A recorded as Out Of David de Treat at the	
5	<pre>dstOffset + dstLength > dstBuffer.length dstBuffer.length = 5</pre>	ArrayIndexOutOfBoundsException is thrown	
	dstOffset = 3	THIS UNIOWIT	
	dstLength = 3	Amerika da 20040fBana da Fina anti-	
6	<pre>dstLength < 0 dstBuffer.length = 5</pre>	ArrayIndexOutOfBoundsException is thrown	
	dstOffset = 0	IT IS UTIOWIT	
L	dstLength = -1	T 1175 (1 017 05 T) V	
7	dstLength > length of the simple TLV list dstBuffer.length = 13	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
	dstOffset = 0	BOONDARIES IS UITOWIT	
	dstLength = 13	D 14 (0 : 40	
8	Successful call, dstBuffer is the whole buffer dstBuffer.length = 12	Result of copy() is 12	
	dstOffset = 0		
	dstLength = 12		
9	Compare the buffer with buffer: 81 03 01 21 00 02 02 82 81 03 01 00	Result of arrayCompare() is 0	
10	Successful call, dstBuffer is part of a buffer	Result of copy() is 15	
	dstBuffer.length = 20		
	<pre>dstOffset = 3 dstLength = 12</pre>		
11	Compare the whole buffer	Result of arrayCompare() is 0	
	Reference =		
	00 01 02 81 03 01 21 00		
	02 02 82 81		
	03 01 00 0F 10 11 12 13		
12	Initialize dstBuffer		
	dstBuffer = 00h 01h 02h 13h		
	Successful call, dstBuffer is part of a buffer	Result of copy() is 12	
	<pre>dstBuffer.length = 20 dstOffset = 3</pre>		
	dstLength = 9		
13	Compare the whole buffer	Result of arrayCompare() is 0	
	Reference = 00 01 02		
	81 03 01 21 00		
	02 02 82 81 0C 0D 0E		
	0F 10 11 12 13		

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.

6.2.8.11.2 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

Cleanup 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		
	81 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	
	0	D. W. TIV FOUND OF OFT	
2	Search 1st TLV	Result is TLV_FOUND_CR_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	D 11: 001	
5 6	Call the getValueLength() method Select a TLV (tag 02h)	Result is 02h	
Ь	Search a wrong tag	Result is TLV_NOT_FOUND	
	tag = 04h	Result is TEV_NOT_FOUND	
	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	
	<pre>tag = 01h occurrence = 2</pre>		
9	Call the getValueLength() method	ToolkitException.UNAVAILABLE	
"	can are gerrarae zongan, meanea	_ELEMENT shall be thrown.	
10	Search 3rd TLV	Result is	
	tag = 03h	TLV_FOUND_CR_NOT_SET	
4.4	occurrence = 1	D 11: 041	
11	Call the getValueLength() method	Result is 01h	
12	Search 3rd TLV	Result is	
'-	tag = 03h	TLV_FOUND_CR_NOT_SET	
	occurrence = 2		
13	Call the getValueLength() method	Result is 02h	
14	Search tag 83h	Result is	
' ~	Tag = 83h	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_GVLE

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

No requirements

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.

6.2.8.12.2 Test Suite files

Test Script: API_2_PRH_GVLE_1.scr

Test Applet: API_2_PRH_GVLE_1.java

Load Script: API_2_PRH_GVLE_1.ldr

Cleanup Script: API_2_PRH_GVLE_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()	ToolkitException.UNAVAILABLE	
	GetValueLength()	_ELEMENT is thrown	
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)		
	getValueLength()	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		
	7F		
	Search TLV 0Dh (Text String TLV)	Description 00h	
	getValueLength()	Result is 80h	
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	

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_GVBYS

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.

6.2.8.13.2 Test Suite files

Test Script: API_2_PRH_GVBYS_1.scr

Test Applet: API_2_PRH_GVBYS_1.java

Load Script: API_2_PRH_GVBYS_1.ldr

Cleanup Script: API_2_PRH_GVBYS_1.clr

6.2.8.13.3 Test procedure

1		API Expectation	APDU Expectation
	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()		
	<pre>getValueByte(0)</pre>	ToolkitException.UNAVAILABLE	
		_ELEMENT is thrown	
2	Search TLV 01h (Command Details TLV)		
	<pre>getValueByte(3)</pre>	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)	
		(555.00)	
5	Search TLV 0Dh (Text String TLV)		
	getValueByte(7E)	Result is 7Eh	
6	Send a GET INPUT command		GET INPUT Proactive
0	Send a GET INFOT Command		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	

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.

6.2.8.14.2 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
Cleanup Script: API_2_PRH_CPYVS_BSS_1.clr

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6.2.8.14.3 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		
	CopyValue() with a null dstBuffer	NullPointerException is thrown	
2	dstOffset > dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	<pre>dstOffset = 6 dstLength = 0</pre>		
3	dstOffset < 0	ArrayIndexOutOfBoundsExceptio	
	<pre>dstBuffer.length = 5 dstOffset = -1</pre>	n is thrown	
	dstLength = 1		
4	dstLength >dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	<pre>dstBuffer.length = 5 dstOffset = 0</pre>	n is thrown	
	dstollset = 0 dstLength = 6		
5	dstOffset + dstLength >dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	<pre>dstBuffer.length = 5 dstOffset = 3</pre>	n is thrown	
	dstOffset = 3 dstLength = 3		
6	dstLength < 0	ArrayIndexOutOfBoundsExceptio	
	<pre>dstBuffer.length = 5 dstOffset = 0</pre>	n is thrown	
	dstLength = -1		
7	valueOffset > Text String Length valueOffset = 7	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
	dstBuffer.length = 15	BOUNDARIES IS thrown	
	dstOffset = 0		
8	dstLength = 0 valueOffset < 0	ToolkitException.OUT_OF_TLV_	
O	valueOffset = -1	BOUNDARIES is thrown	
	<pre>dstBuffer.length = 15 dstOffset = 0</pre>		
	dstorrset = 0 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	T 11/15 (1 OLIT OF TIM	
10	ValueOffset + dstLength > Text String length ValueOffset = 2	ToolkitException.OUT_OF_TLV_ BOUNDARIES is thrown	
	DstBuffer.length = 15	BOONDAINES IS UNOWIT	
	DstOffset = 0		
	DstLength = 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 CopyValue()	ToolkitException.UNAVAILABLE	
		ELEMENT is thrown	
12	Select Text String TLV		
	Successful call	Result of copyValue() is 17	
	ValueOffset = 0 DstBuffer.length = 17		
	DstOffset = 0		
13	DstLength = 17 Compare buffer	Result is 00h	
13	Buffer = 04 00 01 0F	Tresuit is out	
14	<pre>initialise dstBuffer dstBuffer = 55 55 55</pre>		
	Successful call	Result of copyValue() is 15	
	ValueOffset = 2		

	DstBuffer.length = 20		
	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		

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 compare Value

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.

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.

6.2.8.15.2 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

Cleanup 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	
	comparevalue() with a null comparebuller	NullFolliterException is tillown	
2	compareOffset > compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
	<pre>compareBuffer.length = 5</pre>	n is thrown	
	compareOffset = 6		
3	compareLength = 0 compareOffset < 0	A recyled a vOut Of Dougla Cycontia	
3	compareOffset < 0 compareBuffer.length = 5	ArrayIndexOutOfBoundsExceptio	
	compareOffset = -1	n is thrown	
	compareLength = 1		
4	compareLength >compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length = 5	n is thrown	
	<pre>compareOffset = 0 compareLength = 6</pre>		
5	compareOffset + compareLength	ArrayIndexOutOfBoundsExceptio	
3	>compareOffset + compareLength	n is thrown	
	compareBuffer.length = 5	II IS UIIOWII	
	compareOffset = 3		
	compareLength = 3		
6	compareLength < 0	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length = 5	n is thrown	
	<pre>compareOffset = 0 compareLength = -1</pre>		
	Comparedengen1		
7	valueOffset > Text String Length	ToolkitException.OUT_OF_TLV_	
	valueOffset = 7	BOUNDARIES is thrown	
	<pre>compareBuffer.length = 15 compareOffset = 0</pre>		
	compareLength = 0		
8	valueOffset < 0	ToolkitException.OUT_OF_TLV_	
	<pre>valueOffset = -1</pre>	BOUNDARIES is thrown	
	compareBuffer.length = 15		
	compareOffset = 0		
9	compareLength = 1 compareLength > Text String length	ToolkitException.OUT_OF_TLV_	
٦	valueOffset = 0	BOUNDARIES is thrown	
	compareBuffer.length = 15	DOGINDAINEO IS UIIOWII	
	compareOffset = 0		
	compareLength = 7		
10	valueOffset + compareLength > Text String	ToolkitException.OUT_OF_TLV_	
	length	BOUNDARIES is thrown	
	<pre>valueOffset = 2 compareBuffer.length = 15</pre>		
	compareOffset = 0		
	compareLength = 5		
4.4	Cond a CET INDUT command		OFT INDUT December 2
11	Send a GET INPUT command		GET INPUT Proactive
	Terminal Response, Text String length = 16		command
	reminal Response, Text String length = 16		l

	Im . a mrrr op 11 04 00 01 05		
	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 OF		
	Compare buffers	Result is 00h	
	ValueOffset = 0		
	CompareOffset = 0		
	CompareLength = 17		
13	Initialise compareBuffer		
	CompareBuffer =		
	04 00 01 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	
	Compare suriore with came parameters	Troodic to 11	
15	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	
	ValueOffset = 2		
	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		
	Compare buffers with same parameters	Result is -1	
17	Initialise compareBuffer		
17	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	
	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.

