

Source: TSG\_N WG4  
Title: CRs to 3G Work Item “CAMEL Phase 3”  
Agenda item: 6.2.4  
Document for: APPROVAL

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**Introduction:**

This document contains “8” CRs on Work Item “CAMEL Phase 3”, that have been agreed by TSG\_N WG4, and are forwarded to TSG\_N Plenary meeting #8 for approval.

TDoc	SPEC	CR	REV	PHAS	VERS	SUBJECT	CAT	NEW_VERS
N4-000097	23.008	026	2	R99	3.3.0	Editorial changes on 23.008 draft version 3.2.0	F	3.4.0
N4-000383	23.012	006		R99	3.2.0	Introduction of Mobility Management event notification into	F	3.3.0
N4-000087	23.018	045	1	R99	3.4.0	Correction of CAMEL Incoming Call Handling	D	3.5.0
N4-000394	23.018	051	4	R99	3.4.0	Correction of Active Retrieval of Location Information	F	3.5.0
N4-000098	29.002	115	1	R99	3.4.0	Activation of TDPs in the call related CSIs on DP basis	F	3.5.0
N4-000100	29.002	122	2	R99	3.4.0	Proposed information flow on NSDC	C	3.5.0
N4-000321	29.002	124	3	R99	3.4.0	CAMEL Subscription Info	F	3.5.0
N4-000320	29.002	127	1	R99	3.4.0	Optionality of parameters in d-csi and in sms-csi	F	3.5.0

**3GPP-CN2-SA meeting**  
**Charleston,U.S.A, 27-31 March 2000**

**Document N4-000097**

### 3G CHANGE REQUEST

*Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.*

**23.008 CR 026r2**

Current Version: **3.3.0**

3G specification number ↑

↑ CR number as allocated by 3G support team

For submission to TSG **CN#08** for approval  (only one box should  
list TSG meeting no. here ↑ for information  be marked with an X)

Form: 3G CR cover sheet, version 1.0 The latest version of this form is available from: <http://ftp.3gpp.org/Information/3GCRF-xx.rtf>

**Proposed change affects:**  
(at least one should be marked with an X)

USIM

ME

UTRAN

Core Network

**Source:** **N4** **Date:** **29/03/00**

**Subject:** **Editorial changes on 23.008 draft version 3.2.0**

**3G Work item:** **CAMEL phase3**

**Category:** F Correction   
(only one category shall be marked with an X)  
A Corresponds to a correction in a 2G specification   
B Addition of feature   
C Functional modification of feature   
D Editorial modification

**Reason for change:** This CR includes editorial corrections concerning the notes and special characters at the end of the document.

**Clauses affected:** **Table 1&2.**

**Other specs affected:** Other 3G core specifications  → List of CRs:  
Other 2G core specifications  → List of CRs:  
MS test specifications  → List of CRs:  
BSS test specifications  → List of CRs:  
O&M specifications  → List of CRs:

**Other comments:**



<----- double-click here for help and instructions on how to create a CR.

**Table 1: Overview of data stored for non-GPRS Network Access Mode**

PARAMETER	SUBCLAUSE	HLR	VLR	TYPE	
IMSI	2.1.1.1	M	M	P	Note
Network Access Mode	2.1.1.2	M	-	P	Note
International MS ISDN number	2.1.2	M	M	P	
multinumering MSISDNs	2.1.3	C	-	P	Note
Basic MSISDN indicator	2.1.3.1	C	-	P	
MSISDN-Alert indicator	2.1.3.2	C	-	P	
TMSI	2.1.4	-	C	T	
LMSI	2.1.8	C	C	T	Note
Mobile Station Category	2.2.1	M	M	P	
LMU Identifier	2.2.2	C	C	P	
RAND, SRES and Kc	2.3.1		C	T	
RAND, XRES, CK, IK and AUTN	2.3.2	M	C	T	
Ciphering Key Sequence Number	2.3.3	-	M	T	
MSRN	2.4.1	-	C	T	Note
Location Area Identity	2.4.2	-	M	T	
VLR number	2.4.5	M	-	T	Note
MSC number	2.4.6	M	C	T	
HLR number	2.4.7	-	C	T	
Subscription restriction	2.4.10	C	-	P	
RSZI lists	2.4.11.1	C	-	P	
Zone Code List	2.4.11.2	-	C	P	
MSC area restricted flag	2.4.12	M	-	T	
LA not allowed flag	2.4.13	-	M	T	
ODB-induced barring data	2.4.15.1	C	-	T	
Roaming restriction due to unsupported feature	2.4.15.2	M	M	T	
Cell ID	2.4.16	-	C	T	
LSA Identity	2.4.17.1	C	C	P	
LSA Priority	2.4.17.2	C	C	P	
LSA Only Access Indicator	2.4.17.3	C	C	P	
LSA Active Mode Indicator	2.4.17.4	C	C	P	
VPLMN Identifier	2.4.17.5	C	-	P	
Provision of bearer service	2.5.1	M	M	P	
Provision of teleservice	2.5.2	M	M	P	
BC allocation	2.5.3	C	C	P	
IMSI detached flag	2.7.1	-	C	T	
Confirmed by Radio Contact indicator	2.7.4.1	-	M	T	
Subscriber Data Confirmed by HLR indicator	2.7.4.2	-	M	T	
Location Information Confirmed in HLR indicator	2.7.4.3	-	M	T	
Check SS indicator	2.7.4.4	M	-	T	
MS purged for non-GPRS flag	2.7.5	M	-	T	
MNRR	2.7.7	C	-	T	
Subscriber status	2.8.1	C	C	P	
Barring of outgoing calls	2.8.2.1	C	C	P	
Barring of incoming calls	2.8.2.2	C	-	P	
Barring of roaming	2.8.2.3	C	-	P	
Barring of premium rate calls	2.8.2.4	C	C	P	
Barring of supplementary service management	2.8.2.5	C	C	P	
Barring of registration of call forwarding	2.8.2.6	C	-	P	
Barring of invocation of call transfer	2.8.2.7	C	C	P	
Operator determined barring PLMN-specific data	2.8.3	C	C	P	
Notification to CSE flag for ODB	2.8.4	C	-	T	
gsmSCF address list for ODB	2.8.5	C	-	P	
Handover Number	2.9.1	-	C	T	
Messages Waiting Data	2.10.1	C	-	T	
Mobile Station Not Reachable Flag	2.10.2	C	M	T	
Memory Capacity Exceeded Flag	2.10.3	C	-	T	

(continued)

**Table 1 (concluded): Overview of data stored for non-GPRS Network Access Mode**

PARAMETER	SUBCLAUSE	HLR	VLR	TYPE	
Trace Reference	2.11.1	C	C	P	
Trace Type	2.11.2	C	C	P	
Operations Systems Identity	2.11.3	C	C	P	
HLR Trace Type	2.11.4	C	-	P	
MAP Error On Trace	2.11.5	C	-	T	
Trace Activated in VLR	2.11.6	C	C	T	
Foreign Subscriber Registered in VLR	2.11.7	-	C	P	Note
VGCS Group Membership List	2.12.1	C	C	P	
VBS Group Membership List	2.12.2	C	C	P	
Broadcast Call Initiation Allowed List	2.12.2.1	C	C	P	
Originating CAMEL Subscription Information (O-CSI)	2.14.1.1/3.1	C	C	P	
Terminating CAMEL Subscription Information (T-CSI)	2.14.1.2	C	-	P	
VMSC Terminating CAMEL Subscription Information (VT-CSI)	2.14.1.2/3.2	C	C	P	
Location Information/Subscriber state Information	2.14.1.3	C	-	P	
USSD CAMEL subscription information(U-CSI)	2.14.1.4	C	-	P	
SS invocation notification (SS-CSI)	2.14.1.5/3.2	C	C	P	
Translation information flag(TIF-CSI)	2.14.1.6/3.6	C	C	P	
Dialled service CAMEL Subscription Information (D-CSI)	2.14.1.10/3.6	C	C	P	
O-CSI Negotiated CAMEL Capability Handling	2.14.2.1	C		P	
D-CSI Negotiated CAMEL Capability Handling	2.14.2.1	C		P	
SS-CSI Negotiated CAMEL Capability Handling	2.14.2.1	C		P	
VT-CSI Negotiated CAMEL Capability Handling	2.14.2.1	C		P	
SMS-CSI VLR Negotiated CAMEL Capability Handling	2.14.2.1	C		P	
M-CSI Negotiated CAMEL Capability Handling	2.14.2.1	C		P	
VLR Supported CAMEL Phases	2.14.2.2	C		P	
USSD General CAMEL service information (UG-CSI)	2.14.2.3	C		P	
GsmSCF address for CSI	2.14.2.4	C		P	
IST Alert Timer	2.15.1	C	C	P	
Privacy Exception List	2.16.1.1	C	C	P	
GMLC Numbers	2.16.1.2	C	C	P	
MO-LR List	2.16.1.3	C	C	P	
Age Indicator	2.17.1	C	C	T	

**Table 2: Overview of data used for GPRS Network Access Mode**

PARAMETER	Subclause	HLR	VLR	SGSN	GGSN	TYPE
IMSI	2.1.1.1	M	M	M	M	P <i>Note</i>
Network Access Mode	2.1.1.2	M	-	C <del>(a)</del> <i>note1</i>	-	P <i>Note</i>
International MS ISDN number	2.1.2	M	M	M	-	T
multinumbering MSISDNs	2.1.3	C	-	-	-	T <i>Note</i>
Basic MSISDN indicator	2.1.3.1	C	-	-	-	T
MSISDN-Alert indicator	2.1.3.2	C	-	-	-	T
P-TMSI	2.1.5	-	-	C	-	T <i>Note</i>
TLLI	2.1.6	-	-	C	-	T
Random TLLI	2.1.7	-	-	C	-	T <i>Note</i>
IMEI	2.1.9	-	-	C	-	T
RAND/SRES and Kc	2.3.1	-	-	C	-	T
RAND, XRES, CK, IK, AUTN	2.3.2	M	-	C	-	T
Ciphering Key Sequence Number	2.3.3	-	-	M	-	T
Selected Ciphering Algorithm	2.3.5	-	-	M	-	T
Current Kc	2.3.6	-	-	M	-	T
P-TMSI Signature	2.3.7	-	-	C	-	T
Routing Area Identity	2.4.3	-	-	M	-	T
Cell Global Identification	2.4.4	-	-	C	-	T
VLR Number	2.4.5	M	-	C	-	T
SGSN Number	2.4.8.1	M	C	<del>(G)</del> <i>note2</i>	-	T <i>Note</i>
			<del>(G)</del> <i>note2</i>			
GGSN Number	2.4.8.2	<del>(M)</del>	-	-	-	P <i>Note</i>
RSZI Lists	2.4.11.1	C	-	-	-	P
Zone Code List	2.4.11.2	-	-	C	-	P
LA not allowed flag	2.4.13	-	-	M	-	T
SGSN area restricted flag	2.4.14	M	-	-	-	T
Roaming Restriction in the SGSN ..	2.4.15.2	M	-	M	-	T
Cell ID	2.4.16	-	-	C	-	T
LSA Identity	2.4.17.1	C	C	C	-	P
LSA Priority	2.4.17.2	C	C	C	-	P
LSA Only Access Indicator	2.4.17.3	C	C	C	-	P
LSA Active Mode Indicator	2.4.17.4	C	C	C	-	P
VPLMN Identifier	2.4.17.5	C	-	-	-	P
Provision of teleservice	2.5.2	C	-	C	-	P
Transfer of SM option	2.5.4	M	-	-	-	P
MNRG	2.7.2	M	-	M	M	T
MM State	2.7.3	-	-	M	-	T
Subscriber Data Confirmed by HLR Indicator	2.7.4.2	-	-	M	-	T
Location Info Confirmed by HLR Indicator	2.7.4.3	-	-	M	-	T
MS purged for GPRS flag	2.7.6	M	-	-	-	T
MNRR	2.7.7	C	-	-	-	T
Subscriber Status	2.8.1	C	-	C	-	P
Barring of outgoing calls	2.8.2.1	C	-	C	-	P
Barring of roaming	2.8.2.3	C	-	C	-	P
ODB PLMN-specific data	2.8.3	C	-	C	-	P
Notification to CSE flag for ODB	2.8.4	C	-	-	-	T
gsmSCF address list for ODB	2.8.5	C	-	-	-	P
Trace Activated in SGSN	2.11.7	C	-	C	-	P
PDP Type	2.13.1	C	-	C	M	P
PDP Address	2.13.2	C	-	C	M	P
NSAPI	2.13.3	-	-	C	C	T
PDP State	2.13.4	-	-	C	-	T
New SGSN Address	2.13.5	-	-	C	-	T
Access Point Name	2.13.6	C	-	C	C	P/T <i>Note</i>
GGSN Address in Use	2.13.7	-	-	C	-	T
VPLMN Address Allowed	2.13.8	C	-	C	-	P
Dynamic Address	2.13.9	-	-	-	C	T
SGSN Address	2.13.10	-	-	-	M	T
GGSN-list	2.13.11	M	-	-	-	T

(continued)

**Table 2 (concluded): Overview of data used for GPRS Network Access Mode**

PARAMETER	Subclause	HLR	VLR	SGSN	GGSN	TYPE
Quality of Service Subscribed	2.13.12	C	-	C	-	P
Quality of Service Requested	2.13.13	-	-	C	-	T
Quality of Service Negotiated	2.13.14	-	-	C	M	T
SND	2.13.15	-	-	C	C	T
SNU	2.13.16	-	-	C	C	T
DRX Parameters	2.13.17	-	-	M	-	T
Compression	2.13.18	-	-	C	-	T
NGAF	2.13.19	-	-	C	-	T
Classmark	2.13.20	-	-	<del>(Gs)</del> note2 M	-	T
TID	2.13.21	-	-	C	C	T
Radio Priority	2.13.22	-	-	C	-	T
Radio Priority SMS	2.13.23	-	-	C	-	T
Short Message Service CAMEL Subscription Information (SMS-CSI)	2.14.4.1/1.8	C	-	C	-	P
GPRS CAMEL Subscription Information (GPRS-CSI)	2.14.4.2/1.9	C	-	C	-	C
SMS-CSI SGSN Negotiated CAMEL Capability Handling	2.14.2.1	C	-	-	-	P
GPRS-CSI Negotiated CAMEL Capability Handling	2.14.2.1	C	-	-	-	P
SGSN Supported CAMEL Phases	2.14.2.3	C	-	-	-	P
GsmSCF address for CSI	2.14.2.4	C	-	-	-	P
Age Indicator	2.16.1	C	-	C	-	T

**NOTE:** The HLR column indicates only GPRS related use, i.e. if the HLR uses a parameter in non-GPRS Network Access Mode but not in GPRS Network Access Mode, it is not mentioned in this table 2.

note1: This parameter is relevant in the SGSN only when the Gs interface is installed.

~~(Gs)~~note2: The VLR column is applicable if Gs interface is installed. It only indicates GPRS related data to be stored and is only relevant to GPRS subscribers registered in VLR.

~~(a)note1: This parameter is relevant in the SGSN only when the Gs interface is installed.~~

**NOTE:** For special condition of storage see in the subclauses 2.x.y, referred to. See clause 3 for explanation of M,C,T and P in table 2.

**3GPP TSG CN WG4 meeting  
Rotenburg, Germany, 22-26 Mai 2000**

**Document N4-000383**

*e.g. for 3GPP use the format TP-99xxx  
or for SMG, use the format P-99-xxx*

**CHANGE REQUEST**

*Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.*

**23.012 CR 006**

Current Version: **3.2.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **CN#08**  
*list expected approval meeting # here ↑*

for approval   
for information

strategic   
non-strategic  *(for SMG Use only)*

Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

**Proposed change affects:** (U)SIM  ME  UTRAN / Radio  Core Network   
*(at least one should be marked with an X)*

**Source:** N4 **Date:** 18/05/00

**Subject:** Introduction of Mobility Management event notification into 23.012 procedures

**Work item:** Camel phase 3

<b>Category:</b> <i>(only one category shall be marked with an X)</i>	F Correction	<input checked="" type="checkbox"/>	<b>Release:</b>	Phase 2	<input type="checkbox"/>
	A Corresponds to a correction in an earlier release	<input type="checkbox"/>		Release 96	<input type="checkbox"/>
	B Addition of feature	<input type="checkbox"/>		Release 97	<input type="checkbox"/>
	C Functional modification of feature	<input type="checkbox"/>		Release 98	<input type="checkbox"/>
	D Editorial modification	<input type="checkbox"/>		Release 99	<input checked="" type="checkbox"/>
			Release 00	<input type="checkbox"/>	

**Reason for change:** Introduction of Mobility Management event notification into 23.012 procedures.

**Clauses affected:** Figure 4.1.2.1(sheet2 of 4), process Update\_Location\_Area\_VLR  
Figure 4.1.2.1(sheet 4 of 4):process Update\_Location\_Area\_VLR  
Figure 4.3.1.1(sheet 1 of 1): process Detach\_IMSI\_VLR

<b>Other specs affected:</b>	Other 3G core specifications	<input type="checkbox"/>	→ List of CRs:	
	Other GSM core specifications	<input type="checkbox"/>	→ List of CRs:	
	MS test specifications	<input type="checkbox"/>	→ List of CRs:	
	BSS test specifications	<input type="checkbox"/>	→ List of CRs:	
	O&M specifications	<input type="checkbox"/>	→ List of CRs:	

**Other comments:** This CR shall be read in page mode



<----- double-click here for help and instructions on how to create a CR.

