3GPP TSG-T (Terminals) Meeting #8
Düsseldorf, Germany, 21 - 23 June, 2000

Tdoc TP-000095

Source: T3

Title: Change Requests to TS 31.102 "Characteristics of the USIM application"

Agenda item: 6.3.3

Document for: Approval

This document contains several change requests to TS 31.102 v3.1.0 agreed by T3.

T3 Doc	Spec	CR	Rv	Rel	Subject
T3-000259	31.102	028		R99	removal of EUIC feature from R99
T3-000260	31.102	029		R99	Alignment with 33.102 Replace COUNT by START
T3-000271	31.102	030		R99	PLMN Selection additions
T3-000272	31.102	031		R99	Alignment to GSM 11.11 - Introduction of CPBCCH information and Investigation Scan indicator
T3-000309	31.102	032	2	R99	HPLMN Length
T3-000317	31.102	033	1	R99	LAI, RAI and CNL : alignment with GSM 04.08
T3-000268	31.102	034		R99	Deletion of EF(LOCIGSM) and EF(LOCIGPRS)
T3-000293	31.102	035		R99	Files to be read at USIM initialization
T3-000281	31.102	036		R99	Alignment to GSM 11.11 regarding Terminology
T3-000290	31.102	037		R99	Alignment with 33.102 regarding key set identifier
T3-000310	31.102	038	2	R99	Addition of SFI values to files read at initialisation of the USIM application
T3-000299	31.102	039		R99	Support of voltage classes
T3-000291	31.102	041		R99	Alignment with 33.102 regarding conversion functions
T3-000246	31.102	042		R99	Addition of procedures for reading and updating the content of the Enabled Services Table.
T3-000319	31.102	043		R99	Correction of the application activation termination procedures

Note: CR 31.102-040 "Addition of files for MExE" is contained in a separate document at TSG-T #8.

3GPP TSG T3 #14
Visby, Sweden, 24 – 26.5.2000

Document T3-00-261
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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31.102	**CR**	**027rev1**	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:	TSG-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:** 25-May-00

Subject: PLMN and Access Technology Selection: Indicator of preferred list

Work item:

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

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

Reason for change: To align PLMN selection procedures on the SIM with the revised service accessibility requirements contained in TS22.011 V3.1.0, namely inclusion of an user controlled switch to indicate the preferred PLMN selection list (user or operator).

Clauses affected: 4.2.x (new), 5.1.1, 5.3.x (new), Annex A, Annex E

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.

4.2.x EF_{PSPI} (PLMN selector preference indicator)

This EF indicates which PLMN selector file is used with preference by the ME, either $EF_{UPLMNsel}$ or $EF_{OPLMNsel}$. This information is determined by the user. This file shall be present if $EF_{UPLMNsel}$ and $EF_{OPLMNsel}$ are present at the same time.

Identifier: '6Fxx'	Structure: transparent	Optional
SFI: Mandatory		
File size: 1 byte	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	Preferred PLMN selector list	M	1 byte

- Preferred PLMN selector list

  Contents:

  Preferred PLMN selector list.

  Coding:

  '00' : $EF_{UPLMNsel}$ preferred;

  '01' : $EF_{OPLMNsel}$ preferred;

  all other codings are RFU.

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 preferred access technology request.
- PLMN Selector Preference Indicator 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.

5.3.x PLMN selector preference indicator

Requirement: Service n°20 "available".

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

Update: The ME performs the updating procedure with EF_{PSPI}.

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
...	...	...
...	...	...
'6FXX'	PLMN Selector Preference Indicator	(Note 2)
NOTE1: If EF_{IMSI} is changed, the UICC should issue REFRESH as defined in TS 31.111 and update EF_{LOCI} accordingly.		
NOTE2: For update of EF_{PSPI} see TS 22.011.		

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
...	...	...
...	...	...
'6FC2'	Group identity	'FFFFFFFF'
'6FC3'	Key for hidden phone book entries	'FF…FF'
'6FXX'	PLMN Selector Preference Indicator	'00'

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 TSG-T3#14
Visby, Sweden, 24. – 26.5, 2000

Document T3-00-0259
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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31.102	**CR**	**028** (was incorrectly marked 029)	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: TSG-T *list expected approval meeting # here ↑*

for approval	X	strategic	
for information		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: TSG-T3 **Date:** 25 May, 2000

Subject: removal of Enhanced User Identity Confidentiality (EUIC)

Work item:

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: EUIC has been postponed to R'2000 by TSG-SA and is subject to further study. Consequently, it is removed from 31.102 R'99.

Clauses affected: 3.2, 3.3, 4.2.8, 4.2.41, 5.2.9, 6.2, 7.2, 7.3

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.

3.2 Symbols

For the purposes of the present document, the following symbols apply:

||	Concatenation
⊕	Exclusive or
f1	Message authentication function used to compute MAC
f1*	A message authentication code (MAC) function with the property that no valuable information can be inferred from the function values of f1* about those of f1, ... , f5 and vice versa
f2	Message authentication function used to compute RES and XRES
f3	Key generating function used to compute CK
f4	Key generating function used to compute IK
f5	Key generating function used to compute AK
~~f6~~	~~Encryption function to encipher the IMSI~~

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

3GPP	3rd Generation Partnership Project
AC	Access Condition
ACL	APN Control List
ADF	Application Dedicated File
AID	Application IDentifier
AK	Anonymity key
ALW	ALWays
AMF	Authentication Management Field
AoC	Advice of Charge
APN	Access Point Name
AuC	Authentication Centre
AUTN	Authentication token
BDN	Barred Dialling Number
CCP	Capability Configuration Parameter
CK	Cipher key
CLI	Calling Line Identifier
CNL	Co-operative Network List
CS	Circuit switched
DCK	Depersonalisation Control Keys
DF	Dedicated File
DO	Data Object
EF	Elementary File
EMUI	Encrypted Mobile User Identity
~~EUIC~~	~~Enhanced User Identity Confidentiality~~
FCP	File Control Parameters
FFS	For Further Study
~~GK~~	~~User group key~~
GMSI	Group Identity
GSM	Global System for Mobile communications
HE	Home Environment
ICC	Integrated Circuit Card
ICI	Incoming Call Information
ICT	Incoming Call Timer
ID	IDentifier
IK	Integrity key
IMSI	International Mobile Subscriber Identity
K	USIM Individual key
K_C	Cryptographic key used by the cipher A5
KSI	Key Set Identifier

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)~~RFU
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

4.2.41 EF$_{GMSI}$ (Group Identity)

This EF contains the group identity of the mobile subscriber. This group identity references a group key GK, stored in the USIM, which is used for enhanced user identity confidentiality (enciphering of the IMSI).

Identifier: '6FC2'	Structure: transparent	Optional
File size: 4 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 4	Group Identity	M	4 bytes

Group Identity GMSI.

Coding:

the least significant bit of GMSI is the least significant bit of the 4th byte. The most significant bit of GMSI is the most significant bit of the first byte.

5.2.9 User Identity Request

The ME selects a USIM and ~~checks service n°26 (Enhanced user identity confidentiality). If service n°26 is not available then the ME~~ performs the reading procedure with EF_{IMSI}.

~~Otherwise the ME uses the Encipher IMSI function (see subclause 7.2.1). The response is received by the ME (in case of the T=0 protocol when requested by a subsequent GET RESPONSE command). Then the ME reads the group identity out of EF_{GMSI}. The ME concatenates the HE-id, the group identity GMSI and the enciphered IMSI and sends that to the network.~~

6.2 Cryptographic Functions

The names and parameters of the cryptographic functions supported by the USIM are defined in 3G TS 33.102 [13]. These are:

- f1: a message authentication function for network authentication used to compute XMAC;
- f1*: a message authentication function for support to re-synchronisation with the property that no valuable information can be inferred from the function values of f1* about those of f1, ... , f5 and vice versa;
- f2: a message authentication function for user authentication used to compute SRES;
- f3: a key generating function to compute the cipher key CK;
- f4: a key generating function to compute the integrity key IK;
- f5: a key generating function to compute the anonymity key AK (optional).~~;~~
- ~~f6: the user identity encryption function to encrypt the IMSI (optional).~~

These cryptographic functions may exist either discretely or combined within the USIM.

7.2 Encipher IMSI

7.2.1 Command description

The function is used during the procedure for identification of the user via the radio access path by means of the enciphered permanent user identity (IMSI).

For the execution of the command the USIM uses the group key GK and the sequence number $SEQ_{UIC/UE}$ which are stored internally in the USIM.

The USIM increments the internal sequence number $SEQ_{UIC/UE}$ that holds the value from the last execution of 'Encipher IMSI'.

Next the USIM computes the enciphered IMSI as $f6_{GK}$ ($SEQ_{UIC/UE}$ || IMSI) which is then returned in the command response.

The function is related to a particular USIM and shall not be executable unless the USIM or any sub-directory has been selected as the Current Directory and a successful PIN verification procedure has been performed (see clause 5).

Input:

- none.

Output:

- enciphered IMSI.

7.2.2 Command parameters and data

Code	Value
CLA	As defined in 3G TS 31.101
INS	'2A'
P1	'00'
P2	'00'
Lc	not present
Data	not present
Le	Length of EMSI (L1)

Parameter Le specifies the expected length of the response. This is depending on the further specification of function f6.

Command parameters/data:

- none.

Response parameters/data:

Byte(s)	Description	Length
1	Length of encrypted IMSI (L1)	1
2 to (L1+1)	Encrypted IMSI	L1

The most significant bit of the encrypted IMSI is coded on bit 8 of byte 2.

7.3 Status Conditions Returned by the UICC

Status of the card after processing of the command is coded in the status bytes SW1 and SW2. This subclause specifies coding of the status bytes in the following tables.

7.3.1 Security management

SW1	SW2	Error description
'98'	'62'	- Authentication error, incorrect MAC
'98'	'64	- Authentication error, GSM security context not supported

7.3.2 Status Words of the Commands

The following table shows for each command the possible status conditions returned (marked by an asterisk *). Status conditions of GSM and USIM applications are on the left and right sides of the table, respectively.

Commands and status words

AUTHENTICATE	~~ENCIPHERING~~	
		90 00
		91 XX
*	*	9F XX
		61XX#
		93 00
		92 0X
*	*	65 81
		94 00
		94 02
		94 04
*		94 08
		98 02
*	*	69 82
		98 08
		98 10
		98 40
		98 50
*		98 62
*		98 64
*	*	67 XX
*	*	6B XX
		6D XX
*	*	6E XX
*	*	6F XX
		62 81
		62 83
		62 82
		62 84
		62 00
		63 CX
		69 81
*	*	69 84
*	*	69 85
		69 86
		6A 81
		6A 82
		6A 83
		6A 84
		6A 85
*	*	6A 86
		6A 87
*	*	6A 88
		6C XX

3GPP TSG-T3#14
Visby, Sweden, 24. – 26.5, 2000

Document T3-00-0260
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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31.102	**CR**	**029**	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: TSG-T *list expected approval meeting # here ↑*	for approval	X	strategic		*(for SMG use only)*
	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: TSG-T3 **Date:** 25 May, 2000

Subject: Alignment with 33.102: Replace COUNT by START

Work item:

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: The mechanism to limit key lifetimes has been modified in 3G TS 33.102 (Security Architecture) and the attached CR proposes the according 31.102 changes.

Clauses affected: 4.2.51, 4.2.52, 5.2.12, 5.2.13, Annex A, Annex E.

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.

4.2.51 $EF_{START\text{-}HFN}$ ~~COUNT~~ (Initialisation values for Hyperframe number)

This EF contains the ~~highest~~ values of ~~the hyperframe number~~ $START_{CS}$ and $START_{PS}$ of the bearers that were protected by the keys in EF_{KEYS} or EF_{KEYSPS} ~~during the last~~ at release of the last CS or PS RRC connection. These~~is~~ values are~~is~~ used to control the lifetime of the keys (see 3G TS 33.102 [13]).

Identifier: '6F5B'	Structure: transparent	Mandatory
File size: ~~4~~6 bytes	Update activity: low	
Access Conditions: READ PIN UPDATE PIN DEACTIVATE ADM ACTIVATE ADM		

Bytes	Description	M/O	Length
1 to 3	$START_{CS}$	M	3 bytes
~~1~~4 to 6~~4~~	$START_{PS}$ ~~Hyperframe number~~	M	3~~4~~ bytes

- $START_{CS}$
  Contents: Initialisation value for Hyperframe number – CS domain~~Hyperframe number~~.
  Coding: The LSB of ~~the hyperframe number~~ $START_{CS}$ is stored in bit 1 of byte 3~~4~~. Unused nibbles are set to 'F'.

- $START_{PS}$
  Contents: Initialisation value for Hyperframe number – PS domain.
  Coding: As for $EF_{START\text{-}CS}$.

4.2.52 $EF_{THRESHOLD}$ ~~COUNTMAX~~ (Maximum value of START~~Hyperframe number~~)

This EF contains the maximum value of ~~the~~ $START_{CS}$ or $START_{PS}$ ~~hyperframe~~. This value is used to control the lifetime of the keys (see 3G TS 33.102 [13]).

Identifier: '6F5C'	Structure: transparent	Mandatory
File size: 3~~4~~ bytes	Update activity: low	
Access Conditions: READ PIN UPDATE ADM DEACTIVATE ADM ACTIVATE ADM		

Bytes	Description	M/O	Length
1 to 3~~4~~	Maximum value of ~~Hyperframe number~~ $START_{CS}$ or $START_{PS}$.	M	~~4~~3 bytes

- Maximum value of $START_{CS}$ or $START_{PS}$. ~~Hyperframe number~~.
  Coding: As for $EF_{START\text{-}CS}$. ~~The LSB of the maximum hyperframe number is stored in bit 1 of byte 4.~~

5.2.12 Initialisation value for Hyperframe number

Request: The ME performs the reading procedure with $EF_{COUNTSTART-HFN}$.

Update: The ME performs the updating procedure with $EF_{COUNTSTART-HFN}$.

5.2.13 Maximum value of START~~Hyperframe number~~

Request: The ME performs the reading procedure with ~~$EF_{COUNTMAX}$~~ $EF_{THRESHOLD}$.

5.2.14 HPLMN preferred access technology request

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

5.3 Subscription related procedures

5.3.1 Phone book procedures

5.3.1.1 Initialisation

The ME first reads the content of EF_{PBR} to determine the configuration phonebook. If the EF_{IAP} file is indicated in EF_{PBR} following tag 'D8' the ME reads the content of EF_{IAP} in order to establish the relation ship between the content in the files indicated using tag 'D9' and files indicated by tag 'D8'. The ME may read the contents of the phone book related files in any order.

5.3.1.2 Creation/Deletion of information

In order to avoid unlinked data to introduce fragmentation of the files containing phone book data the following procedures shall be followed when creating a new entry in the phone book. The data related to EF_{ADN} is first stored in the relevant record. As the record number is used as a pointer the reference pointer is now defined for the entry. The rule for storing additional information for an entry is that the reference pointer shall be created before the actual data is written to the location.

In case of deletion of a complete or part of an entry the data shall be deleted first followed by the reference pointer for that data element. In case of deletion of a complete entry the contents of EF_{ADN} is the last to be deleted.

5.3.1.3 Hidden phone book entries

If a phone book entry is marked as hidden by means of EF_{PBC} the ME first prompts the user to enter the 'Hidden Key'. The key presented by the user is compared against the value that is stored in the corresponding $EF_{Hiddenkey}$. Only if the presented and stored hidden key are identical the ME displays the data stored in this phone book entry. Otherwise the content of this phone book entry is not diplayed by the ME.

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

Update: The ME performs the updating procedure with $EF_{Hiddenkey}$.

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'	Initialisation value for Hyperframe number	Caution
'6F5C'	Maximum value of ~~hyperframe number~~START	Yes
'6F5D'	Operator PLMN selector	Caution
'6F5E'	Preferred HPLMN 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.

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'	Initialisation value for Hyperframe number	'00…00'
'6F5C'	Maximum value of ~~hyperframe number~~START	Operator dependant
'6F5D'	Operator PLMN selector	'FF…FF'
'6F5E'	Preferred HPLMN access technology	'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].

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

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 *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: PLMN Selection additions

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: 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:

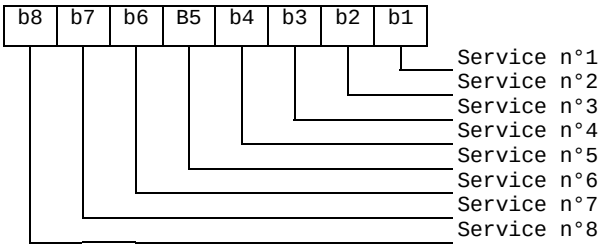
1 bit is used to code each service:

bit = 1: service available;

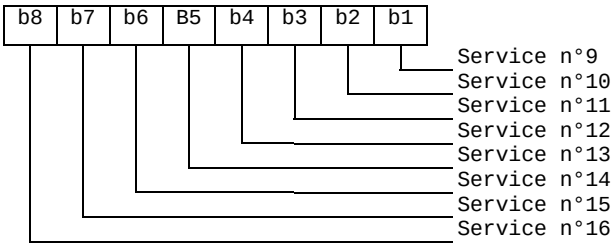
bit = 0: service not available.

- 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 T3-000272
Was T3-00254

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**	**031**	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:	TSG-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: Alignment to GSM 11.11 – Introduction of CPBCCH information and Investigation Scan indicator

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: Introduction of CPBCCH information and Investigation Scan indicator.
The alignment to 11.11 is essential for GSM/UMTS inter-working

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] GSM 04.18 “Mobile Interface Layer3 Specification, Radio Resource control protocol”

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

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

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

3GPP	3rd Generation Partnership Project
AC	Access Condition
ACL	APN Control List
ADF	Application Dedicated File
AID	Application IDentifier
AK	Anonymity key
ALW	ALWays
AMF	Authentication Management Field
AoC	Advice of Charge
APN	Access Point Name
AuC	Authentication Centre
AUTN	Authentication token
BDN	Barred Dialling Number
CCP	Capability Configuration Parameter
CK	Cipher key
CLI	Calling Line Identifier
CNL	Co-operative Network List
CPBCCH	COMPACT Packet BCCH
CS	Circuit switched
DCK	Depersonalisation Control Keys
DF	Dedicated File
DO	Data Object
EF	Elementary File
EMUI	Encrypted Mobile User Identity
EUIC	Enhanced User Identity Confidentiality
FCP	File Control Parameters
FFS	For Further Study
GK	User group key
GMSI	Group Identity
GSM	Global System for Mobile communications
HE	Home Environment
ICC	Integrated Circuit Card
ICI	Incoming Call Information
ICT	Incoming Call Timer
ID	IDentifier
IK	Integrity key
IMSI	International Mobile Subscriber Identity
K	USIM Individual key
K_C	Cryptographic key used by the cipher A5
KSI	Key Set Identifier
LI	Language Indication
LSB	Least Significant Bit
MAC	Message authentication code
MAC-A	MAC used for authentication and key agreement
MAC-I	MAC used for data integrity of signalling messages
MCC	Mobile Country Code

MF	Master File
MMI	Man Machine Interface
MNC	Mobile Network Code
MODE	Indication packet switched / circuit switched mode
MSB	Most Significant Bit
NEV	NEVer
NPI	Numbering Plan Identifier
OCI	Outgoing Call Information
OCT	Outgoing Call Timer
OFM	Operational Feature Monitor
PIN	Personal Identification Number
PL	Preferred Languages
PS	Packet switched
PS_DO	PIN Status Data Object
RAND	Random challenge
$RAND_{MS}$	Random challenge stored in the USIM
RES	User response
RFU	Reserved for Future Use
RST	Reset
SDN	Service dialling number
SE	Security Environment
SFI	Short EF Identifier
SQN	Sequence number
SRES	Signed RESponse calculated by a USIM
SW	Status Word
TLV	Tag Length Value
USAT	USIM Application Toolkit
USIM	Universal Subscriber Identity Module
XRES	Expected user RESponse

***** 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	CPBCCH Information
	Service n. xx	Investigation Scan

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:

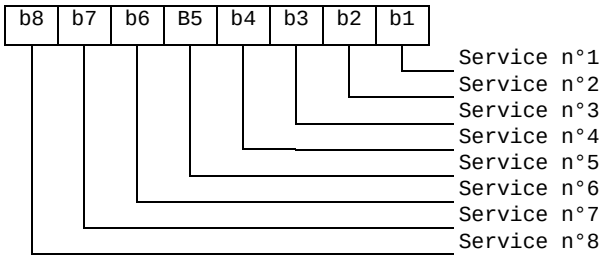
1 bit is used to code each service:

bit = 1: service available;

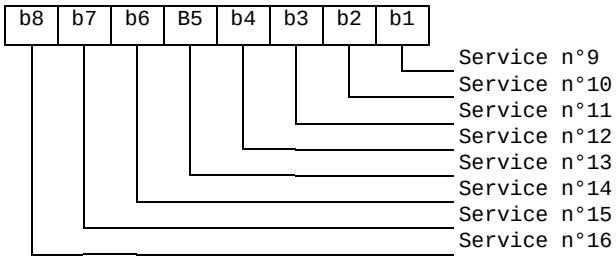
bit = 0: service not available.

- 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 *****

4.2.43.x EF_{CPBCCH} (CPBCCH Information)

This EF contains information concerning the CPBCCH according to GSM 04.18 [28].
CPBCCH storage may reduce the extent of a Mobile Station's search of CPBCCH carriers when selecting a cell. The CPBCCH carrier lists shall be in accordance with the procedures specified GSM 03.22 [29]. The MS stores CPBCCH information (from the System Information 19 message, Packet System Information 3, and Packet System Information 3 bis) on the USIM. The same CPBCCH carrier shall never occur twice in the list.

Identifier: 'xxxx'	Structure: transparent	Optional
File size: 2n bytes	Update activity: high	

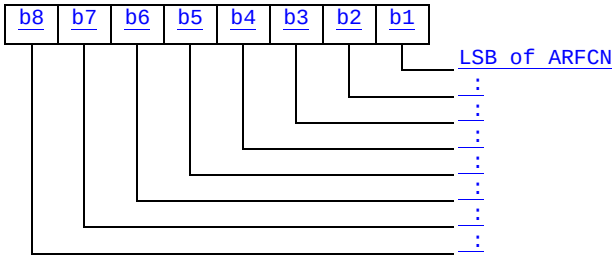
Access Conditions:

READ	PIN
UPDATE	PIN
INVALIDATE	ADM
REHABILITATE	ADM

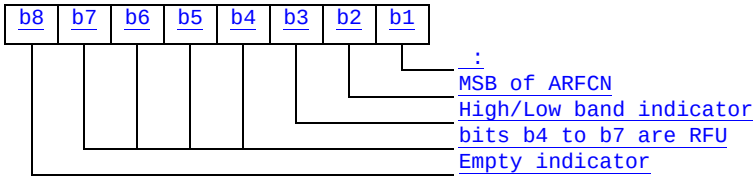
Bytes	Description	M/O	Length
1 to 2	Element 1 of CPBCCH carrier list	M	2 bytes
2n-1 to 2n	Element n of CPBCCH carrier list	M	2 bytes

- Element in CPBCCH carrier list
  Coding:

  Byte 1: first byte of CPBCCH carrier list element



  Byte 2: second byte of CPBCCH carrier list element



  - ARFCN (10 bits) as defined in GSM 05.05.

  - High/Low band indicator: If the ARFCN indicates possibly a channel in the DCS 1800 or a channel in the PCS 1900 band, if the bit is set to '1' the channel is in the higher band (GSM 1900). If the bit is set to '0',

the lower band (GSM 1800) is indicated. If ARFCN indicates a unique channel, this indicator shall be set to '0'.

- Empty indicator: If this bit is set to '1', no valid CPBCCH carrier is stored in this position. If the Empty Indicator is set to '1', the content of the CPBCCH carrier field shall be ignored. The empty indicator shall also be used, and set to '1', if storage of fewer than maximum number n, of CPBCCH carrier fields is required.

4.2.43.x $EF_{InvScan}$ (Investigation Scan)

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

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

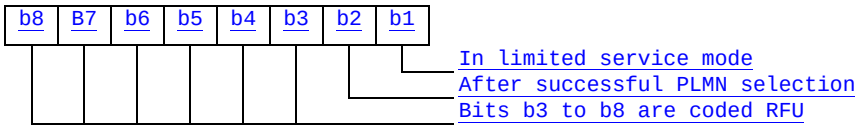
Access Conditions:

READ	PIN
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.

***** 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 preferred access technology request.
- PLMN selector request.
- GSM initialisation requests.
- 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.

5.1.1.1 GSM related initialisation procedures

If GSM access is enabled the following procedures shall be performed if the applicable service is enabled.

- Investigation Scan request
- CPBCCH information request

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.
- GSM Termination procedures.

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.

5.1.2.1 GSM termination procedures

If GSM access is enabled the following termination procedures shall be performed if the applicable service is enabled.

- CPBCCH information update

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

5.3.xx CPBCCH information

- Requirement: Service n°XX "available".
- Request: The ME performs the reading procedure with EF_{CPBCCH}.
- Update: The ME performs the updating procedure with EF_{CPBCCH}.

5.3.xx Investigation Scan

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

***** 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
'6F4D'	Barred dialling numbers	Yes
'6F4E'	Extension 5	Yes
'6F4F'	Capability configuration parameters 2	Yes
'6F50'	CBMIR	Yes

File identification	Description	Change advised
'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
'6F73'	Packet switched location information	Caution
'6F74'	BCCH	No
'xxxx'	CPBCCH Information	No
'xxxx'	Investigation Scan	Caution
'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'
'xxxx'	Investigation PLMN scan	'00'
'xxxx'	CPBCCH Information	'FF..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'
'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 TSG-T3 (USIM) Meeting #14
Visby, Sweden, 24-26 May 2000

Document T3-000309
corresponds to 9-00-0292

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	032r2	Current Version:	V3.1.0

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

For submission to:	TSG-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:** 26/05/2000

Subject: New "length of MNC" field in EF(AD)

Work item: T.E.I.

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: The ability to extract the right number of digits from the IMSI to determine the MNC length (2 or 3 digits), and then calculate the HPLMN length (5 or 6 digits)

Clauses affected: 4.2.18

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:

4.2.18 EF_{AD} (Administrative data)

This EF contains information concerning the mode of operation according to the type of USIM, such as normal (to be used by PLMN subscribers for 3G operations), type approval (to allow specific use of the ME during type approval procedures of e.g. the radio equipment), cell testing (to allow testing of a cell before commercial use of this cell), manufacturer specific (to allow the ME manufacturer to perform specific proprietary auto-test in its ME during e.g. maintenance phases).

It also provides an indication of whether some ME features should be activated during normal operation.

It will as well provide information about the length of the MNC, which is part of the International Mobile Subscriber Identity (IMSI).

