3GPP TSG-T (Terminals) Meeting #11
Palm Springs, USA, 14 - 16 March, 2001

Tdoc TP-010038

Source: T3

Title: Change Requests to TS 31.102 "Characteristics of the USIM application" and TS 11.11 "SIM/ME Interface"

Document for: Approval

This document contains several change requests to TS 11.11 v8.4.0 and TS 31.102 v3.3.0 agreed by T3.

T3 Doc	Spec	CR	Rv	Rel	Subject
T3-010047	11.11	A127		R99	Addition to note for the iDEN file ID, "7F31'
T3-010045	11.11	A128		R99	Alignment between GSM 11.11 and TS 31.102 on default HPLMN RAT
T3-010114	31.102	065	3	R99	Correction and clarification of the APN Control feature
T3-010044	31.102	066		R99	Correction to default HPLMN RAT
T3-010113	31.102	067	2	R99	Clarification on EF(ANR), EF(SNE) and EF(EMAIL)
T3-010106	31.102	068	1	R99	Correction of the PROFILE download procedure
T3-010080	31.102	069		Rel-4	Clarification of EFARR access conditions
T3-010097	31.102	070		R99	Indication of minimum clock frequency required by the USIM application
T3-010206	31.102	071		R99	General corrections
T3-010205	31.102	072		R99	Correction of the EF(UST) for Packet Domain
T3-010229	31.102	073		Rel-4	Introduction of the voicemail, message waiting and call forward indication features from the Common PCN Handset Specification (CPHS)
T3-010230	31.102	074		Rel-4	Introduction of the PLMN Network Name feature from the Common PCN Handset Specification (CPHS)
T3-010231	31.102	075		Rel-4	Introduction of Operator PLMN List
T3-010238	31.102	076		R99	Usage of 'FF' in the EF(PBR)
T3-010249	31.102	077		R99	Correction of EF(ANR) (CR number changed from CR 076)

3GPP T3 (USIM) Meeting #17
Berlin, Germany, 15 - 17 January, 2001

Tdoc T3-010047

CR-Form-v3

CHANGE REQUEST

⌘ **11.11** **CR** **A127** ⌘ rev **-** ⌘ Current version: **8.4.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☐ Core Network ☐

Title:	⌘	CR to reserve a file ID for iDEN access technology
Source:	⌘	3GPP TSG-T3
Work item code:	⌘	***Date:*** ⌘ 15 January 2001
Category:	⌘	**D** ***Release:*** ⌘ R99

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	To list the file identifier for iDEN use, which allows plastic roaming between the iDEN networks and GSM.
Summary of change:	⌘	iDEN file identifier noted.
Consequences if not approved:	⌘	Possibility of file identifier clashes, and unpredictable behaviour, if some other body uses the same file identifier.

Clauses affected:	⌘	6.6
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

Table 6: File selection

Last selected file	Valid Selections
MF	DF1, DF2, EF1
DF1	MF, DF2, DF3, EF2
DF2	MF, DF1, EF3, EF4
DF3	MF, DF1, EF5
EF1	MF, DF1, DF2
EF2	MF, DF1, DF2, DF3
EF3	MF, DF1, DF2, EF4
EF5	MF, DF1, DF3

6.6 Reservation of file IDs

In addition to the identifiers used for the files specified in the present document, the following file IDs are reserved for use by GSM.

Dedicated Files:

- administrative use:
  '7F 4X', '5F1X', '5F2X'
- operational use:
  '7F 10' ($DF_{TELECOM}$), '7F 20' (DF_{GSM}), '7F 21' ($DF_{DCS1800}$), '7F 22' (DF_{IS-41}), '7F 23' (DF_{FP-CTS}) (see GSM 11.19 [34]), '7F 24' ($DF_{TIA/EIA-136}$), '7F 25' ($DF_{TIA/EIA-95}$), and '7F 2X', where X ranges from '6' to 'F'.
  Note: '7F 80' (DF_{PDC}) is used in the Japanese PDC specification.
  '7F 90' (DF_{TETRA}) is used in the ETSI TETRA specification [44].
  '7F 31' (DF_{iDEN}) is used in the iDEN specification.

- reserved under '7F10':
  '5F50' ($DF_{GRAPHICS}$)
- reserved under '7F20':
  '5F30' ($DF_{IRIDIUM}$), '5F31' ($DF_{Globalstar}$), '5F32' (DF_{ICO}), '5F33' (DF_{ACeS}), '5F3X', where X ranges from '4' to 'F' for other MSS.
  '5F40'($DF_{EIA/TIA-553}$), '5F4Y' where Y ranges from '1' to 'F';
  '5F5X' where X ranges from '0' to 'F';
  '5F60'(DF_{CTS}), '5F6Y' where Y ranges from '1' to 'F';
  '5F70' (DF_{SoLSA}), '5F7Y' where Y ranges from '1' to 'F';
  '5FYX' where Y ranges from '8' to 'F' and X from '0' to 'F'.

Elementary files:

- administrative use:
  '6F XX' in the DFs '7F 4X'; '4F XX' in the DFs '5F 1X', '5F2X'
  '6F 1X' in the DFs '7F 10', '7F 20', '7F 21';
  '4F 1X' in all 2nd level DFs
  '2F 01', '2F EX' in the MF '3F 00';
- operational use:
  '6F 2X', '6F 3X', '6F 4X' in '7F 10' and '7F 2X';
  '4F YX', where Y ranges from '2' to 'F' in all 2nd level DFs.
  '2F 1X' in the MF '3F 00'.

In all the above, X ranges, unless otherwise stated, from '0' to 'F'.

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Tdoc T3-010045

CR-Form-v3

CHANGE REQUEST

⌘ **GSM 11.11 CR A128** ⌘ rev **-** ⌘ Current version: **8.4.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM [X] ME/UE [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Correction to default HPLMN RAT
Source:	⌘	T3
Work item code:	⌘	GSM-UMTS interworking
Date:	⌘	15.01.2001
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change: ⌘ Contradictory requirements for MS in 11.11 and 23.122

Summary of change: ⌘

The RAT associated with HPLMN may be provided to help the MS to find the serving network as quickly as possible. Still, the MS shall search for HPLMN in all access technologies it supports as stated in 23.122.

GSM 11.11 10.3.37 requires:

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

23.122 requires:

" an MS using a SIM without access technology information storage (i.e. the “HPLMN Selector with Access Technology” data field is not present) shall search for all access technologies it is capable of and shall assume GSM access technology as the highest priority radio access technology."

As GSM 11.11 defines the data structures and 23.122 defines the procedure it seems better to correct the former, particularly as the reference to 23.122 is already in place in GSM 11.11.

Consequences if not approved: ⌘ Serious contradiction between 11.11 and 23.122

Clauses affected: ⌘ 10.3.37

Other specs Affected: ⌘
[ ] Other core specifications ⌘
[ ] Test specifications
[ ] O&M Specifications

Other comments:	⌘	Stage 1 is not affected as 22.011 does not distinguish between the radio access technologies associated with HPLMN.

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at:
http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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

The HPLMN Selector with access technology data field shall contain the HPLMN code, or codes together with the respective access technology in priority order (see TS 23.122 [51]).

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

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

Access Conditions:

READ	CHV1
UPDATE	ADM
INVALIDATE	ADM
REHABILITATE	ADM

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

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

- Access Technology

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

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

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Berlin, Germany, 15 - 17 January, 2001

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(revised version of T3-010100)

CR-Form-v3

CHANGE REQUEST

⌘ **31.102** **CR** **065** ⌘ rev **3** ⌘ Current version: **3.4.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM [X] ME/UE [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Correction and precision of the APN Control feature
Source:	⌘	T3
Work item code:	⌘	TEI
Date:	⌘	15 January 2001
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change:	⌘	The behaviour of the APN Control List feature is not specified for PDP context request sent to the network without an APN.
Summary of change:	⌘	Precise the APN Control List mechanism when no APN is provided.
Consequences if not approved:	⌘	The APN Control mechanism would not be fully specified.

Clauses affected:	⌘	5.3.14 APN Control List; 4.2.48 EF_{ACL} (Access Point Name Control List)
Other specs affected:	⌘	[ ] Other core specifications ⌘ [ ] Test specifications [ ] O&M Specifications
Other comments:	⌘	

5.3.14 APN Control List

Requirement: Service n°35 "available".

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

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

Enabling: The ME activates service n°3 in EF_{EST} (bit n°3 set to "1").

Disabling: The ME deactivates service n°3 in EF_{EST} (bit n°3 set to "0").

When the APN Control List service is enabled, the ME shall check that the entire APN of any PDP context is listed in EF_{ACL} before requesting this PDP context activation from the network. If the APN is not present in EF_{ACL}, the ME shall not request the corresponding PDP context activation from the network.

In the case that the APN Control List is enabled and no APN is indicated in the PDP context request, indicating that a network provided APN is to be used, then the ME shall only request the PDP context activation if “network provided APN” is contained within EF_{ACL}.

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~~File size: 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-TLV values see TS 23.003 [25]. The tag value of the APN-TLV shall be 'DD'.

“Network provided APN” is coded with a TLV object of length zero.

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Tdoc T3-010044

CR-Form-v3

CHANGE REQUEST

⌘ **31.102** **CR** **66** ⌘ rev **-** ⌘ Current version: **3.4.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM [X] ME/UE [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Correction to default HPLMN RAT
Source:	⌘	T3
Work item code:	⌘	GSM-UMTS interworking
Date:	⌘	15.01.2001
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change: ⌘ Contradictory requirements for MS in 31.102 and 23.122

Summary of change: ⌘

The RAT associated with HPLMN may be provided to help the MS to find the serving network as quickly as possible. Still, the MS shall search for HPLMN in all access technologies it supports as stated in 23.122.

31.102 4.2.54 requires:

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

23.122 requires:

" an MS using a SIM without access technology information storage (i.e. the "HPLMN Selector with Access Technology" data field is not present) shall search for all access technologies it is capable of and shall assume GSM access technology as the highest priority radio access technology."

As 31.102 defines the data structures and 23.122 defines the procedure it seems better to correct the former, particularly as the reference to 23.122 is already in place in 31.102.

Consequences if not approved: ⌘ Serious contradiction between 31.102 and 23.122

Clauses affected: ⌘ 4.2.54

Other specs Affected: ⌘

- [ ] Other core specifications ⌘
- [ ] Test specifications
- [ ] O&M Specifications

Other comments:	⌘	Stage 1 is not affected as 22.011 does not distinguish between the radio access technologies associated with HPLMN.

How to create CRs using this form:

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3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

4.2.54 $EF_{HPLMNwAcT}$ (HPLMN selector with Access Technology)

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 [31]).

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

Identifier: '6F62'	Structure: Transparent	Optional
SFI: '13'		
File size: 5n 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 TS 24.008 [47].

- Access Technology:
  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 $EF_{PLMNwACT}$ for coding.

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Berlin, Germany, 15 - 17 January, 2001

Tdoc T3-010113
Revised from T3-010095

CR-Form-v3

CHANGE REQUEST

⌘ **31.102** **CR** **067** ⌘ rev **2** ⌘ Current version: **3.4.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM [X] ME/UE [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Clarification on EF(ANR), EF(SNE), and EF(EMAIL)
Source:	⌘	T3
Work item code:	⌘	TEI
Date:	⌘	17 January 2001
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
- ***F*** *(essential correction)*
- ***A*** *(corresponds to a correction in an earlier release)*
- ***B*** *(Addition of feature),*
- ***C*** *(Functional modification of feature)*
- ***D*** *(Editorial modification)*

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	The EF(ANR), EF(SNE), and EF(EMAIL) records contains fields which hold a backward link to the related EF(ADN) record, when a type 2 link is used. This implies that a limitation exists on these EFs, as the same record cannot be part of 2 or more different phonebook entries. This must be clarified.
Summary of change:	⌘	A sentence is added in the description of the EFs, stating this limitation. Editorials modifications are also done in order to align the description of the EFs. A clarification is done on what is a shared record.
Consequences if not approved:	⌘	Wrong implementation in the ME (bad value in the backward link fields).

Clauses affected:	⌘	4.4.2.1, 4.4.2.9, 4.4.2.10, 4.4.2.13
Other specs affected:	⌘	[ ] Other core specifications ⌘ [ ] Test specifications [ ] O&M Specifications
Other comments:	⌘	

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 kinds of EFs, no fixed 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 an 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.

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.

Type 2 and type 3 files contain records that may be shared between several phonebook entries (except when otherwise indicated). The terminal shall ensure that a shared record is emptied when the last phonebook entry referencing it is modified in such a way that it doesn't reference the record anymore.

NOTE : in the current version of the specification, only type 3 files contain records that may be shared.

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. That is, 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)'

. 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. This record cannot be shared between several phonebook entries. 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: 'XX'		
Record length: 12 or 14 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	Capability/Configuration1 Identifier	M	1 byte
13	ADN file SFI	C	1 byte
14	ADN file Record Identifier	C	1 byte

NOTE: The fields marked C above are mandatory if and only if the file is not type 1 (as specified in EF_{PBR})

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

- Capability/Configuration1 Identifier.

  Contents:

  - This byte identifies the number of a record in the EF_{CCP1} 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.

- 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.

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}. Each record contains a second name entry. This record cannot be shared between several phonebook entries.

Structure of EF_{SNE}

Identifier: '4FXX'	Structure: linear fixed	Optional
SFI: 'XX'		
Record length: X or 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	C	1 byte
X+2	ADN file Record Identifier	C	1 byte

NOTE: The fields marked C above are mandatory if and only if the file is not type 1 (as specified in EF_{PBR})

- 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.~~

4.4.2.13 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 second part indicates the reference to the associated record in the EF_{ADN} file. This record cannot be shared between several phonebook entries.

Structure of EF_{EMAIL}

Identifier: '4FXX'	Structure: linear fixed	Optional
SFI: 'XX'		
Record length: X or X+2 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	C	1 byte
X+2	ADN file Record Identifier	C	1 byte

NOTE: The fields marked C above are mandatory if and only if the file is not type 1 (as specified in EF_{PBR})

- 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.~~

3GPP T3 (USIM) Meeting #17
Berlin, Germany, 15 - 17 January, 2001

Tdoc T3-010106
Revised from T3-010056

CR-Form-v3

CHANGE REQUEST

⌘ **31.102** **CR** **068** ⌘ rev **1** ⌘ Current version: **3.4.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM [X] ME/UE [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Correction of the PROFILE download procedure
Source:	⌘	T3
Work item code:	⌘	TEI
Date:	⌘	17 January 2001
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
- ***F*** *(essential correction)*
- ***A*** *(corresponds to a correction in an earlier release)*
- ***B*** *(Addition of feature),*
- ***C*** *(Functional modification of feature)*
- ***D*** *(Editorial modification)*

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	The PROFILE DOWNLOAD procedure is performed during UICC initialisation, and not during the USIM initialisation. The "application profile indication request" procedure is not defined.
Summary of change:	⌘	In the USIM initialisation description, the paragraphs about PROFILE DOWNLOAD and application profile indication request are removed
Consequences if not approved:	⌘	Wrong implementation of the terminal or the USIM.

Clauses affected:	⌘	Section 5.1.1.2
Other specs affected:	⌘	[ ] Other core specifications ⌘ [ ] Test specifications [ ] O&M Specifications
Other comments:	⌘	

5.1.1.2 USIM initialisation

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

The ME requests the Language Indication. The preferred language selection shall always use the EF_{LI} in preference to the EF_{PL} at the MF unless any of the following conditions applies:

- if the EF_{LI} has the value 'FFFF' in its highest priority position, then the preferred language selection shall be the language preference in the EF_{PL} at the MF level according the procedure defined in 3G TS 31.101[11];
- if the ME does not support any of the language codes indicated in EF_{LI} , or if EF_{LI} is not present, then the language selection shall be as defined in EF_{PL} at the MF level according the procedure defined in 3G TS 31.101[11];
- if neither the languages of EF_{LI} nor EF_{PL} are supported by the terminal, then the terminal shall use its own internal default selection.

The ME then runs the ~~PIN~~user verification procedure. ~~If the PIN verification procedure is performed successfully, the ME then runs the application profile indication request procedure.~~ If the procedure is not performed successfully, the USIM initialisation stops.

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 selector with Access Technology request;
- User controlled PLMN selector with Access Technology request;
- Operator controlled PLMN selector with Access Technology request;
- RPLMN last used Access Technology
- GSM initialisation requests.
- Location Information request for CS-and/or PS-mode.
- Cipher key and integrity key request for CS- and/or PS-mode.
- Forbidden PLMN request.
- Initialisation value for hyperframe number request.

- Maximum value of START request.

