3GPP TSG CN Plenary Meeting #22 **NP-030517**
10th – 12th December 2003 Maui, USA.

Source: TSG CN WG4

Title: Corrections on TEI6

Agenda item: 9.20

Document for: APPROVAL

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
29.060	466		N4-031155	Rel-6	Correction of a mis-implementation of CR 29.060-410	F	6.2.0
23.094	003	1	N4-031303	Rel-6	Notify of forced erasure to previously regisstered subscriber of his deregistration	B	5.0.1
23.008	127	4	N4-031390	Rel-6	Services related to unregistered state	F	5.6.0

3GPP TSG–CN4 Meeting #21
Bangkok, Thailand, 27th to 31st October 2003

***Tdoc* ⌘N4-031390**

CR-Form-v7

CHANGE REQUEST

⌘ **23.008** **CR** **127** ⌘ **rev** **4** ⌘ Current version: **5.6.0** ⌘

*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⌘ [ ] ME [ ] Radio Access Network [ ] Core Network [X]

Title:	⌘	Services related to unregistered state
Source:	⌘	CN4
Work item code:	⌘	IMS
Date:	⌘	19/09/2003
Category:	⌘	**F**
Release:	⌘	Rel-6

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:	⌘	It is stated in TS 23.228 (§ 5.12) that "The detection of an unregistered Public User Identity is done in the HSS and if this Public User Identity has services related to unregistered state, a S-CSCF is selected for the unregistered Public User Identity".
Summary of change:	⌘	A new parameter is added in the data related to subscription to indicate whether the Public User Identity has services related to unregistered state or not.
Consequences if not approved:	⌘	The indication in the subscription data still missing. When receiving a location Info request for a Public User Identity not registered, the HSS will not be able to check in the subscription data that the user has services related to unregistered state.
Clauses affected:	⌘	3.1; 5.3

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

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.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://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 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.

*** FIRST MODIFICATION ***

3.1 Data related to subscription, identification and numbering

3.1.1 Private User Identity

The Private User Identity is in the form of a Network Access Identifier (NAI), which is defined in RFC 2486 [48].

The Private User Identity is permanent subscriber data and is stored in HSS and in S-CSCF.

3.1.2 Public User Identities

The Public User Identities contain one or several instances of Public User Identity, which is defined in 3GPP TS 23.003 [5].

The Public User Identities are permanent subscriber data and are stored in HSS and in S-CSCF.

3.1.3 Barring indication

Flag associated to each public identity to indicate that the identity is barred from any IMS communication (except registrations and re-registrations).

The Barring indication is permanent subscriber data and is stored in the HSS and in the S-CSCF.

3.1.4 List of authorized visited network identifiers

The list of authorized visited network identifiers is associated with the public user identity of IMS subscribers to indicate which visited network identifiers are allowed for roaming.

The list of visited network identifiers is permanent subscriber data and is stored in the HSS. This list can be a linear list of visited network identifiers or a compound list of network identifier types e.g. home PLMN or home country; however the exact structure of the list is an implementation option.

3.1.5 Services related to unregistered state

The Services related to unregistered state is a parameter associated to each public identity and it indicates whether the identity has services related to unregistered state or not.

The Services related to unregistered state is permanent subscriber data stored in the HSS.

*** SECOND MODIFICATION ***

5.3 IP Multimedia Service Data Storage

Table 5.3: Overview of data used for IP Multimedia services

PARAMETER	Subclause	HSS	S-CSCF	IM-SSF	AS	TYPE
Private User Identity	3.1.1	M	M		-	P
Public Identity	3.1.2	M	M		-	P
Barring Indication	3.1.3	M	M		-	P
List of authorized visited network identifiers	3.1.4	M	-		-	P
Services related to unregistered state	3.1.5	M	-		-	P
Registration Status	3.2.1	M	-		-	T
S-CSCF Name	3.2.2	M	-		-	T
Diameter Client Address of S-CSCF	3.2.3	M	-		-	T
Diameter Server Address of HSS	3.2.3	-	M		-	T
RAND, XRES, CK, IK and AUTN	3.3.1	M	C		-	T
Server Capabilities	3.4.1	C	C		-	P
Subscribed Media Profile Identifier	3.5.1	C	C		-	P
Initial Filter Criteria	3.5.2	C	C		-	P
Service Indication	3.5.4	M	-		M	P
GsmSCF address for IM CSI	3.8.4	C	-		-	P
IM-SSF address for IM CSI	3.8.5	C	-		-	T
O-IM-CSI	3.8.1	C	-	C	-	P
VT-IM-CSI	3.8.2	C	-	C	-	P
D-IM-CSI	3.8.3	C	-	C	-	P

*** END OF MODIFICATION ***

3GPP TSG CN WG4 Meeting #21 **N4-031303**
Bangkok, THAILAND, 27th – 31st October 2003

CR-Form-v7

CHANGE REQUEST

⌘ **23.094** **CR** 003 ⌘ **rev** 1 ⌘ Current version: **5.0.1** ⌘

*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⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☒

Title:	⌘	Notify of forced erasure to previously regisstered subscriber of his deregistration
Source:	⌘	CN4
Work item code:	⌘	TEI6
Date:	⌘	16/10/2003
Category:	⌘	**B**
Release:	⌘	Rel-6

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:	⌘	With the forced erasure procedure, a service supervisor is able to erase the Follow Me data which have been registered by the initiating subscriber. However, the notification of the erasure to the previously registered subscriber is not specified. The notification of the successful forced erasure to the previously registered subscriber is an important feature for GSM-R.
Summary of change:	⌘	Notification of the forced erasure to the initiating subscriber is specified. With this change, the previously registered subscriber, who had registered the Follow Me data, will be informed of the successful forced erasure by a service supervisor.
Consequences if not approved:	⌘	The previously registered subscriber is not informed about a forced erasure of his Follow Me registration.

Clauses affected:	⌘	4.3, 4.3, B.5 (new)

		Y	N			
Other specs Affected:	⌘	X		Other core specifications	⌘	22.094
			X	Test specifications		
			X	O&M Specifications		

Other comments:	⌘	

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.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://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 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.

****** First Modified Section ******

3 Definitions and abbreviations

3.1 Definitions

initiating subscriber: mobile subscriber who modifies the Follow Me data of the remote party.

initiating number: number (the MSISDN of the initiating subscriber) to which incoming calls, originally destined for the remote party, shall be forwarded. It is subsequently also referred to as **$MSISDN_A$**.

remote party: is characterised by the remote number which is defined in the numbering plan of a PLMN operator. The Follow Me feature enables the initiating subscriber to modify the Follow Me data of the remote party. In particular cases the remote party is a GSM subscriber of the PLMN and the remote number denotes her basic MSISDN.

Previously registered subscriber: Is the initiating service subscriber who has registered Follow Me with respect to a remote party. Her Registration can be erased by herself or by an FM service supervisor via forced erasure procedure.

FM service supervisor: is an initiating subscriber who is allowed to modify the Follow Me data of a remote party who has been registered to a previously registered ~~another initiating~~ subscriber for the Follow Me application. The FM service supervisor shall be authorised by her network operator.

remote number: is a number in E.164 format which identifies a remote party. In general this number is not assigned to a subscriber and can be regarded as a "dummy MSISDN". In particular cases the remote party is a GSM subscriber of the PLMN and the remote number denotes her basic MSISDN. The remote number is entered by the initiating subscriber for registration, interrogation, forced erasure and erasure of the Follow Me feature with respect to the remote party.

Follow Me function node: is a network node in the PLMN operator of the remote party. The FM data of the remote party are stored in this node. This node can be implemented in:

- an HLR;
- any other operator specific network node e.g.:
  - a gsmSCF;
  - an SCP.

****** Next Modified Section ******

4.1.3 Erasure

If an initiating subscriber A or the FM service supervisor successfully erases FM with respect to a remote party B then FM becomes not registered and not active for remote party B.