## 1.1 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.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

- [1] 3G TS 21.905: "3G Vocabulary".
- [2] 3G TS 23.002: "Network architecture".
- [3] 3G TS 23.003: "Numbering, addressing and identification".
- [4] 3G TS 23.007: "Restoration procedures".
- [5] 3G TS 23.008: "Organization of subscriber data".
- [6] 3G TS 23.022: "Functions related to Mobile Station (MS) in idle mode".
- [7] 3G TS 23.116: "Super-Charger Technical Realisation; Stage 2".
- [8] 3G TS 29.002: "Mobile Application Part (MAP) specification".
- [9] 3G TS 29.007: "General requirements on interworking between the Public Land Mobile Network (PLMN) and the Integrated Services Digital Network (ISDN) or Public Switched Telephone Network (PSTN)".
- [10] GSM 03.20: "Digital cellular telecommunication system (Phase 2+); Security related network functions".
- [11] [3G TS 23.078: "CAMEL phase3 – stage2"](#)

### 4.1.2 Detailed procedure in the VLR

#### 4.1.2.1 Process Update\_Location\_Area\_VLR

General comment: at any stage in the location updating process the MSC may receive an indication from the BSS that the MM transaction has been released. The MSC then sends an Abort signal to the VLR. Upon receipt of this message, the VLR shall follow one of two possible courses of action.

The two possible courses of action and the conditions determining which course shall be taken are as follows:

1. If a successfully authenticated radio connection is already established before the Abort message is received, the VLR shall ignore the message.

2. If a successfully authenticated radio connection has not been established before the Abort message is received, the VLR shall abort the Update Location Area process and return to the idle state.

Sheet 1: the location area updating process will be activated by receiving an Update Location Area indication from the MSC. If there are parameter errors in the indication, the process is terminated with the appropriate error sent in the Update Location Area response to the MSC. Else, the behaviour will depend on the subscriber identity received, either an IMSI or a TMSI.



Sheet 2: at the decision "HLR updating required?" the "True" branch shall be taken if and only if one or more of the following conditions is true:

- (1) Location Info Confirmed in HLR is false.
- (2) Data Confirmed by HLR is false.

The type of Location Update is retrieved in 3G TS 23.078 procedure 'Set\_Notification\_Type' and is returned into the 'Notify' variable; this information is necessary for the CAMEL Mobility Management event notification procedure 3G TS 23.078 'Notify\_gsmSCF'.

