3GPP TSG-T (Terminals) Meeting #9
Hawaii, USA, 20 - 22 September, 2000

Tdoc TP-000176

Source: T3

Title: Change Requests to TS 31.102 "Characteristics of the USIM application" and GSM 11.11 "SIM ME interface specification"

Agenda item: 6.3.3

Document for: Approval

This document contains two change requests to GSM 11.11 and two equivalent CRs to TS 31.102 which had originally been presented to SMG #32 and TSG-T#8. The report of SMG #32 stated that the CRs to GSM 11.11 had been postponed due to "*possible problems with the service requirements"*. As a result of that decision, TSG-T #8 had also postponed the equivalent CRs to TS 31.102.

However, it appears that the postponement of the GSM 11.11 CRs was a result of a misunderstanding and so the CRs are now re-presented to TSG-T #9 for approval.

WG Doc	Spec	CR	Rv	Rel	Subject
9-00-0253	11.11	A116		R99	PLMN Selection Corrections and additions for EDGE
9-00-0269	11.11	A119		R99	Addition of RPLMN file
T3-000271	31.102	030		R99	PLMN Selection additions
T3-000281	31.102	036		R99	Alignment to GSM 11.11 regarding Terminology

ETSI EP "New SMG9" Meeting #1
Visby, Sweden, 22 - 24 May, 2000

Tdoc 9-00-0253

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

11.11	CR	A116	Current Version:	8.2.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	SMG #32	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from:* ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: *(at least one should be marked with an X)* (U)SIM [X] ME [X] UTRAN / Radio [ ] Core Network [ ]

Source: New SMG9 **Date:** 24/05/00

Subject: PLMN Selection Corrections

Work item: EDGE Compact and support for EGPRS in ANSI-136 networks

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: Corrections of PLMN related SIM fields and alignment with the USIM specification

Clauses affected: See attached CR

Other specs affected:

Other 3G core specifications		→ List of CRs:	
Other GSM core specifications		→ List of CRs:	
MS test specifications		→ List of CRs:	
BSS test specifications		→ List of CRs:	
O&M specifications		→ List of CRs:	

Other comments:

help.doc

<--------- double-click here for help and instructions on how to create a CR.

2 Normative 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.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.
- For this Release 1998 document, references to GSM documents are for Release 1998 versions (version 7.x.y).

[1] GSM 01.02: "Digital cellular telecommunications system (Phase 2+); General description of a GSM Public Land Mobile Network (PLMN)".

[49] GSM 04.60: "Digital cellular telecommunications system (Phase 2+); General Packet Radio Service (GPRS); Mobile Station (MS) - Base Station System (BSS) interface; Radio Link Control/ Medium Access Control (RLC/MAC) protocol".

[50] TS 23.122: "Technical Specification Group Core Network; NAS Functions related to Mobile Station (MS) in idle mode ".

[51] TS 31.102: "Characteristics of the USIM application".

***** Next modified section *****

10.3.7 EF_{SST} (SIM service table)

This EF indicates which services are allocated, and whether, if allocated, the service is activated. If a service is not allocated or not activated in the SIM, the ME shall not select this service.

Identifier: '6F38'	Structure: transparent	Mandatory
File size: X bytes, X ≥ 2	Update activity: low	

Access Conditions:

READ	CHV1
UPDATE	ADM
INVALIDATE	ADM
REHABILITATE	ADM

Bytes	Description	M/O	Length
1	Services n°1 to n°4	M	1 byte
2	Services n°5 to n°8	M	1 byte
3	Services n°9 to n°12	O	1 byte
4	Services n°13 to n°16	O	1 byte
5	Services n°17 to n°20	O	1 byte
6	Services n°21 to n°24	O	1 byte
7	Services n°25 to n°28	O	1 byte
8	Services n°29 to n°32	O	1 byte
etc.			
X	Services (4X-3) to (4X)	O	1 byte

-Services

Contents:

Service n°1 : CHV1 disable function
Service n°2 : Abbreviated Dialling Numbers (ADN)
Service n°3 : Fixed Dialling Numbers (FDN)
Service n°4 : Short Message Storage (SMS)
Service n°5 : Advice of Charge (AoC)
Service n°6 : Capability Configuration Parameters (CCP)
Service n°7 : PLMN selector
Service n°8 : RFU
Service n°9 : MSISDN
Service n°10: Extension1
Service n°11: Extension2
Service n°12: SMS Parameters
Service n°13: Last Number Dialled (LND)
Service n°14: Cell Broadcast Message Identifier
Service n°15: Group Identifier Level 1
Service n°16: Group Identifier Level 2
Service n°17: Service Provider Name
Service n°18: Service Dialling Numbers (SDN)
Service n°19: Extension3
Service n°20: RFU
Service n°21: VGCS Group Identifier List (EF_{VGCS} and EF_{VGCSS})
Service n°22: VBS Group Identifier List (EF_{VBS} and EF_{VBSS})
Service n°23: enhanced Multi-Level Precedence and Pre-emption Service
Service n°24: Automatic Answer for eMLPP
Service n°25: Data download via SMS-CB
Service n°26: Data download via SMS-PP
Service n°27: Menu selection
Service n°28: Call control
Service n°29: Proactive SIM
Service n°30: Cell Broadcast Message Identifier Ranges
Service n°31: Barred Dialling Numbers (BDN)
Service n°32: Extension4
Service n°33: De-personalization Control Keys
Service n°34: Co-operative Network List
Service n°35: Short Message Status Reports
Service n°36: Network's indication of alerting in the MS
Service n°37: Mobile Originated Short Message control by SIM
Service n°38: GPRS
Service n°39: Image (IMG)
Service n°40: SoLSA (Support of Local Service Area)
Service n°41: USSD string data object supported in Call Control
Service n°42: RUN AT COMMAND command
Service n°43: User controlled PLMN Selector ~~List~~ with Access Technology
Service n° 44: Operator controlled PLMN Selector ~~List~~ with Access Technology
Service n° 45 HPLMN Selector with Access Technology
Service n° 46: CPBCCH Information

Service n° 47: Investigation Scan
Service n°48: Extended Capability Configuration Parameters

For a phase 2 SIM, the EF shall contain at least two bytes which correspond to the Phase 1 services. Further bytes may be included, but if the EF includes an optional byte, then it is mandatory for the EF to also contain all bytes before that byte. Other services are possible in the future and will be coded on further bytes in the EF. The coding falls under the responsibility of ETSI.

NOTE 1: Service N°8 was used in Phase 1 for Called Party Subaddress. To prevent any risk of incompatibility Service N°8 should not be reallocated.

NOTE 2: As the BDN service relies on the Call Control feature, service n°31 (BDN) should only be allocated and activated if service n°28 (Call control) is allocated and activated.

Coding:

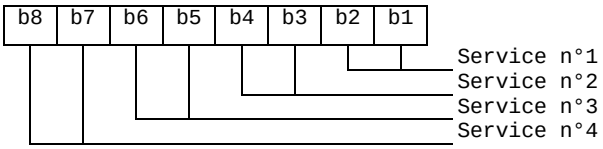
2 bits are used to code each service:
first bit = 1: service allocated
first bit = 0: service not allocated
where the first bit is b1, b3, b5 or b7;
second bit = 1: service activated
second bit = 0: service not activated
where the second bit is b2, b4, b6 or b8.

Service allocated means that the SIM has the capability to support the service. Service activated means that the service is available for the card holder (only valid if the service is allocated).

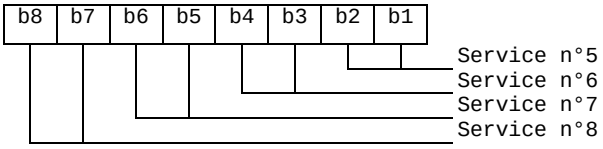
The following codings are possible:
- first bit = 0: service not allocated, second bit has no meaning;
- first bit = 1 and second bit = 0: service allocated but not activated;
- first bit = 1 and second bit = 1: service allocated and activated.

The bits for services not yet defined shall be set to RFU. For coding of RFU see subclause 9.3.

First byte:

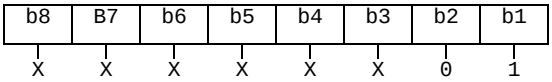


Second byte:



etc.

The following example of coding for the first byte means that service n°1 "CHV1-Disabling" is allocated but not activated:



If the SIM supports the FDN feature (FDN allocated and activated) a special mechanism shall exist in the SIM which invalidates both EF_{IMSI} and EF_{LOCI} once during each GSM session. This mechanism shall be invoked by the SIM automatically if FDN is enabled. This invalidation shall occur at least before the next command following selection of either EF. FDN is enabled when the ADN is invalidated or not activated.

If the SIM supports the BDN feature (BDN allocated and activated) a special mechanism shall exist in the SIM which invalidates both EF_{IMSI} and EF_{LOCI} once during each GSM session and which forbids the REHABILITATE command to rehabilitate both EF_{IMSI} and EF_{LOCI} until the PROFILE DOWNLOAD procedure is performed indicating that the ME supports the "Call control by SIM" facility. This mechanism shall be invoked by the SIM automatically if BDN is

enabled. The invalidation of EF_{IMSI} and EF_{LOCI} shall occur at least before the next command following selection of either EF. BDN is enabled when the EF_{BDN} is not invalidated.

***** Next modified section *****

10.3.35 $EF_{PLMNwACT}$ (User controlled PLMN Selector with Access Technology)

This EF contains coding for n PLMNs, where n is at least eight. This information, determined by the user, defines the preferred PLMNs of the user in priority order. The EF also contains the Access Technologies for each PLMN in this list. ~~The MS use this information to determine what type of channels to scan for when searching for a specific PLMN~~ (see ~~GSM 03.22~~ TS 23.122 [~~45~~50]).

Identifier:'6F60'	Structure: transparent	Optional
File size: ~~4~~ 5n (n ≥ 8) bytes	Update activity: low	

Access Conditions:

READ	CHV1
UPDATE	CHV1
INVALIDATE	ADM
REHABILITATE	ADM

Bytes	Description	M/O	Length
1 to 3	1st PLMN (highest priority)	M	3 bytes
4 to 5	1st PLMN Access Technology Identifier	M	2 bytes
6 to 8	2nd PLMN	M	3 bytes
9 to 10	2nd PLMN Access Technology Identifier	M	2 bytes
:	:		
36 to 38	8th PLMN	M	3 bytes
39 to 40	8th PLMN Access Technology Identifier	M	2 bytes
41 to 43	9th PLMN	O	3 bytes
44 to 45	9th PLMN Access Technology Identifier	O	2 bytes
:	:		
(5n-4) to (5n-2)	Nth PLMN (lowest priority)	O	3 bytes
(5n-1) to 5n	Nth PLMN Access Technology Identifier	O	2 bytes
~~Bytes~~	~~Description~~	~~M/O~~	~~Length~~
~~1 3~~	~~1st PLMN (highest priority)~~	~~M~~	~~3 bytes~~
~~4~~	~~Access Technologies of 1st PLMN in PLMN selector with Access Technology~~	~~M~~	~~1 byte~~
~~5 7~~	~~2nd PLMN~~	~~M~~	~~3 bytes~~
~~8~~	~~Access Technologies of 2nd PLMN in PLMN selector with Access Technology~~	~~M~~	~~1 byte~~
~~(4n 3) (4n 1)~~	~~Nth PLMN (lowest priority)~~	~~O~~	~~3 bytes~~
~~4n~~	~~Access Technologies of nth PLMN in PLMN selector with Access Technology~~	~~O~~	~~1 byte~~

- PLMN
  Contents:
  Mobile Country Code (MCC) followed by the Mobile Network Code (MNC).
  Coding:
  according to TS 24.008 [47].

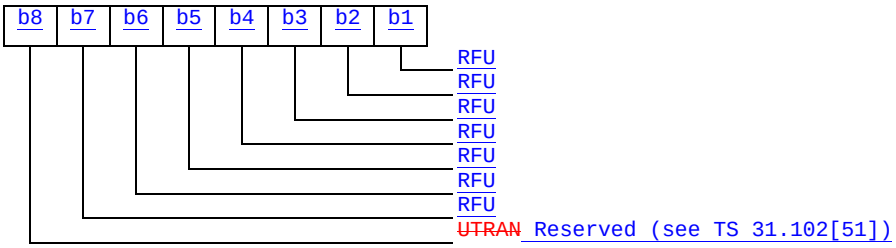
- Access Technologies

  Contents: The Access Technologies of a PLMN that the MS will assume when searching for a listed PLMN.

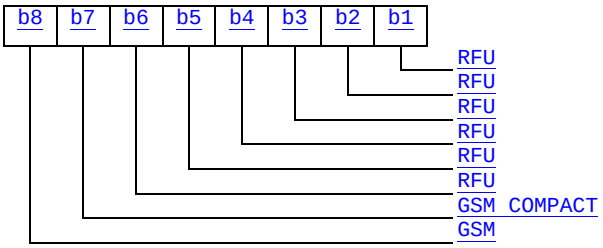
  Coding:
  - 2 bytes are used to select the access technology where the meaning of each bit is as follows:
    - bit = 1: access technology selected;

- bit = 0: access technology not selected.

Byte 5n-1:

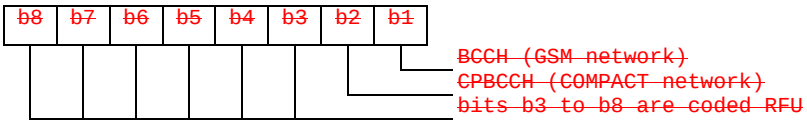


Byte 5n:



The RFU bits are coded with '0' in the bit positions.

~~Coding:~~



~~A '1' in a bit position indicates that the Access Technology corresponding to that bit position is supported and a '0' that it is not supported. The RFU bits are coded with '0' in the bit positions.~~

~~The default coding of the Access Technologies field shall be '01'.~~

~~A user initiated update of a PLMN shall automatically initiate an update of the associated Access Technologies field, according to the Access Technologies identified by the MS for the respective PLMN. If no Access Technologies are identified, the default coding value shall apply for the associated Access Technologies field.~~

~~If storage for fewer than the maximum possible number n is required, the excess bytes shall be set to 'FF'.~~

~~For instance, using 246 for the MCC and 81 for the MNC for a GSM only PLMN, and if this is the first and only PLMN in the list, the contents reads as follows:~~

~~Bytes 1-3: '42' 'F6' '18'~~

~~Byte 4 : '01'~~

~~Bytes 5-7: 'FF' 'FF' 'FF'~~

~~Byte 8 : 'FF'~~

~~etc.~~

10.3.36 $EF_{OPLMNwACT}$ (Operator controlled PLMN Selector with Access Technology)

This EF contains coding for n PLMNs, where n is at least eight. This information, determined by the operator, defines the preferred PLMNs of the operator in priority order. The EF also contains the Access Technologies for each PLMN in this list . ~~The MS uses this information to determine what type of channels to scan for when searching for a specific PLMN~~ (see ~~GSM 03.22~~ TS23.122 [~~45~~50]).