6.2.8.16.2 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

Cleanup 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	
	tag = 0Dh	n is thrown	
	dstBuffer.length = 20		
	dstOffset = 21		
3	dstOffset < 0	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 20	n is thrown	
	dstOffset = -1		
4	length > dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 15	n is thrown	
	dstOffset = 0		
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() tag = 04h	ToolkitException.UNAVAILABLE _ELEMENT is thrown	
	Call the getValueLength() method	ToolkitException.UNAVAILABLE _ELEMENT is thrown.	
7	Successful call	Result of findAndcopyValue() is	
	Tag = 0Dh DstBuffer.length = 17 DstOffset = 0	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	Result is 00h	
	07 08 09 0A 0B 0C 0D 0E 0F 55		
11	Send a GET INPUT command		GET INPUT Proactive command
	Terminal Response, with 2 Text String TLV 0D 11 04 00 01 0F 0D 02 04 41		
	ProactiveResponseHandler.getTheHandler()		
	Successful call Tag = 0Dh DstBuffer.length = 17 DstOffset = 0	Result of findAndcopyValue() is 17	
12	Compare buffer Buffer = 04 00 01 0F	Result is 00h	
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 Properties Personnel Hendler (act The Hendler)		
	ProactiveResponseHandler.getTheHandler() Successful call (with tag 8Dh) Tag = 8Dh DstBuffer.length = 17 DstOffset = 0	Result of findAndcopyValue() is 17	
14	Compare buffer Buffer = 04 00 01 0F	Result is 00h	

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.

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.

6.2.8.17.2 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

Cleanup 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	Expodution	GET INPUT Proactive
			command
	Terminal Response, Text String length = 15		
	Text String TLV = 0D 10 04 01 02 0F		
	ProactiveResponseHandler.getTheHandler()	NiviliDelinterFree C. C. C.	
	findAndCopyValue() with a null dstBuffer	NullPointerException is thrown	
2	dstOffset > dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	tag = 0Dh, occurrence = 1	n is thrown	
	<pre>valueOffset = 0 dstBuffer.length = 5</pre>		
	dstBuller.length = 5 dstOffset = 6		
	dstLength = 0		
3	dstOffset < 0	ArrayIndexOutOfBoundsExceptio	
	<pre>dstBuffer.length = 5 dstOffset = -1</pre>	n is thrown	
	dstOffset = -1 dstLength = 1		
4	dstLength > dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
	dstBuffer.length = 5	n is thrown	
	dstOffset = 0		
5	dstLength = 6 dstOffset + dstLength > dstBuffer.length	ArrayIndexOutOfBoundsExceptio	
5	dstBuffer.length = 5	n is thrown	
	dstOffset = 3	2	
	dstLength = 3	Amerika day Oy 10/D	
6	<pre>dstLength < 0 dstBuffer.length = 5</pre>	ArrayIndexOutOfBoundsException is thrown	
	dstOffset = 0	n is thrown	
	dstLength = -1		
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()		
	valueOffset > Text String Length	ToolkitException.OUT_OF_TLV_	
	tag = 0Dh, occurrence = 1	BOUNDARIES is thrown	
	<pre>valueOffset = 7</pre>		
	<pre>dstBuffer.length = 15 dstOffset = 0</pre>		
	dstOffset = 0 dstLength = 0		
8	valueOffset < 0	ToolkitException.OUT_OF_TLV_	
	valueOffset = -1	BOUNDARIES is thrown	
	<pre>dstBuffer.length = 15 dstOffset = 0</pre>		
	dstollset = 0 dstLength = 1		
9	dstLength > Text String length	ToolkitException.OUT_OF_TLV_	
	<pre>valueOffset = 0</pre>	BOUNDARIES is thrown	
	<pre>dstBuffer.length = 15 dstOffset = 0</pre>		
	dstOffset = 0 dstLength = 7		
10	valueOffset + dstLength > Text String length	ToolkitException.OUT_OF_TLV_	
	<pre>valueOffset = 2</pre>	BOUNDARIES is thrown	
	<pre>dstBuffer.length = 15 dstOffset = 0</pre>		
	dstLength = 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)		
	Sciect a ILV (tay UZII)	1	

	<pre>findAndCopyValue() tag = 0Dh occurrence = 2</pre>	ToolkitException.UNAVAILABLE _ELEMENT is thrown	
	Call the getValueLength() method	ToolkitException.UNAVAILABLE _ELEMENT is thrown.	
12	Successful call Tag = 0Dh, occurrence = 1 ValueOffset = 0 DstBuffer.length = 17 DstOffset = 0 DstLength = 17	Result of findAndCopyValue() is 17	
13	Compare buffer Buffer = 04 00 01 0F	Result is 00h	
14	initialise dstBuffer dstBuffer = 55 55 55		
	Successful call Tag = 0Dh, occurrence = 1 ValueOffset = 2 DstBuffer.length = 20 DstOffset = 3 DstLength = 12	Result of findAndcopyValue() 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	
16	Send a GET INPUT command		GET INPUT Proactive command
	Terminal Response, with 2 Text String TLV 0D 11 04 00 01 02 0F 0D 06 00 11 22 33 44 55 (no specific DCS byte)		
	ProactiveResponseHandler.getTheHandler()		
	Successful call Tag = 0Dh, occurrence = 1 ValueOffset = 0 DstBuffer.length = 17 DstOffset = 0 DstLength = 17	Result of findAndCopyValue() is 17	
17	Compare buffer Buffer = 04 00 01 0F	Result is 00h	
18	Successful call Tag = 0Dh, occurrence = 2 ValueOffset = 0 DstBuffer.length = 6 DstOffset = 0 DstLength = 6	Result of findAndCopyValue() is 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) Tag = 8Dh, occurrence = 1 ValueOffset = 0 DstBuffer.length = 17 DstOffset = 0 DstLength = 17	Result of findAndcopyValue() is 17	
21	Compare buffer Buffer = 04 00 01 0F	Result is 00h	

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.

6.2.8.18.2 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

Cleanup 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	711 Expodution	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	
	<pre>compareBuffer.length = 20 compareOffset = 21</pre>		
3	compareOffset < 0	ArrayIndexOutOfBoundsExceptio	
Ū	compareBuffer.length = 20	n is thrown	
	compareOffset = -1		
4	length > compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
	<pre>compareBuffer.length = 15 compareOffset = 0</pre>	n is thrown	
5	CompareOffset + length >	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length	n is thrown	
	<pre>CompareBuffer.length = 20 CompareOffset = 5</pre>		
	COMPATENTIBER - 3		
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)	ToolkitEveenties LINAVALLABLE	
	findAndCompareValue() tag = 04h	ToolkitException.UNAVAILABLE _ELEMENT is thrown	
	Call the getValueLength() method	ToolkitException.UNAVAILABLE	
	Jan the gerralacenging memod	_ELEMENT is thrown.	
7	Initialise compareBuffer		
	CompareBuffer = 04 00 01 OF		
	Compare buffers	Result is 00h	
	Tag = 0Dh	Troodit is oon	
	CompareOffset = 0		
8	Verify current TLV	Result is 17	
9	GetValueLength() Initialise compareBuffer		
9	CompareBuffer =		
	04 00 01 10		
	Compare buffers with same parameters	Result is -1	
10	Initialise compareBuffer		
-	CompareBuffer =		
	03 00 01 0F	Describie of	
	Compare buffers with same parameters	Result is +1	
11	Initialise compareBuffer		
	CompareBuffer =		
	55 55 04 00 01 02 03 04 05 06		
	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
14	Sena a GET INFOT COMMINANA		command
	Terminal Response, with 2 Text String TLV		
	OD 11 04 00 01 OF		

	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		
	OC OD OE OF 55		
	Compare buffers	Result is 00h	
	CompareOffset = 2		
13	Initialise compareBuffer		
	CompareBuffer =		
	55 55 04 01 01		
	02 03 04 05 06		
	07 08 09 0A 0B		
	OC OD OE OF 55	D 11: 4	
	Compare buffers	Result is -1	
	CompareOffset = 2		
14	Initialise compareBuffer		
14	Initialise compareBuffer CompareBuffer =		
14			
14	CompareBuffer =		
14	CompareBuffer = 55 55 04 00 01		
14	CompareBuffer = 55 55 04 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0D 10 55		
14	CompareBuffer = 55 55 04 00 01 02 03 04 05 06 07 08 09 0A 0B	Result is +1	
14	CompareBuffer = 55 55 04 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0D 10 55	Result is +1	
14	CompareBuffer = 55 55 04 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0D 10 55 Compare buffers CompareOffset = 2	Result is +1	
14	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	GET INPUT Proactive
	CompareBuffer = 55 55 04 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0D 10 55 Compare buffers CompareOffset = 2	Result is +1	GET INPUT Proactive command
	CompareBuffer = 55 55 04 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0D 10 55 Compare buffers CompareOffset = 2 Send a GET INPUT command	Result is +1	
	CompareBuffer = 55 55 04 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0D 10 55 Compare buffers CompareOffset = 2	Result is +1	
	CompareBuffer = 55 55 04 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0D 10 55 Compare buffers CompareOffset = 2 Send a GET INPUT command Terminal Response, Text String length = 16	Result is +1	
	CompareBuffer = 55 55 04 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0D 10 55 Compare buffers CompareOffset = 2 Send a GET INPUT command Terminal Response, Text String length = 16 Text String TLV = 0D 11 04 00 01 0F ProactiveResponseHandler.getTheHandler() Initialise compareBuffer	Result is +1	
	CompareBuffer = 55 55 04 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0D 10 55 Compare buffers CompareOffset = 2 Send a GET INPUT command Terminal Response, Text String length = 16 Text String TLV = 0D 11 04 00 01 0F ProactiveResponseHandler.getTheHandler() Initialise compareBuffer CompareBuffer =	Result is +1	
	CompareBuffer = 55 55 04 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0D 10 55 Compare buffers CompareOffset = 2 Send a GET INPUT command Terminal Response, Text String length = 16 Text String TLV = 0D 11 04 00 01 0F ProactiveResponseHandler.getTheHandler() Initialise compareBuffer = 04 00 01 0F	Result is +1	
	CompareBuffer = 55 55 04 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0D 10 55 Compare buffers CompareOffset = 2 Send a GET INPUT command Terminal Response, Text String length = 16 Text String TLV = 0D 11 04 00 01 0F ProactiveResponseHandler.getTheHandler() Initialise compareBuffer CompareBuffer = 04 00 01 0F Compare buffers (with tag 8Dh)	Result is +1 Result is 00h	
	CompareBuffer = 55 55 04 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0D 10 55 Compare buffers CompareOffset = 2 Send a GET INPUT command Terminal Response, Text String length = 16 Text String TLV = 0D 11 04 00 01 0F ProactiveResponseHandler.getTheHandler() Initialise compareBuffer = 04 00 01 0F		

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.

public byte findAndCompareValue(byte tag,

byte occurence,
short valueOffset,
byte[] compareBuffer,
short compareOffset,
short compareLength)

throws java.lang.NullPointerException,

java.lang.ArrayIndexOutOfBoundsException,

ToolkitException

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.