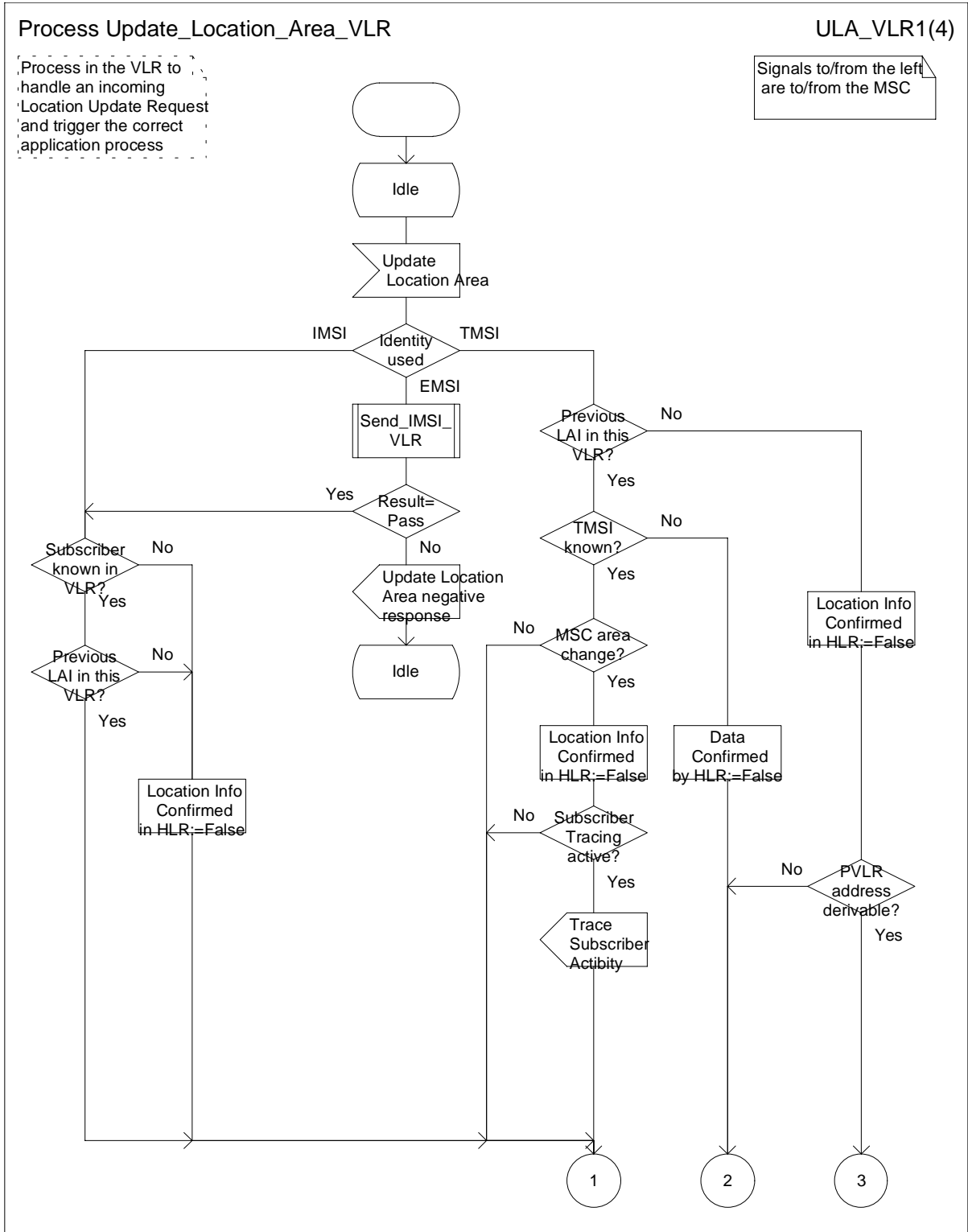


Figure 4.1.2.1 (sheet 1 of 4): Process Update\_Location\_Area\_VLR

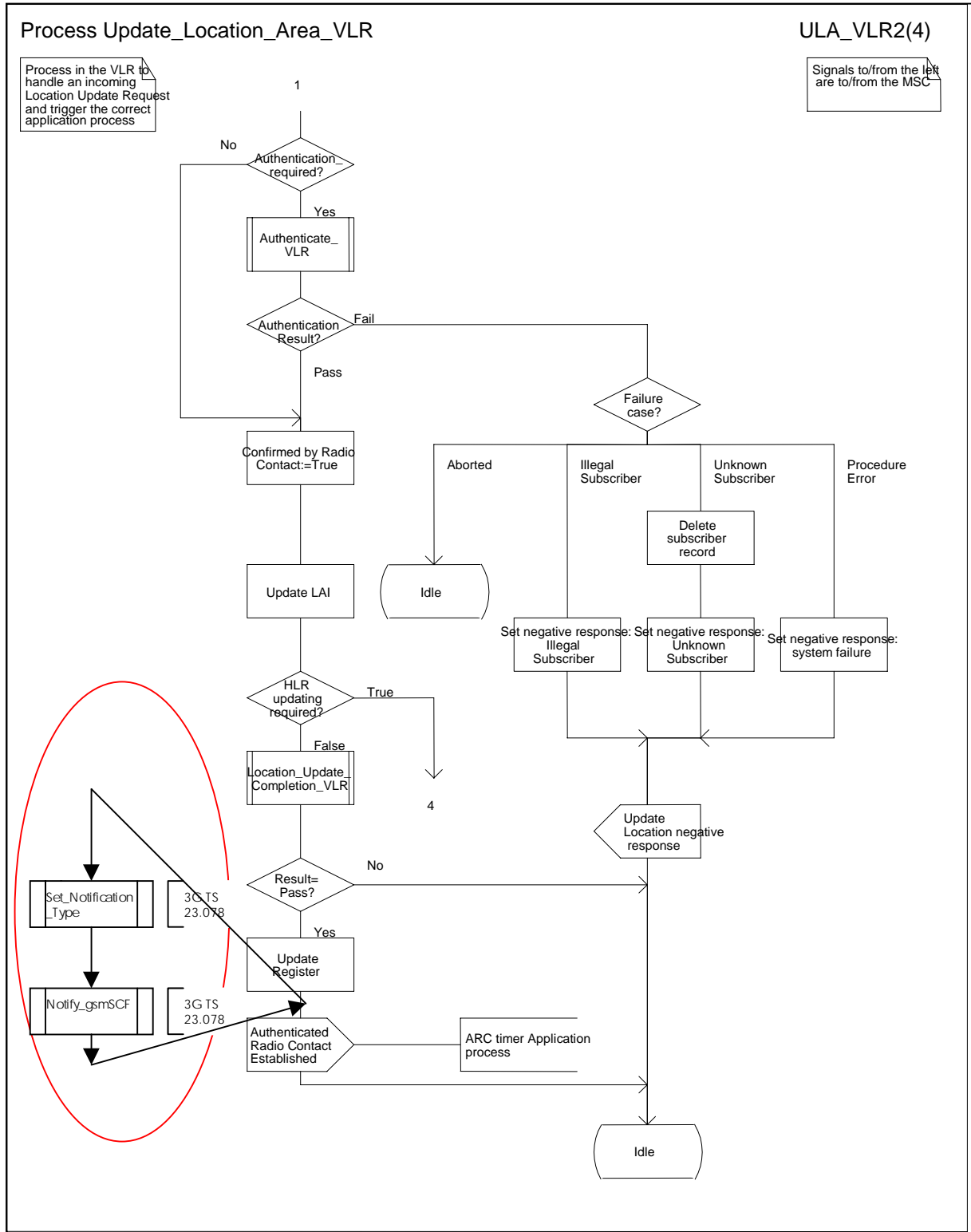


Figure 4.1.2.1 (sheet 2 of 4): Process Update\_Location\_Area\_VLR

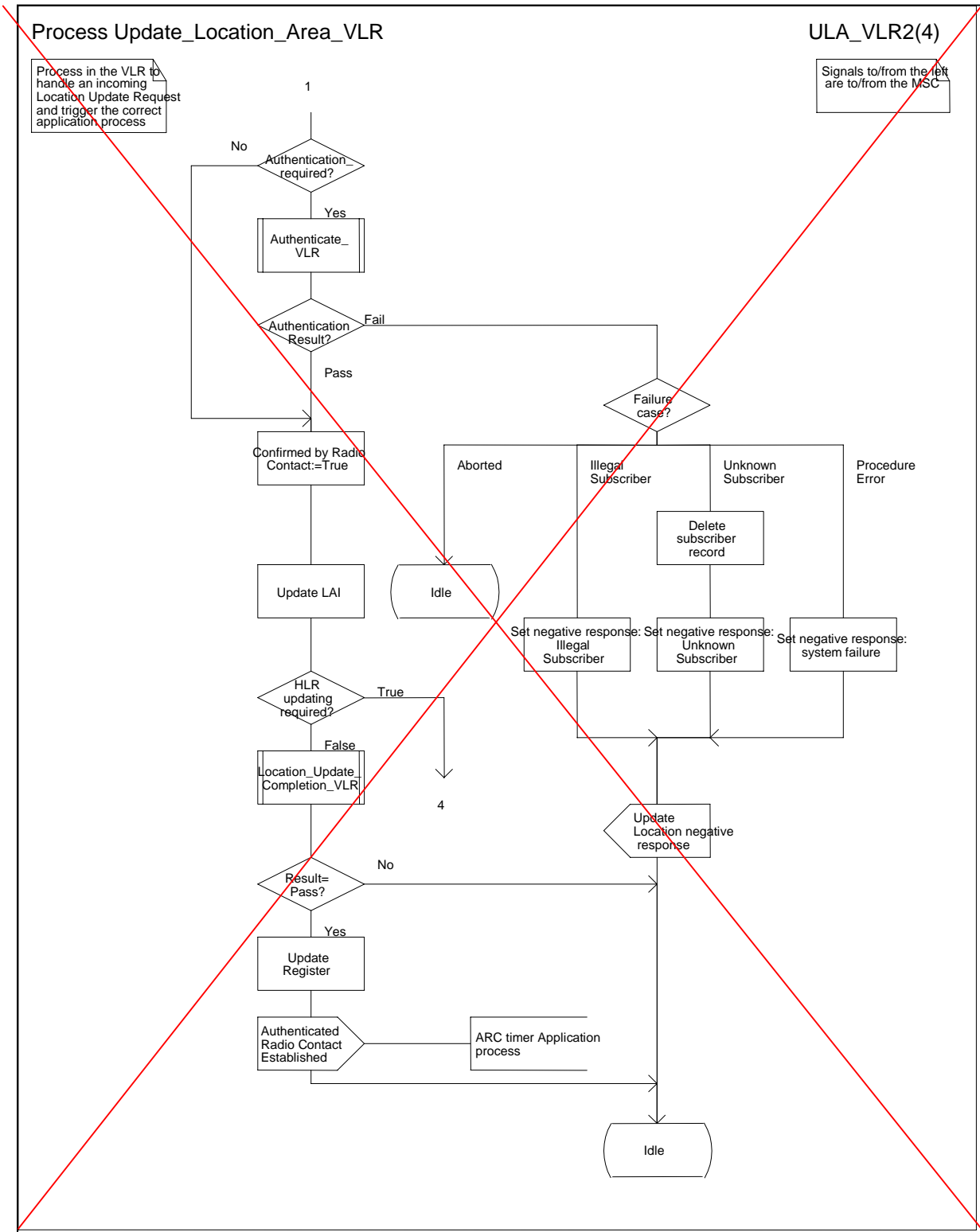


Figure 4.1.2.1 (sheet 2 of 4): Process Update\_Location\_Area\_VLR

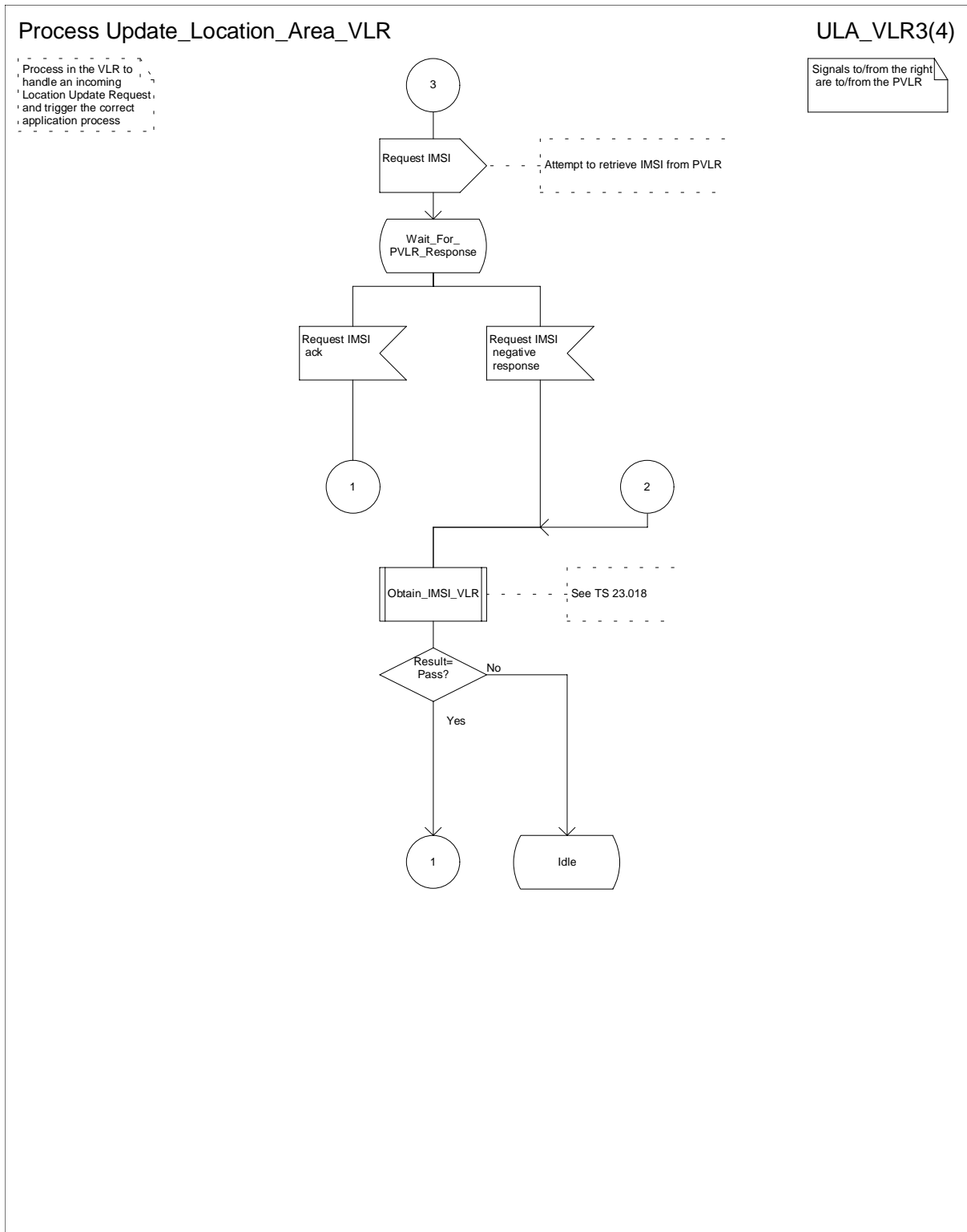


Figure 4.1.2.1 (sheet 3 of 4): Process Update\_Location\_Area\_VLR

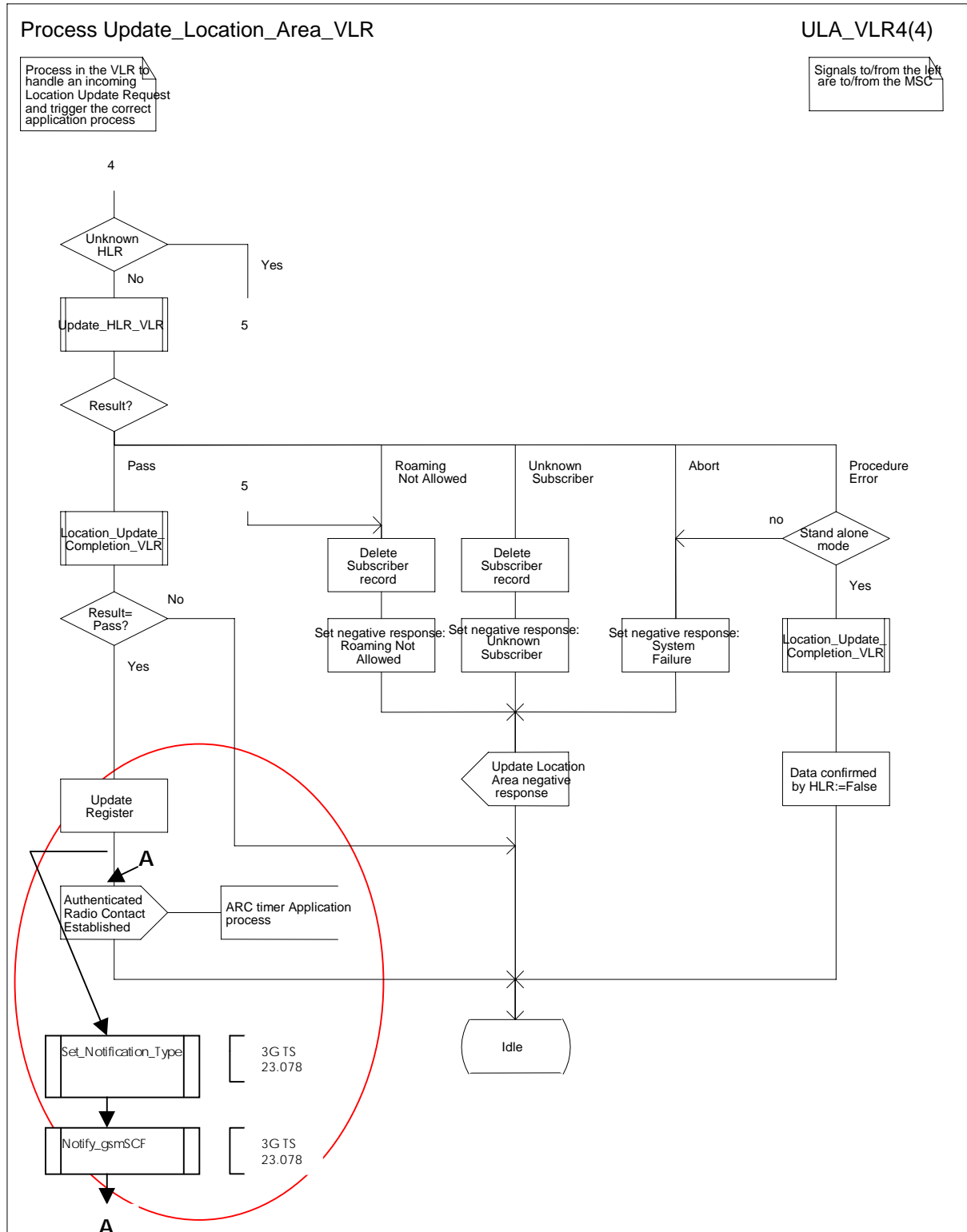


Figure 4.1.2.1 (sheet 4 of 4): Process Update\_Location\_Area\_VLR

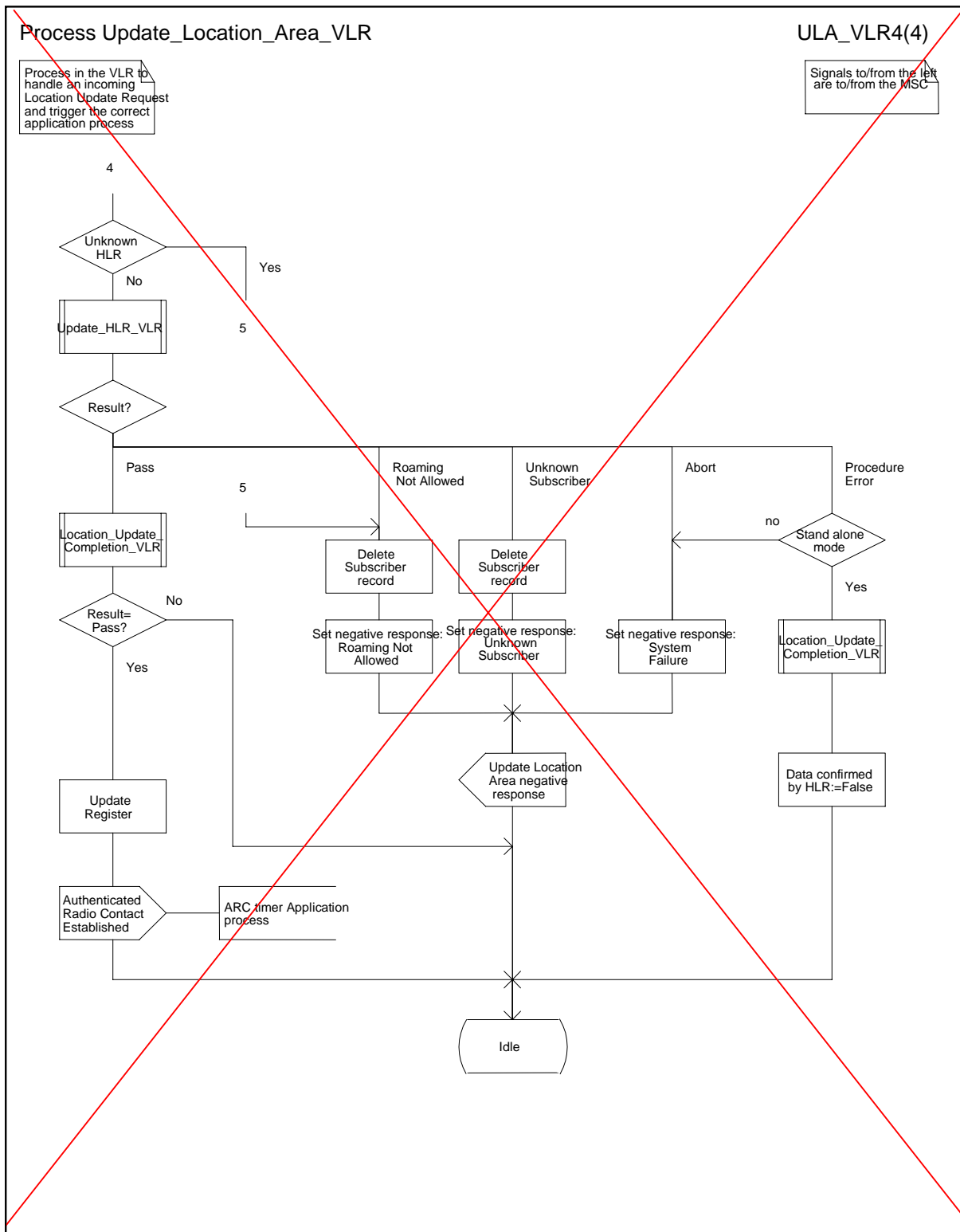


Figure 4.1.2.1 (sheet 4 of 4): Process Update\_Location\_Area\_VLR

### 4.3.2 Detailed procedure in the VLR

#### 4.3.2.1 Process Detach\_IMSI\_VLR

Sheet 1: The signal "Authenticated Radio Contact Terminated" is sent to Process Detach\_IMSI\_VLR from RR handling in the MSC whenever authenticated radio contact is terminated, e.g. at the release of a call.

The 3G TS 23.078 procedure 'Notify\_gsmSCF' with 'Notify' variable set either to 'explicit' or to 'implicit detach' allows the handling of CAMEL Mobility Management events notification.



Process Detach\_IMSI\_VLR

1(1)

Process in the VLR to handle an Detach IMSI timer

Signals to/from the left are to/from the MSC unless marked otherwise  
Signals to/from the right are to/from the detach timer

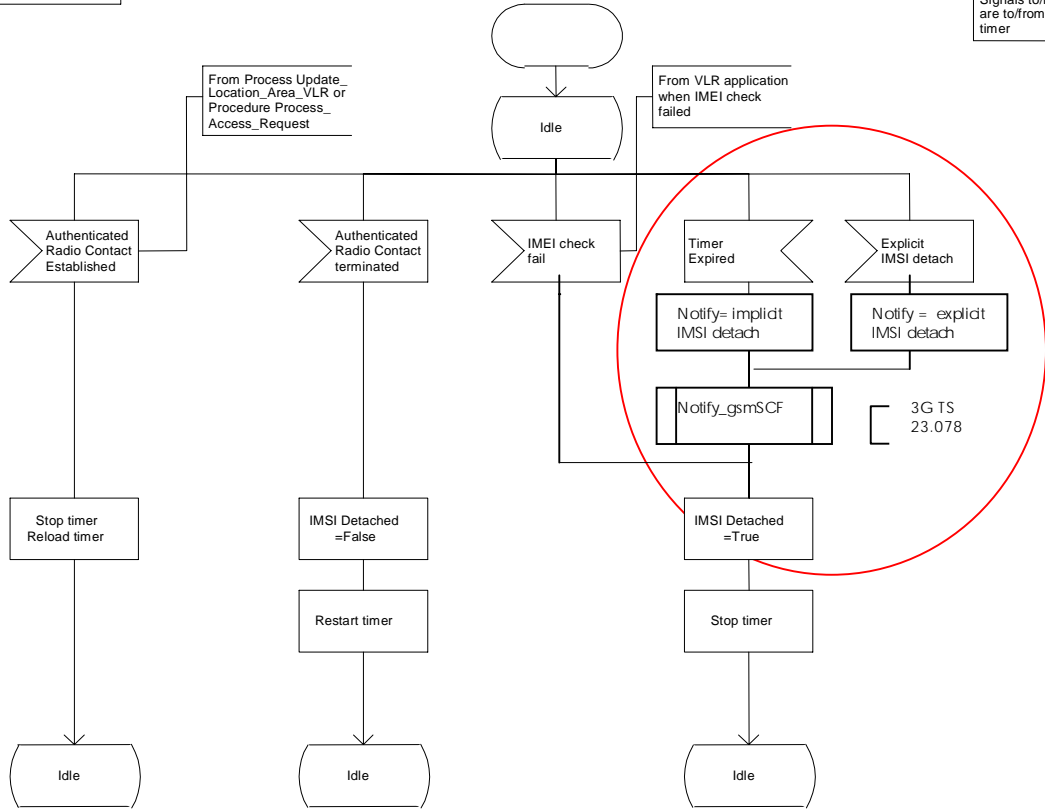
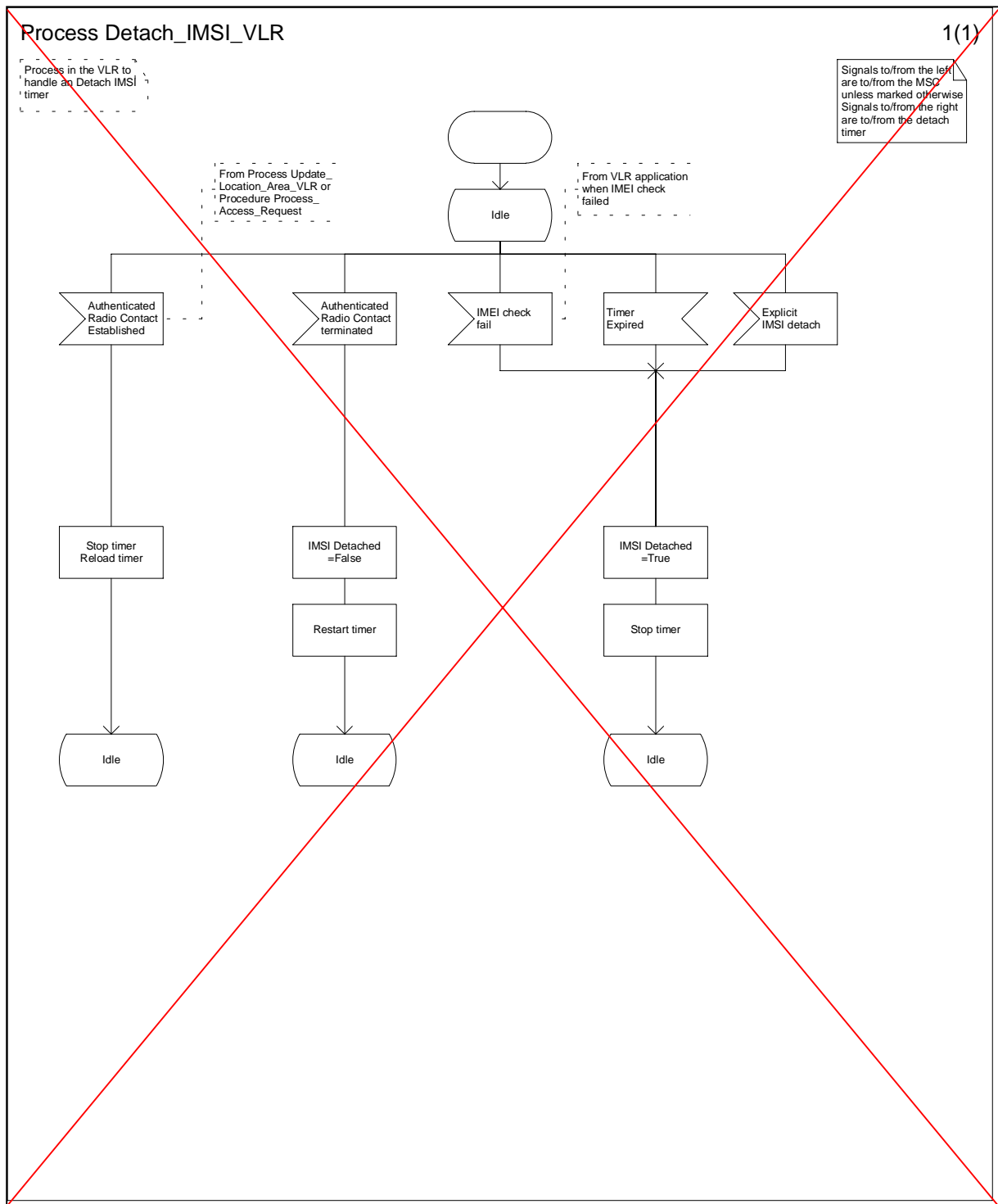


Figure 4.3.1.1 (Sheet 1 of 1): Process Detach\_IMSI\_VLR



<b>CHANGE REQUEST</b>		Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.	
<b>23.018</b>	<b>CR</b>	<b>045r1</b>	Current Version: <b>3.4.0</b>
GSM (AA.BB) or 3G (AA.BBB) specification number ↑		↑ CR number as allocated by MCC support team	
For submission to: <b>CN#8</b>	for approval <input checked="" type="checkbox"/>	strategic <input type="checkbox"/>	(for SMG use only)
list expected approval meeting # here ↑	for information <input type="checkbox"/>	non-strategic <input type="checkbox"/>	

Form: CR cover sheet, version 2 for 3GPP and SMG    The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

**Proposed change affects:**    (U)SIM     ME     UTRAN / Radio     Core Network   
 (at least one should be marked with an X)

**Source:**    **N4**    **Date:**    **24th Mar., 2000**

**Subject:**    **Correction of CAMEL Incoming Call Handling**

**Work item:**    **CAMEL Phase 3**

<b>Category:</b>	F Correction <input type="checkbox"/> A Corresponds to a correction in an earlier release <input type="checkbox"/> B Addition of feature <input type="checkbox"/> C Functional modification of feature <input type="checkbox"/> D Editorial modification <input checked="" type="checkbox"/>		<b>Release:</b>	Phase 2 <input type="checkbox"/> Release 96 <input type="checkbox"/> Release 97 <input type="checkbox"/> Release 98 <input type="checkbox"/> Release 99 <input checked="" type="checkbox"/> Release 00 <input type="checkbox"/>
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(only one category shall be marked with an X)

**Reason for change:**    **Output Continue CAMEL Handling signalling is specific to CAMEL and should be described in 23.078 rather than in 23.018.**

**Clauses affected:**    **7.3.2.1**

<b>Other specs affected:</b>	Other 3G core specifications <input checked="" type="checkbox"/> Other GSM core specifications <input type="checkbox"/> MS test specifications <input type="checkbox"/> BSS test specifications <input type="checkbox"/> O&M specifications <input type="checkbox"/>	→ List of CRs: <b>23.078CR123r1</b> → List of CRs: → List of CRs: → List of CRs: → List of CRs:
------------------------------	--	---

**Other comments:**



<----- double-click here for help and instructions on how to create a CR.