Identifier: '6F61'	Structure: transparent	Optional
File size: 4 5n (n ≥ 8) bytes	Update activity: low	

Access Conditions:

READ	CHV1
UPDATE	ADM
INVALIDATE	ADM
REHABILITATE	ADM

Bytes	Description	M/O	Length
1 to 3	1st PLMN (highest priority)	M	3 bytes
4 to 5	1st PLMN Access Technology Identifier	M	2 bytes
6 to 8	2nd PLMN	O	3 bytes
9 to 10	2nd PLMN Access Technology Identifier	O	2 bytes
(5n-4) to (5n-2)	Nth PLMN (lowest priority)	O	3 bytes
(5n-1) to 5n	Nth PLMN Access Technology Identifier	O	2 bytes
~~Bytes~~	~~Description~~	~~M/O~~	~~Length~~
~~1 3~~	~~1st PLMN (highest priority)~~	~~M~~	~~3 bytes~~
~~4~~	~~Access Technologies of 1st PLMN in Operator controlled PLMN selector with Access Technology~~	~~M~~	~~1 byte~~
~~5 7~~	~~2nd PLMN~~	~~M~~	~~3 bytes~~
~~8~~	~~Access Technologies of 2nd PLMN in Operator controlled PLMN selector with Access Technology~~	~~M~~	~~1 byte~~
~~(4n 3) (4n 1)~~	~~nth PLMN (lowest priority)~~	~~O~~	~~3 bytes~~
~~4n~~	~~Access Technologies of nth PLMN in Operator controlled PLMN selector with Access Technology~~	~~O~~	~~1 byte~~

- PLMN

  Contents:

  Mobile Country Code (MCC) followed by the Mobile Network Code (MNC).

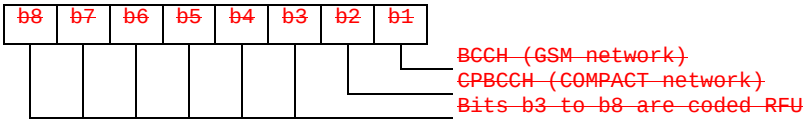
  Coding:

  according to TS 24.008 [47].

- Access Technologies

  Contents: The Access Technologies of a PLMN that the MS will assume when searching for a listed PLMN.

  Coding: See $EF_{PLMNselwACT}$ for coding.



~~A '1' in a bit position indicates that the Access Technology corresponding to that bit position is supported and a '0' that it is not supported. The RFU bits are coded with '0' in the bit positions.~~

~~The default coding of the Access Technologies field shall be '01'.~~

~~If storage for fewer than the maximum possible number n is required, the excess bytes shall be set to 'FF'.~~

~~For instance, using 246 for the MCC and 81 for the MNC for a GSM only PLMN and if this is the first and only PLMN in the list, the contents reads as follows:~~

~~Bytes 1 3: '42' 'F6' '18'~~

~~Byte 4 : '01'~~

~~Bytes 5 7: 'FF' 'FF' 'FF'~~

~~Byte 8 : 'FF'~~

~~etc.~~

10.3.37 $EF_{HPLMNACT}$ (HPLMN Selector with Access Technology)

~~This EF contains the Access Technology for the HPLMN (see EF_{IMSI}). The MS uses this information to determine what type of channels to scan for when searching for the HPLMN and in what priority order. (see GSM 03.22 [45]).~~

The HPLMN Selector with access technology data field shall contain the HPLMN code, or codes together with the respected access technology in priority order. (see ~~GSM 03.22[45]~~ TS 23.122 [50].

If this EF does not exist on the SIM then the MS shall assume that the HPLMN access technology is GSM.~~use BCCH.This EF contains the access technology codes for one HPLM.~~

Identifier: '6F62'	Structure: transparent	Optional
File size: 5n bytes	Update activity: low	

Access Conditions:

READ	CHV1
UPDATE	ADM
INVALIDATE	ADM
REHABILITATE	ADM

Bytes	Description	M/O	Length
1 to 3	1st PLMN (highest priority)	M	3 bytes
4 to 5	1st PLMN Access Technology Identifier	M	2 bytes
6 to 8	2nd PLMN	O	3 bytes
9 to 10	2nd PLMN Access Technology Identifier	O	2 bytes
(5n-4) to (5n-2)	Nth PLMN (lowest priority)	O	3 bytes
(5n-1) to 5n	Nth PLMN Access Technology Identifier	O	2 bytes
~~Bytes~~	~~Description~~	~~M/O~~	~~Length~~
~~1~~	~~Access Technology 1 of HPLMN~~	~~O~~	~~1 byte~~
~~2~~	~~Access Technology 2 of HPLMN~~	~~O~~	~~1 byte~~
~~n~~	~~Access Technology n of HPLMN~~	~~O~~	~~1 byte~~

- PLMN

  Contents:

  Mobile Country Code (MCC) followed by the Mobile Network Code (MNC).

  Coding:

  according to TS 24.008 [47].

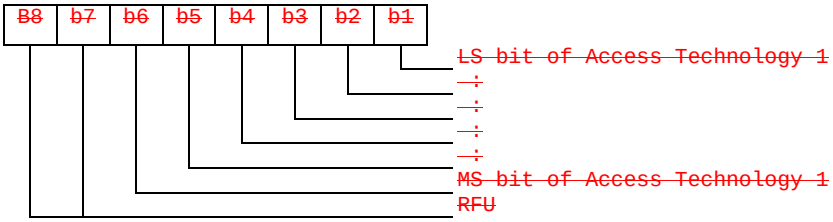
- Access Technology

  Contents: The Access Technology of the HPLMN that the MS will assume when searching for the HPLMN, in priority order. The first Access Technology in the list has the highest priority.

  Coding: See $EF_{PLMNselwACT}$ for coding.

~~For each 1 byte list element~~

~~Byte 1:~~



~~Byte:~~

~~Bits:~~	~~b6~~	~~b5~~	~~b4~~	~~b31~~	~~b3~~	~~b2~~	~~b1~~	
	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~1~~	~~BCCH~~
	~~0~~	~~0~~	~~0~~	~~0~~	~~0~~	~~1~~	~~0~~	~~CPBCCH~~

~~The default coding of the Access Technology field shall be '000001'.~~

~~The RFU bit positions shall be set to '0'.~~

10.3.39 $EF_{InvScan}$ (Investigation ~~PLMN~~ Scan)

This EF contains two flags used to control the investigation scan for higher prioritized PLMNs not offering voice services.

Identifier: '6F64'	Structure: transparent	Optional
File size: 1 byte	Update activity: low	

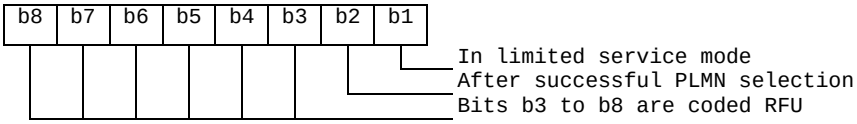
Access Conditions:

READ	CHV1
UPDATE	ADM
INVALIDATE	ADM
REHABILITATE	ADM

Bytes	Description	M/O	Length
1	Investigation scan flags	M	1 bytes

- Investigation scan flags

  Coding:



  A '1' in a bit position indicates that the investigation scan shall be performed for the condition corresponding to that bit position and a '0' that it shall not be performed.

  If this elementary file is not present, no investigation scan shall be performed.

  The RFU bits shall be coded with '0'.

***** Next modified section *****

11 Application protocol

When involved in GSM administrative management operations, the SIM interfaces with appropriate terminal equipment. These operations are outside the scope of this standard.

When involved in GSM network operations the SIM interfaces with an ME with which messages are exchanged. A message can be a command or a response.

- A GSM command/response pair is a sequence consisting of a command and the associated response.
- A GSM procedure consists of one or more GSM command/response pairs which are used to perform all or part of an application-oriented task. A procedure shall be considered as a whole, that is to say that the corresponding task is achieved if and only if the procedure is completed. The ME shall ensure that, when operated according to the manufacturer's manual, any unspecified interruption of the sequence of command/response pairs which realize the procedure, leads to the abortion of the procedure itself.
- A GSM session of the SIM in the GSM application is the interval of time starting at the completion of the SIM initialization procedure and ending either with the start of the GSM session termination procedure, or at the first instant the link between the SIM and the ME is interrupted.

During the GSM network operation phase, the ME plays the role of the master and the SIM plays the role of the slave.

The SIM shall execute all GSM and SIM Application Toolkit commands or procedures in such a way as not to jeopardise, or cause suspension, of service provisioning to the user. This could occur if, for example, execution of the RUN GSM ALGORITHM is delayed in such a way which would result in the network denying or suspending service to the user.

Some procedures at the SIM/ME interface require MMI interactions. The descriptions hereafter do not intend to infer any specific implementation of the corresponding MMI. When MMI interaction is required, it is marked "MMI" in the list given below.

Some procedures are not clearly user dependent. They are directly caused by the interaction of the MS and the network. Such procedures are marked "NET" in the list given below.

Some procedures are automatically initiated by the ME. They are marked "ME" in the list given below.

The list of procedures at the SIM/ME interface in GSM network operation is as follows:

General Procedures:

- Reading an EF	ME
- Updating an EF	ME
- Increasing an EF	ME

SIM management procedures:

- SIM initialization	ME
- GSM session termination	ME
- Emergency call codes request	ME
- Extended language preference request	ME
- Language preference request	ME
- Administrative information request	ME
- SIM service table request	ME
- SIM phase request	ME

CHV related procedures:

- CHV verification	MMI
- CHV value substitution	MMI
- CHV disabling	MMI
- CHV enabling	MMI
- CHV unblocking	MMI

GSM security related procedures:

- GSM algorithms computation	NET
- IMSI request	NET
- Access control information request	NET
- HPLMN search period request	NET
~~- Investigation PLMN scan request~~	~~NET~~
- Location Information	NET
- Cipher key	NET
- BCCH information	NET
~~- CPBCCH information~~	~~NET~~
- Forbidden PLMN information	NET
- LSA information	NET

Subscription related procedures:

-	Dialling Numbers (ADN, FDN, MSISDN, LND, SDN, BDN)	MMI/ME
-	Short messages (SMS)	MMI
-	Advice of Charge (AoC)	MMI
-	Capability Configuration Parameters (CCP)	MMI
-	PLMN Selector	MMI
-	HPLMN Selector with Access Technology	MMI
-	User controlled PLMN Selector with Access Technology	MMI
-	Operator controlled PLMN Selector with Access Technology	MMI
-	Investigation Scan request	NET
-	CPBCCH information	NET
-	Cell Broadcast Message Identifier (CBMI)	MMI
-	Group Identifier Level 1 (GID1)	MMI/ME
-	Group Identifier Level 2 (GID2)	MMI/ME
-	Service Provider Name (SPN)	ME
-	Voice Group Call Service (VGCS)	MMI/ME
-	Voice Broadcast Service (VBS)	MMI/ME
-	Enhanced Multi Level Pre-emption and Priority (eMLPP)	MMI/ME
-	Depersonalisation Control Keys	ME
-	Short message status reports (SMSR)	MMI
-	Network's indication of alerting	ME

SIM Application Toolkit related procedures:

-	Data Download via SMS-CB (CBMID)	NET
-	Data Download via SMS-PP	NET
-	Menu selection	MMI
-	Call Control	MMI/ME/NET
-	Proactive SIM	MMI/ME/NET
-	Mobile Originated Short Message control by SIM	MMI/ME/NET
-	Image Request	MMI/ME

The procedures listed in subclause 11.2 are basically required for execution of the procedures in subclauses 11.3, 11.4 and 11.5. The procedures listed in subclauses 11.3 and 11.4 are mandatory (see GSM 02.17 [6]). The procedures listed in 11.5 are only executable if the associated services, which are optional, are provided in the SIM. However, if the procedures are implemented, it shall be in accordance with subclause 11.5.

If a procedure is related to a specific service indicated in the SIM Service Table, it shall only be executed if the corresponding bits denote this service as "allocated and activated" (see subclause 10.3.7). In all other cases this procedure shall not start.

***** Next modified section *****

11.2.1 SIM initialization

After SIM activation (see subclause 4.3.2), the ME selects the Dedicated File DF_{GSM} and optionally attempts to select EF_{ECC}. If EF_{ECC} is available, the ME requests the emergency call codes.

The ME requests the Extended Language Preference. The ME only requests the Language Preference (EF_{LP}) if at least one of the following conditions holds:

- EF_{ELP} is not available;
- EF_{ELP} does not contain an entry corresponding to a language specified in ISO 639[30];
- the ME does not support any of the languages in EF_{ELP}.

If both EFs are not available or none of the languages in the EFs is supported then the ME selects a default language. It then runs the CHV1 verification procedure.

If the CHV1 verification procedure is performed successfully, the ME then runs the SIM Phase request procedure.

For a SIM requiring PROFILE DOWNLOAD, then the ME shall perform the PROFILE DOWNLOAD procedure in accordance with GSM 11.14 [27]. When BDN is enabled on a SIM, the PROFILE DOWNLOAD procedure is used to

indicate to the SIM whether the ME supports the "Call Control by SIM" facility. If so, then the SIM is able to allow the REHABILITATE command to rehabilitate EF_{IMSI} and EF_{LOCI}.

If the ME detects a SIM of Phase 1, it shall omit the following procedures relating to FDN and continue with the Administrative Information request. The ME may omit procedures not defined in Phase 1 such as HPLMN Search Period request.

For a SIM of Phase 2 or greater, GSM operation shall only start if one of the two following conditions is fulfilled:

- if EF_{IMSI} and EF_{LOCI} are not invalidated, the GSM operation shall start immediately;
- if EF_{IMSI} and EF_{LOCI} are invalidated, the ME rehabilitates these two EFs.

  MEs without FDN capability but with Call control by SIM facility shall not rehabilitate EF_{IMSI} and/or EF_{LOCI} if FDN is enabled in the SIM and therefore have no access to these EFs. GSM operation will therefore be prohibited;

  MEs without FDN capability and without Call control by SIM facility shall not rehabilitate EF_{IMSI} and/or EF_{LOCI} and therefore have no access to these EFs. GSM operation will therefore be prohibited.

  It is these mechanisms which are used for control of services n°3 and n°31 by the use of SIMs for these services which always invalidate these two EFs at least before the next command following selection of either EF.

NOTE: When FDN and BDN are both enabled, and if the ME supports FDN but does not support the Call control by SIM facility, the rehabilitation of EF_{IMSI} and EF_{LOCI} will not be successful because of a restriction mechanism of the REHABILITATE command linked to the BDN feature.

When EF_{IMSI} and EF_{LOCI} are successfully rehabilitated, if the FDN capability procedure indicates that:

i) FDN is allocated and activated in the SIM; and FDN is set "enabled", i.e. ADN "invalidated" or not activated; and the ME supports FDN;

or ii) FDN is allocated and activated in the SIM; and FDN is set "disabled", i.e. ADN "not invalidated";

or iii) FDN is not allocated or not activated;

then GSM operation shall start.

In all other cases GSM operation shall not start.

Afterwards, the ME runs the following procedures:

- Administrative Information request;
- SIM Service Table request;
- IMSI request;
- Access Control request;
- HPLMN Search Period request;
- Investigation ~~PLMN~~ scan request;
- PLMN selector request;
- HPLMN Selector with Access Technology request;
- User controlled PLMN Selector with Access Technology request;
- Operator controlled PLMN Selector with Access Technology request;
- Location Information request;
- Cipher Key request;
- BCCH information request;
- CPBCCH information request;
- Forbidden PLMN request;
- LSA information request;
- CBMID request;
- Depersonalisation Control Keys request;
- Network's indication of alerting request.

If the SIM service table indicates that the proactive SIM service is active, then from this point onwards, the ME, if it supports the proactive SIM service, shall send STATUS commands at least every 30s during idle mode as well as during calls, in order to enable the proactive SIM to respond with a command. The SIM may send proactive commands

(see GSM 11.14 [27]), including a command to change the interval between STATUS commands from the ME, when in idle mode. In-call requirements for STATUS for SIM Presence Detection are unchanged by this command.

After the SIM initialization has been completed successfully, the MS is ready for a GSM session.

11.2.2 GSM session termination

NOTE 1: This procedure is not to be confused with the deactivation procedure in subclause 4.3.2.