For forced erasure by the FM service supervisor the previously registered subscriber shall be informed of the successful forced erasure via a network initiated USSD Notify message with appropriate contents. This message is sent by the FFN.

If remote party B is a GSM subscriber and successfully erases FM then FM becomes not registered and not active for remote party B.

4.1.4 Interrogation

If an initiating subscriber A or the FM service supervisor successfully interrogates FM with respect to a remote party B then this procedure interrogates the FM data of subscriber B.

If remote party B is a GSM subscriber and successfully interrogates FM then this procedure interrogates her own FM data.

4.2 Information Flows

4.2.1 Information Flow for the handling of FM by the initiating subscriber

Figure 4.1 shows the Information Flow for the control of FM (registration, erasure, forced erasure and interrogation) by the initiating subscriber.

For any control operation on FM, the initiating subscriber (MSa) enters a Follow Me Request (FM-Request). This is a USSD string containing the requested FM operation and the remote number. The Follow Me Request is routed via the MSC/VLR to the HLR of the initiating subscriber (HLRa).

The HLRa performs a series of checks as described in the SDLs (subclause 4.3~~0~~). If these checks fail, the MSa receives a response (FM-Response) indicating the error.

If the checks pass, the HLRa forwards the operation request (HLR-FM-Request) to the FFN of the remote party (FFNb).

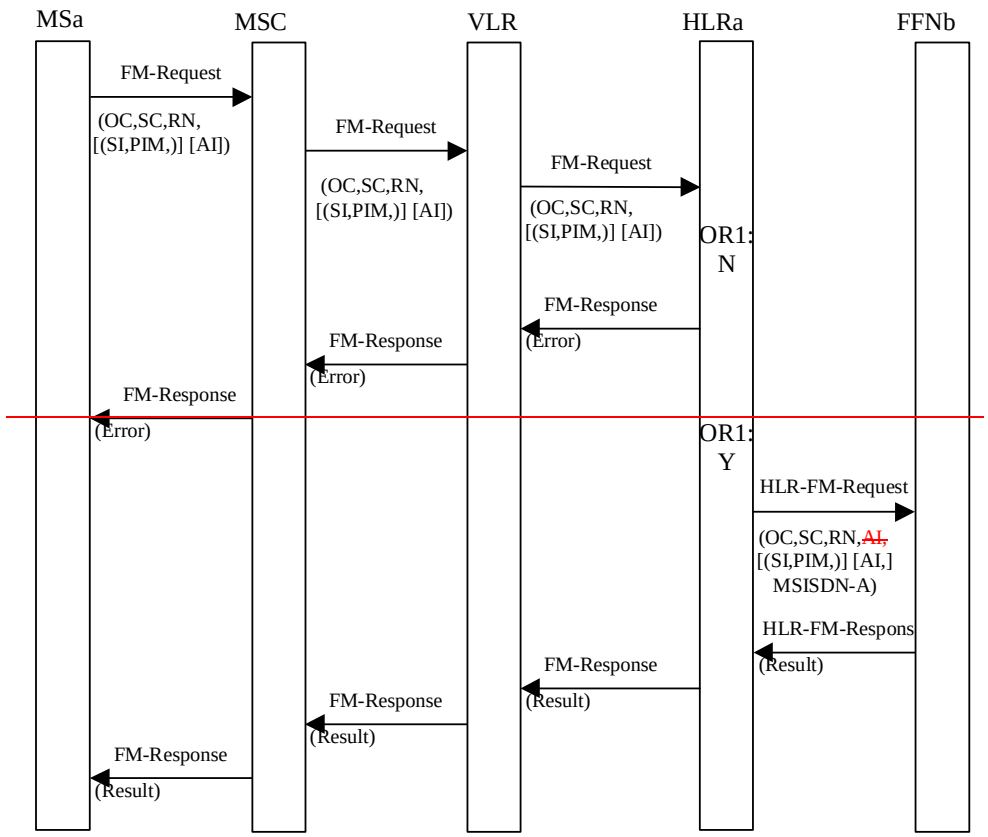
FFNb carries out the appropriate control operation and checks as described in the SDLs (subclause 4.3~~0~~) for the remote party.

The result of this operation (success or error) is reported back in a USSD Response to the initiating subscriber.

For successful forced erasure by a service supervisor, the FFN shall send a Network Initiated USSD notify message with the corresponding USSD string to the HLR of the previously registered subscriber who had registered the Follow Me data. The HLR shall forward the USSD notify to VLR which will relay the USSD Notify towards the MS.

Upon receipt of the USSD Notify, the MS shall respond by sending a FACILITY message with empty return result component.

An error response with corresponding reason can be returned from any entity, when error happens at the entity [8].


MSa
MSC
VLR
HLRa
FFNb
FM-Request
(OC,SC,RN,
[(SI,PIM,)] [AI])
FM-Request
(OC,SC,RN,
[(SI,PIM,)] [AI])
FM-Request
(OC,SC,RN,
[(SI,PIM,)] [AI])
OR1:
N
FM-Response
(Error)
FM-Response
(Error)
FM-Response
(Error)
OR1:
Y
HLR-FM-Request
(OC,SC,RN,~~AI,~~
[(SI,PIM,)] [AI,]
MSISDN-A)
HLR-FM-Respons
(Result)
FM-Response
(Result)
FM-Response
(Result)
FM-Response
(Result)