Identifier: '6FAD'	Structure: transparent	Mandatory
File size: ~~3~~4+X bytes	Update activity: low	

Access Conditions:

READ	ALW
UPDATE	ADM
INVALIDATE	ADM
REHABILITATE	ADM

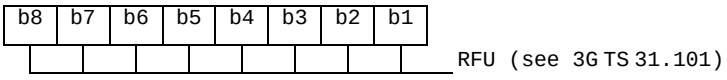
Bytes	Description	M/O	Length
1	UE operation mode	M	1 byte
2 – 3	Additional information	M	2 bytes
4	length of MNC in the IMSI	M	1 byte
~~4~~5 - ~~3~~4+X	RFU	O	X bytes

- UE operation mode
  Contents: mode of operation for the UE
  Coding:
  Initial value

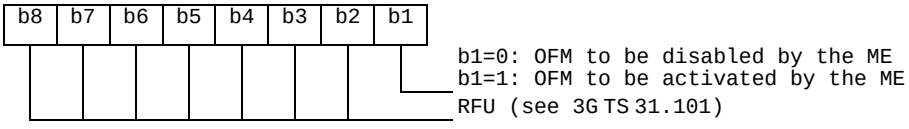
- normal operation	'00'
- type approval operations	'80'
- normal operation + specific facilities	'01'
- type approval operations + specific facilities	'81'
- maintenance (off line)	'02'
- cell test operation	'04'

- Additional information
  Coding:
  - specific facilities (if b1=1 in byte 1);

  Byte 2 (first byte of additional information):



  Byte 3:

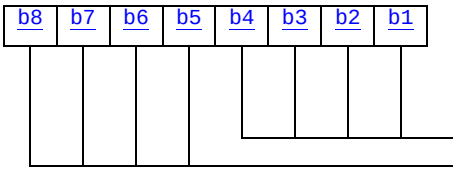


  The OFM bit is used to control the Ciphering Indicator as specified in GSM 02.07 [3]

  - ME manufacturer specific information (if b2=1 in byte 1).

- Length of MNC in the IMSI :
  Contents:
  The length indicator refers to the number of digits, used for extracting the MNC from the IMSI
  Coding:

Byte 4:



This value codes the number of digits of the MNC in the IMSI. Only the values '0010' and '0011' are currently specified, all other values are reserved for future use.

RFU (see 3G TS 31.101)

3GPP TSG-T3 (USIM) Meeting #14
Visby, Sweden, 24-26 May 2000

Document T3-000317
corresponds to 9-00-0236

CHANGE REQUEST

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

TS 31.102	CR	033R1	Current Version:	V3.1.0

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

For submission to:	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:** 31/05/2000

Subject: LAI, RAI and CNL : alignment with 3G TS 24.008

Work item: T.E.I.

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:
Alignment with 3G TS 24.008 :
The MNC contains up to 3 digits. The LAI (in EF_{LOCI}), the RAI (in EF_{PSLOCI}) and the Co-operative Networks (in EF_{CNL}) are concerned. In order to ensure consistency, duplicated text from 3G TS 24.008 is deleted. Annex E (suggested content at pre-personalization) is updated accordingly.

Clauses affected: 4.2.17, 4.2.23, 4.2.50, Annex E

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.

4.2.17 EF_{LOCI} (Location Information)

This EF contains the following Location Information:

- Temporary Mobile Subscriber Identity (TMSI);
- Location Area Information (LAI);
- Location update status.

See subclause 5.2.5 for special requirements when updating EF_{LOCI}.

Identifier: '6F7E'	Structure: transparent	Mandatory
SFI: Mandatory		
File size: 11 bytes	Update activity: high	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 4	TMSI	M	4 bytes
5 to 9	LAI	M	5 bytes
10	RFU	M	1 byte
11	Location update status	M	1 byte

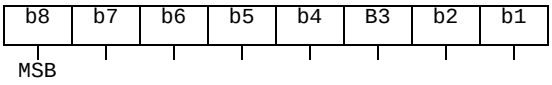
- TMSI

  Contents:

  Temporary Mobile Subscriber Identity.

  Coding:

  according to 3G TS 24.008 [9].



- LAI

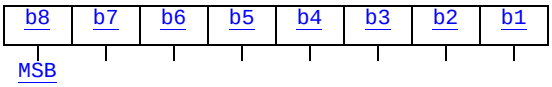
  Contents:

  Location Area Information.

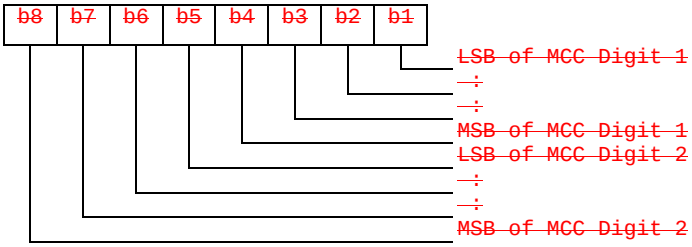
  Coding:

  according to 3G TS 24.008 [9].

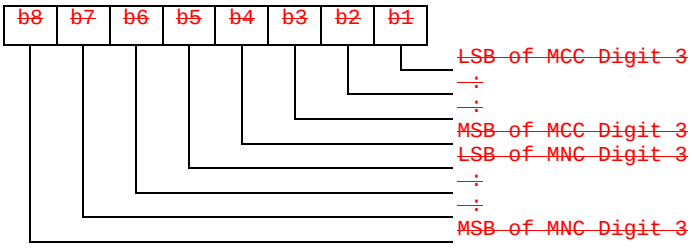
Byte 5: first byte of LAI



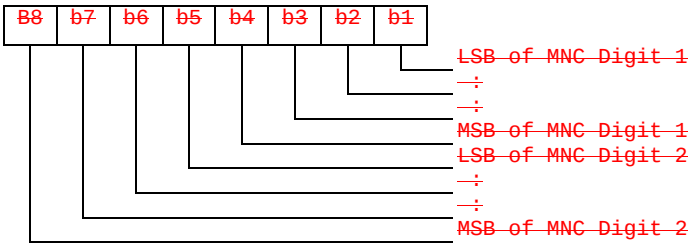
~~Byte 5: first byte of LAI (MCC digits 1 and 2)~~



~~Byte 6: second byte of LAI (MCC digit 3, MNC digit 3)~~



Byte 7: third byte of LAI (MNC digits 1 and 2)



Byte 8: fourth byte of LAI (LAC).

Byte 9: fifth byte of LAI (LAC continued).

- Location update status
  Contents:
  status of location update according to 3G TS 24.008 [9].
  Coding:
  Byte 11:

Bits:	b3	b2	b1	
	0	0	0	: updated.
	0	0	1	: not updated.
	0	1	0	: PLMN not allowed.
	0	1	1	: Location Area not allowed.
	1	1	1	: reserved.

Bits b4 to b8 are RFU (see 3G TS 31.101 [11]).

4.2.23 EF_{PSLOCI} (Packet Switched location information)

This EF contains the following Location Information:

- Packet Temporary Mobile Subscriber Identity (P-TMSI);
- Packet Temporary Mobile Subscriber Identity signature value (P-TMSI signature value);
- Routing Area Information (RAI);
- Routing Area update status.

Identifier: '6F73'	Structure: transparent	Optional
SFI: Mandatory		
File size: 14 bytes	Update activity: high	

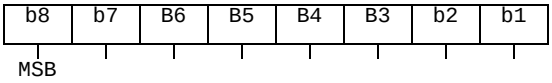
Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 4	P-TMSI	M	4 bytes
5 to 7	P-TMSI signature value	M	3 bytes
8 to13	RAI	M	6 bytes
14	Routing Area update status	M	1 byte

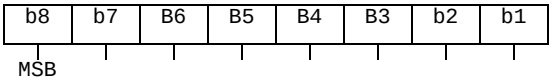
- P-TMSI.
  Contents:
  Packet Temporary Mobile Subscriber Identity.
  Coding:
  according to 3G TS 24.008 [9].

Byte 1: first byte of P-TMSI



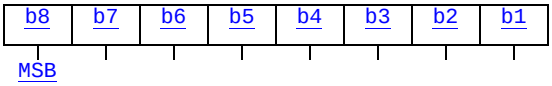
- P-TMSI signature value.
  Contents:
  Packet Temporary Mobile Subscriber Identity signature value.
  Coding:
  according to 3G TS 24.008 [9].

  Byte 5: first byte of P-TMSI signature value.

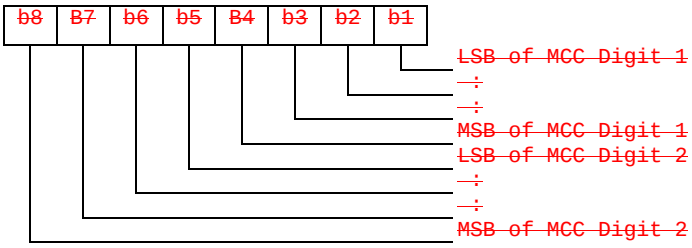


- RAI
  Contents:
  Routing Area Information.
  Coding:
  according to 3G TS 24.008 [9].

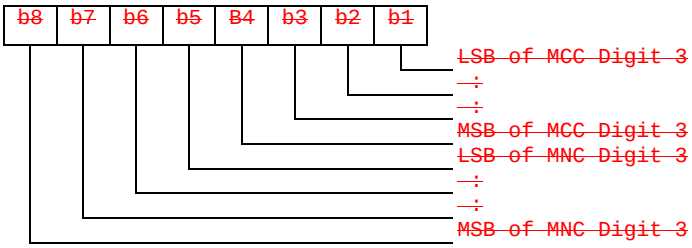
  Byte 8: first byte of RAI



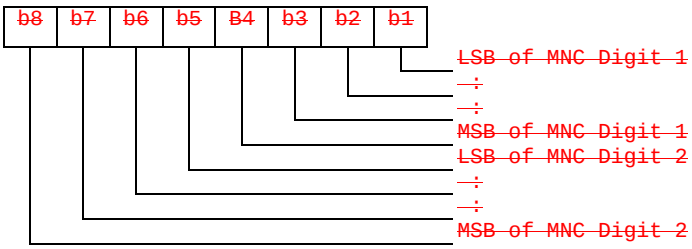
~~Byte 8: first byte of RAI (MCC digits 1 and 2).~~



~~Byte 9: second byte of RAI (MCC digit 3, MNC digit 3)~~



~~Byte 10: third byte of RAI (MNC digits 1 and 2)~~



~~Byte 11: fourth byte of RAI (LAC).~~

~~Byte 12: fifth byte of RAI (LAC continued).~~

~~Byte 13: sixth byte of RAI (RAC).~~

- Routing Area update status.
  Contents:
  status of routing area update according to 3G TS 24.008 [9].
  Coding:
  byte 14:

Bits:	b3	b2	b1.	
	0	0	0	: updated.
	0	0	1	: not updated.
	0	1	0	: PLMN not allowed.
	0	1	1	: Routing Area not allowed.
	1	1	1	: reserved.

  Bits b4 to b8 are RFU (see 3G TS 31.101 [11]).

4.2.50 EF_{CNL} (Co-operative Network List)

This EF contains the Co-operative Network List for the multiple network personalization services defined in TS 22.022 [27].

Identifier: '6F32'	Structure: transparent	Optional
File size: 6n bytes	Update activity: low	
Access Conditions: READ PIN UPDATE ADM INVALIDATE ADM REHABILITATE ADM		

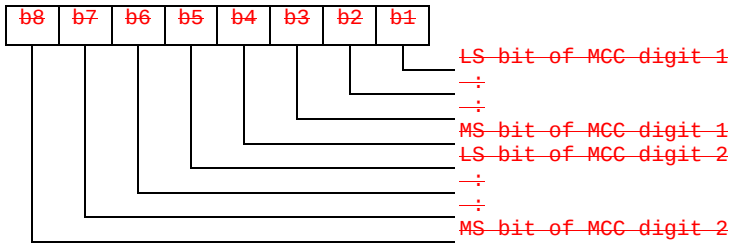
Bytes	Description	M/O	Length
1 to 6	Element 1 of co-operative net list	M	6 bytes
6n-5 to 6n	Element n of co-operative net list	O	6 bytes

- Co-operative Network List.

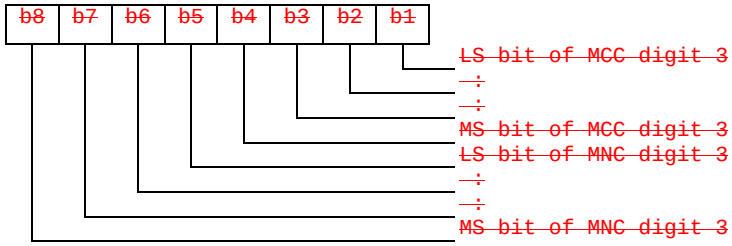
  Contents:
  - ~~MCC, MNC~~PLMN, network subset, service provider ID and corporate ID of co-operative networks.

  Coding:
  - For each 6 byte list element.

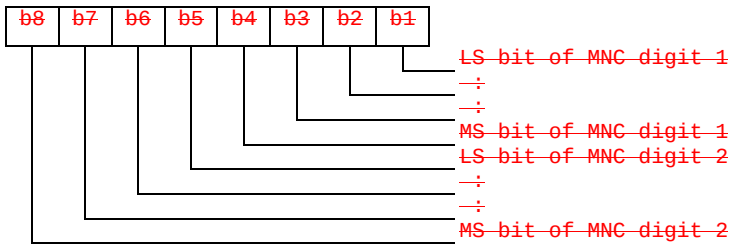
Byte 1~~:~~ to 3 : PLMN (MCC + MNC) : according to 3G TS 24.008 [9].



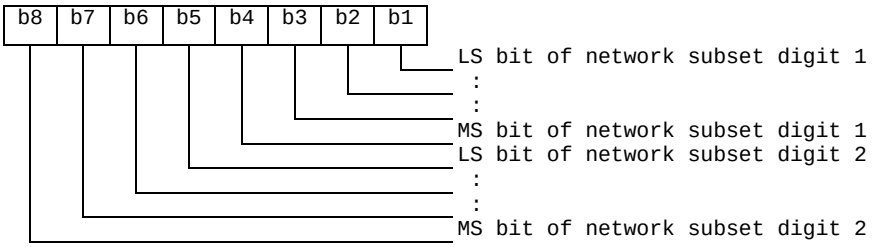
~~Byte 2:~~



~~Byte 3:~~

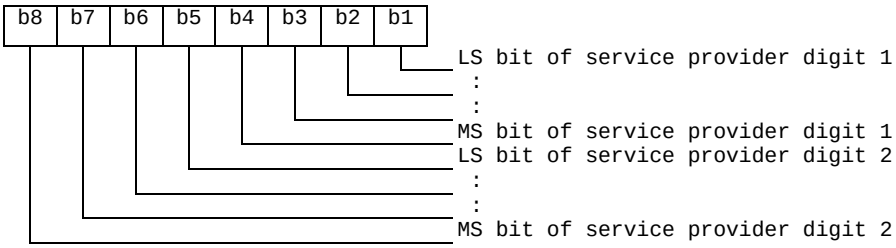


Byte 4:

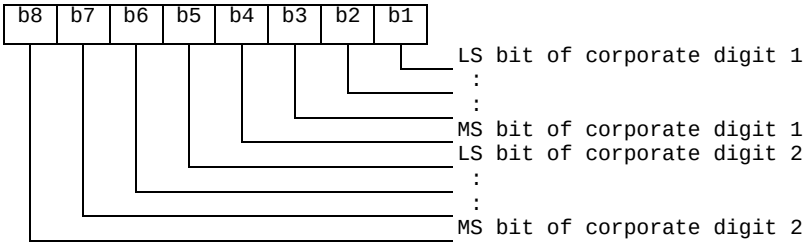


~~NOTE: Digit 3 of the MNC is placed directly after the MCC fields for compatibility between GSM and PCS 1900 PLMN structures.~~

Byte 5:



Byte 6:



~~For 2 digit MNCs digit 3 of this field shall be 'F'.~~

~~For 1 digit network subsets digit 2 of this field shall be 0.~~

- Empty fields shall be coded with 'FF'.
- The end of the list is delimited by the first MCC field coded 'FFF'.

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'
'6F73'	Packet switched location information	'FFFFFFFF FFFFFF xx~~F~~xxxx 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 xx~~F~~xxxx 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: xx~~F~~xxxx stands for any valid MCC and MNC, coded according to 3G TS 24.008 [9].

3GPP TSG-T3 (USIM) Meeting #14
Visby, Sweden, 24-26 May 2000

Document T3-000268
supersedes T3-000216

CHANGE REQUEST

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

TS 31.102	CR	034	Current Version:	V3.1.0

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

For submission to:	TSG-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:** 26/05/2000

Subject: Deletion of EF(LOCIGSM) and EF(LOCIGPRS)

Work item: T.E.I.

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: EF(LOCIGSM) and EF(LOCIGPRS) are not needed. EF(LOCI) and EF(PSLOCI) can be used, see 3G TS 24.008. If the file are duplicated, there's a big risk of introducing synchronisation problems with the network concerning TMSI, PTMSI, LAI and RAI.

Clauses affected: 4.2.43.3, 4.2.43.4, Annex E

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.

4.2.43.3 EF$_{LOCIGPRS}$ (GPRS location information)

This EF contains the following Location Information:

- Packet Temporary Mobile Subscriber Identity (P-TMSI);
- Packet Temporary Mobile Subscriber Identity signature value (P-TMSI signature value);
- Routing Area Information (RAI);
- Routing Area update status.

If the GSM access service is available on the USIM, then this file is mandatory.

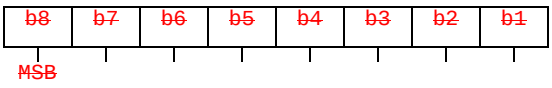
Identifier: '6F53'	Structure: transparent	Optional
SFI: Mandatory		
File size: 14 bytes	Update activity: high	

Access Conditions:
READ PIN
UPDATE PIN
DEACTIVATE ADM
ACTIVATE ADM

Bytes	Description	M/O	Length
1 to 4	P-TMSI	M	4 bytes
5 to 7	P-TMSI signature value	M	3 bytes
8 to 13	RAI	M	6 bytes
14	Routing Area update status	M	1 byte

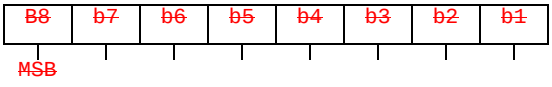
- P-TMSI.
  - Contents:
    - Packet Temporary Mobile Subscriber Identity.
  - Coding:
    - according to TS 24.008 [9].

Byte 1: first byte of P-TMSI



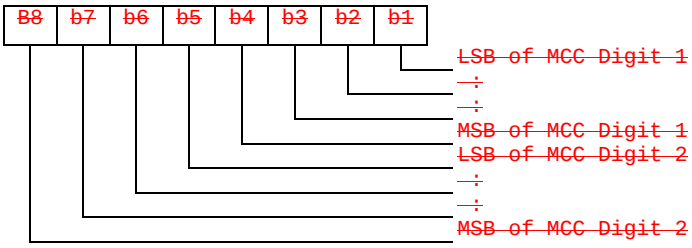
- P-TMSI signature value.
  - Contents:
    - Packet Temporary Mobile Subscriber Identity signature value.
  - Coding:
    - according to TS 24.008 [9].

Byte 5: first byte of P-TMSI signature value

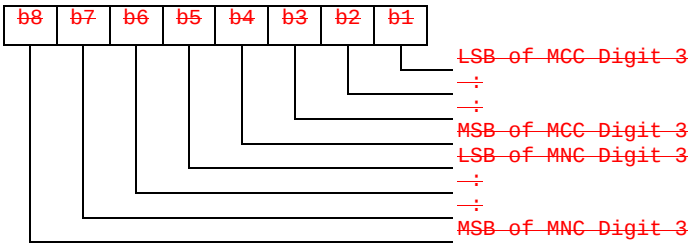


- RAI.
  - Contents:
    - Routing Area Information.
  - Coding:
    - according to TS 24.008 [9].

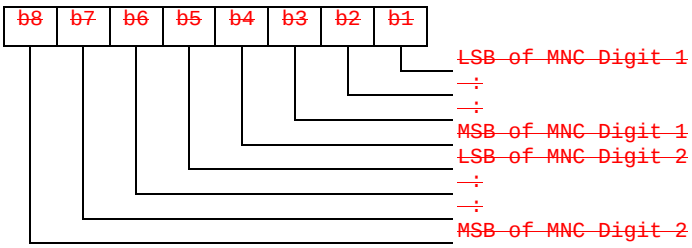
Byte 8: first byte of RAI (MCC digits 1 and 2).



Byte 9: second byte of RAI (MCC digit 3, MNC digit 3)



Byte 10: third byte of RAI (MNC digits 1 and 2).



Byte 11: fourth byte of RAI (LAC).

Byte 12: fifth byte of RAI (LAC continued).

Byte 13: sixth byte of RAI (RAC).

Routing area update status.

Contents:

status of routing area update according to TS 24.008 [9].

Coding:

Byte 14:

Bits:	b3	b2	b1.
	0	0	0 : updated.
	0	0	1 : not updated.
	0	1	0 : PLMN not allowed.
	0	1	1 : Routing Area not allowed.
	1	1	1 : reserved.

Bits b4 to b8 are RFU.

4.2.43.4 EF$_{LOCIGSM}$ (GSM Location Information)

This EF contains the following Location Information:

Temporary Mobile Subscriber Identity (TMSI).

Location Area Information (LAI).

Location update status.

See subclause 5.2.5 for special requirements when updating EF$_{LOCIGSM}$.

If the GSM access service is available on the USIM, then this file is mandatory.

Identifier: '6F7F'	Structure: transparent	Optional
SFI: Mandatory		
File size: 11 bytes	Update activity: high	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	PIN

Bytes	Description	M/O	Length
1 to 4	TMSI	M	4 bytes
5 to 9	LAI	M	5 bytes
10	Reserved (was used in GSM phase 1)	M	1 byte
11	Location update status	M	1 byte

TMSI.

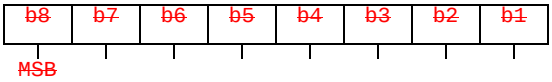
Contents:

Temporary Mobile Subscriber Identity.

Coding:

according to TS 24.008 [9].

Byte 1: first byte of TMSI



LAI.

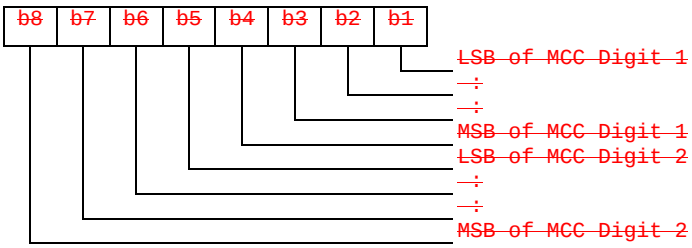
Contents:

Location Area Information.

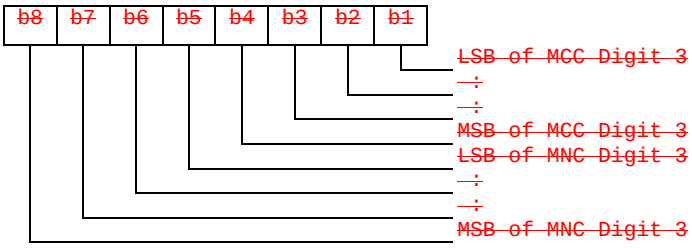
Coding:

according to TS 24.008 [9].

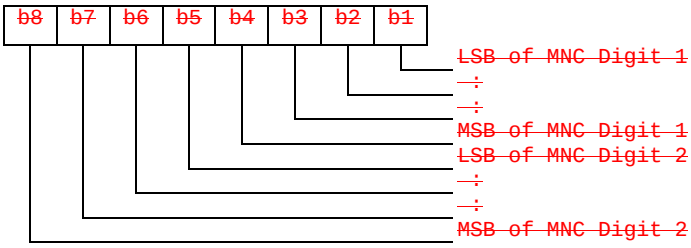
Byte 5: first byte of LAI (MCC digits 1 and 2).



Byte 6: second byte of LAI (MCC digit 3, MNC digit 3).



Byte 7: third byte of LAI (MNC digits 1 and 2).



Byte 8: fourth byte of LAI (LAC).

Byte 9: fifth byte of LAI (LAC continued).

Location update status.

Contents:

status of location update according to TS 24.008 [9].

Coding:

byte 11:

Bits:	b3	b2	b1.	
0	0	0	:	updated.
0	0	1	:	not updated.
0	1	0	:	PLMN not allowed.
0	1	1	:	Location Area not allowed.
1	1	1	:	reserved.

Bits b4 to b8 are RFU (see GSM 11.11 [18]).

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'
'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 TSG-T3 (USIM) Meeting #14
Visby, Sweden, 24-26 05 2000

Document T3-000293
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

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	035R1	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:	TSG-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:** 26.05.2000

Subject: Addition of files to be read at USIM initialization

Work item: USIM

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: Not all files needed at USIM initialisation are present in the latest version of 31.102. This CR proposes the introduction procedures for reading EF_{EST}, EF_{KeysPS}, EF_{PSLOCI}, $EF_{StartHN}$, $EF_{UPLMNsel}$, $EF_{Threshold}$ and $EF_{OPLMNsel}$ as well as removal of EF_{HPLMN} and EF_{LSA}

Clauses affected:

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.

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].

The ME performs the Enabled Services Table Request.

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 if the ME supports the related feature:

- IMSI request.
- Access control information request.
- HPLMN search period request.
- HPLMN preferred access technology request.
- User PLMN selector request.
- Operator PLMN selector request.
- Location Information request for CS-~~,~~and/or PS-mode~~.~~
- Cipher key and integrity key request CS- and/or PS-mode.

- Forbidden PLMN request.

- ~~LSA information request.~~

- Initialisation value for ~~H~~hyperframe number request

- Maximum value of START 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.

5.1.3 USIM application closure

After termination of the 3G session as defined in 5.1.2 the USIM application may be closed by closing the logical channels that are used to communicate with this particular USIM application.

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	

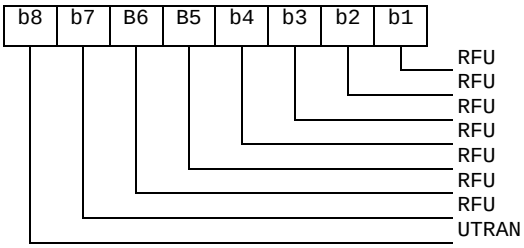
Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

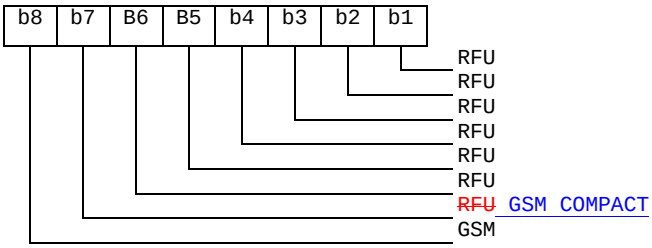
Bytes	Description	M/O	Length
1 to 3	1st PLMN (highest priority)	M	3 bytes
4 to 5	1st PLMN Access Technology Identifier	M	2 bytes
6 to 8	2nd PLMN	M	3 bytes
9 to 10	2nd PLMN Access Technology Identifier	M	2 bytes
:	:		
36 to 38	8th PLMN	M	3 bytes
39 to 40	8th PLMN Access Technology Identifier	M	2 bytes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

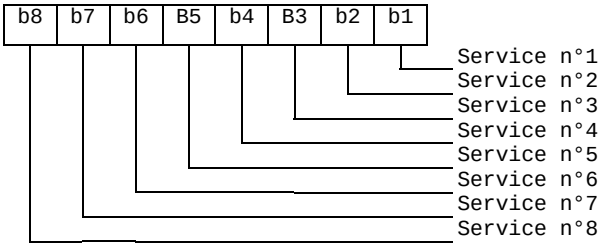
1 bit is used to code each service:

bit = 1: service available;

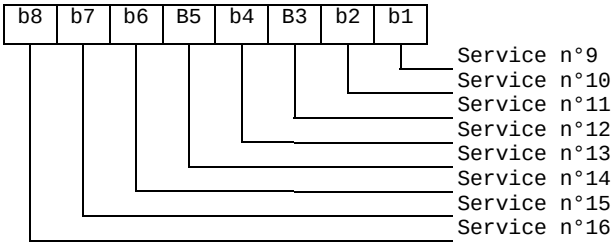
bit = 0: service not available.