The GSM session is terminated by the ME as follows:

The ME runs all the procedures which are necessary to transfer the following subscriber related information to the SIM:

- Location Information update;
- Cipher Key update;
- BCCH information update;
- CPBCCH information update;
- Advice of Charge increase;
- Forbidden PLMN update.

As soon as the SIM indicates that these procedures are completed, the ME/SIM link may be deactivated.

Finally, the ME deletes all these subscriber related information elements from its memory.

NOTE 2: If the ME has already updated any of the subscriber related information during the GSM Session, and the value has not changed until GSM session termination, the ME may omit the respective update procedure.

***** Next modified section *****

11. ~~4.~~ 5.10 User controlled PLMN Selector with Access Technology

Requirement: Service n°43"allocated and activated".
Request: The ME performs the reading procedure with $EF_{PLMNwACT}$.
Update: The ME performs the updating procedure with EFPLMNwACT.

11. ~~4.~~ 5.11 Operator controlled PLMN Selector with Access Technology

Requirement: Service n°44 "allocated and activated".
Request: The ME performs the reading procedure with $EF_{OPLMNwACT}$.
~~Update: The ME performs the updating procedure with $EF_{OPLMNwACT}$.~~

11. ~~4.~~ 5.12 HPLMN Selector with Access Technology

Requirement: Service n°45 "allocated and activated".
Request: The ME performs the reading procedure with $EF_{HPLMNACT}$.

11. ~~4.~~ 5.13 CPBCCH information

Requirement: Service n°46 "allocated and activated".
Request: The ME performs the reading procedure with EF_{CPBCCH}.
Update: The ME performs the updating procedure with EF_{CPBCCH}.

11. ~~4.~~ 5.14 Investigation ~~PLMN~~ Scan ~~Request~~

Requirement: Service n°47 "allocated and activated".
Request: The ME performs the reading procedure with $EF_{InvScan}$.

***** Next modified section *****

Annex D (informative): Suggested contents of the EFs at pre-personalization

If EFs have an unassigned value, it may not be clear from the main text what this value should be. This annex suggests values in these cases.

File Identification	Description	Value
'2FE2'	ICC identification	operator dependant (see 10.1.1)
'2F05'	Extended Language preference	'FF…FF'
'6F05'	Language preference	'FF'
'6F07'	IMSI	operator dependant (see 10.3.2)
'6F20'	Ciphering key Kc	'FF...FF07'
'6F30'	PLMN selector	'FF...FF'
'6F31'	HPLMN search period	'FF'
'6F37'	ACM maximum value	'000000' (see note 1)
'6F38'	SIM service table	operator dependant (see 10.3.7)
'6F39'	Accumulated call meter	'000000'
'6F3E'	Group identifier level 1	operator dependant
'6F3F'	Group identifier level 2	operator dependant
'6F41'	PUCT	'FFFFFF0000'
'6F45'	CBMI	'FF...FF'
'6F46'	Service provider name	'FF...FF'
'6F48'	CBMID	'FF...FF'
'6F49'	Service Dialling Numbers	'FF...FF'
'6F74'	BCCH information	'FF...FF'
'6F78'	Access control class	operator dependant (see 10.1.12)
'6F7B'	Forbidden PLMNs	'FF...FF'
'6F7E	Location information	'FFFFFFFF xxFxxx 0000 FF 01' (see note 2)
'6FAD'	Administrative data	operator dependant (see 10.3.15)
'6FAE'	Phase identification	see 10.3.16
'6F3A'	Abbreviated dialling numbers	'FF...FF'
'6F3B'	Fixed dialling numbers	'FF...FF'
'6F3C'	Short messages	'00FF...FF'
'6F3D'	Capability configuration parameters	'FF...FF'
'6F40'	MSISDN storage	'FF...FF'
'6F42'	SMS parameters	'FF...FF'
'6F43'	SMS status	'FF...FF'
'6F44'	Last number dialled	'FF...FF'
'6F47'	Short message status reports	'00FF…FF'
'6F4A'	Extension 1	'FF...FF'
'6F4B'	Extension 2	'FF...FF'
'6F4C'	Extension 3	'FF...FF'
'6F4D'	Barred dialling numbers	'FF...FF'
'6F4E'	Extension 4	'FF...FF'
'6F4F'	Extended capability configuration parameters	'FF...FF'
'6F51'	Network's indication of alerting	'FF...FF'
'6F52'	GPRS Ciphering key KcGPRS	'FF...FF07'
'6F53'	GPRS Location Information	'FFFFFFFF FFFFFF xxFxxx 0000 FF 01'
'6F54'	SetUpMenu Elements	operator dependant (see 10.3.34)
'6F58'	Comparison method information	'FF…FF'
'6F60'	User controlled PLMN Selector with Access Technology	~~'00...00'~~ 'FFFFFF0000..FFFFFF0000'
'6F61'	Operator controlled PLMN Selector with Access Technology	~~'00...00'~~ 'FFFFFF0000..FFFFFF0000'
'6F62'	HPLMN Selector with Access Technology	~~'FF...FF'~~ 'FFFFFF0000..FFFFFF0000'
'6F63'	CPBCCH information	'~~00~~FF..FF'
'6F64'	Investigation ~~PLMN~~ Scan	'00'
'4F20'	Image data	'00FF...FF'
'4F30'	SoLSA Access Indicator)	'00FF...FF'
'4F31'	SoLSA LSA List	'FF...FF'

NOTE 1: The value '000000' means that ACMmax is not valid, i.e. there is no restriction on the ACM. When assigning a value to ACMmax, care should be taken not to use values too close to the maximum possible value 'FFFFFF', because the INCREASE command does not update EF_{ACM} if the units to be added would exceed 'FFFFFF'. This could affect the call termination procedure of the Advice of Charge function.

NOTE 2: xxFxxx stands for any valid MCC and MNC, coded according to GSM 04.08 [15].

***** Next modified section *****

Annex I (informative): EF changes via Data Download or SIM Toolkit applications

This annex defines if changing the content of an EF by the network (e.g. by sending an SMS), or by SIM Toolkit Application (e.g. by using the SIM API), is advisable. Updating of certain EFs, "over the air" such as EF_{ACC} could result in unpredictable behaviour of the MS; these are marked "Caution" in the table below. Certain EFs are marked "No"; under no circumstances should "over the air" changes of these EFs be considered.

File identification	Description	Change advised
'2F05'	Extended Language preference	Yes
'2FE2'	ICC identification	No
'4F20'	Image data	Yes
'4Fxx'	Image Instance data Files	Yes
'6F05'	Language preference	Yes
'6F07'	IMSI	Caution (Note 1)
'6F20'	Ciphering key Kc	No
'6F2C'	De-personalization Control Keys	Caution
'6F30'	PLMN selector	Caution
'6F31'	HPLMN search period	Caution
'6F32'	Co-operative network	Caution
'6F37'	ACM maximum value	Yes
'6F38'	SIM service table	Caution
'6F39'	Accumulated call meter	Yes
'6F3A'	Abbreviated dialling numbers	Yes
'6F3B'	Fixed dialling numbers	Yes
'6F3C'	Short messages	Yes
'6F3D'	Capability configuration parameters	Yes
'6F3E'	Group identifier level 1	Yes
'6F3F'	Group identifier level 2	Yes
'6F40'	MSISDN storage	Yes
'6F41'	PUCT	Yes
'6F42'	SMS parameters	Yes
'6F43'	SMS status	Yes
'6F44'	Last number dialled	Yes
'6F45'	CBMI	Caution
'6F46'	Service provider name	Yes
'6F47'	Short message status reports	Yes
'6F48'	CBMID	Yes
'6F49'	Service Dialling Numbers	Yes
'6F4A'	Extension 1	Yes
'6F4B'	Extension 2	Yes
'6F4C'	Extension 3	Yes
'6F4D'	Barred dialling numbers	Yes
'6F4E'	Extension 4	Yes
'6F50'	CBMIR	Yes
'6F51'	Network's indication of alerting	Caution
'6F52'	GPRS Ciphering key KcGPRS	No
'6F53'	GPRS Location Information	Caution
'6F58'	Comparison method information	
'6F60'	User controlled PLMN Selector with Access Technology	~~Caution~~ see TS 22.011
'6F61'	Operator controlled PLMN Selector with Access Technology	Caution
'6F62'	HPLMN Selector with Access Technology	Caution
'6F63'	CPBCCH information	~~Caution~~No
'6F64'	Investigation ~~PLMN~~ scan	Caution
'6F74'	BCCH information	No
'6F78'	Access control class	Caution
'6F7B'	Forbidden PLMNs	Caution
'6F7E'	Location information	No (Note 1)
'6FAD'	Administrative data	Caution
'6FAE'	Phase identification	Caution

Continued.....

File identification	Description	Change advised
'6FB1'	Voice Group Call Service	Yes
'6FB2'	Voice Group Call Service Status	Yes
'6FB3'	Voice Broadcast Service	Yes
'6FB4'	Voice Broadcast Service Status	Yes
'6FB5'	Enhanced Multi Level Pre-emption and Priority	Yes
'6FB6'	Automatic Answer for eMLPP Service	Yes
'6FB7'	Emergency Call Codes	Caution
NOTE1: If EF_{IMSI} is changed, the SIM should issue REFRESH as defined in GSM 11.14 [27] and update EF_{LOCI} accordingly.		

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Visby, Sweden, 22 - 24 May, 2000

Tdoc 9-00-0269

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

11.11	CR	A119	Current Version:	8.2.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	SMG #32	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)*	(U)SIM	X	ME	X	UTRAN / Radio		Core Network	

Source:	Ericsson
Date:	24/05/00
Subject:	PLMN Selection additions
Work item:	EDGE Compact and support for EGPRS in ANSI-136 networks

Category: *(only one category shall be marked with an X)*

F	Correction	X
A	Corresponds to a correction in an earlier release	
B	Addition of feature	
C	Functional modification of feature	
D	Editorial modification	

Release:

Phase 2	
Release 96	
Release 97	
Release 98	
Release 99	X
Release 00	

Reason for change: Addition of a file to store the last registered PLMN with access technology

Clauses affected: See attached CR

Other specs affected:

Other 3G core specifications		→ List of CRs:
Other GSM core specifications		→ List of CRs:
MS test specifications		→ List of CRs:
BSS test specifications		→ List of CRs:
O&M specifications		→ List of CRs:

Other comments:


help.doc

<--------- double-click here for help and instructions on how to create a CR.

2 Normative 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.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.
- For this Release 1998 document, references to GSM documents are for Release 1998 versions (version 7.x.y).

[1] GSM 01.02: "Digital cellular telecommunications system (Phase 2+); General description of a GSM Public Land Mobile Network (PLMN)".

[2] GSM 01.04: "Digital cellular telecommunications system (Phase 2+); Abbreviations and acronyms".

[3] GSM 02.07: "Digital cellular telecommunications system (Phase 2+); Mobile Stations (MS) features".

[4] GSM 02.09: "Digital cellular telecommunications system (Phase 2+); Security aspects".

[5] GSM 02.11: "Digital cellular telecommunications system (Phase 2+); Service accessibility".

[6] GSM 02.17: "Digital cellular telecommunications system (Phase 2+); Subscriber Identity Modules (SIM) Functional characteristics".

[7] GSM 02.24: "Digital cellular telecommunications system (Phase 2+); Description of Charge Advice Information (CAI)".

[8] GSM 02.30: "Digital cellular telecommunications system (Phase 2+); Man-Machine Interface (MMI) of the Mobile Station (MS)".

[9] GSM 02.86: "Digital cellular telecommunications system (Phase 2+); Advice of charge (AoC) Supplementary Services - Stage 1".

[10] GSM 03.03: "Digital cellular telecommunications system (Phase 2+); Numbering, addressing and identification".

[11] GSM 03.20: "Digital cellular telecommunications system (Phase 2+); Security related network functions".

[12] GSM 03.38: "Digital cellular telecommunications system (Phase 2+); Alphabets and language-specific information".

[13] GSM 03.40: "Digital cellular telecommunications system (Phase 2+); Technical realization of the Short Message Service (SMS) Point-to-Point (PP)".

[14] GSM 03.41: "Digital cellular telecommunications system (Phase 2+); Technical realization of Short Message Service Cell Broadcast (SMSCB)".

[15] GSM 04.08: "Digital cellular telecommunications system (Phase 2+); Mobile radio interface layer 3 specification".

[16] GSM 04.11: "Digital cellular telecommunications system (Phase 2+); Point-to-Point (PP) Short Message Service (SMS) support on mobile radio interface".

[17] GSM 09.91: "Digital cellular telecommunications system (Phase 2+); Interworking aspects of the Subscriber Identity Module - Mobile Equipment (SIM - ME) interface between Phase 1 and Phase 2".

[18] CCITT Recommendation E.118: "The international telecommunication charge card".

[19] CCITT Recommendation E.164: "Numbering plan for the ISDN era".

[20] CCITT Recommendation T.50: "International Alphabet No. 5". (ISO 646: 1983, "Information processing - ISO 7-bits coded characters set for information interchange".)

[21] ISO/IEC 7810 (1995): "Identification cards - Physical characteristics".

[22] ISO/IEC 7811-1 (1995): "Identification cards - Recording technique - Part 1: Embossing".

[23] ISO/IEC 7811-3 (1995): "Identification cards - Recording technique - Part 3: Location of embossed characters on ID-1 cards".

[24] ISO/IEC 7816-1 (1998): "Identification cards - Integrated circuit(s) cards with contacts, Part 1: Physical characteristics".

[25] ISO/IEC 7816-2 (1988): "Identification cards - Integrated circuit(s) cards with contacts, Part 2: Dimensions and locations of the contacts".

[26] ISO/IEC 7816-3 (1997): "Identification cards - Integrated circuit(s) cards with contacts, Part 3: Electronic signals and transmission protocols".

[27] 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".

[28] GSM 11.12: "Digital cellular telecommunications system (Phase 2); Specification of the 3 Volt Subscriber Identity Module - Mobile Equipment (SIM - ME) interface".

[29] GSM 02.22: "Digital cellular telecommunications system (Phase 2+); Personalization of GSM Mobile Equipment (ME) Mobile functionality specification".

[30] ISO 639 (1988): "Code for the representation of names of languages".

[31] ISO/IEC 10646-1 (1993): "Information technology -- Universal Multiple-Octet Coded Character Set (UCS) -- Part 1: Architecture and Basic Multilingual Plane".

[32] GSM 03.60: "Digital cellular telecommunications system (Phase 2+); General Packet Radio Service (GPRS); Service description; Stage 2".

[33] GSM 03.73: "Digital cellular telecommunications system (Phase 2+); Support of Localised Service Area (SoLSA); Service description; Stage 2".

[34] GSM 11.19: "Digital cellular telecommunications system (Phase 2+); Specification of the Cordless Telephony System Subscriber Identity Module for both Fixed Part and Mobile Station".

[35] ISO/IEC 7816-4 (1995): "Identification cards - Integrated circuit(s) cards with contacts, Part 4: Interindustry commands for interchange".

[36] TIA/EIA-136-005: "Introduction, Identification, and Semi-Permanent Memory, November 1998".

[37] TIA/EIA-136-123-A: "Digital Control Channel Layer 3, November 1998".

[38] TIA/EIA-136-140-A: "Analogue Control Channel, November 1998".

[39] TIA/EIA-136-510-A: "Authentication, Encryption of Signaling Information/User Data and Privacy, November 1998".

[40] ANSI TIA/EIA-41: "Cellular Radio Telecommunications Intersystem Operations".

[41] EIA/TIA-553: "Mobile Station-Land Station Compatibility Specification".

[42] GSM 02.67: "Digital cellular telecommunications system (Phase 2+); Enhanced Multi Level Pre-emption and Priority (eMLPP) Services - Stage 1".