## <<First Modified Section>>

### 7.3.2 Functional requirements of VLR

#### 7.3.2.1 Process ICH\_VLR

Sheet 1: if the MSRN received in the Send Info For Incoming Call is not allocated or there is no IMSI record for the IMSI identified by the MSRN, this is treated as an unknown MSRN.

Sheet 1: the procedure CAMEL\_ICH\_VLR is specific to CAMEL phase 3; it is specified in TS 23.078 for CAMEL Phase 3 [**Error! Reference source not found.**]. If the VLR does not support CAMEL phase 3, processing continues from the possible call of the procedure CCBS\_ICH\_Set\_CCBS\_Call\_Indicator"No" exit of the test "~~Result=CAMEL Active?~~".

Sheet 1: the procedure CCBS\_ICH\_Set\_CCBS\_Call\_Indicator is specific to CCBS; it is specified in GSM 03.93 [**Error! Reference source not found.**].

Sheet 1, sheet 2, sheet 4: the procedure CCBS\_ICH\_VLR\_Report\_Failure is specific to CCBS; it is specified in GSM 03.93 [**Error! Reference source not found.**].

Sheet 1, sheet 3: the procedure CCBS\_ICH\_Report\_Not\_Reachable is specific to CCBS; it is specified in GSM 03.93 [**Error! Reference source not found.**].

Sheet 2: this process communicates with the matching instance of the process PRN\_VLR, which is linked by the MSRN.

Sheet 2: the test "Paging via SGSN possible" takes the "yes" exit if:

- the Gs interface is implemented; and
- there is an association established for the MS between the MSC/VLR and the SGSN.

Sheet 3: the test "NDUB?" takes the "Yes" exit if the Page MS negative response or the Search for MS negative response had the value Busy Subscriber (NDUB).

Sheet 3: the procedure Get\_CW\_Subscription\_Info\_VLR is specific to Call Waiting. If the VLR does not support Call Waiting, processing continues from the "No" exit of the test "CW available?".

Sheet 3: the VLR uses the basic service returned in the Page MS negative response or the Search for MS negative response Busy Subscriber (More calls possible) to determine whether call waiting is available.

Sheet 3: the procedure Get\_LI\_Subscription\_Info\_MT\_VLR is specific to CLIP and COLR. If the VLR supports neither CLIP nor COLR, the procedure call is omitted.

Sheet3: the procedure Get\_AoC\_Subscription\_Info\_VLR is specific to AoC; it is specified in subclause **Error! Reference source not found.**

Sheet 3 sheet 5: the procedure CLI\_ICH\_VLR\_Add\_CLI is specific to Enhanced CLI Handling. It is specified in GSM 03.81 [**Error! Reference source not found.**].

Sheet 3: the procedure CCBS\_ICH\_Handle\_NDUB is specific to CCBS; it is specified in GSM 03.93 [**Error! Reference source not found.**]. If the VLR does not support CCBS, processing continues from the "Forward" exit of the test "Result".

Sheet 3: the procedure Process\_Access\_Request\_VLR is specified in subclause **Error! Reference source not found.**

Sheet 3: the output signal Page MS towards the SGSN includes the Location area identity parameter.

Sheet 3: if the VLR does not support CUG, handling continues from the "No" exit of the test "CUG info present?".

Sheet 4, sheet 5: the procedure CD\_Authorization is specific to Call Deflection, it is specified in GSM 03.72 [**Error! Reference source not found.**]. If the VLR does not support Call Deflection, processing continues from the "Yes" exit of the test "Result=Aborted?".

Sheet 4, sheet 5: the procedure CCBS\_ICH\_Handle\_UDUB is specific to CCBS; it is specified in GSM 03.93 [**Error! Reference source not found.**].

Sheet 5: the test "NDUB?" is executed only if the VLR supports CCBS. If the VLR does not support CCBS, processing continues from connector 5.

Sheet 6: the procedure CCBS\_ICH\_Set\_CCBS\_Target is specific to CCBS; it is specified in GSM 03.93 [**Error! Reference source not found.**].

Sheet 6: the procedure Handle\_CFNRC is specified in subclause **Error! Reference source not found.**

Sheet 7: the procedure Forward\_CUG\_Check is specific to CUG; it is specified in subclause **Error! Reference source not found.** If the VLR does not support CUG, processing continues from the "Yes" exit of the test "Result=Call allowed?".

# Process ICH\_VLR

Process in VLRB to handle a request for information for an incoming (MT) call

# ICH\_VLR1(7)

Signals to/from the left are to/from the MSC

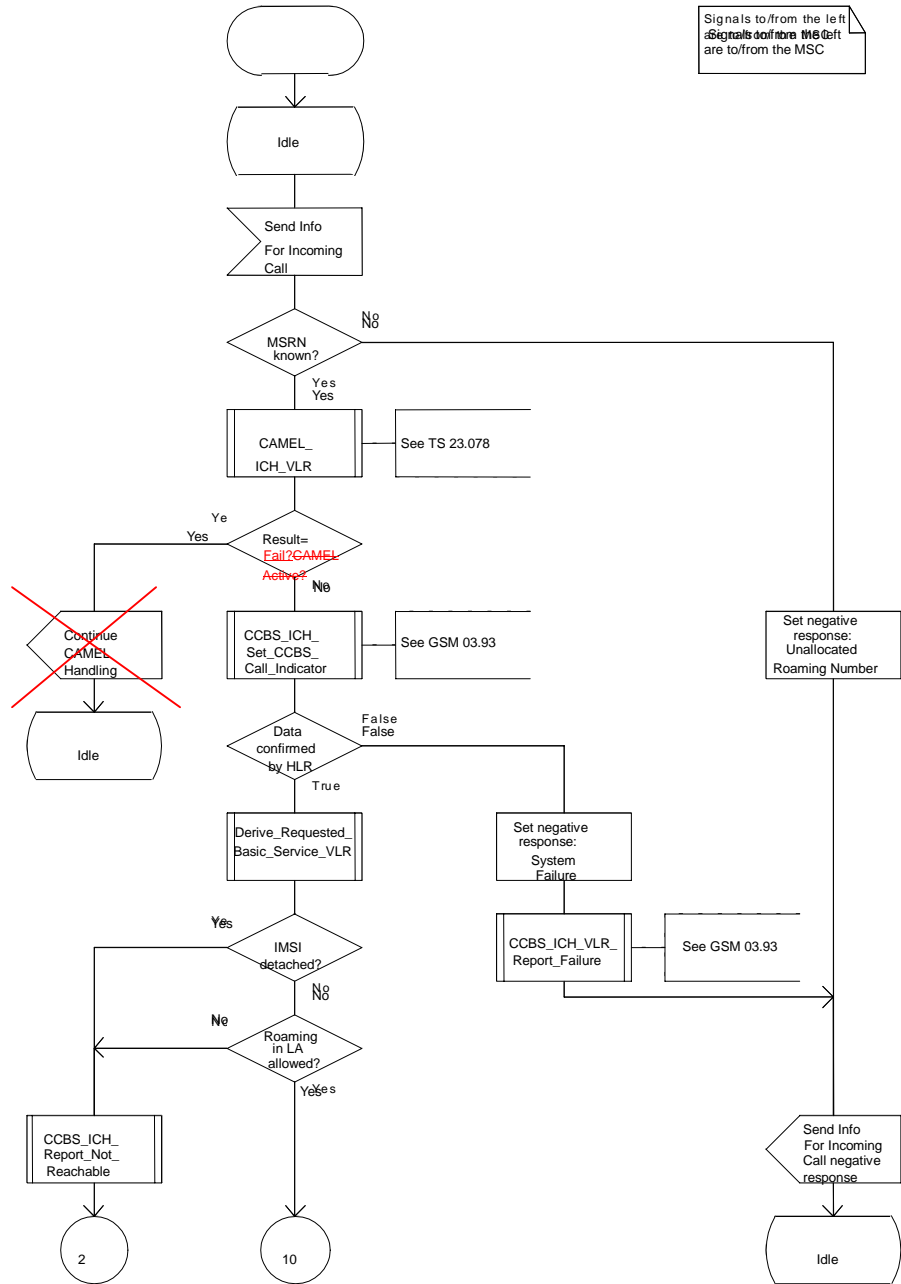


Figure 1a: Process ICH\_VLR (sheet 1)

3GPP/SMG TSG CN WG2 meeting  
Rotenburg, Germany, 22-26 May 2000

Document **N2-000394**

e.g. for 3GPP use the format TP-99xxx  
or for SMG, use the format P-99-xxx

### CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

**23.018 CR 051r4**

Current Version: **3.3.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **CN#08**  
list expected approval meeting # here ↑

for approval   
for information

strategic   
non-strategic  (for SMG Use only)

Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

**Proposed change affects:**  
(at least one should be marked with an X)

(U)SIM  ME  UTRAN / Radio  Core Network

**Source:** N4 **Date:** 25/05/00

**Subject:** Improvement of Active Retrieval of Location Information procedure

**Work item:** Camel phase 3

**Category:**  
(only one category shall be marked with an X)  
F Correction   
A Corresponds to a correction in an earlier release   
B Addition of feature   
C Functional modification of feature   
D Editorial modification

**Release:**  
Phase 2   
Release 96   
Release 97   
Release 98   
Release 99   
Release 00

**Reason for change:**

This CR improves the Active Location Retrieval feature :  
  
It is not possible with the existing ALR feature to retrieve the location of a MS when it has a transaction in progress, if it uses a GSM access.  
  
For a **GSM network**, the current cell is always known in the MSC. This CR proposes to enable the VLR to obtain the current cell of the MS by modifying the handling in the procedures Current\_Location\_Page\_MSC and Current\_Location\_Search\_MSC.  
  
This improvement is not applicable for a UMTS network, as the RNC does not inform the MSC when the MS change of cell during a call.

**Clauses affected:**

**Other specs affected:**  
Other 3G core specifications  → List of CRs:  
Other GSM core specifications  → List of CRs:  
MS test specifications  → List of CRs:  
BSS test specifications  → List of CRs:  
O&M specifications  → List of CRs:

**Other comments:**



<----- double-click here for help and instructions on how to create a CR.

#### 7.2.4.6 Procedure Current\_Location\_Page\_MSC

The test "MS connection exists" takes the "Yes" exit if there is a radio connection established between the MS and the network.

The test "GSM Access" takes the "Yes" exit if the MS is using a GSM radio access to communicate with the network.

#### 7.2.4.7 Procedure Current\_Location\_Search\_MSC

The test "MS connection exists" takes the "Yes" exit if there is a radio connection established between the MS and the network.

The test "GSM Access" takes the "Yes" exit if the MS is using a GSM radio access to communicate with the network.

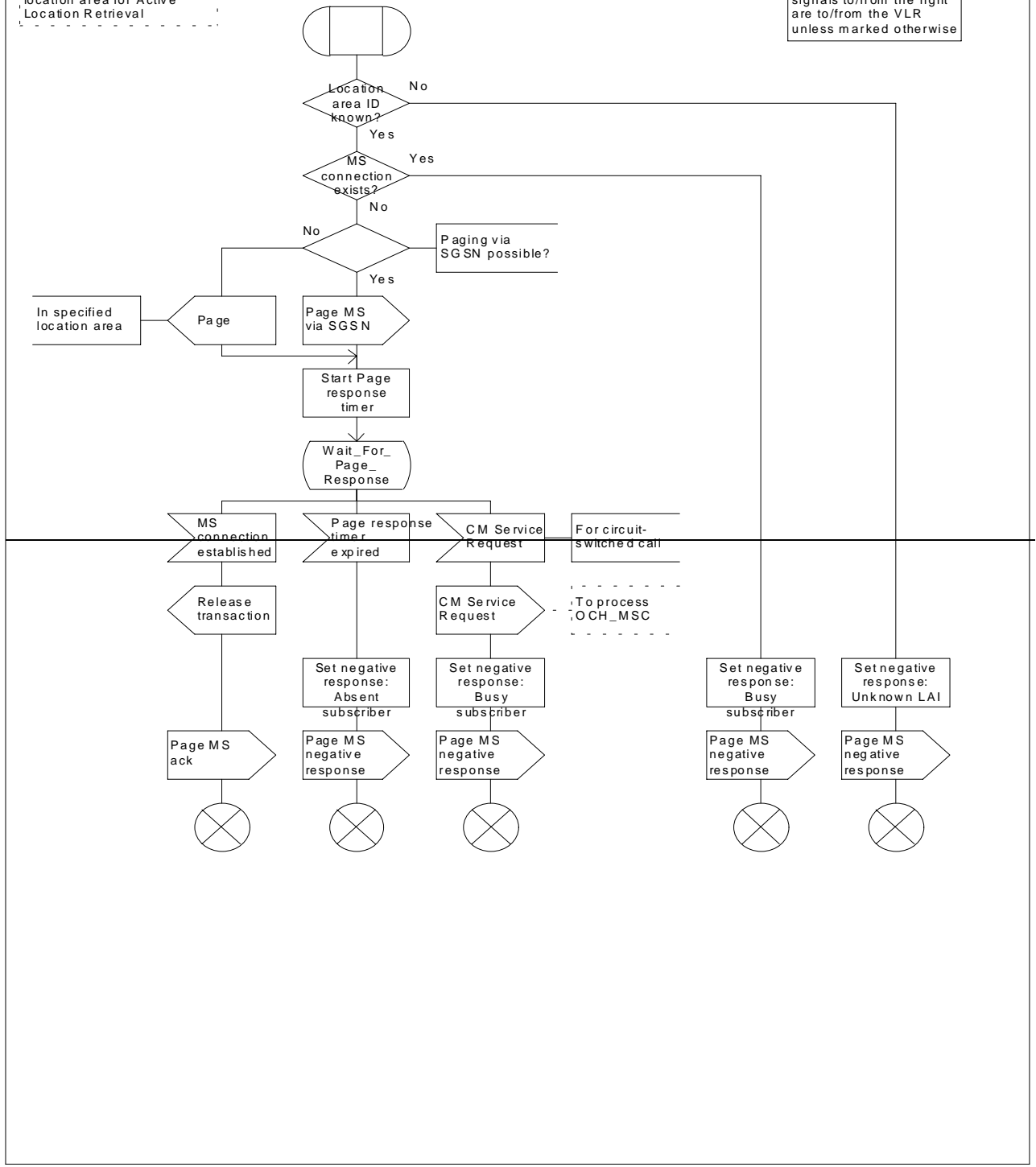


Procedure Current\_Location\_Page\_MSC

CL Page\_M1(1)

Procedure in the MSC to page an MS in a specified location area for Active Location Retrieval

Signals to/from the left are to/from the BSS; signals to/from the right are to/from the VLR unless marked otherwise



Procedure Current\_Location\_Page\_MSC

CLPage\_M1(1)

Procedure in the MSC to page an MS in a specified location area for Active Location Retrieval

Signals to/from the left are to/from the BSS; signals to/from the right are to/from the VLR unless marked otherwise