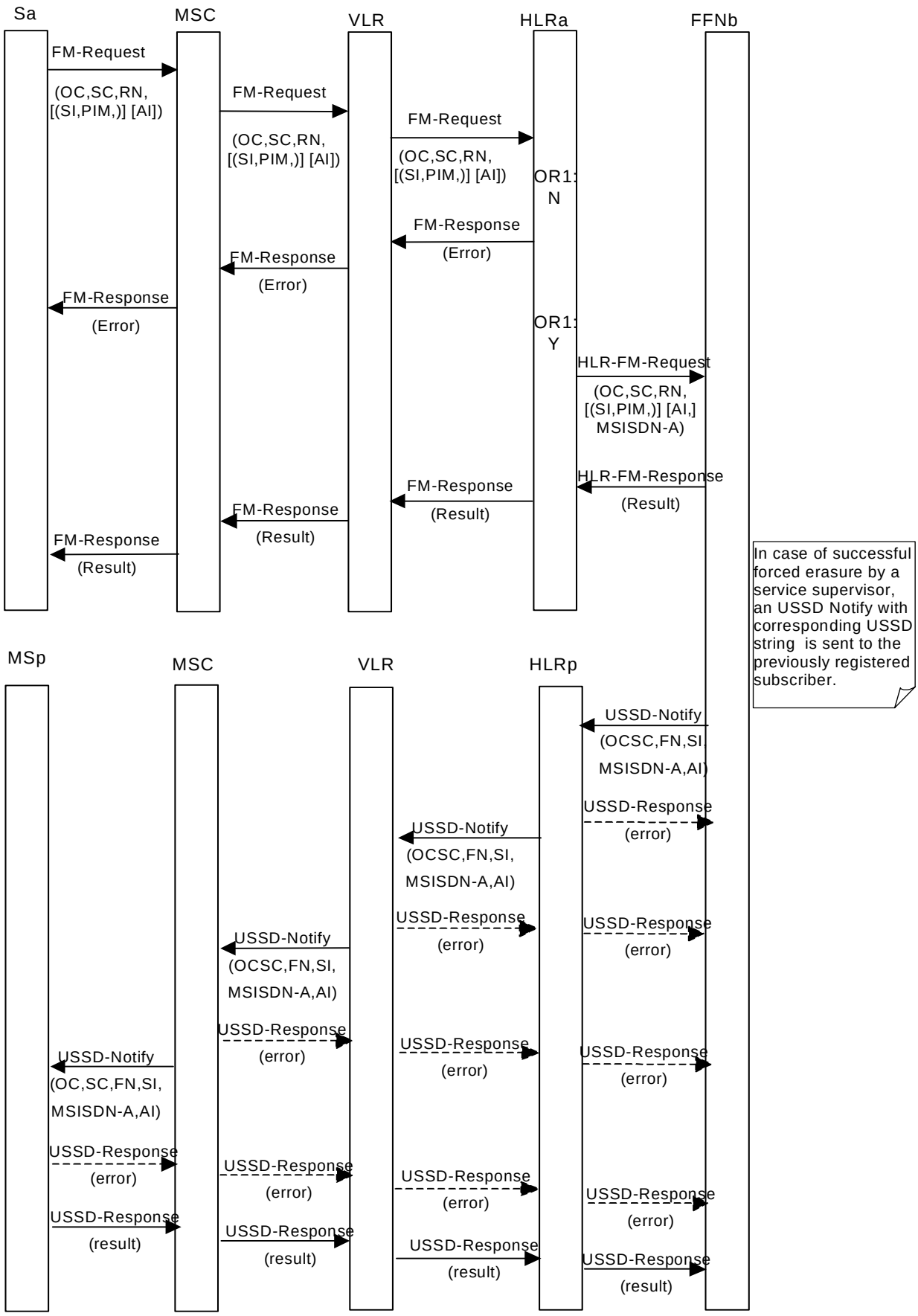


Figure 4.1: Information flow for the control of FM by the initiating subscriber or service supervisor

NOTE 1:	OR1:N: operate	The case where the checks in the HLR result in a negative outcome, e.g. FM is not provisioned for the initiating subscriber or the initiating subscriber is not allowed to FM for the remote party.
	OR1:Y:	The case where all the checks in the HLR are successful, e.g. FM is provisioned for the initiating subscriber and the initiating subscriber is allowed to operate FM for the remote party.
NOTE 2:	[...]	Optional parameter.
	(...)]	Conditional parameter.
	OC	Operation Code (Register, Erase or Interrogate).
	SC	Service Code for FM.
	RN	Remote Number.
	SI	Supervisor Indicator. This parameter is conditional and only used for forced erasure by a FM service supervisor.
	PIM	MSISDN of ~~previous initiating~~previously registered subscriber who has registered the FM to remote number. This parameter is conditional and only used for forced erasure by a FM service supervisor.
	AI	Supplementary Information containing additional information.
	MSISDN-A	initiating number in international format. It is not a part of the USSD string, but is sent from HLRa to the FFNb together with the HLR-FM-Request within the MAP operation. For forced erasure, the MSISDN-A corresponds to the supervisor's MSISDN and will be part of the USSD-notify.
	MSp	MS of previously registered service subscriber.
	HLRp	HLR of the previously registered service subscriber.

4.2.2 Information Flow for the handling of FM by the remote party

Control of FM by the remote party is possible if the remote party is a GSM subscriber.

The information flow for control of FM by the remote party (erasure and interrogation of her own FM data) is the same as the information flow for control of FM by the initiating subscriber.

If a remote party tries to register FM to herself the registration is rejected and an error is reported.

4.3 Handling of FM control in HLRa and FFNb

HLRa and FFNb can both receive FM control messages, based on USSD. The USSD handler in each entity analyses the Service Code contained in the USSD string and, recognising the Service Code for FM, invokes the FM USSD application.

The FM control messages and their contents are given in Annex B (normative).

4.3.1 Handling of FM control in HLRa

The FM USSD application in HLRa is the process **FM_initiating_subscriber_handling_in_HLR** (figure 4.2). It receives the FM-Request from the initiating subscriber. This FM-Request is an USSD-string containing:

- the operation code (register, erase, interrogate);
- the remote number;
- an additional operator specific information field.

The HLR checks:

- the provisioning of FM to the initiating subscriber;
- whether the FFN can be deduced from the remote number;
- whether any operator specific restrictions to engage in FM activity with the remote party apply;
- if the initiating subscriber requires forced erasure, the HLR checks Whether the initiating subscriber is entitled to do it, i.e. Whether the initiating subscriber is a FM service supervisor.

The basic MSISDN of the initiating subscriber is sent together with the original USSD string to the FFN of the remote party.

The HLR forwards the response from the FFN to the initiating subscriber.

For successful forced erasure by a service supervisor, the HLR of the previously registered subscriber (HLRp) shall relay the USSD Notify to the VLR when the USSD Notify from the FFN is received. The VLR will then forward the USSD Notify towards the MS of the previously registered service subscriber.

On receipt of an USSD response from the MS of the previously registered subscriber, the HLRp shall relay it to the FFN.