[43] TR45 AHAG "Common Cryptographic Algorithms, Revision C," October 27, 1998

[44] ETS 300.812: "Terrestrial Trunk Radio; Specification of the Subscriber Identity Module - Mobile Equipment (SIM - ME) interface".

[45] GSM 03.22: " Digital cellular telecommunications system (Phase 2+); Functions related to Mobile Station (MS) in idle mode and group receive mode".

[46] GSM 05.05: " Digital cellular telecommunications system (Phase 2+); Radio transmission and reception".

[47] TS 24.008: "Mobile Radio Interface Layer 3 specification, Core Network Protocols".

[48] GSM 04.18: " Digital cellular telecommunications system (Phase 2+); Mobile radio interface layer 3 specification , Radio Resource Control Protocol".

[49] GSM 04.60: "Digital cellular telecommunications system (Phase 2+); General Packet Radio Service (GPRS); Mobile Station (MS) - Base Station System (BSS) interface; Radio Link Control/ Medium Access Control (RLC/MAC) protocol".

[50] TS 23.122: "Technical Specification Group Core Network; NAS Functions related to Mobile Station (MS) in idle mode ".

***** Next modified section *****

10.3.7 EF_{SST} (SIM service table)

This EF indicates which services are allocated, and whether, if allocated, the service is activated. If a service is not allocated or not activated in the SIM, the ME shall not select this service.

Identifier: '6F38'	Structure: transparent	Mandatory
File size: X bytes, X ≥ 2	Update activity: low	

Access Conditions:

READ	CHV1
UPDATE	ADM
INVALIDATE	ADM
REHABILITATE	ADM

Bytes	Description	M/O	Length
1	Services n°1 to n°4	M	1 byte
2	Services n°5 to n°8	M	1 byte
3	Services n°9 to n°12	O	1 byte
4	Services n°13 to n°16	O	1 byte
5	Services n°17 to n°20	O	1 byte
6	Services n°21 to n°24	O	1 byte
7	Services n°25 to n°28	O	1 byte
8	Services n°29 to n°32	O	1 byte
etc.			
X	Services (4X-3) to (4X)	O	1 byte

-Services

Contents:	Service n°1 :	CHV1 disable function
	Service n°2 :	Abbreviated Dialling Numbers (ADN)
	Service n°3 :	Fixed Dialling Numbers (FDN)
	Service n°4 :	Short Message Storage (SMS)
	Service n°5 :	Advice of Charge (AoC)
	Service n°6 :	Capability Configuration Parameters (CCP)
	Service n°7 :	PLMN selector
	Service n°8 :	RFU
	Service n°9 :	MSISDN
	Service n°10:	Extension1
	Service n°11:	Extension2
	Service n°12:	SMS Parameters
	Service n°13:	Last Number Dialled (LND)
	Service n°14:	Cell Broadcast Message Identifier
	Service n°15:	Group Identifier Level 1
	Service n°16:	Group Identifier Level 2
	Service n°17:	Service Provider Name
	Service n°18:	Service Dialling Numbers (SDN)
	Service n°19:	Extension3
	Service n°20:	RFU
	Service n°21:	VGCS Group Identifier List (EF_{VGCS} and EF_{VGCSS})
	Service n°22:	VBS Group Identifier List (EF_{VBS} and EF_{VBSS})
	Service n°23:	enhanced Multi-Level Precedence and Pre-emption Service
	Service n°24:	Automatic Answer for eMLPP
	Service n°25:	Data download via SMS-CB
	Service n°26:	Data download via SMS-PP
	Service n°27:	Menu selection
	Service n°28:	Call control
	Service n°29:	Proactive SIM
	Service n°30:	Cell Broadcast Message Identifier Ranges
	Service n°31:	Barred Dialling Numbers (BDN)
	Service n°32:	Extension4
	Service n°33:	De-personalization Control Keys
	Service n°34:	Co-operative Network List
	Service n°35:	Short Message Status Reports
	Service n°36:	Network's indication of alerting in the MS
	Service n°37:	Mobile Originated Short Message control by SIM
	Service n°38:	GPRS
	Service n°39:	Image (IMG)
	Service n°40:	SoLSA (Support of Local Service Area)
	Service n°41:	USSD string data object supported in Call Control
	Service n°42:	RUN AT COMMAND command
	Service n°43:	PLMN Selector with Access Technology
	Service n° 44:	OPLMN Selector with Access Technology
	Service n° 45	HPLMN Access Technology
	Service n° 46:	CPBCCH Information
	Service n° 47:	Investigation Scan
	Service n°48:	Extended Capability Configuration Parameters
	Service n°49	RPLMN last used Access Technology

For a phase 2 SIM, the EF shall contain at least two bytes which correspond to the Phase 1 services. Further bytes may be included, but if the EF includes an optional byte, then it is mandatory for the EF to also contain all bytes before that byte. Other services are possible in the future and will be coded on further bytes in the EF. The coding falls under the responsibility of ETSI.

NOTE 1: Service N°8 was used in Phase 1 for Called Party Subaddress. To prevent any risk of incompatibility Service N°8 should not be reallocated.

NOTE 2: As the BDN service relies on the Call Control feature, service n°31 (BDN) should only be allocated and activated if service n°28 (Call control) is allocated and activated.

Coding:

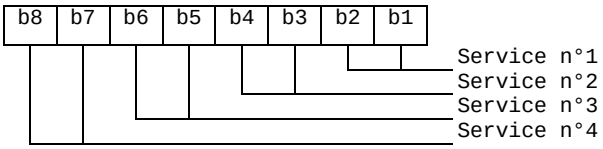
2 bits are used to code each service:
first bit = 1: service allocated
first bit = 0: service not allocated
where the first bit is b1, b3, b5 or b7;
second bit = 1: service activated
second bit = 0: service not activated
where the second bit is b2, b4, b6 or b8.

Service allocated means that the SIM has the capability to support the service. Service activated means that the service is available for the card holder (only valid if the service is allocated).

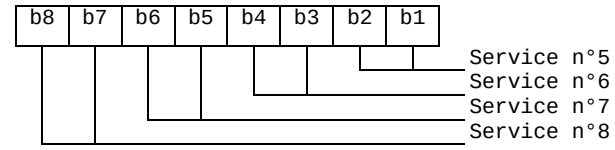
The following codings are possible:
- first bit = 0: service not allocated, second bit has no meaning;
- first bit = 1 and second bit = 0: service allocated but not activated;
- first bit = 1 and second bit = 1: service allocated and activated.

The bits for services not yet defined shall be set to RFU. For coding of RFU see subclause 9.3.

First byte:

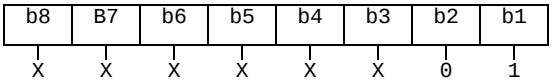


Second byte:



etc.

The following example of coding for the first byte means that service n°1 "CHV1-Disabling" is allocated but not activated:



If the SIM supports the FDN feature (FDN allocated and activated) a special mechanism shall exist in the SIM which invalidates both EF_{IMSI} and EF_{LOCI} once during each GSM session. This mechanism shall be invoked by the SIM automatically if FDN is enabled. This invalidation shall occur at least before the next command following selection of either EF. FDN is enabled when the ADN is invalidated or not activated.

If the SIM supports the BDN feature (BDN allocated and activated) a special mechanism shall exist in the SIM which invalidates both EF_{IMSI} and EF_{LOCI} once during each GSM session and which forbids the REHABILITATE command to rehabilitate both EF_{IMSI} and EF_{LOCI} until the PROFILE DOWNLOAD procedure is performed indicating that the ME supports the "Call control by SIM" facility. This mechanism shall be invoked by the SIM automatically if BDN is enabled. The invalidation of EF_{IMSI} and EF_{LOCI} shall occur at least before the next command following selection of either EF. BDN is enabled when the EF_{BDN} is not invalidated.

***** Next modified section *****

10.3.xx $EF_{RPLMNACT}$ (RPLMN Last used Access Technology)

This EF contains the last used access technology for the Registered PLMN, RPLMN. (see TS 23.122 [50]). This EF shall contain only one access technology.

NOTE: One access technology means that only one bit is set in the entire field.

If this EF does not exist on the SIM then the MS shall assume that RPLMN access technology is GSM.

Identifier: '6Fxx'	Structure: transparent	Optional
File size: 2+X~~2~~ bytes	Update activity: High~~low~~	

Access Conditions:

READ	CHV1
UPDATE	CHV1
INVALIDATE	ADM
REHABILITATE	ADM

Bytes	Description	M/O	Length
1to2	Access Technology of RPLMN	M	2 bytes
3 to 2+X~~1to2~~	~~Access Technology of RPLMN~~ RFU	O~~M~~	X~~2~~ bytes

- Access Technology

  Coding:

  - See $EF_{PLMNselwACT}$ for coding.

***** Next modified section *****

11 Application protocol

When involved in GSM administrative management operations, the SIM interfaces with appropriate terminal equipment. These operations are outside the scope of this standard.

When involved in GSM network operations the SIM interfaces with an ME with which messages are exchanged. A message can be a command or a response.

- A GSM command/response pair is a sequence consisting of a command and the associated response.
- A GSM procedure consists of one or more GSM command/response pairs which are used to perform all or part of an application-oriented task. A procedure shall be considered as a whole, that is to say that the corresponding task is achieved if and only if the procedure is completed. The ME shall ensure that, when operated according to the manufacturer's manual, any unspecified interruption of the sequence of command/response pairs which realize the procedure, leads to the abortion of the procedure itself.
- A GSM session of the SIM in the GSM application is the interval of time starting at the completion of the SIM initialization procedure and ending either with the start of the GSM session termination procedure, or at the first instant the link between the SIM and the ME is interrupted.

During the GSM network operation phase, the ME plays the role of the master and the SIM plays the role of the slave.

The SIM shall execute all GSM and SIM Application Toolkit commands or procedures in such a way as not to jeopardise, or cause suspension, of service provisioning to the user. This could occur if, for example, execution of the RUN GSM ALGORITHM is delayed in such a way which would result in the network denying or suspending service to the user.

Some procedures at the SIM/ME interface require MMI interactions. The descriptions hereafter do not intend to infer any specific implementation of the corresponding MMI. When MMI interaction is required, it is marked "MMI" in the list given below.

Some procedures are not clearly user dependent. They are directly caused by the interaction of the MS and the network. Such procedures are marked "NET" in the list given below.

Some procedures are automatically initiated by the ME. They are marked "ME" in the list given below.

The list of procedures at the SIM/ME interface in GSM network operation is as follows:

General Procedures:

- Reading an EF	ME
- Updating an EF	ME
- Increasing an EF	ME

SIM management procedures:

- SIM initialization	ME
- GSM session termination	ME
- Emergency call codes request	ME
- Extended language preference request	ME
- Language preference request	ME
- Administrative information request	ME
- SIM service table request	ME
- SIM phase request	ME

CHV related procedures:

- CHV verification	MMI
- CHV value substitution	MMI
- CHV disabling	MMI
- CHV enabling	MMI
- CHV unblocking	MMI

GSM security related procedures:

- GSM algorithms computation	NET
- IMSI request	NET
- Access control information request	NET
- HPLMN search period request	NET
- Investigation PLMN scan request	NET
- Location Information	NET
- Cipher key	NET
- BCCH information	NET
- CPBCCH information	NET
- Forbidden PLMN information	NET
- LSA information	NET

Subscription related procedures:

- Dialling Numbers (ADN, FDN, MSISDN, LND, SDN, BDN)	MMI/ME
- Short messages (SMS)	MMI
- Advice of Charge (AoC)	MMI
- Capability Configuration Parameters (CCP)	MMI
- PLMN Selector	MMI
- HPLMN Access Technology	MMI
- RPLMN last used Access Technology	MMI
- PLMN Selector with Access Technology	MMI
- OPLMN Selector with Access Technology	MMI
- Cell Broadcast Message Identifier (CBMI)	MMI
- Group Identifier Level 1 (GID1)	MMI/ME
- Group Identifier Level 2 (GID2)	MMI/ME
- Service Provider Name (SPN)	ME
- Voice Group Call Service (VGCS)	MMI/ME
- Voice Broadcast Service (VBS)	MMI/ME
- Enhanced Multi Level Pre-emption and Priority (eMLPP)	MMI/ME
- Depersonalisation Control Keys	ME
- Short message status reports (SMSR)	MMI
- Network's indication of alerting	ME

SIM Application Toolkit related procedures:

- Data Download via SMS-CB (CBMID)	NET

-	Data Download via SMS-PP	NET
-	Menu selection	MMI
-	Call Control	MMI/ME/NET
-	Proactive SIM	MMI/ME/NET
-	Mobile Originated Short Message control by SIM	MMI/ME/NET
-	Image Request	MMI/ME

The procedures listed in subclause 11.2 are basically required for execution of the procedures in subclauses 11.3, 11.4 and 11.5. The procedures listed in subclauses 11.3 and 11.4 are mandatory (see GSM 02.17 [6]). The procedures listed in 11.5 are only executable if the associated services, which are optional, are provided in the SIM. However, if the procedures are implemented, it shall be in accordance with subclause 11.5.

If a procedure is related to a specific service indicated in the SIM Service Table, it shall only be executed if the corresponding bits denote this service as "allocated and activated" (see subclause 10.3.7). In all other cases this procedure shall not start.

***** Next modified section *****

11.2.1 SIM initialization

After SIM activation (see subclause 4.3.2), the ME selects the Dedicated File DF_{GSM} and optionally attempts to select EF_{ECC}. If EF_{ECC} is available, the ME requests the emergency call codes.

The ME requests the Extended Language Preference. The ME only requests the Language Preference (EF_{LP}) if at least one of the following conditions holds:

- EF_{ELP} is not available;
- EF_{ELP} does not contain an entry corresponding to a language specified in ISO 639[30];
- the ME does not support any of the languages in EF_{ELP}.

If both EFs are not available or none of the languages in the EFs is supported then the ME selects a default language. It then runs the CHV1 verification procedure.

If the CHV1 verification procedure is performed successfully, the ME then runs the SIM Phase request procedure.

For a SIM requiring PROFILE DOWNLOAD, then the ME shall perform the PROFILE DOWNLOAD procedure in accordance with GSM 11.14 [27]. When BDN is enabled on a SIM, the PROFILE DOWNLOAD procedure is used to indicate to the SIM whether the ME supports the "Call Control by SIM" facility. If so, then the SIM is able to allow the REHABILITATE command to rehabilitate EF_{IMSI} and EF_{LOCI}.

If the ME detects a SIM of Phase 1, it shall omit the following procedures relating to FDN and continue with the Administrative Information request. The ME may omit procedures not defined in Phase 1 such as HPLMN Search Period request.

For a SIM of Phase 2 or greater, GSM operation shall only start if one of the two following conditions is fulfilled:

- if EF_{IMSI} and EF_{LOCI} are not invalidated, the GSM operation shall start immediately;

- if EF_{IMSI} and EF_{LOCI} are invalidated, the ME rehabilitates these two EFs.

  MEs without FDN capability but with Call control by SIM facility shall not rehabilitate EF_{IMSI} and/or EF_{LOCI} if FDN is enabled in the SIM and therefore have no access to these EFs. GSM operation will therefore be prohibited;

  MEs without FDN capability and without Call control by SIM facility shall not rehabilitate EF_{IMSI} and/or EF_{LOCI} and therefore have no access to these EFs. GSM operation will therefore be prohibited.

  It is these mechanisms which are used for control of services n°3 and n°31 by the use of SIMs for these services which always invalidate these two EFs at least before the next command following selection of either EF.

NOTE: When FDN and BDN are both enabled, and if the ME supports FDN but does not support the Call control by SIM facility, the rehabilitation of EF_{IMSI} and EF_{LOCI} will not be successful because of a restriction mechanism of the REHABILITATE command linked to the BDN feature.