3GPP T3 (USIM) Meeting #17
Berlin, Germany, 15 - 17 January, 2001

Tdoc T3-010080
(Supersedes T3-000564)

CR-Form-v3

CHANGE REQUEST

⌘ **31.102** **CR** **069** ⌘ rev **-** ⌘ Current version: **3.4.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM [X] ME/UE [ ] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Clarification of EF_{ARR} access conditions
Source:	⌘	T3
Work item code:	⌘	UICC
Date:	⌘	17/1/2001
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
- ***F*** *(essential correction)*
- ***A*** *(corresponds to a correction in an earlier release)*
- ***B*** *(Addition of feature),*
- ***C*** *(Functional modification of feature)*
- ***D*** *(Editorial modification)*

Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	If the file EF_{ARR} is not accessible, there is no indication of how to handle an other file wich has its access conditions given by this EF_{ARR}
Summary of change:	⌘	It shall not be allowed to access a file wich EF_{ARR} is not accessible
Consequences if not approved:	⌘	

Clauses affected:	⌘	4.2.55 and 4.5.5		
Other specs affected:	⌘	[X] Other core specifications	⌘	TS 102.221
		[ ] Test specifications		
		[ ] O&M Specifications		
Other comments:	⌘			

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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'		
Record Length: 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'.

If the card cannot access EF_{ARR}, any attempt to access a file with access rules indicated in this EF_{ARR} shall not be granted.

4.5.5 EF_{ARR} (Access Rule Reference)

This EF contains the access rules for files located under the $DF_{TELECOM}$ 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 $DF_{Telecom}$-level

Identifier: '6F06'	Structure: Linear fixed	Mandatory
~~File size~~Record length: 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'.

If the card cannot access EF_{ARR}, any attempt to access a file with access rules indicated in this EF_{ARR} shall not be granted.

3GPP T3 (USIM) Meeting #17
Berlin, Germany, 15 - 17 January, 2001

Tdoc T3-010097
(Supersedes T3-010057)

CR-Form-v3

CHANGE REQUEST

⌘ **31.102 CR 070** ⌘ rev ⌘ Current version: **3.4.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM [X] ME/UE [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Indication of minimum clock frequency required by the USIM application
Source:	⌘	T3
Work item code:	⌘	***Date:*** ⌘ 16.1.2001
Category:	⌘	**F** ***Release:*** ⌘ R99

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change:	⌘	In order to execute time critical commands like AUTHENTICATE within a defined time limit it is necessary to indicate to the terminal what clock frequency is needed for the USIM application to complete this command successfully
Summary of change:	⌘	A data object for this purpose is defined in 3G TS 31.101. The value for and the usage of this data object has been specified
Consequences if not approved:	⌘	The USIM application must be designed in such a way that all time critical commands can be executed at a clock frequency of 1 MHz.

Clauses affected:	⌘	8.2, 8.2.1
Other specs affected:	⌘	[ ] Other core specifications ⌘
		[ ] Test specifications
		[ ] O&M Specifications
Other comments:	⌘	

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at:
http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

8.2 File Control Parameters (FCP)

This section defines the contents of the data objects which are part of the FCP information where there is a difference compared to the values as specified in 3G TS 31.101 [11]. This section also specifies values for data objects in the FCP information where there is no exact value given in TS 31.101 and there is a need for such from the USIM application point of view.

8.2.1 Minimum application clock frequency

This data object is indicated by tag '82' in the proprietary constructed data object in the FCP information, identified by tag 'A5', as defined in 3G TS 31.101 [11]. This data object specifies the minimum clock frequency to be provided by the terminal during the USIM session. The value indicated in this data object shall not exceed 3 MHz, corresponding to '1E'. The terminal shall use a clock frequency between the value specified by this data object and the maximum clock frequency for the UICC as defined in 3G TS 31.101 [11]. If this data object is not present in the FCP response or the value is 'FF' then the terminal shall assume that the minimum clock frequency is 1 MHz.

3GPP T3 (USIM) Meeting #18
Sophia-Antipolis, France, 1-2 March, 2001

Tdoc T3-010206
Superseeds T3-010092 and T3-010179

CR-Form-v3

CHANGE REQUEST

⌘ **31.102** **CR** **071** ⌘ rev ⌘ Current version: **3.4.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM [X] ME/UE [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	General Corrections
Source:	⌘	T3
Work item code:	⌘	***Date:*** ⌘ 02/03/01
Category:	⌘	**F** ***Release:*** ⌘ R99

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	
Summary of change:	⌘	
Consequences if not approved:	⌘	TS 31.102 will contain inconsistencies

Clauses affected:	⌘	2: 4.2.8; 4.2.21; 4.2.33; 4.2.48; 4.4.2.14, 4.4.3.4; 4.4.4.1; 4.4.4.2; 4.4.4.3; 4.4.4.4; 4.4.4.5; 4.5.5; 4.7; Annex A; Annex D; Annex G		
Other specs affected:	⌘	[ ] Other core specifications [X] Test specifications [ ] O&M Specifications	⌘	TS 31.122
Other comments:	⌘			

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] 3GPP TS 21.111: "USIM and IC Card Requirements".

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

[17] 3GPP TS 02.07: "Mobile Stations (MS) features".

[18] 3GPP TS 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] 3GPP TS 22.101: "Service aspects; service principles".

[25] 3GPP 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] 3GPP TS 22.022: "Personalisation of GSM Mobile Equipment (ME); Mobile functionality specification".

[28] 3GPP TS 04.18 "Mobile Interface Layer3 Specification, Radio Resource control protocol"

[29] 3GPP TS 23.022: "Functions related to Mobile Station (MS) in idle mode and group receive mode".

[30] 3GPP TS 23.057: "Mobile Station Application Execution Environment (MExE);Functional description; Stage 2".

[31] 3GPP TS 23.122: "NAS Functions related to Mobile Station (MS) in idle mode"

[32] ISO/IEC 7816-6 (1996): "Identification cards -- Integrated circuit(s) cards with contacts -- Part 6: Interindustry data elements".

[33] 3GPP TS 25.101: "UE Radio Transmission and Reception (FDD)"

[34] 3GPP TS 05.05: "Radio Transmission and Reception "

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: '04'		
File size: X bytes, X >= 1	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~~Emlpp~~
	Service n°26:	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
	Service n°39	CPBCCH Information
	Service n°40	Investigation Scan
	Service n°41	MExE
	Service n°42	Operator controlled PLMN selector with Access Technology
	Service n°43	HPLMN selector with Access Technology
	Service n°xx	Extension 5

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:

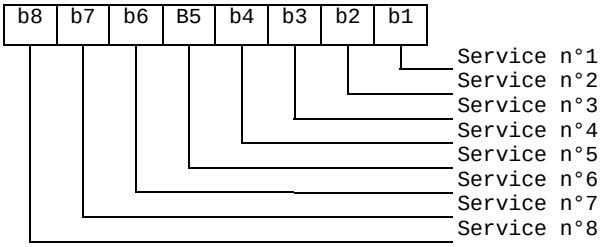
1 bit is used to code each service:

bit = 1: service available;

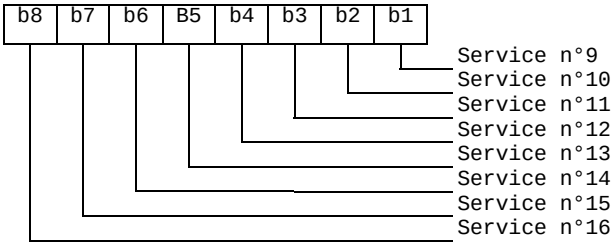
bit = 0: service not available.

- 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.

4.2.21 EF_{ECC} (Emergency Call Codes)

This EF contains emergency call codes.

Identifier: '6FB7'	Structure: linear fixed	Mandatory
SFI: '01'		
Record size: X+4 bytes	Update activity: low	

Access Conditions:

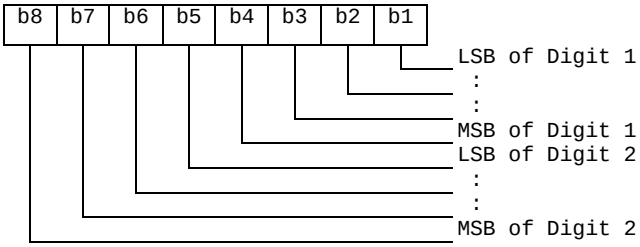
READ	ALW
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

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

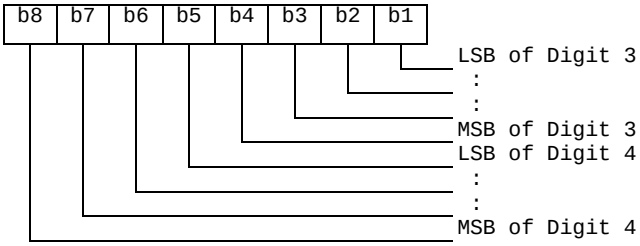
- Emergency Call Code.
  Contents:
  - Emergency Call Code.

  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.

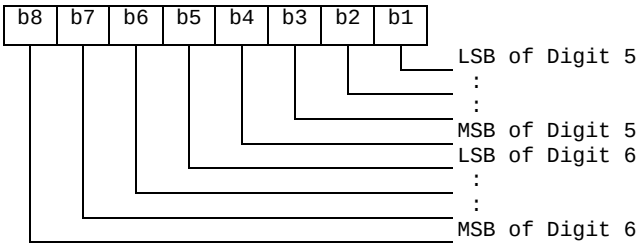
Byte 1:



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~~Service Category.
  Contents:
  ~~Set to RFU.~~ Information to be sent to the network indicating the ~~type~~ category of the 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.~~

4.2.33 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: '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'.

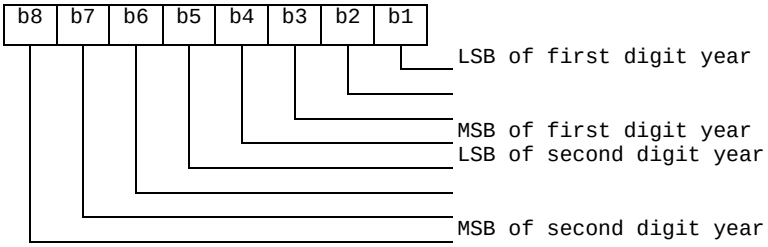
Detail 1 Coding of date and time.

Content:

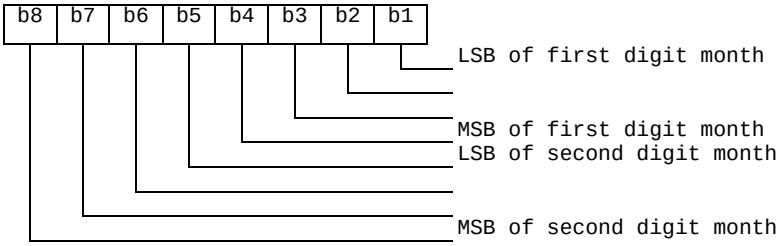
the date and time are defined by the ME.

Coding:

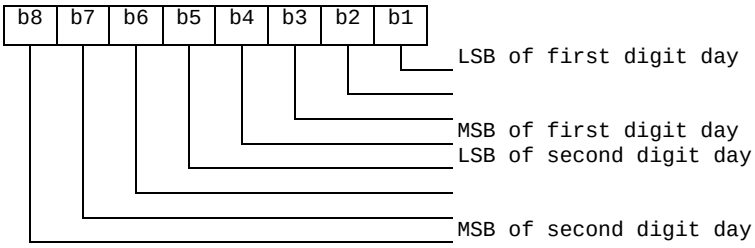
it is according to the extended BCD coding from Byte1 to Byte 7. The first 3 bytes show year, month and day (yy.mm.dd). The next 3 bytes show hour, minute and second (hh.mm.ss). The last Byte 7 is Time Zone. The Time Zone indicates the difference, expressed in quarters of an hour, between the local time 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 7~~8~~ shall be "FF". Byte X+15: Year.



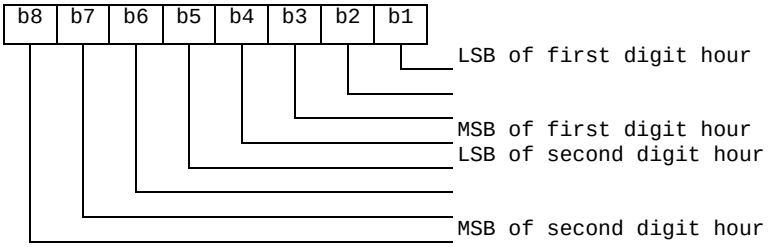
Byte X+16: Month



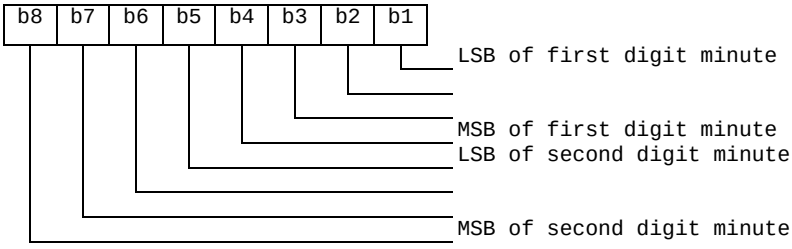
Byte X+17: Day



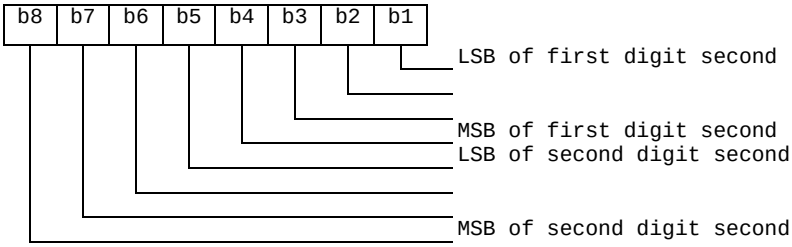
Byte X+18: Hour



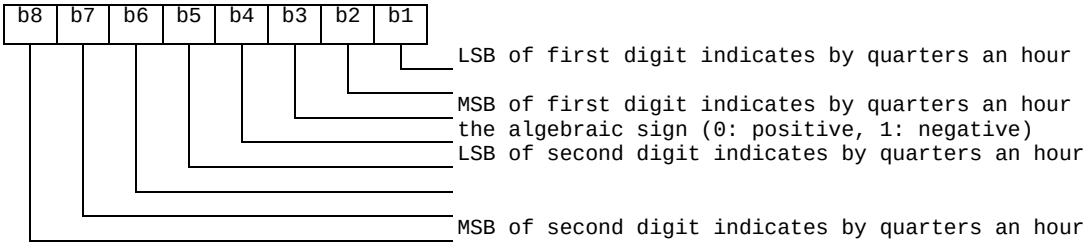
Byte X+19: Minute



Byte X+20: Second



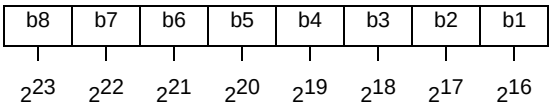
Byte X+21: Time Zone



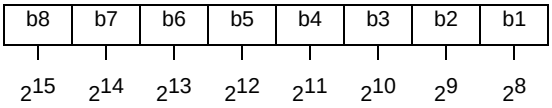
Detail 2 Coding of call duration.

Call duration is indicated by second.

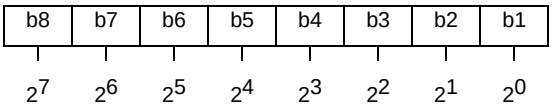
Byte X+22:



Byte X+23:



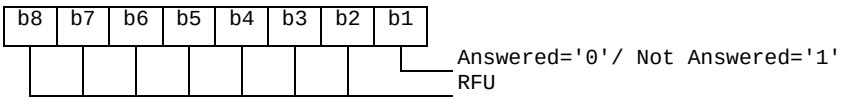
Byte X+24:



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

Detail 3 Coding of Call status.

Byte X+25:

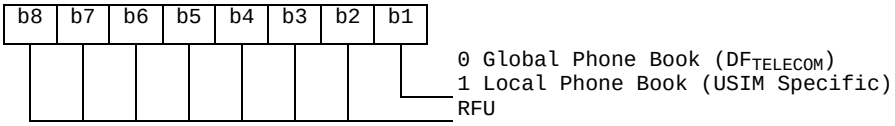


Detail 4 Link to phone book entry

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.

4.2.48 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~~File size: 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-TLV values see TS 23.003 [25]. The tag value of the APN-TLV shall be 'DD'.

4.4.2.14 Phonebook restrictions

This subclause lists some general restrictions that apply to the phonebook:

- if an EF_{PBR} file contains more than one record, then they shall all be formatted identically on a type-by-type basis, e.g. if EF_{PBR} record #1 contains one type 1 e-mail then all EF_{PBR} records shall have one type 1 email;
- if an EF_{PBR} record contains more than one reference to ~~a~~ one type of file ~~of type~~, such as two EF_{EMAIL} files, ~~-~~then they shall all be formatted identically on a type-by-type basis, e.g. if an EF_{PBR} record has 2 email addresses, then they shall have the same record size and the same number of records in each EF_{PBR} entry;
- an EF_{PBR} record may contain TLV entries indicating that the file exist as a type 1 and 2 file, e.g. a phonebook entry may have two emails, one with a one-to-one mapping (type 1) and one with a indirect mapping (type 2). Regardless of the type, files in all entries shall have the same record configuration.

Editor's note: this list is currently not complete.

