

3GPP TS 31.116 V6.8.0 (2005-06)

Technical Specification

3rd Generation Partnership Project; Technical Specification Group Core Network and Terminals; Remote APDU Structure for (U)SIM Toolkit applications (Release 6)



The present document has been developed within the 3rd Generation Partnership Project (3GPP™) and may be further elaborated for the purposes of 3GPP.

The present document has not been subject to any approval process by the 3GPP Organizational Partners and shall not be implemented. This Specification is provided for future development work within 3GPP only. The Organizational Partners accept no liability for any use of this Specification. Specifications and reports for implementation of the 3GPP™ system should be obtained via the 3GPP Organizational Partners' Publications Offices.

Keywords

UMTS, SIM, SMS, card, security

3GPP

Postal address

3GPP support office address

650 Route des Lucioles - Sophia Antipolis
Valbonne - FRANCE
Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Internet

<http://www.3gpp.org>

Copyright Notification

No part may be reproduced except as authorized by written permission.
The copyright and the foregoing restriction extend to reproduction in all media.

© 2005, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TTA, TTC).
All rights reserved.

Contents

Foreword	4
Introduction	4
1 Scope	5
2 References	5
3 Definitions and abbreviations.....	5
4 Remote APDU Format	6
4.1 Remote command coding	6
4.2 Response coding	6
4.2.1 (U)SIM specific behaviour for Response Packets (Using SMS-PP)	6
4.2.2 void	6
5 Remote File Management (RFM)	6
5.1 SIM Remote File Management	6
5.2 USIM Remote File Management	7
5.3 UICC Shared File System Remote File Management.....	7
5.4 ISIM Remote File Management.....	7
6 Remote Applet Management.....	7
6.1 SIM File System Access Domain Parameter	7
6.1.1 SIM Access Mechanism.....	8
7 Additional command for push.....	9
7.1 USIM specific behaviour for responses using SMS-PP.....	9
Annex A (informative): Change History	10

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

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

Introduction

The present document is the result of a split of TS 23.048 Release 5 between the generic part and the bearers specific application. The generic part has been transferred to SCP. The present document is the bearers specific part.

1 Scope

The present document defines the remote management of files and applets on the SIM/USIM/ISIM.

It describes the APDU format for remote management.

Furthermore the document specifies:

- a set of commands coded according to this APDU structure and used in the remote file management on the SIM/USIM specified in 3GPP TS 51.011 [1], 3GPP TS 31.101 [2], 3GPP TS 31.102 [3], 3GPP TS 31.103 [6].
- a set of commands coded according to this APDU structure and used in the remote applet management on the SIM/USIM. This is based on TS 102 226 [4].

The remote APDU structure for SIM/USIM/ISIM applications shall comply with the one defined in TS 102 226 [4]. The present document only contains additional requirements or explicit limitations for SIM/USIM/ISIM applications.

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 and/or edition number or version number) 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] 3GPP TS 51.011 Release 4: "Specification of the Subscriber Identity Module - Mobile Equipment (SIM-ME) interface".
- [2] 3GPP TS 31.101: "UICC-Terminal Interface; Physical and Logical Characteristics".
- [3] 3GPP TS 31.102: "Characteristics of the USIM Application".
- [4] ETSI TS 102 226 Release 6: "Smart Cards; Remote APDU structure for UICC based applications".
- [5] ISO/IEC 7816-4: "Information technology - Identification cards - Integrated circuit cards, Part 4: Organization, security and commands for interchange".
- [6] 3GPP TS 31.103: "Characteristics of the IP Multimedia Services Identity Module (ISIM) application".

3 Definitions and abbreviations

For the purposes of the present document, the abbreviations, terms and definitions given in TS 102 226 [4] apply.

4 Remote APDU Format

4.1 Remote command coding

The SIM/USIM/ISIM Remote command coding shall comply with the Remote command coding of TS 102 226 [4].

4.2 Response coding

The SIM/USIM/ISIM Response coding shall comply with the Response coding of TS 102 226 [4], added features are defined below.

4.2.1 (U)SIM specific behaviour for Response Packets (Using SMS-PP)

If PoR is not requested, no data shall be returned by the (U)SIM's RE/RA and the (U)SIM's RE/RA shall indicate to the terminal to issue a RP-ACK.

If PoR is requested, data shall be returned by the (U)SIM's RE/RA. The (U)SIM's RE/RA shall indicate to the terminal to issue:

- a RP-ACK if the response status code octet is '00' or,
- a RP-ERROR if there is a security error of some kind (see table 5).

The data returned by the (U)SIM is the complete Response Packet to be included in the User Data part of the SMS-DELIVER-REPORT.

Because the (U)SIM is unable to indicate to the Terminal that the TP-UDHI bit is to be set, the Sending Entity receiving the Response Packet shall expect the UDH structure in any event.

If a proof of Receipt is required by the sending entity, the Additional Response Data sent by the Remote Management Application shall be formatted according to TS 102 226 [4].

4.2.2 void

5 Remote File Management (RFM)

5.1 SIM Remote File Management

Command and Response formats are defined in TS 102 226 [4]. Nevertheless, the list of commands defined in TS 102 226 [4] for Remote File Management does not apply for SIM application. All the SIM Remote File Management commands are defined below.

The standardised commands are listed in table 5.1. The commands are as defined in 3GPP TS 51.011 [1], except that the SELECT command is extended from the one in 3GPP TS 51.011 [1] to include "SELECT by path" as defined in ISO/IEC 7816-4 [6].