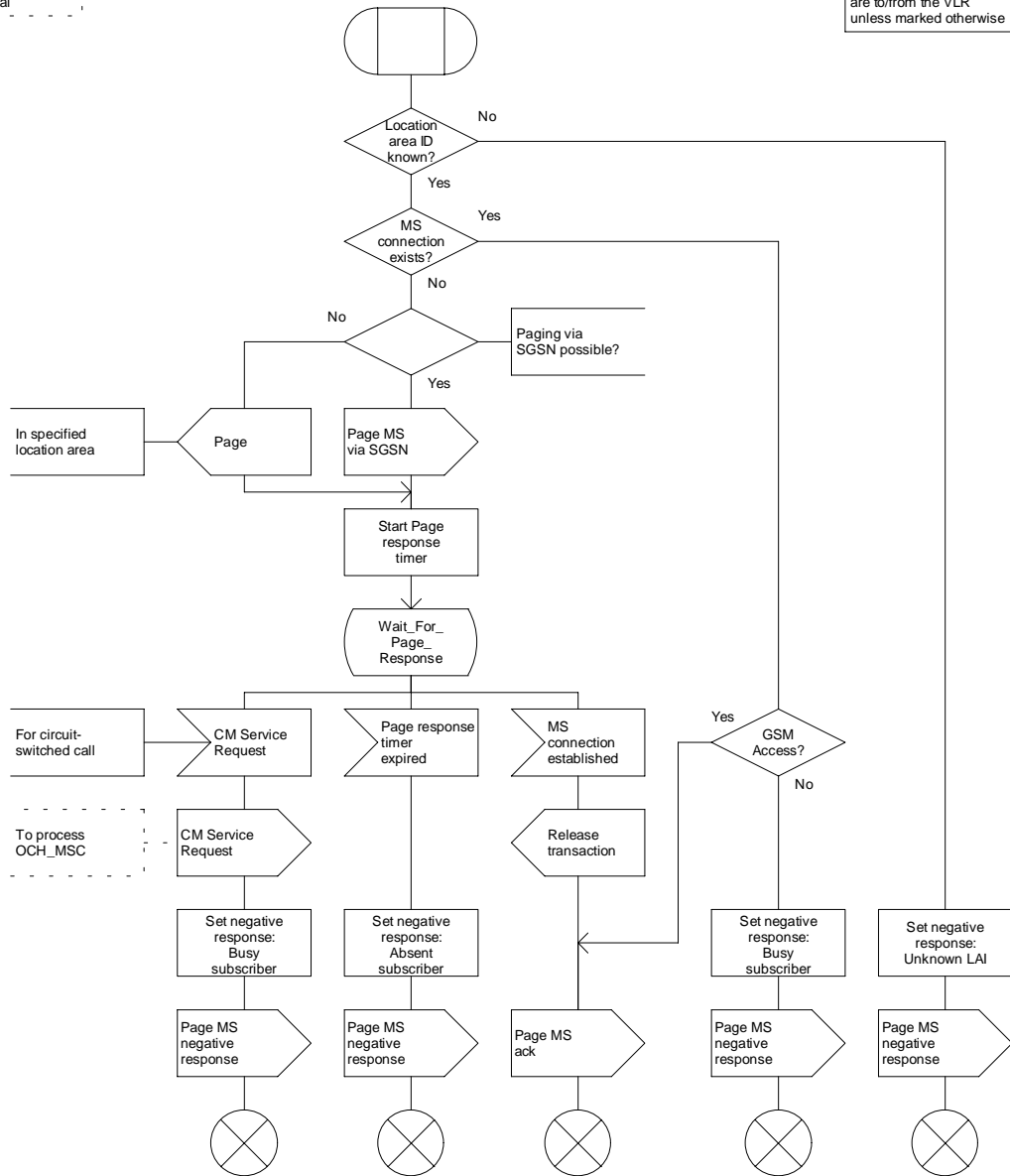


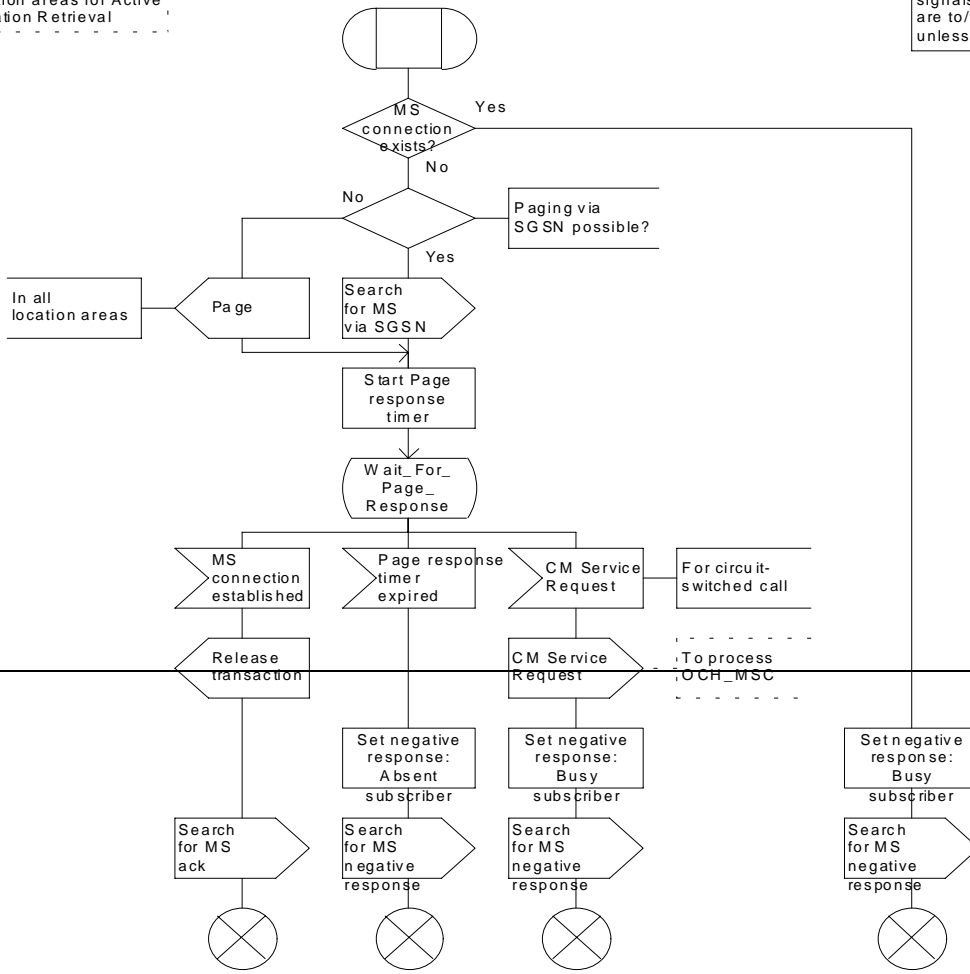
Figure 64: Procedure Current\_Location\_Page\_MSC

Procedure Current\_Location\_Search\_MSC

CLS\_MSC1(1)

Procedure in the MSC to page an MS in all location areas for Active Location Retrieval

Signals to/from the left are to/from the BSS; signals to/from the right are to/from the VLR unless marked otherwise



Procedure Current\_Location\_Search\_MSC

CLS\_MSC1(1)

Procedure in the MSC to page an MS in all location areas for Active Location Retrieval

Signals to/from the left are to/from the BSS; signals to/from the right are to/from the VLR unless marked otherwise

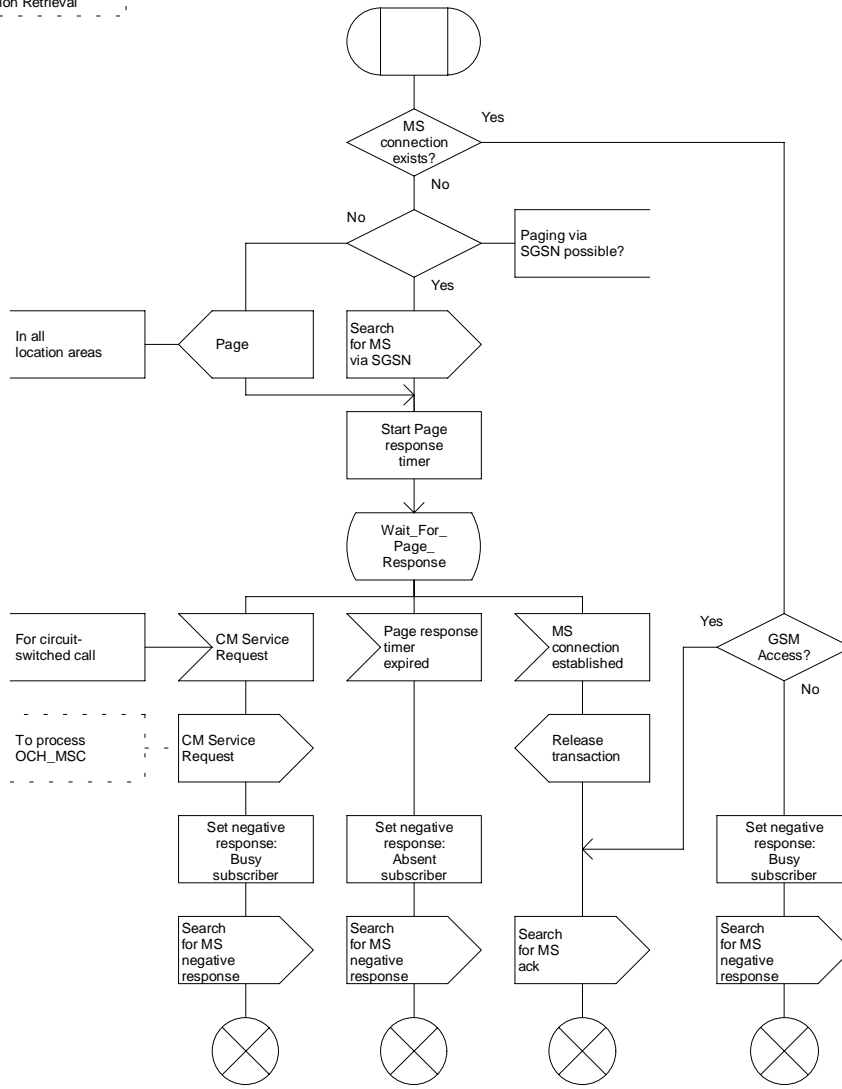


Figure 65: Procedure Current\_Location\_Search\_MSC



**** FIRST MODIFIED SECTION ****
----------------------------------

## 17.7 MAP constants and data types

### 17.7.1 Mobile Service data types

<b>SGSN-CAMEL-SubscriptionInfo ::= SEQUENCE {</b>			
gprs-CSI	[0]	GPRS-CSI	OPTIONAL,
sms-CSI	[1]	SMS-CSI	OPTIONAL,
extensionContainer	[2]	ExtensionContainer	OPTIONAL,
...}			

<b>GPRS-CSI ::= SEQUENCE {</b>			
gprs-CamelTDPDataList	[0]	GPRS-CamelTDPDataList,	
camelCapabilityHandling	[1]	CamelCapabilityHandling,	
extensionContainer	[2]	ExtensionContainer	OPTIONAL,
notificationToCSE	[3]	NULL	OPTIONAL,
csi-Active	[4]	NULL	OPTIONAL,
...}			
-- notificationToCSE and csi-Active shall not be present when GPRS-CSI is sent to SGSN.			
-- They may only be included in ATSI/ATMATS1-Ack-/ATM ack/NSDC message.			

<b>GPRS-CamelTDPDataList ::= SEQUENCE SIZE (1..maxNumOfCamelTDPData) OF</b>			
GPRS-CamelTDPData			
-- GPRS-CamelTDPDataList shall not contain more than one instance of			
-- GPRS-CamelTDPData containing the same value for gprs-TriggerDetectionPoint.			

<b>GPRS-CamelTDPData ::= SEQUENCE {</b>			
gprs-TriggerDetectionPoint	[0]	GPRS-TriggerDetectionPoint,	
serviceKey	[1]	ServiceKey,	
gsmSCF-Address	[2]	ISDN-AddressString,	
defaultSessionHandling	[3]	DefaultGPRS-Handling,	
extensionContainer	[4]	ExtensionContainer	OPTIONAL,
...}			

<b>Ext-ForwInfo ::= SEQUENCE {</b>			
ss-Code		SS-Code,	
forwardingFeatureList		Ext-ForwFeatureList,	
extensionContainer	[0]	ExtensionContainer	OPTIONAL,
...}			

<b>Ext-ForwFeatureList ::= SEQUENCE SIZE (1..maxNumOfExt-BasicServiceGroups) OF</b>			
Ext-ForwFeature			

<b>Ext-ForwFeature ::= SEQUENCE {</b>			
basicService		Ext-BasicServiceCode	OPTIONAL,
ss-Status [4] Ext-SS-Status,			
forwardedToNumber	[5]	ISDN-AddressString	OPTIONAL,
-- When this data type is sent from an HLR which supports CAMEL Phase 2			
-- to a VLR that supports CAMEL Phase 2 the VLR shall not check the			
-- format of the number			
forwardedToSubaddress	[8]	ISDN-SubaddressString	OPTIONAL,
forwardingOptions	[6]	Ext-ForwOptions	OPTIONAL,
noReplyConditionTime	[7]	Ext-NoRepCondTime	OPTIONAL,
extensionContainer	[9]	ExtensionContainer	OPTIONAL,
...}			

```

Ext-SS-Status ::= OCTET STRING (SIZE (1..5))

-- OCTET 1:
--
-- bits 8765: 0000 (unused)
-- bits 4321: Used to convey the "P bit", "R bit", "A bit" and "Q bit",
--             representing supplementary service state information
--             as defined in TS GSM 03.11

-- bit 4: "Q bit"

-- bit 3: "P bit"

-- bit 2: "R bit"

-- bit 1: "A bit"

-- OCTETS 2-5: reserved for future use. They shall be discarded if
-- received and not understood.

```

```

Ext-ForwOptions ::= OCTET STRING (SIZE (1..5))

-- OCTET 1:

-- bit 8: notification to forwarding party
-- 0 no notification
-- 1 notification

-- bit 7: redirecting presentation
-- 0 no presentation
-- 1 presentation

-- bit 6: notification to calling party
-- 0 no notification
-- 1 notification

-- bit 5: 0 (unused)

-- bits 43: forwarding reason
-- 00 ms not reachable
-- 01 ms busy
-- 10 no reply
-- 11 unconditional

-- bits 21: 00 (unused)

-- OCTETS 2-5: reserved for future use. They shall be discarded if
-- received and not understood.

```

```

Ext-CallBarInfo ::= SEQUENCE {
    ss-Code                SS-Code,
    callBarringFeatureList Ext-CallBarFeatureList,
    extensionContainer     ExtensionContainer OPTIONAL,
    ...}

```

```

Ext-CallBarFeatureList ::= SEQUENCE SIZE (1..maxNumOfExt-BasicServiceGroups) OF
    Ext-CallBarringFeature

```

```

Ext-CallBarringFeature ::= SEQUENCE {
    basicService           Ext-BasicServiceCode OPTIONAL,
    ss-Status [4] Ext-SS-Status,
    extensionContainer     ExtensionContainer OPTIONAL,
    ...}

```

```

Ext-BasicServiceGroupList ::= SEQUENCE SIZE (1..maxNumOfExt-BasicServiceGroups)
    OF
    Ext-BasicServiceCode

```

```

maxNumOfExt-BasicServiceGroups INTEGER ::= 32

```

```

Ext-SS-Data ::= SEQUENCE {
    ss-Code                               SS-Code,
    ss-Status [4] Ext-SS-Status,
    ss-SubscriptionOption                 SS-SubscriptionOption           OPTIONAL,
    basicServiceGroupList                 Ext-BasicServiceGroupList         OPTIONAL,
    extensionContainer                     [5] ExtensionContainer             OPTIONAL,
    ...}

```

```

VlrCamelSubscriptionInfo ::= SEQUENCE {
    o-CSI [0] O-CSI                               OPTIONAL,
    extensionContainer [1] ExtensionContainer       OPTIONAL,
    ...,
    ss-CSI [2] SS-CSI                             OPTIONAL,
    o-BcsmCamelTDP-CriteriaList [4] O-BcsmCamelTDPCriteriaList OPTIONAL,
    tif-CSI [3] NULL                             OPTIONAL,
    m-CSI [5] M-CSI                               OPTIONAL,
    sms-CSI [6] SMS-CSI                           OPTIONAL,
    vt-CSI [7] T-CSI                              OPTIONAL,
    t-BCSM-CAMEL-TDP-CriteriaList [8] T-BCSM-CAMEL-TDP-CriteriaList OPTIONAL,
    d-CSI [9] D-CSI                               OPTIONAL,
}

```

```

D-CSI ::= SEQUENCE {
    dp-AnalysedInfoCriteriaList           DP-AnalysedInfoCriteriaList,
    camelCapabilityHandling                CamelCapabilityHandling,
    extensionContainer                     ExtensionContainer               OPTIONAL,
    notificationToCSE [0] NULL             OPTIONAL,
    csi-Active [1] NULL                    OPTIONAL,
    ...}

```

-- Csi-active shall not be present when D-CSI is sent to VLR/GMSC.

-- It may only be included in ATSI/ATM ack/NSDC message.

```

DP-AnalysedInfoCriteriaList ::= SEQUENCE SIZE (1..maxNumOfDP-AnalysedInfoCriteria) OF
    DP-AnalysedInfoCriterium

```

```

maxNumOfDP-AnalysedInfoCriteria INTEGER ::= 10

```

```

DP-AnalysedInfoCriterium ::= SEQUENCE {
    dialledNumber           ISDN-AddressString,
    serviceKey              ServiceKey,
    gsmSCF-Address          ISDN-AddressString,
    defaultCallHandling     DefaultCallHandling,
    extensionContainer       ExtensionContainer           OPTIONAL,
    ...}

```

```

SS-CSI ::= SEQUENCE {
    ss-CamelData           SS-CamelData,
    extensionContainer      ExtensionContainer           OPTIONAL,
    ...,
    notificationToCSE [0] NULL                             OPTIONAL,
    csi-Active [1] NULL                                    OPTIONAL,
}

```

-- notificationToCSE and csi-Active shall not be present when SS-CSI is sent to VLR.

-- They may only be included in ATSI/ATM/ATSI-Ack-/ATM ack/NSDC message.

```

O-CSI ::= SEQUENCE {
    o-BcsmCamelTDPDataList O-BcsmCamelTDPDataList,
    extensionContainer      ExtensionContainer           OPTIONAL,
    ...,
    camelCapabilityHandling [0] CamelCapabilityHandling OPTIONAL,
    notificationToCSE [1] NULL                             OPTIONAL,
    csiActive [2] NULL                                       OPTIONAL,
}

```

-- notificationtoCSE and csiActive shall not be present when O-CSI is sent to VLR/GMSC.

-- They may only be included in ATSI/ATM/ATSI-Ack-/ATM ack/NSDC message.

```

O-BcsmCamelTDPDataList ::= SEQUENCE SIZE (1..maxNumOfCamelTDPData) OF
    O-BcsmCamelTDPData
-- O-BcsmCamelTDPDataList shall not contain more than one instance of
-- O-BcsmCamelTDPData containing the same value for o-BcsmTriggerDetectionPoint.
-- For CAMEL Phase 2, this means that only one instance of O-BcsmCamelTDPData is allowed
-- with o-BcsmTriggerDetectionPoint being equal to DP2.