When EF_{IMSI} and EF_{LOCI} are successfully rehabilitated, if the FDN capability procedure indicates that:

i) FDN is allocated and activated in the SIM; and FDN is set "enabled", i.e. ADN "invalidated" or not activated; and the ME supports FDN;

or ii) FDN is allocated and activated in the SIM; and FDN is set "disabled", i.e. ADN "not invalidated";

or iii) FDN is not allocated or not activated;

then GSM operation shall start.

In all other cases GSM operation shall not start.

Afterwards, the ME runs the following procedures:

- Administrative Information request;
- SIM Service Table request;
- IMSI request;
- Access Control request;
- HPLMN Search Period request;
- Investigation PLMN scan request;
- PLMN selector request;
- HPLMN Access Technology request;
- RPLMN last used Access Technology request
- PLMN Selector with Access Technology request;
- OPLMN Selector with Access Technology request;
- Location Information request;
- Cipher Key request;
- BCCH information request;
- CPBCCH information request;
- Forbidden PLMN request;
- LSA information request;
- CBMID request;
- Depersonalisation Control Keys request;
- Network's indication of alerting request.

If the SIM service table indicates that the proactive SIM service is active, then from this point onwards, the ME, if it supports the proactive SIM service, shall send STATUS commands at least every 30s during idle mode as well as during calls, in order to enable the proactive SIM to respond with a command. The SIM may send proactive commands (see GSM 11.14 [27]), including a command to change the interval between STATUS commands from the ME, when in idle mode. In-call requirements for STATUS for SIM Presence Detection are unchanged by this command.

After the SIM initialization has been completed successfully, the MS is ready for a GSM session.

11.2.2 GSM session termination

NOTE 1: This procedure is not to be confused with the deactivation procedure in subclause 4.3.2.

The GSM session is terminated by the ME as follows:

The ME runs all the procedures which are necessary to transfer the following subscriber related information to the SIM:

- Location Information update;
- Cipher Key update;
- BCCH information update;
- CPBCCH information update;
- RPLMN last used Access Technology update;
- Advice of Charge increase;
- Forbidden PLMN update.

As soon as the SIM indicates that these procedures are completed, the ME/SIM link may be deactivated.

Finally, the ME deletes all these subscriber related information elements from its memory.

NOTE 2: If the ME has already updated any of the subscriber related information during the GSM Session, and the value has not changed until GSM session termination, the ME may omit the respective update procedure.

***** Next modified section *****

11. 5.xx RPLMN last used Access Technology

Requirement: Service n°49 "allocated and activated".
Request: The ME performs the reading procedure with $EF_{RPLMNACT}$.
Update: The ME performs the updating procedure with $EF_{RPLMNACT}$.

***** Next modified section *****

Annex D (informative): Suggested contents of the EFs at pre-personalization

If EFs have an unassigned value, it may not be clear from the main text what this value should be. This annex suggests values in these cases.

File Identification	Description	Value
'2FE2'	ICC identification	operator dependant (see 10.1.1)
'2F05'	Extended Language preference	'FF…FF'
'6F05'	Language preference	'FF'
'6F07'	IMSI	operator dependant (see 10.3.2)
'6F20'	Ciphering key Kc	'FF...FF07'
'6F30'	PLMN selector	'FF...FF'
'6F31'	HPLMN search period	'FF'
'6F37'	ACM maximum value	'000000' (see note 1)
'6F38'	SIM service table	operator dependant (see 10.3.7)
'6F39'	Accumulated call meter	'000000'
'6F3E'	Group identifier level 1	operator dependant
'6F3F'	Group identifier level 2	operator dependant
'6F41'	PUCT	'FFFFFF0000'
'6F45'	CBMI	'FF...FF'
'6F46'	Service provider name	'FF...FF'
'6F48'	CBMID	'FF...FF'
'6F49'	Service Dialling Numbers	'FF...FF'
'6F74'	BCCH information	'FF...FF'
'6F78'	Access control class	operator dependant (see 10.1.12)
'6F7B'	Forbidden PLMNs	'FF...FF'
'6F7E	Location information	'FFFFFFFF xxFxxx 0000 FF 01' (see note 2)
'6FAD'	Administrative data	operator dependant (see 10.3.15)
'6FAE'	Phase identification	see 10.3.16
'6F3A'	Abbreviated dialling numbers	'FF...FF'
'6F3B'	Fixed dialling numbers	'FF...FF'
'6F3C'	Short messages	'00FF...FF'
'6F3D'	Capability configuration parameters	'FF...FF'
'6F40'	MSISDN storage	'FF...FF'
'6F42'	SMS parameters	'FF...FF'
'6F43'	SMS status	'FF...FF'
'6F44'	Last number dialled	'FF...FF'
'6F47'	Short message status reports	'00FF…FF'
'6F4A'	Extension 1	'FF...FF'
'6F4B'	Extension 2	'FF...FF'
'6F4C'	Extension 3	'FF...FF'
'6F4D'	Barred dialling numbers	'FF...FF'
'6F4E'	Extension 4	'FF...FF'
'6F4F'	Extended capability configuration parameters	'FF...FF'
'6F51'	Network's indication of alerting	'FF...FF'
'6F52'	GPRS Ciphering key KcGPRS	'FF...FF07'
'6F53'	GPRS Location Information	'FFFFFFFF FFFFFF xxFxxx 0000 FF 01'
'6F54'	SetUpMenu Elements	operator dependant (see 10.3.34)
'6F58'	Comparison method information	'FF…FF'
'6F60'	PLMN Selector with Access Technology	'00…00'
'6F61'	OPLMN Selector with Access Technology	'00…00'
'6F62'	HPLMN Access Technology	'FF…FF'
'xxxx'	RPLMN last used Access Technology	0000
'6F63'	CPBCCH information	'00'
'6F64'	Investigation Scan	'00'
'4F20'	Image data	'00FF...FF'
'4F30'	SoLSA Access Indicator)	'00FF...FF'
'4F31'	SoLSA LSA List	'FF...FF'

NOTE 1: The value '000000' means that ACMmax is not valid, i.e. there is no restriction on the ACM. When assigning a value to ACMmax, care should be taken not to use values too close to the maximum possible value 'FFFFFF', because the INCREASE command does not update EF_{ACM} if the units to be added would exceed 'FFFFFF'. This could affect the call termination procedure of the Advice of Charge function.

NOTE 2: xxFxxx stands for any valid MCC and MNC, coded according to GSM 04.08 [15].

***** Next modified section *****

Annex I (informative): EF changes via Data Download or SIM Toolkit applications

This annex defines if changing the content of an EF by the network (e.g. by sending an SMS), or by SIM Toolkit Application (e.g. by using the SIM API), is advisable. Updating of certain EFs, "over the air" such as EF_{ACC} could result in unpredictable behaviour of the MS; these are marked "Caution" in the table below. Certain EFs are marked "No"; under no circumstances should "over the air" changes of these EFs be considered.

File identification	Description	Change advised
'2F05'	Extended Language preference	Yes
'2FE2'	ICC identification	No
'4F20'	Image data	Yes
'4Fxx'	Image Instance data Files	Yes
'6F05'	Language preference	Yes
'6F07'	IMSI	Caution (Note 1)
'6F20'	Ciphering key Kc	No
'6F2C'	De-personalization Control Keys	Caution
'6F30'	PLMN selector	Caution
'6F31'	HPLMN search period	Caution
'6F32'	Co-operative network	Caution
'6F37'	ACM maximum value	Yes
'6F38'	SIM service table	Caution
'6F39'	Accumulated call meter	Yes
'6F3A'	Abbreviated dialling numbers	Yes
'6F3B'	Fixed dialling numbers	Yes
'6F3C'	Short messages	Yes
'6F3D'	Capability configuration parameters	Yes
'6F3E'	Group identifier level 1	Yes
'6F3F'	Group identifier level 2	Yes
'6F40'	MSISDN storage	Yes
'6F41'	PUCT	Yes
'6F42'	SMS parameters	Yes
'6F43'	SMS status	Yes
'6F44'	Last number dialled	Yes
'6F45'	CBMI	Caution
'6F46'	Service provider name	Yes
'6F47'	Short message status reports	Yes
'6F48'	CBMID	Yes
'6F49'	Service Dialling Numbers	Yes
'6F4A'	Extension 1	Yes
'6F4B'	Extension 2	Yes
'6F4C'	Extension 3	Yes
'6F4D'	Barred dialling numbers	Yes
'6F4E'	Extension 4	Yes
'6F50'	CBMIR	Yes
'6F51'	Network's indication of alerting	Caution
'6F52'	GPRS Ciphering key KcGPRS	No
'6F53'	GPRS Location Information	Caution
'6F58'	Comparison method information	
'6F60'	PLMN Selector with Access Technology	Caution
'6F61'	OPLMN Selector with Access Technology	Caution
'6F62'	HPLMN Access Technology	Caution
'xxxx'	RPLMN last used Access Technology	No
'6F63'	CPBCCH information	Caution
'6F64'	Investigation scan	Caution
'6F74'	BCCH information	No
'6F78'	Access control class	Caution
'6F7B'	Forbidden PLMNs	Caution
'6F7E'	Location information	No (Note 1)
'6FAD'	Administrative data	Caution
'6FAE'	Phase identification	Caution

Continued.....

File identification	Description	Change advised
'6FB1'	Voice Group Call Service	Yes
'6FB2'	Voice Group Call Service Status	Yes
'6FB3'	Voice Broadcast Service	Yes
'6FB4'	Voice Broadcast Service Status	Yes
'6FB5'	Enhanced Multi Level Pre-emption and Priority	Yes
'6FB6'	Automatic Answer for eMLPP Service	Yes
'6FB7'	Emergency Call Codes	Caution
NOTE1: If EF_{IMSI} is changed, the SIM should issue REFRESH as defined in GSM 11.14 [27] and update EF_{LOCI} accordingly.		

Tdoc T3-000271
Was T3-000253

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

31.102	CR	030	Current Version:	3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	TST-T #8	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from:* ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: *(at least one should be marked with an X)* (U)SIM [X] ME [X] UTRAN / Radio [ ] Core Network [ ]

Source: T3 **Date:** 26/05/00

Subject: PLMN Selection additions

Work item: GSM/UMTS Inter-working

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: Addition of a file to store the last registered PLMN with access technology

Clauses affected: See attached CR

Other specs affected:

Other 3G core specifications		→ List of CRs:	
Other GSM core specifications		→ List of CRs:	
MS test specifications		→ List of CRs:	
BSS test specifications		→ List of CRs:	
O&M specifications		→ List of CRs:	

Other comments:

help.doc

<--------- double-click here for help and instructions on how to create a CR.

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.

[1] 3G TS 21.111: "USIM and IC Card Requirements".

[2] 3G TS 22.011: "Service accessibility".

[3] 3G TS 22.024: "Description of Charge Advice Information (CAI)".

[4] 3G TS 22.030: "Man-Machine Interface (MMI) of the Mobile Station (MS)".

[5] 3G TS 23.038: "Alphabets and language".

[6] 3G TS 23.040: "Technical realization of the Short Message Service (SMS) Point-to-Point (PP)".

[7] 3G TS 23.060: "General Packet Radio Service (GPRS); Service description; Stage 2".

[8] 3G TS 22.067: "Enhanced Multi Level Precedence and Pre-emption service (eMLPP) - Stage 1".

[9] 3G TS 24.008: "Mobile Radio Interface Layer 3 specification".

[10] 3G TS 24.011: "Point-to-Point (PP) Short Message Service (SMS) support on mobile radio interface".

[11] 3G TS 31.101: "UICC-Terminal Interface, Physical and Logical Characteristics".

[12] 3G TS 31.111: "USIM Application Toolkit (USAT)".

[13] 3G TS 33.102: "3G Security Architecture".

[14] 3G TS 33.103: "3G Security; Integration Guidelines".

[15] 3G TS 22.086: "Advice of charge (AoC) Supplementary Services - Stage 1".

[16] 3G TS 23.041: "Technical realization of Short Message Service Cell Broadcast (SMSCB)".

[17] GSM 02.07: "Mobile Stations (MS) features".

[18] GSM 11.11: "Specification of the Subscriber Identity Module – Mobile Equipment (SIM – ME) interface".

[19] ISO 639 (1988): "Code for the representation of names of languages".

[20] ISO/IEC 7816-4 (1995): "Identification cards - Integrated circuit(s) cards with contacts, Part 4: Interindustry commands for interchange".

[21] ISO/IEC 7816-5 (1994): "Identification cards - Integrated circuit(s) cards with contacts, Part 5: Numbering system and registration procedure for application identifiers".

[22] ITU-T Recommendation E.164: "Numbering plan for the ISDN era".

[23] ITU-T Recommendation T.50: "International Alphabet No. 5". (ISO 646 (1983): "Information processing - ISO 7-bits coded characters set for information interchange").

[24] 3G TS 22.101: "Service aspects; service principles".

[25] 3G TS 23.003: "Numbering, Addressing and Identification".

[26] ISO/IEC FCD 7816-9 (1999): "Identification cards - Integrated circuit(s) cards with contacts, Part 9: Additional Interindustry commands and security attributes".

[27] 3G TS 22.022: "Personalisation of GSM Mobile Equipment (ME); Mobile functionality specification".

[28] 3G TS 23.122: “NAS Functions related to Mobile Station (MS) in idle mode”

***** Next modified section *****

4.2.8 EF_{UST} (USIM Service Table)

This EF indicates which services are available. If a service is not indicated as available in the USIM, the ME shall not select this service.

Identifier: '6F38'	Structure: transparent	Mandatory
SFI: Mandatory		
File size: X bytes, X >= 2	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	Services n°1 to n°8	M	1 byte
2	Services n°9 to n°16	O	1 byte
3	Services n°17 to n°24	O	1 byte
4	Services n°25 to n°32	O	1 byte
etc.			
X	Services n°(8X-7) to n°(8X)	O	1 byte

-Services

Contents:	Service n°1 :	Local Phone Book
	Service n°2 :	Fixed Dialling Numbers (FDN)
	Service n°3 :	Extension 2
	Service n°4 :	Service Dialling Numbers (SDN)
	Service n°5 :	Extension3
	Service n°6 :	Barred Dialling Numbers (BDN)
	Service n°7 :	Extension4
	Service n°8 :	Outgoing Call Information (OCI and OCT)
	Service n°9 :	Incoming Call Information (ICI and ICT)
	Service n°10:	Short Message Storage (SMS)
	Service n°11:	Short Message Status Reports (SMSR)
	Service n°12:	Short Message Service Parameters (SMSP)
	Service n°13:	Advice of Charge (AoC)
	Service n°14:	Capability Configuration Parameters (CCP)
	Service n°15:	Cell Broadcast Message Identifier
	Service n°16:	Cell Broadcast Message Identifier Ranges
	Service n°17:	Group Identifier Level 1
	Service n°18:	Group Identifier Level 2
	Service n°19:	Service Provider Name
	Service n°20:	PLMN selector
	Service n°21:	MSISDN
	Service n°22:	Image (IMG)
	Service n°23:	Not used (reserved for SoLSA)
	Service n°24:	Enhanced Multi-Level Precedence and Pre-emption Service
	Service n°25:	Automatic Answer for Emlpp
	Service n°26:	EUIC (Enhanced User Identity Confidentiality)
	Service n°27:	GSM Access
	Service n°28:	Data download via SMS-PP
	Service n°29:	Data download via SMS-CB
	Service n°30:	Call Control by USIM
	Service n°31:	MO-SMS Control by USIM
	Service n°32:	RUN AT COMMAND command
	Service n°33:	Packet Switched Domain
	Service n°34:	Enabled Services Table
	Service n°35:	APN Control List (ACL)
	Service n°36:	Depersonalisation Control Keys
	Service n°37:	Co-operative Network List
	Service n°38:	GSM security context
	~~Service n° XX~~	~~RPLMN last used Access Technology~~

The EF shall contain at least one byte. Further bytes may be included, but if the EF includes an optional byte, then it is mandatory for the EF to also contain all bytes before that byte. Other services are possible in the future and will be coded on further bytes in the EF. The coding falls under the responsibility of the 3GPP.