6.2.8.19.2 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

Cleanup 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	AiTExpectation	GET INPUT Proactive
'	Send a GET INFOT Command		command
	Terminal Response, Text String length = 15		Command
	Text String TLV = 0D 10 04 01 02 0F		
	ProactiveResponseHandler.getTheHandler()		
	findAndCompareValue() with a null	NullPointerException is thrown	
	compareBuffer	Null officerException is thown	
	Comparebatier		
2	compareOffset > compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
_	tag = 0Dh, occurrence = 1	n is thrown	
	valueOffset = 0		
	compareBuffer.length = 5		
	compareOffset = 6		
3	compareLength = 0 compareOffset < 0	ArrayIndayOutOfPaundaEyeantia	
3	compareBuffer.length = 5	ArrayIndexOutOfBoundsException is thrown	
	compareOffset = -1	III IS UIIOWII	
	compareLength = 1		
4	compareLength >compareBuffer.length	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length = 5	n is thrown	
	compareOffset = 0		
5	compareLength = 6 CompareOffset + compareLength	ArrayIndexOutOfBoundsExceptio	
э	compareOnset + compareLength compareBuffer.length		
	CompareBuffer.length = 5	n is thrown	
	CompareOffset = 3		
	CompareLength = 3		
6	compareLength < 0	ArrayIndexOutOfBoundsExceptio	
	compareBuffer.length = 5	n is thrown	
	<pre>compareOffset = 0 compareLength = -1</pre>		
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()		
	valueOffset ≥ Text String Length	ToolkitException.OUT_OF_TLV_	
	<pre>tag = 0Dh, occurrence = 1 valueOffset = 7</pre>	BOUNDARIES is thrown	
	compareBuffer.length = 15		
	compareOffset = 0		
	compareLength = 0		
8	valueOffset < 0	ToolkitException.OUT_OF_TLV_	
	valueOffset = -1	BOUNDARIES is thrown	
	<pre>compareBuffer.length = 15 compareOffset = 0</pre>		
	compareUffset = 0 compareLength = 1		
9	compareLength > Text String length	ToolkitException.OUT_OF_TLV_	
	valueOffset = 0	BOUNDARIES is thrown	
	compareBuffer.length = 15		
	compareOffset = 0		
10	compareLength = 7 valueOffset + compareLength > Text String	ToolkitException.OUT_OF_TLV_	
10	length	BOUNDARIES is thrown	
	valueOffset = 2	BOONDAINES IS UITOWIT	
	compareBuffer.length = 15		
	compareOffset = 0		
	compareLength = 5		
1.4	Invalid parameter	ToolkitEveention DAD INDUT D	
11	Invalid parameter Occurrence = 0	ToolkitException.BAD_INPUT_P ARAMETER is thrown	
	Joseph John John John John John John John Joh	ANAIVIETEK IS (IIIOWI)	
12	Send a GET INPUT command		GET INPUT Proactive
'-	55 2 5E1 51 5511111and		command
	Terminal Response, Text String length = 16		
	Text String TLV = 0D 11 04 00 01 0F		
	ProactiveResponseHandler.getTheHandler()		
	Select a TLV (tag 02h)		
			_

	findAndCompareValue() tag = 0Dh	ToolkitException.UNAVAILABLE _ELEMENT is thrown	
	occurrence = 2 Call the getValueLength() method		
		ToolkitException.UNAVAILABLE _ELEMENT is thrown.	
13	Initialise compareBuffer CompareBuffer =		
	04 00 01 0F findAndCompareValue()	Result is 00h	
	<pre>tag = 0Dh, occurrence = 1 valueOffset = 0</pre>		
	<pre>compareOffset = 0 compareLength = 17</pre>		
14	Verify current TLV	Result is 17	
	GetValueLength()	TROOM TO TY	
15	Initialise compareBuffer compareBuffer =		
	04 00 01 10	Describie A	
	Compare buffers with same parameters	Result is -1	
16	Initialise compareBuffer compareBuffer =		
	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 55 Compare buffers	Result is 00h	
	<pre>valueOffset = 2 compareOffset = 3</pre>		
	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		
	Compare buffers with same parameters	Result is -1	
19	Initialise compareBuffer compareBuffer =		
	55 55 55 01 02		
	03 04 05 06 07 08 09 0A 0A 0D		
	Compare buffers with same parameters	Result is +1	
20	Send a GET INPUT command		GET INPUT Proactive command
	Terminal Response, with 2 Text String TLV		
	OD 06 00 11 22 33 44 55		
	ProactiveResponseHandler.getTheHandler() Initialise compareBuffer		
	compareBuffer = 04 00 01 0F		
	<pre>findAndCompareValue() tag = 0Dh, occurrence = 1</pre>	Result is 00h	
	<pre>valueOffset = 0 compareOffset = 0</pre>		
	compareLength = 17		
21	Initialise compareBuffer		
	compareBuffer = 00 11 22 33 44 55	D. W. OOL	
	findAndCompareValue()	Result is 00h	

	tag = 0Dh, occurrence = 2		
	valueOffset = 0		
	compareOffset = 0		
	compareLength = 6		
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
22	Initialise compareBuffer		
	compareBuffer =		
	00 11 22 33 44 66		
	findAndCompareValue()	Result is -1	
	tag = 0Dh, occurrence = 2		
	valueOffset = 0		
	<pre>compareOffset = 0</pre>		
	compareLength = 6		
23	Send a GET INPUT command		GET INPUT Proactive
23	Send a GET INPUT command		GET INPUT Proactive command
23			
23	Send a GET INPUT command Terminal Response, Text String length = 16 Text String TLV = 0D 11 04 00 01 0F		
23	Terminal Response, Text String length = 16		
23	Terminal Response, Text String length = 16 Text String TLV = 0D 11 04 00 01 0F ProactiveResponseHandler.getTheHandler()		
23	Terminal Response, Text String length = 16 Text String TLV = 0D 11 04 00 01 0F		
23	Terminal Response, Text String length = 16 Text String TLV = 0D 11 04 00 01 0F ProactiveResponseHandler.getTheHandler() Initialise compareBuffer		
23	Terminal Response, Text String length = 16 Text String TLV = 0D 11 04 00 01 0F ProactiveResponseHandler.getTheHandler() Initialise compareBuffer CompareBuffer =	Result is 00h	
23	Terminal Response, Text String length = 16 Text String TLV = 0D 11 04 00 01 0F ProactiveResponseHandler.getTheHandler() Initialise compareBuffer CompareBuffer = 04 00 01 0F	Result is 00h	
23	Terminal Response, Text String length = 16 Text String TLV = 0D 11 04 00 01 0F ProactiveResponseHandler.getTheHandler() Initialise compareBuffer CompareBuffer = 04 00 01 0F Compare buffers (with tag 8Dh)	Result is 00h	
23	Terminal Response, Text String length = 16 Text String TLV = 0D 11 04 00 01 0F 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
2	Allocates up to 8 timers (applet 1) 8 * allocateTimer(). Allocate timers more than the maximum (applet 1) The applet 1 allocates 1 more timer.	No exception shall be thrown. Timer ID returned shall be between 01 and 08 inclusive. It shall be different after each call. Shall throw a ToolkitException with reason NO_TIMER_AVAILABLE.	
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 (applet 2) 4 * allocateTimer().	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) The applet 3 allocates 1 more timer.	Shall throw a ToolkitException with reason NO_TIMER_AVAILABLE.	

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	API Expectation	APDU Expectation
1	Applet changes the entry's title by menuEntry buffer, with a greater length than the initial length		
	1- ChangeMenuEntry()with parameters:		
	Id = '02' MenuEntry = "UseAllBuffer" Offset = 0	1- No exception shall be thrown.	
	Length = menuEntry.length NextAction = 0	2- shall return true.	
	HelpSupported = false IconQualifier = 0 IconIdentifier = 0.	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:		
	Id = '01' MenuEntry = "UsePartOfBuffer"	1- No exception shall be thrown.	
	Offset = 3 Length = 12 NextAction = 0	2- Shall return true.	
	HelpSupported = false IconQualifier = 0 IconIdentifier = 0.	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 '01'.
3	Length = 0		.
	1- changeMenuEntry() for entry '01' and entry '02', with parameters:		
	<pre>Id = '01'/'02' MenuEntry = "LengthEquals0" Offset = 0</pre>	1- No exception shall be thrown.	
	Length = 0 NextAction = 0 HelpSupported = false	2- Shall return true.	
	IconQualifier = 0 IconIdentifier = 0.	3- shall return false.	
	2- isEventSet(EVENT_MENU_SELECTION).		
	3- isEventSet(EVENT_MENU_SELECTION_HELP_R EQUEST).		The SIM shall issue a 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: Id = '02' MenuEntry = "NextActionIndic" Offset = 0	 No exception shall be thrown. Shall return true. Shall return false. 	The SIM shall issue a SETUP MENU proactive command which contains an
	Length = Wenter = Wen		Items Next Action Indicator list and which contains a command qualifier '80'.

