Liaison Statement

From: **T3**
To: **S1**
CC: **T, T2 , N1**
Subject: **GPRS operator preferences for 3G Rel-4**

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T3 have identified a requirement for a data field within the USIM application for the setting of GPRS parameters, which is attached to this liaison statement.

 The aim of these GPRS parameters is for the operator to define settings that remain consistent irrespective of the manufacturer of the terminal. They are not intended to override the parameters that an application may define but to allow reasonable and consistent settings in the absence of an application defining its own.

The parameters are considered a rel-4 issue and may have impact on the service requirements. Therefore it would be appreciated that they be approved conditionally in T3 on S1s approval.

It may also be noted that although these parameters are specifically for the GPRS operation they could also be applied in the case of the 3G packet switched domain. Therefore T3 asks S1s guidance on whether they could also be applied in Rel-5.

CR-Form-v3

CHANGE REQUEST

⌘   **TS 31.102** CR **CR-Num** ⌘ 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: ⌘	Addition of Operators Preferences file for GPRS service usage
Source: ⌘	Vodafone
Work item code: ⌘	**Date:** ⌘ 02/03/01
Category: ⌘ B	**Release:** ⌘ *REL-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: ⌘	The addition of a GPRS configuration file that defines the default settings for GPRS service when an application does not fully specify the GPRS settings.
Summary of change: ⌘	At present there are no defined settings of key parameters for GPRS connections. Therefore this field being optional has one change in the USIM service table for the addition of the optional feature. Secondly the addition of the GPRS Operator Preferences TLV encoded transparent file, describing the parameters. Finally the addition of the procedure
Consequences if not approved: ⌘	Indeterminate behaviour of GPRS services dependant on the Terminal manufacturer.

Clauses affected: ⌘	4.2.8, 4.4, 4.7, 5.3.2x, Annex A, Annex D, Annex E
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°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	GPRS Operator Preferences

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:

b8	b7	b6	B5	b4	B3	b2	b1

Service nº1
Service nº2
Service nº3
Service nº4
Service nº5
Service nº6
Service nº7
Service nº8

Second byte:

b8	b7	b6	B5	b4	B3	b2	b1

Service nº9
Service nº10
Service nº11
Service nº12
Service nº13
Service nº14
Service nº15
Service nº16
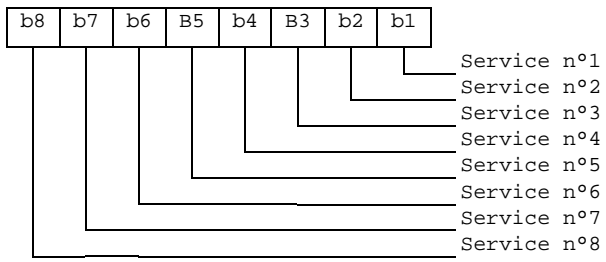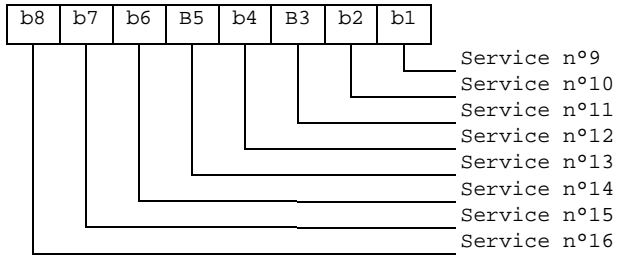
etc.

4.4.x   EF_{GPRSOperPrefs} (GPRS Operator Preferences)

This EF contains the Operators preferences for the use of the GPRS service.

Identifier: '6Fxx'		Structure: transparent	Optional
SFI :'xx'			
File size: X bytes		Update activity: low	

Access Conditions:
    READ   PIN
    UPDATE   ADM
    DEACTIVATE   ADM
    ACTIVATE ADM			

Bytes	Description	M/O	Length
1 – X	TLV object(s) containing GPRS operator preferences information	M	

- EF_{OperPrefs} Cell Information tags

Tag Value	Tag Description
'Ax'	GPRS operator preferences Tag
'80'	GPRS Class A Attachment preferences in Home PLMN tag
'81'	GPRS Class A Detachment preferences in Home PLMN tag
'82'	GPRS Class A Attachment preferences in Roaming PLMN tag
'83'	GPRS Class A Detachment preferences in Roaming PLMN tag

After the constructed 'Ax' Tag object the TLVs thereafter define preferences for the terminal settings for a particular Class of terminal. These preferences cannot be repeated i.e. the tag value cannot be repeated.