4.4.3.4 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 TS 23.022 [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: '4F63'	Structure: transparent	Optional
File size: 2n bytes	Update activity: high	

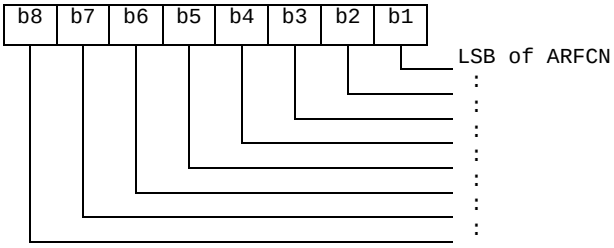
Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

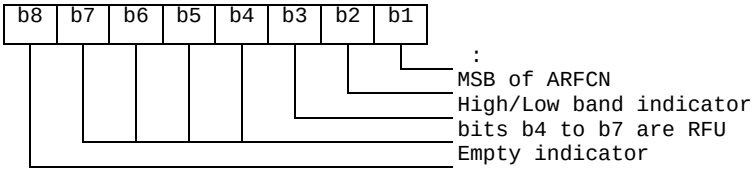
Bytes	Description	M/O	Length
1 to 2	Element 1 of CPBCCH carrier list	M	2 bytes
2n-1 to 2n	Element n of CPBCCH carrier list	M	2 bytes

- 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 3GPP TS ~~GSM~~ 05.05 [34].

  - 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.

4.4.4.1 $EF_{MExE-ST}$ (MExE Service table)

This EF indicates which MExE services are available~~allocated, and whether, if allocated, the service is activated~~. If a service is not indicated as available ~~allocated or not activated~~ in the USIM, the ME shall not select this service.

Identifier: '4F40'	Structure: transparent	Optional
File size: X bytes, X ≥ 1	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
etc.			
X	Services (8X-7) to (8X)	O	1 byte

-Services

Contents:

Service n°1 :	Operator Root Public Key
Service n°2 :	Administrator Root Public Key
Service n°3 :	Third Party Root Public Key
Service n°4 :	RFU

Coding:

the coding rules of the USIM Service Table apply to this table.

4.4.4.2 EF_{ORPK} (Operator Root Public Key)

This EF contains the descriptor(s) of certificates containing the Operator Root Public Key. This EF shall only be allocated if the operator wishes to verify applications and certificates in the MExE operator domain using a root public key held in the USIM. Each record of this EF contains one certificate descriptor.

For example, an operator may provide a second key for recover disaster procedure in order to limit OTA data to load.

Identifier: '4F41'	Structure: linear fixed	Optional
Record length : X + 10 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

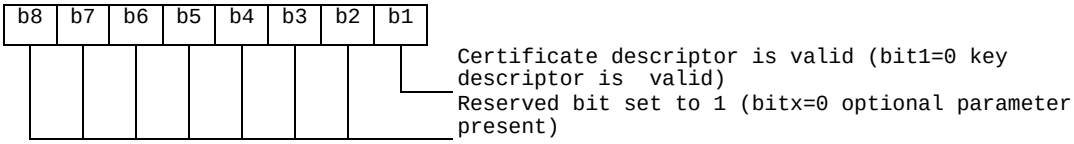
Bytes	Description	M/O	Length
1	Parameters indicator	M	1 byte
2	Flags	M	1 byte
3	Type of certificate	M	1 byte
4 to 5	Key/certificate file identifier	M	2 bytes
6 to 7	Offset into key/certificate file	M	2 bytes
8 to 9	Length of key/certificate data	M	2 bytes
10	Key identifier length (Xk)	M	1 byte
11 to 10+Xk	Key identifier	M	Xk bytes

- Parameter indicator

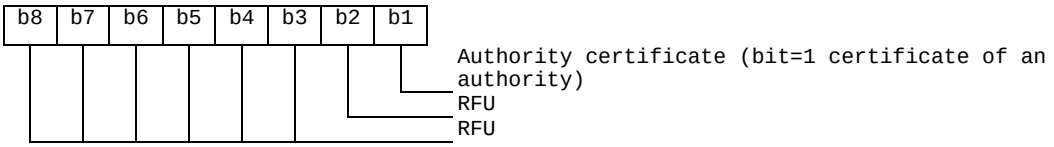
Contents:

The parameter indicator indicates if record is full and which optional parameters are present

Coding: bit string



- Flags
  Contents:
  The authority flag indicates whether the certificate identify an authority (i.e. CA or AA) or not.
  Coding: bit string



- Type of certificate
  Contents:
  This field indicates the type of certificate containing the key.
  Coding: binary :
  0 : WTLS
  1 : X509
  2 : X9.68
  Other values are reserved for further use

- Key/certificate File Identifier
  Contents:
  these bytes identify an EF which is the key/certificate data file (see subclause 4.4.4.5), holding the actual key/certificate data for this record.
  Coding:
  byte 4: high byte of Key/certificate File Identifier;
  byte 5: low byte of Key/certificate File Identifier.

- Offset into Key/certificate File
  Contents:
  these bytes specify an offset into the transparent key/certificate data File identified in bytes 4 and 5.
  Coding:
  byte 6: high byte of offset into Key/certificate Data File;
  byte 7: low byte of offset into Key/certificate Data File

- Length of Key/certificate Data
  Contents:
  these bytes yield the length of the key/certificate data, starting at the offset identified in "Offset into Key/certificate File" field.
  Coding:
  byte 8: high byte of Key/certificate Data length;
  byte 9: low byte of Key/certificate Data length.

- Key identifier length
  Contents:
  This field gives length of key identifier
  Coding:
  binary

- Key identifier
  Contents:
  This field provides a means of identifying certificates that ~~contents~~ contain a particular public key (chain building) and linking the public key to its corresponding private key. For more information about value and using see TS 23.057 [30].

Coding:
octet string

Note: transparent key/certificate data longer than 256 bytes may be read using successive READ BINARY commands.

4.4.4.3 EF_{ARPK} (Administrator Root Public Key)

This EF contains the descriptor(s) of certificates containing the Administrator Root Public Key. This EF shall only be allocated if the SIM issuer wishes to control the Third Party certificates on the terminal using an Administrator root public key held in the USIM. Each record of this EF contents one certificate descriptor.

This file shall contain only one record.

Identifier: '4F42'	Structure: linear fixed	Optional
Record length: X + 10 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	Parameters indicator	M	1 byte
2	Flags	M	1 byte
3	Type of certificate	M	1 byte
4 to 5	Key/certificate file identifier	M	2 bytes
6 to 7	Offset into key/certificate file	M	2 bytes
8 to 9	Length of key/certificate data	M	2 bytes
10	Key identifier length (Xk)	M	1 byte
11 to 10+Xk	Key identifier	M	Xk bytes

For contents and coding of all data items see the respective data items of the EF_{ORPK} (sub-clause 4.4.4.2).

4.4.4.4 EF_{TPRPK} (Third Party Root Public Key)

This EF contains descriptor(s) of certificates containing the Third Party root public key (s). This EF shall only be allocated if the USIM issuer wishes to verify applications and certificates in the MExE Third Party domain using root public key(s) held in the USIM. This EF can contain one or more root public keys. Each record of this EF contains one certificate descriptor.

For example, an operator may provide several Third Party Root Public Keys.

Identifier:'4F43'	Structure: linear fixed	Optional
Record length : X + Y+ 110 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	Parameters indicator	M	1 byte
2	Flags	M	1 byte
3	Type of certificate	M	1 byte
4 to 5	Key/certificate file identifier	M	2 bytes
6 to 7	Offset into key/certificate file	M	2 bytes
8 to 9	Length of key/certificate data	M	2 bytes
10	Key identifier length (Xk)	M	1 byte
11 to 10+Xk	Key identifier	M	Xk bytes
11+Xk to11+Xk	Certificate identifier length (Ym)	M	1 byte
12+Xk to11+Xk+Ym	Certificate identifier	M	Ym bytes

- Certificate identifier length
  Contents:
  This field gives the length of the certificate identifier
  Coding:
  binary

- Certificate identifier
  Contents:
  This field identifies the issuer and provides an easy way to find a certificate. For more information about the value and usage see TS 23.057 [30].
  Coding:
  Octet string

For contents and coding of all other data items see the respective data items of the EF_{ORPK} (sub-clause 4.4.4.2).

4.4.4.5 EF_{TKCDF} (Trusted Key/Certificates Data Files)

Residing under DF_{MExE}, there may be several key/certificates data files. These EFs containing key/certificates data shall have the following attributes:

Identifier: '4FXX'	Structure: transparent	Optional
~~Record length~~File size: Y bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to Y	Key/Certificate~~s~~ Data	M	Y bytes

Contents and coding:

Key/certificate data are accessed using the key/certificate~~s~~ descriptors provided by EF_{TPRPK} (see sub-clause 4.4.4.4).

The identifier '4FXX' shall be different from one key/certificate data file to ~~the~~ another. For the range of 'XX', see ~~sub-clause 8.6 in~~3GPP TS 31.101 [11]. The length Y may be different from one key/certificate data file to ~~the~~ another.

4.5.5 EF_{ARR} (Access Rule Reference)

This EF contains the access rules for files located under the $DF_{TELECOM}$ 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 $DF_{Telecom}$-level

Identifier: '6F06'	Structure: Linear fixed	Mandatory
~~File size~~Record length: 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'.

4.7 Files of USIM

This subclause contains two figures depicting the file structure of the UICC and the ADF_{USIM}. ADF_{USIM} shall be selected using the AID and information in EF_{DIR}.

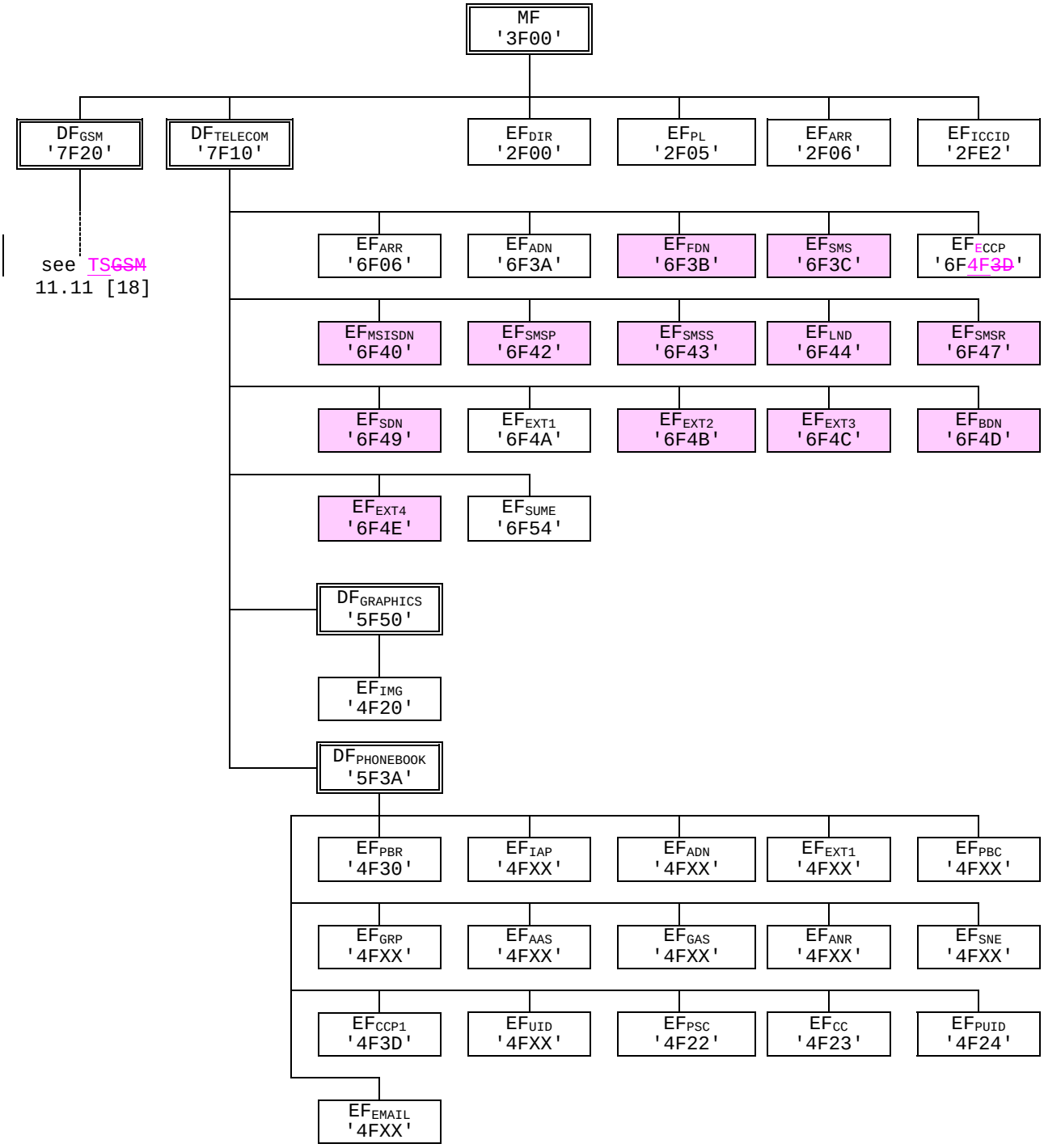


Figure 4.1: File identifiers and directory structures of UICC

Files under $DF_{TELECOM}$ with shaded background are defined in TS 11.11 [18].

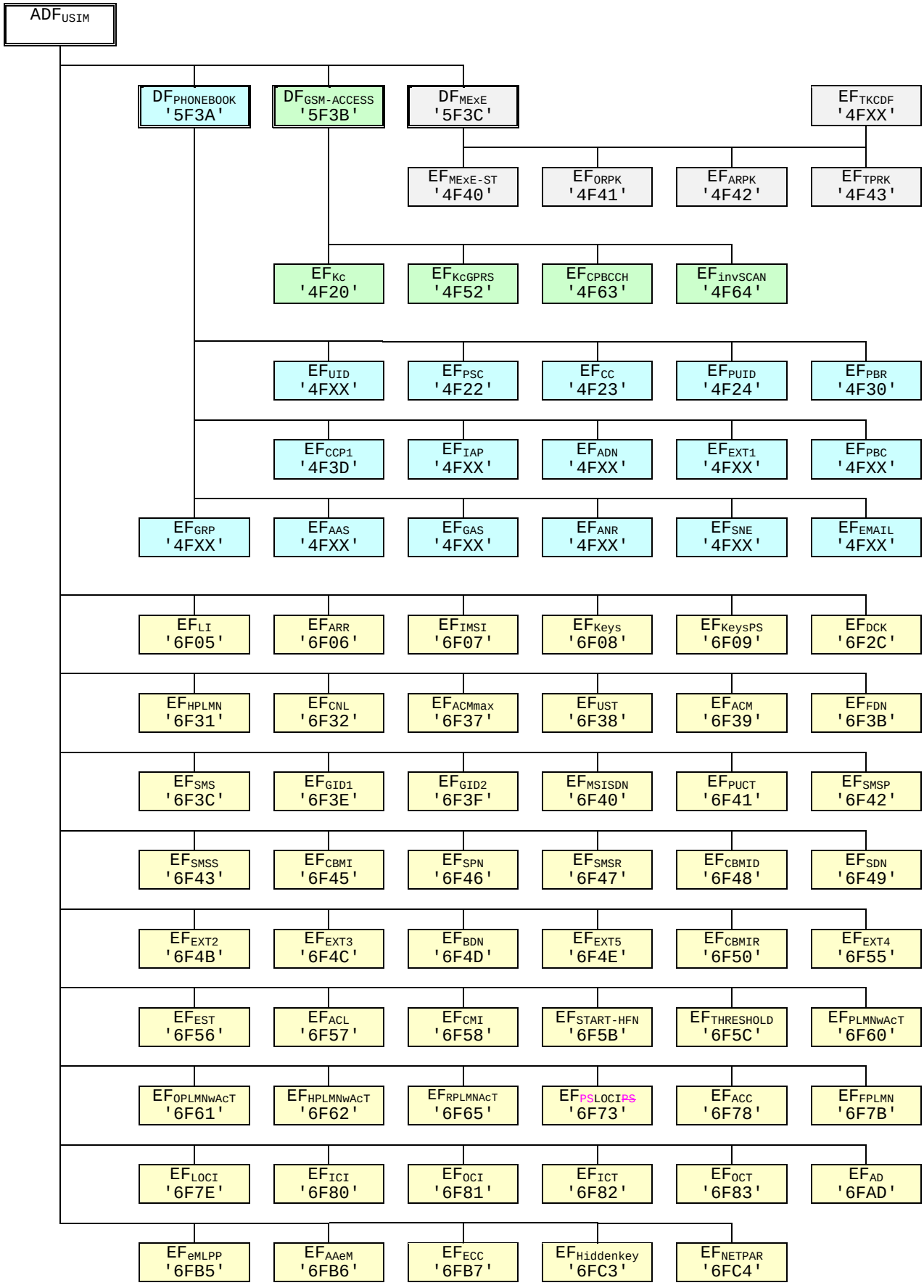


Figure 4.2: File identifiers and directory structures of USIM

DF '5F70' is reserved for SoLSA. EF '4F30' (EF_{SAL}) and EF '4F31' (EF_{SLL}) are reserved under DF '5F70' (SoLSA).