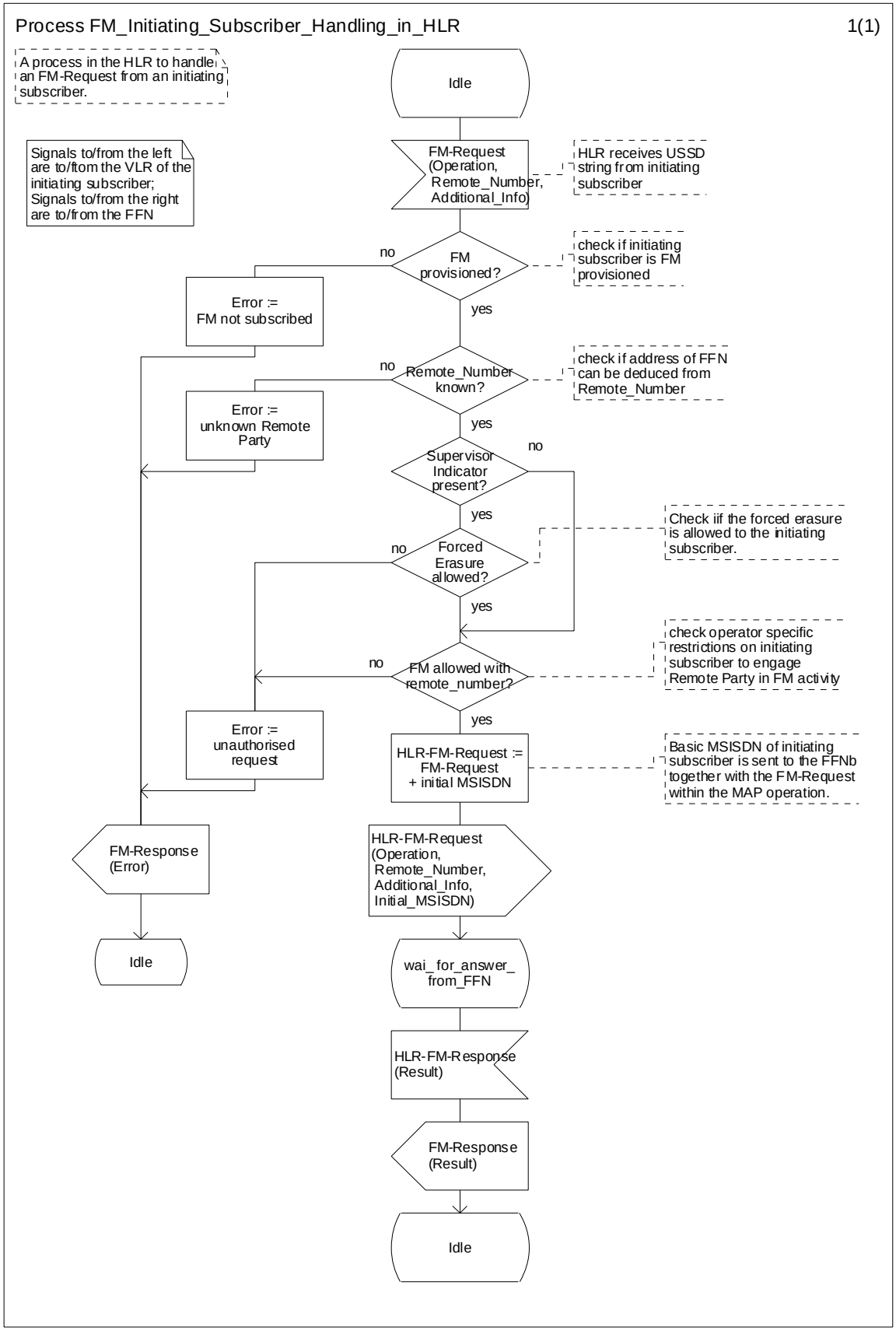


Figure 4.2: Process: FM_Initiating_Subscriber_Handling_in_HLR

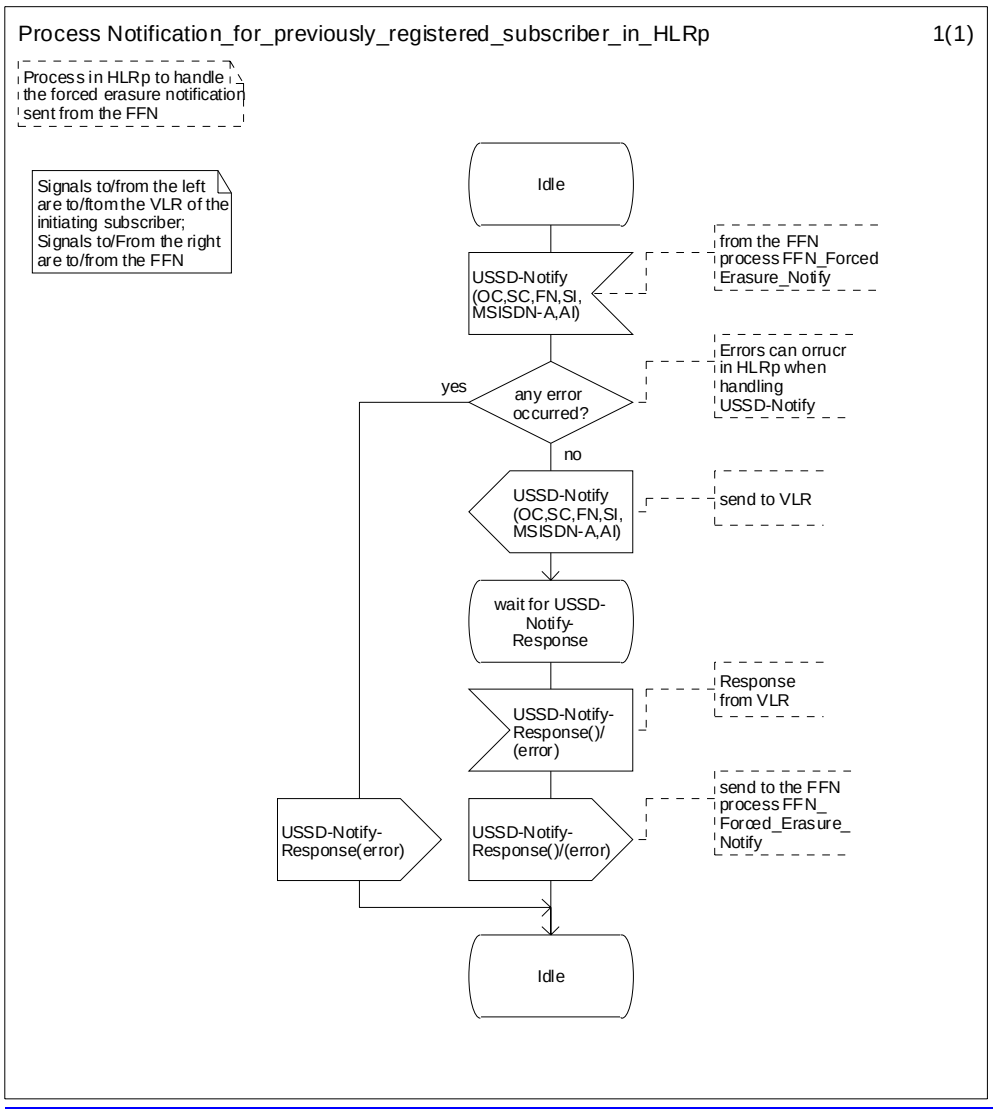


Figure 4.2a: Process Notification_for_previously_registered_subscriber_in_HLRp

4.3.2 Handling of FM control in FFNb

If the FFN is an HLR, the FFN is responsible for handling the interactions between FM and CFU. Two kinds of request may be received in an FFN which deals with forwarding services:

- CFU requests sent by the VLR for CFU operations (only if the FFN is a HLR);
- FM-HLR-Requests which are USSD strings sent by HLRa for FM operations.

When the control process in the FFN receives a CFU request, it shall either pass the CFU operation request directly to a CFU process or reject it depending on the registration and/or activation states of both FM and CFU services (see Table A.1 for permission checks).

On receipt of an HLR-FM request, the control process in the FFN performs a series of FM specific checks and checks the states of both FM and CFU. If the checks are successful, a CFU operation request is sent to a CFU process. On receipt of an HLR-FM-Request from HLRa, the FFN performs a series of checks. e.g.:

- if the remote party is a GSM subscriber:
  - provisioning of FM to the remote party;
  - provisioning of CFU to the remote party;

- illegal interaction with CFU registered or active to remote party.

- if the remote number is registered in the FFN;
- if any operator specific restrictions to engage in FM activity with the initiating subscriber apply;
- specific checks for forced erasure.

Depending on the requested operation, one of the following procedures is performed:

- registration with implicit Activation (procedure Handle_Remote_Party_Registration, figure 4.6);
- erasure with implicit Deactivation (procedure Handle_Remote_Party_Erasure, figure 4.7);
- interrogation (procedure Handle_Remote_Party_Interrogation, figure 4.8).

For successful forced erasure by a service supervisor, the FFN shall generate an USSD-Notify message and send it to the HLRp, which will relay the USSD Notify towards the MS of the previously registered subscriber (MSp). On receipt of an error response that the USSD Notify message could not be transferred to the MS, the FFN shall check the error code of the response. Depending on the error types and the specific implementation the process shall decide to resend the USSD message after a predefined time.

For the resend procedure the process shall start a timer. On timer expiry it shall send the message again. The FFN shall repeat the messages up to 5 times.

The length of the timer is defined by operator and has the value in the range of 1 – 10 minutes.

Figure 4.3 shows the message flow between the process Forwarding_Service_Control and the processes handling CFU operation requests, defined in [9].