- 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$_{OPLMNselwACT}$ (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~~A~~ccess t~~T~~echnology	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].

Tdoc T3-000290

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	037	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:	TSG-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: TSG-T3 **Date:** 26 May 2000

Subject: Alignment with 33.102 regarding key set identifier

Work item: T.E.I.

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: The key set identifier, KSI, has three bits according to 33.102, but by mistake is specified as 4 bits in 31.102.

Clauses affected: 4.2.3, 4.2.4, Annex E.

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.

4.2.3 EF_{Keys} (Ciphering and Integrity Keys)

This EF contains the ciphering key CK, the integrity key IK and the key set identifier KSI.

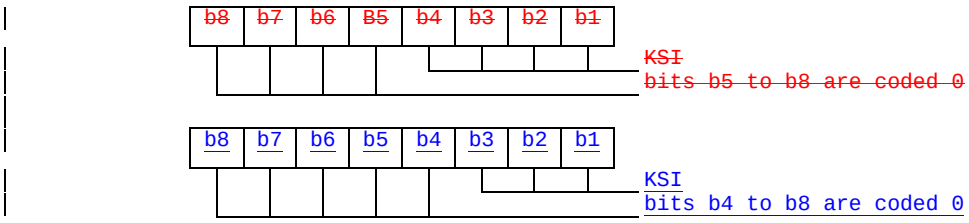
Identifier: '6F08'	Structure: transparent	Mandatory
SFI: '08'		
File size: 33 bytes	Update activity: high	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	Key set identifier KSI	M	1 byte
2 to 17	Ciphering key CK	M	16 bytes
18 to 33	Integrity key IK	M	16 bytes

- Key Set Identifier KSI.
  Coding:



- Ciphering key CK.
  Coding:
  - the least significant bit of CK is the least significant bit of the 17th byte. The most significant bit of CK is the most significant bit of the 2nd byte.

- Integrity key IK.
  Coding:
  - the least significant bit of IK is the least significant bit of the 33rd byte. The most significant bit of IK is the most significant bit of the 18th byte.

4.2.4 EF_{KeysPS} (Ciphering and Integrity Keys for Packet Switched domain)

This EF contains the ciphering key CKPS, the integrity key IKPS and the key set identifier KSIPS for the packet switched (PS) domain.

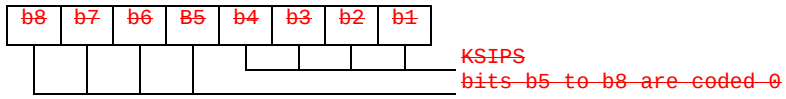
Identifier: '6F09'	Structure: transparent	Mandatory
SFI: '09'		
File size: 33 bytes	Update activity: high	

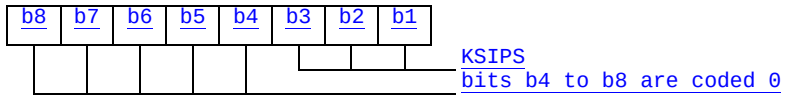
Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	Key set identifier KSIPS	M	1 byte
2 to 17	Ciphering key CKPS	M	16 bytes
18 to 33	Integrity key IKPS	M	16 bytes

- Key Set Identifier KSIPS.
  Coding:





- Ciphering key CKPS.
  Coding:
  - the least significant bit of CKPS is the least significant bit of the 17th byte. The most significant bit of CKPS is the most significant bit of the 2nd byte.
- Integrity key IKPS.
  Coding:
  - the least significant bit of IKPS is the least significant bit of the 33rd byte. The most significant bit of IKPS is the most significant bit of the 18th byte.

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	'07FF…FF'
'6F09'	Ciphering and integrity keys for packet switched domain	'07FF…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'
'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 TSG-T3 (USIM) Meeting #14
Visby, Sweden, 24-26 05 2000

Document T3-000310
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

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	038R2	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:	TSG-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		UTRAN / Radio		Core Network	

Source: T3 **Date:** 30.05.2000

Subject: Addition of SFI values to files ; Introduction of DF_GSM; Corrections concerning EFs

Work item: USIM

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:
SFI values have been missing in spec. DF_GSM is introduced to reduce the number of EFs in ADF USIM having SFI values assigned.
EF_PSLOCI is changed to mandatory to correct the inconsistency of having some PS related EFs mandatory and others optional.
Editorial corrections in Annex G.

Clauses affected: 4.2; ; 4.3; 4.4.2; 4.7; Annex

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.

4.2 Contents of files at the USIM ADF (Application DF) level

The EFs in the USIM ADF contain service and network related information.

4.2.1 EF_{LI} (Language Indication)

This EF contains the codes for one or more languages. This information, determined by the user/operator, defines the preferred languages of the user in order of priority. This information may be used by the ME for MMI purposes. This information may also be used for the screening of Cell Broadcast messages in a preferred language, as follows.

When the CB Message Identifier capability is available, the ME selects only those CB messages the language of which corresponds to an entry in this EF or in $EF_{PL,}$ whichever of these EFs is used (see subclause 5.1.1). The CB message language is defined by the Data Coding Scheme (DCS: see 3G TS 23.038 [5]) received with the CB message. The ME shall be responsible for translating the language coding indicated in the Data Coding Scheme for the Cell Broadcast Service (as defined in 3G TS 23.038 [5]) to the language coding as defined in ISO 639 [19] if it is necessary to check the language coding in EF_{PL}.

Identifier: '6F 05'	Structure: transparent	Optional
SFI: '02'		
File size: 2n bytes	Update activity: low	

Access Conditions:

READ	ALW
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 2	1st language code (highest prior).	M	2 bytes
3 to 4	2nd language code	O	2 bytes
2n-1 to 2n	Nth language code (lowest prior).	O	2 bytes

Coding:

- each language code is a pair of alpha-numeric characters, defined in ISO 639 [19]. Each alpha-numeric character shall be coded on one byte using the SMS default 7-bit coded alphabet as defined in 3G TS 23.038 [5] with bit 8 set to 0.

Unused language entries shall be set to 'FF FF'.

4.2.2 EF_{IMSI} (IMSI)

This EF contains the International Mobile Subscriber Identity (IMSI).

Identifier: '6F07'	Structure: transparent	Mandatory
SFI: '07'		
File size: 9 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	Length of IMSI	M	1 byte
2 to 9	IMSI	M	8 bytes

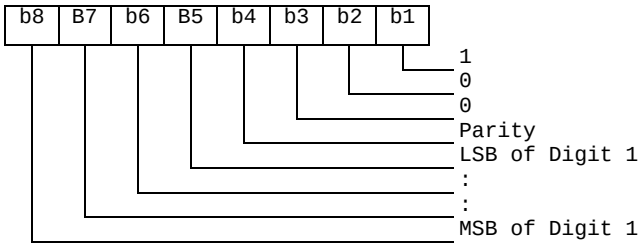
- Length of IMSI
  Contents:
  - the length indicator refers to the number of significant bytes, not including this length byte, required for the IMSI.

  Coding:
  - according to 3G TS 24.008 [9].

- IMSI
  Contents:
  - International Mobile Subscriber Identity.

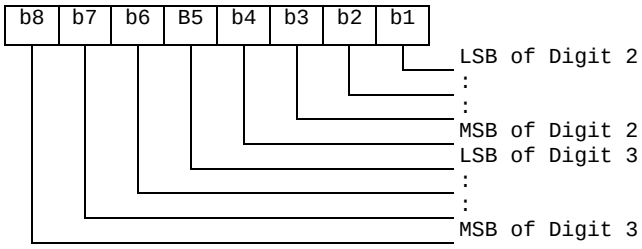
  Coding:
  - this information element is of variable length. If a network operator chooses an IMSI of less than 15 digits, unused nibbles shall be set to 'F'.

Byte 2:



For the parity bit, see 3G TS 24.008 [9].

Byte 3:



etc.

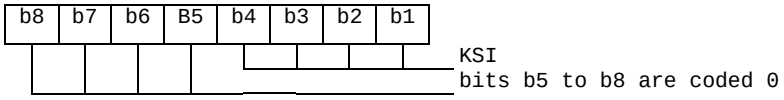
4.2.3 EF_{Keys} (Ciphering and Integrity Keys)

This EF contains the ciphering key CK, the integrity key IK and the key set identifier KSI.

Identifier: '6F08'	Structure: transparent	Mandatory
SFI: '08'		
File size: 33 bytes	Update activity: high	
Access Conditions: READ PIN UPDATE PIN DEACTIVATE ADM ACTIVATE ADM		

Bytes	Description	M/O	Length
1	Key set identifier KSI	M	1 byte
2 to 17	Ciphering key CK	M	16 bytes
18 to 33	Integrity key IK	M	16 bytes

- Key Set Identifier KSI.
  Coding:



- Ciphering key CK.
  Coding:
  - the least significant bit of CK is the least significant bit of the 17th byte. The most significant bit of CK is the most significant bit of the 2nd byte.

- Integrity key IK.
  Coding:
  - the least significant bit of IK is the least significant bit of the 33rd byte. The most significant bit of IK is the most significant bit of the 18th byte.

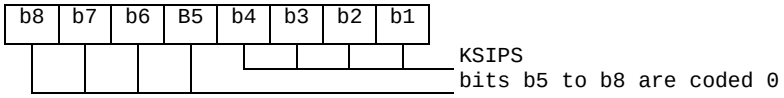
4.2.4 EF_{KeysPS} (Ciphering and Integrity Keys for Packet Switched domain)

This EF contains the ciphering key CKPS, the integrity key IKPS and the key set identifier KSIPS for the packet switched (PS) domain.

Identifier: '6F09'	Structure: transparent	Mandatory
SFI: '09'		
File size: 33 bytes	Update activity: high	
Access Conditions: READ PIN UPDATE PIN DEACTIVATE ADM ACTIVATE ADM		

Bytes	Description	M/O	Length
1	Key set identifier KSIPS	M	1 byte
2 to 17	Ciphering key CKPS	M	16 bytes
18 to 33	Integrity key IKPS	M	16 bytes

- Key Set Identifier KSIPS.
  Coding:



- Ciphering key CKPS.
  Coding:
  - the least significant bit of CKPS is the least significant bit of the 17th byte. The most significant bit of CKPS is the most significant bit of the 2nd byte.
- Integrity key IKPS.
  Coding:
  - the least significant bit of IKPS is the least significant bit of the 33rd byte. The most significant bit of IKPS is the most significant bit of the 18th byte.

4.2.5 $EF_{UPLMNsel}$ (UPLMN selector)

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 nth record indicates the lowest.

Identifier: '6F30'	Structure: transparent	Optional
SFI: '0A'~~Mandatory~~		
File size: 5n (where n >=8) bytes~~)~~	Update activity: low	

Access Conditions:

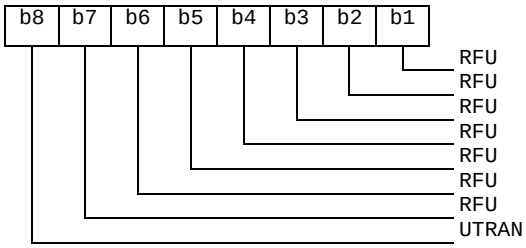
READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

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

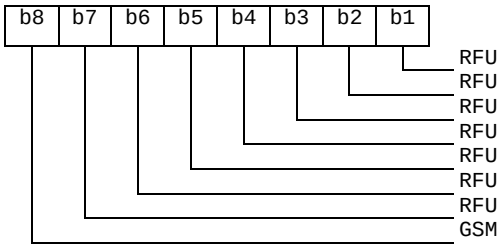
- PLMN
  Contents:
  - Mobile Country Code (MCC) followed by the Mobile Network Code (MNC).

  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:



Byte 5:



4.2.6 EF_{HPLMN} (HPLMN search period)

This EF contains the interval of time between searches for the HPLMN (see 3G TS 22.011 [2]).

Identifier: '6F31'	Structure: transparent	Mandatory
SFI: '12'		
File size: 1 byte	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	Time interval	M	1 byte

- Time interval.
  Contents:
  the time interval between two searches.
  Coding:
  the time interval is coded in integer multiples of n minutes. The range is from n minutes to a maximum value. The value '00' indicates that no attempts shall be made to search for the HPLMN. The encoding is:

  - '00': No HPLMN search attempts;
  - '01': n minutes;
  - '02': 2n minutes;
  - : :
  - 'YZ': (16Y+Z)n minutes (maximum value).

  - All other values shall be interpreted by the ME as a default period.

For specification of the integer timer interval n, the maximum value and the default period refer to 3G TS 22.011 [2].

4.2.7 EF_{ACMmax} (ACM maximum value)

This EF contains the maximum value of the accumulated call meter. This EF shall always be allocated if EF_{ACM} is allocated.

Identifier: '6F37'	Structure: transparent	Optional
File size: 3 bytes	Update activity: low	

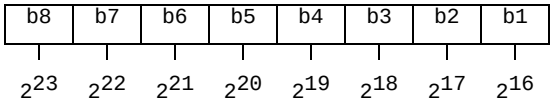
Access Conditions:

READ	PIN
UPDATE	PIN/PIN2 (fixed during administrative management)
DEACTIVATE	ADM
ACTIVATE	ADM

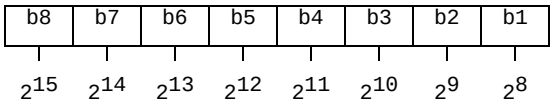
Bytes	Description	M/O	Length
1 to 3	Maximum value	M	3 bytes

- Maximum value.
  Contents:
  - maximum value of the Accumulated Call Meter (ACM).
  Coding:

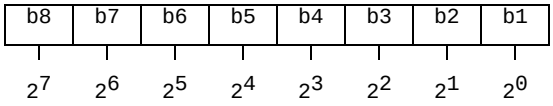
First byte:



Second byte:



Third byte:



For instance, '00' '00' '30' represents 2^5+2^4.

All ACM data is stored in the USIM and transmitted over the USIM/ME interface as binary.

ACMmax is not valid, as defined in 3G TS 22.024 [3], if it is coded '000000'.

If a GSM application is present on the UICC and the ACMmax value is to be shared between the GSM and the USIM application this file shall be shared between the two applications.

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~~'04'		
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

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:

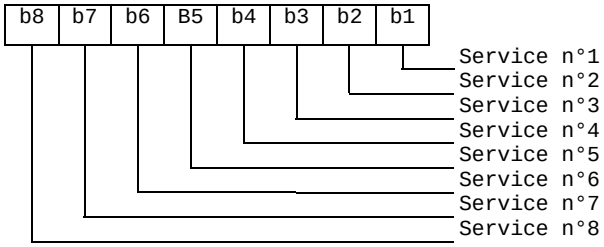
1 bit is used to code each service:

bit = 1: service available;

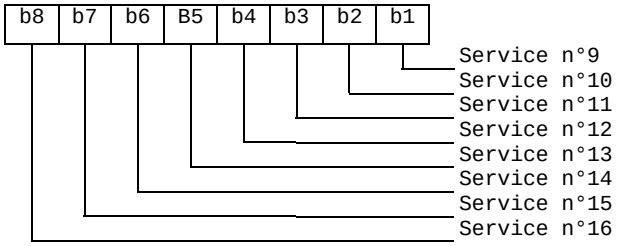
bit = 0: service not available.

- 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.

4.2.9 EF_{ACM} (Accumulated Call Meter)

This EF contains the total number of units for both the current call and the preceding calls.

NOTE: The information may be used to provide an indication to the user for advice or as a basis for the calculation of the monetary cost of calls (see 3G TS 22.086 [15]).

Identifier: '6F39'	Structure: cyclic	Optional
Record length: 3 bytes	Update activity: high	

Access Conditions:

READ	PIN
UPDATE	PIN/PIN2 (fixed during administrative management)
INCREASE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 3	Accumulated count of units	M	3 bytes

- Accumulated count of units
  Contents:
  value of the ACM.
  Coding:
  see the coding of EF_{ACMmax}.

If a GSM application is present on the UICC and the ACM value is to be shared between the GSM and the USIM application this file shall be shared between the two applications.

4.2.10 EF_{GID1} (Group Identifier Level 1)

This EF contains identifiers for particular USIM-ME associations. It can be used to identify a group of USIMs for a particular application.

Identifier: '6F3E'	Structure: transparent	Optional
File size: 1-n bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to n	USIM group identifier(s)	O	n bytes

4.2.11 EF_{GID2} (Group Identifier Level 2)

This EF contains identifiers for particular USIM-ME associations. It can be used to identify a group of USIMs for a particular application.

Identifier: '6F3F'	Structure: transparent	Optional
File size: 1-n bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to n	USIM group identifier(s)	O	n bytes

NOTE: The structure of EF_{GID1} and EF_{GID2} is identical. They are provided to allow the network operator to enforce different levels of security dependant on an application.

4.2.12 EF_{SPN} (Service Provider Name)

This EF contains the service provider name and appropriate requirements for the display by the ME.

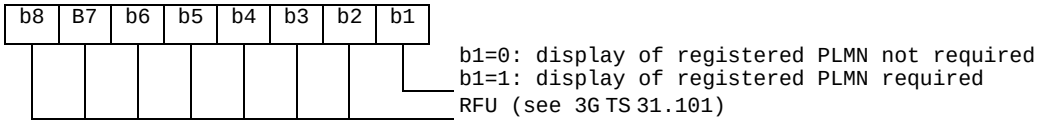
Identifier: '6F46'	Structure: transparent	Optional
File Size: 17 bytes	Update activity: low	

Access Conditions:

READ	ALWAYS
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	Display Condition	M	1 byte
2 to 17	Service Provider Name	M	16 bytes

- Display Condition
  Contents: display condition for the service provider name in respect to the registered PLMN (see GSM 02.07 [17]).
  Coding:



- Service Provider Name
  Contents:
  service provider string to be displayed
  Coding:
  the string shall use:
  - either the SMS default 7-bit coded alphabet as defined in 3G TS 23.038 [5] with bit 8 set to 0. The string shall be left justified. Unused bytes shall be set to 'FF'.
  - or one of the UCS2 code options defined in the annex of 3G TS 31.101 [11].

4.2.13 EF_{PUCT} (Price per Unit and Currency Table)

This EF contains the Price per Unit and Currency Table (PUCT). The PUCT is Advice of Charge related information which may be used by the ME in conjunction with EF_{ACM} to compute the cost of calls in the currency chosen by the subscriber, as specified in 3G TS 22.024 [3]. This EF shall always be allocated if EF_{ACM} is allocated.

Identifier: '6F41'	Structure: transparent	Optional
File size: 5 bytes	Update activity: low	

Access Conditions:

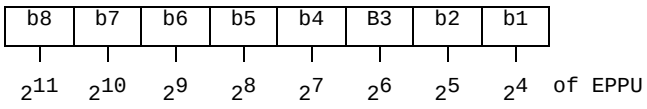
READ	PIN
UPDATE	PIN/PIN2 (fixed during administrative management)
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 3	Currency code	M	3 bytes
4 to 5	Price per unit	M	2 bytes

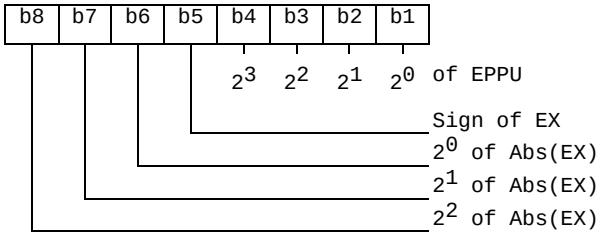
- Currency code
  Contents:
  the alpha-identifier of the currency code.
  Coding:
  bytes 1, 2 and 3 are the respective first, second and third character of the alpha identifier. This alpha-tagging shall use the SMS default 7-bit coded alphabet as defined in 3G TS 23.038 [5] with bit 8 set to 0.

- Price per unit
  Contents:
  price per unit expressed in the currency coded by bytes 1-3.
  Coding:
  byte 4 and bits b1 to b4 of byte 5 represent the Elementary Price per Unit (EPPU) in the currency coded by bytes 1-3. Bits b5 to b8 of byte 5 are the decimal logarithm of the multiplicative factor represented by the absolute value of its decimal logarithm (EX) and the sign of EX, which is coded 0 for a positive sign and 1 for a negative sign.

Byte 4:



Byte 5:



- The computation of the price per unit value is made by the ME in compliance with 3G TS 22.024 [3] by the following formula:

price per unit = EPPU * 10^{EX}.

- The price has to be understood as expressed in the coded currency.

If a GSM application is present on the UICC and the PUCT information is to be shared between the GSM and the USIM application, then this file shall be shared between the two applications.

4.2.14 EF_{CBMI} (Cell Broadcast Message identifier selection)

This EF contains the Message Identifier Parameters which specify the type of content of the cell broadcast messages that the subscriber wishes the UE to accept.

Any number of CB Message Identifier Parameters may be stored in the USIM. No order of priority is applicable.

Identifier: '6F45'	Structure: transparent	Optional
File size: 2 n bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 2	CB Message Identifier 1	O	2 bytes
3 to 4	CB Message Identifier 2	O	2 bytes
2n-1 to 2n	CB Message Identifier n	O	2 bytes

- Cell Broadcast Message Identifier
  Coding:
  - as in 3G TS 23.041 [16], "Message Format on BTS-MS Interface - Message Identifier";
  - values listed show the types of message which shall be accepted by the UE;
  - unused entries shall be set to 'FF FF'.

4.2.15 EF_{ACC} (Access Control Class)

This EF contains the assigned access control class(es). The access control class is a parameter to control the access attempts. 15 classes are split into 10 classes randomly allocated to normal subscribers and 5 classes allocated to specific high priority users. For more information see 3G TS 22.011 [2].

Identifier: '6F78'	Structure: transparent	Mandatory
SFI: '06'		
File size: 2 bytes	Update activity: low	

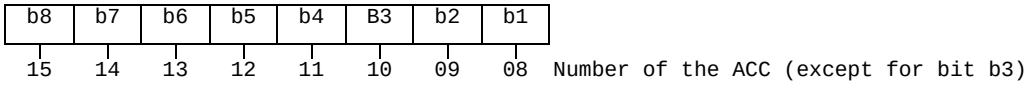
Access Conditions:

READ	PIN
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

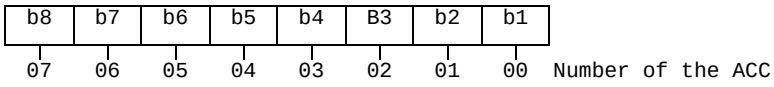
Bytes	Description	M/O	Length
1 to 2	Access control classes	M	2 bytes

- Access control classes
  Coding:
  - each ACC is coded on one bit. An ACC is "allocated" if the corresponding bit is set to 1 and "not allocated" if this bit is set to 0. Bit b3 of byte 1 is set to 0.

  Byte 1:



Byte 2:



4.2.16 EF_{FPLMN} (Forbidden PLMNs)

This EF contains the coding for n Forbidden PLMNs (FPLMN). It is read by the ME as part of the USIM initialization procedure and indicates PLMNs which the UE shall not automatically attempt to access.

A PLMN is written to the EF if a network rejects a Location Update with the cause "PLMN not allowed". The ME shall manage the list as follows.

When n FPLMNs are held in the EF, and rejection of a further PLMN is received by the ME from the network, the ME shall modify the EF using the UPDATE command. This new PLMN shall be stored in the n^{th} position, and the existing list "shifted" causing the previous contents of the first position to be lost.

When less than n FPLMNs exist in the EF, storage of an additional FPLMN shall not cause any existing FPLMN to be lost.

Dependent upon procedures used to manage storage and deletion of FPLMNs in the EF, it is possible, when less than n FPLMNs exist in the EF, for 'FFFFFF' to occur in any position. The ME shall analyse all the EF for FPLMNs in any position, and not regard 'FFFFFF' as a termination of valid data.

Identifier: '6F7B'	Structure: transparent	Mandatory
SFI: '0D'		
File size: n*3 bytes (n>3)	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 3	PLMN 1	M	3 bytes
4 to 6	PLMN 2	M	3 bytes
7 to 9	PLMN 3	M	3 bytes
10 to 12	PLMN 4	M	3 bytes
(3n-2) to 3n	PLMN n	O	3 bytes

- PLMN
  Contents:
  Mobile Country Code (MCC) followed by the Mobile Network Code (MNC).
  Coding:
  according to 3G TS 24.008 [9].
  For instance, using 246 for the MCC and 81 for the MNC and if this is stored in PLMN 3 the contents is as follows:
  Bytes 7-9: '42' 'F6' '18'.
  If storage for fewer than n PLMNs is required, the unused bytes shall be set to 'FF'.

4.2.17 EF_{LOCI} (Location Information)

This EF contains the following Location Information:

- Temporary Mobile Subscriber Identity (TMSI);

- Location Area Information (LAI);
- Location update status.

See subclause 5.2.5 for special requirements when updating EF_{LOCI}.

Identifier: '6F7E'	Structure: transparent	Mandatory
SFI: '0B'~~Mandatory~~		
File size: 11 bytes	Update activity: high	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 4	TMSI	M	4 bytes
5 to 9	LAI	M	5 bytes
10	RFU	M	1 byte
11	Location update status	M	1 byte

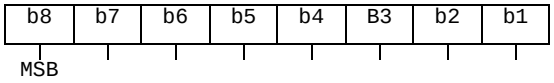
- TMSI

  Contents:

  Temporary Mobile Subscriber Identity.

  Coding:

  according to 3G TS 24.008 [9].



- LAI

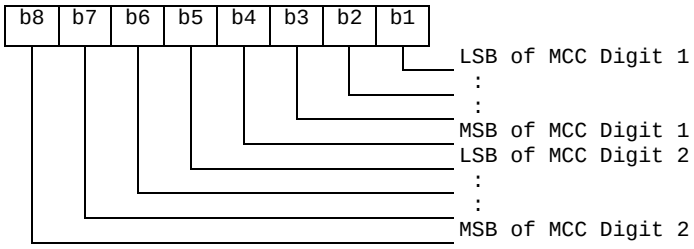
  Contents:

  Location Area Information.

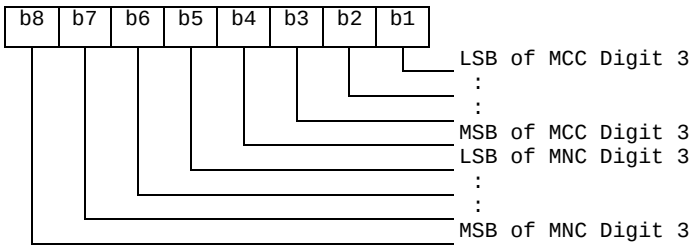
  Coding:

  according to 3G TS 24.008 [9].

