

**3GPP TSG-T (Terminals) Meeting #12
Stockholm, Sweden, 13 - 15 June 2001**

Tdoc TP-010109

Source: T3

Title: Change Requests to TS 51.011 "SIM/ME Interface"

Document for: Approval

This document contains several change requests to TS 51.011 as agreed by T3.

T3 Doc	Spec	CR	Rv	Rel	Subject
T3-010378	51.011	001		rel-4	Addition of GPRS operator preferences
T3-010373	51.011	002		rel-4	Introduction of USIM Features in to the SIM

CR-Form-v3
CHANGE REQUEST
⌘ TS 51.011 CR 001 ⌘ rev - ⌘ Current version: 4.0.0 ⌘

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:	⌘ Addition of Operators Preferences file for GPRS service usage		
Source:	⌘ T3		
Work item code:	⌘ TEI	Date:	⌘ 10 th May 2001
Category:	⌘ B	Release:	⌘ REL-4
	Use <u>one</u> 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 <u>one</u> 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:	⌘ 10.3.7, 10.3.xx(new), 10.7, 11.5.xx(new), Annex D, Annex I, Annex X(new)		
Other specs Affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘		

10.3.7 EF_{SST} (SIM service table)

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

Identifier: '6F38'		Structure: transparent		Mandatory
File size: X bytes, X ≥ 2		Update activity: low		
Access Conditions:				
READ		CHV1		
UPDATE		ADM		
INVALIDATE		ADM		
REHABILITATE		ADM		
Bytes	Description	M/O	Length	
1	Services n°1 to n°4	M	1 byte	
2	Services n°5 to n°8	M	1 byte	
3	Services n°9 to n°12	O	1 byte	
4	Services n°13 to n°16	O	1 byte	
5	Services n°17 to n°20	O	1 byte	
6	Services n°21 to n°24	O	1 byte	
7	Services n°25 to n°28	O	1 byte	
8	Services n°29 to n°32	O	1 byte	
etc.				
X	Services (4X-3) to (4X)	O	1 byte	

-Services

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

Service n 44:	Operator controlled PLMN Selector with Access Technology
Service n 45:	HPLMN Selector with Access Technology
Service n 46:	CPBCH Information
Service n 47:	Investigation Scan
Service n°48:	Extended Capability Configuration Parameters
Service n°49:	MExE
Service n°50:	RPLMN last used Access Technology
<u>Service n°XX:</u>	<u>GPRS Operator Preferences</u>

10.3.xx EF_{GPRSOperPrefs} (GPRS Operator Preferences)

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

<u>Identifier: '6Fxx'</u>		<u>Structure: transparent</u>		<u>Optional</u>	
<u>SFI : 'xx'</u>					
<u>File size: X bytes</u>			<u>Update activity: low</u>		
<u>Access Conditions:</u>					
<u>READ</u>		<u>PIN</u>			
<u>UPDATE</u>		<u>ADM</u>			
<u>DEACTIVATE</u>		<u>ADM</u>			
<u>ACTIVATE</u>		<u>ADM</u>			
<u>Bytes</u>	<u>Description</u>			<u>M/O</u>	<u>Length</u>
<u>1 – X</u>	<u>TLV object(s) containing GPRS operator preferences information</u>			<u>M</u>	

- EF_{OperPrefs} Cell Information tags

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

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

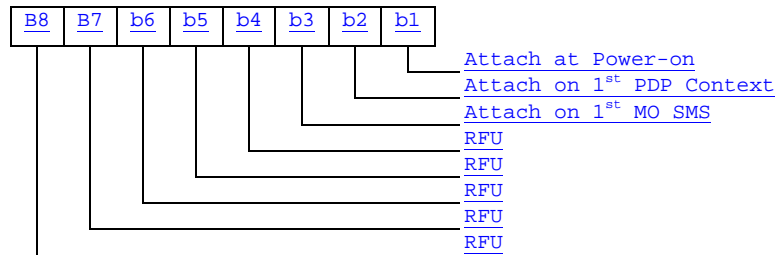
<u>Description</u>	<u>M/O</u>	<u>Length</u>
<u>GPRS Class A Attachment Preferences in Home PLMN Tag</u>	<u>M</u>	<u>1</u>
<u>Length</u>	<u>M</u>	<u>1</u>
<u>Class A Attachment Terminal Preferences</u>	<u>M</u>	<u>1</u>

- Class A Attachment Terminal Preferences

Contents

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

Coding



- 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

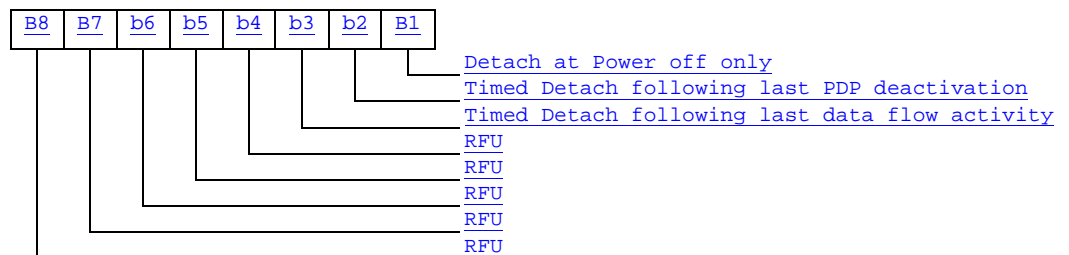
<u>Description</u>	<u>M/O</u>	<u>Length</u>
<u>GPRS Detachment Class A Preferences in home PLMN Tag</u>	<u>M</u>	<u>1</u>
<u>Length</u>	<u>M</u>	<u>1</u>
<u>Terminal Detachment Preferences</u>	<u>M</u>	<u>1</u>
<u>Detachment Timer Value</u>	<u>M</u>	<u>2</u>

-Terminal Detachment Preferences

Contents

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

Coding



- 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

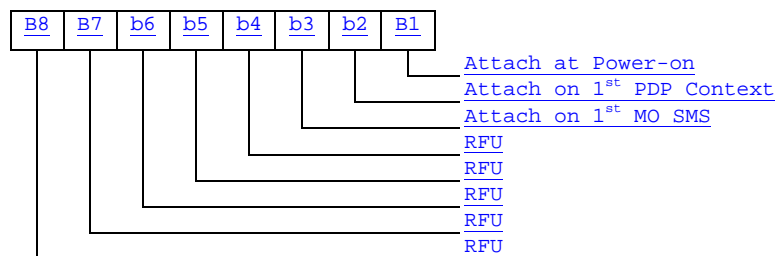
<u>Description</u>	<u>M/O</u>	<u>Length</u>
<u>GPRS Class A Attachment Preferences in Roaming PLMN Tag</u>	<u>M</u>	<u>1</u>
<u>Length</u>	<u>M</u>	<u>1</u>
<u>Class A Attachment Terminal Preferences</u>	<u>M</u>	<u>1</u>

- Class A Attachment Terminal Preferences

Contents

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

Coding



- 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

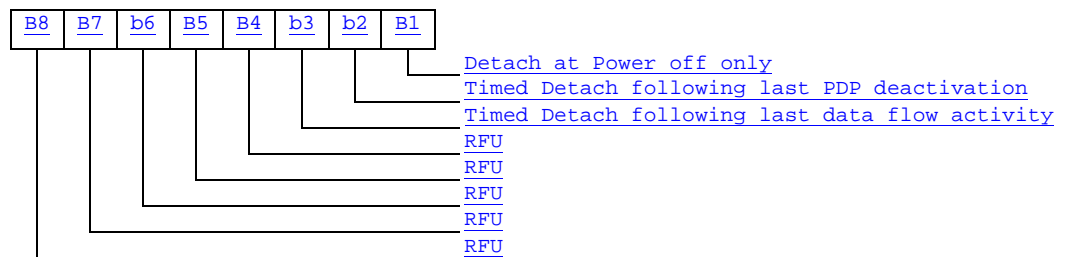
<u>Description</u>	<u>M/O</u>	<u>Length</u>
<u>GPRS Detachment Class A Preferences in Roaming PLMN Tag</u>	<u>M</u>	<u>1</u>
<u>Length</u>	<u>M</u>	<u>1</u>
<u>Terminal Detachment Preferences</u>	<u>M</u>	<u>1</u>
<u>Detachment Timer Value</u>	<u>M</u>	<u>2</u>

- Terminal Detachment Preferences

Contents

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

Coding



- 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.