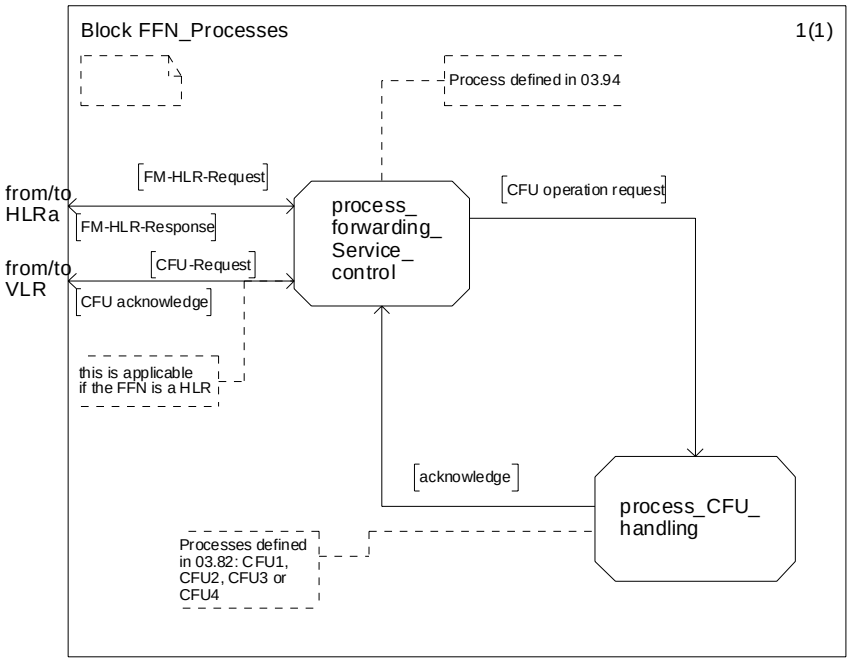
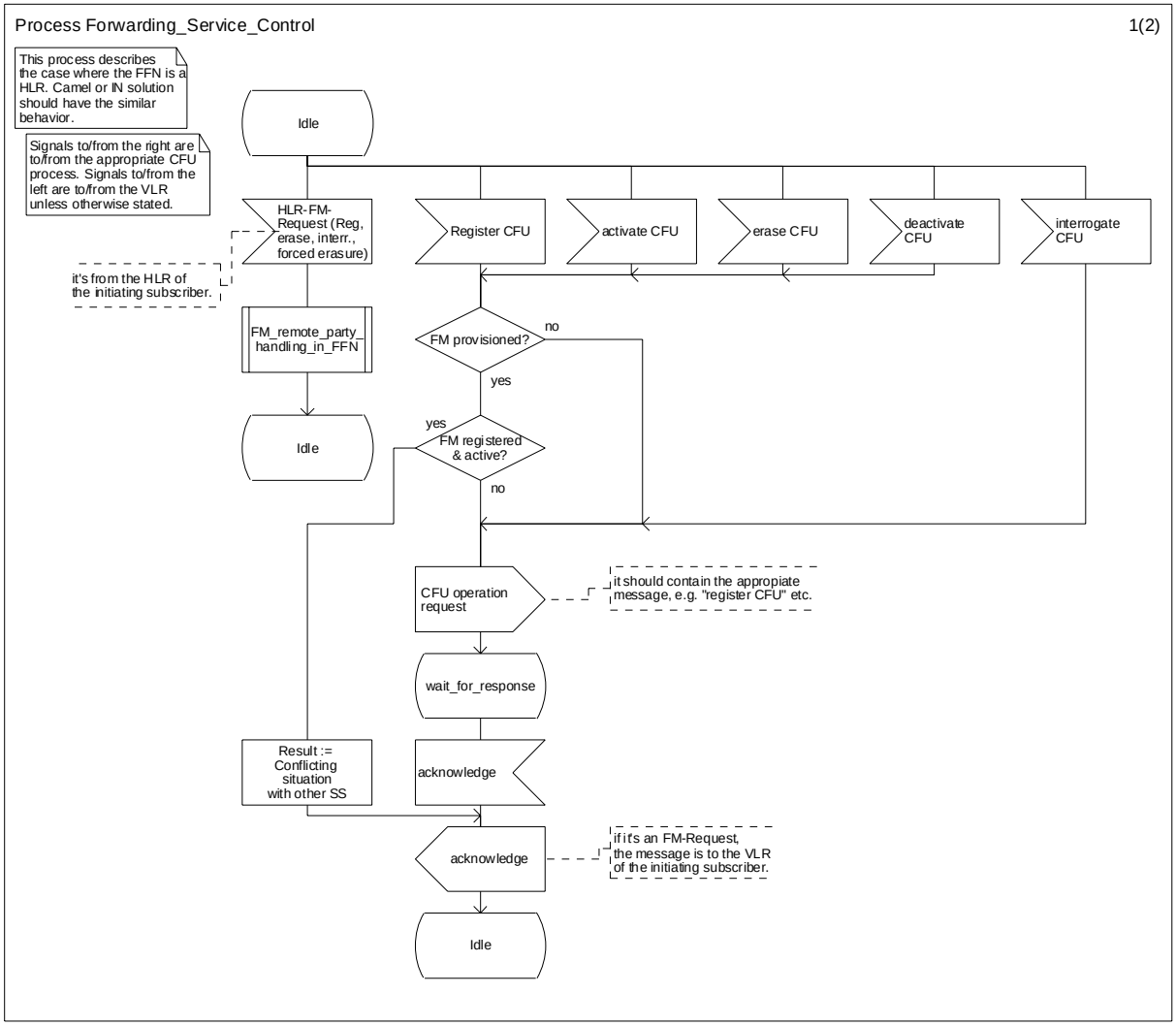