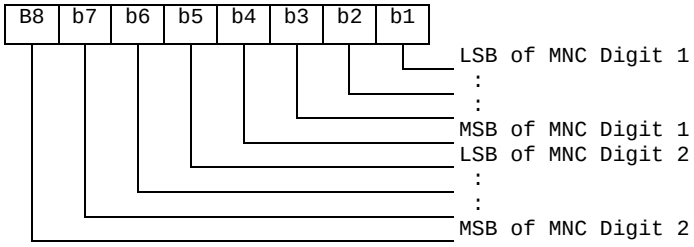
Byte 5: first byte of LAI (MCC digits 1 and 2)



Byte 6: second byte of LAI (MCC digit 3, MNC digit 3)



Byte 7: third byte of LAI (MNC digits 1 and 2)



- Byte 8: fourth byte of LAI (LAC).

- Byte 9: fifth byte of LAI (LAC continued).

- Location update status
  Contents:
  status of location update according to 3G TS 24.008 [9].
  Coding:
  Byte 11:

Bits:	b3	b2	b1	
	0	0	0	: updated.
	0	0	1	: not updated.
	0	1	0	: PLMN not allowed.
	0	1	1	: Location Area not allowed.
	1	1	1	: reserved.

  Bits b4 to b8 are RFU (see 3G TS 31.101 [11]).

4.2.18 EF_{AD} (Administrative Data)

This EF contains information concerning the mode of operation according to the type of USIM, such as normal (to be used by PLMN subscribers for 3G operations), type approval (to allow specific use of the ME during type approval procedures of e.g. the radio equipment), cell testing (to allow testing of a cell before commercial use of this cell), manufacturer specific (to allow the ME manufacturer to perform specific proprietary auto-test in its ME during e.g. maintenance phases).

It also provides an indication of whether some ME features should be activated during normal operation.

Identifier: '6FAD'	Structure: transparent	Mandatory
SFI: '03'		
File size: 3+X bytes	Update activity: low	

Access Conditions:

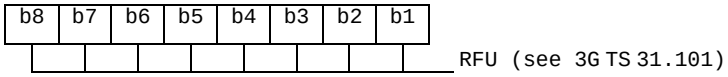
READ	ALW
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	UE operation mode	M	1 byte
2 to 3	Additional information	M	2 bytes
4 to 3+X	RFU	O	X bytes

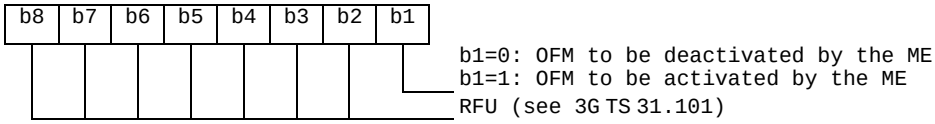
- UE operation mode
  Contents:
  mode of operation for the UE
  Coding:
  Initial value
  - '00' normal operation.
  - '80' type approval operations.
  - '01' normal operation + specific facilities.
  - '81' type approval operations + specific facilities.

- '02' maintenance (off line).
- '04' cell test operation.

- Additional information:
  Coding:
  - specific facilities (if b1=1 in byte 1);
  Byte 2 (first byte of additional information):



Byte 3:



The OFM bit is used to control the Ciphering Indicator as specified in GSM 02.07 [17].

ME manufacturer specific information (if b2=1 in byte 1).

4.2.19 Spare

4.2.20 EF_{CBMID} (Cell Broadcast Message Identifier for Data Download)

This EF contains the message identifier parameters which specify the type of content of the cell broadcast messages which are to be passed to the USIM.

Any number of CB message identifier parameters may be stored in the USIM. No order of priority is applicable.

Identifier: '6F48'	Structure: transparent	Optional
SFI: '0E'		
File size: 2n bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 2	CB Message Identifier 1	O	2 bytes
3 to 4	CB Message Identifier 2	O	2 bytes
2n-1 to 2n	CB Message Identifier n	O	2 bytes

- Cell Broadcast Message Identifier.
  Coding:
  - as in 3G TS 23.041 [16]. Values listed show the identifiers of messages which shall be accepted by the UE to be passed to the USIM.
    Unused entries shall be set to 'FF FF'.

4.2.21 EF_{ECC} (Emergency Call Codes)

This EF contains emergency call codes.

Identifier: '6FB7'	Structure: linear fixed	Mandatory
SFI: '01'		
Record size size: X+6 bytes	Update activity: low	

Access Conditions:

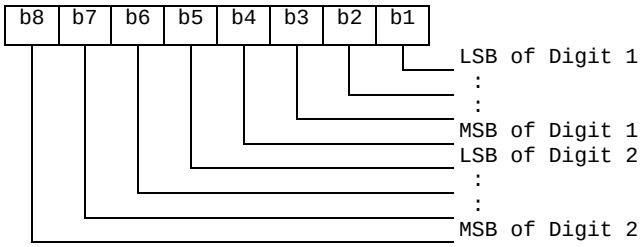
READ	ALW
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 3	Emergency Call Code	M	3 bytes
4 to X+4	Emergency Call Code Alpha Identifier	O	X bytes
X+5 to X+6	Emergency Call Type Indicator	M	1 byte

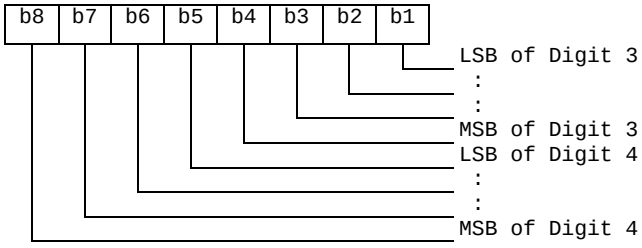
- Emergency Call Code.
  Contents:
  - Emergency Call Code.

  Coding:
  - the emergency call code is of a variable length with a maximum length of 6 digits. Each emergency call code is coded on three bytes, with each digit within the code being coded on four bits as shown below. If a code of less than 6 digits is chosen, then the unused nibbles shall be set to 'F'. If EF_{ECC} does not contain any valid number, the UE shall use the emergency numbers it stores for use in setting up an emergency call without a USIM.

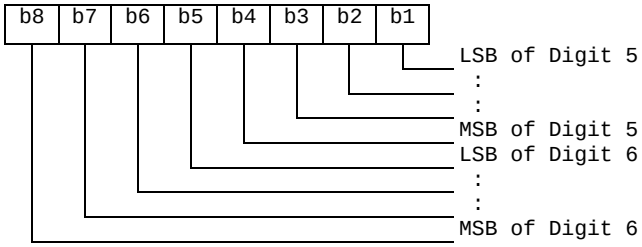
Byte 1:



Byte 2:



Byte 3:



- Emergency Call Code Alpha Identifier.
  Contents:
  Information about the dialled emergency number to be displayed to the user.
  Coding:
  this alpha-tagging shall use
  either:
  - the SMS default 7-bit coded alphabet as defined in 3G TS 23.038 [5] with bit 8 set to 0. The alpha identifier shall be left justified. Unused bytes shall be set to 'FF'.

  Or
  - one of the UCS2 coded options as defined in the annex of 3G TS 31.101 [11].
- Emergency Call Type Indicator.
  Contents:
  Set to RFU. Information to be sent to the network indicating the type of emergency call.
  Coding:
  Coding according to 24.008 [9].

NOTE The coding is not yet defined and therefore this byte is set to RFU. A terminal shall not interpret the Emergency Call Type Indicator that has its value set to RFU. Furthermore a terminal not supporting the emergency call type indication towards the network shall not interpret the Emergency Call Type Indicator byte in this EF.

4.2.22 EF_{CBMIR} (Cell Broadcast Message Identifier Range selection)

This EF contains ranges of cell broadcast message identifiers that the subscriber wishes the UE to accept.

Any number of CB Message Identifier Parameter ranges may be stored in the USIM. No order of priority is applicable.

Identifier: '6F50'	Structure: transparent	Optional
File size: 4n bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 4	CB Message Identifier Range 1	O	4 bytes
5 to 8	CB Message Identifier Range 2	O	4 bytes
(4n-3) to 4n	CB Message Identifier Range n	O	4 bytes

- Cell Broadcast Message Identifier Ranges.
  Contents:
  - CB Message Identifier ranges:

  Coding:
  - bytes one and two of each range identifier equal the lower value of a cell broadcast range, bytes three and four equal the upper value of a cell broadcast range, both values are coded as in 3G TS 23.041 [16] "Message Format on BTS-MS Interface - Message Identifier". Values listed show the ranges of messages which shall be accepted by the UE.
    Unused entries shall be set to 'FF FF FF FF'.

4.2.23 EF_{PSLOCI} (Packet Switched location information)

This EF contains the following Location Information:

- Packet Temporary Mobile Subscriber Identity (P-TMSI);
- Packet Temporary Mobile Subscriber Identity signature value (P-TMSI signature value);
- Routing Area Information (RAI);

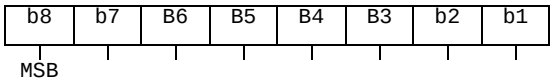
- Routing Area update status.

Identifier: '6F73'	Structure: transparent	~~Optional~~Mandatory
SFI: ~~Mandatory~~'0C'		
File size: 14 bytes	Update activity: high	
Access Conditions: READ PIN UPDATE PIN DEACTIVATE ADM ACTIVATE ADM		

Bytes	Description	M/O	Length
1 to 4	P-TMSI	M	4 bytes
5 to 7	P-TMSI signature value	M	3 bytes
8 to13	RAI	M	6 bytes
14	Routing Area update status	M	1 byte

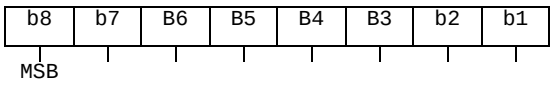
- P-TMSI.
  Contents:
  Packet Temporary Mobile Subscriber Identity.
  Coding:
  according to 3G TS 24.008 [9].

Byte 1: first byte of P-TMSI



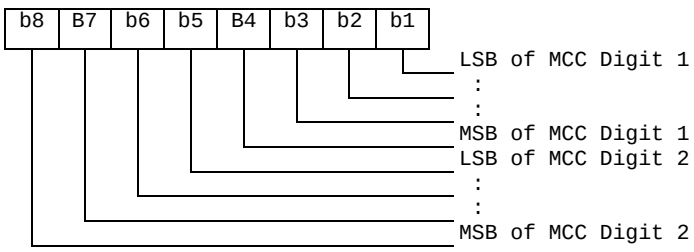
- P-TMSI signature value.
  Contents:
  Packet Temporary Mobile Subscriber Identity signature value.
  Coding:
  according to 3G TS 24.008 [9].

  Byte 5: first byte of P-TMSI signature value.

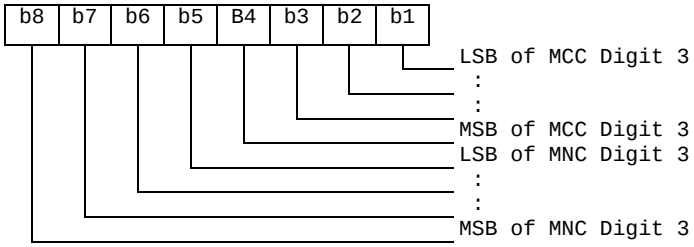


- RAI
  Contents:
  Routing Area Information.
  Coding:
  according to 3G TS 24.008 [9].

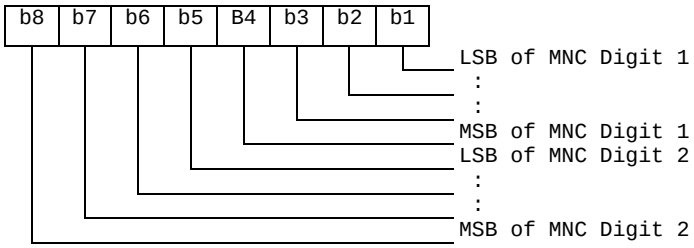
Byte 8: first byte of RAI (MCC digits 1 and 2).



Byte 9: second byte of RAI (MCC digit 3, MNC digit 3)



Byte 10: third byte of RAI (MNC digits 1 and 2)



- Byte 11: fourth byte of RAI (LAC).

- Byte 12: fifth byte of RAI (LAC continued).

- Byte 13: sixth byte of RAI (RAC).

- Routing Area update status.
  Contents:
  status of routing area update according to 3G TS 24.008 [9].
  Coding:
  byte 14:

Bits:	b3	b2	b1.	
	0	0	0	: updated.
	0	0	1	: not updated.
	0	1	0	: PLMN not allowed.
	0	1	1	: Routing Area not allowed.
	1	1	1	: reserved.

  Bits b4 to b8 are RFU (see 3G TS 31.101 [11]).

4.2.24 EF_{FDN} (Fixed Dialling Numbers)

This EF contains Fixed Dialling Numbers (FDN) and/or Supplementary Service Control strings (SSC). In addition it contains identifiers of associated network/bearer capabilities and identifiers of extension records at the USIM ADF level. It may also contain an associated alpha-tagging. If this file is present in the USIM, the Enabled Services Table (EF_{EST}) shall also be present.

Identifier: '6F3B'	Structure: linear fixed	Optional
Record length: X+14 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN2
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to X	Alpha Identifier	O	X bytes
X+1	Length of BCD number/SSC contents	M	1 byte
X+2	TON and NPI	M	1 byte
X+3 to X+12	Dialling Number/SSC String	M	10 bytes
X+13	Capability/Configuration2 Identifier	M	1 byte
X+14	Extension2 Record Identifier	M	1 byte

For contents and coding of all data items see the respective data items of the EF_{ADN} (subclause 4.4.2.3), with the exception that extension records are stored in the EF_{EXT2}.

By default, destination addresses which are not in EF_{FDN} shall not be allowed on any CS bearer service/teleservice or SMS when FDN is enabled.

For the FDN procedures related to SMS see TS 22.101 [24] and TS 31.111 [12].

NOTE: The value of X (the number of bytes in the alpha-identifier) may be different to the length denoted X in EF_{ADN}.

4.2.25 EF_{SMS} (Short messages)

This EF contains information in accordance with 3G TS 23.040 [6] comprising short messages (and associated parameters) which have either been received by the UE from the network, or are to be used as an UE originated message.

Identifier: '6F3C'	Structure: linear fixed	Optional
Record length: 176 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	Status	M	1 byte
2 to 176	Remainder	M	175 bytes

- Status.
  Contents:
  Status byte of the record which can be used as a pattern in the SEARCH RECORD command. For UE originating messages sent to the network, the status shall be updated when the UE receives a status report, or sends a successful SMS Command relating to the status report.

  Coding:

b8	b7	b6	b5	b4	b3	b2	b1	
					X	X	0	free space
					X	X	1	used space
					0	0	1	message received by UE from network; message read
					0	1	1	message received by UE from network; message to be read
					1	1	1	UE originating message; message to be sent
								RFU (see 3G TS 31.101 [11])

b8	b7	b6	b5	b4	b3	b2	b1	
			X	X	1	0	1	UE originating message; message sent to the network:
			0	0	1	0	1	Status report not requested
			0	1	1	0	1	Status report requested but not (yet) received;
			1	0	1	0	1	Status report requested, received but not stored in EF-SMSR;
			1	1	1	0	1	Status report requested, received and stored in EF-SMSR;
								RFU (see 3G TS 31.101 [11])

- Remainder.
  Contents:
  This data item commences with the TS-Service-Centre-Address as specified in 3G TS 24.011 [10]. The bytes immediately following the TS-Service-Centre-Address contain an appropriate short message TPDU as specified in 3G TS 23.040 [6], with identical coding and ordering of parameters.
  Coding:
  according to 3G TS 23.040 [6] and 3G TS 24.011 [10]. Any TP-message reference contained in an UE originated message stored in the USIM, shall have a value as follows:

	Value of the TP-message-reference:
message to be sent:	'FF'.
message sent to the network:	the value of TP-Message-Reference used in the message sent to the network.

  Any bytes in the record following the TPDU shall be filled with 'FF'.

  It is possible for a TS-Service-Centre-Address of maximum permitted length, e.g. containing more than 18 address digits, to be associated with a maximum length TPDU such that their combined length is 176 bytes. In this case the ME shall store in the USIM the TS-Service-Centre-Address and the TPDU in bytes 2-176 without modification, except for the last byte of the TPDU, which shall not be stored.

4.2.26 EF_{MSISDN} (MSISDN)

This EF contains MSISDN(s) related to the subscriber. In addition it contains identifiers of associated network/bearer capabilities and identifiers of extension records at the USIM ADF level. It may also contain an associated alpha-tagging.

Identifier: '6F40'	Structure: linear fixed	Optional
Record length: X+14 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN/ADM (fixed during administrative management)
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to X	Alpha Identifier	O	X bytes
X+1	Length of BCD number/SSC contents	M	1 byte
X+2	TON and NPI	M	1 byte
X+3 to X+12	Dialling Number/SSC String	M	10 bytes
X+13	Capability/Configuration2 Identifier	M	1 byte
X+14	Extension5 Record Identifier	M	1 byte

For contents and coding of all data items see the respective data items of EF_{ADN}.

If the USIM stores more than one MSISDN number and the ME displays the MSISDN number(s) within the initialisation procedure then the one stored in the first record shall be displayed with priority.

NOTE: The value of X (the number of bytes in the alpha-identifier) may be different to the length denoted X in EF_{ADN}.

4.2.27 EF_{SMSP} (Short message service parameters)

This EF contains values for Short Message Service header Parameters (SMSP), which can be used by the ME for user assistance in preparation of mobile originated short messages. For example, a service centre address will often be common to many short messages sent by the subscriber.

The EF consists of one or more records, with each record able to hold a set of SMS parameters. The first (or only) record in the EF shall be used as a default set of parameters, if no other record is selected.

To distinguish between records, an alpha-identifier may be included within each record, coded on Y bytes.

The SMS parameters stored within a record may be present or absent independently. When a short message is to be sent from the UE, the parameter in the USIM record, if present, shall be used when a value is not supplied by the user.

Identifier: '6F42'	Structure: linear fixed	Optional
Record length: 28+Y bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to Y	Alpha-Identifier	O	Y bytes
Y+1	Parameter Indicators	M	1 byte
Y+2 to Y+13	TP-Destination Address	M	12 bytes
Y+14 to Y+25	TS-Service Centre Address	M	12 bytes
Y+26	TP-Protocol Identifier	M	1 byte
Y+27	TP-Data Coding Scheme	M	1 byte
Y+28	TP-Validity Period	M	1 byte

Storage is allocated for all of the possible SMS parameters, regardless of whether they are present or absent. Any bytes unused, due to parameters not requiring all of the bytes, or due to absent parameters, shall be set to 'FF'.

- Alpha-Identifier.
  Contents:
  Alpha Tag of the associated SMS-parameter.
  Coding:
  see subclause 4.4.2.3 (EF_{ADN}).

NOTE: The value of Y may be zero, i.e. the alpha-identifier facility is not used. By using the command GET RESPONSE the ME can determine the value of Y.

- Parameter Indicators.
  Contents:
  each of the default SMS parameters which can be stored in the remainder of the record are marked absent or present by individual bits within this byte.
  Coding:
  allocation of bits:

bit number	Parameter indicated.
1	TP-Destination Address.
2	TS-Service Centre Address.
3	TP-Protocol Identifier.
4	TP-Data Coding Scheme.
5	TP-Validity Period.
6	reserved, set to 1.
7	reserved, set to 1.
8	reserved, set to 1.

Bit value	Meaning.
0	Parameter present.
1	Parameter absent.

- TP-Destination Address.
  Contents and Coding:
  as defined for SM-TL address fields in 3G TS 23.040 [6].

- TP-Service Centre Address.
  Contents and Coding:
  as defined for RP-Destination address Centre Address in 3G TS 24.011 [10].

- TP-Protocol Identifier.
  Contents and Coding:
  as defined in 3G TS 23.040 [6].

- TP-Data Coding Scheme.
  Contents and Coding:
  as defined in 3G TS 23.038 [5].

- TP-Validity Period.
  Contents and Coding:
  as defined in 3G TS 23.040 [6] for the relative time format.

4.2.28 EF_{SMSS} (SMS status)

This EF contains status information relating to the short message service.

The provision of this EF is associated with EF_{SMS}. Both files shall be present together, or both absent from the USIM.

Identifier: '6F43'	Structure: transparent	Optional
File size: 2+X bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	Last Used TP-MR	M	1 byte
2	SMS "Memory Cap. Exceeded" Not. Flag	M	1 byte
3 to 2+X	RFU	O	X bytes

- Last Used TP-MR.
  Contents:
  - the value of the TP-Message-Reference parameter in the last mobile originated short message, as defined in 3G TS 23.040 [6].

  Coding:
  - as defined in 3G TS 23.040 [6].

- SMS "Memory Capacity Exceeded" Notification Flag.
  Contents:
  - this flag is required to allow a process of flow control, so that as memory capacity in the UE becomes available, the Network can be informed. The process for this is described in 3G TS 23.040 [6].

  Coding:
  b1=1 means flag unset; memory capacity available;
  b1=0 means flag set;
  b2 to b8 are reserved and set to 1.

4.2.29 EF_{SDN} (Service Dialling Numbers)

This EF contains special service numbers (SDN) and/or the respective supplementary service control strings (SSC). In addition it contains identifiers of associated network/bearer capabilities and identifiers of extension records at the USIM ADF level. It may also contain associated alpha-tagging.

Identifier: '6F49'	Structure: linear fixed	Optional
Record length: X+14 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1-X	Alpha identifier	O	X bytes
X+1	Length of BCD number/SSC contents	M	1 bytes
X+2	TON and NPI	M	1 byte
X+3 to X+12	Dialling Number/SSC String	M	10 bytes
X+13	Capability/Configuration Identifier	M	1 byte
X+14	Extension3 Record Identifier	M	1 byte

For contents and coding of all data items see the respective data items of the EF_{ADN} (subclause 4.4.2.3), with the exception that extension records are stored in the EF_{EXT3}.

NOTE: The value of X (the number of bytes in the alpha-identifier) may be different to the length denoted X in EF_{ADN}.

4.2.30 EF_{EXT2} (Extension2)

This EF contains extension data of an FDN (see FDN in 4.2.24).

Identifier: '6F4B'	Structure: linear fixed	Optional
Record length: 13 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN2
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	Record type	M	1 byte
2 to 12	Extension data	M	11 bytes
13	Identifier	M	1 byte

For contents and coding see subclause 4.4.2.4 (EF_{EXT1}).

4.2.31 EF_{EXT3} (Extension3)

This EF contains extension data of an SDN (see SDN in 4.2.29).

Identifier: '6F4C'	Structure: linear fixed	Optional
Record length: 13 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	Record type	M	1 byte
2 to 12	Extension data	M	11 bytes
13	Identifier	M	1 byte

For contents and coding see subclause 4.4.2.4 (EF_{EXT1}).

4.2.32 EF_{SMSR} (Short message status reports)

This EF contains information in accordance with 3G TS 23.040 [6] comprising short message status reports which have been received by the UE from the network.

Each record is used to store the status report of a short message in a record of EF_{SMS}. The first byte of each record is the link between the status report and the corresponding short message in EF_{SMS}.

Identifier: '6F47'	Structure: linear fixed	Optional
Record length: 30 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	SMS record identifier	M	1
2 to 30	SMS status report	M	29 bytes

- SMS record identifier.
  Contents:
  - this data item identifies the corresponding SMS record in EF_{SMS}, e.g. if this byte is coded '05' then this status report corresponds to the short message in record #5 of EF_{SMS}.

  Coding:
  - '00' - empty record;
  - '01' - 'FF' - record number of the corresponding SMS in EF_{SMS}.

- SMS status report:
  Contents:
  - this data item contains the SMS-STATUS-REPORT TPDU as specified in 3G TS 23.040 [6], with identical coding and ordering of parameters.

  Coding:
  - according to 3G TS 23.040 [6]. Any bytes in the record following the TPDU shall be filled with 'FF'.

4.2.33 EF_{ICI} (Incoming Call Information)

This EF is located within the USIM application. The incoming call information can be linked to the phone book stored under $DF_{TELECOM}$ or to the local phone book within the USIM. The EF_{ICI} contains the information related to incoming calls.

The time of the call and duration of the call are stored in this EF. This EF can also contain associated alpha identifier that may be supplied with the incoming call. In addition it contains identifiers of associated network/bearer capabilities and identifiers of extension records at the USIM ADF level. The structure of this EF is cyclic, so the contents shall be updated only after a call is disconnected.

If CLI is supported and the incoming phone number matches a number stored in the phone book the incoming call information is linked to the corresponding information in the phone book. If the incoming call matches an entry but is indicated as hidden in the phone book the link is established but the information is not displayed by the ME if the code for the secret entry has not been verified. The ME shall not ask for the secret code to be entered at this point.

Optionally the ME may store the link to phone book entry in the file, so that it does not need to look again for a match in the phone book when it reuses the entry. But the ME will have to check that the incoming call number still exits in the linked phone book entry, as the link might be broken (entry modified). When not used by the ME or no link to the phone book has been found, this field shall be set to 'FFFFFF'.

The first byte of this link is used to identify clearly the phone book location either global (i.e. under $DF_{TELECOM}$) or local (i.e. USIM specific). To allow the reuse of the referring mechanism in further implementation of the phonebook under discussion, this byte can be used to indicate those.

For the current version of the phone book, the phone book entry is identified as follows:

- the record number in the EF_{PBR} which indicates the EF_{ADN} containing the entry;

- the record number inside the indicated EF_{ADN}.

The structure of EF_{ICI} is shown below. Coding scheme is according to EF_{ADN}

Structure of EF_{ICI}

Identifier: '6F80'	Structure: Cyclic	Optional
SFI: ~~Mandatory~~'14'		
Record length: X+28 bytes	Update activity: high	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to X	Alpha Identifier	O	X bytes
X+1	Length of BCD number contents	M	1 byte
X+2	TON and NPI	M	1 byte
X+3 to X+12	Incoming Call Number	M	10 bytes
X+13	Capability/Configuration2 Identifier	M	1 byte
X+14	Extension5 Record Identifier	M	1 byte
X+15 to X+21	Incoming call date and time (see detail 1)	M	7 bytes
X+22 to X+24	Incoming call duration (see detail 2)	M	3 bytes
X+25	Incoming call status (see detail 3)	M	1 byte
X+26 to X+28	Link to phone book entry (see detail 4)	M	3 bytes

NOTE: When the contents except incoming call status are invalid, they are filled with 'FF'.

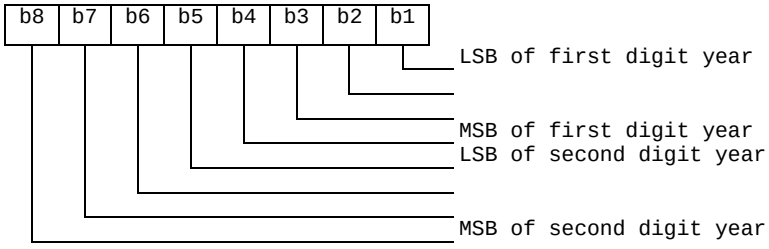
Detail 1 Coding of date and time.