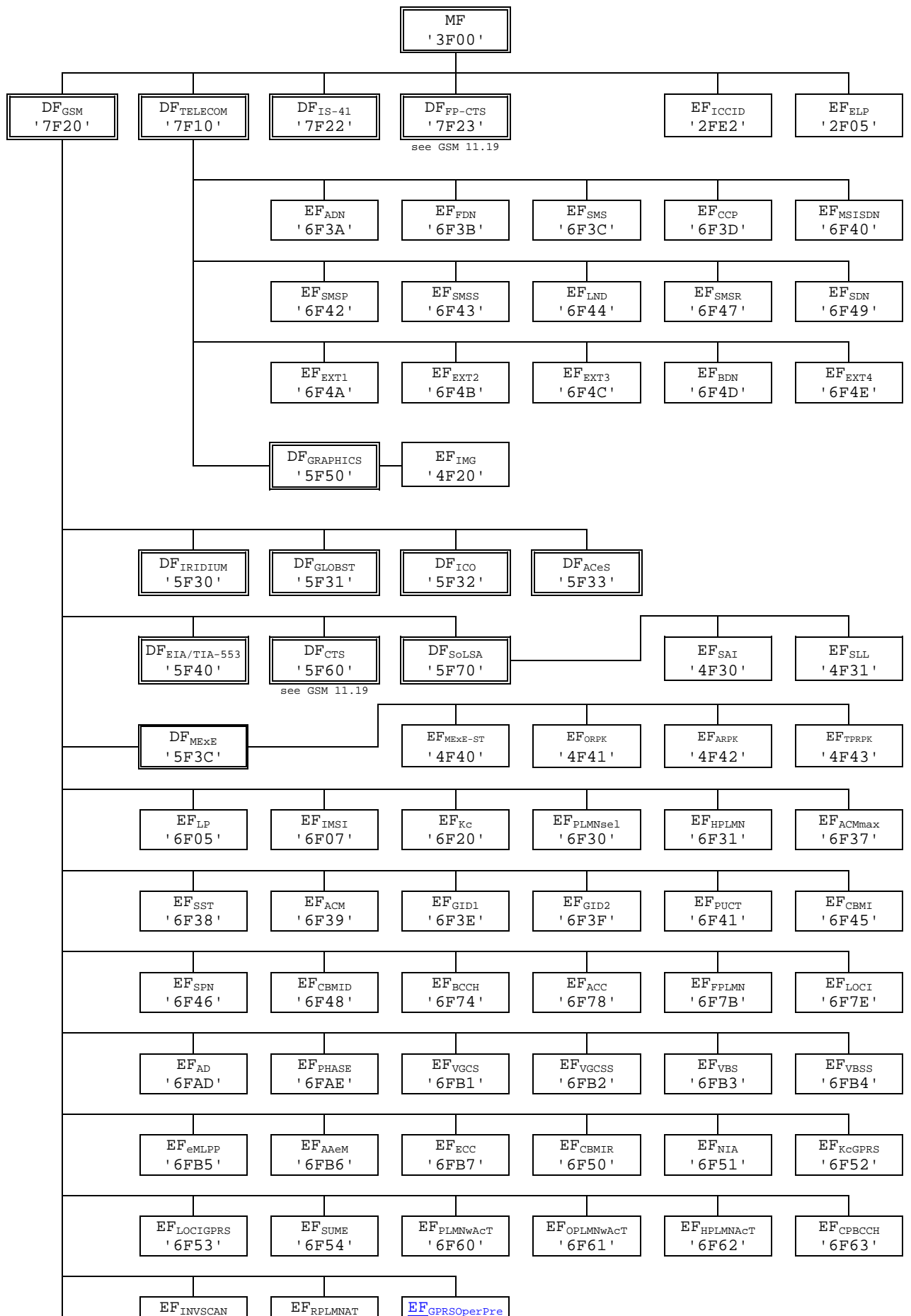
Value of 'FFFF' means timer never expires.

10.7 Files of GSM

This subclause contains a figure depicting the file structure of the SIM. DF_{GSM} shall be selected using the identifier '7F20'. If selection by this means fails, then DCS 1800 MEs shall, and optionally GSM MEs may then select DF_{GSM} with '7F21'.

NOTE 1: The selection of the GSM application using the identifier '7F21', if selection by means of the identifier '7F20' fails, is to ensure backwards compatibility with those Phase 1 SIMs which only support the DCS 1800 application using the Phase 1 directory $DF_{DCS1800}$ coded '7F21'.

NOTE 2: To ensure backwards compatibility with those Phase 1 DCS 1800 MEs which have no means to select DF_{GSM} two options have been specified. These options are given in GSM 09.91 [17].



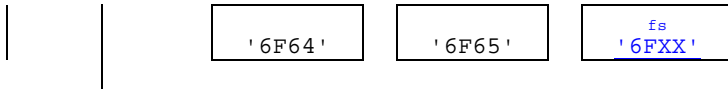


Figure 8: File identifiers and directory structures of GSM

11.5.xx

Requirement: Service n° XX Present

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

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

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

File Identification	Description	Value
'2FE2'	ICC identification	operator dependant (see 10.1.1)
'2F05'	Extended Language preference	'FF...FF'
'6F05'	Language preference	'FF'
'6F07'	IMSI	operator dependant (see 10.3.2)
'6F20'	Ciphering key Kc	'FF...FF07'
'6F30'	PLMN selector	'FF...FF'
'6F31'	HPLMN search period	'FF'
'6F37'	ACM maximum value	'000000' (see note 1)
'6F38'	SIM service table	operator dependant (see 10.3.7)
'6F39'	Accumulated call meter	'000000'
'6F3E'	Group identifier level 1	operator dependant
'6F3F'	Group identifier level 2	operator dependant
'6F41'	PUCT	'FFFFFF0000'
'6F45'	CBMI	'FF...FF'
'6F46'	Service provider name	'FF...FF'
'6F48'	CBMID	'FF...FF'
'6F49'	Service Dialling Numbers	'FF...FF'
'6F74'	BCCH information	'FF...FF'
'6F78'	Access control class	operator dependant (see 10.1.12)
'6F7B'	Forbidden PLMNs	'FF...FF'
'6F7E'	Location information	'FFFFFFF xxxxxx 0000 FF 01' (see note 2)
'6FAD'	Administrative data	operator dependant (see 10.3.15)
'6FAE'	Phase identification	see 10.3.16
'6F3A'	Abbreviated dialling numbers	'FF...FF'
'6F3B'	Fixed dialling numbers	'FF...FF'
'6F3C'	Short messages	'00FF...FF'
'6F3D'	Capability configuration parameters	'FF...FF'
'6F40'	MSISDN storage	'FF...FF'
'6F42'	SMS parameters	'FF...FF'
'6F43'	SMS status	'FF...FF'
'6F44'	Last number dialled	'FF...FF'
'6F47'	Short message status reports	'00FF...FF'
'6F4A'	Extension 1	'FF...FF'
'6F4B'	Extension 2	'FF...FF'
'6F4C'	Extension 3	'FF...FF'
'6F4D'	Barred dialling numbers	'FF...FF'
'6F4E'	Extension 4	'FF...FF'
'6F4F'	Extended capability configuration parameters	'FF...FF'
'6F51'	Network's indication of alerting	'FF...FF'
'6F52'	GPRS Ciphering key KcGPRS	'FF...FF07'
'6F53'	GPRS Location Information	'FFFFFFF FFFFFFF xxxxxx 0000 FF 01'
'6F54'	SetUpMenu Elements	operator dependant (see 10.3.34)
'6F58'	Comparison method information	'FF...FF'
'6F60'	User controlled PLMN Selector with Access Technology	'FFFFFF0000..FFFFFF0000'
'6F61'	Operator controlled PLMN Selector with Access Technology	'FFFFFF0000..FFFFFF0000'
'6F62'	HPLMN Selector with Access Technology	'FFFFFF0000..FFFFFF0000'
'6F63'	CPBCH information	'FF..FF'
'6F64'	Investigation Scan	'00'
'6F65'	RPLMN last used Access Technology	'0000'
'4F20'	Image data	'00FF...FF'
'4F30'	SoLSA Access Indicator)	'00FF...FF'
'4F31'	SoLSA LSA List	'FF...FF'
'6Fxx'	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 TS 04.08 [15].