Figure 4.3: FFN_processes



4.4 Process Forwarding_Service_Control

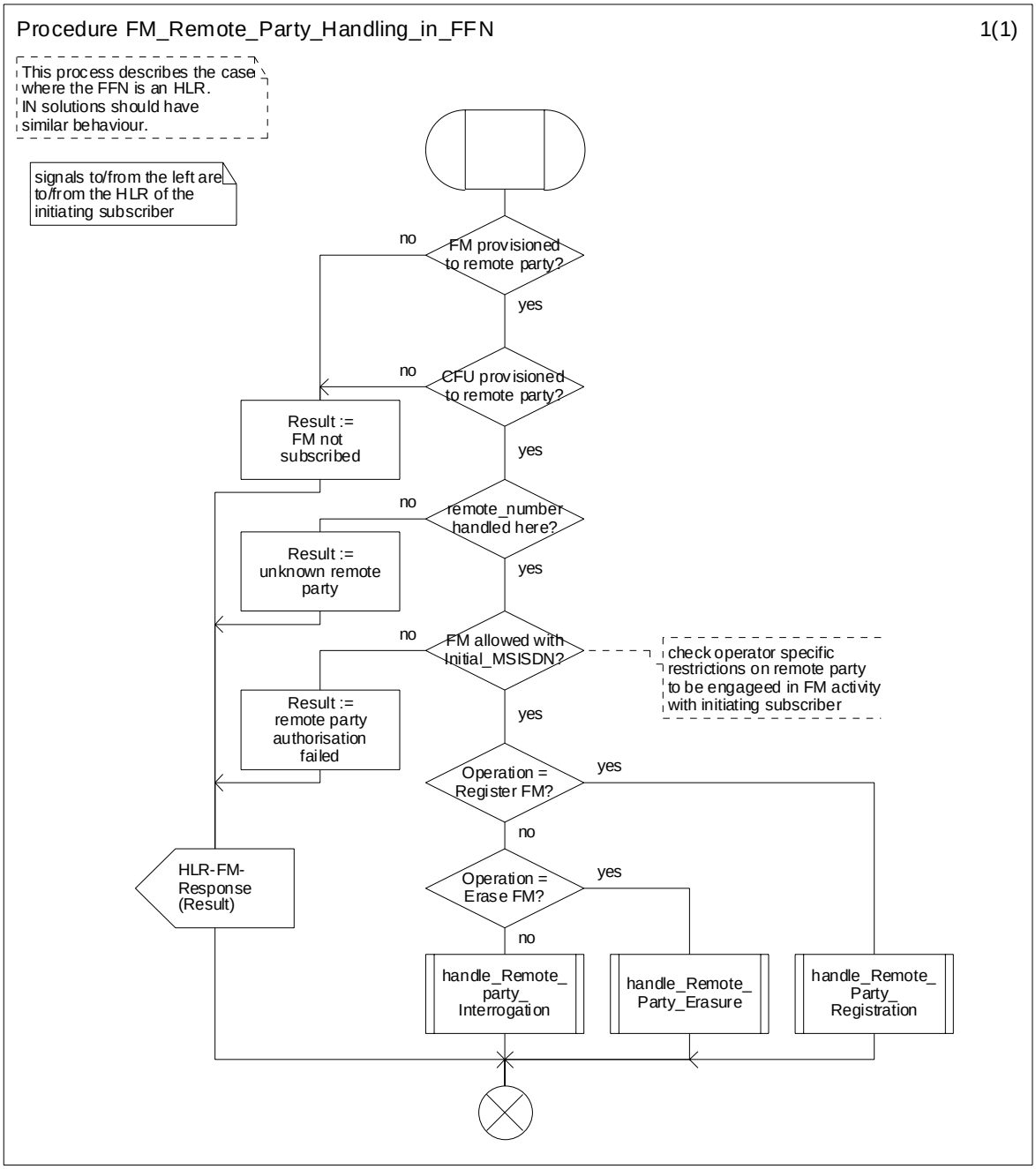
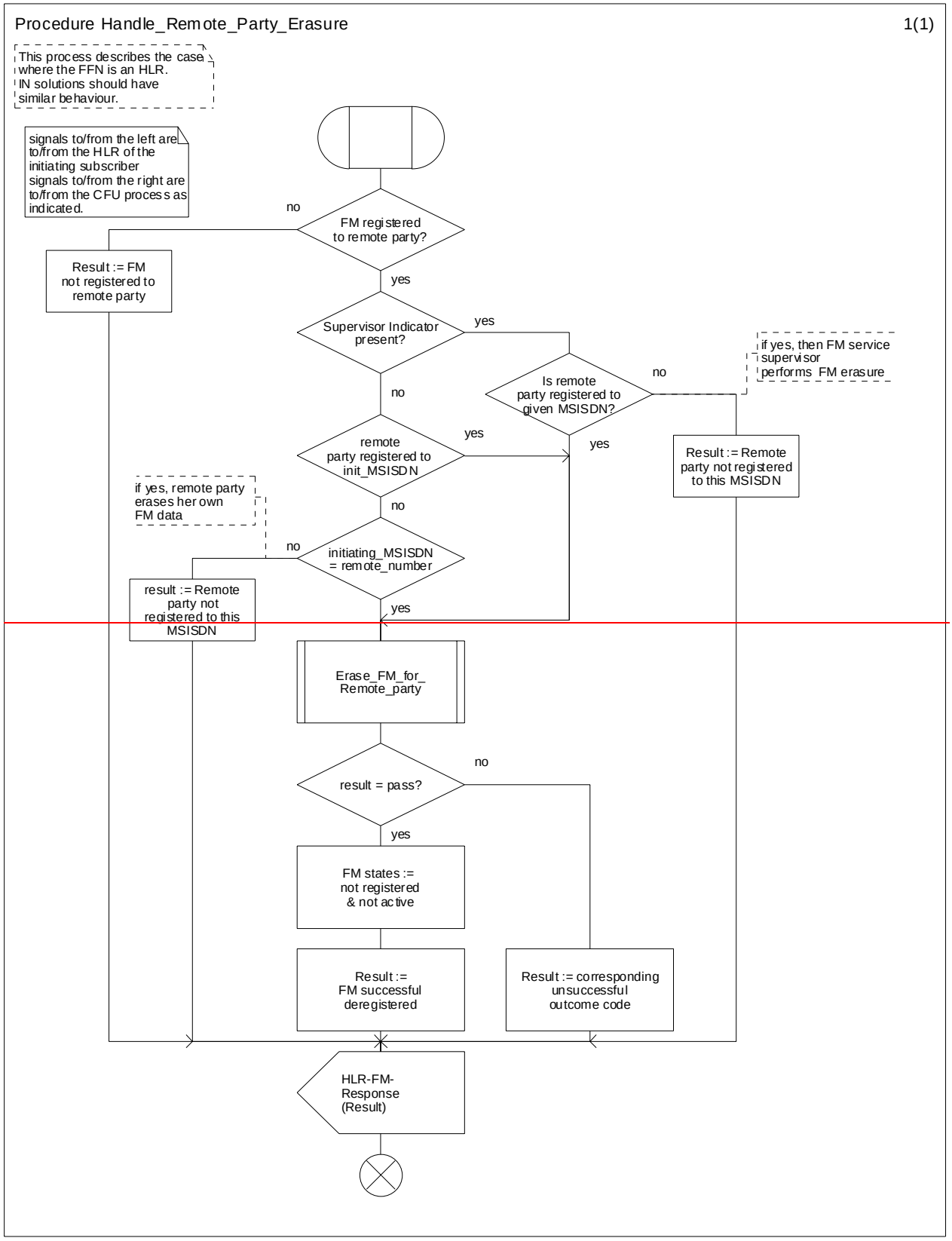


Figure 4.5: Procedure: FM_Remote_Party_Handling_in_FFN

****** Next Modified Section ******


Procedure Handle_Remote_Party_Erasure
1(1)
This process describes the case where the FFN is an HLR. IN solutions should have similar behaviour.
signals to/from the left are to/from the HLR of the initiating subscriber
signals to/from the right are to/from the CFU process as indicated.
FM registered to remote party?
no
yes
Result := FM not registered to remote party
Supervisor Indicator present?
yes
no
if yes, then FM service supervisor performs FM erasure
Is remote party registered to given MSISDN?
no
yes
Result := Remote party not registered to this MSISDN
remote party registered to init_MSISDN
yes
no
if yes, remote party erases her own FM data
initiating_MSISDN = remote_number
no
result := Remote party not registered to this MSISDN
yes
Erase_FM_for_ Remote_party
result = pass?
no
yes
FM states := not registered & not active
Result := FM successful deregistered
Result := corresponding unsuccessful outcome code
HLR-FM-Response (Result)