Content:

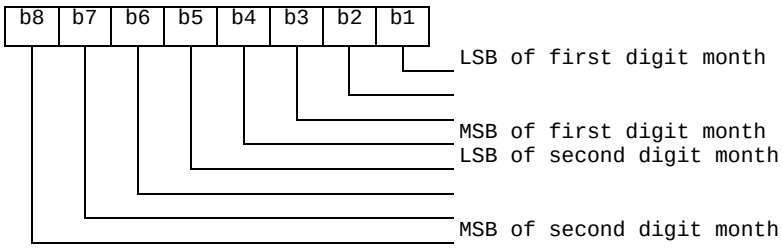
the date and time are defined by the ME.

Coding:

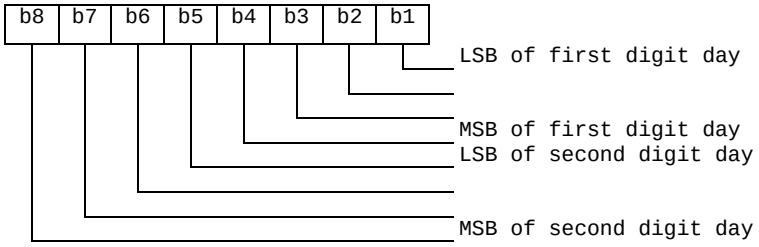
it is according to the extended BCD coding from Byte1 to Byte 7. The first 3 bytes show year, month and day (yy.mm.dd). The next 3 bytes show hour, minute and second (hh.mm.ss). The last Byte 7 is Time Zone. The Time Zone indicates the difference, expressed in quarters of an hour, between the local time and GMT. Bit 4 in Byte 7 represents the algebraic sign of this difference (0: positive, 1: negative). If the terminal does not support the Time Zone, Byte 8 shall be "FF“. Byte X+15: Year.



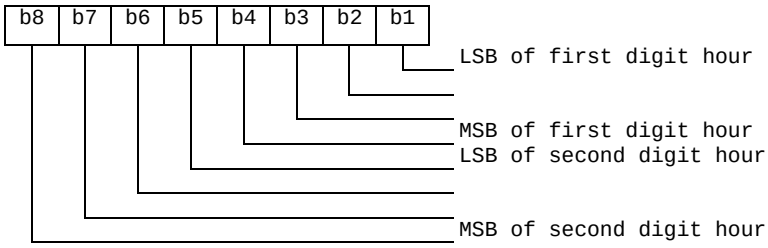
Byte X+16: Month



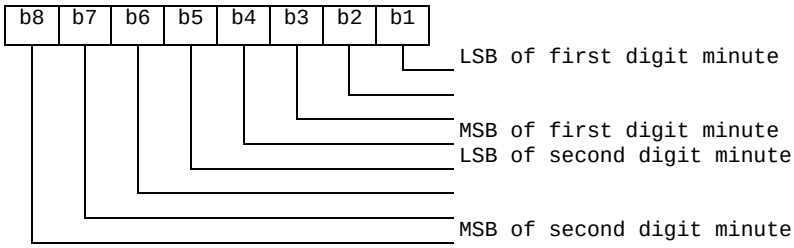
Byte X+17: Day



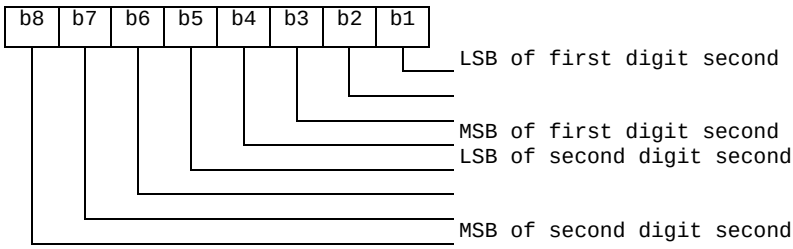
Byte X+18: Hour



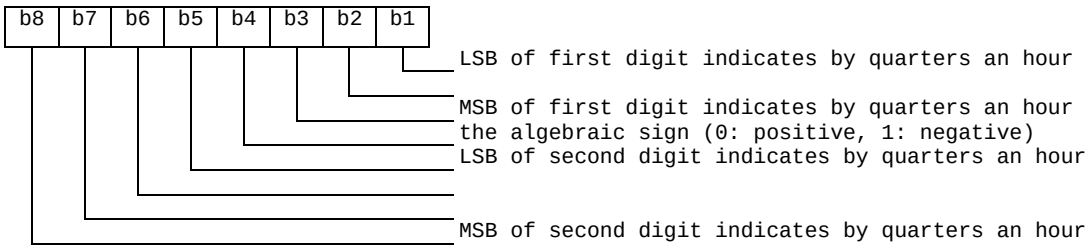
Byte X+19: Minute



Byte X+20: Second



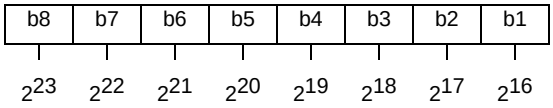
Byte X+21: Time Zone



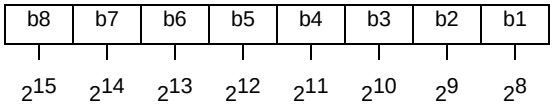
Detail 2 Coding of call duration.

Call duration is indicated by second.

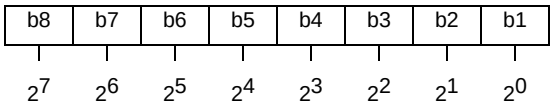
Byte X+22:



Byte X+23:



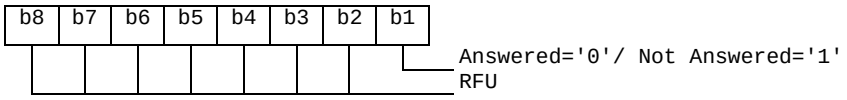
Byte X+24:



For instance, '00' '00' '30' represents 2^5+2^4.

Detail 3 Coding of Call status.

Byte X+25:

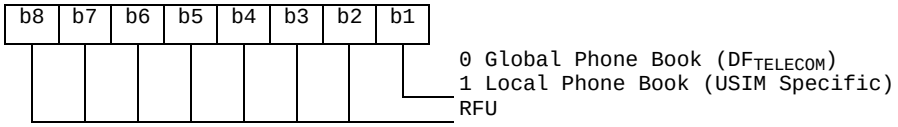


Detail 4 Link to phone book entry

For the current implementation of the phone book the following coding applies:

Phone book reference.

Byte X+26:



EF_{PBR} record number:

- Byte X+27: Hexadecimal value.
- EF_{ADN} record number:
  - Byte X+28: Hexadecimal value.

4.2.34 EF_{OCI} (Outgoing Call Information)

This EF is located within the USIM application. The outgoing call information can be linked to the phone book stored under $DF_{TELECOM}$ or to the local phone book within the USIM. The EF_{OCI} contains the information related to outgoing calls.

The time of the call and duration of the call are stored in this EF. It may also contain associated alpha identifier. In addition it contains identifiers of associated network/bearer capabilities and identifiers of extension records at the USIM ADF level. The structure of this file is cyclic, so the contents shall be updated only after a call is disconnected.

If the dialled phone number matches a number stored in the phone book the outgoing call information might be linked to the corresponding information in the phone book. The dialled number may match with a hidden entry in the phone book. If the dialled number matches a hidden entry in the phone book the link is established but the information related to the phone book entry is not displayed by the ME, if the hidden code has not been verified. The ME shall not perform hidden code verification at this point.

Optionally, the ME may store the link to phone book entry in the file, so that it does not need to look again for a match in the phone book when it reuses the entry. But the ME will have to check that the outgoing call number still exists in the linked phone book entry, as the link might be broken (entry modified). When not used by the ME or no link to the phone book has been found, this field shall be set to 'FFFFFF'.

Coding scheme is according to EF_{ICI}.

Structure of EF_{OCI}

Identifier: '6F81'	Structure: Cyclic	Optional
SFI: ~~Mandatory~~'15'		
Record length: X+26 bytes	Update activity: high	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to X	Alpha Identifier	O	X bytes
X+1	Length of BCD number/SSC contents	M	1 byte
X+2	TON and NPI	M	1 byte
X+3 to X+12	Outgoing Call Number/SSC String	M	10 bytes
X+13	Capability/Configuration2 Identifier	M	1 byte
X+14	Extension5 Record Identifier	M	1 byte
X+15 to X+21	Outgoing call date and time	M	7 bytes
X+22 to X+24	Outgoing call duration	M	3 bytes
X+25 to X+27	Link to Phone Book Entry	M	3 bytes

NOTE: When the contents are invalid, they are filled with 'FF'.

4.2.35 EF_{ICT} (Incoming Call Timer)

This EF contains the accumulated incoming call timer duration value for the current call and previous calls. The EF is USIM specific and resides within the USIM application.

Structure of EF_{ICT}

Identifier: '6F82'	Structure: cyclic	Optional
Record length: 3 bytes	Update activity: high	

Access Conditions:

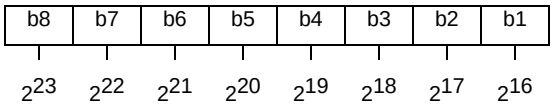
READ	PIN
UPDATE	PIN/PIN2 (fixed during administrative management)
INCREASE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 3	Accumulated call timer value	M	3 bytes

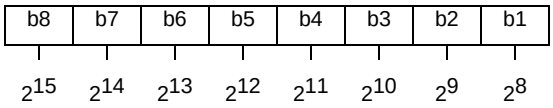
Coding:

Accumulated call timer value is indicated by second.

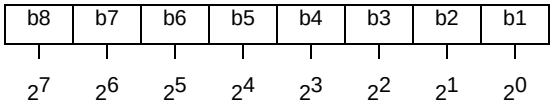
Byte 1:



Byte 2:



Byte 3:



For example, '00' '00' '30' represents 2^5+2^4.

4.2.36 EF_{OCT} (Outgoing Call Timer)

This EF contains the accumulated outgoing call timer duration value for the current call and previous calls. The EF is USIM specific and resides within the USIM application. The contents of this EF shall be updated only after a call is disconnected. The coding of this EF is the same as EF_{ICT}.

Structure of EF_{OCT}

Identifier: '6F83'	Structure: cyclic	Optional
Record length: 3 bytes	Update activity: high	

Access Conditions:

READ	PIN
UPDATE	PIN/PIN2 (fixed during administrative management)
INCREASE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 3	Accumulated call timer value	M	3 bytes

4.2.37 EF_{EXT5} (Extension5)

This EF contains extension data of EF_{ICI}, EF_{OCI} and EF_{MSISDN} of the USIM application.

Identifier: '6F4E'	Structure: linear fixed	Optional
Record length: 13 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	Record type	M	1 byte
2 to 12	Extension data	M	11 bytes
13	Identifier	M	1 byte

For contents and coding see EF_{EXT1}.

4.2.38 EF_{CCP2} (Capability Configuration Parameters 2)

This EF contains parameters of required network and bearer capabilities and terminal configurations associated with a call established using a fixed dialling number, an MSISDN, a service dialling number, an incoming call or an outgoing call. It is referred by EF_{FDN}, EF_{MSISDN}, EF_{SDN}, EF_{ICI} and EF_{OCI} at USIM ADF level.

Identifier: '6F4F'	Structure: linear fixed	Optional
SFI: ~~optional~~ '16'		
Record length: 14 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 10	Bearer capability information element	M	10 bytes
11 to 14	Bytes reserved - see below	M	4 bytes

- Bearer capability information elements.
  - Contents and Coding:
    - see 3G TS 24.008 [9]. The Information Element Identity (IEI) shall be excluded, i.e. the first byte of the EF_{CCP2} record shall be Length of the bearer capability contents.
    - Bytes 11-14 shall be set to 'FF' and shall not be interpreted by the terminal.

4.2.39 EF_{eMLPP} (enhanced Multi Level Precedence and Pre-emption)

This EF contains information about priority levels and fast call set-up conditions for the enhanced Multi Level Precedence and Pre-emption service that can be used by the subscriber.

Identifier: '6FB5'	Structure: transparent	Optional
File size: 2 bytes	Update activity: low	

Access Conditions:

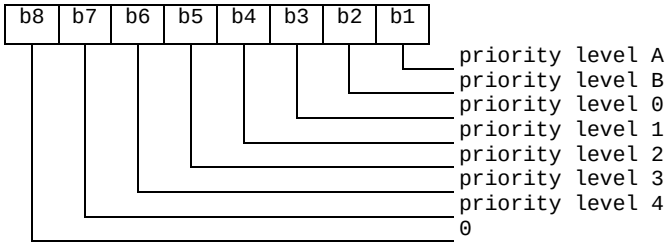
READ	PIN
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	Priority levels	M	1 byte
2	Fast call set-up conditions	M	1 byte

- Priority levels.
  Contents:
  - the eMLPP priority levels subscribed to.

  Coding:
  - each eMLPP priority level is coded on one bit. Priority levels subscribed to have their corresponding bits set to 1. Priority levels not subscribed to have their corresponding bits set to 0. Bit b8 is reserved and set to 0.

Byte 1:



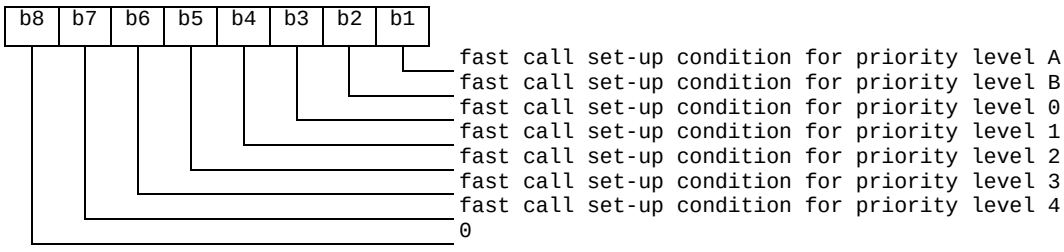
NOTE: Priority levels A and B can not be subscribed to (see 3G TS 22.067 [5] for details).

EXAMPLE 1: If priority levels 0, 1 and 2 are subscribed to, EF_{eMLPP} shall be coded '1C'.

- Fast call set-up conditions.
  Contents:
  for each eMLPP priority level, the capability to use a fast call set-up procedure.
  Coding:
  each eMLPP priority level is coded on one bit. Priority levels for which fast call set-up is allowed have their corresponding bits set to 1. Priority levels for which fast call set-up is not allowed have their corresponding bits set to 0. Bit b8 is reserved and set to 0.

Byte 2: fast call set-up condition for:

`



EXAMPLE 2: If fast call set-up is allowed for priority levels 0, and 1, then byte 2 of EF_{eMLPP} is coded '0C'.

4.2.40 EF_{AAeM} (Automatic Answer for eMLPP Service)

This EF contains those priority levels (of the Multi Level Precedence and Pre-emption service) for which the ME shall answer automatically to incoming calls.

Identifier: '6FB6'	Structure: transparent	Optional
File size: 1 byte	Update activity: low	

Access Conditions:

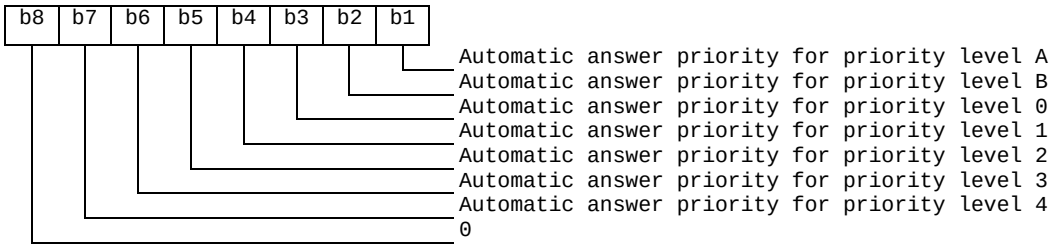
READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	Automatic answer priority levels	M	1 byte

- Automatic answer priority levels.
  Contents:
  - for each eMLPP priority level, the capability for the mobile station to answer automatically to incoming calls (with the corresponding eMLPP priority level).

  Coding:
  - each eMLPP priority level is coded on one bit. Priority levels allowing an automatic answer from the mobile station have their corresponding bits set to 1. Priority levels not allowing an automatic answer from the mobile station have their corresponding bits set to 0. Bit b8 is reserved and set to 0.

Byte 1:



EXAMPLE: If automatic answer is allowed for incoming calls with priority levels A, 0 and 1, then EF_{AAeM} is coded '0D'.

4.2.41 EF_{GMSI} (Group Identity)

This EF contains the group identity of the mobile subscriber. This group identity references a group key GK, stored in the USIM, which is used for enhanced user identity confidentiality (enciphering of the IMSI).

Identifier: '6FC2'	Structure: transparent	Optional
File size: 4 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 4	Group Identity	M	4 bytes

- Group Identity GMSI.
  Coding:

- the least significant bit of GMSI is the least significant bit of the 4th byte. The most significant bit of GMSI is the most significant bit of the first byte.

4.2.42 $EF_{Hiddenkey}$ (Key for hidden phone book entries)

This EF contains the hidden key that has to be verified by the ME in order to display the phone book entries that are marked as hidden. The hidden key can consist of 4 to 8 digits.

Identifier: '6FC3'	Structure: transparent	Optional
File size: 4 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 4	Hidden Key	M	4 bytes

- Hidden Key.
  Coding:
  - the hidden key is coded on 4 bytes using BCD coding. The minimum number of digits is 4. Unused digits are padded with 'FF'.

NOTE: The phone book entries marked as hidden are not scrambled by means of the hidden key. The are stored in plain text in the phone book.

~~4.2.43 Files required for GSM Access~~

~~The EFs described in this subclause are required for the USIM application to be able to access service through a GSM network.~~

~~The presence of these files and thus the support of a GSM access is indicated in the 'USIM Service Table' as service no. '27' being available. If the GSM access service is available on the USIM, then all these files are mandatory.~~

~~4.2.43.1 EF_{Kc} (GSM Ciphering key Kc)~~

~~This EF contains the ciphering key Kc and the ciphering key sequence number n for enciphering in a GSM access network. If the GSM access service is available on the USIM, then this file is mandatory.~~

~~Identifier: '6F20'~~	~~Structure: transparent~~	~~Optional~~
~~File size: 9 bytes~~	~~Update activity: high~~	

~~Access Conditions:~~

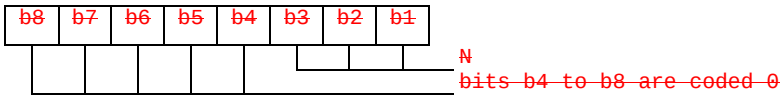
~~READ~~	~~PIN~~
~~UPDATE~~	~~PIN~~
~~DEACTIVATE~~	~~ADM~~
~~ACTIVATE~~	~~ADM~~

~~Bytes~~	~~Description~~	~~M/O~~	~~Length~~
~~1 to 8~~	~~Ciphering key Kc~~	~~M~~	~~8 bytes~~
~~9~~	~~Ciphering key sequence number n~~	~~M~~	~~1 byte~~

~~- Ciphering key Kc.~~
~~Coding:~~
~~- the least significant bit of Kc is the least significant bit of the eighth byte. The most significant bit of Kc is the most significant bit of the first byte.~~

- Ciphering key sequence number n

Coding:



NOTE: 3G TS 24.008 [9] defines the value of n=111 as "key not available". Therefore the value '07' and not 'FF' should be present following the administrative phase.

4.2.43.2 EF$_{KcGPRS}$ (GPRS Ciphering key KcGPRS)

This EF contains the ciphering key KcGPRS and the ciphering key sequence number n for GPRS (see 3G TS 23.060 [7]). If the GSM access service is available on the USIM, then this file is mandatory.

Identifier: '6F52'	Structure: transparent	Optional
File size: 9 bytes	Update activity: high	

Access Conditions:
READ PIN
UPDATE PIN
DEACTIVATE ADM
ACTIVATE ADM

Bytes	Description	M/O	Length
1 to 8	Ciphering key KcGPRS	M	8 bytes
9	Ciphering key sequence number n for GPRS	M	1 byte

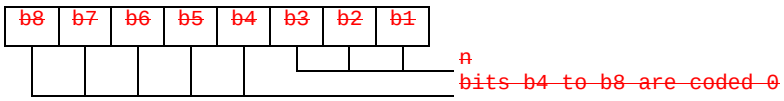
- Ciphering key KcGPRS.

Coding:

- the least significant bit of KcGPRS is the least significant bit of the eighth byte. The most significant bit of KcGPRS is the most significant bit of the first byte.

- Ciphering key sequence number n for GPRS.

Coding:



NOTE: TS 24.008 [9] defines the value of n=111 as "key not available". Therefore the value '07' and not 'FF' should be present following the administrative phase.

4.2.43.3 EF$_{LOCIGPRS}$ (GPRS location information)

This EF contains the following Location Information:

- Packet Temporary Mobile Subscriber Identity (P-TMSI);
- Packet Temporary Mobile Subscriber Identity signature value (P-TMSI signature value);
- Routing Area Information (RAI);
- Routing Area update status.

If the GSM access service is available on the USIM, then this file is mandatory.

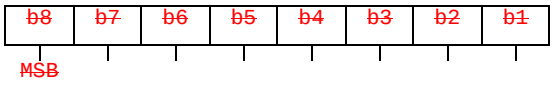
Identifier: '6F53'	Structure: transparent	Optional
SFI: Mandatory		
File size: 14 bytes	Update activity: high	

Access Conditions:
READ PIN
UPDATE PIN
DEACTIVATE ADM
ACTIVATE ADM

Bytes	Description	M/O	Length
1 to 4	P-TMSI	M	4 bytes
5 to 7	P-TMSI signature value	M	3 bytes
8 to 13	RAI	M	6 bytes
14	Routing Area update status	M	1 byte

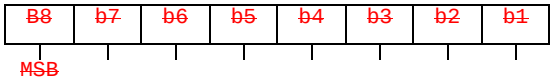
P-TMSI.
Contents:
Packet Temporary Mobile Subscriber Identity.
Coding:
according to TS 24.008 [9].

Byte 1: first byte of P-TMSI



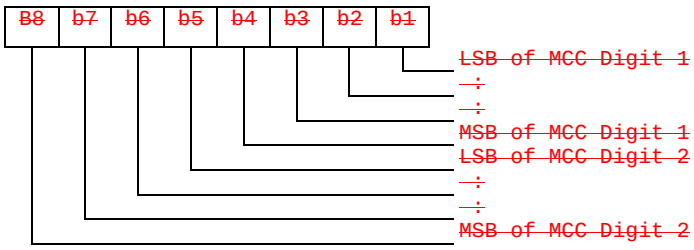
P-TMSI signature value.
Contents:
Packet Temporary Mobile Subscriber Identity signature value.
Coding:
according to TS 24.008 [9].

Byte 5: first byte of P-TMSI signature value

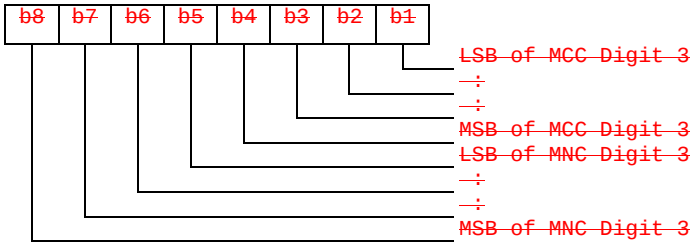


RAI.
Contents:
Routing Area Information.
Coding:
according to TS 24.008 [9].

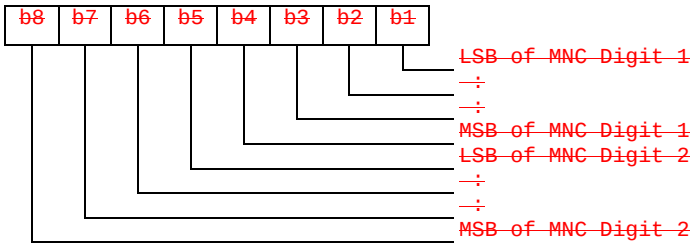
Byte 8: first byte of RAI (MCC digits 1 and 2).



Byte 9: second byte of RAI (MCC digit 3, MNC digit 3)



Byte 10: third byte of RAI (MNC digits 1 and 2).



- Byte 11: fourth byte of RAI (LAC).
- Byte 12: fifth byte of RAI (LAC continued).
- Byte 13: sixth byte of RAI (RAC).
- Routing area update status.

Contents:

- status of routing area update according to TS 24.008 [9].

Coding:

- Byte 14:

Bits:	b3	b2	b1.
	0	0	0 : updated.
	0	0	1 : not updated.
	0	1	0 : PLMN not allowed.
	0	1	1 : Routing Area not allowed.
	1	1	1 : reserved.

Bits b4 to b8 are RFU.

4.2.43.4 $EF_{LOCIGSM}$ (GSM Location Information)

This EF contains the following Location Information:

- Temporary Mobile Subscriber Identity (TMSI).
- Location Area Information (LAI).
- Location update status.

See subclause 5.2.5 for special requirements when updating $EF_{LOCIGSM}$.

If the GSM access service is available on the USIM, then this file is mandatory.

Identifier: '6F7F'	Structure: transparent	Optional
SFI: Mandatory		
File size: 11 bytes	Update activity: high	

Access Conditions:
READ PIN
UPDATE PIN
DEACTIVATE ADM
ACTIVATE PIN

Bytes	Description	M/O	Length
1 to 4	TMSI	M	4 bytes
5 to 9	LAI	M	5 bytes
10	Reserved (was used in GSM phase 1)	M	1 byte
11	Location update status	M	1 byte

TMSI.

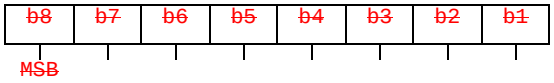
Contents:

Temporary Mobile Subscriber Identity.

Coding:

according to TS 24.008 [9].

Byte 1: first byte of TMSI



LAI.

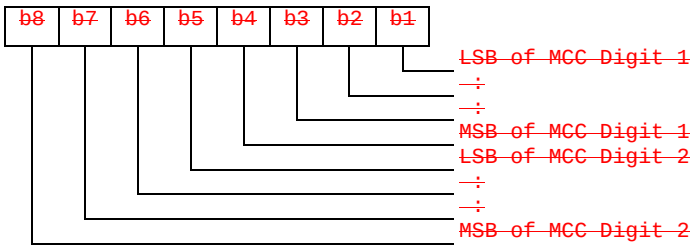
Contents:

Location Area Information.

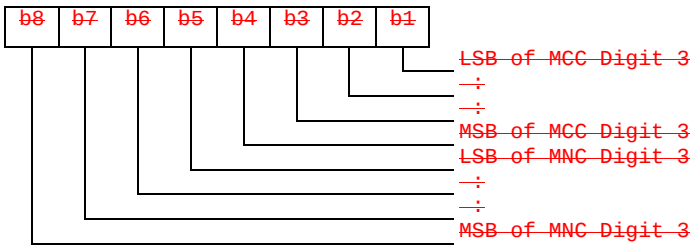
Coding:

according to TS 24.008 [9].

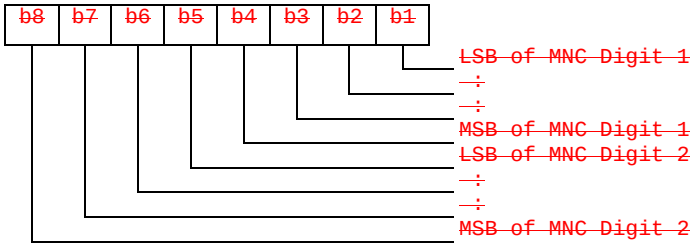
Byte 5: first byte of LAI (MCC digits 1 and 2).