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

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

File identification	Description	Change advised
'2F05'	Extended Language preference	Yes
'2FE2'	ICC identification	No
'4F20'	Image data	Yes
'4Fxx'	Image Instance data Files	Yes
'6F05'	Language preference	Yes
'6F07'	IMSI	Caution (note)
'6F20'	Ciphering key Kc	No
'6F2C'	De-personalization Control Keys	Caution
'6F30'	PLMN selector	Caution
'6F31'	HPLMN search period	Caution
'6F32'	Co-operative network	Caution
'6F37'	ACM maximum value	Yes
'6F38'	SIM service table	Caution
'6F39'	Accumulated call meter	Yes
'6F3A'	Abbreviated dialling numbers	Yes
'6F3B'	Fixed dialling numbers	Yes
'6F3C'	Short messages	Yes
'6F3D'	Capability configuration parameters	Yes
'6F3E'	Group identifier level 1	Yes
'6F3F'	Group identifier level 2	Yes
'6F40'	MSISDN storage	Yes
'6F41'	PUCT	Yes
'6F42'	SMS parameters	Yes
'6F43'	SMS status	Yes
'6F44'	Last number dialled	Yes
'6F45'	CBMI	Caution
'6F46'	Service provider name	Yes
'6F47'	Short message status reports	Yes
'6F48'	CBMID	Yes
'6F49'	Service Dialling Numbers	Yes
'6F4A'	Extension 1	Yes
'6F4B'	Extension 2	Yes
'6F4C'	Extension 3	Yes
'6F4D'	Barred dialling numbers	Yes
'6F4E'	Extension 4	Yes
'6F50'	CBMIR	Yes
'6F51'	Network's indication of alerting	Caution
'6F52'	GPRS Ciphering key KcGPRS	No
'6F53'	GPRS Location Information	Caution
'6F58'	Comparison method information	
'6F60'	User controlled PLMN Selector with Access Technology	see 3GPP TS 22.011
'6F61'	Operator controlled PLMN Selector with Access Technology	Caution
'6F62'	HPLMN Selector with Access Technology	Caution
'6F63'	CPBCCH information	No
'6F64'	Investigation scan	Caution
'6F65'	RPLMN last used Access Technology	No
'6F74'	BCCH information	No
'6F78'	Access control class	Caution
'6F7B'	Forbidden PLMNs	Caution
'6F7E'	Location information	No (note)
'6FAD'	Administrative data	Caution
'6FAE'	Phase identification	Caution
Continued.....		

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

Annex X (informative): Tags defined in 51.011

<u>Tag</u>	<u>Name of Data Element</u>	<u>Usage</u>
'A0'	Reserved for 3G 31.102 [52]	Reserved for 3G 31.102 [52]
'A1'	Reserved for 3G 31.102 [52]	Reserved for 3G 31.102 [52]
'A2'	Reserved for 3G 31.102 [52]	Reserved for 3G 31.102 [52]
'A8'	Reserved for 3G 31.102 [52]	Reserved for 3G 31.102 [52]
'A9'	Reserved for 3G 31.102 [52]	Reserved for 3G 31.102 [52]
'AA'	Reserved for 3G 31.102 [52]	Reserved for 3G 31.102 [52]
'DB'	Reserved for 3G 31.102 [52]	Reserved for 3G 31.102 [52]
'DC'	Reserved for 3G 31.102 [52]	Reserved for 3G 31.102 [52]
'DD'	Reserved for 3G 31.102 [52]	Reserved for 3G 31.102 [52]
'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	

CR-Form-v3

CHANGE REQUEST

⌘ **51.011** **CR 002** ⌘ rev **-** ⌘ Current version: **4.0.0** ⌘

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:	⌘ Introduction of USIM Features in to the SIM		
Source:	⌘ T3		
Work item code:	⌘ TEI	Date:	⌘ 10 th May 2001
Category:	⌘ B	Release:	⌘ REL-4 (Release 4)
Use <u>one</u> 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 <u>one</u> 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 agreed during the Palm Springs T Plenary meeting in March 2001, some USIM features are to be incorporated into the SIM. This CR includes those features.
Summary of change:	⌘ The support for the following USIM features from 31.102 have been included within this Change Request to 51.011: <ul style="list-style-type: none"> • EF-OPL • EF-PNN • EF-MBDN and EF-EXT6 • EF-MBI • EF-MWIS • EF-CFIS and EF-EXT7 Additionally, a section for Extension 5 has been added but is indicated as not used.
Consequences if not approved:	⌘ Inability to get necessary standardised features for 2G operators

Clauses affected:	⌘ 2, 3.2, 10.3.7, 10.3.aa(new), 10.3.bb(new), 10.3.cc(new), 10.3.dd(new), 10.3.ee(new), 10.3.ff(new), 10.3.gg(new), 10.3.hh(new), 10.3.ii(new), 10.5.4.2, 10.7, 11.5.1, 11.5.aa(new), 11.5.bb(new), 11.5.cc(new), 11.5.dd(new), Annex D, Annex I
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Other specs Affected:	⌘	<input type="checkbox"/>	Other core specifications	⌘	
		<input type="checkbox"/>	Test specifications		
		<input type="checkbox"/>	O&M Specifications		
Other comments:	⌘	3G 31.102 makes use of EF-EXTN5 but GSM 11.11 does not. To keep consistency between the 31.102 features that are being introduced into GSM 11.11, the use of EF-EXTN6 and EF-EXTN7 has been maintained, this results in EF-EXTN5 being marked as "not used".			

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.

- [1] not used
- [2] 3GPP TS 01.04: "Abbreviations and acronyms".
- [3] 3GPP TS 02.07: "Mobile Stations (MS) features".
- [4] 3GPP TS 02.09: " Security aspects".
- [5] 3GPP TS 22.011: " Service accessibility".
- [6] 3GPP TS 02.17: "Subscriber Identity Modules (SIM) Functional characteristics".
- [7] 3GPP TS 22.024: " Description of Charge Advice Information (CAI)".
- [8] 3GPP TS 02.30: "Man-Machine Interface (MMI) of the Mobile Station (MS)".
- [9] 3GPP TS 22.086: "Advice of charge (AoC) Supplementary Services - Stage 1".
- [10] 3GPP TS 23.003: "Numbering, addressing and identification".
- [11] 3GPP TS 03.20: "Security related network functions".
- [12] 3GPP TS 23.038: "Alphabets and language-specific information".
- [13] 3GPP TS 23.040: "Technical realization of the Short Message Service (SMS) Point-to-Point (PP)".
- [14] 3GPP TS 23.041: "Technical realization of Short Message Service Cell Broadcast (SMSCB)".
- [15] 3GPP TS 04.08: "Mobile radio interface layer 3 specification".
- [16] 3GPP TS 24.011: "Point-to-Point (PP) Short Message Service (SMS) support on mobile radio interface".
- [17] GSM 09.91: "Digital cellular telecommunications system (Phase 2); Interworking aspects of the Subscriber Identity Module - Mobile Equipment (SIM - ME) interface between Phase 1 and Phase 2".
- [18] CCITT Recommendation E.118: "The international telecommunication charge card".
- [19] CCITT Recommendation E.164: "Numbering plan for the ISDN era".
- [20] CCITT Recommendation T.50: "International Alphabet No. 5". (ISO 646: 1983, "Information processing - ISO 7-bits coded characters set for information interchange".)
- [21] ISO/IEC 7810 (1995): "Identification cards - Physical characteristics".
- [22] ISO/IEC 7811-1 (1995): "Identification cards - Recording technique - Part 1: Embossing".
- [23] ISO/IEC 7811-3 (1995): "Identification cards - Recording technique - Part 3: Location of embossed characters on ID-1 cards".
- [24] ISO/IEC 7816-1 (1998): "Identification cards - Integrated circuit(s) cards with contacts, Part 1: Physical characteristics".