```

```

maxNumOfCamelTDPData INTEGER ::= 10

```



```

O-BcsmCamelTDPData ::= SEQUENCE {
  o-BcsmTriggerDetectionPoint      O-BcsmTriggerDetectionPoint,
  serviceKey                        ServiceKey,
  gsmSCF-Address                    [0] ISDN-AddressString,
  defaultCallHandling                [1] DefaultCallHandling,
  extensionContainer                 [2] ExtensionContainer          OPTIONAL,
  ...
}

```

```

T-CSI ::= SEQUENCE {
  t-BcsmCamelTDPDataList           T-BcsmCamelTDPDataList,
  extensionContainer                 ExtensionContainer          OPTIONAL,
  ... ,
  camelCapabilityHandling           [0] CamelCapabilityHandling    OPTIONAL,
  notificationToCSE                 [1] NULL                      OPTIONAL,
  csi-Active                         [2] NULL                      OPTIONAL
}
-- notificationToCSE and csi-Active shall not be present when VT-CSI/T-CSI is sent to
VLR/GMSC.
-- They may only be included in ATSI/ATMATSI-Ack-/ATM ack/NSDC message.

```

```

T-BcsmCamelTDPDataList ::= SEQUENCE SIZE (1..maxNumOfCamelTDPData) OF
  T-BcsmCamelTDPData
--- T-BcsmCamelTDPDataList shall not contain more than one instance of
--- T-BcsmCamelTDPData containing the same value for t-BcsmTriggerDetectionPoint.
--- For CAMEL Phase 2, this means that only one instance of T-BcsmCamelTDPData is allowed
--- with t-BcsmTriggerDetectionPoint being equal to DP12.
--- For CAMEL Phase 3, more TDP's are allowed.

```

```

T-BcsmCamelTDPData ::= SEQUENCE {
  t-BcsmTriggerDetectionPoint      T-BcsmTriggerDetectionPoint,
  serviceKey                        ServiceKey,
  gsmSCF-Address                    [0] ISDN-AddressString,
  defaultCallHandling                [1] DefaultCallHandling,
  extensionContainer                 [2] ExtensionContainer          OPTIONAL,
  ...
}

```

```

T-BcsmTriggerDetectionPoint ::= ENUMERATED {
  termAttemptAuthorized (12),
  ... ,
  tBusy (13),
  tNoAnswer (14)}
-- exception handling:
-- For T-BcsmCamelTDPData sequences containing this parameter with any other
-- value than the ones listed above, the receiver shall ignore the whole
-- T-BcsmCamelTDPData sequence.

```

```

SMS-CSI ::= SEQUENCE {
  sms-CAMEL-TDP-DataList           [0] SMS-CAMEL-TDP-DataList,
  camelCapabilityHandling           [1] CamelCapabilityHandling    ,
  extensionContainer                 [2] ExtensionContainer          OPTIONAL,
  notificationToCSE                 [3] NULL                      OPTIONAL,
  csi-Active                         [4] NULL                      OPTIONAL, ...}
-- notificationToCSE and csi-Active shall not be present when SMS-CSI is sent to VLR/SGSN.
-- They may only be included in ATSI/ATMATSI-Ack-/ATM ack/NSDC message.

```

```

SMS-CAMEL-TDP-DataList ::= SEQUENCE SIZE (1..maxNumOfCamelTDPData) OF
  SMS-CAMEL-TDP-Data
-- SMS-CAMEL-TDP-DataList shall not contain more than one instance of
-- SMS-CAMEL-TDP-Data containing the same value for sms-TriggerDetectionPoint.

```

```

SMS-CAMEL-TDP-Data ::= SEQUENCE {
  sms-TriggerDetectionPoint         [0] SMS-TriggerDetectionPoint,
  serviceKey                         [1] ServiceKey,
  gsmSCF-Address                     [2] ISDN-AddressString,
  defaultSMS-Handling                [3] DefaultSMS-Handling,
  extensionContainer                 [4] ExtensionContainer          OPTIONAL,
  ...
}

```

```

M-CSI ::= SEQUENCE {
    mobilityTriggers           MobilityTriggers,
    serviceKey                 ServiceKey,
    gsmSCF-Address             [0] ISDN-AddressString,
    extensionContainer         [1] ExtensionContainer           OPTIONAL,
    notificationToCSE         [2] NULL                       OPTIONAL,
    csi-Active                 [3] NULL                       OPTIONAL,
    ...}
-- notificationToCSE and csi-Active shall not be present when M-CSI is sent to VLR.
-- They may only be included in ATSI/ATMATSI-Ack/ATM ack/NSDC message.

```

-- subscriber data modification notification types

```

NoteSubscriberDataModifiedArg ::= SEQUENCE {
    imsi                       IMSI,
    msisdn                     ISDN-AddressString,
    typeOfModification         TypeOfModification,
    extensionContainer         ExtensionContainer           OPTIONAL,
    ...}

```

```

NoteSubscriberDataModifiedRes ::= SEQUENCE {
    extensionContainer         ExtensionContainer           OPTIONAL,
    ...}

```

```

TypeOfModification ::= ENUMERATED {
    callForwardingSS-Data     (0),
    callBarringSS-Data       (1),
    operatorDeterminedBarringData (2),
    camelSubscriptionInformation (3),
    ...}
-- exception handling:
-- reception of other values shall be treated as unexpected data

```

END

<h2 style="margin: 0;">CHANGE REQUEST</h2>		Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.
<b>29.002</b>	<b>CR 122r2</b>	Current Version: <b>3.4.0</b>
GSM (AA.BB) or 3G (AA.BBB) specification number ↑	↑ CR number as allocated by MCC support team	
For submission to: <b>CN#8</b> <small>list expected approval meeting # here ↑</small>	for approval <input checked="" type="checkbox"/> for information <input type="checkbox"/>	strategic <input type="checkbox"/> non-strategic <input checked="" type="checkbox"/> <small>(for SMG use only)</small>

Form: CR cover sheet, version 2 for 3GPP and SMG    The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

**Proposed change affects:**    (U)SIM     ME     UTRAN / Radio     Core Network   
(at least one should be marked with an X)

**Source:**    **N4**    **Date:**    **30/03/00**

**Subject:**    **Proposed information flow on NSDC**

**Work item:**    **CAMEL Phase 3**

<b>Category:</b>	F Correction <input type="checkbox"/> A Corresponds to a correction in an earlier release <input type="checkbox"/> B Addition of feature <input type="checkbox"/> C Functional modification of feature <input checked="" type="checkbox"/> D Editorial modification <input type="checkbox"/>		<b>Release:</b>	Phase 2 <input type="checkbox"/> Release 96 <input type="checkbox"/> Release 97 <input type="checkbox"/> Release 98 <input type="checkbox"/> Release 99 <input checked="" type="checkbox"/> Release 00 <input type="checkbox"/>
------------------	--	--	-----------------	--

(only one category shall be marked with an X)

**Reason for change:**    In CAMEL Phase 3, Notify Subscriber Data Change operation sends only identifier which indicates call forwarding, call barring, odb or CSI to the gsmSCF.

But in this specification, in the case of call forwarding, the gsmSCF has to interrogate maximum 4 times to the HLR to know what kind of call forwarding data (CFU, CFB, CFNRc or CFNRy) has changed. And in the case of CSI, the gsmSCF has to interrogate maximum 9 times to the HLR.

This specification is not practical, so NTT COMWARE proposes to include changed data to the request of Notify Subscriber Data Change operation.

**Clauses affected:**    **8.11.5, 17.6.1, 17.7.1, 24A.3**

<b>Other specs affected:</b>	Other 3G core specifications <input checked="" type="checkbox"/> Other GSM core specifications <input type="checkbox"/> MS test specifications <input type="checkbox"/> BSS test specifications <input type="checkbox"/> O&M specifications <input type="checkbox"/>	→ List of CRs: <b>23.078-142r1</b> → List of CRs: → List of CRs: → List of CRs: → List of CRs:
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**Other comments:**   



help.doc

<----- double-click here for help and instructions on how to create a CR.

## 8.11.5 MAP-NOTE-SUBSCRIBER-DATA-MODIFIED service

### 8.11.5.1 Definition

This service is used by the HLR to inform the gsmSCF that subscriber data have been modified.

### 8.11.5.2 Service primitives

**Table 8.11/5: Note\_Subscriber\_Data\_Modified**

Parameter name	Request	Indication	Response	Confirm
Invoke id	M	M(=)	M(=)	M(=)
IMSI	M	M(=)		
MSISDN	M	M(=)		
Type of Modification	M	M(=)		
Ext Forwarding information-for-CSE	C	C(=)		
Ext Call barring information-for-CSE	C	C(=)		
ODB data	C	C(=)		
CAMEL subscription info	C	C(=)		
All Information Sent	C	C(=)		
User error			C	C(=)
Provider error				O

### 8.11.5.3 Parameter definition and use

#### Invoke id

See subclause 7.6.1 for the use of this parameter.

#### IMSI

See subclause 7.6.2 for the use of this parameter.

#### MSISDN

See subclause 7.6.2 for the use of this parameter.

#### Ext Forwarding information-for-CSE

See subclause 7.6.2 for the use of this parameter. The use of this parameter and the requirements for their presence are specified in 3G TS 23.078.

#### Ext Call barring information-for-CSE

See subclause 7.6.2 for the use of this parameter. The use of this parameter and the requirements for their presence are specified in 3G TS 23.078.

#### ODB data

See subclause 7.6.2 for the use of this parameter. The use of this parameter and the requirements for their presence are specified in 3G TS 23.078.

#### CAMEL subscription info

See subclause 7.6.2 for the use of this parameter. The use of this parameter and the requirements for their presence are specified in 3G TS 23.078.

#### All Information Sent

This parameter is set when the HLR has sent all information to gsmSCF.

#### Type of Modification

~~This parameter indicates which subscriber data have been modified~~

~~It takes one of the following values:~~

- ~~— Call Forwarding SS Data modified;~~
- ~~— Call Barring SS Data modified;~~
- ~~— Operator Determined Barring Data modified;~~
- ~~— CAMEL Subscription Information modified.~~

#### User error

This parameter is sent by the responder when an error is detected and if present, takes one of the following values:

- Data Missing;
- Unexpected Data Value;
- Unknown Subscriber.

#### Provider error

These are defined in subclause 7.6.1.

The use of the parameters and the requirements for their presence are specified in 3G TS 23.078.

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

## 17.6 MAP operation and error types

### 17.6.1 Mobile Service Operations

*-- subscriber data modification notification operations*

```

NoteSubscriberDataModified ::= OPERATION --Timer m
  ARGUMENT
    noteSubscriberDataModifiedArg NoteSubscriberDataModifiedArg
  RESULT
    noteSubscriberDataModifiedRes NoteSubscriberDataModifiedRes
    -- optional
  ERRORS {
    DataMissing,
    UnexpectedDataValue,
    UnknownSubscriber}

```

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

## 17.7 MAP constants and data types

### 17.7.1 Mobile Service data types

*-- subscriber data modification notification types*

```

NoteSubscriberDataModifiedArg ::= SEQUENCE {
    imsi                IMSI,
    msisdn              ISDN-AddressString,
    typeOfModification TypeOfModification,
    forwardingInfoFor-CSE [0] Ext-ForwardingInfoFor-CSE    OPTIONAL,
    callBarringInfoFor-CSE [1] Ext-CallBarringInfoFor-CSE  OPTIONAL,
    odb-Info            [2] ODB-Info                        OPTIONAL,
    camel-SubscriptionInfo [3] CAMEL-SubscriptionInfo      OPTIONAL,
    allInformationSent  [4] NULL                          OPTIONAL,
    extensionContainer  ExtensionContainer                 OPTIONAL,
    ...}

```

```

NoteSubscriberDataModifiedRes ::= SEQUENCE {
    extensionContainer  ExtensionContainer                 OPTIONAL,
    ...}

```

```

TypeOfModification ::= ENUMERATED {
    callForwardingSS-Data (0),
    callBarringSS-Data (1),
    operatorDeterminedBarringData (2),
    camelSubscriptionInformation (3),
    ...}
exception handling:
reception of other values shall be treated as unexpected data

```

-- mobility management event notification info types

```

NoteMM-EventArg ::= SEQUENCE {
    serviceKey          ServiceKey,
    eventMet            [0] MM-Code,
    imsi                [1] IMSI,
    msisdn              [2] ISDN-AddressString,
    locationInformation [3] LocationInformation            OPTIONAL,
    lsaIdentity         [4] LSAIdentity                   OPTIONAL,
    supportedCAMELPhases [5] SupportedCamelPhases        OPTIONAL,
    extensionContainer  [6] ExtensionContainer            OPTIONAL,
    ...}

```

```

NoteMM-EventRes ::= SEQUENCE {
    extensionContainer  ExtensionContainer                 OPTIONAL,
    ...}

```

```

Ext-SS-InfoFor-CSE ::= CHOICE {
    forwardingInfoFor-CSE [0] Ext-ForwardingInfoFor-CSE,
    callBarringInfoFor-CSE [1] Ext-CallBarringInfoFor-CSE
}

```

```

Ext-ForwardingInfoFor-CSE ::= SEQUENCE {
    ss-Code            [0] SS-Code,
    forwardingFeatureList [1] Ext-ForwFeatureList,
    notificationToCSE  [2] NULL,
    extensionContainer  [3] ExtensionContainer            OPTIONAL,
    ...}

```

```

Ext-CallBarringInfoFor-CSE ::= SEQUENCE {
    ss-Code            [0] SS-Code,
    callBarringFeatureList [1] Ext-CallBarFeatureList,
    password           [2] Password,
    wrongPasswordAttemptsCounter [3] WrongPasswordAttemptsCounter,
    notificationToCSE  [4] NULL,
    extensionContainer  [5] ExtensionContainer            OPTIONAL,
    ...}

```

END

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

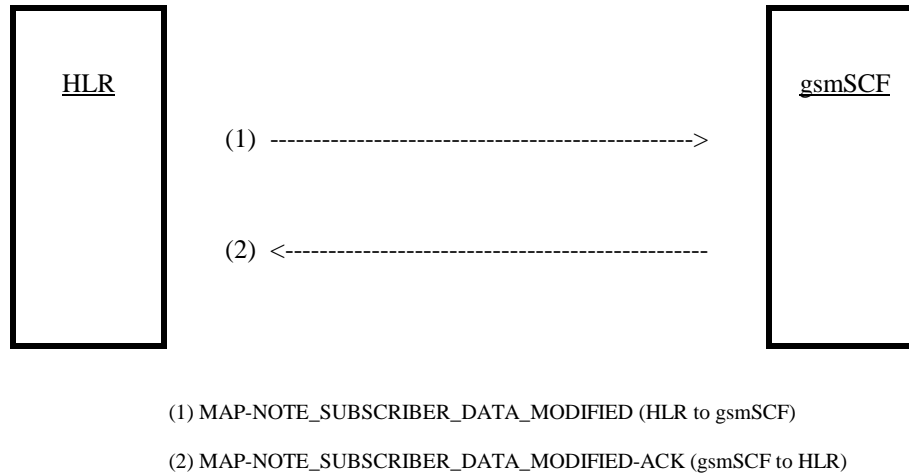
## 24A.3 Subscriber Data Modification Notification procedure

### 24A.3.1 General

The Subscriber Data Modification Notification procedure is used to notify a gsmSCF about the modification of subscriber data.

The stage 2 specification for Subscriber Data Modification Notification is in TS 23.078. The interworking between the MAP signalling procedures and the Subscriber Data Modification Notification procedures for each entity (HLR, gsmSCF) is shown by the transfer of signals between these procedures.

The following services are used:



**Figure 24A.3/1: Interfaces and services for subscriber data modification notification**

## 24A.3.2 Processes in the MAP Entities

The text in this clause is a supplement to the definition in the SDL diagrams; it does not duplicate the information in the SDL diagrams.

### 24A.3.2.1 Process in the HLR

The MAP process in the HLR to send modified data to the gsmSCF is shown in figure 24A.3/2. The MAP process invokes macros not defined in this subclause; the definitions of these macros can be found as follows:

<u>Receive_Open_Cnf</u>	see subclause 25.1.2;
<u>Check_Confirmation</u>	see subclause 25.2.2.

#### **Successful Outcome**

When the MAP process receives a Notify Subscriber Data Change request from the process in the HLR, it requests a dialogue with the gsmSCF whose identity is contained in the Note Subscriber Data Modified request by sending a MAP\_OPEN service request, notifies modified subscriber data to the gsmSCF using a MAP NOTE SUBSCRIBER DATA MODIFIED service request and invokes the macro Receive\_Open\_Cnf to wait for the response to the dialogue opening request. If the dialogue opening is successful, the MAP process waits for a response from the gsmSCF.

If the HLR notices after receiving a Notify Subscriber Data Change request that the segmentation is needed the HLR does not set the "All Information Sent" indicator. Otherwise the indicator is set and the process returns to the Wait for SCF response state.

If the MAP process receives a MAP\_NOTE\_SUBSCRIBER\_DATA\_MODIFIED service confirm from the gsmSCF, the MAP process invokes the macro Check\_Confirmation to check the content of the confirm.