Byte 6: second byte of LAI (MCC digit 3, MNC digit 3).



Byte 7: third byte of LAI (MNC digits 1 and 2).



Byte 8: fourth byte of LAI (LAC).

Byte 9: fifth byte of LAI (LAC continued).

- Location update status.

  Contents:

  - status of location update according to TS 24.008 [9].

  Coding:

  - byte 11:

Bits:	b3	b2	b1	
0	0	0	:	updated.
0	0	1	:	not updated.
0	1	0	:	PLMN not allowed.
0	1	1	:	Location Area not allowed.
1	1	1	:	reserved.

Bits b4 to b8 are RFU (see GSM 11.11 [18]).

4.2.43.5 EF_{BCCH} (Broadcast Control Channels)

This EF contains information concerning the GSM BCCH according to TS 24.008 [9].

BCCH storage may reduce the extent of a User Equipment's search of GSM BCCH carriers when selecting a cell. The BCCH carrier lists in an UE shall be in accordance with the procedures specified in TS 24.008 [9]. The UE shall only store BCCH information from the System Information 2 message and not the 2bis extension message.

If the GSM access service is available on the USIM, then this file is mandatory.

Identifier: '6F74'	Structure: transparent	Optional
File size: 16 bytes	Update activity: high	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 16	BCCH information	M	16 bytes

- BCCH information.

  Coding:

  - the information is coded as octets 2-17 of the "neighbour cells description information element" in TS 24.008 [9].

4.2.44 EF_{BDN} (Barred Dialling Numbers)

This EF contains Barred Dialling Numbers (BDN) and/or Supplementary Service Control strings (SSC). In addition it contains identifiers of associated network/bearer capabilities and identifiers of extension records. It may also contain an associated alpha-tagging. As the BDN service relies on the Call Control feature, BDN shall only be available if Call Control is available. If this file is present in the USIM, the Enabled Services Table (EF_{EST}) shall also be present.

Identifier: '6F4D'	Structure: linear fixed	Optional
Record length: X+15 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN2
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to X	Alpha Identifier	O	X bytes
X+1	Length of BCD number/SSC contents	M	1 byte
X+2	TON and NPI	M	1 byte
X+3 to X+12	Dialling Number/SSC String	M	10 bytes
X+13	Capability/Configuration Identifier	M	1 byte
X+14	Extension4 Record Identifier	M	1 byte
X+15	Comparison Method Pointer	M	1 byte

For contents and coding of all data items, except for the Comparison Method Pointer, see the respective data items of EF_{ADN}, with the exception that extension records are stored in the EF_{EXT4}. The Comparison Method Pointer refers to a record number in EF_{CMI}.

NOTE: The value of X (the number of bytes in the alpha-identifier) may be different to the length denoted X in EF_{ADN}.

4.2.45 EF_{EXT4} (Extension4)

This EF contains extension data of a BDN/SSC.

Identifier: '6F55'	Structure: linear fixed	Optional
Record length: 13 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN2
DEACTIVATION	ADM
ACTIVATION	ADM

Bytes	Description	M/O	Length
1	Record type	M	1 byte
2 to 12	Extension data	M	11 bytes
13	Identifier	M	1 byte

For contents and coding see subclause 4.4.2.4 EF_{EXT1}.

4.2.46 EF_{CMI} (Comparison Method Information)

This EF contains the list of Comparison Method Identifiers and alpha-tagging associated with BDN entries (see EF_{BDN}). This EF shall be present if EF_{BDN} is present.

Identifier: '6F58'	Structure: linear fixed	Optional
Record length: X+1 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	Comparison Method Identifier	M	1 byte
2 to X+1	Alpha Identifier	M	X bytes

- Alpha Identifier.
  Contents:
  Alpha-tagging of the associated Comparison Method Identifier.
  Coding:
  Same as the alpha identifier in EF_{ADN}.
- Comparison Method Identifier.
  Contents:
  - this byte describes the comparison method which is associated with a BDN record. Its interpretation is not specified but it shall be defined by the card issuers implementing the BDN feature on their USIMs.

  Coding:
  - binary; values from 0 to 255 are allowed.
    The default coding 255 is reserved for empty field.

4.2.47 EF_{EST} (Enabled Services Table)

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

Identifier: '6F56'	Structure: transparent	Optional
SFI: '05'		
File size: X bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN2
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
etc.			
X	Services n°(8X-7) to n°(8X)	O	1 byte

-Services

Contents:

Service n°1 :	Fixed Dialling Numbers (FDN)
Service n°2 :	Barred Dialling Numbers (BDN)
Service n°3 :	APN Control List (ACL)

The EF shall contain at least one byte. Further bytes may be included, but if the EF includes an optional byte, then the EF shall also contain all bytes before that byte. Other services are possible in the future. The coding falls under the responsibility of the 3GPP.

Coding:

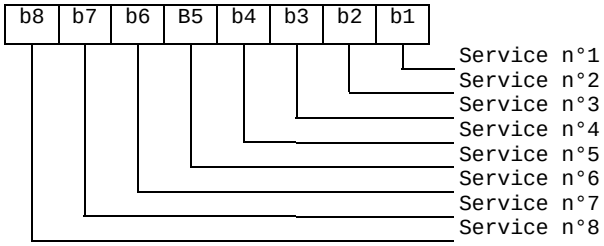
- 1 bit is used to code each service:
  - bit = 1: service activated;

- bit = 0: service deactivated.

- Unused bits shall be set to '0'.

A service which is listed in this table is enabled if it is indicated as available in the USIM Service Table (UST) and indicated as activated in the Enabled Services Tables (EST) otherwise this service is, either not available or disabled.

First byte:



etc.

4.2.48 EF_{ACL} (Access Point Name Control List)

This EF contains the list of allowed APNs (Access Point Names). If this file is present in the USIM, the Enabled Services Table (EF_{EST}) shall also be present.

Identifier: '6F57'	Structure: transparent	Optional
Record length: X bytes (X>1)	Update activity: low	
Access Conditions: READ PIN UPDATE PIN2 DEACTIVATE ADM ACTIVATE ADM		

Bytes	Description	M/O	Length
1	Number of APNs	M	1 byte
2 to X	APN TLVs	M	X-1 byte

For contents and coding of APN-TLVs see TS 23.003 [24].

4.2.49 EF_{DCK} (Depersonalisation Control Keys)

This EF provides storage for the de-personalization control keys associated with the OTA de-personalization cycle of TS 22.022 [27].

Identifier: '6F2C'	Structure: transparent	Optional
File Size: 16 bytes	Update activity: low	
Access Conditions: READ PIN UPDATE PIN DEACTIVATE ADM ACTIVATE ADM		

Bytes	Description	M/O	Length
1 to 4	8 digits of network de-personalization control key	M	4 bytes
5 to 8	8 digits of network subset de-personalization control key	M	4 bytes
9 to 12	8 digits of service provider de-personalization control key	M	4 bytes
13 to 16	8 digits of corporate de-personalization control key	M	4 bytes

Empty control key bytes shall be coded 'FFFFFFFF'.

4.2.50 EF_{CNL} (Co-operative Network List)

This EF contains the Co-operative Network List for the multiple network personalization services defined in TS 22.022 [27].

Identifier: '6F32'	Structure: transparent	Optional
File size: 6n bytes	Update activity: low	
Access Conditions: READ PIN UPDATE ADM INVALIDATE ADM REHABILITATE ADM		

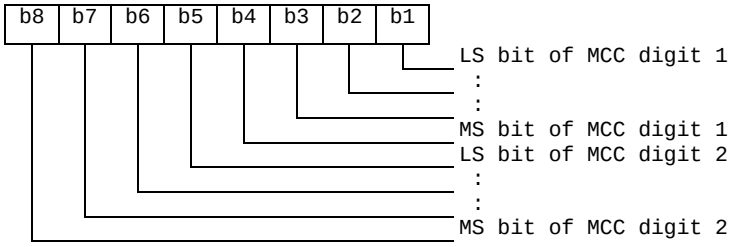
Bytes	Description	M/O	Length
1 to 6	Element 1 of co-operative net list	M	6 bytes
6n-5 to 6n	Element n of co-operative net list	O	6 bytes

- Co-operative Network List.

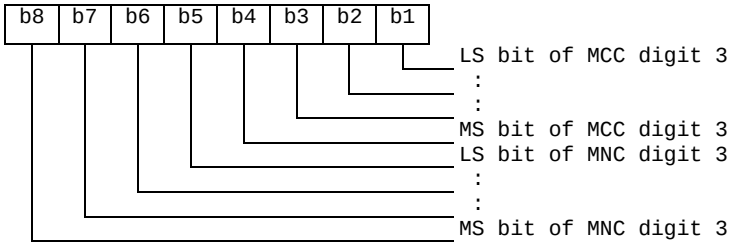
  Contents:
  - MCC, MNC, network subset, service provider ID and corporate ID of co-operative networks.

  Coding:
  - For each 6 byte list element.

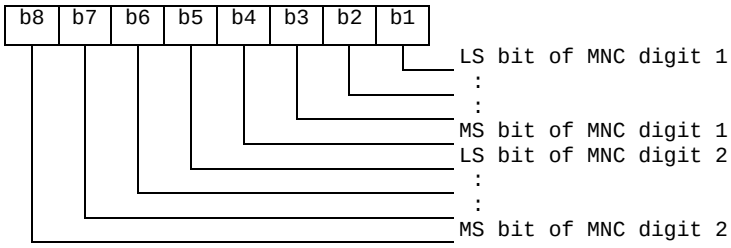
Byte 1:



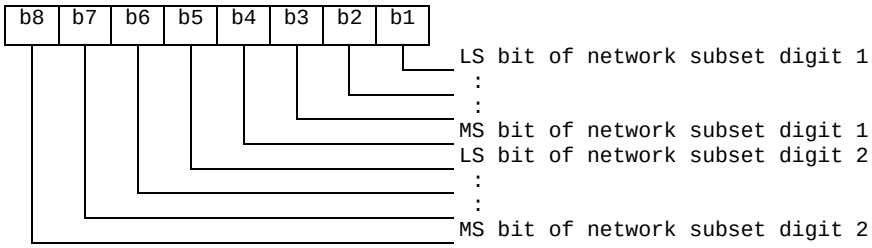
Byte 2:



Byte 3:

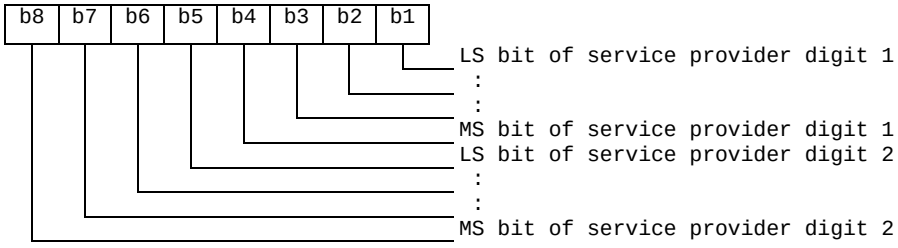


Byte 4:

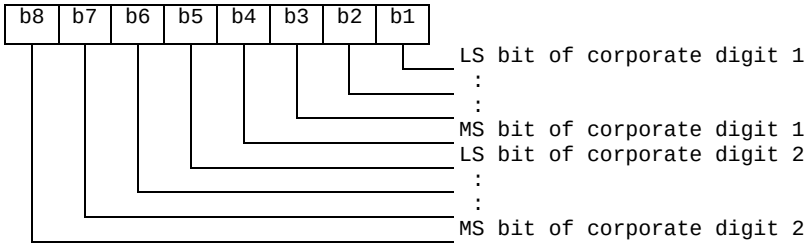


NOTE: Digit 3 of the MNC is placed directly after the MCC fields for compatibility between GSM and PCS 1900 PLMN structures.

Byte 5:



Byte 6:



- For 2 digit MNCs digit 3 of this field shall be 'F'.
- For 1 digit network subsets digit 2 of this field shall be 0.

- Empty fields shall be coded with 'FF'.
- The end of the list is delimited by the first MCC field coded 'FFF'.

4.2.51 EF_{COUNT} (Hyperframe number)

This EF contains the highest value of the hyperframe number of the bearers that were protected by the keys in EF_{KEYS} or EF_{KEYSPS} during the last connection. This value is used to control the lifetime of the keys (see 3G TS 33.102 [13]).

Identifier: '6F5B'	Structure: transparent	Mandatory
SFI: '0F'		
File size: 4 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 4	Hyperframe number	M	4 bytes

- Hyperframe number.
  Coding: The LSB of the hyperframe number is stored in bit 1 of byte 4.

4.2.52 $EF_{COUNTMAX}$ (Maximum value of Hyperframe number)

This EF contains the maximum value of the hyperframe. This value is used to control the lifetime of the keys (see 3G TS 33.102 [13]).

Identifier: '6F5C'	Structure: transparent	Mandatory
SFI: '10'		
File size: 4 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 4	Maximum value of Hyperframe number	M	4 bytes

- Maximum value of Hyperframe number.
  Coding: The LSB of the maximum hyperframe number is stored in bit 1 of byte 4.

4.2.53 $EF_{OPLMNsel}$ (OPLMN selector)

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 n^{th} record indicates the lowest.

Identifier: '6F5D'	Structure: transparent	Optional
SFI: ~~Mandatory~~'11'		
File size: 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	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 $EF_{UPLMNsel}$ for coding.

4.2.54 $EF_{PHPLMNAT}$ (Preferred HPLMN Access Technology)

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

Identifier: '6F5E'	Structure: Transparent	Optional
SFI: ~~Mandatory~~'13'		
File size: 2 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

- Access Technology Identifier:
  Coding:
  - See $EF_{UPLMNsel}$ for coding.

4.2.55 EF_{ARR} (Access Rule Reference)

This EF contains the access rules for files located under the USIM ADF in the UICC. If the security attribute tag '8B' is indicated in the FCP it contains a reference to a record in this file.

Structure of EF_{ARR} at ADF-level

Identifier: '6F06'	Structure: Linear fixed	Mandatory
SFI: '17'		
File size: X bytes	Update activity: low	
Access Conditions: READ ALW UPDATE ADM DEACTIVATE ADM ACTIVATE ADM		

Bytes	Description	M/O	Length
1 to X	Access Rule TLV data objects	M	X bytes

This EF contains one or more records containing access rule information according to the reference to expanded format as defined in ISO/IEC 7816-9 [26]. Each record represents an access rule. Unused bytes in the record are set to 'FF'.

4.3 DFs at the USIM ADF (Application DF) Level

DFs may be present as child directories of USIM ADF. The following DFs are defined:

- DF_{GSM} '5F3B'.
- $DF_{PHONEBOOK}$ '5F3A'.

(DF for application specific phonebook. This DF has the same structure as the $DF_{PHONEBOOK}$ under $DF_{TELECOM}$).

'5F70' is reserved for DF_{SoLSA} and is expected to be defined in the release 2000 version of the present document.

4.4 Contents of DFs at the USIM ADF (Application DF) level

4.4.2 Contents of files at the DF PHONEBOOK level

The UICC may contain a global phonebook, or application specific phonebooks, or both in parallel. When both phonebook types co-exist, they are independent and no data is shared. In this case, it shall be possible for the user to select which phonebook the user would like to access.

The global phonebook is located in $DF_{PHONEBOOK}$ under $DF_{TELECOM}$. Each specific USIM application phonebook is located in $DF_{PHONEBOOK}$ of its respective Application DF_{USIM}. $DF_{PHONEBOOK}$ under DF_{USIM} and under DF $_{TELECOM}$ have the same structure. Yet $DF_{PHONEBOOK}$ under DF_{USIM} may contain a different set of files than $DF_{PHONEBOOK}$ under $DF_{TELECOM}$. All phonebook related EFs are located under their respective $DF_{PHONEBOOK}$. USIM specific phonebooks are dedicated to application specific entries. Each application specific phonebook is protected by the application PIN.

If a GSM application resides on the UICC, the EFs ADN and EXT1 from one $DF_{PHONEBOOK}$ (defined at GSM application installation) are mapped to $DF_{TELECOM}$. Their file IDs are specified in GSM 11.11 [18], i.e. EF_{ADN} = '6F3A' and EF_{EXT1} = '6F4A', respectively. EF_{ADN} and EF_{PBR} shall always be present if the $DF_{Phonebook}$ is present. If any phonebook file other than EF_{ADN} or $EF_{EXT1,}$ is used, then EF_{PBC} shall be present.

If the UICC is inserted into a GSM terminal and a record in the phone book has been updated, a flag in the entry control information in the EF_{PBC} is set from 0 to 1 by the card. If the UICC is later inserted into a 3G terminal again, the terminal shall check the flag in EF_{PBC} and if this flag is set, shall update the CC. A set flag in EF_{PBC} results in a full synchronisation of the phone book (if synchronisation is requested).

The EF structure related to the public phone book is located under $DF_{PHONEBOOK}$ in $DF_{TELECOM}$. A USIM specific phone book may exist for application specific entries. The application specific phone book is protected by the application PIN. The application specific phone book is a copy of the file structure of the one specified for the public phone book under $DF_{TELECOM}$. The application specific phonebook may contain a different set of files than the one in the public area under $DF_{TELECOM}$.

4.4.2.1 EF_{PBR} (Phone Book Reference file)

This file describes the structure of the phonebook. All EFs representing the phonebook are specified here, together with their file identifiers (FID) and their short file identifiers (SFI), if applicable.

Some types of EFs can occur more than once in the phonebook, e.g. there may be two entities of Abbreviated Dialling Numbers, EF_{ADN} and EF_{ADN1}. For these kind of EFs no fix FID values are specified, instead the value '4FXX' indicates that the value is to be assigned by the card issuer. These assigned values are then indicated in the associated TLV object in EF_{PBR}.

EFs stating a SFI value ('XX') in the description of their structure shall provide an SFI. The value shall be assigned by the card issuer and is indicated in the associated TLV object in EF_{PBR}.

The reference file is a file that contains information how the information in the different files is to be combined together to form a phone book entry. The reference file contains records. Each record specifies the structure of up to 254 entries in the phone book. Each phone book entry consists of data stored in files indicated in the reference file record. The entry structure shall be the same over all the records in the EF $_{PBR}$. If more than 254 entries are to be stored, a second record is needed in the reference file. The structure of a phone book entry is defined by different TLV objects that are stored in

a reference file record. The reference file record structure describes the way a record in a file that is part of the phonebook is used to create a complete entry. Three different types of file linking exist.

- Type 1 files: Files that contain as many records as the reference/master file (EF_{ADN}, EF_{ADN1}) and are linked on record number bases (Rec1 -> Rec1). The master file record number is the reference.

- Type 2 files: Files that contain less entries than the master file and are linked via pointers in the index administration file (EF_{IAP}).

- Type 3 files are files that are linked by a TLV object in a record (Grouping information in EF_{GAS}).

Table 4.1: Phone Book Reference file Constructed Tags

Tag Value	Constructed TAG Description
'D8'	Indicating files where the amount of records equal to master EF, type 1
'D9'	Indicating files that are linked using the index administration file, type 2. Order of pointer appearance in index administration EF is the same as the order of file IDs following this tag
'DA'	Indicating files that are addressed inside a TLV object, type 3. (The file pointed to is defined by the TLV object.)

The first file ID indicated using constructed Tag 'D8' is called the master EF. Access conditions for all other files in the index structure is set to the same as for the master EF unless otherwise specified.

File IDs indicated using constructed Tag 'D8' is a type 1 file and contains the same number of records as the first file that is indicated in the data part of this TLV object. All files following this Tag are mapped one to one using the record numbers/IDs of the first file indicated in this TLV object.

File IDs indicated using constructed Tag 'D9' are mapped to the master EF (the file ID indicated as the first data object in the TLV object using Tag 'D8') using the pointers in the index administration file. The order of the pointers in the index administration file is the same as the order of the file IDs presented after Tag 'D9'. If this Tag is not present in the reference file record the index administration file is not present in the structure. In case the index administration file is not present in the structure it is not indicated in the data following tag 'D8'.

File IDs indicated using constructed Tag 'DA' indicate files that are part of the reference structure but they are addressed using TLV objects in one or more of the files that are part of the reference structure. The length of the tag indicates whether the file to be addressed resides in the same directory or if a path to the file is provided in the TLV object.

Each constructed Tag contains a list of primitive Tags indicating the order and the type of data (e.g. ADN, IAP,…) of the reference structure.

-The primitive tag identifies clearly the type of data, its value field indicates the file identifier and, if applicable, the SFI value of the specified EF.
I.e. the length value of a primitive tag indicates if an SFI value is available for the EF or not:

- Length = '02' Value: 'FID (2 bytes)'
- Length = '03' Value: 'FID (2 bytes)', 'SFI (1 byte)'

Table 4.2: Tag definitions for the phone book type of file

Tag Value	TAG Description
'C0'	EF_{ADN} data object
'C1'	EF_{IAP} data object
'C2'	EF_{EXT1} data object
'C3'	EF_{SNE} data object
'C4'	EF_{ANR} data object
'C5'	EF_{PBC} data object
'C6'	EF_{GRP} data object
'C7'	EF_{AAS} data object
'C8'	EF_{GAS} data object
'C9'	EF_{UID} data object
'CA'	EF_{EMAIL} data object

Phone Book Reference file EF_{PBR} structure

Identifier: '4F30'	Structure: linear fixed	Optional
~~SFI: Optional~~		
Record Length: X bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to X	TLV object(s) for indicating EFs that are part of the phone book structure	M	X bytes

4.4.2.2 EF_{IAP} (Index Administration Phone book)

This file is present if Tag 'D9' is indicated in the reference file.

The EF contains pointers to the different records in the files that are part of the phone book. The index administration file record number/ID is mapped one to one with the corresponding EF_{ADN} (shall be record to record). The index administration file contains the same amount of records as EF_{ADN}. The order of the pointers in an EF_{IAP} shall be the same as the order of file IDs that appear in the TLV object indicated by Tag 'D9' in the reference file record. The amount of bytes in a record is equal to the number of files indicated the EF_{PBR} following tag 'D9'.

The value 'FF' is an invalid record number/ID and is used in any location in to indicate that no corresponding record in the indicated file is available.

The content of EF_{IAP} is set to 'FF' at the personalisation stage.

Index administration file EF_{IAP} structure

Identifier: '4FXX'	Structure: linear fixed	Optional
SFI: ~~mandatory~~ 'XX'		
Record Length: X bytes	Update activity: high	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	Record number of the first object indicated after Tag 'D9'	M	1 byte
2	Record number of the second object indicated after Tag 'D9'	M	1 byte
X	Record number of the x^{th} object indicated after Tag 'D9'	M	1 byte

4.4.2.3 EF_{ADN} (Abbreviated dialling numbers)

This EF contains Abbreviated Dialling Numbers (ADN) and/or Supplementary Service Control strings (SSC). In addition it contains identifiers of associated network/bearer capabilities and identifiers of extension records. It may also contain an associated alpha-tagging.

This EF shall always be present if the $DF_{Phonebook}$ is present.

Identifier: '4F3A	Structure: linear fixed	Optional
SFI: 'XX'~~mandatory~~		
Record length: X+14 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to X	Alpha Identifier	O	X bytes
X+1	Length of BCD number/SSC contents	M	1 byte
X+2	TON and NPI	M	1 byte
X+3 to X+12	Dialling Number/SSC String	M	10 bytes
X+13	Capability/Configuration Identifier	M	1 byte
X+14	Extension1 Record Identifier	M	1 byte

- Alpha Identifier.
  Contents:
  - Alpha-tagging of the associated dialling number.

  Coding:
  - this alpha-tagging shall use
    either:
    - the SMS default 7-bit coded alphabet as defined in 3G TS 23.038 [5] with bit 8 set to 0. The alpha identifier shall be left justified. Unused bytes shall be set to 'FF'.

    or:
    - one of the UCS2 coded options as defined in the annex of 3G TS 31.101 [11].

NOTE 1: The value of X may be from zero to 241. Using the command GET RESPONSE the ME can determine the value of X.

- Length of BCD number/SSC contents.

Contents:
- this byte gives the number of bytes of the following two data items containing actual BCD number/SSC information. This means that the maximum value is 11, even when the actual ADN/SSC information length is greater than 11. When an ADN/SSC has extension, it is indicated by the extension1 identifier being unequal to 'FF'. The remainder is stored in the EF_{EXT1} with the remaining length of the additional data being coded in the appropriate additional record itself (see subclause 4.4.2.4).

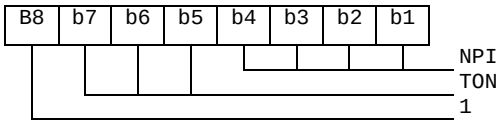
Coding:
- according to 3G TS 24.008 [9].

- TON and NPI.

Contents:
- Type of number (TON) and numbering plan identification (NPI).

Coding:
- according to 3G TS 24.008 [9]. If the Dialling Number/SSC String does not contain a dialling number, e.g. a control string deactivating a service, the TON/NPI byte shall be set to 'FF' by the ME (see note 2).

NOTE 2: If a dialling number is absent, no TON/NPI byte is transmitted over the radio interface (see 3G TS 24.008 [9]). Accordingly, the ME should not interpret the value 'FF' and not send it over the radio interface.

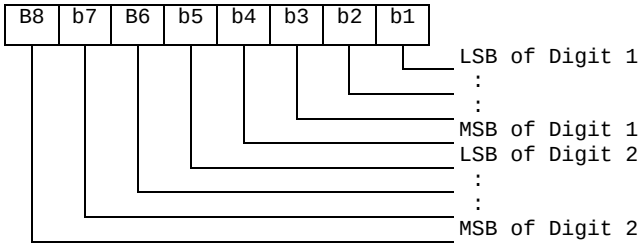


- Dialling Number/SSC String

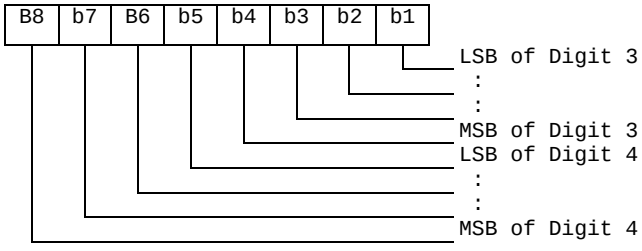
Contents:
- up to 20 digits of the telephone number and/or SSC information.

Coding:
- according to 3G TS 24.008 [9] , 3G TS 22.030 [4] and the extended BCD-coding (see table 4.3). If the telephone number or SSC is longer than 20 digits, the first 20 digits are stored in this data item and the remainder is stored in an associated record in the EF_{EXT1}. The record is identified by the Extension1 Record Identifier. If ADN/SSC require less than 20 digits, excess nibbles at the end of the data item shall be set to 'F'. Where individual dialled numbers, in one or more records, of less than 20 digits share a common appended digit string the first digits are stored in this data item and the common digits stored in an associated record in the EF_{EXT1}. The record is identified by the Extension 1 Record Identifier. Excess nibbles at the end of the data item shall be set to 'F'.

Byte X+3



Byte X+4:



etc.