- [25] ISO/IEC 7816-2 (1988): "Identification cards - Integrated circuit(s) cards with contacts, Part 2: Dimensions and locations of the contacts".
- [26] ISO/IEC 7816-3 (1997): "Identification cards - Integrated circuit(s) cards with contacts, Part 3: Electronic signals and transmission protocols".
- [27] 3GPP TS 11.14: "Specification of the SIM Application Toolkit for the Subscriber Identity Module - Mobile Equipment (SIM - ME) interface".
- [28] 3GPP TS 11.12: "Digital cellular telecommunications system (Phase 2); Specification of the 3 Volt Subscriber Identity Module - Mobile Equipment (SIM - ME) interface".
- [29] 3GPP TS 22.022: "Personalization of Mobile Equipment (ME) Mobile functionality specification".
- [30] ISO 639 (1988): "Code for the representation of names of languages".
- [31] ISO/IEC 10646-1 (1993): "Information technology - Universal Multiple-Octet Coded Character Set (UCS) - Part 1: Architecture and Basic Multilingual Plane".
- [32] 3GPP TS 23.060: "General Packet Radio Service (GPRS); Service description; Stage 2".
- [33] 3GPP TS 23.073: "Support of Localised Service Area (SoLSA); Service description; Stage 2".
- [34] 3GPP TS 11.19: "Specification of the Cordless Telephony System Subscriber Identity Module for both Fixed Part and Mobile Station".
- [35] ISO/IEC 7816-4 (1995): "Identification cards - Integrated circuit(s) cards with contacts, Part 4: Interindustry commands for interchange".
- [36] TIA/EIA-136-005: "Introduction, Identification, and Semi-Permanent Memory, November 1998".
- [37] TIA/EIA-136-123-A: "Digital Control Channel Layer 3, November 1998".
- [38] TIA/EIA-136-140-A: "Analogue Control Channel, November 1998".
- [39] TIA/EIA-136-510-A: "Authentication, Encryption of Signaling Information/User Data and Privacy, November 1998".
- [40] ANSI TIA/EIA-41: "Cellular Radio Telecommunications Intersystem Operations".
- [41] EIA/TIA-553: "Mobile Station-Land Station Compatibility Specification".
- [42] 3GPP TS 22.067: "Enhanced Multi Level Pre-emption and Priority (eMLPP) Services - Stage 1".
- [43] TR45 AHAG "Common Cryptographic Algorithms, Revision C," October 27, 1998.
- [44] ETS 300.812: "Terrestrial Trunk Radio; Specification of the Subscriber Identity Module - Mobile Equipment (SIM - ME) interface".
- [45] 3GPP TS 03.22: "Functions related to Mobile Station (MS) in idle mode and group receive mode".
- [46] 3GPP TS 05.05: "Radio transmission and reception".
- [47] 3GPP TS 24.008: "Mobile Radio Interface Layer 3 specification, Core Network Protocols".
- [48] 3GPP TS 04.18: "Mobile radio interface layer 3 specification, Radio Resource Control Protocol".
- [49] 3GPP TS 04.60: "General Packet Radio Service (GPRS); Mobile Station (MS) - Base Station System (BSS) interface; Radio Link Control/ Medium Access Control (RLC/MAC) protocol".
- [50] 3GPP TS 23.057: "Mobile Station Application Execution Environment (MExE);Functional description; Stage 2".
- [51] 3GPP TS 23.122: "Technical Specification Group Core Network; NAS Functions related to Mobile Station (MS) in idle mode".

[52] 3GPP TS 31.102: "Characteristics of the USIM application".

[53] [3GPP TS 22.101: "Technical Specification Group Services and System Aspects – Service Aspects"](#).

[54] [3GPP TS 23.097: "Multiple Subscriber Profile \(MSP\)"](#)

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply, in addition to those listed in TS 01.04 [2]:

A3	Algorithm 3, authentication algorithm; used for authenticating the subscriber
A38	A single algorithm performing the functions of A3 and A8
A5	Algorithm 5, cipher algorithm; used for enciphering/deciphering data
A8	Algorithm 8, cipher key generator; used to generate K_c
ACM	Accumulated Call Meter
ADM	Access condition to an EF which is under the control of the authority which creates this file
ADN	Abbreviated Dialling Number
AHAG	Ad-Hoc Authentication Group
A-Key	Authentication Key
ALW	ALWays
AMPS	Analogue Mobile Phone System
ANSI	American National Standards Institute
AoC	Advice of Charge
APDU	Application Protocol Data Unit
ATR	Answer To Reset
BCCH	Broadcast Control CHannel
BCD	Binary Coded Decimal
BDN	Barred Dialling Number
BTS	Base Transmitter Station
CB	Cell Broadcast
CBMI	Cell Broadcast Message Identifier
CCITT	The International Telegraph and Telephone Consultative Committee (now ITU Telecommunications Standardization sector)
CCP	Capability/Configuration Parameter
CHV	Card Holder Verification information; access condition used by the SIM for the verification of the identity of the user
CLA	CLAss
CNL	Co-operative Network List
CPBCCH	COMPACT Packet BCCH
CTS	Cordless Telephony System
DCK	De-personalization Control Keys
DCS	Digital Cellular System
DF	Dedicated File (abbreviation formerly used for Data Field)
DTMF	Dual Tone Multiple Frequency
ECC	Emergency Call Code
EF	Elementary File
EIA	Electronics Industries Alliance (North America)
eMLPP	enhanced Multi-Level Precedence and Pre-emption Service
ETSI	European Telecommunications Standards Institute
etu	elementary time unit
FDN	Fixed Dialling Number
GSM	Global System for Mobile communications
HPLMN	Home PLMN
IC	Integrated Circuit
ICC	Integrated Circuit(s) Card
ID	IDentifier
IEC	International Electrotechnical Commission
IEI	Information Element Identifier
IMSI	International Mobile Subscriber Identity
ISO	International Organization for Standardization
Kc	Cryptographic key; used by the cipher A5
Ki	Subscriber authentication key; the cryptographic key used by the authentication algorithm, A3, and cipher key generator, A8
LAI	Location Area Information; information indicating a cell or a set of cells
lgth	The (specific) length of a data unit
LND	Last Number Dialed

LSA	Localised Service Area
LSA ID	Localised Service Area Identity
LSB	Least Significant Bit
MCC	Mobile Country Code
ME	Mobile Equipment
MF	Master File
MMI	Man Machine Interface
MNC	Mobile Network Code
MS	Mobile Station
MSB	Most Significant Bit
MSISDN	Mobile Station international ISDN number
NAM	Numeric Assignment Module
NET	NETwork
NEV	NEVer
NPI	Numbering Plan Identifier
OFM	Operational Feature Monitor
OPLMN	Operator Controlled PLMN (Selector List)
OTA	Over The Air
PDC	Personal Digital Communications
PIN/PIN2	Personal Identification Number / Personal Identification Number 2 (obsolete terms for CHV1 and CHV2, respectively)
PLMN	Public Land Mobile Network
PPS	Protocol and Parameter Select (response to the ATR)
PUK/PUK2	PIN Unblocking Key / PIN2 Unblocking Key (obsolete terms for UNBLOCK CHV1 and UNBLOCK CHV2, respectively)
RAND	A RANDom challenge issued by the network
RFU	Reserved for Future Use
SDN	Service Dialling Number
SID	System IDentity
SIM	Subscriber Identity Module
SMS	Short Message Service
SoLSA	Support of Localised Service Area
SRES	Signed RESponse calculated by a SIM
SSC	Supplementary Service Control string
SW1/SW2	Status Word 1 / Status Word 2
TETRA	TErrestrial Trunk RADio
TIA	Telecommunications Industries Association (North America)
TMSI	Temporary Mobile Subscriber Identity
TON	Type Of Number
TP	Transfer layer Protocol
TPDU	Transfer Protocol Data Unit
TS	Technical Specification
UNBLOCK CHV1/2	value to unblock CHV1/CHV2
VBS	Voice Broadcast Service
VGCS	Voice Group Call Service
VPLMN	Visited PLMN