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
'4FXX'	Unique identifier	Yes
'4F22'	Phone book synchronisation counter	Yes
'4F23'	Change counter	Yes
'4F24'	Previous unique identifier	Yes
'4F30'	Phone book reference file	Yes
'4FXX'	Capability configuration parameters 1	Yes
'4F75'	CPBCCH Information	No
'4F76	Investigation Scan	Caution
'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
'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
'6F4F3D'	Extended Capability configuration parameters	Yes
'6F3E'	Group identifier level 1	Yes
'6F3F'	Group identifier level 2	Yes

Continued….

File identification	Description	Change advised
'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
'6F52'	GPRS Ciphering key KcGPRS	No
'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 START	Yes
'6F60'	User controlled PLMN selector with Access Technology	No
'6F61'	Operator controlled PLMN selector with Access Technology	Caution
'6F62'	HPLMN selector with Access Technology	Caution
'6F63'	RPLMN last used Access Technology	Caution
'6F73'	Packet switched location information	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	
'6FC4'	Network Parameters	No

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

Annex D (informative): Tags defined in 31.102

Tag	Name of Data Element	Usage
'A0'	GSM cell information The following are encapsulated under 'A0': '80' GSM Camping Frequency data object '81' GSM Neighbour Frequency Information data object	Network Parameters (EF_{NETPAR})
'A1'	FDD cell information The following are encapsulated under 'A1': '80' FDD Intra Frequency data object '81' FDD Inter Frequency Information data object	Network Parameters (EF_{NETPAR})
'A2'	TDD cell information The following are encapsulated under 'A2': '80' TDD Intra Frequency data object '81' TDD Inter Frequency Information data object	Network Parameters (EF_{NETPAR})
'D8'	Indicator for type 1 EFs (amount of records equal to master EF)	Phone Book Reference File (EF_{PBR})
'D9'	Indicator for type 2 EFs (EFs linked via the index administration file)	Phone Book Reference File (EF_{PBR})
'DA'	Indicator for type 3 EFs (EFs addressed inside a TLV object) The following are encapsulated under 'DA ~~XZ~~': 'C0' EF_{ADN} data object 'C1' EF_{IAP} data object 'C2' EF_{EXCT1} 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 'CB' EF_{CCP1} data object	Phone Book Reference File (EF_{PBR})
'DB'	Successful 3G authentication	Response to AUTHENTICATE
'DC'	Synchronisation failure	Response to AUTHENTICATE
'DD'	Access Point Name	APN Control List (EF_{ACL})

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_{ANRA}~~1~~, EF_{ANRA1} 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 $DF_{PHONEBOOK}$

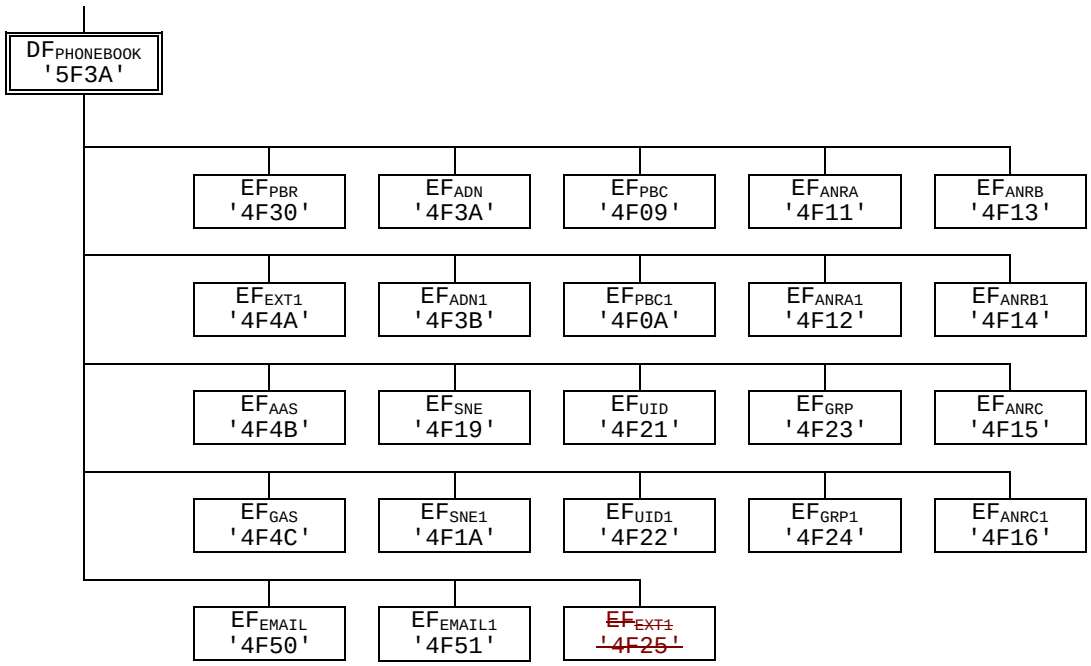


Table G.2: Contents of EF_{PBR}

Rec 1	Tag'D8'	L='26'	Tag'C0'	L='03'	'4F3A'	'01'	Tag'C5'	L='03'	'4F09'	'02'	Tag'C6'	L='02'	'4F23'	
	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='24'	Tag'C0'	L='02'	'4F3B'	Tag'C5'	L='02'	'4F0A'	Tag'C6'	L='02'	'4F24'			
	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'	'4F4A2 5'	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 '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'	ANRA1 Rec n°1	ANRB2 Rec n°12	ANRC3 Rec n°13	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	ANRA1 Rec n°21	ANRB2 Rec n°2	ANRC3 Rec n°23	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	ADN1 '4F3B'		PBC1 '4F0A'	GRP1 '4F24'	ANRA1 '4F12'	ANRB1 '4F14'	ANRC1 '4F16'	SNE1 '4F1A'	UID1 '4F22'	EXT1 '4F4A25'	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'	ANRA1 Rec n°12	ANRB12 Rec n°12	ANRC13 Rec n°13	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	ANRA1 Rec n°2	ANRB12 Rec n°2	ANRC13 Rec n°23	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													

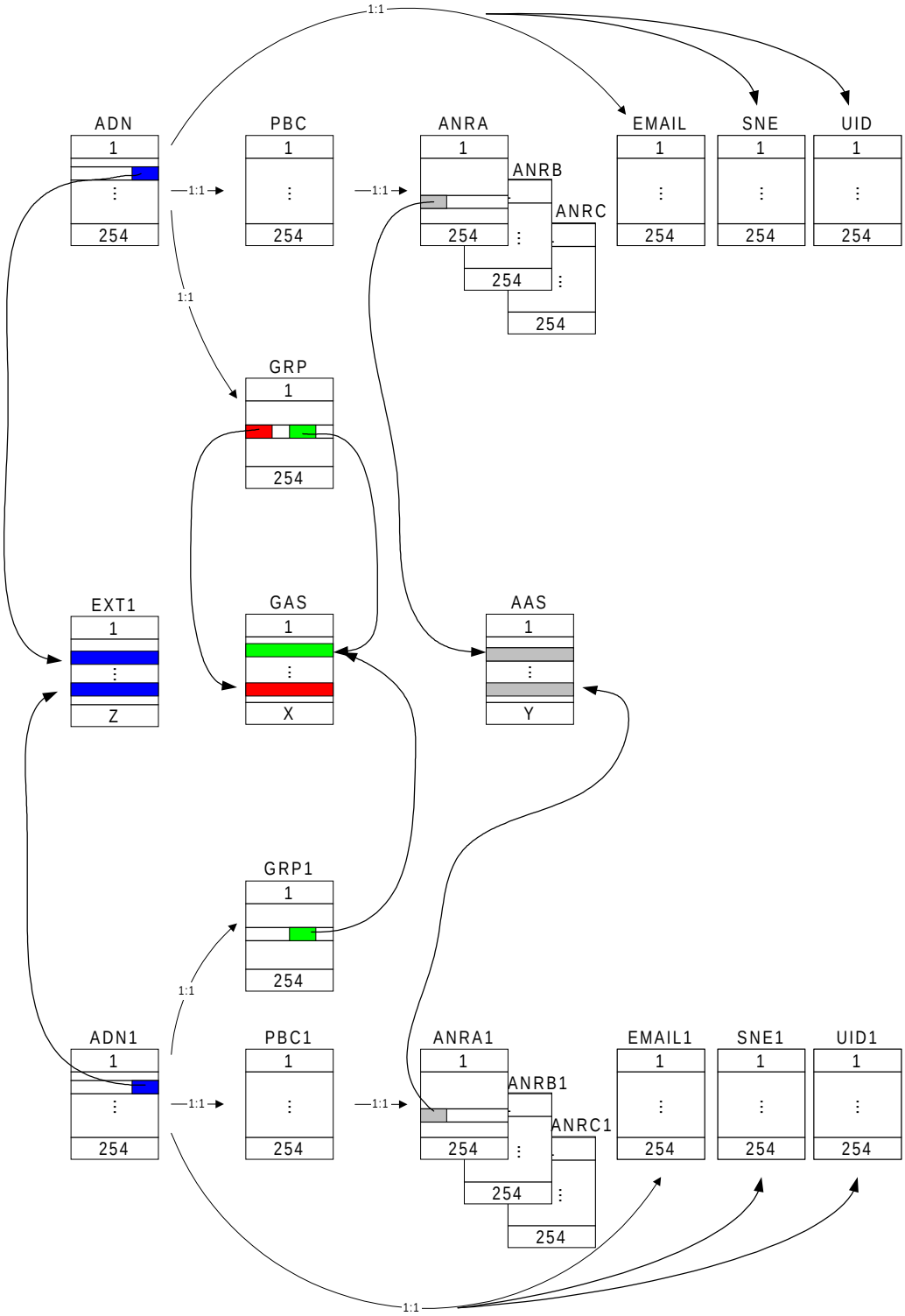


Figure G.1: Structure and Relations of the Example Phone Book

3GPP T3 (USIM) Meeting #18
Sophia-Antipolis, France, 1-2 March, 2001

Tdoc T3-010205
(revised from T3-010154)

CR-Form-v3

CHANGE REQUEST

⌘ **3G TS 31.102** **CR** **72** ⌘ rev **-** ⌘ Current version: **3.4.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM [X] ME/UE [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Correction of the EF(UST) for Packet Domain
Source:	⌘	T3
Work item code:	⌘	TEI
Date:	⌘	01-03-2001
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
- ***F*** *(essential correction)*
- ***A*** *(corresponds to a correction in an earlier release)*
- ***B*** *(Addition of feature),*
- ***C*** *(Functional modification of feature)*
- ***D*** *(Editorial modification)*

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	The bit corresponding to the packet domain support shall always be set to 1 because the EFs for packet domain support (PSLOCI and KeysPS) are mandatory.
Summary of change:	⌘	The bit corresponding to service n°33 is reserved.
Consequences if not approved:	⌘	Inconsistency of the specification

Clauses affected:	⌘	Section 4.2.8
Other specs affected:	⌘	[ ] Other core specifications ⌘ [ ] Test specifications [ ] O&M Specifications
Other comments:	⌘	

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: '04'		
File size: X bytes, X >= 1	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:	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~~shall be set to '1'
	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°39	CPBCCH Information
	Service n°40	Investigation Scan
	Service n°41	MExE
	Service n°42	Operator controlled PLMN selector with Access Technology
	Service n°43	HPLMN selector with Access Technology

3GPP T3 Meeting #28
Sophia-Antipolis, France, 1 - 2 March, 2001

Tdoc ~~T3-010168~~T3-010229

CR-Form-v3

CHANGE REQUEST

⌘ **31.102** **CR** **CR-073** ⌘ rev **-** ⌘ Current version: **3.4.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM [X] ME/UE [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Introduction of the PLMN Network Name feature from the Common PCN Handset Specification (CPHS)
Source:	⌘	T3 #18
Work item code:	⌘	UICC1-CPHS
Date:	⌘	2nd March 2001
Category:	⌘	**B**
Release:	⌘	*REL-4 (Release 4)*

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	To provide the USIM with CPHS functionality for operator name display.
Summary of change:	⌘	The following change is proposed: File EF_{PNN}(PLMN Network Name) is added to reflect the CPHS file EF_{OpName} (PLMN Operator Name) File EF_{UST} is also updated to include the above file.
Consequences if not approved:	⌘	

Clauses affected:	⌘	3.3, 4.2.8, 4.2.xx, 4.7, 5.3.xx, Annex A, Annex E, Annex H
Other specs Affected:	⌘	[ ] Other core specifications [ ] Test specifications [ ] O&M Specifications
	⌘	
Other comments:	⌘	

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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
FCP	File Control Parameters
FFS	For Further Study
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
IEI	Information Element 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
MExE	Mobile Execution Environment
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
PBID	Phonebook Identifier

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
SGSN	Serving GPRS Support Node
SN	Serving Network
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
VLR	Visitor Location Register
XRES	Expected user RESponse

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: '04'		
File size: X bytes, X >= 1	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:	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
	Service n°39	CPBCCH Information
	Service n°40	Investigation Scan
	Service n°41	MexE
	Service n°42	Operator controlled PLMN selector with Access Technology
	Service n°43	HPLMN selector with Access Technology
	Service n°xx:	PLMN Network Name

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:

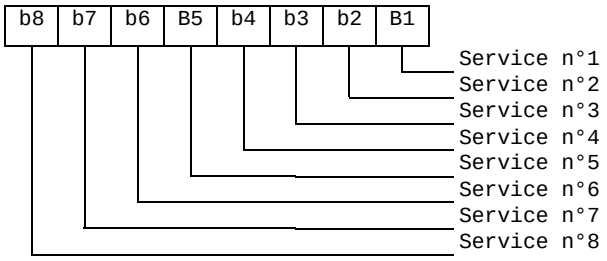
1 bit is used to code each service:

bit = 1: service available;

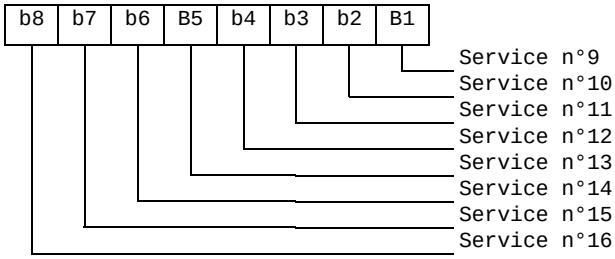
bit = 0: service not available.

- 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.xx EF_{PNN} (PLMN Network Name)

This EF contains the full and short form versions of the network name for the registered PLMN. The ME shall use these versions in place of its own versions of the network name for the PLMN (stored in the ME's memory list), and also in place of the versions of the network name received when registered to the PLMN, as defined by 3G TS 24.008 [9].

The first record in this EF is used for the default network name when registered to the HPLMN. Subsequent records are to be used for other network names.

Identifier: '6FXX'	Structure: linear fixed	Optional
SFI: 'XX'		
Record length: X bytes	Update activity: low	

Access Conditions:

READ	ALWAYS
UPDATE	ADM
ACTIVATE	ADM
DEACTIVATE	ADM

Bytes	Description	M/O	Length
1 to X	Network name TLV objects	M	X bytes

- Network name TLV objects.
  The content and coding (Full name for network and Short name for network) is defined below, where the fields within the objects are defined in 3G TS 24.008[9]:

Coding of the Network name TLV objects

Length	Description	Status
1 byte	Full name for network IEI (This shall be the same as that used in the MM information message).	M
1 byte	Length of Full name for network Name contents	M
Y bytes	Full name for network contents (Octets 3 to n of network name information element)	M
1 byte	Short name for network IEI (This shall be the same as that used in the MM information message).	O
1 byte	Length of Short name for network	C1
Z bytes	Short name for network contents (Octets 3 to n of network name information element)	C1
C1 : this field shall be present if the short name for network IEI is present		

Unused bytes shall be set to 'FF'.

4.7 Files of USIM

This subclause contains two figures depicting the file structure of the UICC and the ADF_{USIM}. ADF_{USIM} shall be selected using the AID and information in EF_{DIR}.