	<pre>IconQualifier = 0</pre>		
	<pre>IconIdentifier = 0</pre>		
	0 '		
	2- isEventSet(EVENT_MENU_SELECTION).		
	3-		
	isEventSet(EVENT_MENU_SELECTION_HELP_R		
	EQUEST).		
	4- changeMenuEntry()with parameters:		
	Id = '02'		
	MenuEntry = "NextActionIndic"		
	Offset = 0		
	Length = menuEntry.length NextAction = '10' (SETUP CALL)		
	HelpSupported = true		
	IconQualifier = 0		
	<pre>IconIdentifier = 0</pre>		
5	Checking applet is triggered by a		
	MENU_SELECTION_HELP_REQUEST	Applet is trigged by a	
		MENU_SELECTION_HELP_REQU	
	Send ENVELOPE(MENU_SELECTION_HELP_REQUEST)	EST and the Item Identifier is 02	
	with Item Identifier = '02'		
6	help supported=true		
	1- changeMenuEntry()with parameters:		
	i changemenumnery()with parameters.		
	Id = '01'		
	MenuEntry = "HelpSupported"	1- No exception shall be thrown.	
	Offset = 0		
	Length = menuEntry.length	2- Shall return true.	
	NextAction = 0		
	<pre>HelpSupported = true IconQualifier = 0</pre>	3- Shall return true.	
	IconIdentifier = 0		
	100114011211101		
	2- isEventSet(EVENT_MENU_SELECTION).		
			The CIM shall issue a
	3-		The SIM shall issue a
	isEventSet(EVENT_MENU_SELECTION_HELP_R		SETUP MENU proactive command which contains a
	EQUEST).		command qualifier '80'.
7	Checking applet is triggered by a		Command qualifier 60.
'	MENU_SELECTION_HELP_REQUEST	Applet is trigged by a	
	WIENO_OLLEGITON_TILLI _NEQUEST	MENU_SELECTION_HELP_REQU	
	Send ENVELOPE(MENU_SELECTION_HELP_REQUEST)	EST and the Item Identifier is 01	
	with Item Identifier = '01'		
8	Setting icons, help supported = false		
	1- changeMenuEntry() for entries		
	'01','02', with parameters:		
	Id = '01'/'02'		
	MenuEntry = "IconQualifier"		
	Offset = 0	1- No exception shall be thrown.	
	Length = menuEntry.length	. 140 Oxooption onali be tillown.	
1	NextAction = 0	2- Shall return true.	
	HelpSupported = false		
	<pre>IconQualifier = '01' IconIdentifier = '02' / '01'</pre>	3- Shall return false.	
1	reonracherrier = .02. / .01.	Shan rotalii ialoo.	
	2- isEventSet(EVENT_MENU_SELECTION).		
	,		The OIM of the
	3-		The SIM shall issue a
	isEventSet(EVENT_MENU_SELECTION_HELP_R		SETUP MENU proactive
1	EQUEST).		command which contains an
<u> </u>	Manager Control		Icon Identifier List.
9	MenuEntry is disabled	1- No exception shall be thrown.	The CIM oball issue -
	1- disableMenuEntry('01').	2. No evention shall be there	The SIM shall issue a
1	_ GIDADICHGHADHUIY (OI /.	2- No exception shall be thrown.	SETUP MENU proactive
	2- changeMenuEntry()with parameters:	3- Shall return true.	command which contains the entry. Without Icon
		3 3 3 1 1 1 1 1 1 1	identifier List Simple TLV
		ĺ	HUCHLING LIST SILLIBIE LEV

	Id = '01'	 Shall return false. 	
	MenuEntry = "EnableEntry"		
	Offset = 0		
	Length = menuEntry.length NextAction = 0		
	HelpSupported = false		
	IconQualifier = 0		
	IconIdentifier = 0		
	<pre>3- isEventSet(EVENT_MENU_SELECTION).</pre>		
	4 –		
	isEventSet(EVENT_MENU_SELECTION_HELP_R		
	EQUEST).		
10	MenuEntry is null		
		Shall throw	
	changeMenuEntry()with:	java.lang.NullPointerException.	
	MenuEntry = NULL	,	
	000		
11	Offset causes access outside array bounds		
	T-3 1011		
	Id = '01'		
	MenuEntry = "Violation"	Shall throw	
	Offset = menuEntry.length +1 Length = 0	java.lang.ArrayIndexOutOfBoundsE	
1	NextAction = 0	xception.	
	HelpSupported = false		
	IconOualifier = 0		
	IconIdentifier = 0		
12	Big Offset causes access outside array bounds		
	g o, acanta		
	Id = '01'		
	MenuEntry = "Violation"	Shall throw	
	Offset = 255	java.lang.ArrayIndexOutOfBoundsE	
	Length = 1		
	NextAction = 0	xception.	
	HelpSupported = false		
	IconQualifier = 0		
	IconIdentifier = 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	·	
	IconQualifier = 0		
1	IconIdentifier = 0		
14	Length causes access outside array bounds		
1	g caacce access careing accuration		
	Id = '01'		
	MenuEntry = "Violation"	Shall throw	
1	Offset = 0	java.lang.ArrayIndexOutOfBoundsE	
1	Length = MenuEntry.length + 1	xception.	
1	NextAction = 0		
	HelpSupported = false		
1	IconQualifier = 0		
4.5	IconIdentifier = 0.		
15	Length < 0 causes access outside array		
	bounds		
	TA - 1011		
	<pre>Id = '01' MenuEntry = "Violation"</pre>	Shall throw	
	Offset = 0	java.lang.ArrayIndexOutOfBoundsE	
	Length = -1	xception.	
	NextAction = 0	, and a second s	
	HelpSupported = false		
	IconQualifier = 0		
	IconIdentifier = 0.		
		İ	

		I	
16	Both offset and length causes access outside		
	array bounds		
	TA _ 1011		
	<pre>Id = '01' MenuEntry = "Violation"</pre>	Shall throw	
	Offset ∈ [1, MenuEntry.length]	java.lang.ArrayIndexOutOfBoundsE	
	Length = MenuEntry.length	xception.	
	NextAction = 1	Acoption:	
	HelpSupported = false	•	
	<pre>IconQualifier = 0</pre>		
	<pre>IconIdentifier = 0</pre>		
17	Invalid ID used		
	Id = '00'		
	MenuEntry = contains text, != null	Chall throws a Tablist Cycontian with	
	Offset = 0	Shall throw a ToolkitException with	
	Length = menuEntry.length < 16	MENU_ENTRY_NOT_FOUND	
	NextAction = 0	reason code.	
	HelpSupported = false		
	<pre>IconQualifier = 0 IconIdentifier = 0</pre>		
10	ID isn't allocated to a menu entry of this applet		
10	instance		
	instance		
	Id = '0A'		
	MenuEntry = contains text, != null	Shall throw a ToolkitException with	
	Offset = 0	reason code:	
	Length = menuEntry.length < 16	MENU_ENTRY_NOT_FOUND.	
	NextAction = 0 HelpSupported = false	IMENG_ENTRY ENGIGE	
	IconQualifier = 0		
	IconIdentifier = 0		
19	The text is bigger than the allocated space		
	Id = '02'		
	MenuEntry = contains text, != null		
	Offset = 0	Shall throw a ToolkitException with	
	Length = menuEntry.length > 15	reason code:	
	NextAction = 0 HelpSupported = false	ALLOWED_LENGTH_EXCEEDED.	
	IconOualifier = 0		
	IconIdentifier = 0		
20	With a smaller text length than the initial length		
	1. changeMenuEntry()with parameters:		
	Id = '02'		
	MenuEntry = "Init"	1 No expension shall be through	
	Offset = 0	No exception shall be thrown.	
	Length = menuEntry.length	Shall return true.	
	NextAction = 0 HelpSupported = false	2. Shan retuin tide.	
	IconQualifier = 0	3. Shall return false.	The SIM shall issue a
	IconIdentifier = 0	o. Shall return raise.	SETUP MENU proactive
	2. isEventSet(EVENT_MENU_SELECTION)		command which contains the new text for entry ID
	3.		'02'.
	isEventSet(EVENT_MENU_SELECTION_HELP_R		, o <u>z</u> .
	EQUEST)		

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	7,5
N6	6
N7	1,2,3,4,8,9,20
N8	To be checked in framework
	tests and insert cross reference
	here
N9	8, 9
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	 No exception shall be thrown. No exception shall be thrown. Shall return false. 	
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.	1- Each time, clearEvent shall throw a Toolkit Exception with reason EVENT_NOT_ALLOWED.	
4	Checking applet isn't triggered by an ENVELOPE(SMS-PP DOWNLOAD) command 1 - reset and initialise the card 2 - 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_R EQUEST)	1- Shall return true2- Shall return false	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)	 No exception shall be thrown. Shall return true. Shall return false. 	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)	Shall return true Shall return true	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)	 No exception shall be thrown. Shall return true. Shall return true. 	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 dynamically 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')	3- 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_R EQUEST)	2- Shall return true.3- 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- Shall return true3- Shall return true4- No exception shall be thrown	4- The SIM shall issue a SET UP MENU proactive command with entry '01'. The help information available flag.is not verified
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)	 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.	Each time a Toolkit Exception with MENU_ENTRY_NOT_FOUND reason 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	
		instance.	
	In the constructor, the applet instance		
	calls the getEntry() method.		
2	Check it returns the same entry	Returns the same ToolkitRegistry	
	_	instance as for test case 1.	
	The applet calls the getEntry() method		
	again.		

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		
	get	PollInterval().	Shall return 0.	
2		Requesting max duration		
	1-	requestPollInterval(15300)	 No exception shall be thrown. 	
	2-	Reset and initialize the card	3- Shall return a value between 1 and 15300.	
	3-	<pre>getPollInterval()</pre>	and 15500.	
3		Requesting System Duration		
	1-			
	ON)	requestPollInterval(POLL_SYSTEM_DURATI	1- No exception shall be thrown.	
	2-	Reset and initialize the card	3- Shall return a value between 1 and 15300.	
	2		and reces.	
	3-	getPollInterval().		
4		Requesting no Duration		
-				
	1-	requestPollInterval(POLL_NO_DURATION)		
	2-	Reset and initialize the card	1- No exception shall be thrown.3- Shall return 0.	
	3-	<pre>getPollInterval().</pre>		

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 1st 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	
	MenuEntry = NULL	java.lang.NullPointerException.	
2	Offset > menuEntry.length MenuEntry = "ToolkitTest" Offset = 12 Length = 0	Shall throw java.lang.ArrayIndexOutOfBoundsE xception.	
3	Offset < 0 MenuEntry = "ToolkitTest" Offset = -1 Length = 11	Shall throw java.lang.ArrayIndexOutOfBoundsE xception.	
	Offset = 255 MenuEntry = "ToolkitTest" Offset = 255 Length = 11	Shall throw java.lang.ArrayIndexOutOfBoundsE xception.	
5	<pre>Length = menuEntry.length+1 MenuEntry = "ToolkitTest" Offset = 0 Length = 12</pre>	Shall throw java.lang.ArrayIndexOutOfBoundsE xception.	
6	<pre>Length < 0 MenuEntry = "ToolkitTest" Offset = 0</pre>	Shall throw java.lang.ArrayIndexOutOfBoundsE xception.	