- GPRS Attachment Preferences for Class A in home PLMN TLV

    Contents
        This TLV defines the Operators Class A terminal GPRS Attachment Preferences when in the Home PLMN.

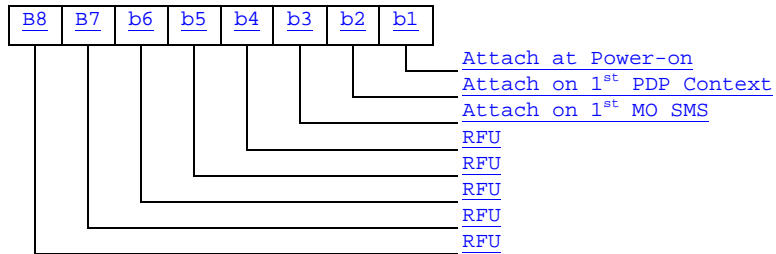   Coding

Description	M/O	Length
GPRS Class A Attachment Preferences in Home PLMN Tag	M	1
Length	M	1
Class A Attachment Terminal Preferences	M	1

- Class A Attachment Terminal Preferences

Contents

The operators GPRS Attachment Preferences in home PLMN for GPRS Class A terminal operation

Coding

B8	B7	b6	b5	b4	b3	b2	b1

```
                                    Attach at Power-on
                                    Attach on 1st PDP Context
                                    Attach on 1st MO SMS
                                    RFU
                                    RFU
                                    RFU
                                    RFU
                                    RFU
```

- bit = 1: rule selected;
- bit = 0: rule not selected.

If bits b1 to b8 are not selected then this specifically means that the ME attachment rules take preference.

- GPRS Class A terminal Detachment Preferences in home PLMN TLV

Contents

This TLV details the Operator Preferences for GPRS detachment when in the Home PLMN

Coding

Description	M/O	Length
GPRS Detachment Class A Preferences in home PLMN Tag	M	1
Length	M	1
Terminal Detachment Preferences	M	1
Detachment Timer Value	M	2

-Terminal Detachment Preferences

Contents

The operators GPRS Detachment Preferences in home PLMN for GPRS Class A terminal operation

Coding

B8	B7	b6	b5	b4	b3	b2	B1

```
                                    Detach at Power off only
                                    Timed Detach following last PDP deactivation
                                    Timed Detach following last data flow activity
                                    RFU
                                    RFU
                                    RFU
                                    RFU
                                    RFU
```

- bit = 1: activation rule selected;

- bit = 0: activation rule not selected.

If bit b1 is selected then bits b2 to b8 are ignored.

If bit b2 is selected bit b3 is ignored.

If bit b3 is selected bit b2 is ignored.

If bits b1 to b8 are not selected then this specifically means that the ME detachment rules take preference.

- Detachment Timer Value

Contents
The timer value for the Operator Preferences for timed GPRS detachment for Class A operation in home PLMN for use when bit b2 or b3 is set.

Coding
Value in minutes coded on two bytes: 0 to 65535 ('FFFF')

Value of '0000' means timer expires immediately.

Value of 'FFFF' means timer never expires.

