

Source: TSG CN WG4
Title: CR on Rel-5 Camel4
Agenda item: 8.3
Document for: APPROVAL

Introduction:

This document contains 10 CRs on Rel-5 Work Item "CAMEL4", that have been agreed by TSG CN WG4, and are forwarded to TSG CN Plenary meeting #16 for approval.

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
23.008	044		N4-020475	Rel-5	Correction of the DP criteria table for T-CSI and VT-CSI on the Rel05 collective CR	F	5.0.0
23.008	045	1	N4-020730	Rel-5	Splitting of CAMEL phase 4	B	5.0.0
23.008	051		N4-020701	Rel-5	Correction of errors introduced with the taken into account CAMEL phase 4	F	5.0.0
29.002	408	2	N4-020485	Rel-5	Transferring the MS classmark & IMEI to the gsmSCF	C	5.1.0
29.002	414	1	N4-020468	Rel-5	Corrections to the handling of Any Time Interrogation and Provide Subscriber Info	F	5.1.0
29.002	422	1	N4-020483	Rel-5	Triggering of gsmSCF for MT-SMS-CSI	F	5.1.0
29.002	423		N4-020408	Rel-5	Clarification of handling of MT-SMS-TPDU-Type and SMS-TDP	C	5.1.0
29.002	435	1	N4-020476	Rel-5	Change PS-connected in PS-PDPactive	D	5.1.0
29.002	436	2	N4-020756	Rel-5	Splitting of CAMEL phase 4	B	5.1.0
29.002	454		N4-020623	Rel-5	Addition of Location Information GPRS to Note MM Event operation	F	5.1.0

CR-Form-v4

CHANGE REQUEST

⌘ **23.008 CR 044** ⌘ Rev ⌘ Current version: **5.0.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction of the DP criteria table for T-CSI and VT-CSI on the Rel05 collective CR		
Source:	⌘ CN4		
Work item code:	⌘ CAMEL phase 4	Date:	⌘ 09/04/02
Category:	⌘ F	Release:	⌘ REL-5
	<i>Use one of the following categories:</i> 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.	<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)	

Reason for change:	⌘ Wrong DP criteria table for T-CSI and VT-CSI.		
Summary of change:	⌘ The DP criteria table shall be aligned with the criteria for T-CSI and VT-CSI.		
Consequences if not approved:	⌘ Missunderstanding of chapter 2.14.1.2.		

Clauses affected:	⌘ 2.14.1.2		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> 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/3G_Specs/CRs.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://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 ****

2.14 Data related to CAMEL

2.14.1 Subscriber Data stored in HLR

2.14.1.2 Terminating CAMEL Subscription Information (T-CSI) and VMSC Terminating CAMEL Subscription Information (VT-CSI));

This data defines the contents of the terminating CAMEL subscription information used to interwork with the gsmSCF for MT call. It consists of:

- A TDP list. ~~DP~~The TDP list is a list of TDP descriptions. Each TDP description contains the following elements:
 1. DP Value. The DP value identifies the DP in the MT State Model where service triggering may take place. For T-CSI, the allowed DP value are DP Terminating_Attempt_Authorised, DP T_Busy, DP T_No_Answer.
 2. A gsmSCF address. It is the gsmSCF address (E.164 number) where the CAMEL service is treated for the subscriber. A gsmSCF address is associated to each serviceKey.
 3. A serviceKey. The serviceKey identifies to the gsmSCF the service logic. A serviceKey is associated to each TDP.
 4. A default Call Handling. The default call handling indicates whether the call shall be released or continued as requested in case of error in the gsmSSF to gsmSCF dialogue. A default Call Handling is associated to each serviceKey.
 5. DP criteria. The DP criteria indicates on which criteria the gsmSSF shall access the gsmSCF. DP criteria is associated to each TDP.