	I ongth - 1	1	
7	Length = -1 Offset + length > menuEntry.length		
'	Onset + length > menucht y.length		
	MenuEntry = "ToolkitTest"	Shall throw	
	Offset = 11	java.lang.ArrayIndexOutOfBoundsE	
	Length = 1	xception.	
8	MenuEntry.length > size allocated at loading		
	for each menu entry		
	_	ALLOWED_LENGTH_EXCEEDED	
	MenuEntry = "ToolkitTest impossible"	ToolkitException is thrown.	
	Offset = 0	Toolkitexocption is tillown.	
	Length = 16		
<u> </u>			
9	Successful call,		
	menuEntry is the whole buffer		
	1- initMenuEntry()		
	iii iiiichendbhciy()		
	MenuEntry = "TOOLKIT TEST 1"	1- No exception shall be thrown,	
	Offset = 0	Shall return ID '01'.	
	Length = 14	Ghail letuil ID U1.	
	NextAction = '00'	2- Shall return true.	
	HelpSupported = false	2- Shan return true.	
	<pre>IconQualifier = '00' IconIdentifier = 0</pre>		
	reomidentiller = 0		
	2- isEventSet(EVENT_MENU_SELECTION)		
10	Successful call,		
'	menuEntry 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.	
	IconQualifier = '00'	2º Orian return raise.	
	IconIdentifier = 0		
	2-		
	isEventSet(EVENT_MENU_SELECTION_HELP_R		
	EQUEST)		
11	Successful call,		
''	menuEntry with help supported		
	monuality than note supported		
	1- initMenuEntry()		
	MenuEntry = "TOOLKIT TEST 3"		
	Offset = 0 Length = 14	1- No exception shall be thrown,	
	Length = 14 NextAction = '00'	Shall return ID '03'	
	HelpSupported = true	2- Shall return true.	
	IconQualifier = '00'	2º Onan return true.	
	IconIdentifier = 0		
	2-		
	isEventSet(EVENT_MENU_SELECTION_HELP_R		
	EQUEST)		
12	Successful call,		
12	menuEntry with an Icon		
	monucina y with an icon		
	MenuEntry = "TOOLKIT TEST 4"		
	Offset = 0	1- No exception shall be thrown.	
	Length = 14	2- Shall return ID '04'	
	NextAction = '00'		
	HelpSupported = false		
	<pre>IconQualifier = '01' [icon not self explanatory]</pre>		
	IconIdentifier = 1		
13	Successful call,	1- No exception shall be thrown.	
	- ,		

	menuEntry with a next action indication	2- Shall return ID '05'	
	-		
	MenuEntry = "TOOLKIT TEST 5" Offset = 0		
	Length = 14		
	NextAction = '24' [Select Item] HelpSupported = false		
	IconQualifier = '00'		
	IconIdentifier = 0		
14	Successful call,	No exception shall be thrown, Shall return ID '06'.	
	length = 0	return ib 06.	
	initMenuEntry()		
	MenuEntry = "ToolkitTest"		
	Offset = 0		
	Length = 0 NextAction = '00'		
	HelpSupported = false		
	IconQualifier = '00'		
	<pre>IconIdentifier = 0</pre>		
15	Initialize more entry than allocated at loading		
	MenuEntry = "ToolkitTest"	REGISTRY_ERROR	
	Offset = 0	ToolkitException is thrown.	
	Length = 11		
16	Dynamic update of the menu stored by the ME		Card shall Send a SetUpMenu Proactive
			command:
	Fetch		[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 5"
			[ItemId=6] = ""
			[ItemsNextAction]=0600000
			0002400
17	Check Applet is triggered by		
	ENVELOPE(MENU_SELECTION) command	Applet is trigged by an ENVELOPE(MENU_SELECTION)	
	Menu Entry ID = '01'	command & Menu Entry ID = '01'	
18	Check Applet is triggered by	-	
10	ENVELOPE(MENU_SELECTION) command	Applet is trigged by an	
	,	ENVELOPE(MENU_SELECTION)	
	Menu Entry ID = '02'	command & Menu Entry ID = '02'	
19	Check Applet is triggered by		
	ENVELOPE(MENU_SELECTION) command	Applet is trigged by an	
	Menu Entry ID = '03'	ENVELOPE(MENU_SELECTION) command & Menu Entry ID = '03'	
		Command & Mend Entry ID = 03	
20	Check Applet is triggered by ENVELOPE(MENU_SELECTION) command	Applot in trigged by an	
	LIVELOFE(IVIENO_SELECTION) COMMINAND	Applet is trigged by an ENVELOPE(MENU_SELECTION)	
	Menu Entry ID = '04'	command & Menu Entry ID = '04'	
21	Check Applet is triggered by		
21	ENVELOPE(MENU_SELECTION) command	Applet is trigged by an	
		ENVELOPE(MENU_SELECTION)	
	Menu Fntry ID = '05'	command & Menu Entry ID = '05'	
L	Menu Entry ID = '05'	zzmana a mona zmry ib = 00	<u> </u>

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	Applet is trigged by an ENVELOPE(MENU_SELECTION) command & Menu Entry ID = '06'	
	Menu Entry ID = '06'	Command & Mend 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) 2- isEventSet(EVENT_FORMATTED_SMS_PP_ENV) .	1- No exception shall be thrown.2- Shall return false.	
5	Setting events 1- For each SUPPORTED and ALLOWED events for setEvent(), applet calls: 1.1- setEvent() method 1.2- isEventSet() method.	1.1- No exception shall be thrown.1.2- Shall return true each time.	
6	For EVENT_MENU_SELECTION_HELP_REQUEST 1- isEventSet (EVENT_MENU_SELECTION_HELP_REQUEST) 2- call changeMenuEntry with help supported 3- isEventSet (EVENT_MENU_SELECTION_HELP_REQUEST)	1- Shall return false.3- Shall return true	
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) 2- call	1- Shall return false.	
		3- Shall return true	

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() .	1- No exception shall be thrown.2- Each time, no exception shall be	
	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	Applet is not trigged by an ENVELOPE(TIMER_EXPIRATION) command	
1	Send ENVELOPE(TIMER_EXPIRATION)	oommand .	

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	1- Check Applet is triggered by a STATUS commandreset and card initialisation 2- Send STATUS command	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- Shall return true.	
	3- IsEventSet(EVENT_STATUS_COMMAND).	o onali 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	Each time, a ToolkitException with	
	For duration ranging from 15301 to 15305, -2 requestPollInterval(duration)	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	II - reget and card 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.

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.		
		Applet 1 shall be triggered	
	Send ENVELOPE(SMS_PP_FORMATTED)	r ippiet i diiaii be iliggerea	
2	Setting ALLOWED and SUPPORTED events		
-	Commig / 12201122 ama con 1 cm 22 cm		
	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_UPD,		
	EVENT_UNFORMATTED_SMS_PP_ENV,		
	EVENT_UNFORMATTED_SMS_PP_UPD,		
	EVENT_UNFORMATTED_SMS_CB,		
	EVENT_CALL_CONTROL_BY_SIM,	1.1- No exception shall be thrown.	
	EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM,	·	
	EVENT_EVENT_DOWNLOAD_MT_CALL, EVENT_EVENT_DOWNLOAD_CALL_CONNECTED,	1.2- Shall return false.	
	EVENT_EVENT_DOWNLOAD_CALL_DISCONNECTED,		
	EVENT_EVENT_DOWNLOAD_LOCATION_STATUS,	1.3- No exception shall be thrown.	
	EVENT_EVENT_DOWNLOAD_USER_ACTIVITY,	The exception chairse another	
	EVENT_EVENT_DOWNLOAD_IDLE_SCREEN_AVAILABL	1.4- Shall return true.	
	Ε,	1.4 Ondir retain true.	
	EVENT_EVENT_DOWNLOAD_CARD_READER_STATUS	1.5- No exception shall be thrown.	
		1.5- No exception shall be thrown.	
	1.1- clearEvent(event)		
	1.2- isEventSet(event)		
	1.2- ISEVERICAEC (EVERIC)		
	1.3- setEvent(event)		
	1.4- isEventSet(event)		
	1.5- clearEvent(event)		
	Tro Gradizvano (Gvano)		
3	Event 0		
		Shall throw a ToolkitException with	
	Call setEvent(0)	EVENT_NOT_SUPPORTED reason	
		code.	
4	Setting EVENT_MENU_SELECTION		
		Shall throw a ToolkitException with	
	Call setEvent(EVENT_MENU_SELECTION)	EVENT_NOT_ALLOWED reason	
		code.	
5	Setting		
	EVENT_MENU_SELECTION_HELP_REQUEST	Chall throw a Tablett vacantian with	
1		Shall throw a ToolkitException with	
1	Call	EVENT_NOT_ALLOWED reason	
	setEvent(EVENT_MENU_SELECTION_HELP_REQUES	code.	
	T)		
6	Setting EVENT_TIMER_EXPIRATION		
1		Shall throw a ToolkitException with	
	Call setEvent(EVENT_TIMER_EXPIRATION)	EVENT_NOT_ALLOWED reason	
		code.	
7	Setting EVENT_STATUS_COMMAND		
	_	Shall throw a ToolkitException with	

	Call setEvent(EVENT_STATUS_COMMAND)	EVENT_NOT_ALLOWED reason code.	
8	Setting EVENT_CALL_CONTROL_BY_SIM Call setEvent(EVENT_CALL_CONTROL_BY_SIM)	No Exception shall be thrown	
9	Setting EVENT_MO_SHORT_MESSAGE_CONTROL_B	No Exception shall be thrown	
10	Check applet is triggered by an ENVELOPE(CALL_CONTROL_BY_SIM) Trigger the applet	Applet is trigged by an ENVELOPE(CALL_CONTROL_BY_SIM)	
11	Check applet is triggered by an ENVELOPE(MO_SHORT_MESSAGE_CONTRO L_BY_SIM) Trigger the Applet	Applet is trigged by an ENVELOPE(MO_SHORT_MESSAG E_CONTROL_BY_SIM)	
12	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	
13	Applet 2 registers to CALL_CONTROL_BY_SIM but it is already assigned setEvent(EVENT_CALL_CONTROL_BY_SIM)	Shall throw a ToolkitException with EVENT_ALREADY_REGISTERED reason code.	
14	Applet 2 registers to MO_MESSAGE_CONTROL_BY SIM but it is already assigned setEvent(EVENT_MO_SHORT_MESSAGE_CONTROL_B Y_SIM)	Shall throw a ToolkitException with EVENT_ALREADY_REGISTERED reason code.	