- GPRS Class A Terminal Attachment Preferences in Roaming PLMN TLV

Contents
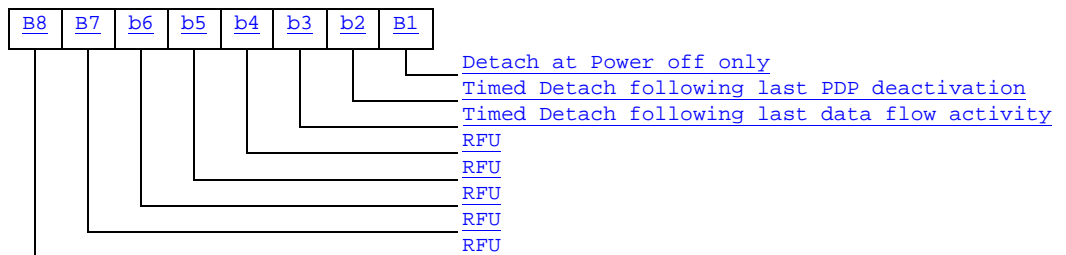This TLV details the Operator Preferences for GPRS Attachment when in the Roaming PLMN

Coding

Description	M/O	Length
GPRS Class A Attachment Preferences in Roaming PLMN Tag	M	1
Length	M	1
Class A Attachment Terminal Preferences	M	1

- Class A Attachment Terminal Preferences

Contents
The operators GPRS Attachment Preferences in Roaming PLMN for GPRS Class A terminal operation

Coding

B8	B7	b6	b5	b4	b3	b2	B1

Attach at Power-on
Attach on 1ˢᵗ PDP Context
Attach on 1ˢᵗ MO SMS
RFU
RFU
RFU
RFU
RFU

- bit = 1: rule selected;
- bit = 0: rule not selected.

If bits b1 to b8 are not selected then this specifically means that the ME attachment rules take preference.

- GPRS Class A Terminal Detachment Preferences in Roaming PLMN TLV

Contents
   This TLV details the Operator Preferences for GPRS detachment when in the Roaming PLMN
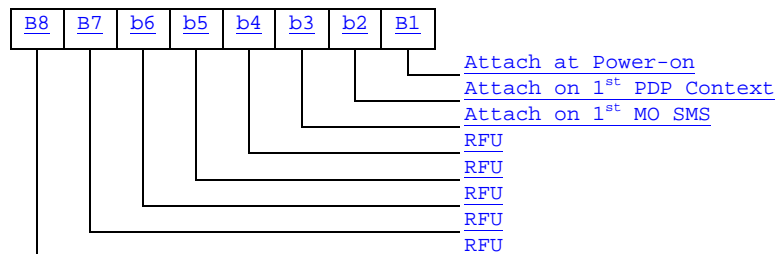
Coding

Description	M/O	Length
GPRS Detachment Class A Preferences in Roaming PLMN Tag	M	1
Length	M	1
Terminal Detachment Preferences	M	1
Detachment Timer Value	M	2

- Terminal Detachment Preferences

Contents

   The operators GPRS Detachment Preferences in home PLMN for GPRS Class A terminal operation

Coding

B8	B7	b6	B5	B4	b3	b2	B1

Detach at Power off only
Timed Detach following last PDP deactivation
Timed Detach following last data flow activity
RFU
RFU
RFU
RFU
RFU

- bit = 1: activation rule selected;
- bit = 0: activation rule not selected.

If bit b1 is selected then bits b2 to b8 are ignored.

If bit b2 is selected bit b3 is ignored.

If bit b3 is selected bit b2 is ignored.

If bits b1 to b8 are not selected then this specifically means that the ME detachment rules take preference.

- Detachment Timer Value

Contents
   The timer value for the Operator preferences for timed GPRS detachment for Class A terminal operation in Roaming PLMN for use when either bit b2 or b3 is set.

Coding
   Value in minutes coded on two bytes: 0 to 65535 ('FFFF')

   Value of '0000' means timer expires immediately.

   Value of 'FFFF' means timer never expires.