- Capability/Configuration Identifier.
  Contents:
  - capability/configuration identification byte. This byte identifies the number of a record in the EF_{CCP} containing associated capability/configuration parameters required for the call. The use of this byte is optional. If it is not used it shall be set to 'FF'.

  Coding:
  - binary.

- Extension1 Record Identifier.
  Contents:
  - extension1 record identification byte. This byte identifies the number of a record in the EF_{EXT1} containing an associated called party subaddress or additional data. The use of this byte is optional. If it is not used it shall be set to 'FF'.
  - if the ADN/SSC requires both additional data and called party subaddress, this byte identifies the additional record. A chaining mechanism inside EF_{EXT1} identifies the record of the appropriate called party subaddress (see subclause 4.4.2.4).

  Coding:
  - binary.

NOTE 3: EF_{ADN} in the public phone book under $DF_{TELECOM}$ may be used by USIM, GSM and also other applications in a multi-application card. If the non-GSM application does not recognise the use of Type of Number (TON) and Number Plan Identification (NPI), then the information relating to the national dialling plan shall be held within the data item dialling number/SSC and the TON and NPI fields set to UNKNOWN. This format would be acceptable for 3G operation and also for the non-GSM application where the TON and NPI fields shall be ignored.

EXAMPLE: SIM storage of an International Number using E.164 [22] numbering plan.

	TON	NPI	Digit field.
USIM application	001	0001	abc...
Other application compatible with 3G	000	0000	xxx...abc...

where "abc..." denotes the subscriber number digits (including its country code), and "xxx..." denotes escape digits or a national prefix replacing TON and NPI.

NOTE 4: When the ME acts upon the EF_{ADN} with a SEARCH RECORD command in order to identify a character string in the alpha-identifier, it is the responsibility of the ME to ensure that the number of characters used as SEARCH RECORD parameters are less than or equal to the value of X if the MMI allows the user to offer a greater number.

Table 4.3: Extended BCD coding

BCD Value	Character/Meaning
'0'	"0"
:	:
'9'	"9"
'A'	"*"
'B'	"#"
'C'	DTMF Control digit separator (GSM 02.07 [17]).
'D'	"Wild" value. This will cause the MMI to prompt the user for a single digit (see GSM 02.07 [17]).
'E'	RFU.
'F'	Endmark e.g. in case of an odd number of digits.

BCD values 'C', 'D' and 'E' are never sent across the radio interface.

NOTE 5: A second or subsequent 'C' BCD value will be interpreted as a 3 second PAUSE (see GSM 02.07 [17]).

4.4.2.4 EF_{EXT1} (Extension1)

This EF contains extension data of an ADN/SSC. . This EF shall always be present if the $DF_{Phonebook}$ is present.

Extension data is caused by:

- an ADN/SSC which is greater than the 20 digit capacity of the ADN/SSC Elementary File or where common digits are required to follow an ADN/SSC string of less than 20 digits. The remainder is stored in this EF as a record, which is identified by a specified identification byte inside the ADN/SSC Elementary File. The EXT1 record in this case is specified as additional data;

- an associated called party subaddress. The EXT1 record in this case is specified as subaddress data.

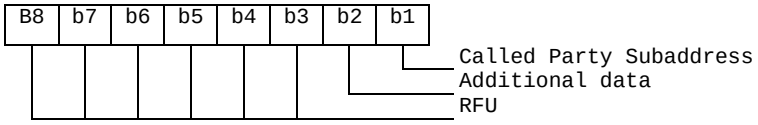
Identifier: '4FXX'	Structure: linear fixed	Optional
SFI: ~~Mandatory~~'XX'		
Record length: 13 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	Record type	M	1 byte
2 to 12	Extension data	M	11 bytes
13	Identifier	M	1 byte

- Record type.
  Contents:
  - type of the record.
  Coding:



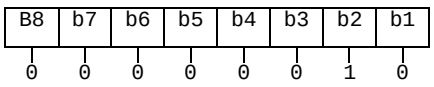
- b3-b8 are reserved and set to 0;

- a bit set to 1 identifies the type of record;

- only one type can be set;

- '00' indicates the type "unknown".

The following example of coding means that the type of extension data is "additional data":



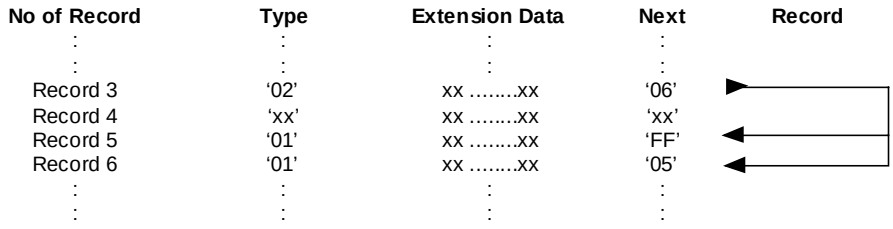
- Extension data.
  Contents:
  additional data or Called Party Subaddress depending on record type.
  Coding:
  Case 1, Extension1 record is additional data:
  - The first byte of the extension data gives the number of bytes of the remainder of ADN/SSC. The coding of remaining bytes is BCD, according to the coding of ADN/SSC. Unused nibbles at the end shall be set to 'F'. It is possible if the number of additional digits exceeds the capacity of the additional record to chain another record inside the EXT1 Elementary File by the identifier in byte 13.

Case 2, Extension1 record is Called Party Subaddress:

- The subaddress data contains information as defined for this purpose in 3G TS 24.008 [9]. All information defined in 3G TS 24.008, except the information element identifier, shall be stored in the USIM. The length of this subaddress data can be up to 22 bytes. In those cases where two extension records are needed, these records are chained by the identifier field. The extension record containing the first part of the called party subaddress points to the record which contains the second part of the subaddress.

- Identifier.
  Contents:
  identifier of the next extension record to enable storage of information longer than 11 bytes.
  Coding:
  record number of next record. 'FF' identifies the end of the chain.

- Example of a chain of extension records being associated to an ADN/SSC. The extension1 record identifier (Byte 14+X) of ADN/SSC is set to 3.



In this example ADN/SSC is associated to additional data (record 3) and a called party subaddress whose length is more than 11 bytes (records 6 and 5).

4.4.2.5 EF_{PBC} (Phone Book Control)

This EF contains control information related to each entry in the phone book. This EF contains as many records as the EF_{ADN} associated with it (shall be record to record). Each record in EF_{PBC} points to a record in its EF_{ADN}. This file indicates the control information and the hidden information of each phone book entry.

The content of EF_{PBC} is linked to the associated EF_{ADN} record by means of the ADN record number/ID (there is a one to one mapping of record number/identifiers between EF_{PCB} and EF_{ADN}).

Structure of control file EF_{PBC}

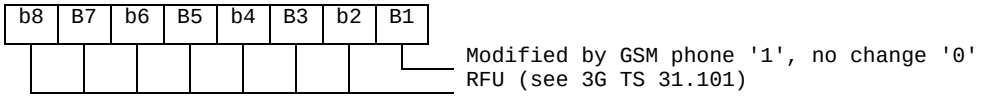
Identifier: '4FXX'	Structure: linear fixed	Optional
SFI: ~~Mandatory~~'XX'		
Record length: 2 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	Entry Control Information	M	1 byte
2	Hidden Information	M	1 byte

- Entry Control Information.
  Contents:
  - provides some characteristics about the phone book entry (eg modification by a GSM mobile).
  Coding:



- Hidden Information.
  Contents:
  indicates to which USIM/GSM application of the UICC this phone book entry belongs, so that the corresponding secret code can be verified to display the phone book entry, other wise the phone book entry is hidden.
  Coding:
  '00' – the phone book entry is not hidden;
  'xx' – record number in EF_{DIR} of the associated USIM application.

4.4.2.6 EF_{GRP} (Grouping file)

This EF contains the grouping information for each phone book entry. This file contains as many records as the associated EF_{ADN}. Each record contains a list of group identifiers to which the entry belongs.

Structure of grouping file EF_{GRP}

Identifier: '4FXX'	Structure: linear fixed	Optional
SFI: ~~Mandatory~~'XX'		
Record Length: X bytes (1 ≤ X ≤10)	Update activity: high	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	Group Name Identifier 1	M	1 byte
2	Group Name Identifier 2	O	1 byte
X	Group Name Identifier X	O	1 byte

- Group Name Identifier x.

  Content:

  - indicates if the associated entry is part of a group, in that case it contains the record number of the group name in EF_{GAS}.

  - One entry can be assigned to a maximum of 10 groups.

  Coding:

  - '00' – the phone book entry is not part of a group;
    'XX' – record number in $EF_{GAS.}$

4.4.2.7 EF_{AAS} (Additional number Alpha String)

This file contains the alpha strings that are associated with the user defined naming tags for additional numbers referenced in EF_{ANR}.

Structure of EF_{AAS}

Identifier: '4FXX'	Structure: linear fixed	Optional
SFI: ~~Recommended~~ -		
Record length: X bytes	Update activity: low	
Access Conditions: READ PIN UPDATE PIN DEACTIVATE ADM ACTIVATE ADM		

Bytes	Description	M/O	Length
1 to X	Alpha text string	M	X bytes

- Alpha text string.

  Content:

  - user defined text for additional number.

  Coding:

  - same as the alpha identifier in EF_{ADN}.

4.4.2.8 EF_{GAS} (Grouping information Alpha String)

This file contains the alpha strings that are associated with the group name referenced in EF_{GRP}.

Structure of EF_{GAS}

Identifier: '4FXX'	Structure: linear fixed	Optional
SFI: ~~Recommended~~ -		
Record length: X bytes	Update activity: low	
Access Conditions: READ PIN UPDATE PIN DEACTIVATE ADM ACTIVATE ADM		

Bytes	Description	M/O	Length
1 to X	Alpha text string	M	X bytes

- Alpha text string

  Content:

  - group names.

  Coding:

  - same as the alpha identifier in EF_{ADN}.

4.4.2.9 EF_{ANR} (Additional Number)

Several phone numbers can be attached to one EF_{ADN} record, using one or several EF_{ANR}. The amount of additional number entries may be less than or equal to the amount of records in EF_{ADN}. The EF structure is linear fixed. Each record contains an additional phone number. The first byte indicates whether the record is free or the type of additional number referring to the record number in EF_{AAS}, containing the text to be displayed. The following part indicates the additional number and the reference to the associated record in the EF_{ADN} file.

Structure of EF_{ANR}

Identifier: '4FXX'	Structure: linear fixed	Optional
SFI: ~~mandatory~~'XX'		
Record length: X+11 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	Additional Number identifier	M	1 byte
2 to 11	Additional number	M	10 bytes
12	ADN file SFI	M/O	1 byte
13	ADN file Record Identifier	M/O	1 byte

- Additional Number Identifier

  Content:

  - describes the type of the additional number defined in the file EF_{AAS}.

  Coding:

  - '00' – no additional number description;
    'xx' – record number in EF_{AAS} describing the type of number (e.g. "FAX");
    'FF' – free record.

- Additional number

  Content:

  - additional phone number linked to the phone book entry.

  Coding:

  - same than the dialling number /SSC string in $EF_{ADN.}$

- ADN file SFI.

  Content:

  - Short File identifier of the associated EF_{ADN} file.

  Coding:

  - as defined in the UICC specification.

- ADN file Record Identifier

  Content:

  - record identifier of the associated phone book entry.

  Coding:

  - 'xx' – record identifier of the corresponding ADN record.

In case of a one-to-one mapping, i.e. there is one ANR entry for each ADN entry, the ADN file SFI and the ADN file Record Identifier should not be present. In all other cases these two bytes shall be present.

4.4.2.10 EF_{SNE} (Second Name Entry)

The phone book also contains the option of a second name entry. The second name entry is associated with the ADN record through the pointer in the index administration file. The amount of second name entries may be less than or equal to the amount of records in EF_{ADN}.

Structure of EF_{SNE}

Identifier: '4FXX'	Structure: linear fixed	Optional
SFI: ~~mandatory~~'XX'		
Record length: X+2 bytes	Update activity: low	
Access Conditions: READ PIN UPDATE PIN DEACTIVATE ADM ACTIVATE ADM		

Bytes	Description	M/O	Length
1 to X	Alpha Identifier of Second Name	M	X bytes
X+1	ADN file SFI	M/O	1 byte
X+2	ADN file Record Identifier	M/O	1 byte

- Alpha Identifier of Second Name.

  Content:

  - string defining the second name of the phone book entry.

  Coding:

  - as the alpha identifier for EF_{ADN}.

- ADN file SFI.

  Content:

  - Short File identifier of the associated EF_{ADN} file.

  Coding:

  - as defined in the UICC specification.

- ADN file Record Identifier

  Content:

  record identifier of the associated phone book entry.

  Coding:

  'xx' – record identifier of the corresponding ADN record.

In case of a one-to-one mapping, i.e. there is one SNE entry for each ADN entry, the ADN file SFI and the ADN file Record Identifier should not be present. In all other cases these two bytes shall be present.

4.4.2.11 EF_{CCP1} (Capability Configuration Parameters 1)

This EF contains parameters of required network and bearer capabilities and ME configurations associated with a call established using a phone book entry.

Structure of EF_{CCP1}

Identifier: '4F3D'	Structure: linear fixed	Optional
SFI: ~~optional~~'XX'		
Record length: 14 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 10	Bearer capability information element	M	10 bytes
11 to 14	Bytes reserved - see below	M	4 bytes

- Bearer capability information element.

  Contents and Coding:

  - see 3G TS 24.008 [9]. The Information Element Identity (IEI) shall be excluded; i.e. the first byte of the EF_{CCP1} record shall be Length of the bearer capability contents.

- Bytes 11-14 shall be set to 'FF' and shall not be interpreted by the ME.

4.4.2.12 Phone Book Synchronisation

To support synchronisation of phone book data with other devices, the USIM may provide the following files to be used by the synchronisation method: a phone book synchronisation counter (PSC), a unique identifier (UID) and change counter (CC) to indicate recent changes.

4.4.2.12.1 EF_{UID} (Unique Identifier)

The EF_{UID} is used to uniquely identify a record and to be able to keep track of the entry in the phone book. The terminal assigns the (UID) when a new entry is created. The value of the UID does not change as long as the value of the PID remains the same. The UID shall remain on the UICC, in EF_{UID}, until the PID is regenerated. This means that when a phone book entry is deleted, the content of the linked information (eg ADN, E-MAIL,..) shall be set to the personalization value 'FF…FF'. But the UID-value of the deleted record shall not be used when a new entry is added to the phonebook until the PID is regenerated, but it shall be set to a new value.

If/when the PID is regenerated, all UIDs for the entry in the phone book shall be assigned new values starting from 1. The new value of the UID for each entry shall then be kept until the PID is regenerated again.

Structure of EF_{UID}

Identifier: '4F21'	Structure: linear fixed	Optional
SFI: ~~optional~~'XX'		
Record length: 2 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 2	Unique Identifier (UID) of Phone Book Entry	M	2 bytes

- Unique Identifier of Phone Book Entry.

  Content:

- number to unambiguously identify the phone book entry for synchronisation purposes.

Coding:

- hexadecimal value. At initialisation all UIDs are personalised to ''00 00'' (i.e. empty).

4.4.2.12.2 EF_{PSC} (Phone book Synchronisation Counter)

The phone book synchronisation counter (PSC) is used by the ME to construct the phone book identifier and to determine whether the accessed phone book is the same as the previously accessed phone book or if it is a new unknown phone book (might be the case that there is one phonebook under DF-telecom and one phone book residing in a USIM-application). If the PSC is unknown, a full synchronisation of the phone book will follow.

The PSC is also used to regenerate the UIDs and reset the CC to prevent them from running out of range. When the UIDs or the CC has reached its maximum value, a new PSC is generated. This leads to a scenario where neither the CC nor the UIDs will run out of range.

The PSC shall be regenerated by the terminal if one of the following situation applies:
- the values of the UIDs have run out of range;
- the whole phone book has been reset/deleted;
- the value of the CC has run out of range.

Structure of EF_{PSC}

Identifier: '4F22'	Structure: transparent	Optional
SFI: ~~optional~~'XX'		
File size: 4 bytes	Update activity: low	
Access Conditions: READ PIN UPDATE PIN DEACTIVATE ADM ACTIVATE ADM		

Bytes	Description	M/O	Length
1 to 4	Phone book synchronisation counter (PSC)	M	4 bytes

- PSC: Unique synchronisation counter of Phone Book.

  Content:

  number to unambiguously identify the status of the phone book for synchronisation purposes.

  Coding:

  hexadecimal value.

  The phone book identifier coding based on the EF_{PSC} is described hereafter:

- For a phone book residing in DF-telecom:
  - Phone book identifier = ICCid (10bytes) "fixed part" + 4 bytes (in EF_{PSC}) "variable part".
- For a phone book residing in an USIM application:
  - Phone book identifier = 10 last bytes of (ICCid XOR AID) "fixed part" + 4 bytes (in EF_{PSC}) "variable part".

  To be able to detect if the PSC needs to be regenerated (i.e. the variable part) the following test shall be made by the terminal before for each update of either the CC or the assignment of a new UID:

  - Each time the terminal has to increment the value of the UID the following test is needed:
    - If UID = ‘FF FF’ then.

{Increment **PSC** mod 'FF FF FF FF'; }.

- Each time the terminal has to increment the value of CC the following test is needed:

  If CC = 'FF FF' then.

  {Increment **PSC** mod 'FF FF FF FF' ; CC=0001}.

NOTE: If the phonebook is deleted then the terminal will change the **PSC** according to:

Incrementing **PSC** modulus FFFFFFFF.

4.4.2.12.3 EF_{CC} (Change Counter)

The change counter (CC) shall be used to detect changes made to the phone book.

Every update/deletion of an existing phone book entry or the addition of a new phone book entry causes the terminal to increment the EF_{CC}. The concept of having a CC makes it possible to update the phone book in different terminals, which still are able to detect the changes (e.g. changes between different handset and/or 2nd and 3rd generation of terminals).

Structure of EF_{CC}

Identifier: '4F23'	Structure: transparent		Optional
SFI: 'XX' ~~Mandatory~~			
File size: 2 bytes		Update activity: high	
Access Conditions: READ PIN UPDATE PIN DEACTIVATE ADM ACTIVATE ADM			
Bytes	Description	M/O	Length
1 to 2	Change Counter (CC) of Phone Book	M	2 bytes

- Change Counter of Phone Book.

  Content:

  - indicates recent change(s) to phone book entries for synchronisation purposes.

  Coding:

  - hexadecimal value. At initialisation, CC shall be personalised to '00 00' (i.e. empty).

4.4.2.12.4 EF_{PUID} (Previous Unique Identifier)

The PUID is used to store the previously used unique identifier (UID). The purpose of this file is to allow the terminal to quickly generate a new UID, which shall then be stored in the EF_{UID}.

Structure of EF_{PUID}

Identifier: '4F24'	Structure: transparent	Optional
SFI: ~~Mandatory~~'XX'		
File size: 2 bytes	Update activity: high	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 2	Previous Unique Identifier (PUID) of Phone Book Entry	M	2 bytes

- Previous unique Identifier of Phone Book Entry.

  Content:

  - Previous number that was used to unambiguously identify the phone book entry for synchronisation purposes.

4.4.2.13 EF_{EMAIL} (e-mail address)

This EF contains the e-mail addresses that may be linked to a phone book entry.

Several e-mail addresses can be attached to one EF_{ADN} record, using one or several EF_{EMAIL}. The number of email addresses may be equal to or less than the amount of records in EF_{ADN}. Each record contains an e-mail address. The first part indicates the e-mail address, and the reference to the associated record in the EF_{ADN} file.

Structure of EF_{EMAIL}

Identifier: '4FXX'	Structure: linear fixed	Optional
SFI: ~~Mandatory~~'XX'		
Record length: X + Y Bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to X	E-mail Address	M	X bytes
:			
:			
X+1	ADN file SFI	M/O	1 byte
X+2	ADN file Record Identifier	M/O	1 byte

NOTE: Y =2 if items "ADN file SFI" and "ADN file Record Identifier exist", otherwise Y=0.

- E-mail Address.
  Content:

  - string defining the e-mail address

  Coding:

  - the SMS default 7-bit coded alphabet as defined in 3G TS 23.038 [5] with bit 8 set to 0. The alpha identifier shall be left justified. Unused bytes shall be set to 'FF'.

- ADN file SFI.

Content:

- short File identifier of the associated EF_{ADN} file.

Coding:

- as defined in 3G TS 31.101.

- ADN file Record Identifier.

  Content:

  - record identifier of the associated phone book entry.

  Coding:

  - binary.

In case of a one-to-one mapping, i.e. there is one E-mail address for each ADN entry, the ADN file SFI and the ADN file Record Identifier shall not be present. In all other cases these two bytes shall be present.

4.4.3 Contents of files at the DF GSM level (Files required for GSM Access)

The EFs described in this subclause are required for the USIM application to be able to access service through a GSM network.

The presence of these files and thus the support of a GSM access is indicated in the 'USIM Service Table' as service no. '27' being available. If the GSM access service is available on the USIM, then all these files are mandatory.

4.4.3.1 EF_{Kc} (GSM Ciphering key Kc)

This EF contains the ciphering key Kc and the ciphering key sequence number n for enciphering in a GSM access network. If the GSM access service is available on the USIM, then this file is mandatory.

Identifier: '4F20'	Structure: transparent	Optional
SFI: '01'		
File size: 9 bytes	Update activity: high	

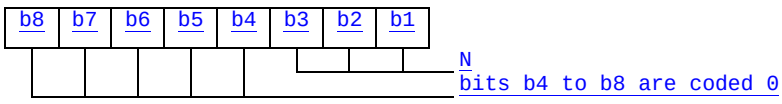
Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 8	Ciphering key Kc	M	8 bytes
9	Ciphering key sequence number n	M	1 byte

- Ciphering key Kc.
  Coding:
  - the least significant bit of Kc is the least significant bit of the eighth byte. The most significant bit of Kc is the most significant bit of the first byte.

- Ciphering key sequence number n
  Coding:



NOTE: 3G TS 24.008 [9] defines the value of n=111 as "key not available". Therefore the value '07' and not 'FF' should be present following the administrative phase.

4.4.3.2 EF_{KcGPRS} (GPRS Ciphering key KcGPRS)

This EF contains the ciphering key KcGPRS and the ciphering key sequence number n for GPRS (see 3G TS 23.060 [7]). If the GSM access service is available on the USIM, then this file is mandatory.

Identifier: '4F52'	Structure: transparent	Optional
SFI: '02'		
File size: 9 bytes	Update activity: high	

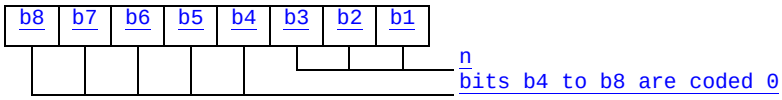
Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 8	Ciphering key KcGPRS	M	8 bytes
9	Ciphering key sequence number n for GPRS	M	1 byte

- Ciphering key KcGPRS.
  Coding:
  the least significant bit of KcGPRS is the least significant bit of the eighth byte. The most significant bit of KcGPRS is the most significant bit of the first byte.

- Ciphering key sequence number n for GPRS.
  Coding:



NOTE: TS 24.008 [9] defines the value of n=111 as "key not available". Therefore the value '07' and not 'FF' should be present following the administrative phase.

4.4.3.3 $EF_{LOCIGPRS}$ (GPRS location information)

This EF contains the following Location Information:

- Packet Temporary Mobile Subscriber Identity (P-TMSI);
- Packet Temporary Mobile Subscriber Identity signature value (P-TMSI signature value);
- Routing Area Information (RAI);
- Routing Area update status.

If the GSM access service is available on the USIM, then this file is mandatory.

Identifier: '4F53'	Structure: transparent	Optional
SFI: 'xx'		
File size: 14 bytes	Update activity: high	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 4	P-TMSI	M	4 bytes
5 to 7	P-TMSI signature value	M	3 bytes
8 to 13	RAI	M	6 bytes
14	Routing Area update status	M	1 byte

- P-TMSI.

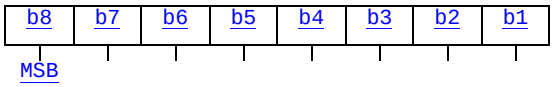
Contents:

Packet Temporary Mobile Subscriber Identity.

Coding:

according to TS 24.008 [9].

Byte 1: first byte of P-TMSI



- P-TMSI signature value.

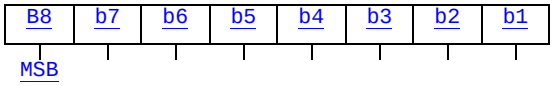
Contents:

Packet Temporary Mobile Subscriber Identity signature value.

Coding:

according to TS 24.008 [9].

Byte 5: first byte of P-TMSI signature value



- RAI.

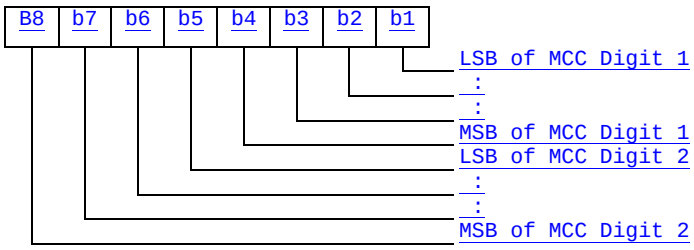
Contents:

Routing Area Information.

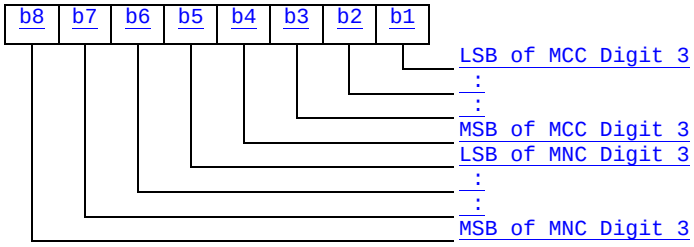
Coding:

according to TS 24.008 [9].

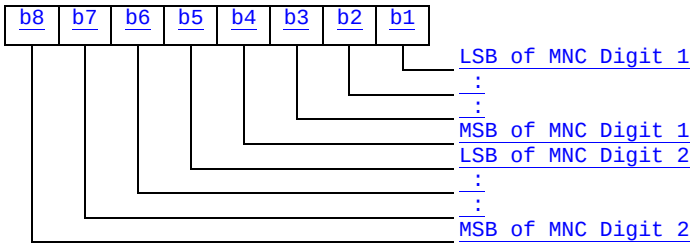
Byte 8: first byte of RAI (MCC digits 1 and 2).



Byte 9: second byte of RAI (MCC digit 3, MNC digit 3)



Byte 10: third byte of RAI (MNC digits 1 and 2).



- Byte 11: fourth byte of RAI (LAC).
- Byte 12: fifth byte of RAI (LAC continued).
- Byte 13: sixth byte of RAI (RAC).
- Routing area update status.

  Contents:

  - status of routing area update according to TS 24.008 [9].

  Coding:

  Byte 14:

Bits:	b3	b2	b1.	
	0	0	0	: updated.
	0	0	1	: not updated.
	0	1	0	: PLMN not allowed.
	0	1	1	: Routing Area not allowed.
	1	1	1	: reserved.