<u>TDP</u>	<u>Triggering Criteria (*)</u>	<u>ServiceKey</u>	<u>gsmSCF address</u>	<u>Default Call Handling</u>
<u>DP Terminating_Attempt_Authorised</u>	<u>No Criterion</u> <u>Basic service criteria</u>	<u>One serviceKey</u>	<u>One E164 gsmSCF address</u>	<u>One Default call handling</u>
<u>DP T_Busy</u>	<u>No criterion</u> <u>Cause value criteria</u>	<u>One serviceKey</u>	<u>One E164 gsmSCF address</u>	<u>One Default call handling</u>
<u>DP T_No_Answer</u>	<u>No criterion</u> <u>Cause value criteria</u>	<u>One service Key</u>	<u>One E164 gsmSCF address</u>	<u>One Default call handling</u>

<u>TDP</u>	<u>Triggering Criteria (*)</u>	<u>ServiceKey</u>	<u>gsmSCF address</u>	<u>Default Call Handling</u>
<u>DP Collected_Info</u>	<u>No Criterion</u> <u>Number criteria</u> <u>Basic service code criteria</u> <u>Call type criteria</u>	<u>One ServiceKey</u>	<u>One E164 gsmSCF address</u>	<u>One Default call handling</u>
<u>DP Route_Select_Failure</u>	<u>No criterion</u> <u>Cause value criteria</u>	<u>One ServiceKey</u>	<u>One E164 gsmSCF address</u>	<u>One Default call handling</u>

(*) One or more TDP criteria shall be applicable. All applicable triggering criteria must be satisfied before the dialogue is established with the gsmSCF.

- CAMEL capability handling. It gives the CAMEL phase associated to the T-CSI/VT-CSI (CAMEL phase1, or phase2, or phase3).
- The CSI state indicates whether the T-CSI/VT-CSI is active or not.
- Notification flag. The notification flag indicates whether the change of the T-CSI/VT-CSI shall trigger Notification on Change of Subscriber data.

**** End of modified section ****

CHANGE REQUEST

⌘ **23.008 CR 045** ⌘ rev **1** ⌘ Current version: **5.0.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Splitting of CAMEL phase 4		
Source:	⌘ CN4		
Work item code:	⌘ CAMEL phase 4	Date:	⌘ 15 May 2002
Category:	⌘ B	Release:	⌘ REL-05
	Use <u>one</u> 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 <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ Introduction of Supported Camel4 Subsets variable into 23.008
Summary of change:	⌘
Consequences if not approved:	⌘ The feature "Split of CAMEL phase 4 into functional subsets" is not possible.

Clauses affected:	⌘ 2.14.2 Other data stored in HLR	
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘
Other comments:	⌘	

**** First modified section ****

2.14.2 Other Data stored in the HLR

2.14.2.2 Supported CAMEL Phases

The HLR shall store the supported CAMEL Phases of the VLR where the subscriber is currently registered and the SGSN where the subscriber is currently attached.

The following variables are required:

- VLR Supported CAMEL Phases
- SGSN Supported CAMEL Phases

The HLR does not store the Supported CAMEL Phases of the GMSC, since a subscriber is not permanently registered at a GMSC.

2.14.2.2A Supported CAMEL4 Subsets

The HLR shall store the supported CAMEL4 Subsets of the VLR where the subscriber is currently registered and the SGSN where the subscriber is currently attached.

The following variables are required:

- VLR Supported CAMEL4 Subsets
- SGSN Supported CAMEL4 Subsets

The HLR does not store the Supported CAMEL4 Subsets of the GMSC, since a subscriber is not permanently registered at a GMSC.

2.14.2.3 UG-CSI

The USSD general CAMEL service(UG-CSI) is also stored in the HLR. This data is used on USSD request receipt from the MS. It consists of a list of:

- a service code. The service code defines a specific application in the gsmSCF;
- a gsmSCFaddress. It is the gsmSCF address (E.164 number) where the USSD application is treated for this subscriber.

2.14.2.4 gsmSCF address for CSI

This information element contains the list of gsmSCF address(E164 address) to which Notification on Change of Subscriber Data is to be sent.