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$_{DIR}$.

```
                                        ┌──────────┐
                                        │    MF    │
                                        │  '3F00'  │
                                        └──────────┘
                                              │
     ┌───────────┬──────────────┬─────────────┼────────────┬───────────┬───────────┐
┌─────────┐ ┌──────────┐   ┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐
│ DF_GSM  │ │DF_TELECOM│   │  EF_DIR  │ │  EF_PL   │ │  EF_ARR  │ │ EF_ICCID │
│ '7F20'  │ │  '7F10'  │   │  '2F00'  │ │  '2F05'  │ │  '2F06'  │ │  '2FE2'  │
└─────────┘ └──────────┘   └──────────┘ └──────────┘ └──────────┘ └──────────┘
     ┊            │
 see GSM    ┌─────┴──────┬──────────────┬─────────────┬───────────┬───────────┐
 11.11 [18] ┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐
            │  EF_ARR  │ │  EF_ADN  │ │  EF_FDN  │ │  EF_SMS  │ │  EF_CCP  │
            │  '6F06'  │ │  '6F3A'  │ │  '6F3B'  │ │  '6F3C'  │ │  '6F3D'  │
            └──────────┘ └──────────┘ └──────────┘ └──────────┘ └──────────┘
            ┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐
            │EF_MSISDN │ │ EF_SMSP  │ │ EF_SMSS  │ │  EF_LND  │ │ EF_SMSR  │
            │  '6F40'  │ │  '6F42'  │ │  '6F43'  │ │  '6F44'  │ │  '6F47'  │
            └──────────┘ └──────────┘ └──────────┘ └──────────┘ └──────────┘
            ┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐
            │  EF_SDN  │ │ EF_EXT1  │ │ EF_EXT2  │ │ EF_EXT3  │ │  EF_BDN  │
            │  '6F49'  │ │  '6F4A'  │ │  '6F4B'  │ │  '6F4C'  │ │  '6F4D'  │
            └──────────┘ └──────────┘ └──────────┘ └──────────┘ └──────────┘
            ┌──────────┐ ┌──────────┐
            │ EF_EXT4  │ │ EF_SUME  │
            │  '6F4E'  │ │  '6F54'  │
            └──────────┘ └──────────┘
       ┌──────────────┐
       │ DF_GRAPHICS  │
       │   '5F50'     │
       └──────────────┘
            │
       ┌──────────┐
       │  EF_IMG  │
       │  '4F20'  │
       └──────────┘
       ┌──────────────┐
       │ DF_PHONEBOOK │
       │   '5F3A'     │
       └──────────────┘
            │
   ┌────────┴─────┬──────────────┬─────────────┬───────────┬───────────┐
┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐
│  EF_PBR  │ │  EF_IAP  │ │  EF_ADN  │ │ EF_EXT1  │ │  EF_PBC  │
│  '4F30'  │ │  '4FXX'  │ │  '4FXX'  │ │  '4FXX'  │ │  '4FXX'  │
└──────────┘ └──────────┘ └──────────┘ └──────────┘ └──────────┘
┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐
│  EF_GRP  │ │  EF_AAS  │ │  EF_GAS  │ │  EF_ANR  │ │  EF_SNE  │
│  '4FXX'  │ │  '4FXX'  │ │  '4FXX'  │ │  '4FXX'  │ │  '4FXX'  │
└──────────┘ └──────────┘ └──────────┘ └──────────┘ └──────────┘
┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐
│ EF_CCP1  │ │  EF_UID  │ │  EF_PSC  │ │  EF_CC   │ │ EF_PUID  │
│  '4F3D'  │ │  '4FXX'  │ │  '4F22'  │ │  '4F23'  │ │  '4F24'  │
