3GPP TSG-T#22 Meeting ***Tdoc ⌘TP-030305***
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CR-Form-v7

CHANGE REQUEST

⌘ **51.011** **CR** **028** ⌘**rev** **1** ⌘ Current version: **4.9.0** ⌘

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

Proposed change affects: UICC apps⌘ [X] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Alignment of EF-HPLMN Search Period with 22.011 and 23.122
Source:	⌘	T
Work item code:	⌘	TEI
Date:	⌘	11/12/03
Category:	⌘	**F**
Release:	⌘	Rel-4

Use one of the following categories:
F *(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)*
Rel-6	*(Release 6)*

Reason for change:	⌘	To align the periodic search procedure with a change made to R99 versions of 22.011 and 23.122
Summary of change:	⌘	The CN and SA specifications were changed so that a periodic search also included any higher priority PLMNS and not just the HPLMN. At present, the T3 specifications still refer to the HPLMN only.
Consequences if not approved:	⌘	Mis-alignment between the T3, CN and SA specifications

Clauses affected:	⌘	10.3.5, 10.7, 11, 11.2.1, Annex D, Annex I

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

10.3.5 EF_{HPPLMN} (Higher Priority PLMN search period)

This EF contains the interval of time between searches for ~~the~~ a higher priority ~~H~~PLMN (see TS 22.011 [5]).

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

Access Conditions:

READ	CHV1
UPDATE	ADM
INVALIDATE	ADM
REHABILITATE	ADM

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

- Time interval

  Contents:

  The time interval between two searches.

  Coding:

  The time interval is coded in integer multiples of n minutes. The range is from n minutes to a maximum value. The value '00' indicates that no attempts shall be made to search for any higher priority ~~the~~ ~~H~~PLMN. The encoding is:

  - '00': No higher priority ~~H~~PLMN search attempts
  - '01': n minutes
  - '02': 2n minutes
  - : :
  - 'YZ': (16Y+Z)n minutes (maximum value)

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

For specification of the integer timer interval n, the maximum value and the default period refer to TS 22.011 [5].

10.7 Files of GSM

This clause 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].

NOTE 3: The value '6F65' under DF_{GSM} was used in earlier versions of this specification, and should not be re-assigned in future versions.