Coding:

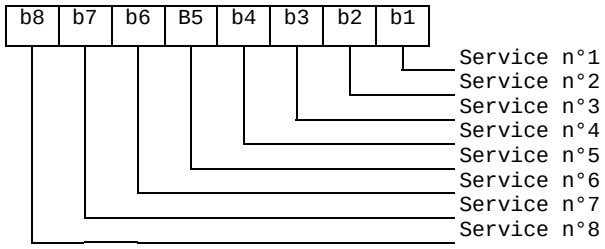
1 bit is used to code each service:

bit = 1: service available;

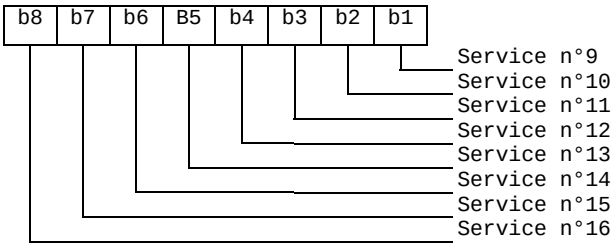
bit = 0: service not available.

- Service available means that the USIM has the capability to support the service and that the service is available for the user of the USIM unless the service is identified as "disabled" in EF_{EST}.
  Service not available means that the service shall not be used by the USIM user, even if the USIM has the capability to support the service.

First byte:



Second byte:



etc.

***** Next modified section *****

4.2.xx EF$_{RPLMNACT}$ (RPLMN Last used Access Technology)

This EF contains the last used access technology for the Registered PLMN, RPLMN. (see TS 23.122 [28]). This EF shall contain only one access technology.

NOTE: One access technology means that only one bit is set in the entire field.

If this EF does not exist on the USIM then the ME shall assume that RPLMN access technology is UTRAN.

Identifier: '6Fxx'	Structure: transparent	Mandatory
SFI: XX		
File size: 2+X bytes	Update activity: High	

Access Conditions:

READ	PIN
UPDATE	PIN
INVALIDATE	ADM
REHABILITATE	ADM

Bytes	Description	M/O	Length
1to2	Access Technology of RPLMN	M	2 bytes
3 to 2+X	RFU	O	X bytes

- Access Technology

  Coding:

  - See EF$_{PLMNselwACT}$ for coding.

***** Next modified section *****

5 Application protocol

When involved in 3G administrative management operations, the USIM interfaces with appropriate equipment. These operations are outside the scope of this standard.

When involved in 3G network operations the USIM interfaces with an ME with which messages are exchanged. A message can be a command or a response.

- A USIM Application command/response pair is a sequence consisting of a command and the associated response.

- A USIM Application procedure consists of one or more USIM Application command/response pairs which are used to perform all or part of an application-oriented task. A procedure shall be considered as a whole, that is to say that the corresponding task is achieved if and only if the procedure is completed. The ME shall ensure that, when operated according to the manufacturer's manual, any unspecified interruption of the sequence of command/response pairs which realise the procedure, leads to the abortion of the procedure itself.

- A 3G session of the USIM in the 3G application is the interval of time starting at the completion of the USIM initialisation procedure and ending either with the start of the 3G session termination procedure, or at the first instant the link between the UICC and the ME is interrupted.

During the 3G network operation phase, the ME plays the role of the master and the USIM plays the role of the slave.

The USIM shall execute all 3G and USIM Application Toolkit commands or procedures in such a way as not to jeopardise, or cause suspension, of service provisioning to the user. This could occur if, for example, execution of the AUTHENTICATE is delayed in such a way which would result in the network denying or suspending service to the user.

The procedures listed in subclause "USIM management procedures" are required for execution of the procedures in the subsequent subclauses "USIM security related procedures" and "Subscription related procedures". The procedures listed in subclauses "USIM security related procedures" are mandatory. The procedures listed in "Subscription related procedures" are only executable if the associated services, which are optional, are provided in the USIM. However, if the procedures are implemented, it shall be in accordance with subclause "Subscription related procedures".

If a procedure is related to a specific service indicated in the USIM Service Table, it shall only be executed if the corresponding bits denote this service as "service available" (see subclause "EF_{UST}"). In all other cases the procedure shall not start.

5.1 USIM management procedures

5.1.1 USIM initialisation

After UICC activation (see 3G TS 31.101 [11]), the ME selects a USIM application. If no EF_{DIR} file is found or no USIM applications are listed in the EF_{DIR} file, the ME then tries to select the GSM application as specified in GSM 11.11 [18].

The ME requests the emergency call codes. For service requirements, see 3G TS 22.101 [24].

The ME requests the Language Indication. The ME keeps using the language selected during UICC activation by means of EF_{PL} (see 3G TS 31.101 [11]) if at least one of the following conditions holds:

- EF_{LI} is not available;

- EF_{LI} does not contain an entry corresponding to a language specified in ISO 639[19];

- the ME does not support any of the languages in EF_{LI}.

If none of the languages in the EFs is supported then the ME selects a default language.

The ME then runs the PIN verification procedure. If the PIN verification procedure is performed successfully, the ME then runs the application profile indication request procedure.

The ME performs the administrative information request.

The ME performs the USIM Service Table request.

For a USIM application requiring PROFILE DOWNLOAD, the ME shall perform the PROFILE DOWNLOAD procedure in accordance with 3G TS 31.111 [12].

In case FDN is enabled, an ME which does not support FDN shall allow emergency calls but shall not allow MO-CS calls and MO-SMS.

If BDN is enabled, an ME which does not support Call Control shall allow emergency calls but shall not allow MO-CS calls.

If ACL is enabled, an ME which does not support ACL shall not send any APN to the network.

If all these procedures have been performed successfully then 3G session shall start. In all other cases 3G session shall not start.

Afterwards, the ME runs the following procedures:

- IMSI request.
- Access control information request.
- HPLMN search period request.
- RPLMN last used Access Technology
- Location Information request.
- Cipher key and integrity key request.
- Forbidden PLMN request.
- LSA information request.
- CBMID request.
- Depending on the further services that are supported by both the ME and the USIM the corresponding EFs have to be read.

After the USIM initialisation has been completed successfully, the ME is ready for a 3G session and indicates this to the USIM be sending a particular STATUS command.

5.1.2 3G session termination

NOTE 1: This procedure is not to be confused with the deactivation procedure in 3G TS 31.101 [11].

The 3G session is terminated by the ME as follows.

The ME runs all the procedures which are necessary to transfer the following subscriber related information to the USIM:

- Location Information update.
- Cipher Key and Integrity Key update.
- Advice of Charge increase.
- Forbidden PLMN update.
- RPLMN last used Access Technology update

As soon as the USIM indicates that these procedures are completed, the ME sends a particular STATUS command indicating the termination of the 3G session.

Finally, the ME deletes all these subscriber related information elements from its memory.

NOTE 2: If the ME has already updated any of the subscriber related information during the 3G session, and the value has not changed until 3G session termination, the ME may omit the respective update procedure.

5.3.xx RPLMN last used Access Technology

- Request: The ME performs the reading procedure with $EF_{RPLMNact}$
- Update: The ME performs the updating procedure with $EF_{RLMNact}$.

***** Next modified section *****

Annex A (informative): EF changes via Data Download or USAT applications

This annex defines if changing the content of an EF by the network (e.g. by sending an SMS), or by a USAT Application, is advisable. Updating of certain EFs "over the air" such as EF_{ACC} could result in unpredictable behaviour of the UE; these are marked "Caution" in the table below. Certain EFs are marked "No"; under no circumstances should "over the air" changes of these EFs be considered.

File identification	Description	Change advised
'2F00'	Application directory	
'2F05'	Preferred languages	Yes
'2F06'	Access rule reference	
'2FE2'	ICC identification	No
'4F20'	Image data	Yes
'4FXX'	Image Instance data Files	Yes
'4F21'	Unique identifier	Yes
'4F22'	Phone book synchronisation counter	Yes
'4F23'	Change counter	Yes
'4F24'	Previous unique identifier	Yes
'4F30'	Phone book reference file	Yes
'4F3D'	Capability configuration parameters 1	Yes
'4FXX'	Additional number alpha string	Yes
'4FXX'	Additional number	Yes
'4FXX'	Second name entry	Yes
'4FXX'	Grouping information alpha string	Yes
'4FXX'	Phone book control	Yes
'4FXX'	E-mail addresses	Yes
'4FXX'	Index administration phone book	Yes
'4FXX'	Extension 1	Yes
'4FXX'	Abbreviated dialling numbers	Yes
'4FXX'	Grouping file	Yes
'6F05'	Language indication	Yes
'6F07'	IMSI	Caution (Note 1)
'6F08'	Ciphering and integrity keys	No
'6F09'	Ciphering and integrity keys for packet switched domain	No
'6F20'	Ciphering key Kc	No
'6F2C'	De-personalization Control Keys	Caution
'6F30'	User PLMN selector	No
'6F31'	HPLMN search period	Caution
'6F32'	Co-operative network list	Caution
'6F37'	ACM maximum value	Yes
'6F38'	USIM service table	Caution
'6F39'	Accumulated call meter	Yes
'6F3B'	Fixed dialling numbers	Yes
'6F3C'	Short messages	Yes
'6F3D'	Capability configuration parameters	Yes
'6F3E'	Group identifier level 1	Yes
'6F3F'	Group identifier level 2	Yes
'6F40'	MSISDN storage	Yes
'6F41'	PUCT	Yes
'6F42'	SMS parameters	Yes
'6F43'	SMS status	Yes
'6F44'	Last number dialled	Yes
'6F45'	CBMI	Caution
'6F46'	Service provider name	Yes
'6F47'	Short message status reports	Yes
'6F48'	CBMID	Yes
'6F49'	Service Dialling Numbers	Yes
'6F4B'	Extension 2	Yes
'6F4C'	Extension 3	Yes

File identification	Description	Change advised
'6F4D'	Barred dialling numbers	Yes
'6F4E'	Extension 5	Yes
'6F4F'	Capability configuration parameters 2	Yes
'6F50'	CBMIR	Yes
'6F52'	GPRS Ciphering key KcGPRS	No
'6F53'	GPRS Location Information	Caution
'6F54'	SetUp Menu Elements	Yes
'6F56'	Enabled services table	
'6F57'	Access point name control list	
'6F58'	Comparison method information	
'6F5B'	Hyperframe number	
'6F5C'	Maximum value of hyperframe number	
'6F5D'	Operator PLMN selector	Caution
'6F5E'	Preferred HPLMN access technology	Caution
xxxx	RPLMN last used Access Technology	Caution
'6F73'	Packet switched location information	Caution
'6F74'	BCCH	No
'6F78'	Access control class	Caution
'6F7B'	Forbidden PLMNs	Caution
'6F7E'	Location information	No (Note 1)
'6F80'	Incoming call information	Yes
'6F81'	Outgoing call information	Yes
'6F82'	Incoming call timer	Yes
'6F83'	Outgoing call timer	Yes
'6FAD'	Administrative data	Caution
'6FB5'	Enhanced Multi Level Pre-emption and Priority	Yes
'6FB6'	Automatic Answer for eMLPP Service	Yes
'6FB7'	Emergency Call Codes	Caution
'6FC2'	Group identity	No
'6FC3'	Key for hidden phone book entries	

NOTE1: If EF_{IMSI} is changed, the UICC should issue REFRESH as defined in TS 31.111 and update EF_{LOCI} accordingly.

***** Next modified section *****

Annex E (informative): Suggested contents of the EFs at pre-personalization

If EFs have an unassigned value, it may not be clear from the main text what this value should be. This annex suggests values in these cases.

File Identification	Description	Value
'2F00'	Application directory	Card issuer/operator dependant
'2F05'	Preferred languages	'FF…FF'
'2F06'	Access rule reference	Card issuer/operator dependant
'2FE2'	ICC identification	operator dependant
'4F20'	Image data	'00FF...FF'
'4FXX'	Image instance data files	'FF…FF'
'4F21'	Unique identifier	'0000'
'4F22'	Phone book synchronisation counter	'00000000'
'4F23'	Change counter	'0000'
'4F24'	Previous unique identifier	'0000'
'4F30'	Phone book reference file	Operator dependant
'4F3D'	Capability configuration parameters 1	'FF…FF'
'4FXX'	E-mail addresses	'FF…FF'
'4FXX'	Additional number alpha string	'FF…FF'
'4FXX'	Second name entry	'FF…FF'
'4FXX'	Abbreviated dialling numbers	'FF...FF'
'4FXX'	Grouping file	'00…00'
'4FXX'	Grouping information alpha string	'FF…FF'
'4FXX'	Phone book control	'0000'
'4FXX'	Index administration phone book	'FF…FF'
'4FXX'	Additional number	'FF…FF'
'4FXX'	Extension 1	'00FF...FF'
'6F05'	Language indication	'FF…FF'
'6F07'	IMSI	Operator dependant
'6F08'	Ciphering and integrity keys	'0FFF…FF'
'6F09'	Ciphering and integrity keys for packet switched domain	'0FFF…FF'
'6F20'	Ciphering key Kc	'FF...FF07'
'6F2C'	De-personalization control keys	'FF…FF'
'6F30'	User PLMN selector	'FF...FF'
'6F31'	HPLMN search period	'FF'
'6F32'	Co-operative network list	'FF…FF'
'6F37'	ACM maximum value	'000000' (see note 1)
'6F38'	USIM service table	Operator dependant
'6F39'	Accumulated call meter	'000000'
'6F3B'	Fixed dialling numbers	'FF...FF'
'6F3C'	Short messages	'00FF...FF'
'6F3E'	Group identifier level 1	Operator dependant
'6F3F'	Group identifier level 2	Operator dependant
'6F40'	MSISDN storage	'FF...FF'
'6F41'	PUCT	'FFFFFF0000'
'6F42'	SMS parameters	'FF...FF'
'6F43'	SMS status	'FF...FF'
'6F45'	CBMI	'FF...FF'
'6F46'	Service provider name	Operator dependant
'6F47'	Short message status reports	'00FF…FF'
'6F48'	CBMID	'FF...FF'
'6F49'	Service Dialling Numbers	'FF...FF'
'6F4B'	Extension 2	'00FF...FF'
'6F4C'	Extension 3	'00FF...FF'
'6F4D'	Barred Dialling Numbers	'FF...FF'
'6F4E'	Extension 5	'00FF...FF'
'6F4F'	Capability configuration parameters 2	'FF...FF'

Continued....