10.3.7 EF_{SST} (SIM service table)

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

Identifier: '6F38'		Structure: transparent		Mandatory	
File size: X bytes, X ≥ 2			Update activity: low		
Access Conditions:					
READ		CHV1			
UPDATE		ADM			
INVALIDATE		ADM			
REHABILITATE		ADM			
Bytes	Description	M/O	Length		
1	Services n°1 to n°4	M	1 byte		
2	Services n°5 to n°8	M	1 byte		
3	Services n°9 to n°12	O	1 byte		
4	Services n°13 to n°16	O	1 byte		
5	Services n°17 to n°20	O	1 byte		
6	Services n°21 to n°24	O	1 byte		
7	Services n°25 to n°28	O	1 byte		
8	Services n°29 to n°32	O	1 byte		
etc.					
X	Services (4X-3) to (4X)	O	1 byte		

-Services

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

Service n 45	HPLMN Selector with Access Technology
Service n 46:	CPBCCCH Information
Service n 47:	Investigation Scan
Service n°48:	Extended Capability Configuration Parameters
Service n°49:	MExE
Service n°50	RPLMN last used Access Technology
Service n°aa	PLMN Network Name
Service n°bb	Operator PLMN List
Service n°cc:	Mailbox Dialling Numbers
Service n°dd:	Message Waiting Indication Status
Service n°ee:	Call Forwarding Indication Status

10.3.aa 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 [47].

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
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 [47]:

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'.

10.3.bb 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 [47].

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

<u>Identifier: '6Fxx'</u>		<u>Structure: linear fixed</u>		<u>Optional</u>	
<u>Record length: X bytes, X >= 6</u>			<u>Update activity: low</u>		
<u>Access Conditions:</u>					
<u>READ</u>		<u>ALWAYS</u>			
<u>UPDATE</u>		<u>ADM</u>			
<u>DEACTIVATE</u>		<u>ADM</u>			
<u>ACTIVATE</u>		<u>ADM</u>			
<u>Bytes</u>	<u>Description</u>			<u>M/O</u>	<u>Length</u>
<u>1 to 5</u>	<u>Location Area Identity</u>			<u>M</u>	<u>5 bytes</u>
<u>6</u>	<u>PLMN Network Name Record Identifier</u>			<u>M</u>	<u>1 byte</u>

- Location Area Identity

Contents:

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

Coding: according to 3G TS 24.008 [47]

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 [53]

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.

10.3.cc 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 [12] for message waiting indication group types).

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

<u>Identifier: '6Fxx'</u>		<u>Structure: linear fixed</u>		<u>Optional</u>	
<u>Record length: X+14 bytes</u>			<u>Update activity: low</u>		
<u>Access Conditions:</u>					
<u>READ</u>		<u>PIN</u>			
<u>UPDATE</u>		<u>PIN/ADM</u> (fixed during administrative management)			
<u>DEACTIVATE</u>		<u>ADM</u>			
<u>ACTIVATE</u>		<u>ADM</u>			
<u>Bytes</u>	<u>Description</u>	<u>M/O</u>	<u>Length</u>		
<u>1 to X</u>	<u>Alpha Identifier</u>	<u>O</u>	<u>X bytes</u>		
<u>X+1</u>	<u>Length of BCD number/SSC contents</u>	<u>M</u>	<u>1 byte</u>		
<u>X+2</u>	<u>TON and NPI</u>	<u>M</u>	<u>1 byte</u>		
<u>X+3 to X+12</u>	<u>Dialling Number/SSC contents</u>	<u>M</u>	<u>10 bytes</u>		
<u>X+13</u>	<u>Extended Capability Configuration Parameters</u>	<u>M</u>	<u>1 byte</u>		
<u>X+14</u>	<u>Extension 6 Record Identifier</u>	<u>M</u>	<u>1 byte</u>		

For contents and coding of all data items see the respective data items of the EF_{ADN} (subclause 10.5.1), 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_{ECCP}

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

10.3.dd 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 [54]). A message waiting indication group type may either be Voicemail, Fax, Electronic Mail or Other (as defined in 3G TS 23.038 [12] 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_{SST} indicates that the Mailbox Dialling Numbers service is available.

<u>Identifier: '6Fxx'</u>		<u>Structure: linear fixed</u>		<u>Optional</u>	
<u>Record length: X bytes, X>=4</u>			<u>Update activity: low</u>		
<u>Access Conditions:</u>					
<u>READ</u>		<u>PIN</u>			
<u>UPDATE</u>		<u>PIN/ADM</u> (fixed during administrative management)			
<u>DEACTIVATE</u>		<u>ADM</u>			
<u>ACTIVATE</u>		<u>ADM</u>			
<u>Bytes</u>	<u>Description</u>	<u>M/O</u>	<u>Length</u>		
<u>1</u>	<u>Mailbox Dialling Number Identifier – Voicemail</u>	<u>M</u>	<u>1 byte</u>		
<u>2</u>	<u>Mailbox Dialling Number Identifier – Fax</u>	<u>M</u>	<u>1 byte</u>		
<u>3</u>	<u>Mailbox Dialling Number Identifier – Electronic Mail</u>	<u>M</u>	<u>1 byte</u>		
<u>4</u>	<u>Mailbox Dialling Number Identifier – Other</u>	<u>M</u>	<u>1byte</u>		

- 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

10.3.ee 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 [12] 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 [54] for MSP.

<u>Identifier: '6Fxx'</u>		<u>Structure: Linear fixed</u>		<u>Optional</u>	
<u>Record length: X bytes, X >= 5</u>			<u>Update activity: high</u>		
<u>Access Conditions:</u>					
<u>READ</u>		<u>PIN</u>			
<u>UPDATE</u>		<u>PIN</u>			
<u>DEACTIVATE</u>		<u>ADM</u>			
<u>ACTIVATE</u>		<u>ADM</u>			
<u>Bytes</u>	<u>Description</u>			<u>M/O</u>	<u>Length</u>
<u>1</u>	<u>Message Waiting Indicator Status</u>			<u>M</u>	<u>1 byte</u>
<u>2</u>	<u>Number of Voicemail Messages Waiting</u>			<u>M</u>	<u>1 byte</u>
<u>3</u>	<u>Number of Fax Messages Waiting</u>			<u>M</u>	<u>1 byte</u>
<u>4</u>	<u>Number of Electronic Mail Messages Waiting</u>			<u>M</u>	<u>1 byte</u>
<u>5</u>	<u>Number of Other Messages Waiting</u>			<u>M</u>	<u>1 byte</u>

Message Waiting Indication Status

Contents:

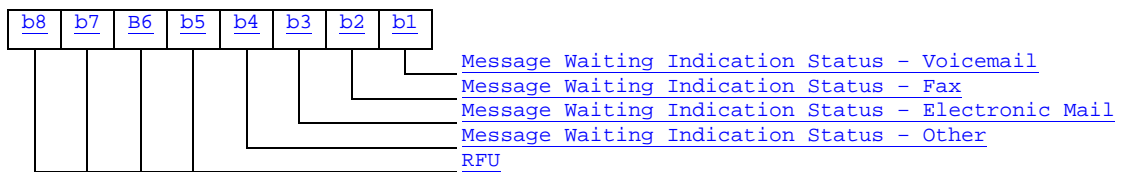
Indicates the status of the message-waiting indication.

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 3G TS 23.040 [13]).

Coding:

Binary.