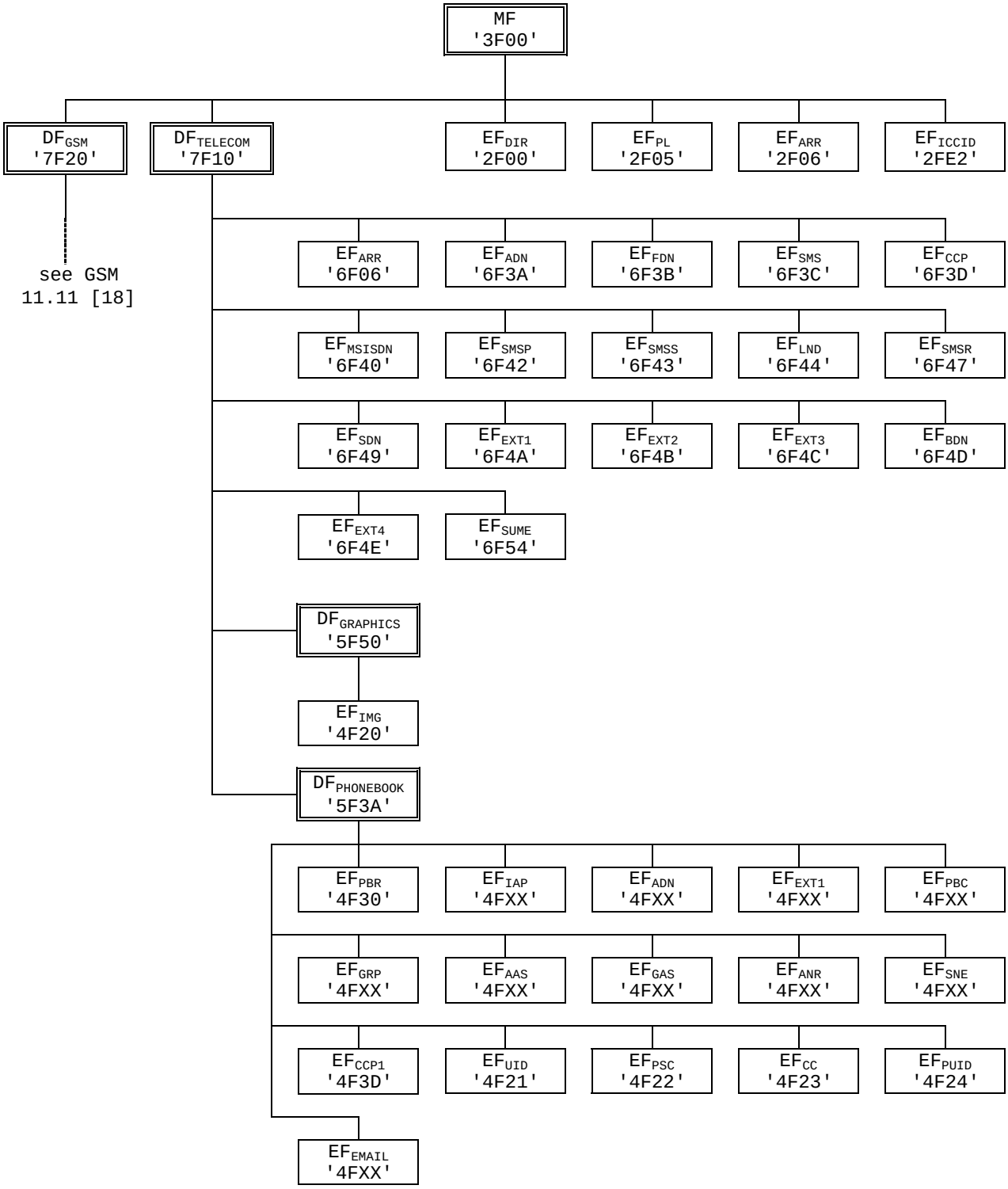


Figure 4.1: File identifiers and directory structures of UICC

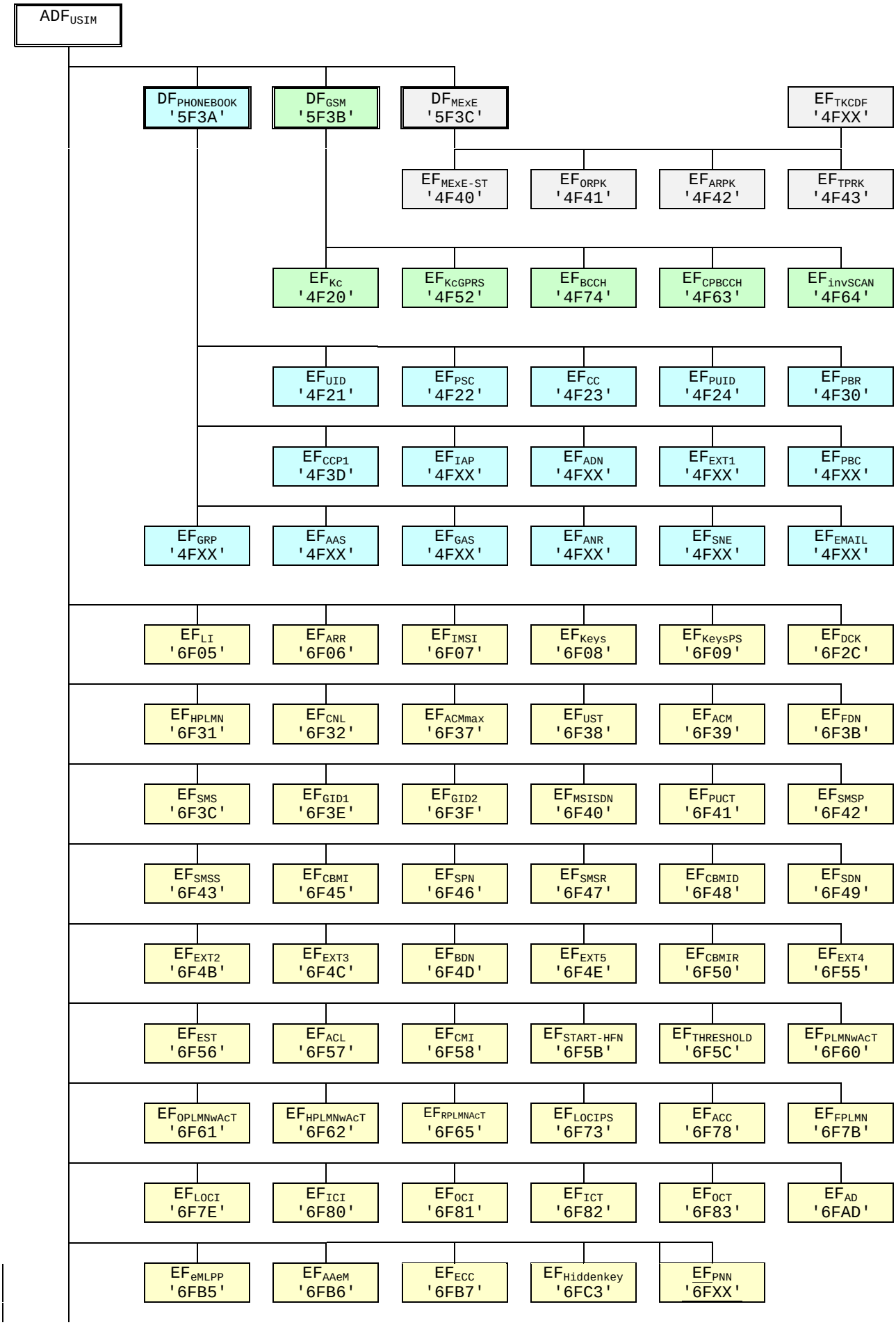

ADF USIM
DF PHONEBOOK '5F3A'
DF GSM '5F3B'
DF MExE '5F3C'
EF TKCDF '4FXX'
EF MExE-ST '4F40'
EF ORPK '4F41'
EF ARPK '4F42'
EF TPRK '4F43'
EF Kc '4F20'
EF KcGPRS '4F52'
EF BCCH '4F74'
EF CPBCCH '4F63'
EF invSCAN '4F64'
EF UID '4F21'
EF PSC '4F22'
EF CC '4F23'
EF PUID '4F24'
EF PBR '4F30'
EF CCP1 '4F3D'
EF IAP '4FXX'
EF ADN '4FXX'
EF EXT1 '4FXX'
EF PBC '4FXX'
EF GRP '4FXX'
EF AAS '4FXX'
EF GAS '4FXX'
EF ANR '4FXX'
EF SNE '4FXX'
EF EMAIL '4FXX'
EF LI '6F05'
EF ARR '6F06'
EF IMSI '6F07'
EF Keys '6F08'
EF KeysPS '6F09'
EF DCK '6F2C'
EF HPLMN '6F31'
EF CNL '6F32'
EF ACMmax '6F37'
EF UST '6F38'
EF ACM '6F39'
EF FDN '6F3B'
EF SMS '6F3C'
EF GID1 '6F3E'
EF GID2 '6F3F'
EF MSISDN '6F40'
EF PUCT '6F41'
EF SMSP '6F42'
EF SMSS '6F43'
EF CBMI '6F45'
EF SPN '6F46'
EF SMSR '6F47'
EF CBMID '6F48'
EF SDN '6F49'
EF EXT2 '6F4B'
EF EXT3 '6F4C'
EF BDN '6F4D'
EF EXT5 '6F4E'
EF CBMIR '6F50'
EF EXT4 '6F55'
EF EST '6F56'
EF ACL '6F57'
EF CMI '6F58'
EF START-HFN '6F5B'
EF THRESHOLD '6F5C'
EF PLMNwAcT '6F60'
EF OPLMNwAcT '6F61'
EF HPLMNwAcT '6F62'
EF RPLMNAcT '6F65'
EF LOCIPS '6F73'
EF ACC '6F78'
EF FPLMN '6F7B'
EF LOCI '6F7E'
EF ICI '6F80'
EF OCI '6F81'
EF ICT '6F82'
EF OCT '6F83'
EF AD '6FAD'
EF eMLPP '6FB5'
EF AAeM '6FB6'
EF ECC '6FB7'
EF Hiddenkey '6FC3'
EF PNN '6FXX'

Figure 4.2: File identifiers and directory structures of USIM

DF 5F70 is reserved for SoLSA. EF 4F30 (EF_{SAL}) and EF 4F31 (EF_{SLL}) are reserved under DF 5F70 (SoLSA).

5.3.xx PLMN network name

Requirement: Service n°xx "available".

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

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
'4FXX'	Unique identifier	Yes
'4F22'	Phone book synchronisation counter	Yes
'4F23'	Change counter	Yes
'4F24'	Previous unique identifier	Yes
'4F30'	Phone book reference file	Yes
'4FXX'	Capability configuration parameters 1	Yes
'4F75'	CPBCCH Information	No
'4F76	Investigation Scan	Caution
'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
'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

Continued….

File identification	Description	Change advised
'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
'6F52'	GPRS Ciphering key KcGPRS	No
'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 START	Yes
'6F60'	User controlled PLMN selector with Access Technology	No
'6F61'	Operator controlled PLMN selector with Access Technology	Caution
'6F62'	HPLMN selector with Access Technology	Caution
'6F63'	RPLMN last used Access Technology	Caution
'6F73'	Packet switched location information	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	
'6FC4'	Network Parameters	No
'6FXX'	PLMN Network Name	Yes

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'
'4FXX'	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
'4FXX'	Capability configuration parameters 1	'FF…FF'
'4F63'	CPBCCH Information	'FF..FF'
'4F64'	Investigation PLMN scan	'00'
'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'
'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'

Continued....

File Identification	Description	Value
'6F4D'	Barred Dialling Numbers	'FF...FF'
'6F4E'	Extension 5	'00FF...FF'
'6F4F'	Capability configuration parameters 2	'FF...FF'
'6F50'	CBMIR	'FF...FF'
'6F52'	GPRS Ciphering key KcGPRS	'FF...FF07'
'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 START	Operator dependant
'6F60'	User controlled PLMN selector with Access Technology	'FFFFFF0000..FFFFFF0000'
'6F61'	Operator controlled PLMN selector with Access Technology	'FFFFFF0000..FFFFFF0000'
'6F62'	HPLMN selector with Access Technology	'FFFFFF0000..FFFFFF0000'
'6F65'	RPLMN last used Access Technology	'0000'
'6F73'	Packet switched location information	'FFFFFFFF FFFFFF xxxxxx 0000 FF 01' (see note 2)
'6F78'	Access control class	Operator dependant
'6F7B'	Forbidden PLMNs	'FF...FF'
'6F7E	Location information	'FFFFFFFF xxxxxx 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'
'6FC4'	Network Parameters	'FF…FF'
'6FXX'	PLMN Network Name	Operator dependant

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

Annex H (normative): List of SFI Values

This annex lists SFI values assigned in this specification.

H.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
'6F60'	'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
'6F61'	'11'	Operator PLMN selector
'6F31'	'12'	HPLMN search period
'6F62'	'13'	Preferred HPLMN access technology
'6F80'	'14'	Incoming call information
'6F81'	'15'	Outgoing call information
'6F4F'	'16'	Capability configuration parameters 2
'6F06'	'17'	Access Rule Reference
'6F65'	'18'	RPLMN last used Access Technology
'6FXX'	'XX'	PLMN Network Name

All other SFI values are reserved for future use.

3GPP T3 Plenary Meeting #18
Sophia Antipolis, France, 1 - 2 March, 2001

Tdoc T3-010230

CR-Form-v3

CHANGE REQUEST

⌘ **31.102** **CR** **CR-074** ⌘ rev **-** ⌘ Current version: **3.4.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM [X] ME/UE [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Introduction of the Operator PLMN List
Source:	⌘	T3
Work item code:	⌘	UICC1-CPHS
Date:	⌘	2nd March 2001
Category:	⌘	**B**
Release:	⌘	*REL-4 (Release 4)*

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	To provide the USIM with enhanced operator name display functionality
Summary of change:	⌘	The following changes are proposed: Addition of a Service to indicate support for the EF_{OPL} (Operator PLMN List) File EF_{OPL} (Operator PLMN List) is added to indicate for which Location Area Identities a required network name is to be displayed
Consequences if not approved:	⌘	The displayed operator name may not accurately reflect the desired operator name i.e. due to mergers, acquisitions or service agreements.

Clauses affected:	⌘	4.2.8, 4.2.xx (new), 4.7, 5.3.xx (new), Annex A, Annex E, Annex H
Other specs Affected:	⌘	[ ] Other core specifications [ ] Test specifications [ ] O&M Specifications
	⌘	
Other comments:	⌘	

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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: '04'		
File size: X bytes, X >= 1	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:	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
	Service n°39	CPBCCH Information
	Service n°40	Investigation Scan
	Service n°41	MexE
	Service n°42	Operator controlled PLMN selector with Access Technology
	Service n°43	HPLMN selector with Access Technology
	Service n°XX:	Operator PLMN List

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:

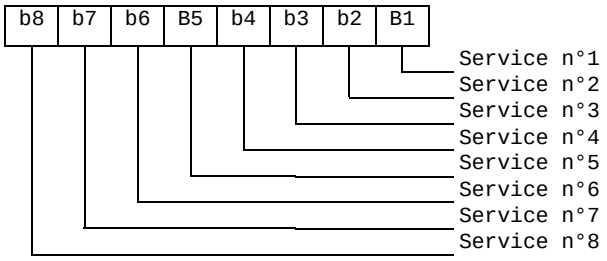
1 bit is used to code each service:

bit = 1: service available;

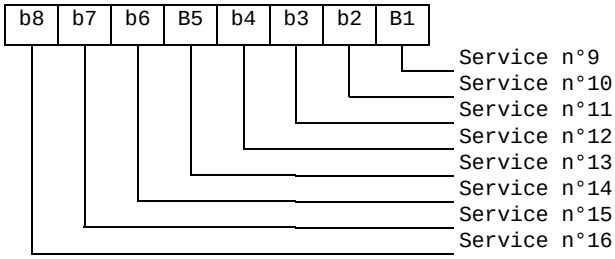
bit = 0: service not available.

- 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.xx EF_{OPL} (Operator PLMN List)

This EF contains a prioritised list of Location Area Information (LAI) identities that are used to associate a specific operator name contained in EF_{PNN} with the LAI. The ME shall use this EF in association with the EF_{PNN} in place of any network name stored within the ME's internal list and any network name received when registered to the PLMN, as defined by 3G TS 24.008 [9].

If the EF_{PNN} is not present then this file shall not be present.

Identifier: '6FXX'	Structure: linear fixed	Optional
SFI: 'YY'		
Record length: X bytes, X >= 6	Update activity: low	

Access Conditions:

READ	ALWAYS
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to 5	Location Area Identity	M	5 bytes
6	PLMN Network Name Record Identifier	M	1 byte

- Location Area Identity

  Contents:

  Location Area Information, this comprises of the MCC, MNC and LAC

  Coding: according to 3G TS 24.008 [9]

  A BCD value of 'D' in any of the MCC and/or MNC digits shall be used to indicate a "wild" value for that corresponding MCC/MNC digit

  A value of '0000' in the LAC shall be used to indicate a "wild" value for the LAC

- PLMN Network Name Record Identifier

  Contents:

  Identifier of operator name to be displayed

  Coding:
  A value of '00' indicates that the name is to be taken from other sources, see 3G TS 22.101 [24]

  A value in the range '01' to 'FE' indicates the record number in EF_{PNN} that shall be displayed as the registered PLMN name

Note: The intent of this file is to provide exceptions to the other sources of a network name. Care should be taken not to introduce too many PLMN entries. An excessive number of entries could result in a longer initialisation period.

4.7 Files of USIM

This subclause contains two figures depicting the file structure of the UICC and the ADF_{USIM}. ADF_{USIM} shall be selected using the AID and information in EF_{DIR}.