File Identification	Description	Value
'6F50'	CBMIR	'FF...FF'
'6F52'	GPRS Ciphering key KcGPRS	'FF...FF07'
'6F53'	GPRS Location Information	'FFFFFFFF FFFFFF xxFxxx 0000 FF 01' (see note 2)
'6F54'	SetUp Menu Elements	Operator dependant
'6F55'	Extension 4	'FF...FF'
'6F56'	Enabled services table	Operator dependant
'6F57'	Access point name control list	'00FF…FF'
'6F58'	Comparison method information	'FF…FF'
'6F5B'	Hyperframe number	'00…00'
'6F5C'	Maximum value of hyperframe number	Operator dependant
'6F5D'	Operator PLMN selector	'FF…FF'
'6F5E'	Preferred HPLMN access technology	'FF…FF'
'xxxx'	RPLMN last used Access Technology	'0000'
'6F73'	Packet switched location information	'FFFFFFFF FFFFFF xxFxxx 0000 FF 01' (see note 2)
'6F74'	BCCH	'FF...FF'
'6F78'	Access control class	Operator dependant
'6F7B'	Forbidden PLMNs	'FF...FF'
'6F7E	Location information	'FFFFFFFF xxFxxx 0000 FF 01' (see note 2)
'6F7F'	GSM location information	'FFFFFFFF xxFxxx 0000 FF 01' (see note 2)
'6F80'	Incoming call information	'FF…FF 000000 00 01FFFF'
'6F81'	Outgoing call information	'FF…FF 000000 01FFFF'
'6F82'	Incoming call timer	'000000'
'6F83'	Outgoing call timer	'000000'
'6FAD'	Administrative data	Operator dependant
'6FB5'	EMLPP	Operator dependant
'6FB6'	AaeM	'00'
'6FB7'	Emergency call codes	Operator dependant
'6FC2'	Group identity	'FFFFFFFF'
'6FC3'	Key for hidden phone book entries	'FF…FF'

NOTE 1: The value '000000' means that ACMmax is not valid, i.e. there is no restriction on the ACM. When assigning a value to ACMmax, care should be taken not to use values too close to the maximum possible value 'FFFFFF', because the INCREASE command does not update EF_{ACM} if the units to be added would exceed 'FFFFFF'. This could affect the call termination procedure of the Advice of Charge function.

NOTE 2: xxFxxx stands for any valid MCC and MNC, coded according to 3G TS 24.008 [9].

3GPP T3 Meeting #14
Visby, Sweden, 24 - 26 May, 2000

Tdoc T3-000281
Was T3-000255

CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

31.102	CR	036	Current Version:	3.1.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to: TST-T #8 *list expected approval meeting # here ↑*

for approval [X]
for information [ ]

strategic [ ]
non-strategic [ ]
(for SMG use only)

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from:* ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: *(at least one should be marked with an X)*
(U)SIM [X] ME [X] UTRAN / Radio [ ] Core Network [ ]

Source: T3 **Date:** 26/05/00

Subject: Alignment to GSM 11.11 – terminology and change of data

Work item: GSM/UMTS Inter-working

Category: *(only one category shall be marked with an X)*

F	Correction	[X]
A	Corresponds to a correction in an earlier release	[ ]
B	Addition of feature	[ ]
C	Functional modification of feature	[ ]
D	Editorial modification	[ ]

Release:

Phase 2	[ ]
Release 96	[ ]
Release 97	[ ]
Release 98	[ ]
Release 99	[X]
Release 00	[ ]

Reason for change: Alignment of terminology used in specs GSM 11.11 and TS 31.102 and addition of some new fields
The alignment to 11.11 is essential for GSM/UMTS interworking

Clauses affected: See attached CR

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments: Related to 11.11 and 23.122 CRs

help.doc

<--------- double-click here for help and instructions on how to create a CR.

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.

[1] 3G TS 21.111: "USIM and IC Card Requirements".

[2] 3G TS 22.011: "Service accessibility".

[3] 3G TS 22.024: "Description of Charge Advice Information (CAI)".

[4] 3G TS 22.030: "Man-Machine Interface (MMI) of the Mobile Station (MS)".

[5] 3G TS 23.038: "Alphabets and language".

[6] 3G TS 23.040: "Technical realization of the Short Message Service (SMS) Point-to-Point (PP)".

[7] 3G TS 23.060: "General Packet Radio Service (GPRS); Service description; Stage 2".

[8] 3G TS 22.067: "Enhanced Multi Level Precedence and Pre-emption service (eMLPP) - Stage 1".

[9] 3G TS 24.008: "Mobile Radio Interface Layer 3 specification".

[10] 3G TS 24.011: "Point-to-Point (PP) Short Message Service (SMS) support on mobile radio interface".

[11] 3G TS 31.101: "UICC-Terminal Interface, Physical and Logical Characteristics".

[12] 3G TS 31.111: "USIM Application Toolkit (USAT)".

[13] 3G TS 33.102: "3G Security Architecture".

[14] 3G TS 33.103: "3G Security; Integration Guidelines".

[15] 3G TS 22.086: "Advice of charge (AoC) Supplementary Services - Stage 1".

[16] 3G TS 23.041: "Technical realization of Short Message Service Cell Broadcast (SMSCB)".

[17] GSM 02.07: "Mobile Stations (MS) features".

[18] GSM 11.11: "Specification of the Subscriber Identity Module – Mobile Equipment (SIM – ME) interface".

[19] ISO 639 (1988): "Code for the representation of names of languages".

[20] ISO/IEC 7816-4 (1995): "Identification cards - Integrated circuit(s) cards with contacts, Part 4: Interindustry commands for interchange".

[21] ISO/IEC 7816-5 (1994): "Identification cards - Integrated circuit(s) cards with contacts, Part 5: Numbering system and registration procedure for application identifiers".

[22] ITU-T Recommendation E.164: "Numbering plan for the ISDN era".

[23] ITU-T Recommendation T.50: "International Alphabet No. 5". (ISO 646 (1983): "Information processing - ISO 7-bits coded characters set for information interchange").

[24] 3G TS 22.101: "Service aspects; service principles".

[25] 3G TS 23.003: "Numbering, Addressing and Identification".

[26] ISO/IEC FCD 7816-9 (1999): "Identification cards - Integrated circuit(s) cards with contacts, Part 9: Additional Interindustry commands and security attributes".

[27] 3G TS 22.022: "Personalisation of GSM Mobile Equipment (ME); Mobile functionality specification".

[28] 3G TS 23.122: "NAS Functions related to Mobile Station (MS) in idle mode"

***** Next modified section *****

4.2.5 EF~~U~~PLMNwACT~~sel~~ (~~U~~User controlled PLMN selector with Access Technology)

This EF contains the coding for n PLMNs, where n is at least eight. This information is determined by the user and defines the preferred PLMNs of the user in priority order. The first record indicates the highest priority and the n^{th} record indicates the lowest. The EF also contains the Access Technologies for each PLMN in this list. (see TS 23.122 [28])

Identifier: '6F30'	Structure: transparent	Optional
SFI: ~~Mandatory~~ XX		
File size: ~~5n (where n >=8 bytes)~~ 5n where(n ≥ 8) bytes	Update activity: low	

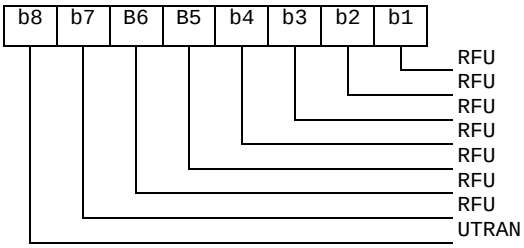
Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

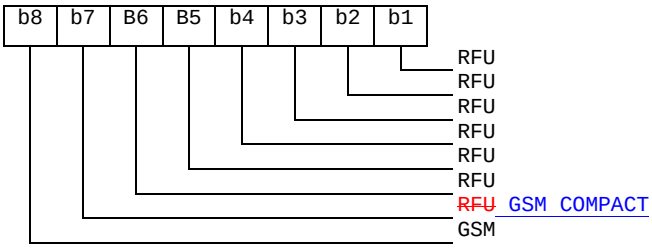
Bytes	Description	M/O	Length
1 to 3	1st PLMN (highest priority)	M	3 bytes
4 to 5	1st PLMN Access Technology Identifier	M	2 bytes
6 to 8	2nd PLMN	M	3 bytes
9 to 10	2nd PLMN Access Technology Identifier	M	2 bytes
:	:		
36 to 38	8th PLMN	M	3 bytes
39 to 40	8th PLMN Access Technology Identifier	M	2 bytes
41 to 43	9th PLMN	O	3 bytes
44 to 45	9th PLMN Access Technology Identifier	O	2 bytes
:	:		
(5n-4) to (5n-2)	Nth PLMN (lowest priority)	O	3 bytes
(5n-1) to 5n	Nth PLMN Access Technology Identifier	O	2 bytes

- PLMN
  Contents:
  - Mobile Country Code (MCC) followed by the Mobile Network Code (MNC).
  Coding:
  - according to 3G TS 24.008 [9].
- Access Technology Identifier:
  Coding:
  - 2 bytes are used to select the access technology where the meaning of each bit is as follows:
    - bit = 1: access technology selected;
    - bit = 0: access technology not selected.

Byte ~~4~~5n-1:



Byte 5n:



***** Next modified section *****

4.2.8 EF_{UST} (USIM Service Table)

This EF indicates which services are available. If a service is not indicated as available in the USIM, the ME shall not select this service.

Identifier: '6F38'	Structure: transparent	Mandatory
SFI: Mandatory		
File size: X bytes, X >= 2	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	Services n°1 to n°8	M	1 byte
2	Services n°9 to n°16	O	1 byte
3	Services n°17 to n°24	O	1 byte
4	Services n°25 to n°32	O	1 byte
etc.			
X	Services n°(8X-7) to n°(8X)	O	1 byte

-Services

Contents:		
	Service n°1 :	Local Phone Book
	Service n°2 :	Fixed Dialling Numbers (FDN)
	Service n°3 :	Extension 2
	Service n°4 :	Service Dialling Numbers (SDN)
	Service n°5 :	Extension3
	Service n°6 :	Barred Dialling Numbers (BDN)
	Service n°7 :	Extension4
	Service n°8 :	Outgoing Call Information (OCI and OCT)
	Service n°9 :	Incoming Call Information (ICI and ICT)
	Service n°10:	Short Message Storage (SMS)
	Service n°11:	Short Message Status Reports (SMSR)
	Service n°12:	Short Message Service Parameters (SMSP)
	Service n°13:	Advice of Charge (AoC)
	Service n°14:	Capability Configuration Parameters (CCP)
	Service n°15:	Cell Broadcast Message Identifier
	Service n°16:	Cell Broadcast Message Identifier Ranges
	Service n°17:	Group Identifier Level 1
	Service n°18:	Group Identifier Level 2
	Service n°19:	Service Provider Name
	Service n°20:	User controlled PLMN selector with Access Technology
	Service n°21:	MSISDN
	Service n°22:	Image (IMG)
	Service n°23:	Not used (reserved for SoLSA)
	Service n°24:	Enhanced Multi-Level Precedence and Pre-emption Service
	Service n°25:	Automatic Answer for Emlpp
	Service n°26:	EUIC (Enhanced User Identity Confidentiality)
	Service n°27:	GSM Access
	Service n°28:	Data download via SMS-PP
	Service n°29:	Data download via SMS-CB
	Service n°30:	Call Control by USIM
	Service n°31:	MO-SMS Control by USIM
	Service n°32:	RUN AT COMMAND command
	Service n°33:	Packet Switched Domain
	Service n°34:	Enabled Services Table
	Service n°35:	APN Control List (ACL)
	Service n°36:	Depersonalisation Control Keys
	Service n°37:	Co-operative Network List
	Service n°38:	GSM security context
	Service n. XX	Operator controlled PLMN selector with Access Technology
	Service n. XX	HPLMN selector with Access Technology

The EF shall contain at least one byte. Further bytes may be included, but if the EF includes an optional byte, then it is mandatory for the EF to also contain all bytes before that byte. Other services are possible in the future and will be coded on further bytes in the EF. The coding falls under the responsibility of the 3GPP.

Coding:

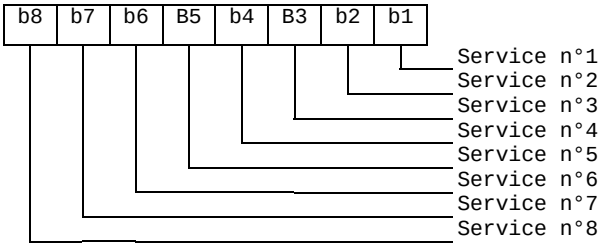
1 bit is used to code each service:

bit = 1: service available;

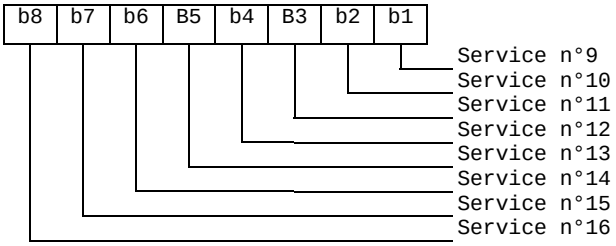
bit = 0: service not available.

- Service available means that the USIM has the capability to support the service and that the service is available for the user of the USIM unless the service is identified as "disabled" in EF_{EST}.
  Service not available means that the service shall not be used by the USIM user, even if the USIM has the capability to support the service.

First byte:



Second byte:



etc.

***** Next modified section *****

4.2.53 EF$_{OPLMNsel wACT}$ (Operator controlled ~~O~~PLMN selector with Access Technology)

This EF contains the coding for n PLMNs where n is determined by the operator. This information is determined by the operator and defines the preferred PLMNs in priority order. The first record indicates the highest priority and the nth record indicates the lowest. The EF also contains the Access Technologies for each PLMN in this list. (see TS 23.122 [28])

Identifier: '6F5D'	Structure: transparent	Optional
SFI: ~~Mandatory~~ XX		
File size: 5n where (~~where~~ n >=8 ~~bytes~~)bytes	Update activity: low	
Access Conditions: READ PIN UPDATE ADM DEACTIVATE ADM ACTIVATE ADM		

Bytes	Description	M/O	Length
1 to 3	1st PLMN (highest priority)	M	3 bytes
4 to 5	1st PLMN Access Technology Identifier	M	2 bytes
6 to 8	2nd PLMN	O	3 bytes
9 to 10	2nd PLMN Access Technology Identifier	O	2 bytes
(5n-4) to (5n-2)	Nth PLMN (lowest priority)	O	3 bytes
(5n-1) to 5n	Nth PLMN Access Technology Identifier	O	2 bytes

- PLMN.
  Contents:
  - Mobile Country Code (MCC) followed by the Mobile Network Code (MNC).

  Coding:
  - according to 3G TS 24.008 [9].
- Access Technology Identifier:
  Coding:
  - See EF$_{~~U~~PLMN~~sel~~wACT}$ for coding.

4.2.54 EF$_{~~P~~HPLMNAcT}$ (~~Preferred~~ HPLMN selector with Access Technology)

~~This EF contains the user preferred access technologies for the HPLMN.~~

The HPLMN Selector with access technology data field shall contain the HPLMN code, or codes together with the respected access technology in priority order. (see TS 23.122 [28]).

If this EF does not exist on the USIM then the ME shall assume that HPLMN access technology is UTRAN.

Identifier: '6F5E'	Structure: Transparent	Optional
SFI: ~~Mandatory~~ XX		
File size: ~~2~~ 5n bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
~~1 to 2~~	~~Access Technology Identifier~~	~~M~~	~~2 bytes~~
1 to 3	1st PLMN (highest priority)	M	3 bytes
4 to 5	1st PLMN Access Technology Identifier	M	2 bytes
6 to 8	2nd PLMN	O	3 bytes
9 to 10	2nd PLMN Access Technology Identifier	O	2 bytes
(5n-4) to (5n-2)	Nth PLMN (lowest priority)	O	3 bytes
(5n-1) to 5n	Nth PLMN Access Technology Identifier	O	2 bytes

- PLMN
  Contents:
  Mobile Country Code (MCC) followed by the Mobile Network Code (MNC).
  Coding:
  according to TS 24.008 [47].

- Access Technology ~~Identifier~~:
  Contents: The Access Technology of the HPLMN that the ME will assume when searching for the HPLMN, in priority order. The first Access Technology in the list has the highest priority.