Number of Fax Messages Waiting

Contents:

Contains the number of fax messages waiting (see 3G TS 23.040 [13]).

Coding:

Binary.

Number of Electronic Mail Messages Waiting

Contents:

Contains the number of electronic mail messages waiting (see 3G TS 23.040 [13]).

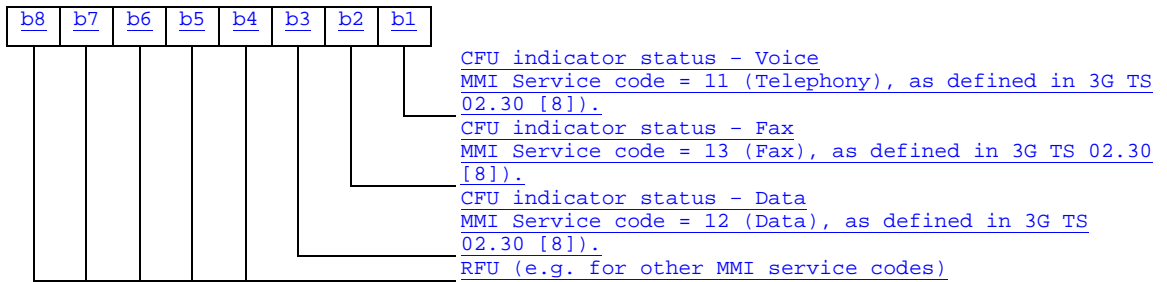
Coding:

Binary.

Number of Other Messages WaitingContents:Contains the number of other messages waiting (see 3G TS 23.040 [13]).Coding:Binary.10.3.ff 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 [54] for MSP.

<u>Identifier: '6Fxx'</u>		<u>Structure: Linear Fixed</u>		<u>Optional</u>	
<u>Record length: 16 bytes</u>			<u>Update activity: low</u>		
<u>Access Conditions:</u>					
<u>READ</u>		<u>PIN</u>			
<u>UPDATE</u>		<u>PIN</u>			
<u>DEACTIVATE</u>		<u>ADM</u>			
<u>ACTIVATE</u>		<u>ADM</u>			
<u>Bytes</u>	<u>Description</u>	<u>M/O</u>	<u>Length</u>		
<u>1</u>	<u>MSP number</u>	<u>M</u>	<u>1 byte</u>		
<u>2</u>	<u>CFU indicator status</u>	<u>M</u>	<u>1 byte</u>		
<u>3</u>	<u>Length of BCD number</u>	<u>M</u>	<u>1 byte</u>		
<u>4</u>	<u>TON and NPI</u>	<u>M</u>	<u>1 byte</u>		
<u>5 to 14</u>	<u>Dialling Number</u>	<u>M</u>	<u>10 bytes</u>		
<u>15</u>	<u>Extended Capability Configuration Parameters</u>	<u>M</u>	<u>1 byte</u>		
<u>16</u>	<u>Extension 7 Record Identifier</u>	<u>M</u>	<u>1 byte</u>		

NOTE: For contents and coding of data items not detailed below, see the respective data items of EF_{ADN} (subclause 10.5.1), with the exception that Capability/Configuration parameters are stored in the EF_{ECCP} and Extension 7 Record Identifier is used.MSP number:Contents:The MSP number contains the Profile Identity of the subscriber profile. The Profile Identity shall be between 1 and 4 as defined in 3G TS 23.097 [54] 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 02.30 [8]Coding:The indicator status for each indicator type is 1 bit long and is set as follows:bit = 1: Set indication activebit = 0: Set indication inactive



10.3.gg EF_{EXT5} (Extension5)

This EF is not used

10.3.hh EF_{EXT6} (Extension6)

This EF contains extension data of an MBDN (see MBDN in 10.3.cc).

<u>Identifier: '6Fxx'</u>	<u>Structure: linear fixed</u>	<u>Optional</u>	
<u>Record length: 13 bytes</u>	<u>Update activity: low</u>		
<u>Access Conditions:</u>			
<u>READ</u>	<u>PIN</u>		
<u>UPDATE</u>	<u>PIN/ADM</u>		
<u>(fixed during administrative management)</u>			
<u>DEACTIVATE</u>	<u>ADM</u>		
<u>ACTIVATE</u>	<u>ADM</u>		
<u>Bytes</u>	<u>Description</u>	<u>M/O</u>	<u>Length</u>
<u>1</u>	<u>Record type</u>	<u>M</u>	<u>1 byte</u>
<u>2 to 12</u>	<u>Extension data</u>	<u>M</u>	<u>11 bytes</u>
<u>13</u>	<u>Identifier</u>	<u>M</u>	<u>1 byte</u>

For contents and coding, see subclause 10.5.10 (EF_{EXT1}).

10.3.ii EF_{EXT7} (Extension7)

This EF contains extension data of a CFIS (Call Forwarding Indication Status - see 10.3.ff).

<u>Identifier: '6Fxx'</u>	<u>Structure: linear fixed</u>	<u>Optional</u>	
<u>Record length: 13 bytes</u>	<u>Update activity: low</u>		
<u>Access Conditions:</u>			
<u>READ</u>	<u>PIN</u>		
<u>UPDATE</u>	<u>PIN</u>		
<u>DEACTIVATE</u>	<u>ADM</u>		
<u>ACTIVATE</u>	<u>ADM</u>		
<u>Bytes</u>	<u>Description</u>	<u>M/O</u>	<u>Length</u>
<u>1</u>	<u>Record type</u>	<u>M</u>	<u>1 byte</u>
<u>2 to 12</u>	<u>Extension data</u>	<u>M</u>	<u>11 bytes</u>
<u>13</u>	<u>Identifier</u>	<u>M</u>	<u>1 byte</u>

For contents and coding see subclause 10.5.10 (EF_{EXT1}).

10.5.4.2 EF_{ECCP} (Extended Capability Configuration Parameters)

This EF contains parameters of required network and bearer capabilities and ME configurations associated with a call established using an abbreviated dialling number, a fixed dialling number, an MSISDN, a last number dialled, a service dialling number, ~~or~~ a barred dialling number, [a mailbox dialling number or a call forwarding indication status number](#).

The number of records of the EF_{ECCP} shall be equal to the number of records of the EF_{CCP}. Each record of the EF_{CCP} shall have a corresponding record in the EF_{ECCP} with the same record number.

If an ME has to update a record, then the ME shall update each record of both files, EF_{CCP} with 10 bytes and EF_{ECCP} with X bytes ($X \geq 15$).

If an ME has to read a record, then the ME shall check the consistency between the record of the EF_{ECCP} and the corresponding record of the EF_{CCP} and update the record of the EF_{ECCP} with the value of the corresponding record of the EF_{CCP}.

Identifier: '6F4F'		Structure: linear fixed		Optional	
Record length: X ($X \geq 15$)			Update activity: low		
Access Conditions:					
READ		CHV1			
UPDATE		CHV1			
INVALIDATE		ADM			
REHABILITATE		ADM			
Bytes	Description		M/O	Length	
1 to X	Bearer capability information element		M	X bytes	

- Bearer capability information element

Contents and Coding:

see TS 24.008 [47]. The Information Element Identity (IEI) shall be excluded, i.e. the first byte of the EF_{ECCP} record shall be Length of the bearer capability contents.

Unused bytes are filled with 'FF'.

10.7 Files of GSM

This subclause contains a figure depicting the file structure of the SIM. DF_{GSM} shall be selected using the identifier '7F20'. If selection by this means fails, then DCS 1800 MEs shall, and optionally GSM MEs may then select DF_{GSM} with '7F21'.

NOTE 1: The selection of the GSM application using the identifier '7F21', if selection by means of the identifier '7F20' fails, is to ensure backwards compatibility with those Phase 1 SIMs which only support the DCS 1800 application using the Phase 1 directory $DF_{DCS1800}$ coded '7F21'.

NOTE 2: To ensure backwards compatibility with those Phase 1 DCS 1800 MEs which have no means to select DF_{GSM} two options have been specified. These options are given in GSM 09.91 [17].