**** Next modified section ****

5.1 Non-GPRS Network Access Mode Data Storage

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

PARAMETER	SUBCLAUSE	HLR	VLR	TYPE
IMSI	2.1.1.1	M	M	P
Network Access Mode	2.1.1.2	M	-	P
International MS ISDN number	2.1.2	M	M	P
multinumbering MSISDNs	2.1.3	C	-	P
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
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
Key Set Identifier (KSI)	2.3.4	-	M	T
MSRN	2.4.1	-	C	T
Location Area Identity	2.4.2	-	M	T
VLR number	2.4.5	M	-	T
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 Global ID or Service Area 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 Preferential Access Indicator	2.4.17.2A	C	C	P
LSA Active Mode Support Indicator	2.4.17.2B	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

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
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)	2.14.1.11/3.7	C	C	P
USSD General CAMEL service information (UG-CSI)	2.14.2	C	-	P
<u>CR Editor's Note: the correct reference for USSD above should be 2.14.2.4 and not 2.14.2</u>				
O-CSI Negotiated CAMEL Capability Handling	2.14.2.1	C		T
SS-CSI Negotiated CAMEL Capability Handling	2.14.2.1	C		T
VT-CSI Negotiated CAMEL Capability Handling	2.14.2.1	C		T
Short Message Service CAMEL Subscription Information(MO-SMS-CSI)	2.14.1.8/2.14.3.5	C	C	P
Short Message Service CAMEL Subscription Information(MT-SMS-CSI)	2.14.1.9/2.14.3.6	C	C	P
<u>CR editor's note: delete this empty row</u>				
MO-SMS-CSI VLR Negotiated CAMEL Capability Handling	2.14.2.1	C		T
MT-SMS-CSI VLR Negotiated CAMEL Capability Handling	2.14.2.1	C		P
M-CSI Negotiated CAMEL Capability Handling	2.14.2.1	C		T
VLR Supported CAMEL Phases	2.14.2.3	C		T
<u>VLR Supported CAMEL4 Subsets</u>	<u>2.14.2.2A</u>	<u>C</u>		<u>T</u>
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
CS Allocation/Retention priority	2.18.1	C	C	P

**** Next modified section ****

5.2 GPRS Network Access Mode Storage

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
Network Access Mode	2.1.1.2	M	-	C note1	-	P
International MS ISDN number	2.1.2	M	M	M	-	T
multinumbering MSISDNs	2.1.3	C	-	-	-	T
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
TLLI	2.1.6	-	-	C	-	T
Random TLLI	2.1.7	-	-	C	-	T
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
Key Set Identifier (KSI)	2.3.4	-	-	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
VLR Number	2.4.5	M	-	C note2	-	T
SGSN Number	2.4.8.1	M	C note2	-	-	T
GGSN Number	2.4.8.2	M	-	-	-	P
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 Global ID or Service Area 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 Preferential Access Indicator	2.4.17.2A	C	C	C	-	P
LSA Active Mode Support Indicator	2.4.17.2B	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	-	-	-	P
Barring of roaming	2.8.2.3	C	-	C	-	P
Barring of Packet Oriented Services	2.8.2.8	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
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

PARAMETER	Subclause	HLR	VLR	SGSN	GGSN	TYPE
SGSN Address	2.13.10	-	-	-	M	T
GGSN-list	2.13.11	M	-	-	-	T
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 note2	-	T
Classmark	2.13.20	-	-	M	-	T
TID	2.13.21	-	-	C	C	T
Radio Priority	2.13.22	-	-	C	-	T
Radio Priority SMS	2.13.23	-	-	C	-	T
PDP Context Identifier	2.13.24	C	-	C	-	T
PDP Context Charging Characteristics	2.13.25	C	-	C	C	P
GPRS CAMEL Subscription Information (GPRS-CSI)	2.14.1.10/2.14.4.4	C	-	C	-	C
MO Short Message Service CAMEL Subscription Information(MO-SMS-CSI)	2.14.1.8/2.14.4.1	C	-	C	-	C
MT Short Message Service CAMEL Subscription Information(MT-SMS-CSI)	2.14.1.9/2.14.4.2	C	-	C	-	C
MO-SMS-CSI SGSN Negotiated CAMEL Capability Handling	2.14.2.1	C	-	-	-	P
MT-SMS-CSI SGSN Negotiated CAMEL Capability Handling	2.14.2.1	C	-	-	-	P
<u>CR editor's note: delete this and the following empty rows.</u>						
Mobility Management for GPRS event notification (MG-CSI)	2.14.1.12/2.14.4.4	C	-	C	-	C
MG-CSI Negotiated CAMEL Capability Handling	2.14.2.1	C	-	-	-	P
GPRS-CSI Negotiated CAMEL Capability Handling	2.14.2.1	C	-	-	-	T
SGSN Supported CAMEL Phases	2.14.2.3	C	-	-	-	T
<u>SGSN Supported CAMEL4 Subsets</u>	<u>2.14.2.2A</u>	<u>C</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>T</u>
GsmSCF address for CSI	2.14.2.4	C	-	-	-	P
Age Indicator	2.16.1	C	-	C	-	T
Subscribed Charging Characteristics	2.19.1	C	-	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