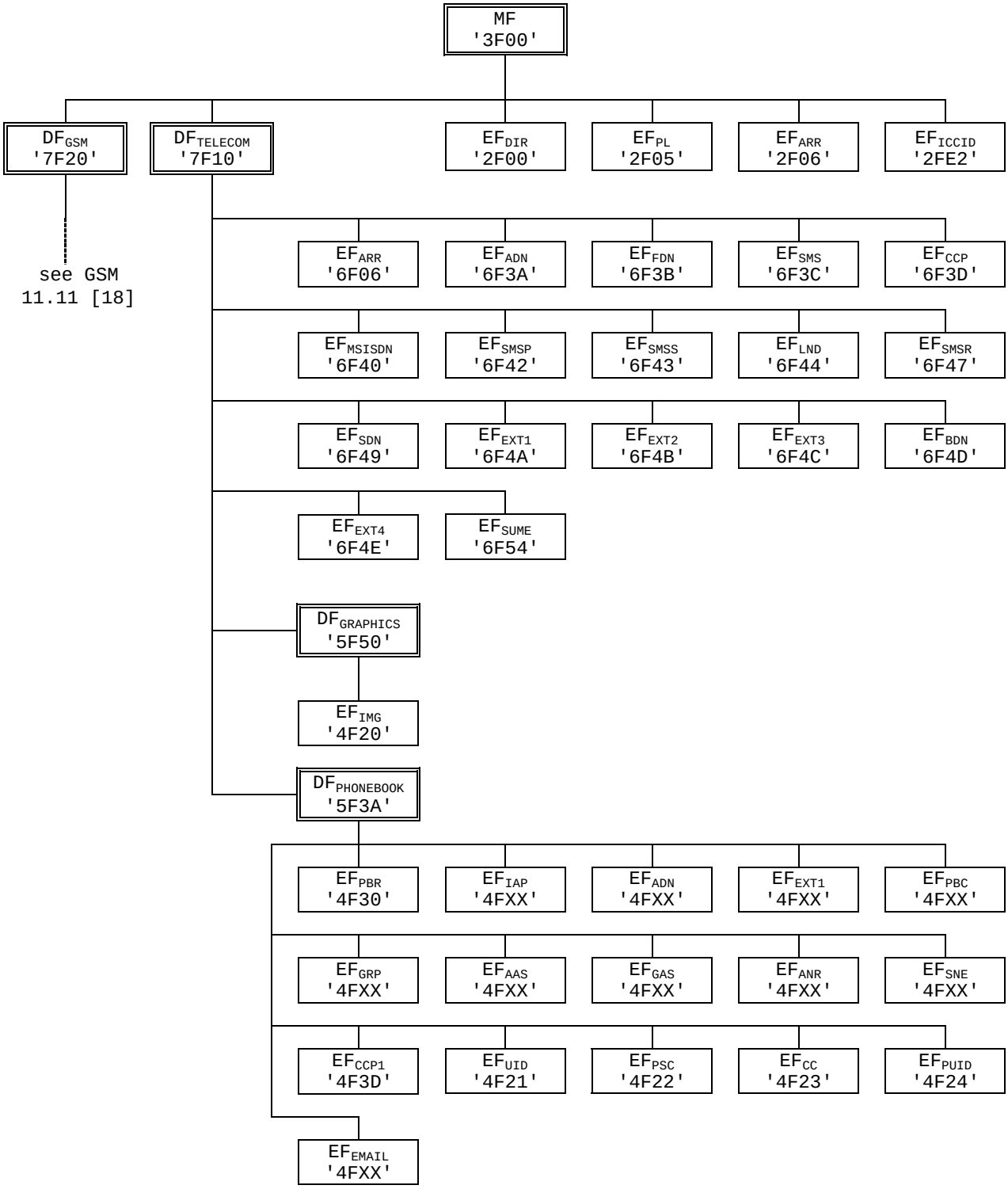


Figure 4.1: File identifiers and directory structures of UICC

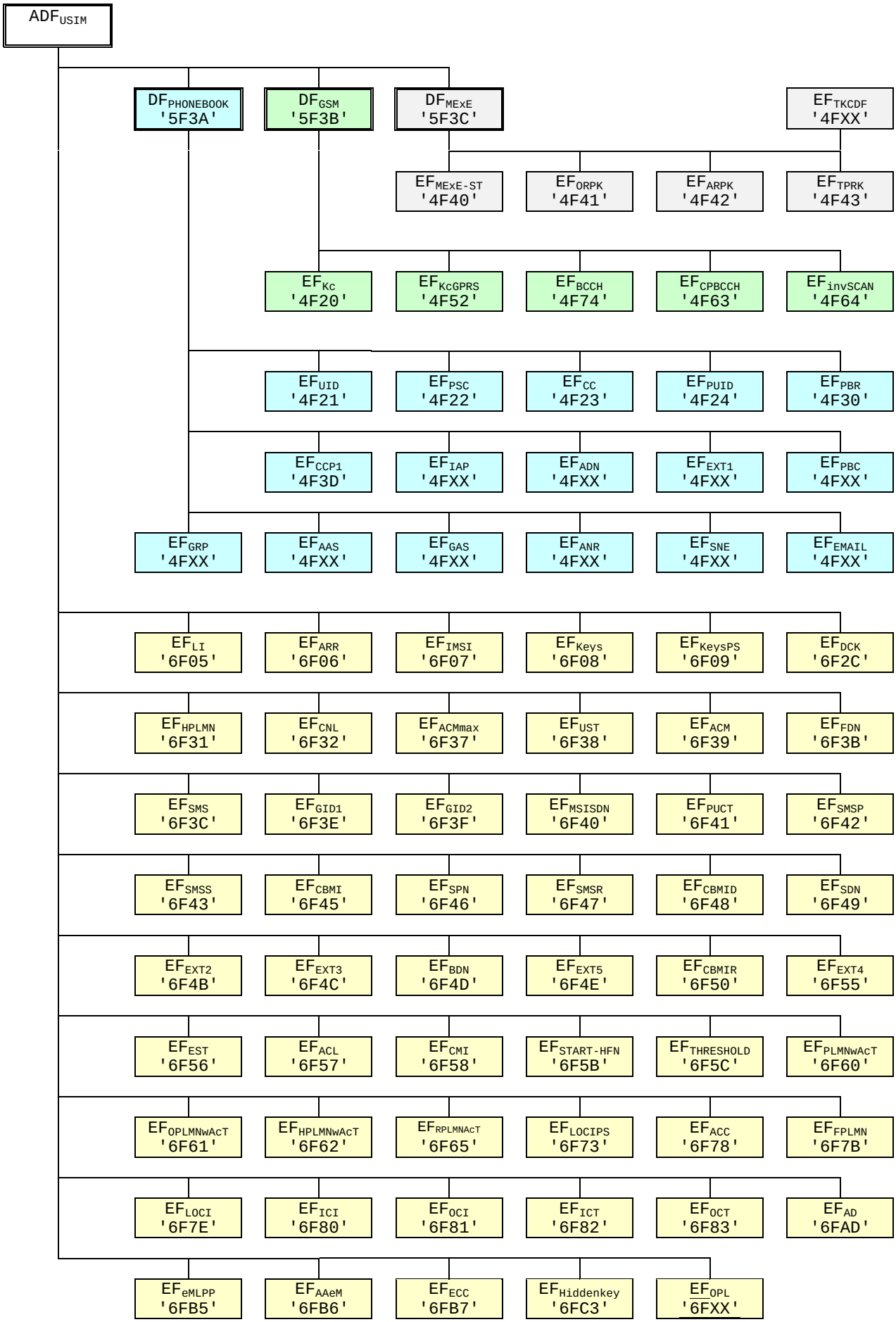

ADF USIM
DF PHONEBOOK '5F3A'
DF GSM '5F3B'
DF MExE '5F3C'
EF TKCDF '4FXX'
EF MExE-ST '4F40'
EF ORPK '4F41'
EF ARPK '4F42'
EF TPRK '4F43'
EF Kc '4F20'
EF KcGPRS '4F52'
EF BCCH '4F74'
EF CPBCCH '4F63'
EF invSCAN '4F64'
EF UID '4F21'
EF PSC '4F22'
EF CC '4F23'
EF PUID '4F24'
EF PBR '4F30'
EF CCP1 '4F3D'
EF IAP '4FXX'
EF ADN '4FXX'
EF EXT1 '4FXX'
EF PBC '4FXX'
EF GRP '4FXX'
EF AAS '4FXX'
EF GAS '4FXX'
EF ANR '4FXX'
EF SNE '4FXX'
EF EMAIL '4FXX'
EF LI '6F05'
EF ARR '6F06'
EF IMSI '6F07'
EF Keys '6F08'
EF KeysPS '6F09'
EF DCK '6F2C'
EF HPLMN '6F31'
EF CNL '6F32'
EF ACMmax '6F37'
EF UST '6F38'
EF ACM '6F39'
EF FDN '6F3B'
EF SMS '6F3C'
EF GID1 '6F3E'
EF GID2 '6F3F'
EF MSISDN '6F40'
EF PUCT '6F41'
EF SMSP '6F42'
EF SMSS '6F43'
EF CBMI '6F45'
EF SPN '6F46'
EF SMSR '6F47'
EF CBMID '6F48'
EF SDN '6F49'
EF EXT2 '6F4B'
EF EXT3 '6F4C'
EF BDN '6F4D'
EF EXT5 '6F4E'
EF CBMIR '6F50'
EF EXT4 '6F55'
EF EST '6F56'
EF ACL '6F57'
EF CMI '6F58'
EF START-HFN '6F5B'
EF THRESHOLD '6F5C'
EF PLMNwAcT '6F60'
EF OPLMNwAcT '6F61'
EF HPLMNwAcT '6F62'
EF RPLMNAcT '6F65'
EF LOCIPS '6F73'
EF ACC '6F78'
EF FPLMN '6F7B'
EF LOCI '6F7E'
EF ICI '6F80'
EF OCI '6F81'
EF ICT '6F82'
EF OCT '6F83'
EF AD '6FAD'
EF eMLPP '6FB5'
EF AAeM '6FB6'
EF ECC '6FB7'
EF Hiddenkey '6FC3'
EF OPL '6FXX'

Figure 4.2: File identifiers and directory structures of USIM

DF 5F70 is reserved for SoLSA. EF 4F30 (EF_{SAL}) and EF 4F31 (EF_{SLL}) are reserved under DF 5F70 (SoLSA).

5.3.xx Operator PLMN List

Requirement: Service n° XX "available".

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

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
'4FXX'	Unique identifier	Yes
'4F22'	Phone book synchronisation counter	Yes
'4F23'	Change counter	Yes
'4F24'	Previous unique identifier	Yes
'4F30'	Phone book reference file	Yes
'4FXX'	Capability configuration parameters 1	Yes
'4F75'	CPBCCH Information	No
'4F76	Investigation Scan	Caution
'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
'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

Continued….

File identification	Description	Change advised
'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
'6F52'	GPRS Ciphering key KcGPRS	No
'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 START	Yes
'6F60'	User controlled PLMN selector with Access Technology	No
'6F61'	Operator controlled PLMN selector with Access Technology	Caution
'6F62'	HPLMN selector with Access Technology	Caution
'6F63'	RPLMN last used Access Technology	Caution
'6F73'	Packet switched location information	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	
'6FC4'	Network Parameters	No
'6Fxx'	Operator Network List	Yes

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'
'4FXX'	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
'4FXX'	Capability configuration parameters 1	'FF…FF'
'4F63'	CPBCCH Information	'FF..FF'
'4F64'	Investigation PLMN scan	'00'
'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'
'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'

Continued....

File Identification	Description	Value
'6F4D'	Barred Dialling Numbers	'FF...FF'
'6F4E'	Extension 5	'00FF...FF'
'6F4F'	Capability configuration parameters 2	'FF...FF'
'6F50'	CBMIR	'FF...FF'
'6F52'	GPRS Ciphering key KcGPRS	'FF...FF07'
'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 START	Operator dependant
'6F60'	User controlled PLMN selector with Access Technology	'FFFFFF0000..FFFFFF0000'
'6F61'	Operator controlled PLMN selector with Access Technology	'FFFFFF0000..FFFFFF0000'
'6F62'	HPLMN selector with Access Technology	'FFFFFF0000..FFFFFF0000'
'6F65'	RPLMN last used Access Technology	'0000'
'6F73'	Packet switched location information	'FFFFFFFF FFFFFF xxxxxx 0000 FF 01' (see note 2)
'6F78'	Access control class	Operator dependant
'6F7B'	Forbidden PLMNs	'FF...FF'
'6F7E	Location information	'FFFFFFFF xxxxxx 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'
'6FC4'	Network Parameters	'FF…FF'
'6Fxx'	Operator Network List	Operator dependant

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

Annex H (normative): List of SFI Values

This annex lists SFI values assigned in this specification.

H.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
'6F60'	'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
'6F61'	'11'	Operator PLMN selector
'6F31'	'12'	HPLMN search period
'6F62'	'13'	Preferred HPLMN access technology
'6F80'	'14'	Incoming call information
'6F81'	'15'	Outgoing call information
'6F4F'	'16'	Capability configuration parameters 2
'6F06'	'17'	Access Rule Reference
'6F65'	'18'	RPLMN last used Access Technology
'6Fxx'	'YY'	Operator Network List

All other SFI values are reserved for future use.

H.2 List of SFI Values at the DF GSM-ACCESS Level

File Identification	SFI	Description
'4F20'	'01'	GSM Ciphering Key Kc
'4F52'	'02'	GPRS Ciphering Key KcGPRS

All other SFI values are reserved for future use.

3GPP T3 Meeting #18
Sophia-Antipolis, France, 1 - 2 March, 2001

Tdoc T3-010231

CR-Form-v3

CHANGE REQUEST

⌘ **31.102** **CR** **CR-075** ⌘ rev **-** ⌘ Current version: **3.4.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM [X] ME/UE [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Introduction of the voicemail, message waiting and call forward indication features from the Common PCN Handset Specification (CPHS)
Source:	⌘	T3 #18
Work item code:	⌘	UICC1-CPHS
Date:	⌘	2nd March 2001
Category:	⌘	**B**
Release:	⌘	*REL-4 (Release 4)*

Use one of the following categories:
- ***F*** *(essential correction)*
- ***A*** *(corresponds to a correction in an earlier release)*
- ***B*** *(Addition of feature),*
- ***C*** *(Functional modification of feature)*
- ***D*** *(Editorial modification)*

Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	To provide the USIM with CPHS functionality for mailbox numbers and indicator status.
Summary of change:	⌘	The following changes are proposed: Files EF_{MBDN} (Mailbox Dialling Numbers) and EF_{MBI} (Mailbox Identifier) are added to reflect the CPHS file $EF_{Mailbox}$ (Mailbox Numbers) File EF_{MWIS} (Message Waiting Indication Status) is added to reflect the CPHS file EF_{MWF} (Message Waiting Flags) File EF_{CFIS} (Call Forwarding Indication Status) is added to reflect the CPHS file EF_{CFF} (Call Forwarding Flags). File EF_{UST} is also updated to include the above files. Note - CPHS allows for support of mailboxs and indicators for 1 alternate line (effectively a subscriber profile) as defined by CPHS ALS. It is intended that CPHS ALS feature can be replaced by the 3G Multiple Subscriber Profile (MSP) feature, which allows for up to 4 subscriber profiles.
Consequences if not approved:	⌘	

Clauses affected:	⌘	2, 4.2.8, 4.2.38, 4.2.xx, 4.7, 5.3.2, 5.3.xx, Annex A, Annex E
Other specs	⌘	[ ] Other core specifications ⌘

Affected:	☐ Test specifications ☐ O&M Specifications	
Other comments: ⌘		

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

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

…

[32] ISO/IEC 7816-6 (1996): "Identification cards -- Integrated circuit(s) cards with contacts -- Part 6: Interindustry data elements".

[33] 3GPP TS 25.101: "UE Radio Transmission and Reception (FDD)"

[34] 3GPP TS 23.097: "Multiple Subscriber Profile (MSP)"

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: '04'		
File size: X bytes, X >= 1	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:	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
	Service n°39	CPBCCH Information
	Service n°40	Investigation Scan
	Service n°41	MexE
	Service n°42	Operator controlled PLMN selector with Access Technology
	Service n°43	HPLMN selector with Access Technology
	Service n°xx:	Mailbox Dialling Numbers
	Service n°yy:	Message Waiting Indication Status
	Service n°zz:	Call Forwarding Indication Status

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:

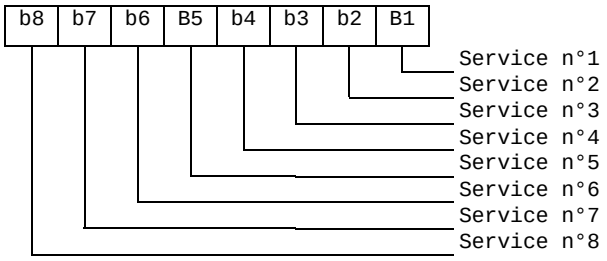
1 bit is used to code each service:

bit = 1: service available;

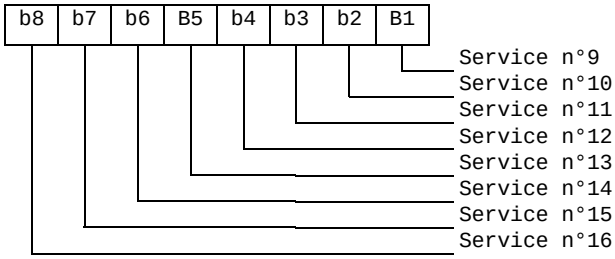
bit = 0: service not available.

- 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.

4.2.38 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 or an MBDN. It is referred by EF_{FDN}, EF_{MSISDN}, EF_{SDN}, EF_{ICI} , ~~and~~ EF_{OCI}, EF_{MBDN} and EF_{CFIS} at USIM ADF level.