  Bits b4 to b8 are RFU.

4.4.3.4 $EF_{LOCIGSM}$ (GSM Location Information)

This EF contains the following Location Information:

- Temporary Mobile Subscriber Identity (TMSI).
- Location Area Information (LAI).
- Location update status.

See subclause 5.2.5 for special requirements when updating $EF_{LOCIGSM}$.

If the GSM access service is available on the USIM, then this file is mandatory.

Identifier: '4F7F'	Structure: transparent	Optional
SFI: 'xx'		
File size: 11 bytes	Update activity: high	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	PIN

Bytes	Description	M/O	Length
1 to 4	TMSI	M	4 bytes
5 to 9	LAI	M	5 bytes
10	Reserved (was used in GSM phase 1)	M	1 byte
11	Location update status	M	1 byte

- TMSI.

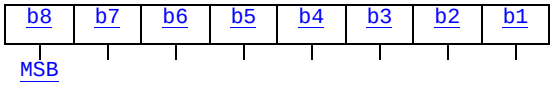
Contents:

Temporary Mobile Subscriber Identity.

Coding:

according to TS 24.008 [9].

Byte 1: first byte of TMSI



- LAI.

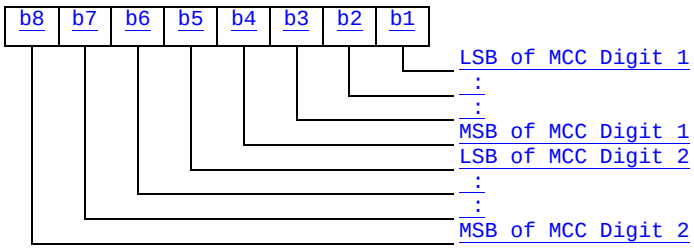
Contents:

Location Area Information.

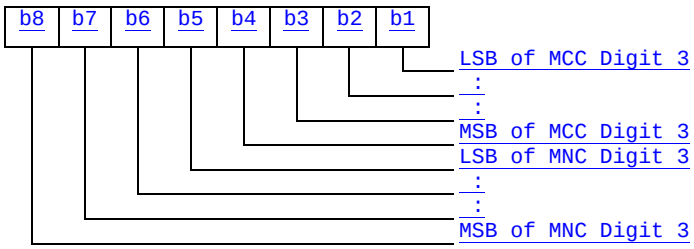
Coding:

according to TS 24.008 [9].

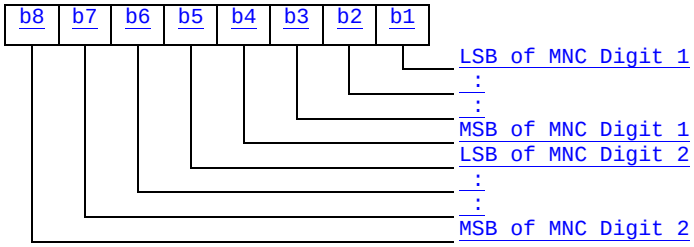
Byte 5: first byte of LAI (MCC digits 1 and 2).



Byte 6: second byte of LAI (MCC digit 3, MNC digit 3).



Byte 7: third byte of LAI (MNC digits 1 and 2).



Byte 8: fourth byte of LAI (LAC).

Byte 9: fifth byte of LAI (LAC continued).

- Location update status.

  Contents:

  - status of location update according to TS 24.008 [9].

  Coding:

  - byte 11:

Bits:	b3	b2	b1.	
0	0	0	:	updated.
0	0	1	:	not updated.
0	1	0	:	PLMN not allowed.
0	1	1	:	Location Area not allowed.
1	1	1	:	reserved.

Bits b4 to b8 are RFU (see GSM 11.11 [18]).

4.4.4.5 EF_{BCCH} (Broadcast Control Channels)

This EF contains information concerning the GSM BCCH according to TS 24.008 [9].

BCCH storage may reduce the extent of a User Equipment's search of GSM BCCH carriers when selecting a cell. The BCCH carrier lists in an UE shall be in accordance with the procedures specified in TS 24.008 [9]. The UE shall only store BCCH information from the System Information 2 message and not the 2bis extension message.

If the GSM access service is available on the USIM, then this file is mandatory.

Identifier: '4F74'	Structure: transparent	Optional
SFI: '03'		
File size: 16 bytes	Update activity: high	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 16	BCCH information	M	16 bytes

- BCCH information.

  Coding:

- the information is coded as octets 2-17 of the "neighbour cells description information element" in TS 24.008 [9].

4.5 Contents of files at the TELECOM level

4.7 Files of USIM

The FID and structure of the UICC / USIM in figures 4.1 and 4.2 have updated according to the introduction of DF_GSM.

Annex G (informative): Phonebook Example

This example phonebook has more than 254 entries. Additional number (3 additional numbers) information, second name and e-mail information can be added to each ADN entry. In addition each entry has a 2 byte Unique ID (UID) attached to it. The phonebook also contains three files that are shared EF_{EXT1}, EF_{AAS} and EF_{GAS}. These files are addressed from inside a file. EF_{EXT1} is addressed via $EF_{ADN,}$ EF_{ADN1}, EF_{AAS} is addressed via $EF_{ANR1,}$ EF_{ANR1} and EF_{GAS} is addressed via $EF_{GRP,}$ EF_{GRP1}. The phonebook supports two levels of grouping and hidden entries in $EF_{PBC.}$

Two records are needed in the phonebook reference file PBR '4F30' for supporting more than 254 entries. The content of the phonebook reference file PBR '4F30' records is as shown in table G.2. The structure of the $DF_{PHONEBOOK}$ is shown in table G.1.

The content of phonebook entries in the range from 1-508 is described in the tables G.3 and G.4.

Table G.1: Structure of EFs inside $DF_{PHONEBOOK}$

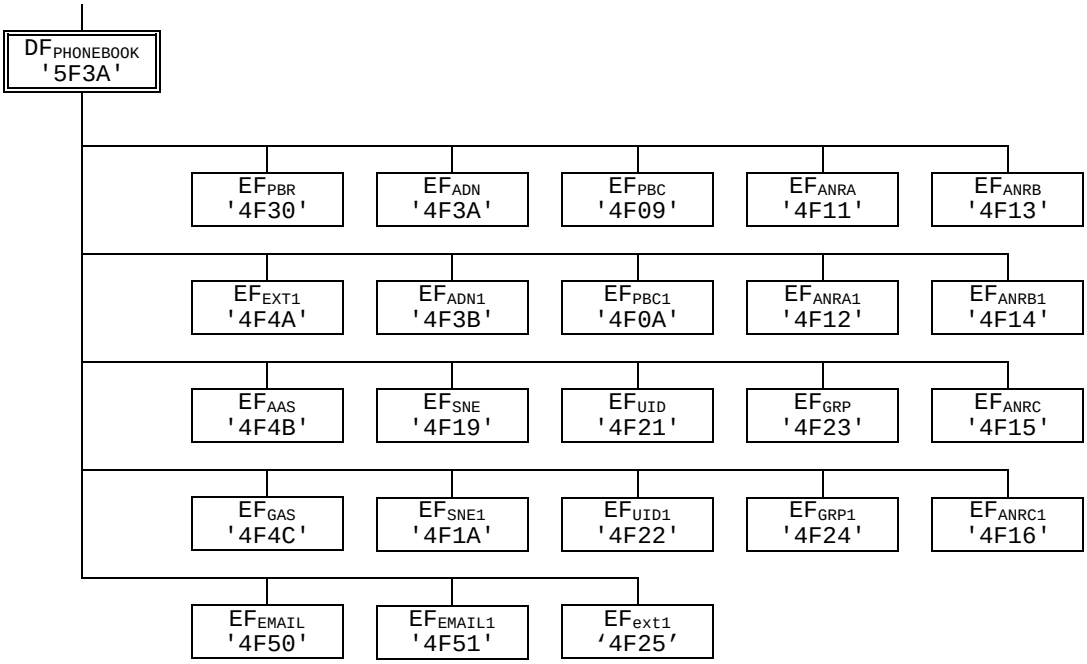


Table G.2: Contents of EF_{PBR}

Rec 1	Tag'D8'	L='~~48~~22'	Tag'C0'	L='032'	'4F3A'	'01'	Tag'C5'	L='032'	'4F09'	'02'	Tag'C4'	L='02'	'4F11'	Tag'C4'
	L='02'	'4F13'	Tag'C4'	L='02'	'4F15'	Tag'C3'	L='02'	'4F19'	Tag'C9'	L='02'	'4F21'	Tag'CA'	L='02'	'4F50'
	Tag'DA'	L='0C'	Tag'C2'	L='02'	'4F4A'	Tag'C7'	L='02'	'4F4B'	Tag'C8'	L='02'	'4F4C'	'FF'		
Rec 2	Tag'D8'	L='~~46~~20'	Tag'C0'	L='02'	'4F3B'	Tag'C5'	L='02'	'4F0A'	Tag'C4'	L='02'	'4F12'	Tag'C4'	L='02'	'4F14'
	Tag'C4'	L='02'	'4F16'	Tag'C3'	L='02'	'4F1A'	Tag'C9'	L='02'	'4F22'	Tag'CA'	L='02'	'4F51'	Tag'DA'	L='0C'
	Tag'C2'	L='02'	'4F25'	Tag'C7'	L='02'	'4F4B'	Tag'C8'	L='02'	'4F4C'	'FF'				

Table G.3: Structure of the 254 first entries in the phonebook

Phone book entry	ADN~~AND~~ '4F3A' SFI '01'		PBC '4F09' SFI '02'	GRP '4F23'	ANRA '4F11'	ANRB '4F13'	ANRC '4F15'	SNE '4F19'	UID '4F21'	EXT1 '4F4A'	AAS '4F4B'	GAS '4F4C'	EMAIL '4F50'
# 1	ADN Content Bytes (1-(X+13))	EXT1 Ident. (Byte X+14): Rec '02'	Hidden (AID rec N° 3)	Rec n°1 Rec n°3 '00'	ANR1 Rec n°1	ANR2 Rec n°2	ANR3 Rec n°3	Second Name Alpha String	UID	Rec '02'	Record numbers as defined in the ANRs	Record no.'s as defined in GRP	email address
# 2	ADN Content Bytes (1-(X+13))	EXT1 Ident. (Byte X+14): Rec '2A'	Not Hidden	Rec n°2 Rec n°1 Rec n°3	ANR1 Rec n°1	ANR2 Rec n°2	ANR3 Rec n°3	Second Name Alpha String	UID	Rec '2A'	Record numbers as defined in the ANRs	Record no.'s as defined in GRP	email address
# 3													
:													
:													
:													
# 254													

Table G.4: Structure of phone book entries 255-508 (Rec 1-254)

Phone book entry	~~AND~~ADN1 '4F3B'		PBC1 '4F0A'	GRP1 '4F24'	ANRA1 '4F12'	ANRB1 '4F14'	ANRC1 '4F16'	SNE1 '4F1A'	UID1 '4F22'	EXT1 '4F4A'	AAS '4F4B'	GAS '4F4C'	EMAIL1 '4F51'
#255	ADN Content Bytes (1-(X+13))	EXT1 Ident. (Byte X+14): Rec '02'	Hidden (AID Rec n° 3)	Rec n°1 Rec n°3 '00'	ANR1 Rec n°2	ANR2 Rec n°2	ANR3 Rec n°3	Second Name Alpha String	UID	Rec '02'	Record numbers as defined in the ANRs	Record no.'s as defined in GRP1	email address
#256	ADN Content Bytes (1-(X+13))	EXT1 Ident. (Byte X+14): Rec '2A'	Not Hidden	Rec n°2 Rec n°1 Rec n°3	ANR1 Rec n°2	ANR2 Rec n°2	ANR3 Rec n°3	Second Name Alpha String	UID	Rec '2A'	Record numbers as defined in the ANRs	Record no.'s as defined in GRP1	email address
#257													
:													
:													
:													
#508													

Table G5, G6 and G7 show examples of which files may appear after the three main tags ‘D8’,’D9’,’DA’.

Table G5: Tag D8

Description	Subclause
EF_{ADN}	4.4.2.3
EF_{IAP}	4.4.2.2
EF_{EXT1}	4.4.2.4
EF_{PBC}	4.4.2.5
EF_{GRP}	4.4.2.6
EF_{AAS}	4.4.2.7
EF_{ANR}	4.4.2.9
$EF_{E\text{-}mail}$	4.4.2.13
~~EF_{EXT1}~~	****
EF_{UID}	4.4.2.12.1

If present in the phone book record EF_{ADN} should be the first file ID specified after Tag D8, thus becoming the master file.

Table G6: Tag D9

Description	Subclause
EF_{EXT1}	4.4.2.4
EF_{AAS}	4.4.2.7
EF_{ANR}	4.4.2.9
$EF_{E\text{-}mail}$	4.4.2.13
~~EF_{EXT1}~~	****
EF_{SNE}	4.4.2.10

Table G7: Tag DA

Description	Subclause
EF_{EXT1}	4.4.2.4
EF_{PAS}	4.4.2.7
$EF_{E\text{-}mail}$	****4.4.2.13
~~EF_{EXT1}~~	****
EF_{ANR}	4.4.2.8

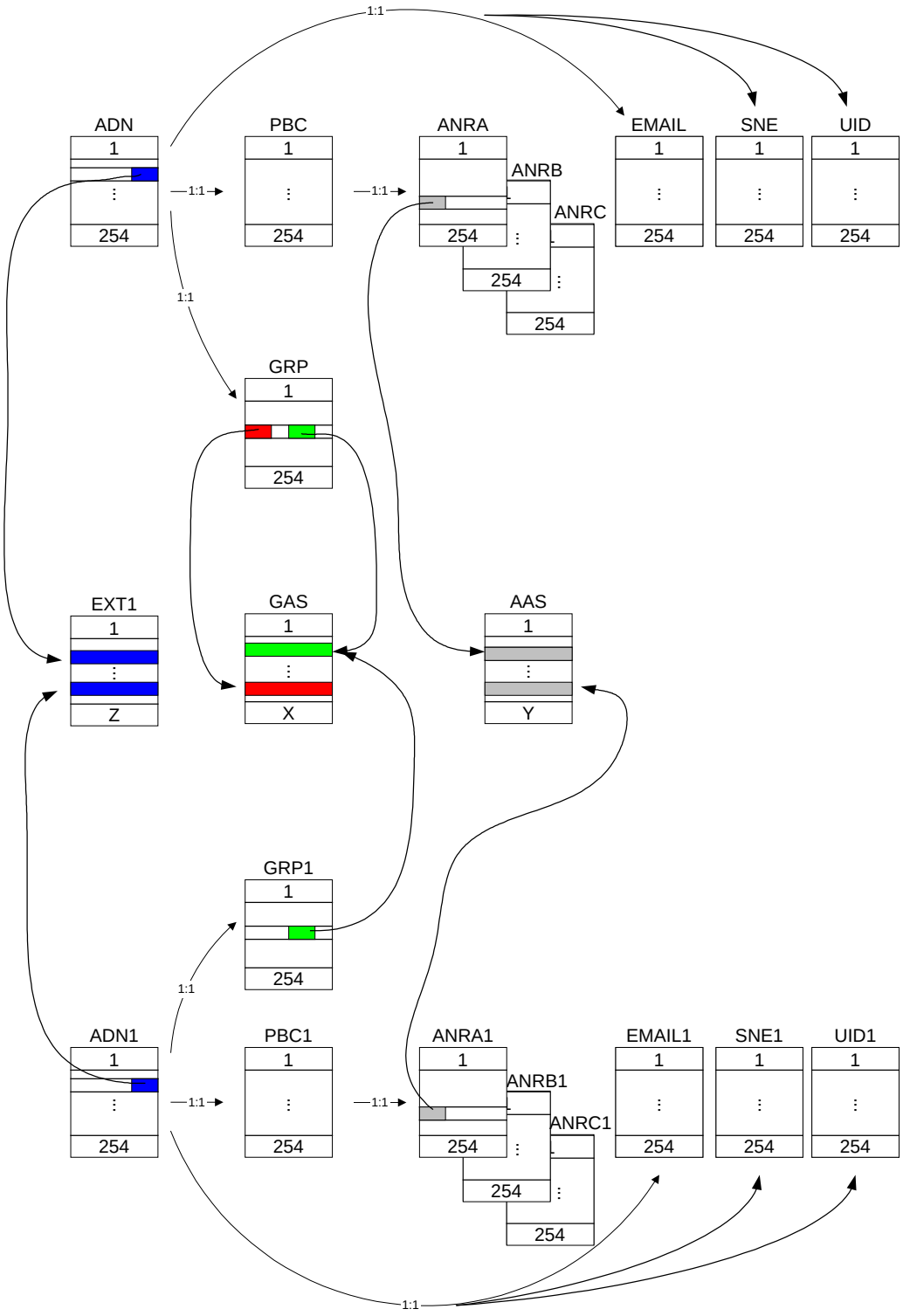


Figure G.1: Structure and Relations of the Example Phone Book

Annex X (normative): List of SFI Values

This annex lists SFI values assigned in this specification.

X.1 List of SFI Values at the USIM ADF Level

File Identification	SFI	Description
'6FB7'	'01'	Emergency call codes
'6F05'	'02'	Language indication
'6FAD'	'03'	Administrative data
'6F38'	'04'	USIM service table
'6F56'	'05'	Enabled services table
'6F78'	'06'	Access control class
'6F07'	'07'	IMSI
'6F08'	'08'	Ciphering and integrity keys
'6F09'	'09'	Ciphering and integrity keys for packet switched domain
'6F30'	'0A'	User PLMN selector
'6F7E'	'0B'	Location information
'6F73'	'0C'	Packet switched location information
'6F7B'	'0D'	Forbidden PLMNs
'6F48'	'0E'	CBMID
'6F5B'	'0F'	Hyperframe number
'6F5C'	'10'	Maximum value of hyperframe number
'6F5D'	'11'	Operator PLMN selector
'6F31'	'12'	HPLMN search period
'6F5E'	'13'	Preferred HPLMN access technology
'6F80'	'14'	Incoming call information
'6F81'	'15'	Outgoing call information
'6F39'	'16'	Capability configuration parameters 2
'6F4F'	'17'	Access Rule Reference

All other SFI values are reserved for future use.

X.2 List of SFI Values at the DF GSM Level

File Identification	SFI	Description
'4F20'	'01'	GSM Ciphering Key Kc
'4F52'	'02'	GPRS Ciphering Key KcGPRS
'4F74'	'03'	Broadcast Control Channel BCCH
'4F53'	xx	GPRS Location Information LOCIGPRS
'4F7F'	xx	GSM Location Information LOCIGSM

All other SFI values are reserved for future use.

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Document T3-000299
Superseeds t3-00266

CHANGE REQUEST

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31.102	CR	039	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:	TSG-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		UTRAN / Radio		Core Network	

Source: Nokia **Date:** 26.5.2000

Subject: Support of voltage classes for a UICC holding a USIM application

Work item: 31.102

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: The requirement for support of supply voltage classes for a UICC holding a USIM application is missing.

Clauses affected: Add new section 8.

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.

8 UICC Characteristics

8.1 Voltage classes

A UICC holding a USIM application shall support at least two consecutive voltage classes as defined in 3G TS 31.101 [11], e.g. AB or BC. If the UICC supports more than two classes they shall all be consecutive, e.g. ABC.

Tdoc T3-000291

CHANGE REQUEST

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31.102	CR	041 (was incorrectly marked 038)	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:	TSG-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: TSG-T3 **Date:** 26. May 2000

Subject: Alignment with 33.102 regarding conversion functions

Work item: T.E.I.

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: Conversion functions to be implemented in the USIM are c2 and c3, but by mistake are specified as c1 and c2.

Clauses affected: 6.3

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.

- f3: a key generating function to compute the cipher key CK;
- f4: a key generating function to compute the integrity key IK;
- f5: a key generating function to compute the anonymity key AK (optional);
- f6: the user identity encryption function to encrypt the IMSI (optional).

These cryptographic functions may exist either discretely or combined within the USIM.

6.3 GSM Conversion Functions

To gain GSM access the USIM provides the conversion functions ~~C1~~ c2 and ~~C2~~c3. These functions derive the required GSM parameters (~~RAND$_G$,~~ SRES, cipher key Kc) from available 3G parameters.

6.4 User verification and file access conditions

The USIM application uses 2 PINs for user verification, PIN and PIN2. PIN2 is used only in the ADF. The PIN and PIN2 are mapped into key references as defined in 3G TS 31.101 [11]. Each key reference is associated with a usage qualifier as defined in ISO/IEC7816-9 [26]. The PIN status is indicated in the PS_DO, which is part of the FCP response when an ADF/DF is selected. The coding of the PS_DO is defined in 3G TS 31.101 [11].

PIN and PIN2 are coded on 8 bytes. Only (decimal) digits (0-9) shall be used, coded in CCITT T.50 [23] with bit 8 set to zero. The minimum number of digits is 4. If the number of digits presented by the user is less than 8 then the ME shall pad the presented PIN with 'FF' before sending it to the USIM.

The coding of the UNBLOCK PINs is identical to the coding of the PINs. However, the number of (decimal) digits is always 8.

The security architecture as defined in 3G TS 31.101 [11] applies to the USIM application with the following definitions and additions.

- The USIM application shall use key reference '01' as PIN and key reference '81' as PIN2. For access to DFTelecom the PIN shall be verified. Access with PIN2 is limited to the USIM application.
- The only valid usage qualifier is '08' which means user authentication knowledge based (PIN) as defined in ISO/IEC 7816-9 [26]. The terminal shall support the multi-application capabilities as defined in 31.101 [11].
- Every file in the USIM application shall have a reference to an access rule stored in EF_{ARR}.
- Every file under $DF_{Telecom}$ shall have a reference to an access rule stored in EF_{ARR} under $DF_{Telecom}$.
- A multi-application capability UICC (from the security context point of view) shall support the referenced format using SEID as defined in 3G TS 31.101 [11].
- A multi-application capability UICC (from the security context point of view) shall support the replacement of a USIM application PIN with the Universal PIN, key reference '01', as defined in 3G TS 31.101 [11]. Only the Universal PIN is allowed as a replacement.
- A terminal shall support the use of level 1 and level 2 user verification requirements as defined i 3G TS 31.101 [11].
- A terminal shall support the replacement of a USIM application PIN with the Universal PIN, key reference '01', as defined in 3G TS 31.101 [11].
- A terminal shall support the security attributes defined using tag's '8C', 'AB' and '8B' as defined in 3G TS 31.101 [11]. In addition both the referencing methods indicated by tag '8B' shall be supported as defined in 3G TS 31.101 [11].

T3-000246
Original version:
T3-000220

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Document
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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31.102	CR	042	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:	TSG-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:** 2000.05.26
Subject:	Addition of procedures for reading and updating the content of the Enabled Services Table.	
Work item:	USIM	

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: Procedures for reading and updating the content of the Enabled Services Table is missing. This CR introduces a procedure for reading the file EF_{UST}.

Clauses affected: 5.3

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.

5.3.15 Depersonalisation Control Keys

Requirement: Service n°36 "available".

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

5.3.16 Co-operative Network List

Requirement: Service n°37 "available".

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

5.3.17 Enabled Services Table Request

- Requirement: Service n°34 "available".
- Request: The ME performs the reading procedure with EF_{EST}.
- Update: The ME performs the updating procedure with EF_{EST}

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Document T3-000319
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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

TS 31.102	CR	043	Current Version:	V3.1.0

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

For submission to:	TSG-T #08	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:	Gemplus, Schlumberger	**Date:**	31/05/2000

Subject:	Clarification of the Application Session Activation / Termination procedures

Work item:	USIM

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:	Application Session Activation / Termination procedures shall be clarified

Clauses affected:	5.1.1, 5.1.2

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.

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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 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 shall indicate~~s~~ this to the USIM b~~e~~y 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 shall indicate to the USIM by sending a particular STATUS command that the termination procedure is starting.

The ME then 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.

To actually terminate the session, the ME shall then use one of the mechanisms described in 3G TS 31.101 [11].

Annex X (informative): USIM Application Session Activation / Termination

The purpose of this annex is to illustrate the different Application Session procedures.

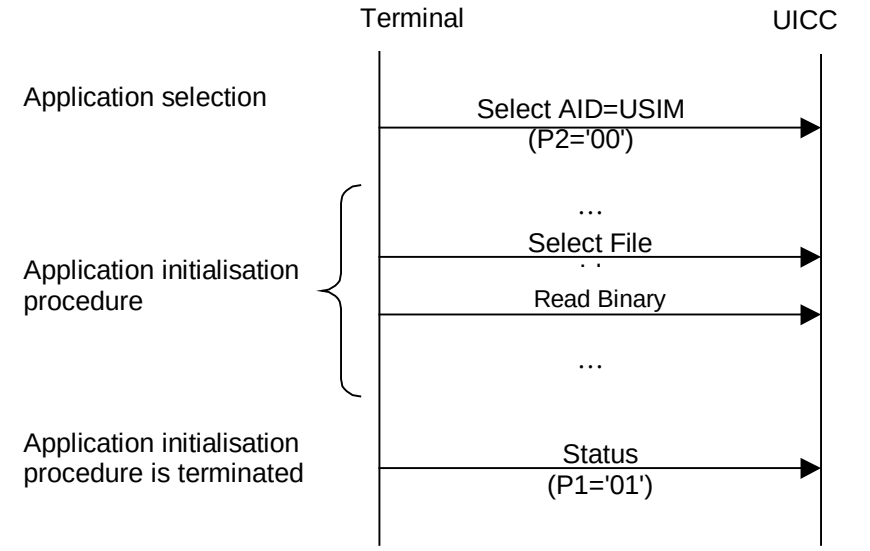

Figure x.1 USIM Application Session Activation procedure

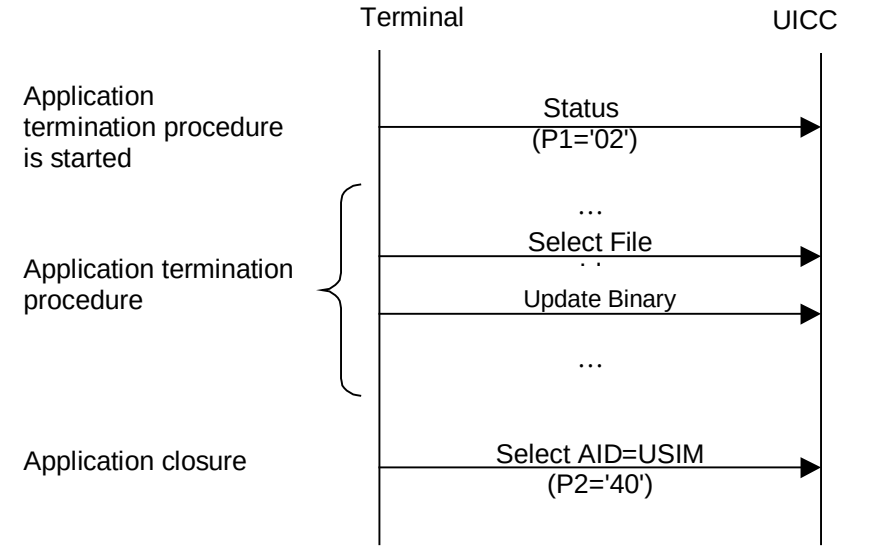

Figure x.1 USIM Application Session Termination procedure