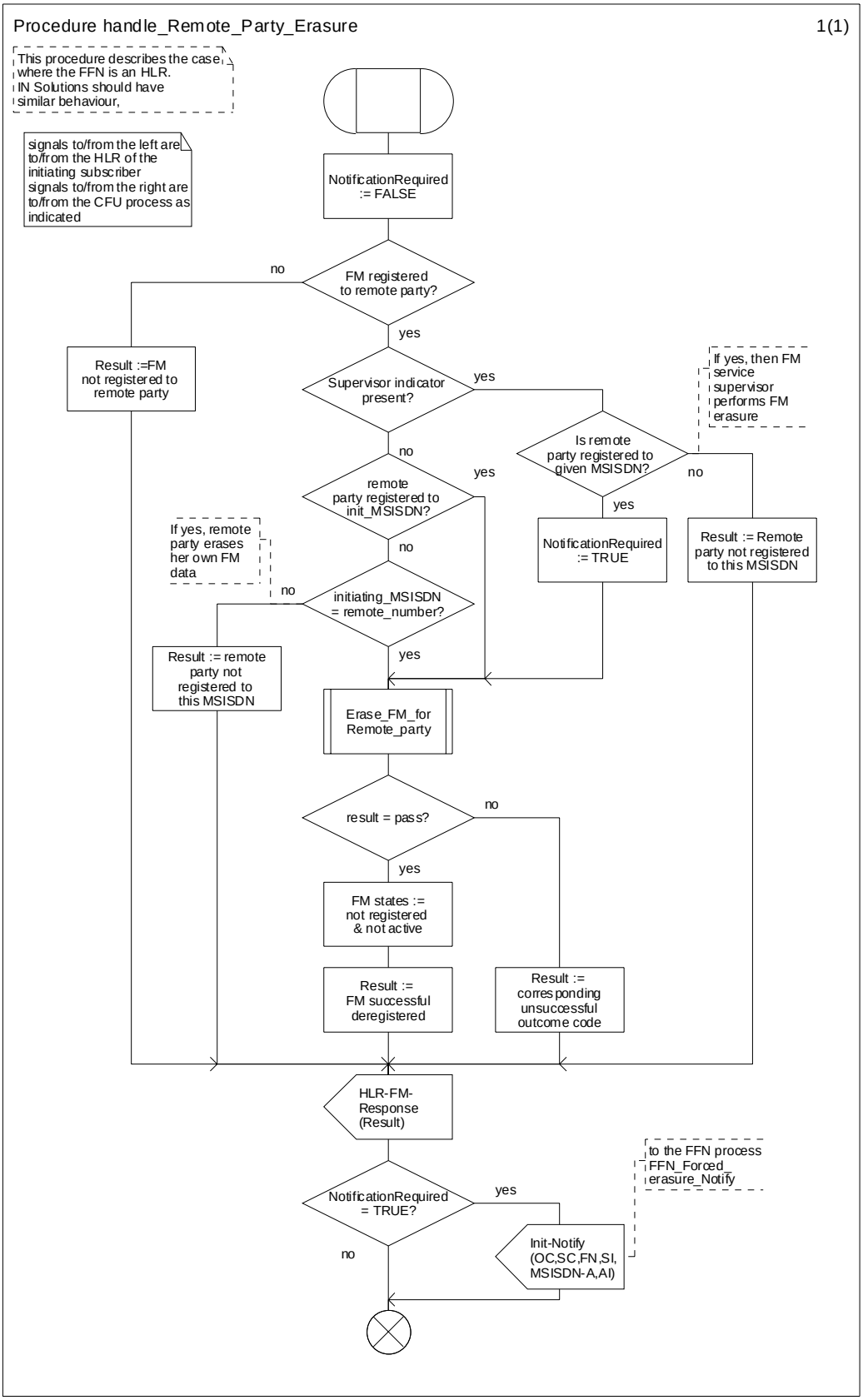


Figure 4.7: Procedure: Handle_Remote_Party_Erasure

****** Next Modified Section ******

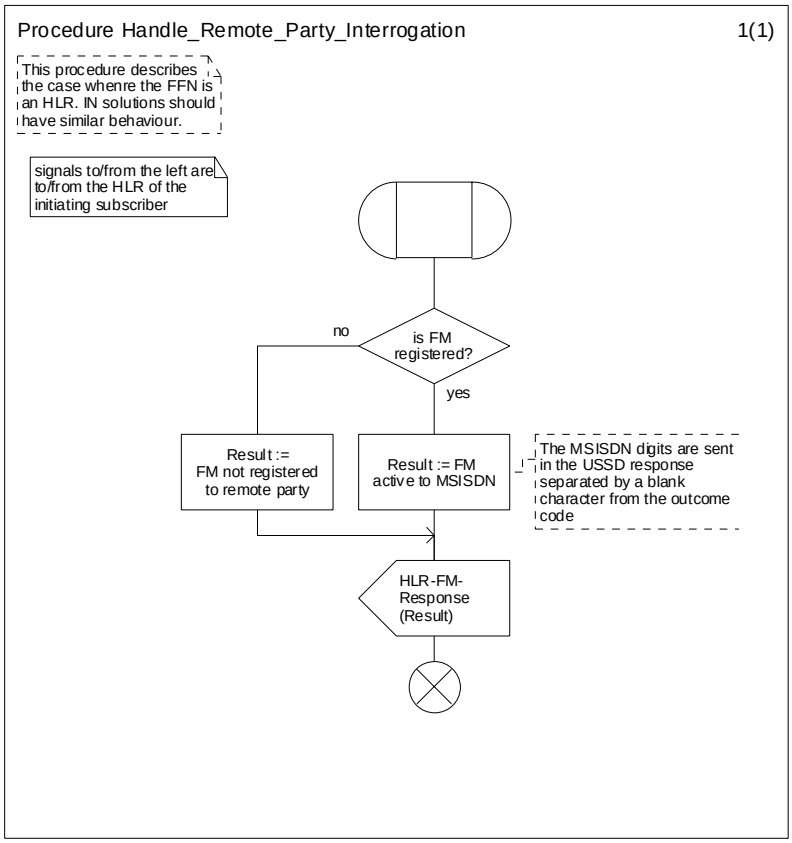


Figure 4.8: Procedure Handle_Remote_Party_Interrogation

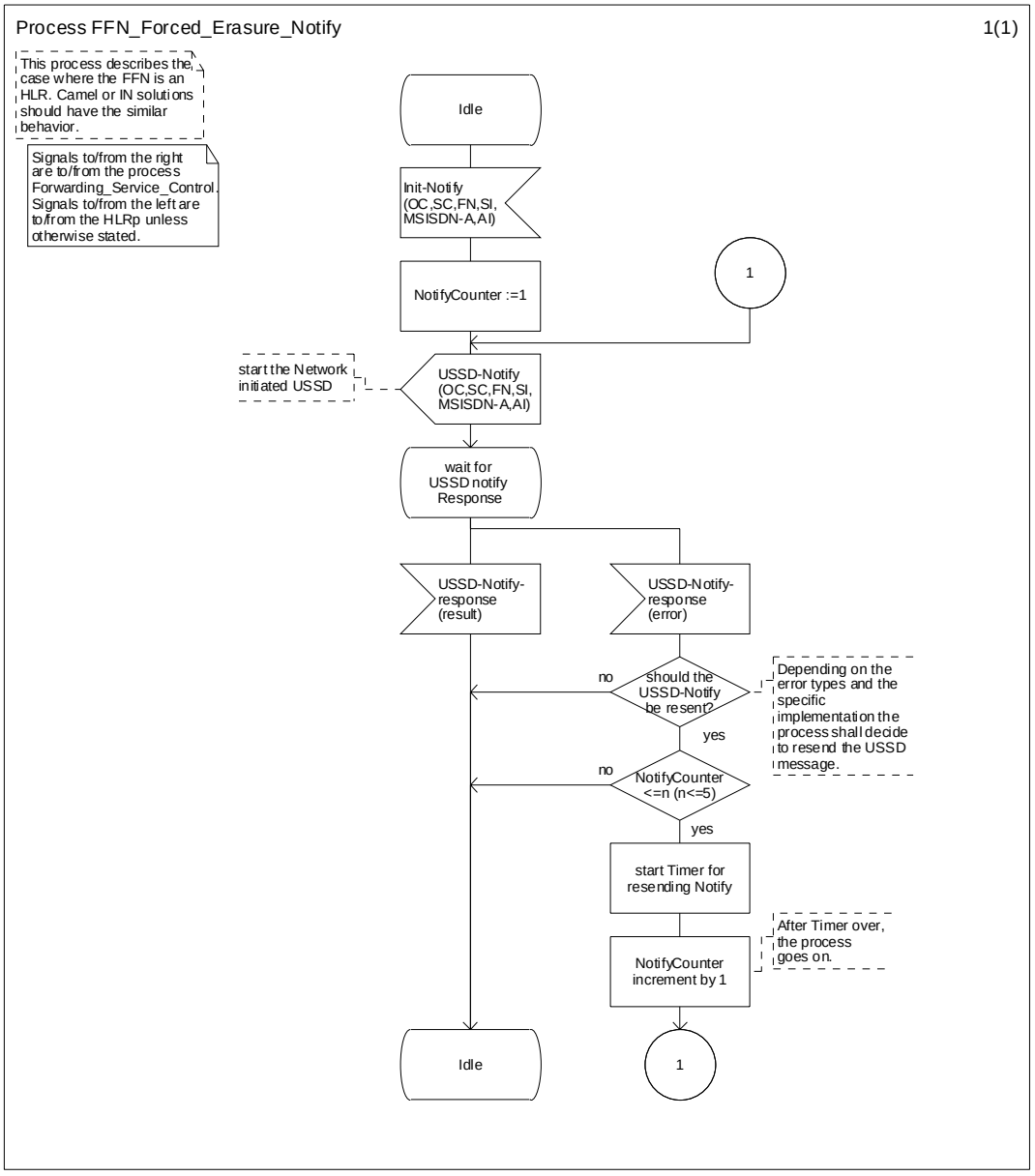


Figure 4.9: Process FFN_Forced_Erasure_Notify

****** Next Modified Section ******

B.5 Contents and Format of the USSD String of the USSD-Notify

The Contents and the format of the USSD string of the USSD-Notify are described in the following table.