  Coding:
  - See EF~~U~~PLMN~~sel~~wACT for coding.

***** Next modified section *****

5 Application protocol

When involved in 3G administrative management operations, the USIM interfaces with appropriate equipment. These operations are outside the scope of this standard.

When involved in 3G network operations the USIM interfaces with an ME with which messages are exchanged. A message can be a command or a response.

- A USIM Application command/response pair is a sequence consisting of a command and the associated response.

- A USIM Application procedure consists of one or more USIM Application command/response pairs which are used to perform all or part of an application-oriented task. A procedure shall be considered as a whole, that is to say that the corresponding task is achieved if and only if the procedure is completed. The ME shall ensure that, when operated according to the manufacturer's manual, any unspecified interruption of the sequence of command/response pairs which realise the procedure, leads to the abortion of the procedure itself.

- A 3G session of the USIM in the 3G application is the interval of time starting at the completion of the USIM initialisation procedure and ending either with the start of the 3G session termination procedure, or at the first instant the link between the UICC and the ME is interrupted.

During the 3G network operation phase, the ME plays the role of the master and the USIM plays the role of the slave.

The USIM shall execute all 3G and USIM Application Toolkit commands or procedures in such a way as not to jeopardise, or cause suspension, of service provisioning to the user. This could occur if, for example, execution of the AUTHENTICATE is delayed in such a way which would result in the network denying or suspending service to the user.

The procedures listed in subclause "USIM management procedures" are required for execution of the procedures in the subsequent subclauses "USIM security related procedures" and "Subscription related procedures". The procedures listed in subclauses "USIM security related procedures" are mandatory. The procedures listed in "Subscription related procedures" are only executable if the associated services, which are optional, are provided in the USIM. However, if the procedures are implemented, it shall be in accordance with subclause "Subscription related procedures".

If a procedure is related to a specific service indicated in the USIM Service Table, it shall only be executed if the corresponding bits denote this service as "service available" (see subclause "EF_{UST}"). In all other cases the procedure shall not start.

5.1 USIM management procedures

5.1.1 USIM initialisation

After UICC activation (see 3G TS 31.101 [11]), the ME selects a USIM application. If no EF_{DIR} file is found or no USIM applications are listed in the EF_{DIR} file, the ME then tries to select the GSM application as specified in GSM 11.11 [18].

The ME requests the emergency call codes. For service requirements, see 3G TS 22.101 [24].

The ME requests the Language Indication. The ME keeps using the language selected during UICC activation by means of EF_{PL} (see 3G TS 31.101 [11]) if at least one of the following conditions holds:

- EF_{LI} is not available;
- EF_{LI} does not contain an entry corresponding to a language specified in ISO 639[19];
- the ME does not support any of the languages in EF_{LI}.

If none of the languages in the EFs is supported then the ME selects a default language.

The ME then runs the PIN verification procedure. If the PIN verification procedure is performed successfully, the ME then runs the application profile indication request procedure.

The ME performs the administrative information request.

The ME performs the USIM Service Table request.

For a USIM application requiring PROFILE DOWNLOAD, the ME shall perform the PROFILE DOWNLOAD procedure in accordance with 3G TS 31.111 [12].

In case FDN is enabled, an ME which does not support FDN shall allow emergency calls but shall not allow MO-CS calls and MO-SMS.

If BDN is enabled, an ME which does not support Call Control shall allow emergency calls but shall not allow MO-CS calls.

If ACL is enabled, an ME which does not support ACL shall not send any APN to the network.

If all these procedures have been performed successfully then 3G session shall start. In all other cases 3G session shall not start.

Afterwards, the ME runs the following procedures:

- IMSI request.

- Access control information request.
- HPLMN search period request.

- HPLMN selector with Access Technology request;
- User controlled PLMN selector with Access Technology request;
- Operator controlled PLMN selector with Access Technology request;

~~- HPLMN preferred access technology request.~~

~~- PLMN selector request.~~

- Location Information request.
- Cipher key and integrity key request.
- Forbidden PLMN request.
- LSA information request.
- CBMID request.
- Depending on the further services that are supported by both the ME and the USIM the corresponding EFs have to be read.

After the USIM initialisation has been completed successfully, the ME is ready for a 3G session and indicates this to the USIM be sending a particular STATUS command.

5.1.2 3G session termination

NOTE 1: This procedure is not to be confused with the deactivation procedure in 3G TS 31.101 [11].

The 3G session is terminated by the ME as follows.

The ME runs all the procedures which are necessary to transfer the following subscriber related information to the USIM:

- Location Information update.
- Cipher Key and Integrity Key update.
- Advice of Charge increase.
- Forbidden PLMN update.

As soon as the USIM indicates that these procedures are completed, the ME sends a particular STATUS command indicating the termination of the 3G session.

Finally, the ME deletes all these subscriber related information elements from its memory.

NOTE 2: If the ME has already updated any of the subscriber related information during the 3G session, and the value has not changed until 3G session termination, the ME may omit the respective update procedure.

5.2.14 HPLMN ~~preferred~~ selector with a~~A~~Access t~~T~~echnology request

Request: The ME performs the reading procedure with $EF_{PHPLMNAT}$.

5.3 Subscription related procedures

5.3.6 User controlled PLMN selector with Access Technology

- Requirement: Service n°20 "available".
- Request: The ME performs the reading procedure with $EF_{UPLMNselwACT}$. ~~followed by $EF_{OPLMNsel}$.~~

- Update: The ME performs the updating procedure with $EF_{PLMNsel}$~~sel~~wACT.

5.3.xx Operator controlled PLMN selector with Access Technology

- Requirement: Service n°xx "available".
- Request: The ME performs the reading procedure with $EF_{OPLMNwACT}$

5.3.xx HPLMN selector with Access Technology

- Requirement: Service n°xx "available".
- Request: The ME performs the reading procedure with $EF_{HPLMNACT}$

*** Next modified section ***

Annex A (informative): EF changes via Data Download or USAT applications

This annex defines if changing the content of an EF by the network (e.g. by sending an SMS), or by a USAT Application, is advisable. Updating of certain EFs "over the air" such as EF_{ACC} could result in unpredictable behaviour of the UE; these are marked "Caution" in the table below. Certain EFs are marked "No"; under no circumstances should "over the air" changes of these EFs be considered.

File identification	Description	Change advised
'2F00'	Application directory	
'2F05'	Preferred languages	Yes
'2F06'	Access rule reference	
'2FE2'	ICC identification	No
'4F20'	Image data	Yes
'4FXX'	Image Instance data Files	Yes
'4F21'	Unique identifier	Yes
'4F22'	Phone book synchronisation counter	Yes
'4F23'	Change counter	Yes
'4F24'	Previous unique identifier	Yes
'4F30'	Phone book reference file	Yes
'4F3D'	Capability configuration parameters 1	Yes
'4FXX'	Additional number alpha string	Yes
'4FXX'	Additional number	Yes
'4FXX'	Second name entry	Yes
'4FXX'	Grouping information alpha string	Yes
'4FXX'	Phone book control	Yes
'4FXX'	E-mail addresses	Yes
'4FXX'	Index administration phone book	Yes
'4FXX'	Extension 1	Yes
'4FXX'	Abbreviated dialling numbers	Yes
'4FXX'	Grouping file	Yes
'6F05'	Language indication	Yes
'6F07'	IMSI	Caution (Note 1)
'6F08'	Ciphering and integrity keys	No
'6F09'	Ciphering and integrity keys for packet switched domain	No
'6F20'	Ciphering key Kc	No
'6F2C'	De-personalization Control Keys	Caution
'6F30'	User controlled PLMN selector with Access Technology	No
'6F31'	HPLMN search period	Caution
'6F32'	Co-operative network list	Caution
'6F37'	ACM maximum value	Yes
'6F38'	USIM service table	Caution
'6F39'	Accumulated call meter	Yes
'6F3B'	Fixed dialling numbers	Yes
'6F3C'	Short messages	Yes
'6F3D'	Capability configuration parameters	Yes
'6F3E'	Group identifier level 1	Yes
'6F3F'	Group identifier level 2	Yes
'6F40'	MSISDN storage	Yes
'6F41'	PUCT	Yes
'6F42'	SMS parameters	Yes
'6F43'	SMS status	Yes
'6F44'	Last number dialled	Yes
'6F45'	CBMI	Caution
'6F46'	Service provider name	Yes
'6F47'	Short message status reports	Yes
'6F48'	CBMID	Yes
'6F49'	Service Dialling Numbers	Yes
'6F4B'	Extension 2	Yes
'6F4C'	Extension 3	Yes

File identification	Description	Change advised
'6F4D'	Barred dialling numbers	Yes
'6F4E'	Extension 5	Yes
'6F4F'	Capability configuration parameters 2	Yes
'6F50'	CBMIR	Yes
'6F52'	GPRS Ciphering key KcGPRS	No
'6F53'	GPRS Location Information	Caution
'6F54'	SetUp Menu Elements	Yes
'6F56'	Enabled services table	
'6F57'	Access point name control list	
'6F58'	Comparison method information	
'6F5B'	Hyperframe number	
'6F5C'	Maximum value of hyperframe number	
'6F5D'	Operator controlled PLMN selector with Access Technology	Caution
'6F5E'	~~Preferred~~ HPLMN selector with ~~a~~Access ~~t~~Technology	Caution
'6F73'	Packet switched location information	Caution
'6F74'	BCCH	No
'6F78'	Access control class	Caution
'6F7B'	Forbidden PLMNs	Caution
'6F7E'	Location information	No (Note 1)
'6F80'	Incoming call information	Yes
'6F81'	Outgoing call information	Yes
'6F82'	Incoming call timer	Yes
'6F83'	Outgoing call timer	Yes
'6FAD'	Administrative data	Caution
'6FB5'	Enhanced Multi Level Pre-emption and Priority	Yes
'6FB6'	Automatic Answer for eMLPP Service	Yes
'6FB7'	Emergency Call Codes	Caution
'6FC2'	Group identity	No
'6FC3'	Key for hidden phone book entries	

NOTE1: If EF_{IMSI} is changed, the UICC should issue REFRESH as defined in TS 31.111 and update EF_{LOCI} accordingly.

***** Next modified section *****

Annex E (informative): Suggested contents of the EFs at pre-personalization

If EFs have an unassigned value, it may not be clear from the main text what this value should be. This annex suggests values in these cases.

File Identification	Description	Value
'2F00'	Application directory	Card issuer/operator dependant
'2F05'	Preferred languages	'FF…FF'
'2F06'	Access rule reference	Card issuer/operator dependant
'2FE2'	ICC identification	operator dependant
'4F20'	Image data	'00FF...FF'
'4FXX'	Image instance data files	'FF…FF'
'4F21'	Unique identifier	'0000'
'4F22'	Phone book synchronisation counter	'00000000'
'4F23'	Change counter	'0000'
'4F24'	Previous unique identifier	'0000'
'4F30'	Phone book reference file	Operator dependant
'4F3D'	Capability configuration parameters 1	'FF…FF'
'4FXX'	E-mail addresses	'FF…FF'
'4FXX'	Additional number alpha string	'FF…FF'
'4FXX'	Second name entry	'FF…FF'
'4FXX'	Abbreviated dialling numbers	'FF...FF'
'4FXX'	Grouping file	'00…00'
'4FXX'	Grouping information alpha string	'FF…FF'
'4FXX'	Phone book control	'0000'
'4FXX'	Index administration phone book	'FF…FF'
'4FXX'	Additional number	'FF…FF'
'4FXX'	Extension 1	'00FF...FF'
'6F05'	Language indication	'FF…FF'
'6F07'	IMSI	Operator dependant
'6F08'	Ciphering and integrity keys	'0FFF…FF'
'6F09'	Ciphering and integrity keys for packet switched domain	'0FFF…FF'
'6F20'	Ciphering key Kc	'FF...FF07'
'6F2C'	De-personalization control keys	'FF…FF'
'6F30'	User controlled PLMN selector with Access Technology	~~'FF...FF'~~ 'FFFFFF0000..FFFFFF0000'
'6F31'	HPLMN search period	'FF'
'6F32'	Co-operative network list	'FF…FF'
'6F37'	ACM maximum value	'000000' (see note 1)
'6F38'	USIM service table	Operator dependant
'6F39'	Accumulated call meter	'000000'
'6F3B'	Fixed dialling numbers	'FF...FF'
'6F3C'	Short messages	'00FF...FF'
'6F3E'	Group identifier level 1	Operator dependant
'6F3F'	Group identifier level 2	Operator dependant
'6F40'	MSISDN storage	'FF...FF'
'6F41'	PUCT	'FFFFFF0000'
'6F42'	SMS parameters	'FF...FF'
'6F43'	SMS status	'FF...FF'
'6F45'	CBMI	'FF...FF'
'6F46'	Service provider name	Operator dependant
'6F47'	Short message status reports	'00FF…FF'
'6F48'	CBMID	'FF...FF'
'6F49'	Service Dialling Numbers	'FF...FF'
'6F4B'	Extension 2	'00FF...FF'
'6F4C'	Extension 3	'00FF...FF'
'6F4D'	Barred Dialling Numbers	'FF...FF'
'6F4E'	Extension 5	'00FF...FF'
'6F4F'	Capability configuration parameters 2	'FF...FF'

Continued....

File Identification	Description	Value
'6F50'	CBMIR	'FF...FF'
'6F52'	GPRS Ciphering key KcGPRS	'FF...FF07'
'6F53'	GPRS Location Information	'FFFFFFFF FFFFFF xxFxxx 0000 FF 01' (see note 2)
'6F54'	SetUp Menu Elements	Operator dependant
'6F55'	Extension 4	'FF...FF'
'6F56'	Enabled services table	Operator dependant
'6F57'	Access point name control list	'00FF…FF'
'6F58'	Comparison method information	'FF…FF'
'6F5B'	Hyperframe number	'00…00'
'6F5C'	Maximum value of hyperframe number	Operator dependant
'6F5D'	Operator controlled PLMN selector with Access Technology	'FFFFFF0000..FFFFFF0000'~~'FF...FF'~~
'6F5E'	~~Preferred~~ HPLMN selector with ~~a~~Access ~~t~~Technology	'FFFFFF0000..FFFFFF0000'~~'FF...FF'~~
'6F73'	Packet switched location information	'FFFFFFFF FFFFFF xxFxxx 0000 FF 01' (see note 2)
'6F74'	BCCH	'FF...FF'
'6F78'	Access control class	Operator dependant
'6F7B'	Forbidden PLMNs	'FF...FF'
'6F7E	Location information	'FFFFFFFF xxFxxx 0000 FF 01' (see note 2)
'6F7F'	GSM location information	'FFFFFFFF xxFxxx 0000 FF 01' (see note 2)
'6F80'	Incoming call information	'FF…FF 000000 00 01FFFF'
'6F81'	Outgoing call information	'FF…FF 000000 01FFFF'
'6F82'	Incoming call timer	'000000'
'6F83'	Outgoing call timer	'000000'
'6FAD'	Administrative data	Operator dependant
'6FB5'	EMLPP	Operator dependant
'6FB6'	AaeM	'00'
'6FB7'	Emergency call codes	Operator dependant
'6FC2'	Group identity	'FFFFFFFF'
'6FC3'	Key for hidden phone book entries	'FF…FF'

NOTE 1: The value '000000' means that ACMmax is not valid, i.e. there is no restriction on the ACM. When assigning a value to ACMmax, care should be taken not to use values too close to the maximum possible value 'FFFFFF', because the INCREASE command does not update EF_{ACM} if the units to be added would exceed 'FFFFFF'. This could affect the call termination procedure of the Advice of Charge function.

NOTE 2: xxFxxx stands for any valid MCC and MNC, coded according to 3G TS 24.008 [9].