If the macro Check\_Confirmation takes the OK exit, the MAP process checks if the "All Information Sent" indicator is set. If it is set the MAP process sends a Notify Subscriber Data Modified ack to the process in the HLR and returns to the idle state. If the "All Information Sent" indicator is not set the MAP process checks if the further segmentation is needed. If segmentation is needed the HLR does not set the indicator and sends MAP\_NOTE\_SUBSCRIBER\_DATA\_MODIFIED service request to the gsmSCF. Otherwise the indicator is set and the MAP\_NOTE\_SUBSCRIBER\_DATA\_MODIFIED service request is sent to the gsmSCF.

#### **Dialogue opening failure**

If the macro Receive\_Open\_Cnf indicates that the dialogue with the gsmSCF could not be opened or that the dialogue can be opened only at an earlier version, the MAP process sends a Notify Subscriber Data Modified negative response indicating system failure to the process in the HLR and returns to the idle state.

**Error in MAP\_NOTE\_SUBSCRIBER\_DATA\_MODIFIED confirm**

If the MAP\_NOTE\_SUBSCRIBER\_DATA\_MODIFIED service confirm contains a user error or a provider error, the MAP process sends a Notify Subscriber Data Change negative response to the process in the HLR and returns to the idle state.

**Abort of gsmSCF dialogue**

After the dialogue with the gsmSCF has been established, the MAP service provider may abort the dialogue by issuing a MAP\_P\_ABORT indication, or the gsmSCF may send a MAP\_CLOSE indication. In either of these cases, the MAP process sends a Notify Subscriber Data Change negative response to the process in the HLR and returns to the idle state.

If the MAP provider indicates a protocol problem by sending a MAP\_NOTICE indication, the MAP process closes the dialogue with the gsmSCF, sends a Notify Subscriber Data Change negative response indicating system failure to the process in the HLR and returns to the idle state.

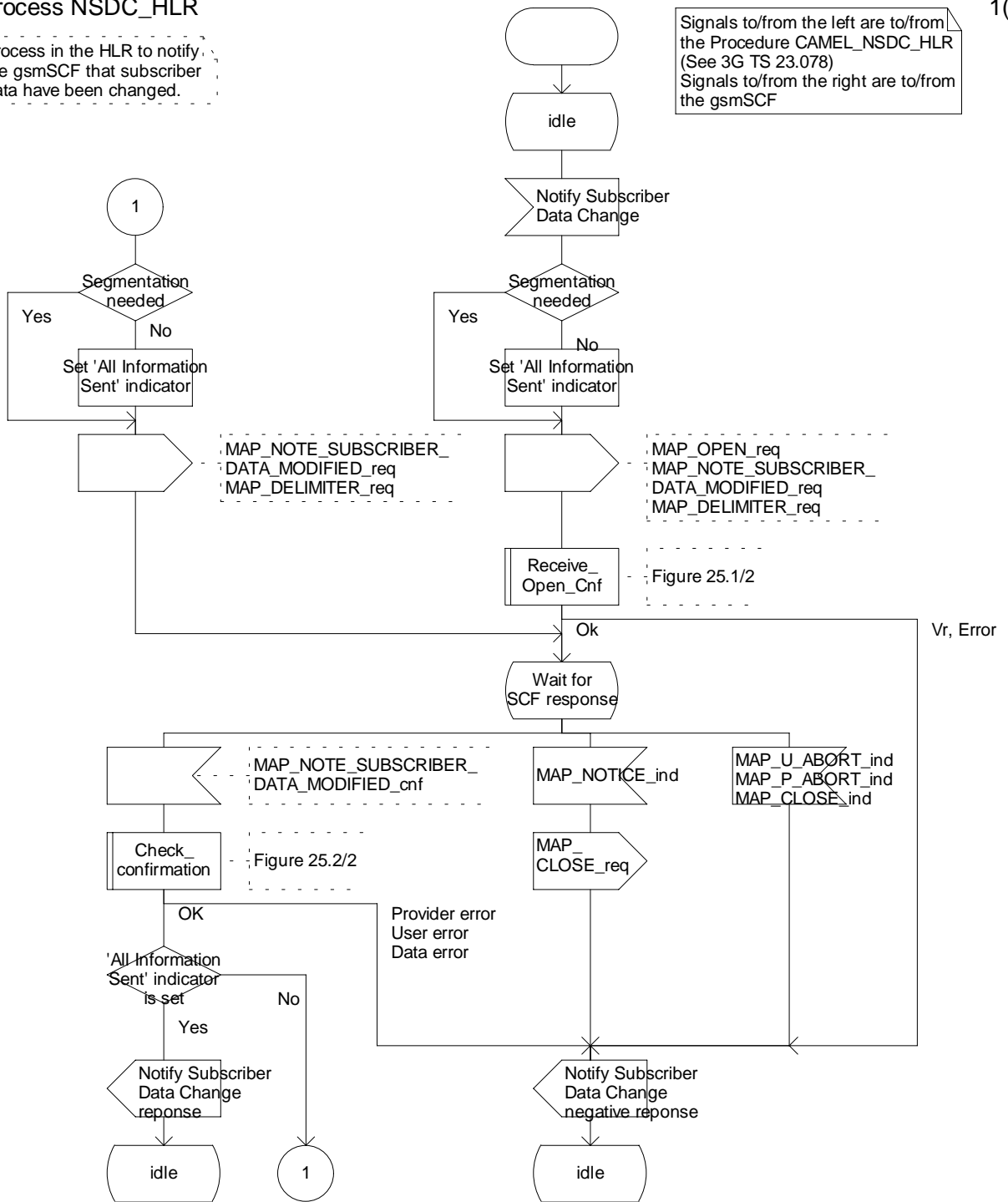


Process NSDC\_HLR

Process in the HLR to notify the gsmSCF that subscriber data have been changed.

1(1)

Signals to/from the left are to/from the Procedure CAMEL\_NSDC\_HLR (See 3G TS 23.078)  
 Signals to/from the right are to/from the gsmSCF



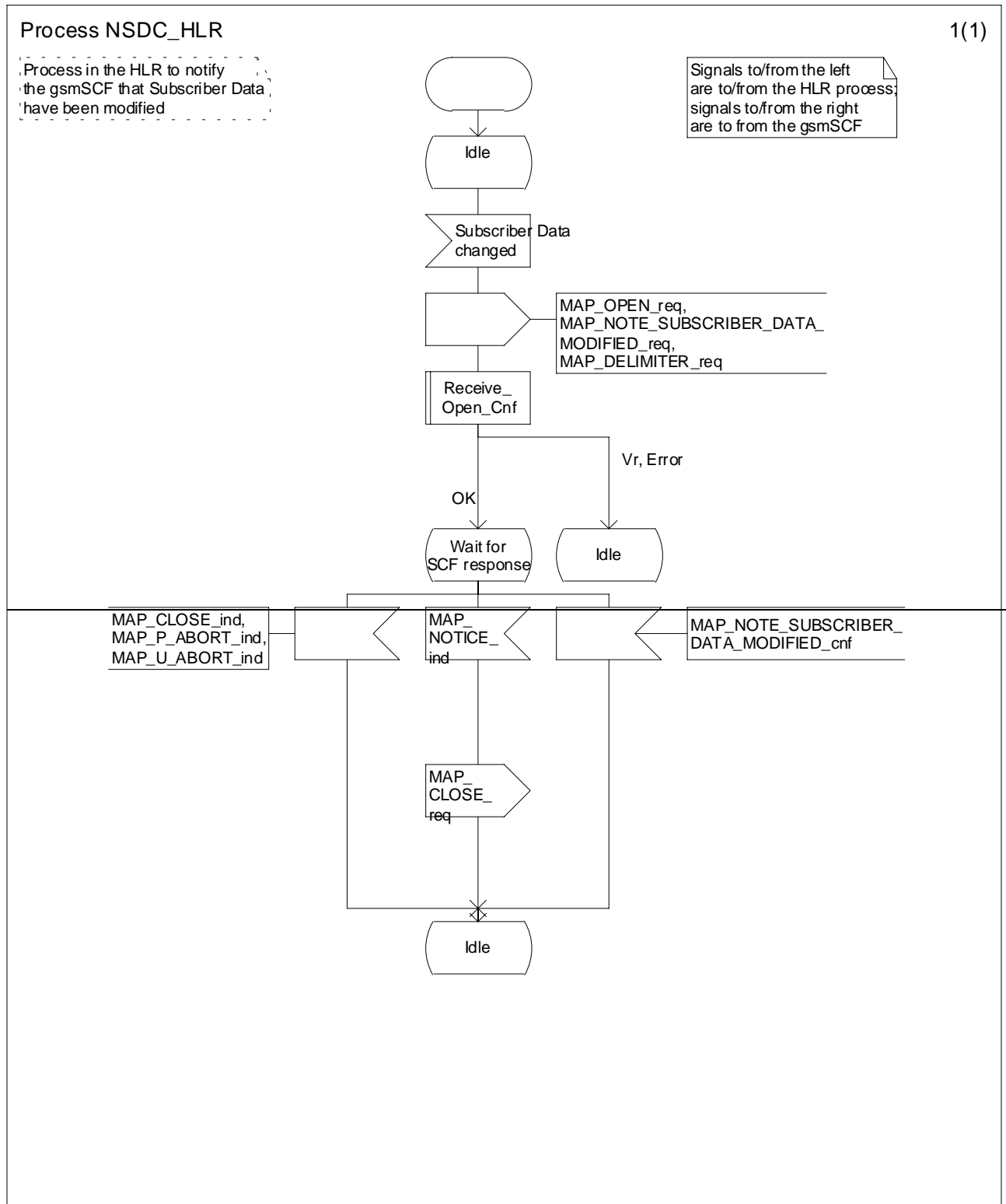


Figure 24A.3/2 Process Subscriber\_Data\_Modification\_Notification\_HLR (sheet 1 of 1)

24A.3.2.2 Process in the gsmSCF

The MAP process in the gsmSCF to handle a notification to the gsmSCF of change of subscriber data resume is shown in figure 24A.3/3. The MAP process invokes a macro not defined in this subclause; the definition of this macro can be found as follows:

Receive Open Ind see subclause 25.1.1;

**Successful outcome**

When the MAP process receives a MAP\_OPEN indication with the application context noteSubscriberDataModified, it checks it by invoking the macro Receive\_Open\_Ind.

If the macro takes the OK exit, the MAP process waits for a service indication.

If a MAP\_NOTE\_SUBSCRIBER\_DATA\_MODIFIED service indication is received, the MAP process checks if the “All Information Sent” indicator is set and if so it sends a Subscriber Data Changed request including all the stored data to the process in the gsmSCF, and waits for a response. The Subscriber Data Changed request contains the parameters received in the MAP\_NOTE\_SUBSCRIBER\_DATA\_MODIFIED service indication. If the “All Information Sent” indicator is not set, the received data is stored and the MAP process constructs an empty MAP\_NOTE\_SUBSCRIBER\_DATA\_MODIFIED service response, sends it to the HLR and returns to the Wait for response state.

If the process in the gsmSCF returns a negative response, the MAP process constructs a MAP\_NOTE\_SUBSCRIBER\_DATA\_MODIFIED service response, constructs a MAP\_CLOSE service request, sends them to the HLR and returns to the idle state.

#### **Failure of dialogue opening with the HLR**

If the macro Receive\_Open\_Ind takes the Vr exit or the Error exit, the MAP process returns to the idle state.

If the MAP provider sends a MAP\_P\_ABORT while the MAP process is waiting for a service indication, the MAP process returns to the idle state.

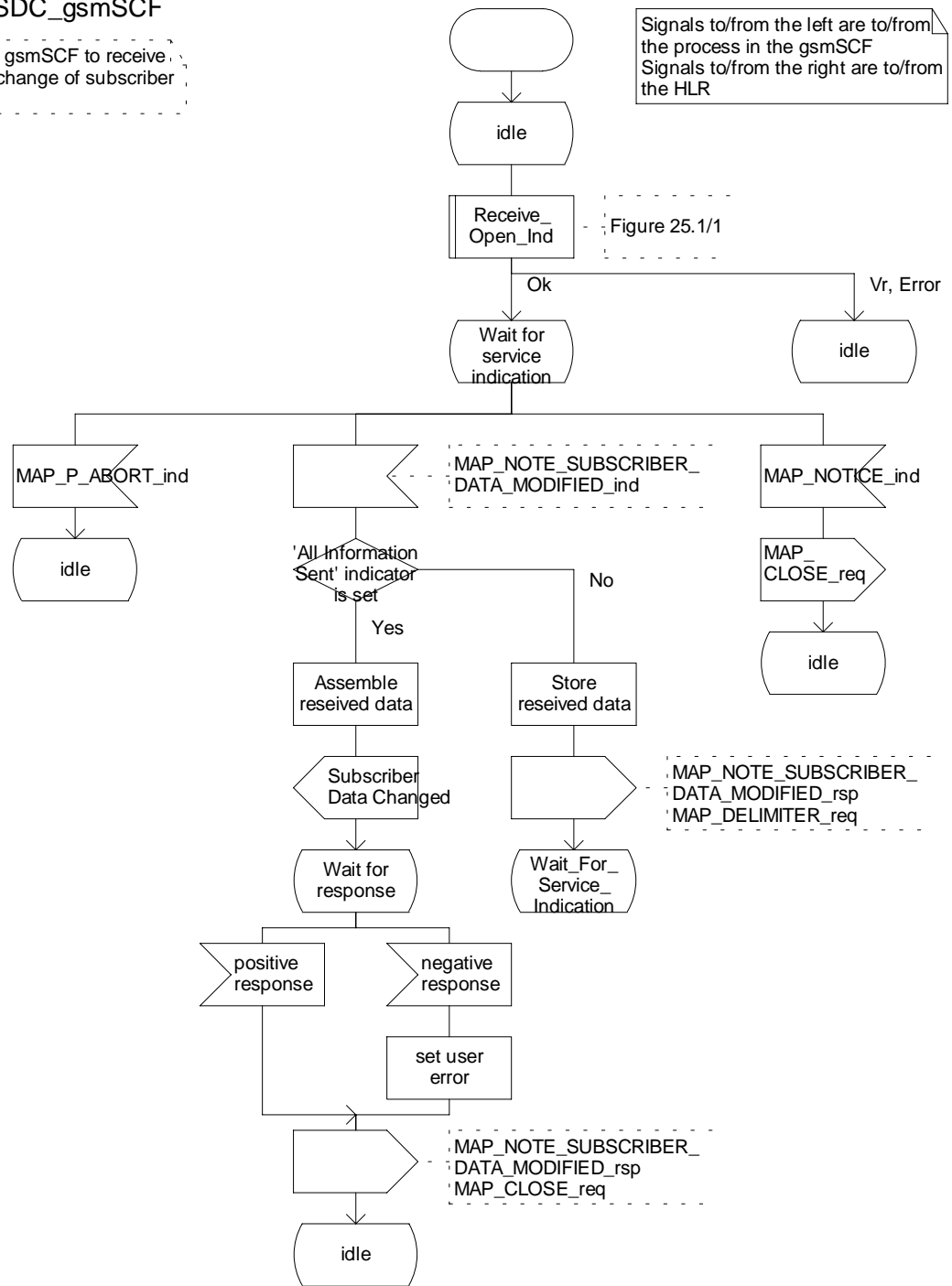
If the MAP provider sends a MAP\_NOTICE while the MAP process is waiting for a service indication, the MAP process sends a MAP\_CLOSE request to terminate the dialogue and returns to the idle.

Process NSDC\_gsmSCF

Process in the gsmSCF to receive notification of change of subscriber data..