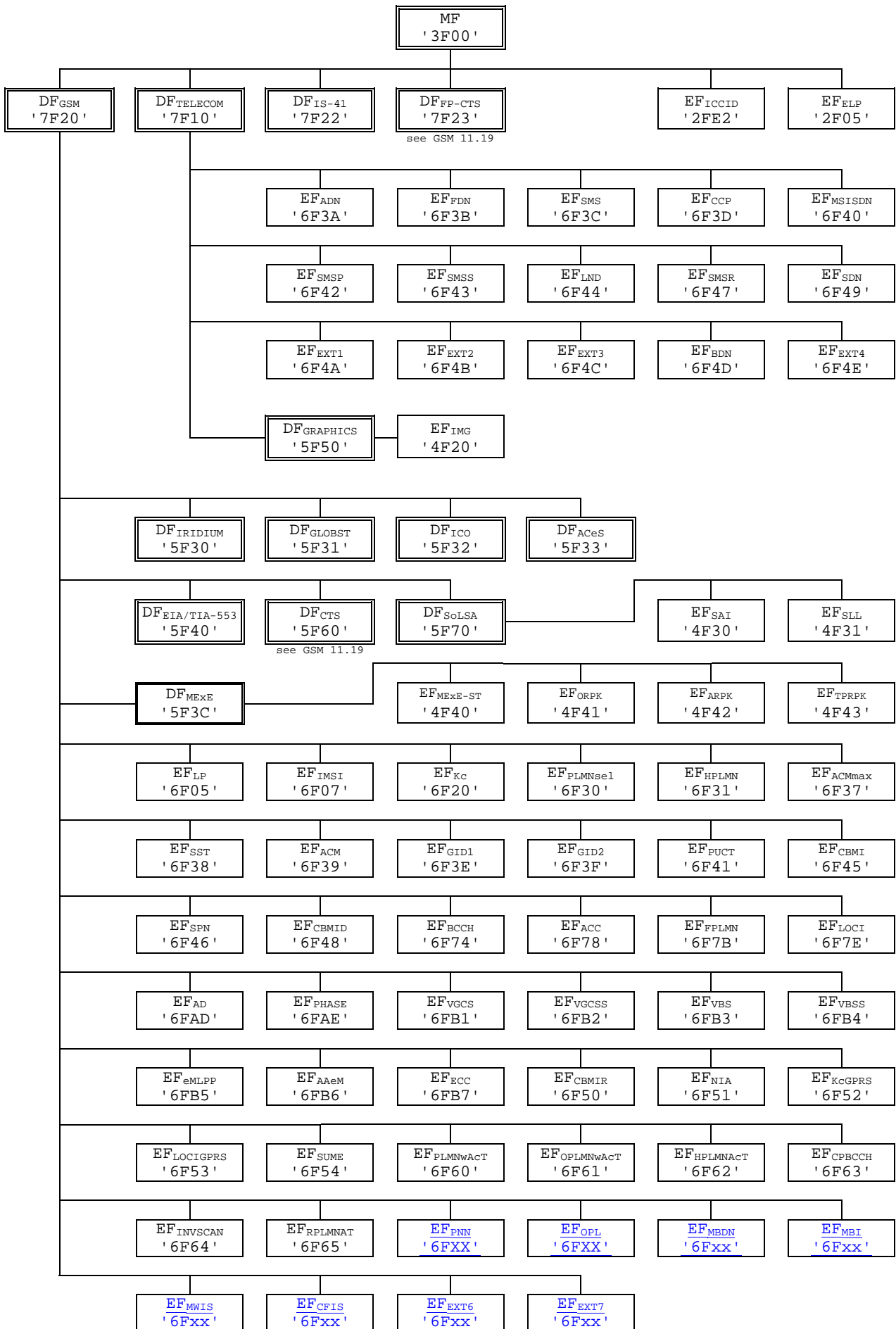


Figure 8: File identifiers and directory structures of GSM

11.5.1 Dialling numbers

The following procedures may not only be applied to EF_{ADN} and its associated extension files EF_{CCP} and EF_{EXT1} as described in the procedures below, but also to EF_{FDN}, EF_{MSISDN}, EF_{LND}, EF_{BDN}, ~~and EF_{SDN}~~ and [EF_{MBDN}](#) and their associated extension files. If these files are not allocated and activated, as denoted in the SIM 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°2 "allocated and activated"

(Service n°3 for FDN,

Service n°9 for MSISDN,

Service n°13 for LND,

Service n°18 for SDN),

Service n°31 for BDN,

[Service n°cc 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 description of the EFs in subclauses 10.5.1, 10.5.4 and 10.5.10):

- 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°10 "allocated and activated";

(Service n°10 applies also for MSISDN and LND;

Service n°11 for FDN;

Service n°19 for SDN;

Service n°32 for BDN;

[Service n°cc 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 (see subclauses 10.5.1 and 10.5.10).

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

Requirement:

Service n°10 "allocated and activated"
 (Service n°10 applies also for MSISDN and LND);
 Service n°11 for FDN;
 Service n°19 for SDN;
 Service n°32 for BDN;
Service n°cc for MBDN.

If the length of the called party subaddress is less than or equal to 11 bytes (see TS 04.08 [15] 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 TS 04.08 [15] 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 SIM has no available empty space to store the received ADN/SSC, or if the procedure has been aborted, the ME advises the user.

NOTE 1: For reasons of memory efficiency the ME is allowed to analyse all Extension1 records to recognize 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 (LND, MSISDN). 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} (subclause 10.5.1) to ascertain, whether additional data is associated in EF_{EXT1} or EF_{CCT}. 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 2: 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°3 (FDN).

FDN capability request. The ME has to check the state of service n°3, i.e. if FDN is "enabled" or "disabled". In case of enabled FDN, the ME has to switch to a restrictive terminal mode (see TS 02.07). To ascertain the state of FDN, the ME checks in EF_{SSC} whether or not ADN is activated. If ADN is not activated, service n°3 is enabled. If ADN is activated, the ME checks the response data of EF_{ADN}. If EF_{ADN} is invalidated, service n°3 is enabled. In all other cases service n°3 is disabled.

FDN disabling. The FDN disabling procedure requires that CHV2 verification procedure has been performed successfully and that ADN is activated. If not, FDN disabling procedure will not be executed successfully. To disable FDN capability, the ME rehabilitates EF_{ADN} . The invalidate/rehabilitate flag of EF_{ADN} , which is implicitly set by the REHABILITATE command, is at the same time the indicator for the state of the service n°3. If ADN is not activated, disabling of FDN is not possible and thus service n°3 is always enabled (see FDN capability request).

NOTE 3: If FDN is disabled (by rehabilitating EF_{ADN}) using an administrative terminal then the FDN disabling procedure of this administrative terminal need also to rehabilitate EF_{IMSI} and EF_{LOCI} to ensure normal operation of the SIM in a phase 1 ME or a phase 2 ME which does not support FDN.

FDN enabling. The FDN enabling procedure requires that CHV2 verification procedure has been performed successfully. If not, FDN enabling procedure will not be executed successfully. To enable FDN capability, the ME invalidates EF_{ADN} . The invalidate/rehabilitate flag of EF_{ADN} , which is implicitly cleared by the INVALIDATE command, is at the same time the indicator for the state of the service n°3 (see FDN capability request). If ADN is not activated, service n°3 is always enabled.

Invalidated ADNs may optionally still be readable and updatable depending on the file status (see subclause 9.3)

The following three procedures are only applicable to service n°31 (BDN).

BDN capability request. The ME has to check the state of service n°31, i.e. if BDN is "enabled" or "disabled". BDN service is "enabled" only if service n°31 is allocated and activated, and EF_{BDN} is not invalidated. In all other cases, the BDN service is "disabled".

BDN disabling. The BDN disabling procedure requires that CHV2 verification procedure has been performed successfully. If not, BDN disabling procedure will not be executed successfully. To disable BDN capability, the ME invalidates EF_{BDN} . The invalidate/rehabilitate flag of EF_{BDN} , which is implicitly cleared by the INVALIDATE command, is at the same time the indicator for the state of the service n°31 (see BDN capability request).