└──────────┘ └──────────┘ └──────────┘ └──────────┘ └──────────┘
┌──────────┐
│ EF_EMAIL │
│  '4FXX'  │
└──────────┘
```
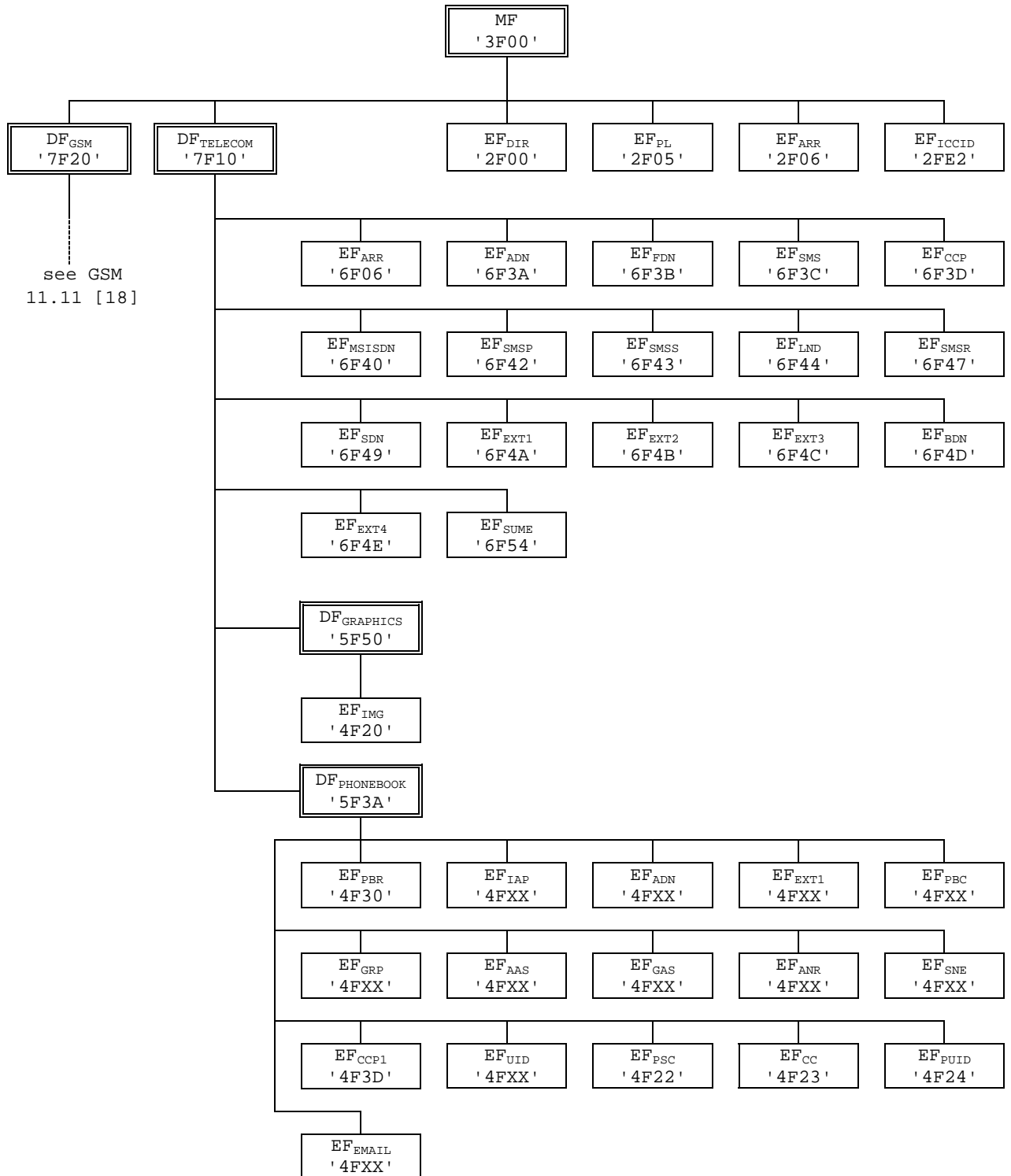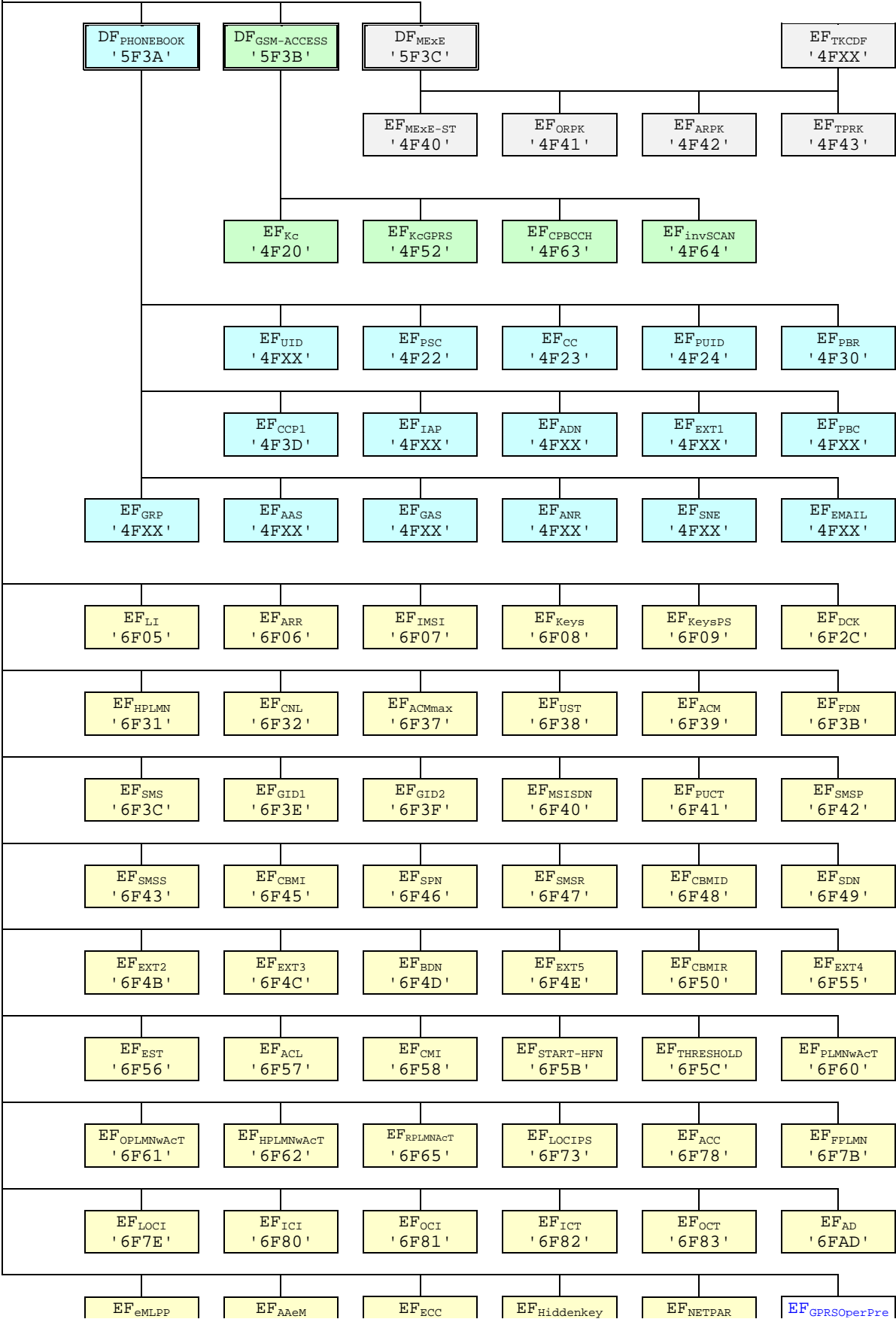
Figure 4.1: File identifiers and directory structures of UICC

```
ADF_USIM
```

DF_PHONEBOOK '5F3A'	DF_GSM-ACCESS '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_CPBCCH '4F63'	EF_invSCAN '4F64'

	EF_UID '4FXX'	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	EF_AAeM	EF_ECC	EF_Hiddenkey	EF_NETPAR	EF_GPRSOperPre

| '6FB5' | '6FB6' | '6FB7' | '6FC3' | '6FC4' | fs
'6FXX' |

5.3.2x

Requirement: Service n° XX Present

Request: The ME performs the reading procedure with EF$_{GPRSOperPref}$.

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'	GPRS Operator Preferences	Caution
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 '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$_{ACL}$)

'AX'	GPRS Operator Preferences:
	The following are encapsulated under 'AX':
	    '80' GPRS Class A Attachment Preferences in Home PLMN data object
	    '81' GPRS Class A Detachment Preferences in Home PLMN data object
	    '82' GPRS Class A Attachment Preferences in Roaming PLMN data object
	    '83' GPRS Class A Detachment Preferences in Roaming PLMN data object	

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'
'xxxx'	GPRS Operator Preferences	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].