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.

Note 1: This parameter is relevant in the SGSN only when the Gs interface is installed.

Note 2: 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.

For special condition of storage see in clause 2. See clause 3 for explanation of M, C, T and P in table 2.

3GPP TSG CN WG4 Meeting #14
Budapest,13th-17th Mai 2002

N4-020701

3GPP TSG CN WG2 Meeting #24
Budapest,13th-17th Mai 2002

N2-020566

CR-Form-v4
CHANGE REQUEST
⌘ 23.008 CR 051 ⌘ Rev. ⌘ Current version: 5.0.0 ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction of errors introduced with the taken into account CAMEL phase 4		
Source:	⌘ CN4		
Work item code:	⌘ CAMEL phase 4	Date:	⌘ 13/05/02
Category:	⌘ F	Release:	⌘ REL-5
	Use <u>one</u> 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 <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ Some errors have been introduced with the taken into account of Tdoc relative to CAMEL phase 4 Further editorial changes and consistency alignements
Summary of change:	⌘ <ol style="list-style-type: none"> 1. Corrections on the table relative to the "negotiated CAMEL Capability Handling variables" 2. Editorials on version 5.0.0 3. NEW = Alignment of the MG-CSI with N2-020201 " Enhancements to subscriber information reporting in the PS domain" approved during CN2/CN4 meeting of Sophia Antipolis. 4. "Service Key" is replaced by "serviceKey"
Consequences if not approved:	⌘ Missing CAMEL phase 4 functionalities

Clauses affected:	⌘ 2.14.1.7/2.14.1.8/2.14.1.9/2.14.1.10/2.14.1.12/1.14.2.1/2.14.3.4/2.14.3.5/2.14.4.1/2.14.4.2/2.14.4.4
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> Test specifications <input type="checkbox"/> 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/3G_Specs/CRs.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ☹ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://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 ****

2.14 Data related to CAMEL

2.14.1.7 Mobility Management event notification (M-CSI)

This data indicates which Mobility Management events shall be reported to the gsmSCF. It consists of:

- gsmSCF address: this is the address of the gsmSCF where the Mobility Management event notification shall be sent to. The gsmSCF address is in E.164 format.
- ~~Service Key~~ServiceKey: the ~~service Key~~serviceKey is included in the notification to the gsmSCF and indicates to the gsmSCF which Service Logic shall be applied.
- Mobility Management Triggers: these triggers define which Mobility Managements events shall be reported to the gsmSCF. The mobility managements triggers may contain one or any combination of the following elements:
 - Location update in the same VLR service area;
 - Location update to another VLR service area;
 - IMSI attach;
 - MS initiated IMSI detach (explicit detach);
 - Network initiated IMSI detach (implicit detach).
- The CSI state, indicates whether the M-CSI is active or not.
- Notification flag. The notification flag indicates whether the change of M-CSI shall trigger Notification on Change of Subscriber data.

2.14.1.8 Mobile Originated Short Message Service CAMEL Subscription Information (MO-SMS-CSI)

This data defines the contents of the MO SMS CAMEL subscription information. The MO SMS CAMEL Subscription Information is used for the following interworking:

- Interworking between gsmSCF and gsmSSF, for CAMEL control of circuit switched MO SMS;
- Interworking between gsmSCF and gprsSSF, for CAMEL control of packet switched MO SMS.