BDN enabling. The BDN enabling procedure requires that CHV2 verification procedure has been performed successfully. If not, BDN enabling procedure will not be executed successfully. To enable BDN capability, the ME rehabilitates EF_{BDN} . The invalidate/rehabilitate flag of EF_{BDN} , which is implicitly set by the REHABILITATE command, is at the same time the indicator for the state of the service n°31 (see BDN capability request).

Invalidated BDNs (when BDN capability is disabled) may optionally still be readable and updatable depending on the file status (see subclause 9.3).

11.5.aa PLMN Network Name

Requirement: Service n°aa "available".

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

11.5.bb Operator PLMN List

Requirement: Service n°bb "available".

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

11.5.cc Message Waiting Indication

- Requirement: Service n°dd "available".

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

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

11.5.dd Call Forwarding Indication Status

- Requirement: Service n°ee "available".

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

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

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

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

File Identification	Description	Value
'2FE2'	ICC identification	operator dependant (see 10.1.1)
'2F05'	Extended Language preference	'FF...FF'
'6F05'	Language preference	'FF'
'6F07'	IMSI	operator dependant (see 10.3.2)
'6F20'	Ciphering key Kc	'FF...FF07'
'6F30'	PLMN selector	'FF...FF'
'6F31'	HPLMN search period	'FF'
'6F37'	ACM maximum value	'000000' (see note 1)
'6F38'	SIM service table	operator dependant (see 10.3.7)
'6F39'	Accumulated call meter	'000000'
'6F3E'	Group identifier level 1	operator dependant
'6F3F'	Group identifier level 2	operator dependant
'6F41'	PUCT	'FFFFFF0000'
'6F45'	CBMI	'FF...FF'
'6F46'	Service provider name	'FF...FF'
'6F48'	CBMID	'FF...FF'
'6F49'	Service Dialling Numbers	'FF...FF'
'6F74'	BCCH information	'FF...FF'
'6F78'	Access control class	operator dependant (see 10.1.12)
'6F7B'	Forbidden PLMNs	'FF...FF'
'6F7E'	Location information	'FFFFFFFF xxxxxx 0000 FF 01' (see note 2)
'6FAD'	Administrative data	operator dependant (see 10.3.15)
'6FAE'	Phase identification	see 10.3.16
'6F3A'	Abbreviated dialling numbers	'FF...FF'
'6F3B'	Fixed dialling numbers	'FF...FF'
'6F3C'	Short messages	'00FF...FF'
'6F3D'	Capability configuration parameters	'FF...FF'
'6F40'	MSISDN storage	'FF...FF'
'6F42'	SMS parameters	'FF...FF'
'6F43'	SMS status	'FF...FF'
'6F44'	Last number dialled	'FF...FF'
'6F47'	Short message status reports	'00FF...FF'
'6F4A'	Extension 1	'FF...FF'
'6F4B'	Extension 2	'FF...FF'
'6F4C'	Extension 3	'FF...FF'
'6F4D'	Barred dialling numbers	'FF...FF'
'6F4E'	Extension 4	'FF...FF'
'6F4F'	Extended capability configuration parameters	'FF...FF'
'6F51'	Network's indication of alerting	'FF...FF'
'6F52'	GPRS Ciphering key KcGPRS	'FF...FF07'
'6F53'	GPRS Location Information	'FFFFFFFF FFFFFFFF xxxxxx 0000 FF 01'
'6F54'	SetUpMenu Elements	operator dependant (see 10.3.34)
'6F58'	Comparison method information	'FF...FF'
'6F60'	User controlled PLMN Selector with Access Technology	'FFFFFF0000..FFFFFF0000'
'6F61'	Operator controlled PLMN Selector with Access Technology	'FFFFFF0000..FFFFFF0000'
'6F62'	HPLMN Selector with Access Technology	'FFFFFF0000..FFFFFF0000'
'6F63'	CPBCCH information	'FF..FF'
'6F64'	Investigation Scan	'00'
'6F65'	RPLMN last used Access Technology	'0000'
'4F20'	Image data	'00FF...FF'
'4F30'	SoLSA Access Indicator)	'00FF...FF'
'4F31'	SoLSA LSA List	'FF...FF'
'6Fxx'	PLMN Network Name	Operator dependant
'6Fxx'	Operator PLMN List	Operator dependant
'6Fxx'	Mailbox Dialling Numbers	Operator dependant
'6Fxx'	Extension 6	'00 FF...FF'
'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 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 TS 04.08 [15].

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

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

File identification	Description	Change advised
'2F05'	Extended Language preference	Yes
'2FE2'	ICC identification	No
'4F20'	Image data	Yes
'4Fxx'	Image Instance data Files	Yes
'6F05'	Language preference	Yes
'6F07'	IMSI	Caution (note)
'6F20'	Ciphering key Kc	No
'6F2C'	De-personalization Control Keys	Caution
'6F30'	PLMN selector	Caution
'6F31'	HPLMN search period	Caution
'6F32'	Co-operative network	Caution
'6F37'	ACM maximum value	Yes
'6F38'	SIM service table	Caution
'6F39'	Accumulated call meter	Yes
'6F3A'	Abbreviated dialling numbers	Yes
'6F3B'	Fixed dialling numbers	Yes
'6F3C'	Short messages	Yes
'6F3D'	Capability configuration parameters	Yes
'6F3E'	Group identifier level 1	Yes
'6F3F'	Group identifier level 2	Yes
'6F40'	MSISDN storage	Yes
'6F41'	PUCT	Yes
'6F42'	SMS parameters	Yes
'6F43'	SMS status	Yes
'6F44'	Last number dialled	Yes
'6F45'	CBMI	Caution
'6F46'	Service provider name	Yes
'6F47'	Short message status reports	Yes
'6F48'	CBMID	Yes
'6F49'	Service Dialling Numbers	Yes
'6F4A'	Extension 1	Yes
'6F4B'	Extension 2	Yes
'6F4C'	Extension 3	Yes
'6F4D'	Barred dialling numbers	Yes
'6F4E'	Extension 4	Yes
'6F50'	CBMIR	Yes
'6F51'	Network's indication of alerting	Caution
'6F52'	GPRS Ciphering key KcGPRS	No
'6F53'	GPRS Location Information	Caution
'6F58'	Comparison method information	
'6F60'	User controlled PLMN Selector with Access Technology	see 3GPP TS 22.011
'6F61'	Operator controlled PLMN Selector with Access Technology	Caution
'6F62'	HPLMN Selector with Access Technology	Caution
'6F63'	CPBCCCH information	No
'6F64'	Investigation scan	Caution
'6F65'	RPLMN last used Access Technology	No
'6F74'	BCCH information	No
'6F78'	Access control class	Caution
'6F7B'	Forbidden PLMNs	Caution
'6F7E'	Location information	No (note)
'6FAD'	Administrative data	Caution
'6FAE'	Phase identification	Caution
Continued.....		

File identification	Description	Change advised
'6FB1'	Voice Group Call Service	Yes
'6FB2'	Voice Group Call Service Status	Yes
'6FB3'	Voice Broadcast Service	Yes
'6FB4'	Voice Broadcast Service Status	Yes
'6FB5'	Enhanced Multi Level Pre-emption and Priority	Yes
'6FB6'	Automatic Answer for eMLPP Service	Yes
'6FB7'	Emergency Call Codes	Caution
'6Fxx'	PLMN Network Name	Yes
'6Fxx'	Operator PLMN List	Yes
'6Fxx'	Mailbox Dialling Numbers	Yes
'6Fxx'	Extension 6	Yes
'6Fxx'	Mailbox Identifier	Caution
'6Fxx'	Message Waiting Indication Status	Caution
'6Fxx'	Call Forwarding Indication Status	Caution
'6Fxx'	Extension 7	Yes
NOTE: If EF _{IMSI} is changed, the SIM should issue REFRESH as defined in TS 11.14 [27] and update EF _{LOCI} accordingly.		