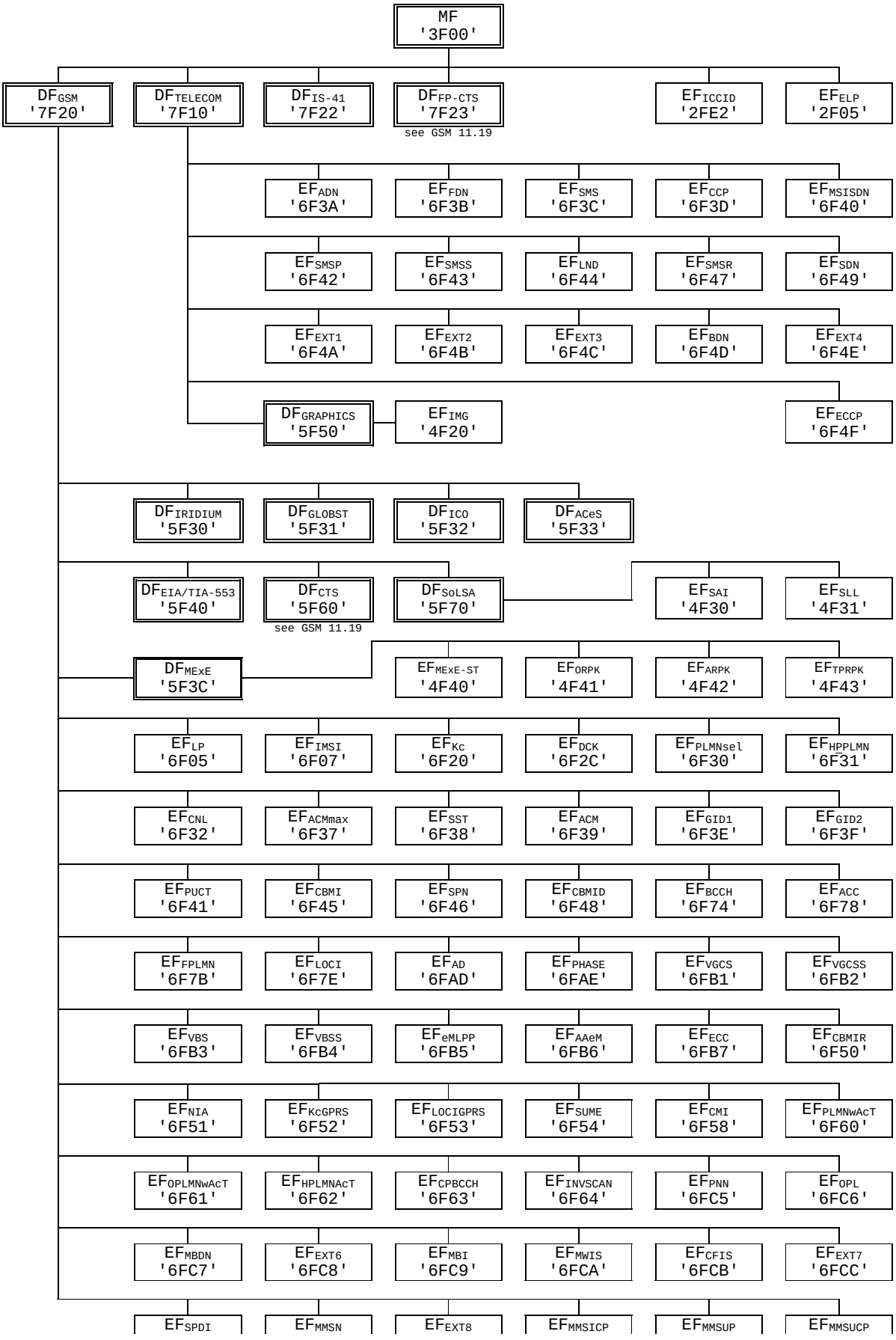
MF '3F00'
DFGSM '7F20'
DFTELECOM '7F10'
DFIS-41 '7F22'
DFFP-CTS '7F23'
see GSM 11.19
EFICCID '2FE2'
EFELP '2F05'
EFADN '6F3A'
EFFDN '6F3B'
EFSMS '6F3C'
EFCCP '6F3D'
EFMSISDN '6F40'
EFSMSP '6F42'
EFSMSS '6F43'
EFLND '6F44'
EFSMSR '6F47'
EFSDN '6F49'
EFEXT1 '6F4A'
EFEXT2 '6F4B'
EFEXT3 '6F4C'
EFBDN '6F4D'
EFEXT4 '6F4E'
DFGRAPHICS '5F50'
EFIMG '4F20'
EFECCP '6F4F'
DFIRIDIUM '5F30'
DFGLOBST '5F31'
DFICO '5F32'
DFACeS '5F33'
DFEIA/TIA-553 '5F40'
DFCTS '5F60'
see GSM 11.19
DFSoLSA '5F70'
EFSAI '4F30'
EFSLL '4F31'
DFMExE '5F3C'
EFMExE-ST '4F40'
EFORPK '4F41'
EFARPK '4F42'
EFTPRPK '4F43'
EFLP '6F05'
EFIMSI '6F07'
EFKc '6F20'
EFDCK '6F2C'
EFPLMNsel '6F30'
EFHPPLMN '6F31'
EFCNL '6F32'
EFACMmax '6F37'
EFSST '6F38'
EFACM '6F39'
EFGID1 '6F3E'
EFGID2 '6F3F'
EFPUCT '6F41'
EFCBMI '6F45'
EFSPN '6F46'
EFCBMID '6F48'
EFBCCH '6F74'
EFACC '6F78'
EFFPLMN '6F7B'
EFLOCI '6F7E'
EFAD '6FAD'
EFPHASE '6FAE'
EFVGCS '6FB1'
EFVGCSS '6FB2'
EFVBS '6FB3'
EFVBSS '6FB4'
EFeMLPP '6FB5'
EFAAeM '6FB6'
EFECC '6FB7'
EFCBMIR '6F50'
EFNIA '6F51'
EFKcGPRS '6F52'
EFLOCIGPRS '6F53'
EFSUME '6F54'
EFCMI '6F58'
EFPLMNwAcT '6F60'
EFOPLMNwAcT '6F61'
EFHPLMNAcT '6F62'
EFCPBCCH '6F63'
EFINVSCAN '6F64'
EFPNN '6FC5'
EFOPL '6FC6'
EFMBDN '6FC7'
EFEXT6 '6FC8'
EFMBI '6FC9'
EFMWIS '6FCA'
EFCFIS '6FCB'
EFEXT7 '6FCC'
EFSPDI
EFMMSN
EFEXT8
EFMMSICP
EFMMSUP
EFMMSUCP