Table 5.1: SIM Remote File Management Commands

Operational command
SELECT
UPDATE BINARY
UPDATE RECORD
SEEK
INCREASE
VERIFY CHV
CHANGE CHV
DISABLE CHV
ENABLE CHV
UNBLOCK CHV
INVALIDATE
REHABILITATE
READ BINARY
READ RECORD

To retrieve the Response parameters/data of a case 4 command the GET RESPONSE command defined in TS 51.011 [1] shall be issued (Class Byte is 'A0').

The GET RESPONSE and any case 2 command (i.e. READ BINARY, READ RECORD) shall only occur once in a command string and, if present, shall be the last command in the string. The Response Data shall be placed in the Additional Response Data element of the Response Packet.

5.2 USIM Remote File Management

USIM Remote File Management shall comply with TS 102 226 [4].

The standardised commands are listed in TS 102 226 [4].

5.3 UICC Shared File System Remote File Management

UICC Shared File System Remote File Management shall comply with TS 102 226 [4].

The standardised commands are listed in TS 102 226 [4].

5.4 ISIM Remote File Management

ISIM Remote File Management shall comply with TS 102 226 [4].

The standardised commands are listed in TS 102 226 [4].

6 Remote Applet Management

SIM/USIM Remote Applet Management shall comply with TS 102 226 [4], added features are defined below.

6.1 SIM File System Access Domain Parameter

This parameter indicates the mechanism used to control the applet instance access to the SIM File System. It is a parameter of the INSTALL [for install] command described in TS 102 226 [4].

This parameter shall be used only if the "SIM File Access and Toolkit Application Specific Parameters" TLV object (Tag 'CA') is present.

Value	Name	Support	ADD length
'00'	See TS 102 226 [4]	-	-
'01'	SIM access mechanism	Optional	2
'02' to 'FF'	See TS 102 226 [4]	-	-

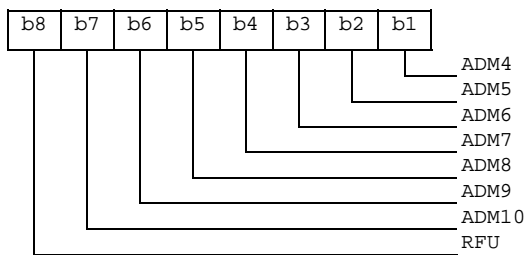
6.1.1 SIM Access Mechanism

This mechanism shall be used, if supported, by the framework if the Access Domain Parameter value is '01'. It shall use the Access Domain Data passed at applet instantiation to define the access conditions fulfilled while the toolkit applet is running.

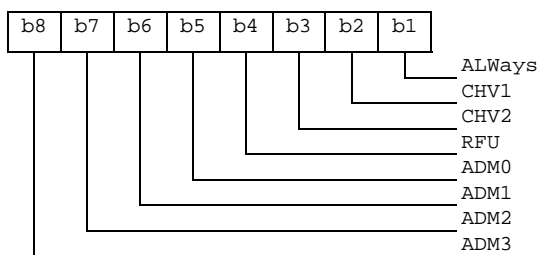
The APDU Access Domain Data is a bit map combination of the file access condition levels described in 3GPP TS 51.011 [1]. When the bit is set the associated Access Condition is granted.

The APDU Access Domain Data is coded as follows:

Byte 1:



Byte 2:



EXAMPLE: Possible combinations of fulfilled Access Conditions are shown below:

ADD value	Applet access condition fulfilled
'00 00'	No access
'00 01'	ALWays
'00 02'	CHV1
'00 03'	ALWays and CHV1
'00 04'	CHV2
'00 05'	ALWays and CHV2
'00 06'	CHV1 and CHV2
:	:
'00 10'	ADM0
:	:
'00 20'	ADM1
:	:
'00 22'	ADM1 and CHV1
:	:
'01 00'	ADM4
:	:
'40 00'	ADM10
:	:
'41 37'	ADM10 and ADM4 and ADM1 and ADM0 and CHV2 and CHV1 and ALWays
:	:

7 Additional command for push

The PUSH command behaviour shall comply with TS 102 226 [4]. The specific behaviour of USIM Toolkit applications is stated below.

7.1 USIM specific behaviour for responses using SMS-PP

The behaviour for responses shall comply with TS 102 226 [4].

As the processing of the PUSH command may result in proactive commands being issued, the PUSH command result may be sent back in the additional response data of a response packet using SMS-SUBMIT.

Annex A (informative): Change History

This annex lists all changes made to the present document.

<i>Meeting / Date</i>	<i>Plenary doc</i>	<i>WG doc</i>	<i>CR</i>	<i>Rev</i>	<i>Cat</i>	<i>Changes</i>	<i>New</i>
TP-16						T#16 approved the specification for Rel-6	6.0.0
TP-17	TP-020209		001		F	USIM specific behaviour for Response Packets (Using SMS-PP)	6.1.0
TP-18	TP-020284		002		F	Alignment with TS 23.048 Release 5: Correction of the Specific behaviour for Response Packets (Using SMS-PP)	6.2.0
TP-19	TP-030025		003		A	Correction on behaviour for Response Packet	6.3.0
TP-23	TP-040027		004		C	Clarification on the usage of SIM Remote File Management commands	6.4.0
TP-25	TP-040185		006		B	Alignment with TS 102 226 V6.8.0	6.5.0
TP-26	TP-040261		007		F	Correction of non-specific references to SCP documents	6.6.0
TP-27	TP-050021	T3-050164	008		F	Correction of reference to TS 102226	6.7.0
TP-27	TP-050021	T3-050167	009		F	USIM specific behaviour for PUSH mechanism using SMS-PP	6.7.0
CP-28	CP-050136	C6-050477	011		F	ISO/IEC 7816-Series Revision	6.8.0
CP-28	CP-050139	C6-050447	010		B	Introduction of an explicit description of the ISIM RFM mechanism	6.8.0