Identifier: '6F4F'	Structure: linear fixed	Optional
SFI: '16'		
Record length: X bytes, X≥15	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to X	Bearer capability information element	M	X 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.
    - unused bytes are filled with 'FF'.

4.2.xx EF_{MBDN} (Mailbox Dialling Numbers)

This EF contains dialling numbers to access mailboxes associated with Voicemail, Fax, Electronic Mail and Other messages. It may also contain associated alpha-tags for each supported mailbox. Each dialling number shall be associated with a message waiting indication group type using EF_{MBI} (see 3G TS 23.038 [5] for message waiting indication group types).

This EF is mandatory if EF_{UST} indicates that the Mailbox Dialling Numbers service is available.

Identifier: '6FXX'	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 contents	M	10 bytes
X+13	Capability/Configuration2 Identifier	M	1 byte
X+14	Extension 6 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_{EXT6} and with the exception that Capability/Configuration parameters are stored in the EF_{CCP2}.

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.xx EF_{EXT6} (Extension6)

This EF contains extension data of an MBDN (see MBDN in 4.2.58).

Identifier: '6FXX'	Structure: linear fixed	Optional
Record length: 13 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	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.xx EF_{MBI} (Mailbox Identifier)

This EF contains information to associate mailbox dialling numbers in EF_{MBDN} with a message waiting indication group type and subscriber profile (as defined in 3G TS 23.097 [34]). A message waiting indication group type may either be Voicemail, Fax, Electronic Mail or Other (as defined in 3G TS 23.038 [5] for Data Coding Scheme).

This EF contains as many records as there are subscriber profiles (shall be record to subscriber profile). Each record contains references to mailbox dialling numbers in EF_{MBDN} (one reference for each message waiting indication group type).

This EF is mandatory if EF_{UST} indicates that the Mailbox Dialling Numbers service is available.

Identifier: '6FXX'	Structure: linear fixed	Optional
Record length: X bytes, X>=4	Update activity: low	

Access Conditions:

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

Bytes	Description	M/O	Length
1	Mailbox Dialling Number Identifier – Voicemail	M	1 byte
2	Mailbox Dialling Number Identifier – Fax	M	1 byte
3	Mailbox Dialling Number Identifier – Electronic Mail	M	1 byte
4	Mailbox Dialling Number Identifier – Other	M	1byte

- Mailbox Dialling Number Identifier (message waiting group type = Voicemail, Fax, Electronic Mail or Other).

Contents:
Identifies the mailbox dialling number to be associated with message waiting type.

Coding:
'00' – no mailbox dialling number associated with message waiting indication group type
'xx' – record number in EF_{MBDN} associated with message waiting indication group type

4.2.xx EF_{MWIS} (Message Waiting Indication Status)

This EF contains the status of indicators that define whether or not a Voicemail, Fax, Electronic Mail or Other message is waiting (as defined in 3G TS 23.038 [5] for message waiting indication group types). The ME uses the status after re-activation to determine whether or not to display the respective message-waiting indication on its display.

This EF contains as many records as there are subscriber profiles (shall be record to subscriber profile) as defined in 3G TS 23.097 [34] for MSP.

Identifier: '6FXX'	Structure: Linear fixed	Optional
Record length: X bytes, X >= 5	Update activity: high	

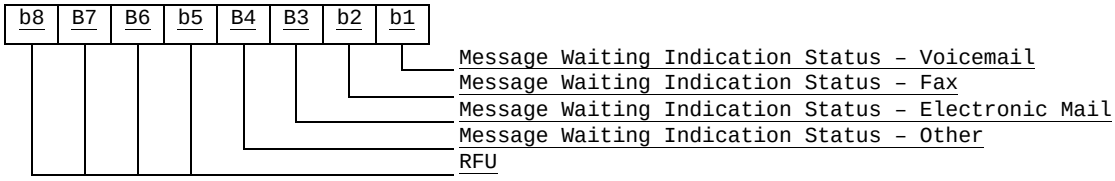
Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	Message Waiting Indicator Status	M	1 byte
2	Number of Voicemail Messages Waiting	M	1 byte
3	Number of Fax Messages Waiting	M	1 byte
4	Number of Electronic Mail Messages Waiting	M	1 byte
5	Number of Other Messages Waiting	M	1 byte

Message Waiting Indication Status
Contents:
Indicates the status of the message-waiting indication.

Coding:
The indicator status for each indicator type is 1 bit long and set as follows:
bit = 1: Set Indication Active
bit = 0: Set Indication Inactive



Number of Voicemail Messages Waiting
Contents:
Contains the number of voicemail messages waiting (see TS 23.040).
Coding:
Binary.

Number of Fax Messages Waiting
Contents:
Contains the number of fax messages waiting (see TS 23.040).
Coding:
Binary.

Number of Electronic Mail Messages Waiting

Contents:

Contains the number of electronic mail messages waiting (see TS 23.040)

Coding:

Binary.

Number of Other Messages Waiting

Contents:

Contains the number of other messages waiting (see TS 23.040).

Coding:

Binary.

4.2.xx EF_{CFIS} (Call Forwarding Indication Status)

This EF contains the status of indicators that are used to record whether call forward is active. The ME uses the status after re-activation to determine whether or not to display the respective Call Forwarding indicator on its display.

This EF contains as many records as there are subscriber profiles (shall be record to subscriber profile) as defined in 3G TS 23.097 [34] for MSP.

Identifier: '6FXX'	Structure: Linear Fixed	Optional
Record length: 16 bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1	MSP number	M	1 byte
2	CFU indicator status	M	1 byte
3	Length of BCD number	M	1 byte
4	TON and NPI	M	1 byte
5 to 14	Dialling Number	M	10 bytes
15	Capability/Configuration2 Identifier	M	1 byte
16	Extension 7 Record Identifier	M	1 byte

NOTE: For contents and coding of data items not detailed below, see the respective data items of EF_{ADN}(subclause 4.4.2.3), Capability/Configuaration2 Identifier and Extension 7 Record Identifer.

MSP number:

Contents:

The MSP number contains the Profile Identity of the subscriber profile. The Profile Identity shall be between 1and 4 as defined in 3G TS 23.097 [34] for MSP.

Coding:

Binary.

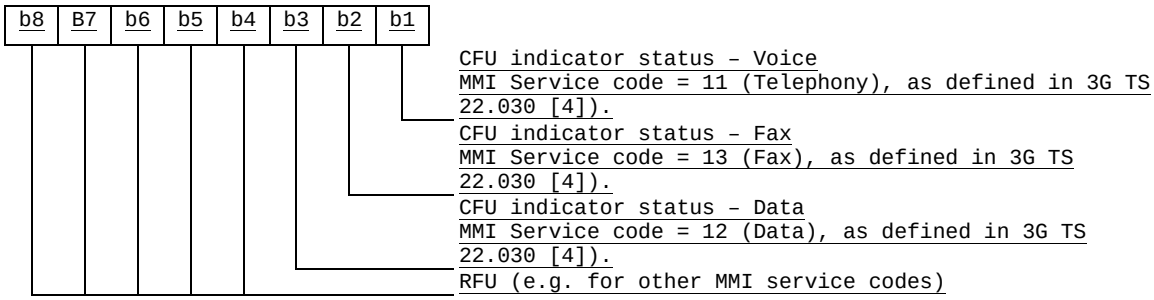
CFU indicator status:

Contents:

Indicates the status of the call forward unconditional indicator. Service code = 21 (CFU) or 002 (for CFU part of all CF), as defined in 3G TS 22.030 [4]

Coding:

The indicator status for each indicator type is 1 bit long and is set as follows:
bit = 1: Set indication active
bit = 0: Set indication inactive



4.2.xx EF_{EXT7} (Extension7)

This EF contains extension data of a CFIS (see CFIS in 4.2.62).

Identifier: '6FXX'	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 subclause 4.4.2.4 (EF_{EXT1}).

4.7 Files of USIM

This subclause contains two figures depicting the file structure of the UICC and the ADF_{USIM}. ADF_{USIM} shall be selected using the AID and information in EF_{DIR}.

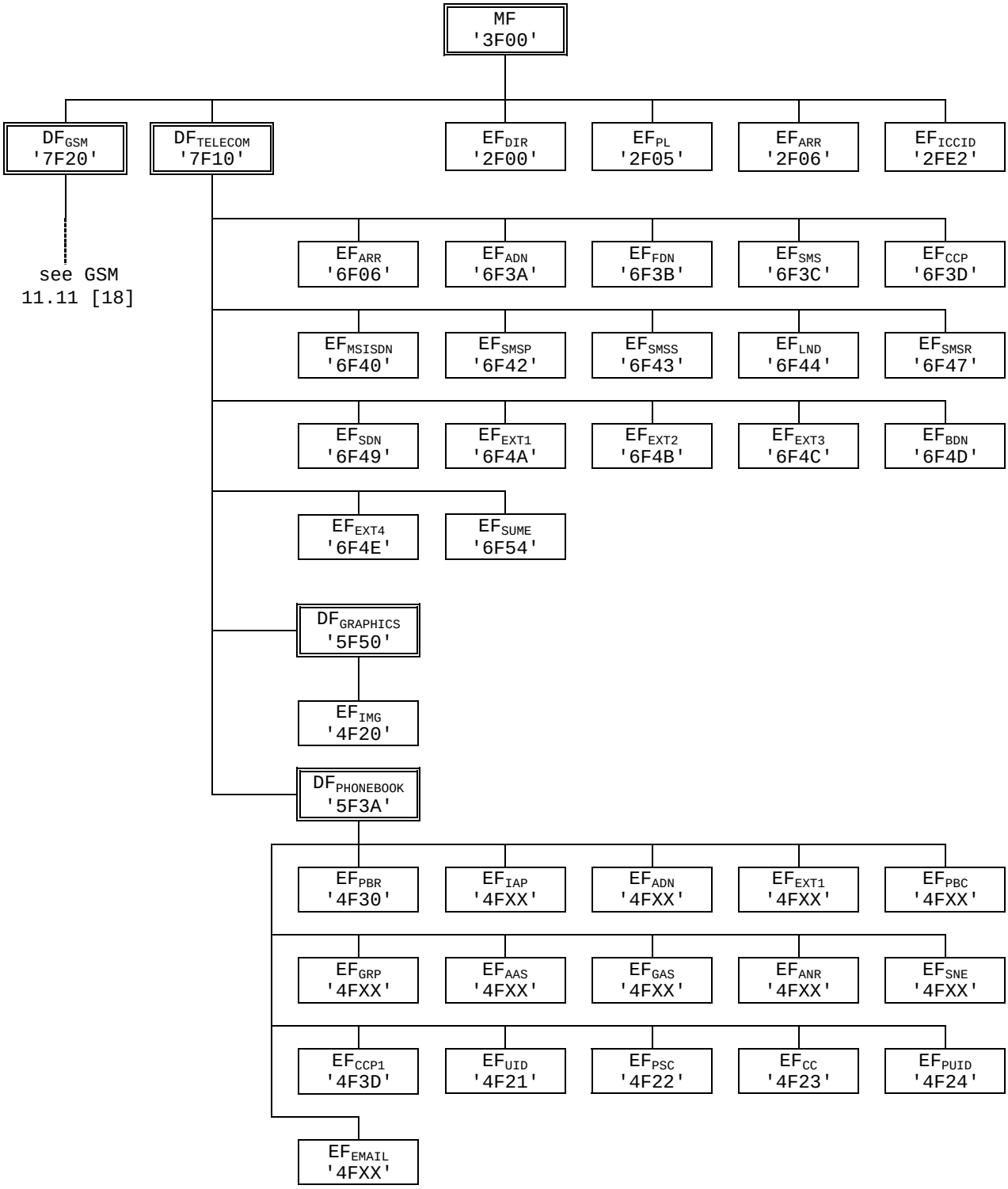
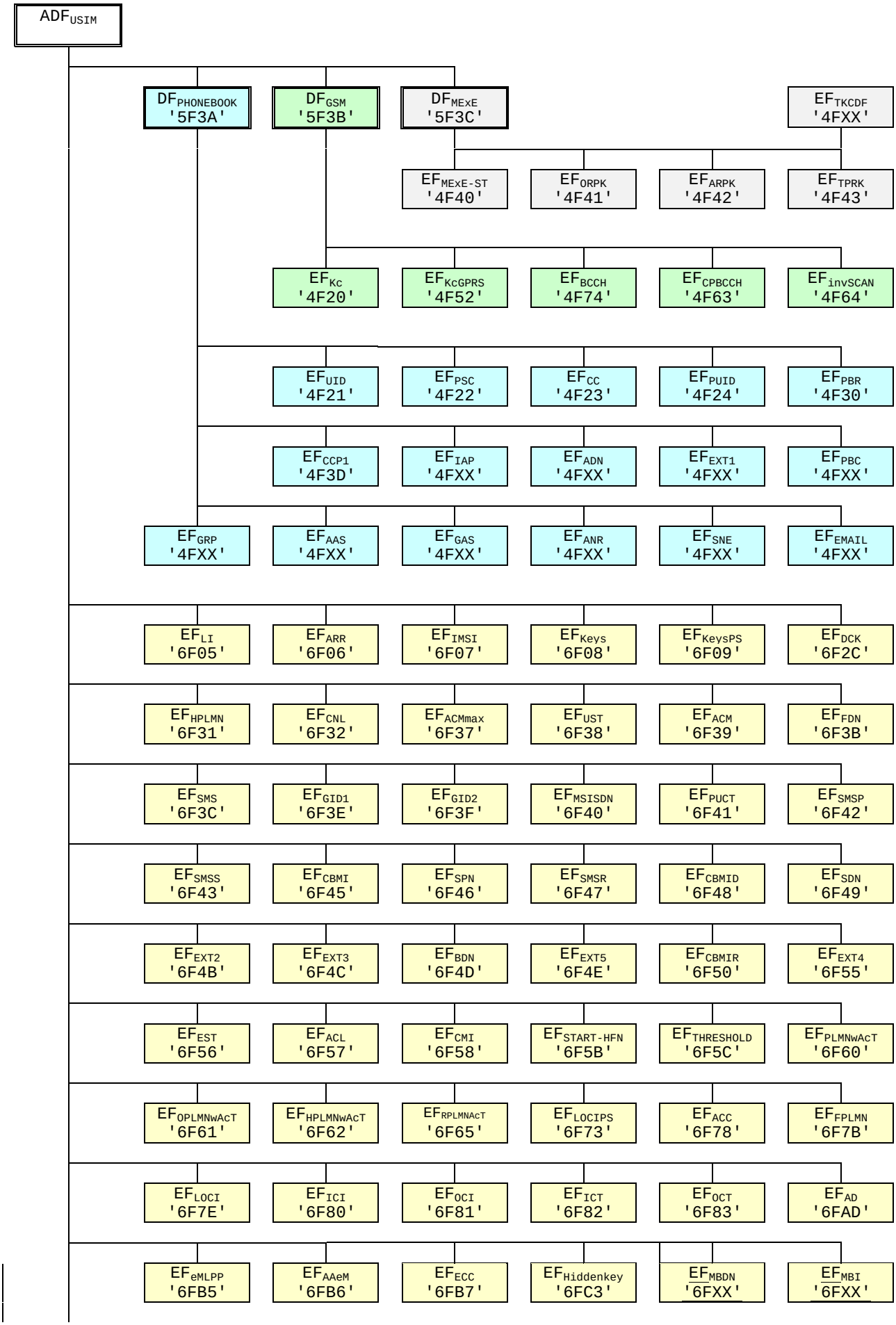


Figure 4.1: File identifiers and directory structures of UICC


ADF USIM
DF PHONEBOOK '5F3A'
DF GSM '5F3B'
DF MExE '5F3C'
EF TKCDF '4FXX'
EF MExE-ST '4F40'
EF ORPK '4F41'
EF ARPK '4F42'
EF TPRK '4F43'
EF Kc '4F20'
EF KcGPRS '4F52'
EF BCCH '4F74'
EF CPBCCH '4F63'
EF invSCAN '4F64'
EF UID '4F21'
EF PSC '4F22'
EF CC '4F23'
EF PUID '4F24'
EF PBR '4F30'
EF CCP1 '4F3D'
EF IAP '4FXX'
EF ADN '4FXX'
EF EXT1 '4FXX'
EF PBC '4FXX'
EF GRP '4FXX'
EF AAS '4FXX'
EF GAS '4FXX'
EF ANR '4FXX'
EF SNE '4FXX'
EF EMAIL '4FXX'
EF LI '6F05'
EF ARR '6F06'
EF IMSI '6F07'
EF Keys '6F08'
EF KeysPS '6F09'
EF DCK '6F2C'
EF HPLMN '6F31'
EF CNL '6F32'
EF ACMmax '6F37'
EF UST '6F38'
EF ACM '6F39'
EF FDN '6F3B'
EF SMS '6F3C'
EF GID1 '6F3E'
EF GID2 '6F3F'
EF MSISDN '6F40'
EF PUCT '6F41'
EF SMSP '6F42'
EF SMSS '6F43'
EF CBMI '6F45'
EF SPN '6F46'
EF SMSR '6F47'
EF CBMID '6F48'
EF SDN '6F49'
EF EXT2 '6F4B'
EF EXT3 '6F4C'
EF BDN '6F4D'
EF EXT5 '6F4E'
EF CBMIR '6F50'
EF EXT4 '6F55'
EF EST '6F56'
EF ACL '6F57'
EF CMI '6F58'
EF START-HFN '6F5B'
EF THRESHOLD '6F5C'
EF PLMNwAcT '6F60'
EF OPLMNwAcT '6F61'
EF HPLMNwAcT '6F62'
EF RPLMNAcT '6F65'
EF LOCIPS '6F73'
EF ACC '6F78'
EF FPLMN '6F7B'
EF LOCI '6F7E'
EF ICI '6F80'
EF OCI '6F81'
EF ICT '6F82'
EF OCT '6F83'
EF AD '6FAD'
EF eMLPP '6FB5'
EF AAeM '6FB6'
EF ECC '6FB7'
EF Hiddenkey '6FC3'
EF MBDN '6FXX'
EF MBI '6FXX'

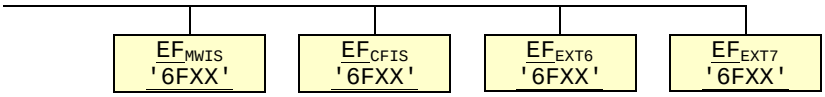


Figure 4.2: File identifiers and directory structures of USIM

DF 5F70 is reserved for SoLSA. EF 4F30 (EF_{SAL}) and EF 4F31 (EF_{SLL}) are reserved under DF 5F70 (SoLSA).