6.2.9.12.4 Test Coverage

CRR number	Test case number
N1	2
N2	1, 8,9,10, 11, 12
N3	2,4,5,6,7
P1	3
P2	4
P3	5
P4	6
P5	7
C1	13
C2	14

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.

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.	
	EventList = all allowed events defined in	2- No exception shall be thrown.	

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	GSM 0319:		
	EVENT_PROFILE_DOWNLOAD,	3- Each time shall return true.	
	EVENT_FORMATTED_SMS_PP_ENV,		
	EVENT_FORMATTED_SMS_PP_UPD,	4 No expension shall be through	
	EVENT_UNFORMATTED_SMS_PP_ENV,	4- No exception shall be thrown.	
	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_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 oarb order in Franklish		
	1- For each event in EventList		
	clearEvent(event)		
	2- setEventList(eventList)		
ĺ	Offset = 0		
	Length = eventList.lentgh		
	3- For all events in eventList		
ĺ	isEventSet(event)		
	,		
	4- For each event in EventList		
	clearEvent(event)		
	orear Evene (evene)		
2	Registering part of eventList buffer		
_	Registering part of eventust burier		
	Description of the state of the		
	EventList = all allowed events defined in		
	GSM 0319 (see test case 1).		
		4. No sussentian aball ha thusun	
	1- For each event in EventList	1- No exception shall be thrown.	
	clearEvent(event)		
	<pre>2- setEventList(eventList, offset,</pre>	No exception shall be thrown.	
	length)		
		3- Each time shall return true for	
	Offset > 0		
	Length = eventList.lentgh - offset	events ranging from offset to	
ĺ		offset+length else shall return false.	
ĺ	3- For all events in eventList:		
		4- No exception shall be thrown.	
	isEventSet(event)	1 140 OXOOPHOH SHAII DE HIIOWII.	
	IDD V GITE DCC (C V GITC /		
	4- For each event in EventList:		
	clearEvent(event)		
	CIEALEVEIL (EVEIL)		
3	Null buffer	Shall throw a	
	EventList = null	java.lang.NullPointerException	
		Exception	
4			
1 4	Out of bounds offset		
4	Out of bounds offset	Shall throw a	
4			
4	Offset = eventList.length	java.lang.ArrayIndexOutOfBounds	
4			
	Offset = eventList.length Length = 1	java.lang.ArrayIndexOutOfBounds	
5	Offset = eventList.length	java.lang.ArrayIndexOutOfBounds Exception	
	Offset = eventList.length Length = 1 Out of bounds and big offset	java.lang.ArrayIndexOutOfBounds Exception Shall throw a	
	Offset = eventList.length Length = 1 Out of bounds and big offset Offset = 255	java.lang.ArrayIndexOutOfBounds Exception Shall throw a java.lang.ArrayIndexOutOfBounds	
	Offset = eventList.length Length = 1 Out of bounds and big offset	java.lang.ArrayIndexOutOfBounds Exception Shall throw a	
	Offset = eventList.length Length = 1 Out of bounds and big offset Offset = 255 Length = 1	java.lang.ArrayIndexOutOfBounds Exception Shall throw a java.lang.ArrayIndexOutOfBounds	
	Offset = eventList.length Length = 1 Out of bounds and big offset Offset = 255	java.lang.ArrayIndexOutOfBounds Exception Shall throw a java.lang.ArrayIndexOutOfBounds	
5	Offset = eventList.length Length = 1 Out of bounds and big offset Offset = 255 Length = 1	java.lang.ArrayIndexOutOfBounds Exception Shall throw a java.lang.ArrayIndexOutOfBounds	
5	Offset = eventList.length Length = 1 Out of bounds and big offset Offset = 255 Length = 1	java.lang.ArrayIndexOutOfBounds Exception Shall throw a java.lang.ArrayIndexOutOfBounds Exception Shall throw a	
5	Offset = eventList.length Length = 1 Out of bounds and big offset Offset = 255 Length = 1 Offset < 0 Offset = -1	java.lang.ArrayIndexOutOfBounds Exception Shall throw a java.lang.ArrayIndexOutOfBounds Exception Shall throw a java.lang.ArrayIndexOutOfBounds	
5	Offset = eventList.length Length = 1 Out of bounds and big offset Offset = 255 Length = 1 Offset < 0	java.lang.ArrayIndexOutOfBounds Exception Shall throw a java.lang.ArrayIndexOutOfBounds Exception Shall throw a	
5	Offset = eventList.length Length = 1 Out of bounds and big offset Offset = 255 Length = 1 Offset < 0 Offset = -1 Length = 1	java.lang.ArrayIndexOutOfBounds Exception Shall throw a java.lang.ArrayIndexOutOfBounds Exception Shall throw a java.lang.ArrayIndexOutOfBounds	
5	Offset = eventList.length Length = 1 Out of bounds and big offset Offset = 255 Length = 1 Offset < 0 Offset = -1	java.lang.ArrayIndexOutOfBounds Exception Shall throw a java.lang.ArrayIndexOutOfBounds Exception Shall throw a java.lang.ArrayIndexOutOfBounds	
5	Offset = eventList.length Length = 1 Out of bounds and big offset Offset = 255 Length = 1 Offset < 0 Offset = -1 Length = 1 Out of bounds length	java.lang.ArrayIndexOutOfBounds Exception Shall throw a java.lang.ArrayIndexOutOfBounds Exception Shall throw a java.lang.ArrayIndexOutOfBounds Exception Shall throw a Shall throw a	
5	Offset = eventList.length Length = 1 Out of bounds and big offset Offset = 255 Length = 1 Offset < 0 Offset = -1 Length = 1 Out of bounds length Offset = 0	java.lang.ArrayIndexOutOfBounds Exception Shall throw a java.lang.ArrayIndexOutOfBounds Exception Shall throw a java.lang.ArrayIndexOutOfBounds Exception Shall throw a java.lang.ArrayIndexOutOfBounds	
5	Offset = eventList.length Length = 1 Out of bounds and big offset Offset = 255 Length = 1 Offset < 0 Offset = -1 Length = 1 Out of bounds length	java.lang.ArrayIndexOutOfBounds Exception Shall throw a java.lang.ArrayIndexOutOfBounds Exception Shall throw a java.lang.ArrayIndexOutOfBounds Exception Shall throw a Shall throw a	

8	Out of bounds and big length		
°	Out of bounds and big length	Shall throw a	
	Offset = 0	java.lang.ArrayIndexOutOfBounds	
	Length = 255	Exception	
	1		
9	Length < 0	Shall throw a	
	Offset = 0	java.lang.ArrayIndexOutOfBounds	
	Length = -1	Exception	
		·	
10	Out of bounds offset + Length	Shall throw a	
	Offset + length > eventList.length + 1	java.lang.ArrayIndexOutOfBounds	
	origon / rengen / cvenozibe/rengen / r	Exception	
11	Event 0		
		Shall throw a ToolkitException with	
	Call setEventList(eventList) with eventList indicating event 0	EVENT_NOT_SUPPORTED	
	eventurse indicating event o	reason code.	
12	EVENT_MENU_SELECTION		
12	EVENT_WENO_SELECTION	Shall throw a ToolkitException with	
	Call setEventList(eventList) with	reason code	
	eventList indicating EVENT_MENU_SELECTION	EVENT_NOT_ALLOWED.	
L			
13	EVENT_MENU_SELECTION_HELP_REQUEST		
	Call setEventList(eventList) with	Shall throw a ToolkitException with	
	call setEventList(eventList) with eventList indicating	reason code	
	EVENT_MENU_SELECTION_HELP_REQUEST	EVENT_NOT_ALLOWED.	
14	EVENT_TIMER_EXPIRATION		
'-		Shall throw a ToolkitException with	
	Call setEventList(eventList) with	reason code	
	eventList indicating EVENT_TIMER_EXPIRATION	EVENT_NOT_ALLOWED.	
15	EVENT_STATUS_COMMAND		
	Call setEventList(eventList) with	Shall throw a ToolkitException with reason code	
	eventList indicating EVENT_STATUS_COMMAND	EVENT_NOT_ALLOWED.	
		LVEIVI_IVOT_XLLOWED.	
16	Setting EVENT_CALL_CONTROL_BY_SIM		
	-		
	setEventList(List, 0, 2) with List	Shall not throw an exception	
	containing		
	EVENT_CALL_CONTROL_BY_SIM &		
	EVENT_MO_SHORT_MESSAGE_CONTROL_BY_SIM		
17	Check applet is triggered by an	Applet is trigged by an	
	ENVELOPE(CALL_CONTROL_BY_SIM) Reset and initialise the card	ENVELOPE(CALL_CONTROL_BY	
	Trigger the applet	_SIM)	
18	Check applet is triggered by an	Applet is trigged by an	
	ENVELOPE(MO_SHORT_MESSAGE_CONTROL	ENVELOPE(MO_SHORT_MESSA	
	_ BY_SIM) Trigger the applet	GE_CONTROL_BY_SIM)	
19	Applet 2 registers to CALL CONTROL BY SIM		
•	but it is already assigned	Shall throw a ToolkitException with	
	setEventList(MonoEventList,0,1) with	EVENT_ALREADY_REGISTERED	
	MonoEventList containing	reason code.	
	EVENT_CALL_CONTROL_BY_SIM		
20	Applet 2 registers to		
	MO_SHORT_MESSAGE_CONTROL_BY_SIM		
	but it is already assigned	Shall throw a ToolkitException with	
	setEventList(MonoEventList,0,1) with	EVENT_ALREADY_REGISTERED	
	MonoEventList containing	reason code.	
	EVENT_MO_SHORT_MESSAGE_CONTROL_BY		
	_SIM		
1			

6.2.9.13.4 Test Coverage

CRR number	Test case number
N1	1,2
N2	16,17,18
N3	1,2,11, 12,13,14,15
P1	3
P2	4,5,6
P3	7,8,9
P4	10
P5	11
P6	12
P7	13
P8	14
P9	15
C1	19
C2	20