Figure 8: File identifiers and directory structures of GSM

11 Application protocol

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

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

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

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

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

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

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

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

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

General Procedures:

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

SIM management procedures:

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

CHV related procedures:

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

GSM security related procedures:

- GSM algorithms computation NET
- IMSI request NET
- Access control information request NET
- Higher Priority PLMN search period request NET
- Location Information NET
- GPRS Location Information NET
- Cipher key NET
- GPRS Cipher key NET
- BCCH information NET
- Forbidden PLMN information NET
- LSA information NET

11.2.1 SIM initialization

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

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

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

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

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

For a SIM requiring PROFILE DOWNLOAD, then the ME shall perform the PROFILE DOWNLOAD procedure in accordance with TS 51.014 [27]. When BDN is enabled on a SIM, the PROFILE DOWNLOAD procedure is used to indicate to the SIM whether the ME supports the "Call Control by SIM" facility. If so, then the SIM is able to allow the REHABILITATE command to rehabilitate EF_{IMSI} and EF_{LOCI}.

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

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

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

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

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

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

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

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

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

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

iii) FDN is not allocated or not activated;

then GSM operation shall start.

In all other cases GSM operation shall not start.

Afterwards, the ME runs the following procedures, subject to the service being supported both by the ME and the SIM:

- Administrative Information request;
- SIM Service Table request;

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

If the SIM service table indicates that the proactive SIM service is active, then from this point onwards, the ME, if it supports the proactive SIM service, shall send STATUS commands at least every 30s during idle mode as well as during calls, in order to enable the proactive SIM to respond with a command. The SIM may send proactive commands (see TS 51.014 [27]), including a command to change the interval between STATUS commands from the ME, when in idle mode. In-call requirements for STATUS for SIM Presence Detection are unchanged by this command.

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

11.4.4 Higher Priority PLMN search period request

The ME performs the reading procedure with EF_{HPPLMN}.

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'	Higher Priority PLMN 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 10.3.15)
'6F7B'	Forbidden PLMNs	'FF...FF'
'6F7E	Location information	'FFFFFFFF xxxxxx 0000 FF 01' (see note 2)
'6FAD'	Administrative data	operator dependant (see 10.3.18)
'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	'00 FF…FF'
'6F4A'	Extension 1	'00 FF...FF'
'6F4B'	Extension 2	'00 FF...FF'
'6F4C'	Extension 3	'00 FF...FF'
'6F4D'	Barred dialling numbers	'FF...FF'
'6F4E'	Extension 4	'00 FF...FF'
'6F4F'	Extended capability configuration parameters	'FF...FF'
'6F51'	Network's indication of alerting	'FF...FF'
'6F52'	GPRS Ciphering key KcGPRS	'FF...FF07'
'6F53'	GPRS Location Information	'FFFFFFFF FFFFFF xxxxxx 0000 FF 01' (see note 2)
'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'

Continued

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'	Higher Priority PLMN 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
'6F4F'	Extended Capability configuration parameters	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
'6F74'	BCCH information	No
'6F78'	Access control class	Caution
'6F7B'	Forbidden PLMNs	Caution
'6F7E'	Location information	No (note)

Continued.....