5.3.2 Dialling numbers

The following procedures may not only be applied to EF_{ADN} and its associated extension files EF_{CCP1} and EF_{EXT1} as described in the procedures below, but also to EF_{FDN}, EF_{MSISDN}, EF_{LND}, EF_{BDN}, EF_{SDN}, EF_{OCI}, EF_{ICI}, EF_{OCT}, ~~and~~ EF_{ICT} and EF_{MBDN} and their associated extension files. If these files are not allocated and activated, as denoted in the USIM service table, the current procedure shall be aborted and the appropriate EFs shall remain unchanged.

As an example, the following procedures are described as applied to ADN.

Requirement: Service n°1 "available".

- Service n°2 for FDN.
- Service n°21 for MSISDN.
- Service n°4 for SDN.
- Service n°6 for BDN.
- Service n°xx for MBDN.

Update: The ME analyses and assembles the information to be stored as follows (the byte identifiers used below correspond to those in the definition of the relevant EFs in the present document):

i) The ME identifies the Alpha-tagging, Capability/Configuration Identifier and Extension1 Record Identifier.

ii) The dialling number/SSC string shall be analysed and allocated to the bytes of the EF as follows:

- if a "+" is found, the TON identifier is set to "International";
- if 20 or less "digits" remain, they shall form the dialling number/SSC string;
- if more than 20 "digits" remain, the procedure shall be as follows:

  Requirement:

  - Service n°1 "available".
  - Service n°2 for FDN.
  - Service n°4 for SDN.
  - Service n°6 for BDN.
  - Service n°xx for MBDN.

- The ME seeks for a free record in EF_{EXT1}. If an Extension1 record is not marked as "free", the ME runs the Purge procedure. If an Extension1 record is still unavailable, the procedure is aborted.
- The first 20 "digits" are stored in the dialling number/SSC string. The value of the length of BCD number/SSC contents is set to the maximum value, which is 11. The Extension1 record identifier is coded with the associated record number in the EF_{EXT1}. The remaining digits are stored in the selected Extension1 record where the type of the record is set to "additional data". The first byte of the Extension1 record is set with the number of bytes of the remaining additional data. The number of bytes containing digit information is the sum of the length of BCD number/SSC contents of EF_{ADN} and byte 2 of all associated chained Extension1 records containing additional data.

iii) If a called party subaddress is associated to the ADN/SSC the procedure shall proceed as follows:

- Requirement:
  - Service n°1 "available".
  - Service n°2 for FDN.
  - Service n°4 for SDN.

- Service n°6 for BDN.

- Service n°xx for MBDN.

- If the length of the called party subaddress is less than or equal to 11 bytes (see 3G TS 24.008 [9] for coding):

  - The ME seeks for a free record in EF_{EXT1}. If an Extension1 record is not marked as "free", the ME runs the Purge procedure. If an Extension1 record is still unavailable, the procedure is aborted.

  - The ME stores the called party subaddress in the Extension1 record, and sets the Extension1 record type to "called party subaddress".

  - If the length of the called party subaddress is greater than 11 bytes (see 3G TS 24.008 [9] for coding):

    - The ME seeks for two free records in EF_{EXT1}. If no such two records are found, the ME runs the Purge procedure. If two Extension1 records are still unavailable, the procedure is aborted.

    - The ME stores the called party subaddress in the two Extension1 records. The identifier field in the Extension1 record containing the first part of the subaddress data is coded with the associated EF_{EXT1} record number containing the second part of the subaddress data. Both Extension1 record types are set to "called party subaddress".

Once i), ii), and iii) have been considered the ME performs the updating procedure with EF_{ADN}. If the USIM has no available empty space to store the received ADN/SSC, or if the procedure has been aborted, the ME advises the user.

For reasons of memory efficiency, the ME may analyse all Extension1 records to recognise if the additional or subaddress data to be stored is already existing in EF_{EXT1}. In this case, the ME may use the existing chain or the last part of the existing chain from more than one ADN. The ME is only allowed to store extension data in unused records. If existing records are used for multiple access, the ME shall not change any data in those records to prevent corruption of existing chains.

Erasure: The ME sends the identification of the information to be erased. The content of the identified record in EF_{ADN} is marked as "free".

Request: The ME sends the identification of the information to be read. The ME shall analyse the data of EF_{ADN} to ascertain, whether additional data is associated in EF_{EXT1} or EF_{CCP}. If necessary, then the ME performs the reading procedure on these EFs to assemble the complete ADN/SSC.

Purge: The ME shall access each EF which references EF_{EXT1} (EF_{EXT2}, EF_{EXT6}) for storage and shall identify records in these files using extension data (additional data or called party subaddress). Note that existing chains have to be followed to the end. All referred Extension1 (Extension2, Extension6) records are noted by the ME. All Extension1 (Extension2, Extension6) records not noted are then marked by the ME as "free" by setting the whole record to 'FF'.

NOTE: Dependent upon the implementation of the ME, and in particular the possibility of erasure of ADN/SSC records by Phase 1 MEs, which have no knowledge of the EF_{EXT1}, it is possible for Extension1 records to be marked as "used space" (not equal to 'FF'), although in fact they are no longer associated with an ADN/SSC record.

The following three procedures are only applicable to service n°2 (FDN).

FDN capability request. The ME shall check the state of service n°2, i.e. if FDN is "enabled" or "disabled". If FDN is enabled, the ME shall only allow outgoing calls as defined in the fixed number dialling description in TS 22.101 [24]. To ascertain the state of FDN, the ME shall check in EF_{UST} and EF_{EST} if FDN is enabled (service activated and available). In all other cases service n°2 is disabled.

FDN enabling is done by activating the FDN service in EF_{EST}.

FDN disabling is done by deactivating the FDN service in EF_{EST}.

The following three procedures are only applicable to service n°6 (BDN).

- BDN capability request. The ME shall check the state of service n°6, i.e. if BDN is "enabled" or "disabled". To ascertain the state of BDN, the ME shall check in EF_{UST} and EF_{EST} if BDN is "enabled" (service available and activated). In all other cases, the BDN service is "disabled".

- BDN enabling is done by activating the BDN service in EF_{EST}.
- BDN disabling is done by deactivating the BDN service in EF_{EST}.

5.3.xx Message Waiting Indication

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

5.3.xx Call Forwarding Indication Status

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

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
'4FXX'	Unique identifier	Yes
'4F22'	Phone book synchronisation counter	Yes
'4F23'	Change counter	Yes
'4F24'	Previous unique identifier	Yes
'4F30'	Phone book reference file	Yes
'4FXX'	Capability configuration parameters 1	Yes
'4F75'	CPBCCH Information	No
'4F76	Investigation Scan	Caution
'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
'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

Continued….

File identification	Description	Change advised
'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
'6F52'	GPRS Ciphering key KcGPRS	No
'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 START	Yes
'6F60'	User controlled PLMN selector with Access Technology	No
'6F61'	Operator controlled PLMN selector with Access Technology	Caution
'6F62'	HPLMN selector with Access Technology	Caution
'6F63'	RPLMN last used Access Technology	Caution
'6F73'	Packet switched location information	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	
'6FC4'	Network Parameters	No
'6FXX'	Mailbox Dialling Numbers	Yes
'6FXX'	Mailbox Identifier	Caution
'6FXX'	Message Waiting Indication Status	Caution
'6FXX'	Call Forwarding Indication Status	Caution
'6FXX'	Extension 6	Yes
'6FXX'	Extension 7	Yes
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'
'4FXX'	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
'4FXX'	Capability configuration parameters 1	'FF…FF'
'4F63'	CPBCCH Information	'FF..FF'
'4F64'	Investigation PLMN scan	'00'
'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'
'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'

Continued....

File Identification	Description	Value
'6F4D'	Barred Dialling Numbers	'FF...FF'
'6F4E'	Extension 5	'00FF...FF'
'6F4F'	Capability configuration parameters 2	'FF...FF'
'6F50'	CBMIR	'FF...FF'
'6F52'	GPRS Ciphering key KcGPRS	'FF...FF07'
'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 START	Operator dependant
'6F60'	User controlled PLMN selector with Access Technology	'FFFFFF0000..FFFFFF0000'
'6F61'	Operator controlled PLMN selector with Access Technology	'FFFFFF0000..FFFFFF0000'
'6F62'	HPLMN selector with Access Technology	'FFFFFF0000..FFFFFF0000'
'6F65'	RPLMN last used Access Technology	'0000'
'6F73'	Packet switched location information	'FFFFFFFF FFFFFF xxxxxx 0000 FF 01' (see note 2)
'6F78'	Access control class	Operator dependant
'6F7B'	Forbidden PLMNs	'FF...FF'
'6F7E	Location information	'FFFFFFFF xxxxxx 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'
'6FC4'	Network Parameters	'FF…FF'
'6FXX'	Mailbox Dialling Numbers	Operator dependant
'6FXX'	Mailbox Identifier	Operator dependant
'6FXX'	Message Waiting Indication Status	'00 00 00 00 00'
'6FXX'	Call Forwarding Indication Status	'xx 00 FF...FF'
'6FXX'	Extension 6	'00 FF...FF'
'6FXX'	Extension 7	'00 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: xxxxxx stands for any valid MCC and MNC, coded according to 3G TS 24.008 [9].

3GPP T3 (USIM) Meeting #18
Sophia-Antipolis, France, 1-2 March, 2001

Tdoc T3-010238
(supersedes T3-010180)

CR-Form-v3

CHANGE REQUEST

⌘ **3G TS 31.102** **CR** **076** ⌘ rev **-** ⌘ Current version: **3.4.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM [X] ME/UE [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Usage of 'FF' in the EF(PBR)
Source:	⌘	T3
Work item code:	⌘	TEI
Date:	⌘	02-03-2001
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
- ***F*** *(essential correction)*
- ***A*** *(corresponds to a correction in an earlier release)*
- ***B*** *(Addition of feature),*
- ***C*** *(Functional modification of feature)*
- ***D*** *(Editorial modification)*

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	As showed in the example in informative annex G, the 'FF' value is used as an end delimiter in the EF(PBR). This must be stated in a normative text.
Summary of change:	⌘	Addition of a indication of the use of the 'FF' value in the EF(PBR). Clarification that the tag 'FF' cannot exist.
Consequences if not approved:	⌘	inconsistency of the specification

Clauses affected:	⌘	Section 4.4.2.1, Annex D.
Other specs affected:	⌘	[ ] Other core specifications ⌘ [ ] Test specifications [ ] O&M Specifications
Other comments:	⌘	

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 kinds of EFs, no fixed 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 an 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.

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. That is, 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
'CB'	EF_{CCP1} data object

Table 4.3 (below) lists the allowed types for each file

Table 4.3: Presence of files as type

File name	Type 1	Type 2	Type 3
EF_{AAS}			X
EF_{ADN}	X		
EF_{ANR}	X	X	
EF_{EMAIL}	X	X	
EF_{EXT1}			X
EF_{GAS}			X
EF_{GRP}	X		
EF_{IAP}	X		
EF_{PBC}	X		
EF_{SNE}	X	X	
EF_{UID}	X		
EF_{CCP1}			X

Phone Book Reference file EF_{PBR} structure

Identifier: '4F30'	Structure: linear fixed	Conditional (see Note)
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

NOTE: This file is mandatory if and only if $DF_{Phonebook}$ is present.

At the end of each record, unused bytes, if any, shall be filled with 'FF'.

Annex D (informative): Tags defined in 31.102

Tag	Name of Data Element	Usage
'A0'	GSM cell information The following are encapsulated under 'A0': '80' GSM Camping Frequency data object '81' GSM Neighbour Frequency Information data object	Network Parameters (EF_{NETPAR})
'A1'	FDD cell information The following are encapsulated under 'A1': '80' FDD Intra Frequency data object '81' FDD Inter Frequency Information data object	Network Parameters (EF_{NETPAR})
'A2'	TDD cell information The following are encapsulated under 'A2': '80' TDD Intra Frequency data object '81' TDD Inter Frequency Information data object	Network Parameters (EF_{NETPAR})
'D8'	Indicator for type 1 EFs (amount of records equal to master EF)	Phone Book Reference File (EF_{PBR})
'D9'	Indicator for type 2 EFs (EFs linked via the index administration file)	Phone Book Reference File (EF_{PBR})
'DA'	Indicator for type 3 EFs (EFs addressed inside a TLV object) The following are encapsulated under 'XZ': 'C0' EF_{ADN} data object 'C1' EF_{IAP} data object 'C2' EF_{ECT1} 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 'CB' EF_{CCP1} data object	Phone Book Reference File (EF_{PBR})
'DB'	Successful 3G authentication	Response to AUTHENTICATE
'DC'	Synchronisation failure	Response to AUTHENTICATE
'DD'	Access Point Name	APN Control List (EF_{ACL})

NOTE : the value 'FF' is an invalid tag value.

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CR-Form-v3

CHANGE REQUEST

⌘ **3G TS 31.102** **CR** **077** (was numbered 076) ⌘ rev **-** ⌘ Current version: **3.4.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM [X] ME/UE [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Correction of EF(ANR)
Source:	⌘	T3
Work item code:	⌘	TEI
Date:	⌘	02-03-2001
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
- ***F*** *(essential correction)*
- ***A*** *(corresponds to a correction in an earlier release)*
- ***B*** *(Addition of feature),*
- ***C*** *(Functional modification of feature)*
- ***D*** *(Editorial modification)*

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	TON/NPI is missing for the ANR (Additional Number) file of the phonebook. It means either that the ME cannot use this number to set up a call, or that the ME needs to refer to the TON/NPI of the associated ADN entry (which puts severe limitation to the phonebook). Other missing fields are : - length of BCD number, to align ANR with ADN – reference to an extension file, in order to allow long numbers to be entered. It is also clarified that the number can be an SSC String
Summary of change:	⌘	Additions to the EF(ANR) : - length of BCD number - TON/NPI – reference to an extension record
Consequences if not approved:	⌘	The ANR file cannot be used in practice.

Clauses affected:	⌘	Section 4.4.2.9		
Other specs affected:	⌘	[ ] Other core specifications [ ] Test specifications [ ] O&M Specifications	⌘	
Other comments:	⌘			

4.4.2.9 EF_{ANR} (Additional Number)

Several phone numbers and/or Supplementary Service Control strings (SSC) 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 or Supplementary Service Control strings (SSC). 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. In addition it contains identifiers of associated network/bearer capabilities and identifiers of extension records.

Structure of EF_{ANR}

Identifier: '4FXX'	Structure: linear fixed	Optional
SFI: 'XX'		
Record length: 1~~2~~5 or 14~~7~~ 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	Length of BCD number/SSC contents	M	1 byte
3	TON and NPI	M	1 byte
~~2~~4 to 1~~1~~3	Additional number/SSC String	M	10 bytes
1~~2~~4	Capability/Configuration1 Identifier	M	1 byte
15	Extension1 Record Identifier	M	1 byte
1~~3~~6	ADN file SFI	C	1 byte
14~~7~~	ADN file Record Identifier	C	1 byte

NOTE: The fields marked C above are mandatory if and only if the file is not type 1 (as specified in EF_{PBR})

- 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.

- 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 additional number/SSC information length is greater than 11. When the additional number/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:
  - same as the length of BCD number/SSC string byte in $EF_{ADN.}$

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

  Coding:
  - same as the TON and NPI byte in $EF_{ADN.}$

- Additional number/SSC string

  Content:

  - up to 20 digits of the additional phone number and/or SSC information linked to the phone book entry.

  Coding:

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

- Capability/Configuration1 Identifier.

  Contents:

  - This byte identifies the number of a record in the EF_{CCP1} 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 number 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.

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.