Table B.3: Contents of the USSD string of the USSD-Notify for forced de-registration

Parameter number	Value	Parameter mandatory (M), optional (O) or conditional (C)	Comment
1	OC	M	Operation Code: OC = ## ... for Erasure
2	SC	M	Service Code for Follow Me. SMG1 Refer to 22.030 for the Service Code for Follow Me.
3	*	M	Delimiter
4	REMOTE NUMBER (forced deregistered number)	M	remote number
5	*	M	Delimiter.
6	Supervisor Indicator	C	Supervisor Indicator = 88. This parameter is mandatory used for Forced Erasure by FM Service Supervisor (see also parameter number 8).
7	*	M	Delimiter
8	MSISDN	C	- This parameter is mandatory as MSISDN of supervisor who initiated the forced deregistration request. - This parameter shall not be included if initiated by an administrative terminal connected to the FFN.
9	*	M	Delimiter
10	Additional information field	O	Additional information field
last	#	M	End of USSD string

Note: USSD Notification for Forced deregistration done by administrative terminal in general is optional.

B.6 Inter-process Message Init-Notify

The Init-Notify message is an inter-process message in FFN. It is sent from the process ~~Forwarding_Service~~Handle_Remote_Party_Erasure~~_Control~~ to process FFN_Forced_Erasure_Notify.

This message consists of the parameter USSD String. On receipt of the Init-Notify message, the process FFN_Forced_Erasure_Notify will pack the USSD String into the USSD-Notify message and send it to the HLRp. Refer to Table B.3 for the contents and format of the USSD String.

This message is only required where the FFN is based on an HLR. If the FFN is based on an IN system it is not required.

3GPP TSG CN WG4 Meeting #21 **N4-031155**
Bangkok, THAILAND, 27th – 31st October 2003

CR-Form-v7

CHANGE REQUEST

⌘ **29.060** **CR** **466** ⌘ **rev** **-** ⌘ Current version: **6.2.0** ⌘

*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⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☒

Title:	⌘	Correction of a mis-implementation of CR 29.060-410
Source:	⌘	CN4
Work item code:	⌘	TEI_6
Date:	⌘	14/10/2003
Category:	⌘	**F**
Release:	⌘	Rel-6

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:	⌘	**Remedy for an incorrectly implemented CR** The CR 29.060-410 (N4-030421) was not implemented correctly; specifically, the place holders for the IE Type Value for the newly added IE "Common Flags" field were not replaced with an actual number.
Summary of change:	⌘	Change the place holders for the "Common Flags" field to an integer number.
Consequences if not approved:	⌘	Although CR 29.060-410 was approved at 3GPP TSG CN WG4 #19, its contents will not be present in 3GPP TS 29.060.

Clauses affected:	⌘	7.7, 7.7.48

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

⌘

Other comments:	⌘	Note to the CR implementer: please swap out the place holders "XXX" with an integer number that does not conflict with any other IE Type Value in any previous releases of 3GPP TS 29.060 or GSM 09.60.

7.7 Information Elements

A GTP Signalling message may contain several information elements. The TLV (Type, Length, Value) or TV (Type, Value) encoding format shall be used for the GTP information elements. The information elements shall be sorted, with the Type fields in ascending order, in the signalling messages. The Length field contains the length of the information element excluding the Type and Length field.

For all the length fields, bit 8 of the lowest numbered octet is the most significant bit and bit 1 of the highest numbered octet is the least significant bit.

Within information elements, certain fields may be described as spare. These bits shall be transmitted with the value defined for them. To allow for future features, the receiver shall not evaluate these bits.

The most significant bit in the Type field is set to 0 when the TV format is used and set to 1 for the TLV format.

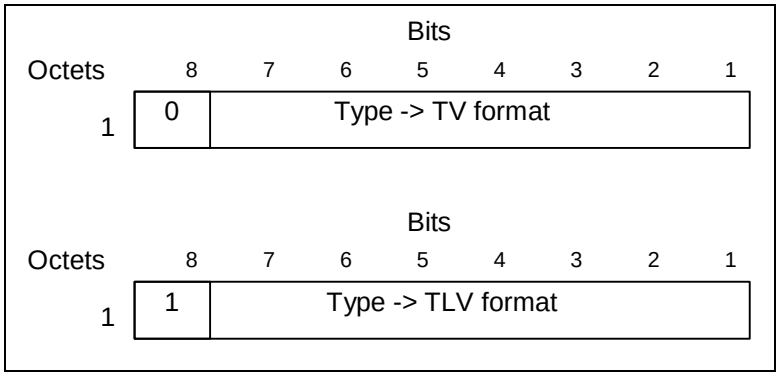


Figure 8: Type field for TV and TLV format

Table 37: Information Elements

IE Type Value	Format	Information Element	Reference
1	TV	Cause	7.7.1
2	TV	International Mobile Subscriber Identity (IMSI)	7.7.2
3	TV	Routeing Area Identity (RAI)	7.7.3
4	TV	Temporary Logical Link Identity (TLLI)	7.7.4
5	TV	Packet TMSI (P-TMSI)	7.7.5
6-7	Spare		
8	TV	Reordering Required	7.7.6
9	TV	Authentication Triplet	7.7.7
10	Spare		
11	TV	MAP Cause	7.7.8
12	TV	P-TMSI Signature	7.7.9
13	TV	MS Validated	7.7.10
14	TV	Recovery	7.7.11
15	TV	Selection Mode	7.7.12
16	TV	Tunnel Endpoint Identifier Data I	7.7.13
17	TV	Tunnel Endpoint Identifier Control Plane	7.7.14
18	TV	Tunnel Endpoint Identifier Data II	7.7.15
19	TV	Teardown Ind	7.7.16
20	TV	NSAPI	7.7.17
21	TV	RANAP Cause	7.7.18
22	TV	RAB Context	7.7.19
23	TV	Radio Priority SMS	7.7.20
24	TV	Radio Priority	7.7.21
25	TV	Packet Flow Id	7.7.22
26	TV	Charging Characteristics	7.7.23
27	TV	Trace Reference	7.7.24
28	TV	Trace Type	7.7.25
29	TV	MS Not Reachable Reason	7.7.25A

IE Type Value	Format	Information Element	Reference
30	TV	Radio Priority LCS	7.7.25B
117-126	Reserved for the GPRS charging protocol (see GTP' in 3GPP TS 32.215 [18])		
127	TV	Charging ID	7.7.26
128	TLV	End User Address	7.7.27
129	TLV	MM Context	7.7.28
130	TLV	PDP Context	7.7.29
131	TLV	Access Point Name	7.7.30
132	TLV	Protocol Configuration Options	7.7.31
133	TLV	GSN Address	7.7.32
134	TLV	MS International PSTN/ISDN Number (MSISDN)	7.7.33
135	TLV	Quality of Service Profile	7.7.34
136	TLV	Authentication Quintuplet	7.7.35
137	TLV	Traffic Flow Template	7.7.36
138	TLV	Target Identification	7.7.37
139	TLV	UTRAN Transparent Container	7.7.38
140	TLV	RAB Setup Information	7.7.39
141	TLV	Extension Header Type List	7.7.40
142	TLV	Trigger Id	7.7.41
143	TLV	OMC Identity	7.7.42
144	TLV	RAN Transparent Container	7.7.43
145	TLV	PDP Context Prioritization	7.7.45
146	TLV	Additional RAB Setup Information	7.7.45A
147	TLV	SGSN Number	7.7.47
XXX	TLV	Common Flags	7.7.48
239-250	Reserved for the GPRS charging protocol (see GTP' in 3GPP TS 32.215 [18])		
251	TLV	Charging Gateway Address	7.7.44
252-254	Reserved for the GPRS charging protocol (see GTP' in 3GPP TS 32.215 [18])		
255	TLV	Private Extension	7.7.46

7.7.48 Common Flags

The Common Flags optional information element is used to hold values for multiple bit flags.

The Prohibit Payload Compression bit field is relevant only for A/Gb mode access and is used to determine whether or not an SGSN should attempt to compress the payload of user data when the users asks for it to be compressed.

Octets	Bits 8	7	6	5	4	3	2	1
1	Type=XXX (Decimal)							
2	Length							
3	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Prohibit Payload Compression

Figure 62a: Common Flags Information Element