1(1)

Signals to/from the left are to/from the process in the gsmSCF  
Signals to/from the right are to/from the HLR



Process NSDC\_gsmSCF

1(1)

Process in the gsmSCF to notify the gsmSCF that subscriber data have been modified

Signals to/from the left are to/from the HLR; Signals to/from the right are to/from the process in the gsmSCF

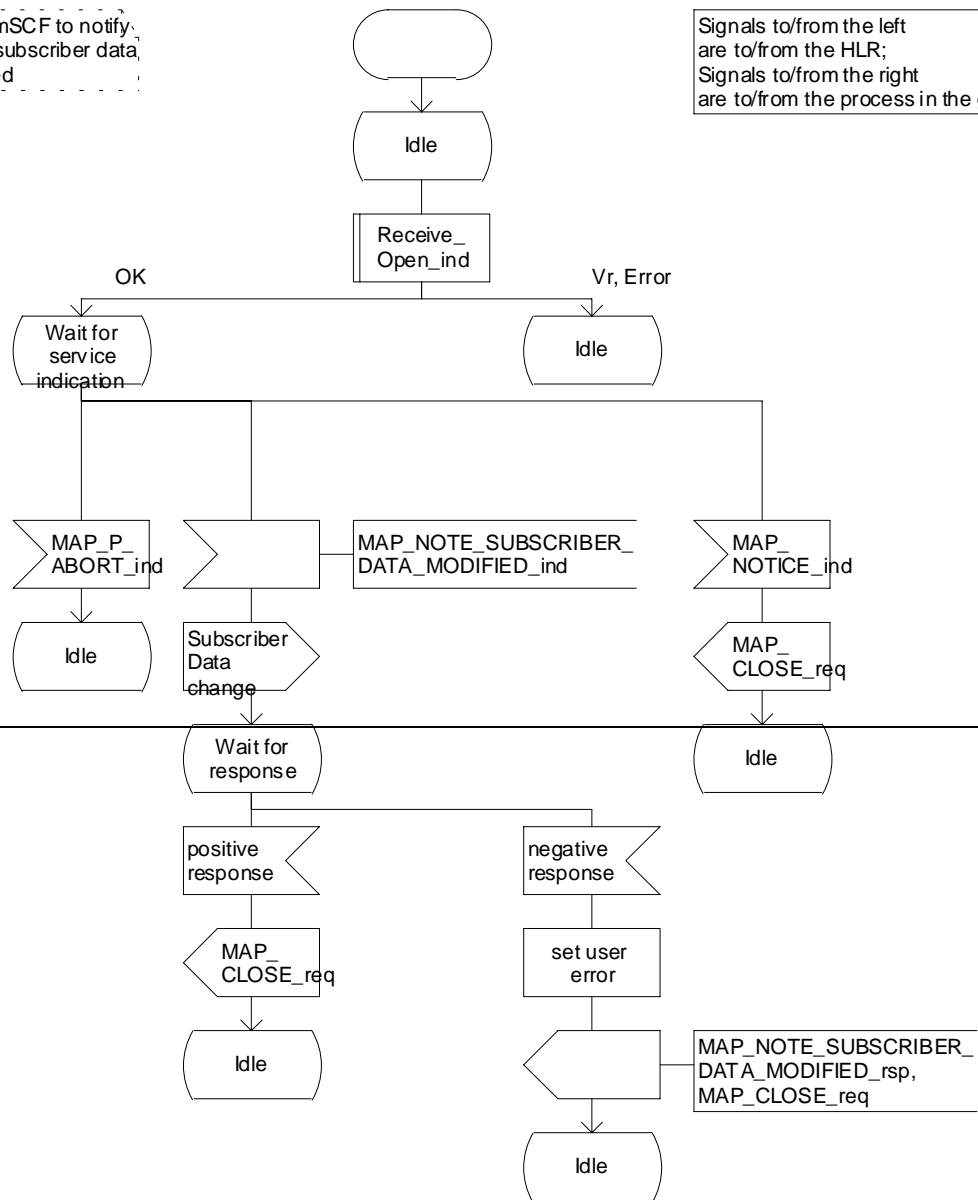


Figure 24A.3/3 Process Subscriber\_Data\_Modification\_Notification\_gsmSCF (sheet 1 of 1)

**CHANGE REQUEST**

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

**29.002 CR 124r3** Current Version: **3.4.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **CN#08** for approval  strategic   
 list expected approval meeting # here ↑ for information  non-strategic  (for SMG use only)

Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

**Proposed change affects:** (U)SIM  ME  UTRAN / Radio  Core Network   
 (at least one should be marked with an X)

**Source:** N4 **Date:** 22/05/00

**Subject:** CAMEL Subscription Info

**Work item:** CAMEL phase 3

**Category:** F Correction  **Release:** Phase 2   
 A Corresponds to a correction in an earlier release  Release 96   
 (only one category shall be marked with an X) B Addition of feature  Release 97   
 C Functional modification of feature  Release 98   
 D Editorial modification  Release 99   
 Release 00

**Reason for change:** When CAMEL Subscription Information in the HLR has been changed, the Stand Alone Insert Subscriber Data message is used to update the data in the VLR. The standard mandates that the complete new VLR CAMEL Subscription Information is sent within one dialogue from the HLR to the VLR and that the VLR replaces the complete old VLR CAMEL Subscription Info with the new VLR CAMEL Subscription Info. This updating procedure was introduced with CAMEL phase 1 when the only elements of VLR CAMEL Subscription Info were O-CSI and Extension Container. The reason for this was to simplify O-CSI updating (i.e. not to allow partial updating of an O-CSI). In CAMEL phase 2 R97 the SS-CSI has been added to VLR CAMEL Subscription Info, and in R98 the TIF-CSI has been added to VLR CAMEL Subscription Info, but still the complete CAMEL Subscription Info has to be sent within the stand alone dialogue.

In CAMEL phase 3 (R99) the m-CSI, sms-CSI, vt-CSI, and d-CSI have been added to the VLR CAMEL Subscription Info. This CR proposes to modify the updating procedure for the R99-CSIs and allow partial updating of the VLR CAMEL Subscription Info (note: Not partial updating of a CSI). Furthermore it is proposed to modify the Delete Subscriber Data message to allow for removal of specific R99-CSIs. The same approach is proposed for SGSN CAMEL Subscription Info which contains gprs-CSI, sms-CSI and extensionContainer.

**Clauses affected:** 8.8, 17.7.1

**Other specs affected:** Other 3G core specifications  → List of CRs:  
 Other GSM core specifications  → List of CRs:  
 MS test specifications  → List of CRs:  
 BSS test specifications  → List of CRs:  
 O&M specifications  → List of CRs:

**Other**

**comments:**



help.doc

←-----

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

## 8.8 Subscriber management services

### 8.8.1 MAP-INSERT-SUBSCRIBER-DATA service

#### 8.8.1.1 Definition

This service is used by an HLR to update a VLR with certain subscriber data in the following occasions:

- the operator has changed the subscription of one or more supplementary services, basic services or data of a subscriber. Note that in case of withdrawal of a Basic or Supplementary service this primitive shall not be used;
- the operator has applied, changed or removed Operator Determined Barring;
- the subscriber has changed data concerning one or more supplementary services by using a subscriber procedure;
- the HLR provides the VLR with subscriber parameters at location updating of a subscriber or at restoration. In this case, this service is used to indicate explicitly that a supplementary service is not provisioned, if the supplementary service specification requires it. The only supplementary services which have this requirement are the CLIR and COLR services. Network access mode is provided only in restoration. If the Super-Charger functionality is supported the HLR may not need to provide the VLR with subscriber parameters at location updating of a subscriber. See TS 23.116.

Also this service is used by an HLR to update a SGSN with certain subscriber data in the following occasions:

- if the GPRS subscription has changed;
- if the network access mode is changed;
- the operator has applied, changed or removed Operator Determined Barring;
- the HLR provides the SGSN with subscriber parameters at GPRS location updating of a subscriber. If the Super-Charger functionality is supported the HLR may not need to provide the SGSN with subscriber parameters. See TS 23.116.

It is a confirmed service and consists of the primitives shown in table 6.8/1.

### 8.8.1.2 Service primitives

**Table 8.8/1: MAP-INSERT-SUBSCRIBER-DATA**

Parameter name	Request	Indication	Response	Confirm
Invoke Id	M	M(=)	M(=)	M(=)
IMSI	C	C(=)		
MSISDN	C	C(=)		
Category	C	C(=)		
Subscriber Status	C	C(=)		
Bearer service List	C	C(=)	C	C(=)
Teleservice List	C	C(=)	C	C(=)
Forwarding information List	C	C(=)		
Call barring information List	C	C(=)		
CUG information List	C	C(=)		
SS-Data List	C	C(=)		
eMLPP Subscription Data	C	C(=)		
Operator Determined Barring General data	C	C(=)	C	C(=)
Operator Determined Barring HPLMN data	C	C(=)		
Roaming Restriction Due To Unsupported Feature	C	C(=)		
Regional Subscription Data	C	C(=)		
VLR CAMEL Subscription Info	C	C(=)		
Voice Broadcast Data	C	C(=)		
Voice Group Call Data	C	C(=)		
Network access mode	C	C(=)		
GPRS Subscription Data	C	C(=)		
Roaming Restricted In SGSN Due To Unsupported Feature	C	C(=)		
North American Equal Access preferred Carrier Id List	U	C(=)		
SGSN Camel Subscription Info	C	C(=)		
LSA Information	C	C(=)		
IST Alert Timer	C	C(=)		
SS-Code List			C	C(=)
LMU Identifier	C	C(=)		
LCS Information	C	C(=)		
Super-Charger Supported In HLR	C	C(=)		
Regional Subscription Response			C	C(=)
Supported CAMEL Phases			C	C(=)
User error			U	C(=)
Provider error				O

### 8.8.1.3 Parameter use

.....

#### VLR CAMEL Subscription Info

This parameter is sent for subscribers who have CAMEL services which are invoked in the MSC. In CAMEL phase 1, this parameter contains only the O-CSI. In CAMEL Phase 2, this parameter may contain OCSI, SS-CSI and TIF-CSI. In CAMEL Phase 3, this parameter may contain O-CSI, D-CSI, SS-CSI, VT-CSI, SMS-CSI M-CSI and TIF-CSI. In CAMEL Phase 2 TDP-Criteria for O-CSI may be associated with O-CSI. In CAMEL Phase 3, additionally, TDP-Criteria for VT-CSI may be associated with VT-CSI. The VLR CAMEL Subscription Info is sent at location updating or when any information in the applicable CAMEL Subscription Info in the HLR has been changed.

At location updating, the complete set of VLR CAMEL Subscription Info is sent in one dialogue.

When CAMEL Subscription Information is changed in the HLR and changed data have to be sent to the VLR, then:

- For CAMEL Phase 1 and CAMEL Phase 2, the complete set of VLR CAMEL Subscription Info is sent in one dialogue;



- For CAMEL Phase 3, one or more specific elements of VLR CAMEL Subscription Info are sent in one dialogue.

When the VLR receives a specific element of VLR CAMEL Subscription Info, it shall overwrite the corresponding specific element of VLR CAMEL Subscription Info (if any) which it has stored for that subscriber.

The specific elements of VLR CAMEL Subscription Info which may be sent are:

- VLR CAMEL Subscription Info which is applicable for CAMEL Phase 1 and CAMEL Phase 2, which consists of any one or more of:
  - O-CSI;
  - TDP-Criteria for O-CSI;
  - SS-CSI;
  - TIF-CSI.
- D-CSI;
- VT-CSI;
- TDP-Criteria for VT-CSI;
- SMS-CSI;
- M-CSI.

If the VLR CAMEL Subscription Info is omitted in the Insert Subscriber Data operation the VLR shall keep the previously stored VLR CAMEL Subscription Info. Within one dialogue subsequent received data are interpreted as add-on data. If the VLR detects that there is overlapping in the information received within a dialogue, it shall send the error Unexpected Data Value. This parameter is used only by the VLR and if the SGSN receives this parameter it shall ignore it.

The VLR CAMEL Subscription Info may contain the TIF-CSI (Translation Information Flag) for CAMEL Phase 2 and 3. See 3G TS 23.072 for the use of this parameter and the conditions for its presence.

.....

#### SGSN CAMEL Subscription Info

The SGSN CAMEL Subscription Info is sent at GPRS location updating or when any information in the applicable SGSN CAMEL Subscription Info in the HLR has been changed. In CAMEL Phase 3, this parameter may contain one or both of GPRS-CSI and SMS-CSI.

At GPRS location updating the complete set of SGSN CAMEL Subscription Info is sent.

When CAMEL Subscription Information is changed in the HLR and changed data have to be sent to the SGSN, then one or more specific elements of SGSN CAMEL Subscription Info are sent in one dialogue.

When the SGSN receives a specific element of SGSN CAMEL Subscription Info, it shall overwrite the corresponding specific element of SGSN CAMEL Subscription Info (if any) which it has stored for that subscriber.

The specific elements of SGSN CAMEL Subscription Info which may be sent are:

- SMS-CSI;
- GPRS-CSI.

This parameter is used only by the SGSN and if the VLR receives this parameter it shall ignore it.

.....

## 8.8.2 MAP-DELETE-SUBSCRIBER-DATA service

### 8.8.2.1 Definition

This service is used by an HLR to remove certain subscriber data from a VLR if the subscription of one or more supplementary services or basic services is withdrawn. Note that this service is not used in case of erasure or deactivation of supplementary services.

Also this service is used by an HLR to remove GPRS subscription data from a SGSN.

It is a confirmed service and consists of the primitives shown in table 8.8/2.

### 8.8.2.2 Service primitives

**Table 8.8/2: MAP-DELETE-SUBSCRIBER-DATA**

Parameter name	Request	Indication	Response	Confirm
Invoke Id	M	M(=)	M(=)	M(=)
IMSI	M	M(=)		
Basic service List	C	C(=)		
SS-Code List	C	C(=)		
Roaming Restriction Due To Unsupported Feature	C	C(=)		
Camel Subscription Info Withdraw	C	C(=)		
Specific CSI Withdraw	C	C(=)		
Regional Subscription Data	C	C(=)		
VBS Group Indication	C	C(=)		
VGCS Group Indication	C	C(=)		
GPRS Subscription Data Withdraw	C	C(=)		
Roaming Restricted In SGSN Due To Unsupported Feature	C	C(=)		
LSA Information Withdraw	C	C(=)		
IST Information Withdraw	C	C(=)		
Regional Subscription Response			C	C(=)
GMLC List Withdraw	C	C(=)		
User error			C	C(=)
Provider error				O

### 8.8.2.3 Parameter use

All parameters are described in subclause 7.6. The following clarifications are applicable:

.....

#### CAMEL Subscription Info Withdraw

This parameter is used to indicate that CAMEL Subscription Info shall be deleted from the VLR or from the SGSN. All CAMEL Subscription Info for the subscriber shall be deleted. This parameter is used by the VLR and by the SGSN. This parameter should not be sent in the same message as the Specific CSI Withdraw parameter.

#### Specific CSI Withdraw

This parameter is used to indicate that one or more specific elements of CAMEL Subscription Info shall be deleted from the VLR or from the SGSN.

The specific elements of CAMEL Subscription Info which may be withdrawn are:

- O-CSI with TDP criteria for O-CSI;
- SS-CSI;
- TIF-CSI;

- D-CSI;
- VT-CSI with TDP criteria for VT-CSI;
- SMS-CSI;
- M-CSI;
- GPRS-CSI.

This parameter is used by the VLR and by the SGSN. It shall not be sent to VLRs that do not support CAMEL phase 3. This parameter should not be sent in the same message as the CAMEL Subscription Info Withdraw parameter.

.....

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

### 17.7.1 Mobile Service data types

```

MAP-MS-DataTypes {
  ccitt identified-organization (4) etsi (0) mobileDomain (0)
  gsm-Network (1) modules (3) map-MS-DataTypes (11) version6 (6)}

```

• • • • •

```

DeleteSubscriberDataArg ::= SEQUENCE {
  imsi [0] IMSI,
  basicServiceList [1] BasicServiceList OPTIONAL,
  -- The exception handling for reception of unsupported/not allocated
  -- basicServiceCodes is defined in section 6.8.2
  ss-List [2] SS-List OPTIONAL,
  roamingRestrictionDueToUnsupportedFeature [4] NULL OPTIONAL,
  regionalSubscriptionIdentifier [5] ZoneCode OPTIONAL,
  vbsGroupIndication [7] NULL OPTIONAL,
  vgcsGroupIndication [8] NULL OPTIONAL,
  camelSubscriptionInfoWithdraw [9] NULL OPTIONAL,
  extensionContainer [6] ExtensionContainer OPTIONAL,
  ...,
  gprsSubscriptionDataWithdraw [10] GPRSSubscriptionDataWithdraw OPTIONAL,
  roamingRestrictedInSgsnDueToUnsupportedFeature [11] NULL OPTIONAL,
  lsaInformationWithdraw [12] LSAInformationWithdraw OPTIONAL,
  gmlc-ListWithdraw [13] NULL OPTIONAL,
  istInformationWithdraw [14] NULL OPTIONAL,
  specificCSI-Withdraw [15] SpecificCSI-Withdraw OPTIONAL}

```

```

SpecificCSI-Withdraw ::= BIT STRING {
  o-csi (0),
  ss-csi (1),
  tif-csi (2),
  d-csi (3),
  vt-csi (4),
  sms-csi (5),
  m-csi (6),
  gprs-csi(7)} (SIZE(8..32))
-- exception handling:
-- bits 8 to 31 shall be ignored if received

```

• • • • •



## 17.7 MAP constants and data types

### 17.7.1 Mobile Service data types

\*\*\*\* NEXT MODIFIED SECTION \*\*\*\*

```
D-CSI ::= SEQUENCE {
    dp-AnalysedInfoCriteriaList [0] DP-AnalysedInfoCriteriaList OPTIONAL,
    camelCapabilityHandling [1] CamelCapabilityHandling OPTIONAL,
    extensionContainer [2] ExtensionContainer OPTIONAL,
    ...}

```

```
DP-AnalysedInfoCriteriaList ::= SEQUENCE SIZE (1..maxNumOfDP-AnalysedInfoCriteria) OF
    DP-AnalysedInfoCriterium

```

```
maxNumOfDP-AnalysedInfoCriteria INTEGER ::= 10

```

\*\*\*\* NEXT MODIFIED SECTION \*\*\*\*

```
SMS-CSI ::= SEQUENCE {
    sms-CAMEL-TDP-DataList [0] SMS-CAMEL-TDP-DataList OPTIONAL,
    camelCapabilityHandling [1] CamelCapabilityHandling OPTIONAL,
    extensionContainer [2] ExtensionContainer OPTIONAL,
    notificationToCSE [3] NULL OPTIONAL,
    csiActive [4] NULL OPTIONAL,
    ...}
-- notificationToCSE and csiActive shall not be present when SMS-CSI is sent to VLR/SGSN.
-- They may only be included in ATSI/ATM Ack message.

```