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

None

6.2.11.1.3 Test procedure

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

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

Cleanup 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_1.scr

Test Applet: API_2_TKE_ THITS_1.java

Load Script: API_2_TKE_THITS_1.ldr

Cleanup Script: API_2_TKE_THITS_1.clr

6.2.11.3.3 Test procedure

ld	Description	API Expectation	APDU Expectation
1	Throws the JCRE instance of ToolkitException	Reason = 0	
	with the specified reason		
2	Throws the JCRE instance of ToolkitException	Reason = 1	
	with the specified reason		
3	Throws the JCRE instance of ToolkitException	Reason = 15	
	with the specified reason		
4	ToolkitException extends	Reason = 0	
	javacard.framework.CardRuntimeException		
5	ToolkitException extends	Reason = 1	
	javacard.framework.CardRuntimeException		
6	ToolkitException extends	Reason = 15	
	javacard.framework.CardRuntimeException		

6.2.11.3.4 Test Coverage

CRR number	Test case number
N1	1, 2, 3
N2	4, 5, 6

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[] resp, short respOffset)</pre>	INCR_BS_BS	000010
<pre>void invalidate()</pre>	INVL	000011
<pre>void readBinary(short fileOffset, byte[] resp, short respOffset, short respLength)</pre>	REDBS_BSS	000100
<pre>short readRecord(short recNumber, byte mode, short recOffset, byte[] resp, short respOffset, short respLength)</pre>	REDRSBS_BSS	000101
<pre>void rehabilitate()</pre>	REHA	000110
<pre>short seek(byte mode, byte[] patt, short pattOffset, short pattLength)</pre>	SEEKB_BSS	000111
<pre>void select(short fid)</pre>	SLCTS	001000
<pre>short select(short fid, byte[] fci, short fciOffset, short fciLength)</pre>	SLCTS_BSS	001001
<pre>short status(byte[] fci, short fciOffset, short fciLength)</pre>	STAT_BSS	001010
<pre>short updateBinary(short fileOffset, byte[] data, short dataOffset, short dataLength)</pre>	UPDBS_BSS	001011
<pre>void updateRecord(short recNumber, byte mode, short recOffset, byte[] data, short dataOffset, short dataLength)</pre>	UPDRSBS_BSS	001100

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
<pre>short getSecuredDataLength()</pre>	GSDL	000011
<pre>short getSecuredDataOffset()</pre>	GSDO	000100
<pre>EnvelopeHandler getTheHandler()</pre>	GTHD	000101
short <pre>getTPUDLOffset()</pre>	GTPO	000110
Inherited Method Name: ViewHandler		
	000/0 000	000444
<pre>Byte compareValue(short valueOffset,byte[] compareBuffer,</pre>	CPRVS_BSS	000111
short compareOffset, short compareLength)		
Short	COPY_BSS	001000
<pre>copy(byte[] dstBuffer,short dstOffset,short dstLengt</pre>	_	
h)		
Short	CPYVS_BSS	001001
<pre>copyValue(short valueOffset, byte[] dstBuffer,short dstOffset,short dstLength)</pre>		
byte[] dstBuffer, short dstOffset, short dstDength)		
Byte	FACRB_BS	001010
<pre>findAndCompareValue(byte tag,byte[] compareBuffer,sh</pre>	_	
<pre>ort compareOffset)</pre>		
Byte findAndCompareValue(byte tag,byte occurence,	FACRBBS_BSS	001011
short valueOffset,byte[] compareBuffer,short compare	17.01.000_000	001011
Offset, short compareLength)		
Short	FACYBBS_BSS	001100
FindAndCopyValue(byte tag,byte occurence,short value		

Offset, byte[] dstBuffer, short dstOffset,		
short dstLength)		
Short	FACYB BS	001101
<pre>findAndCopyValue(byte tag,byte[] dstBuffer,short dst</pre>	_	
Offset)		
Byte	FINDBB	001110
FindTLV(byte tag,byte occurrence)		
Short	GLEN	001111
GetLength()		
Byte	GVBYS	010000
GetValueByte(short valueOffset)		
Short	GVLE	010001
GetValueLength()		

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	APDA	000100
length, short dstLength)		
Void appendTLV(byte tag, byte value)	APTLBB	000101
Void appendTLV(byte tag, byte[] value, short	APTLB_BSS	000110
valueOffset, short valueLength)	ADTIBBB	
Void appendTLV(byte tag, byte value1, byte value2)	APTLBBB	000111
Void appendTLV(byte tag, byte value1, byte[] value2, short value2Offset, short value2Length)	APTLBB_BSS	001000
Void clear()	CLER	001001
void cital()	OLEK	001001
Inherited Method Name: ViewHandler		
Byte	CPRVS_BSS	001010
compareValue(short valueOffset,byte[] compareBuffer,	CPRVS_BSS	001010
short compareOffset, short compareLength)		
Short	COPY_BSS	001011
Copy(byte[] dstBuffer,short dstOffset,short dstLengt		
h)		
Short	CPYVS_BSS	001100
<pre>CopyValue(short valueOffset, byte[] dstBuffer,short dstOffset,short dstLength)</pre>		
byte[] ustburrer, short ustorrset, short ustbength)		
Byte	FACRB_BS	001101
FindAndCompareValue(byte tag,byte[] compareBuffer,sh		
ort compareOffset)		
Byte findAndCompareValue(byte tag,byte occurence, short valueOffset,byte[] compareBuffer,short compare	FACRBBS_BSS	001110
Offset, short compareLength)		
Short	FACYBBS_BSS	001111
FindAndCopyValue(byte tag,byte occurence,short value	17101220_200	001111
Offset, byte[] dstBuffer, short dstOffset,		
short dstLength)		
Short	FACYB_BS	010000
<pre>findAndCopyValue(byte tag,byte[] dstBuffer,short dst Offset)</pre>		
Byte	FINDBB	010001
FindTLV(byte tag,byte occurrence)	TINDDD	010001
Short	GLEN	010010
GetLength()		
Byte	GVBYS	010011
GetValueByte(short valueOffset)	0) " =	0.45 (5.5
Short CotValueLongth()	GVLE	010100
GetValueLength()		1

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	CHECBSS	000010
length)		

A.2.7 ProactiveHandler methods

Method Name	Acronyms	Numbering on 6 bits
GetTheHandler()	GTHD	000001
<pre>Init(byte type, byte qualifier, byte dstDevice)</pre>	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)	APTLBB	001000
Void appendTLV(byte tag, byte[] value, short valueOffset, short valueLength)	APTLB_BSS	001001
Void appendTLV(byte tag, byte value1, byte value2)	APTLBBB	001010
Void appendTLV(byte tag, byte value1, byte[] value2, short value2Offset, short value2Length)	APTLBB_BSS	001011
Void clear()	CLER	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)	GVBYS	010110
Short GetValueLength()	GVLE	010111

A.2.8 ProactiveResponseHandler methods

Method Name	Acronyms	Numbering on 6 bits
Short CopyAdditionalInformation(byte[] dstBuffer,	CPAI_BSS	000001
short dstOffset, short dstLength)		
Short <pre>copyTextString</pre> (byte[] dstBuffer, short	CPTS_BS	000010
dstOffset)		
Short <pre>getAdditionalInformationLength()</pre>	GTIL	000011
Byte <u>getGeneralResult</u> ()	GTGR	000100
Byte <u>getItemIdentifier</u> ()	GTII	000101
Byte getTextStringCodingScheme()	GTCS	000110
Short getTextStringLength()	GTTL	000111
GetTheHandler()	GTHD	001000
		33.333
Inherited Method Name: ViewHandler		
Byte	CPRVS_BSS	001001
CompareValue(short valueOffset,byte[] compareBuffer,s	01 11V0 <u>_</u> 500	00.100.1
hort compareOffset, short compareLength)		
Short	COPY_BSS	001010
<pre>Copy(byte[] dstBuffer,short dstOffset,short dstLength)</pre>		
Short	CPYVS_BSS	001011
CopyValue(short valueOffset,		
byte[] dstBuffer,short dstOffset,short dstLength)		
	E4000 00	224422
Byte FindAndCompareValue(byte tag,byte[] compareBuffer,sho	FACRB_BS	001100
rt compareOffset)		
it compared is to		
Byte findAndCompareValue(byte tag,byte occurence,	FACRBBS_BSS	001101
short valueOffset,byte[] compareBuffer,short compareO	17(6)(BB6_B66	001101
ffset, short compareLength)		
Short	FACYBBS_BSS	001110
FindAndCopyValue(byte tag,byte occurence,short value0		
<pre>ffset, byte[] dstBuffer, short dstOffset,</pre>		
short dstLength)	540\/D D0	201111
Short findAndCopyValue(byte tag,byte[] dstBuffer,short dst0	FACYB_BS	001111
ffset)		
Byte	FINDBB	010000
FindTLV(byte tag,byte occurrence)	LINDOD	010000
Short	GLEN	010001
GetLength()		3.333.
Byte	GVBYS	010010
GetValueByte(short valueOffset)		
Short	GVLE	010011
GetValueLength()		

A.2.9 ToolkitRegistry methods

Method Name	Acronyms	Numbering on 6 bits
<u>AllocateTimer</u> ()	ATIM	000001
<pre>changeMenuEntry(byte id, byte[] menuEntry, short</pre>	CMETB_BSSBZBS	000010
offset, short length, byte nextAction, boolean		
helpSupported, byte iconQualifier, short		
iconIdentifier)		
<u>clearEvent</u> (byte event)	CEVTB	000011
<u>disableMenuEntry</u> (byte id)	DMETB	000100
<pre>enableMenuEntry(byte id)</pre>	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		
iconQualifier, short iconIdentifier)		
<u>isEventSet</u> (byte event)	IEVSB	001001
<pre>releaseTimer(byte timerIdentifier)</pre>	RTIM	001010
requestPollInterval(short duration)	RPOL	001011
<pre>setEvent(byte event)</pre>	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 0D CC CC CC CC CC CC CC CC CC CC CC 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 _{IMSI}	6F07	FF FF FF FF FF FF FF	This value is not compliant with GSM 11.11
EFLP	6F05	01 FF FF FF	·
EF _{Kc}	6F20	FF FF FF FF FF FF FF 07	
EF _{PLMNsel}	6F30	FF FF FF FF FF FF FF FF FF FF	
		FF FF FF FF FF FF FF FF FF FF	
EF _{HPLMN}	6F31	05	
EF _{ACMmax}	6F37	00 00 00	Access condition UPDATE: CHV1
EF _{SST}	6F38	FF 3F C3 03 0C 00 FF 0F 00 33	
EF _{ACM}	6F39	00 00 00	Access condition UPDATE: CHV1
EF _{PUCT}	6F41	FF FF FF 00 00	Access condition UPDATE: CHV1
EF _{BCCH}	6F74	FF FF FF FF FF FF FF FF FF FF FF FF	
EF _{ACC}	6F78	00 00	
EF _{FPLMN}	6F7B	FF FF FF FF FF FF FF FF FF FF FF	
EF _{LOCI}	6F7E	FF FF FF FF 00 F0 00 00 00 FF 01	
EF _{AD}	6FAD	00 FF FF	
EF _{Phase}	6FAE	03	
EF _{FDN}	6F3B	Default value in all the records:	Records: 5
L. FDN	0.02	FF FF FF FF FF FF FF FF FF FF	11000100.0
		FF FF FF FF FF FF FF FF FF FF	
	0540	FF FF FF FF	December 4
EF _{SMSP}	6F42	FF FF FF FF FF FF FF FF FF FF FF FF FF	Records: 1
		FF FF FF FF FF FF FF FF FF FF FF	
		FF FF FF FF FF	
EF _{LND}	6F44	FF FF FF FF FF FF FF FF FF FF	Records: 1
		FF FF FF FF FF FF FF FF FF FF FF	
EF _{SMSS}	6F43	FF FF FF	
EF _{SMS}	6F3C	1st record: 00 FF FF(length 176)	Records: 3
LISMS	01.30	2 nd record:00 FF FF(length 176)	Necolds. 5
		3 rd record: 00 FF FF(length 176)	
EF _{ADN}	6F3A	FF FF FF FF FF FF FF FF FF FF	Records: 1
		FF FF FF FF FF FF FF FF FF FF FF FF	
EF _{CCP}	6F3D	FF FF FF FF FF FF FF FF FF FF FF	
LICCP	01.30	FF FF	
EF _{MSISDN}	6F40	FF FF FF FF FF FF FF FF FF FF	Records: 1
		FF FF FF FF FF FF FF FF FF FF FF	
FF	6544	FF FF FF FF FF FF FF FF FF FF FF	Departs 1
EF _{SDN}	6F41	FF FF FF FF FF FF FF FF FF FF FF FF	Records: 1
		FF FF FF FF	
EF _{SUME}	6F54	85 OC 54 4F 4F 4C 4B 49 54 20 54 45	
		53 54 FF FF FF FF	
EF _{CBMI}	6F45	FF FF	
EF _{IM}	4F20	FF FF FF FF FF FF FF FF FF	

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_{SIMTEST} (SIM Test)

Identifier: '0319'

C.2.2 EF_{TNR} (Transparent Never Read)

	Identifier: '6F01'	Structure: transparent		Structure: transparent Manc		ndatory
	File size: 3 bytes	Update activity: low		y: low		
		Access Conditi	ons:			
	READ		NEVER			
	UPDATE		ALWAYS			
	INVALI	DATE	ALWAYS			
	REHAE	BILITATE	ALWAYS			
Bytes	Description	Default Value		M/O	Length	
1 – 3	Test Data		AA AA AA	М	3 bytes	

C.2.3 EF_{TNU} (Transparent Never Update)

	Identifier: '6F02' Structure: transparent Man		Structure: transparent		andatory
	File size: 3 bytes	·	Update activity: low		
Access Conditions:					
	READ		ALWAYS		
	UPDA	TE	NEVER		
	INVALI	DATE	ALWAYS		
	REHAE	BILITATE	ALWAYS		
Bytes	Description	Default Value M.		M/O	Length
1 - 3	Test Data		55 55 55	М	3 bytes

C.2.4 EF_{TARU} (Transparent Always Read and Update)

	Identifier: '6F03'		ucture: transparent	Ma	indatory
	File size: 260 bytes		Update activity: low		
		Access Conditi	ons:		
	READ		ALWAYS		
	UPDAT	Έ	ALWAYS		
	INVALI	DATE	ALWAYS		
	REHAE	BILITATE	ALWAYS		
Distan	Description		D-f t-1/-	11/0	1
Bytes	Description	l	Default Value	M/O	Length
1 - 260	Test Data		FF FF	M	260
					bytes

C.2.5 EF_{CNR} (Cyclic Never Read)

Iden	Identifier: '6F04'		Structure: cyclic		Mandatory
R	Record length: 3 bytes		Update activity: high		high
		Access Con	ditions:		
	READ NEVER UPDATE ALWAYS INCREASE ALWAYS INVALIDATE ALWAYS REHABILITATE ALWAYS				
Logical Record Number	Description		Default Value	M/O	Length
1	Test Data		00 00 00	М	3 bytes
2	Test Data		00 00 00	М	3 bytes

C.2.6 EF_{CNU} (Cyclic Never Update)

Iden	tifier: '6F05'		Structure: cyclic Manda			
R	ecord length: 3 bytes		Update activity: high			
Access Conditions:						
	INVAL		ALWA` NEVE NEVE ALWA` ALWA`	R R /S		
Logical Record Number	Description		Default Value	M/O	Length	
1	Test Data		00 00 00	М	3 bytes	
3	Test Data		00 00 00	М	3 bytes	

C.2.7 EF_{CNIC} (Cyclic Never Increase)

Iden	tifier: '6F06		Structure: cyclic	Mandatory		
R	ecord length: 3 bytes		Update	activity	: high	
Access Conditions:						
	READ		ALWAY	_		
	UPDA	EASE	ALWAY NEVER	-		
		IDATE	ALWAY	-		
		BILITATE	ALWAY	_		
Logical Record Number	Description		Default Value	M/O	Length	
1	Test Data		00 00 00		3 bytes	
2	Test Data		00 00 00 M		3 bytes	

C.2.8 EF_{CNIV} (Cyclic Never Invalidate)

Iden	tifier: '6F07		Structure: cyclic Manda			
R	ecord length: 3 bytes		Update activity: high			
		Access Cor	nditions:			
		TE	ALWAY ALWAY ALWAY NEVEF ALWAY	S S		
Logical Record Number	Description		Default Value	M/O	Length	
1	Test Data		00 00 00	М	3 bytes	
2	Test Data		00 00 00	М	3 bytes	

C.2.9 EF_{CNRH} (Cyclic Never Rehabilitate)

Iden	tifier: '6F08'	S	Structure: cyclic	Mandatory		
R	ecord length: 3 bytes		Update activity: high			
		Access Cond	ditions:			
	READ ALWAYS UPDATE ALWAYS INCREASE ALWAYS INVALIDATE ALWAYS REHABILITATE NEVER					
Logical Record Number	Description		Default Value	M/O	Length	
1	Test Data		00 00 00		3 bytes	
2	Test Data		00 00 00	М	3 bytes	

C.2.10 EF_{CARU} (Cyclic Always Read and Update)

Iden	tifier: '6F09'		Structure: cyclic	Mandatory	
Record length: 3 bytes			Update	activity:	high
		Access Cor	nditions:		
		TE	ALWAY ALWAY ALWAY ALWAY	S S	
Logical Record Number	Description		Default Value	M/O	Length
1	Test Data		55 55 55		3 bytes
2	Test Data		AA AA AA	М	3 bytes

C.2.11 EF_{LNR} (Linear Fixed Never Read)

Identifier: '6F0A'			Structure: linear fixed Mandatory			
Record length: 4 bytes			Update activity	: low		
Access Conditions:						
	READ		NEVER			
	UPDATI	Ξ	ALWAYS			
	INVALIE	DATE	ALWAYS			
	REHAB	ILITATE	ALWAYS			
Logical	Description		Default Value	M/O	Length	
Record	•				· ·	
Number						
1	Test Data - Record 1		FF FF FF FF	М	4 bytes	
2	Test Data - Record 2		FF FF FF FF	М	4 bytes	

C.2.12 EF_{LNU} (Linear Fixed Never Update)

Identifier: '6F0B'			Structure: linear fixed Mandatory			
	Record length: 4 bytes		Update activity	y: low		
Access Conditions:						
	READ UPDAT INVALIE REHABI	DATE	ALWAYS NEVER ALWAYS ALWAYS			
Logical Record Number	Description		Default Value	M/O	Length	
1	Test Data - Record 1		FF FF FF FF	М	4 bytes	
2	Test Data - Record 2		FF FF FF FF	М	4 bytes	

C.2.13 EF_{LARU} (Linear Fixed Always Read and Update)

Identifier: '6F0C'			Structure: linear fixed Mand		ndatory	
Record length: 4 bytes			Update activ	ity: low		
Access Conditions:						
	READ UPDATI INVALIE REHAB	DATE	ALWAYS ALWAYS ALWAYS ALWAYS			
Logical Record Number	Description		Default Value	M/O	Length	
1	Test Data - Record 1		55 55 55 55	М	4 bytes	
2	Test Data - Record 2		AA AA AA AA	М	4 bytes	

C.2.14EF_{CINA} (Cyclic Increase Not Allowed)

Identifie	er: '6F0D'	Structure: cyclic Mandato		datory		
Rec	ord length: 3 bytes	Update activity: high				
Access Conditions:						
	READ ALWAYS UPDATE ALWAYS INCREASE ALWAYS (see note 1) INVALIDATE ALWAYS REHABILITATE ALWAYS					
Logical Record Number	Description	Default Value	M/O	Length		
1	Test Data	00 00 00	М	3 bytes		
2	Test Data	00 00 00	М	3 bytes		
Note 1: This file will be personalised in a way such that increase is not allowed, as indicated by the FCI byte 8, bit 7 (GSM 11.11; FCI structure of an EF returned by the SELECT command)						

Annex D (normative): sim.test.util package and loading, testing and cleaning script examples.

See attached files:

- Annex_D_SimTestUtil.zip
- Annex_D_Examples.zip

Annex E (normative): Test Area files.

See attached file:

- Annex_E_SourceCode.zip

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	1.2.0	2.0.0
						in technical content to v1.2.0)		
2001-03						As approved at TSG-T #11 (identical in technical content	2.0.0	7.0.0
						to v2.0.0)		
2001-05						Correction to date on cover page / headers	7.0.0	7.0.1
2001-06	TP-12	TP-010105	A001		F	Corrections to the API Test plan, addition of the test area	7.0.1	7.1.0
						files and modification of the util package		
2001-09	TP-13	TP-010206	A002		F	Update API Test plan and Test Area Files	7.1.0	7.2.0

History

	Document history						
V7.0.0	May 2001	Publication					
V7.1.0	June 2001	Publication					
V7.2.0	September 2001	Publication					