MO-SMS-CSI consists of the following data items:

- TDP List. The TDP list is a list of SMS TDP descriptions. Each TDP description contains the following elements:
 1. DP Value. The DP value identifies the DP in the MO SMS State Model where service triggering may take place.
For MO-SMS-CSI, the only allowed DP value is *SMS_Collected_Info*.
 2. gsmSCF Address. The gsmSCF address is the address (E164 number) of the gsmSCF where the MO SMS CAMEL Service associated with this TDP, is located for this subscriber.
 3. ~~Service Key~~ServiceKey. The ~~service Key~~serviceKey identifies to the gsmSCF the service logic that shall be applied.
 4. Default SMS handling. The default SMS handling indicates whether the MO SMS submission request shall be rejected or continued in the case of error in the dialogue between the gsmSSF and gsmSCF or between the gprsSSF and gsmSCF;

- CAMEL Capability Handling. CAMEL Capability Handling indicates the CAMEL Phase that is required for the MO SMS service. The CAMEL Capability Handling for MO-SMS-CSI shall have the value CAMEL phase 3.
- CSI state: indicates whether the MO-SMS-CSI is active or not.
- Notification flag indicates whether the change of the SMS-CSI shall trigger Notification on change of subscriber Data or not.

2.14.1.9 Mobile Terminating Short Message Service CAMEL Subscription Information (MT-SMS-CSI)

This data defines the contents of the mobile terminating short message service CAMEL subscription information. The MT-SMS-CSI CAMEL Subscription Information is used for the following interworking:

- Interworking between gsmSCF and gsmSSF, for CAMEL control of circuit switched MT SMS;
- Interworking between gsmSCF and gprsSSF, for CAMEL control of packet switched MT SMS.

MT-SMS-CSI consists of the following data items:

- TDP List. The TDP list is a list of MT SMS TDP descriptions. Each TDP description contains the following elements:
 1. DP Value. The DP value identifies the DP in the MT SMS State Model where service triggering may take place. For MT-SMS-CSI, the only allowed DP value is DP SMS-Delivery-Request
 2. gsmSCF Address. The gsmSCF address is the address (E164 number) of the gsmSCF where the MT SMS CAMEL Service associated with this TDP, is located for this subscriber.
 3. ~~Service Key~~ServiceKey. The ~~service Key~~serviceKey identifies to the gsmSCF the service logic that shall be applied.
 4. Default SMS handling. The default SMS handling indicates whether the MT SMS delivery request shall be rejected or continued in the case of error in the dialogue between the gsmSSF and gsmSCF or between the gprsSSF and gsmSCF.
 5. DP criterion. The DP criterion indicates on which criterion the gsmSSF shall access the gsmSCF. A DP criterion is associated with each TDP. For MT-SMS the DP criterion is the TDPU type. The criterion may be absent.

TDP	Triggering Criterion	ServiceKey	gsmSCF address	Default SMS Handling
DP SMS-Delivery Request	TDPU type	One serviceKey	One E164 gsmSCF address	One Default SMS handling

- CAMEL Capability Handling. CAMEL Capability Handling indicates the CAMEL Phase that is required for the MT SMS service. The CAMEL Capability Handling for MT-SMS-CSI shall have the value CAMEL phase 4.
- CSI state: indicates whether the MT-SMS-CSI is active or not.
- Notification flag indicates whether the change of the MT-SMS-CSI shall trigger Notification on change of subscriber Data or not.

2.14.1.10 GPRS CAMEL Subscription Information (GPRS-CSI)

This data defines the contents of the GPRS CAMEL subscription information. The GPRS CAMEL Subscription Information is used for the following interworking:

Interworking between gsmSCF and gprsSSF, for CAMEL control of packet switch call.

GPRS-CSI consists of the following data items:

- TDP List. The TDP list is a list of GPRS TDP descriptions. Each TDP description contains the following elements:
 1. DP Value. The DP value identifies the DP in the GPRS State Model where service triggering may take place.
 2. gsmSCF Address. The gsmSCF address is the address (E164 number) of the gsmSCF where the GPRS CAMEL Service associated with this TDP, is located for this subscriber.
 3. ServiceKey. The serviceKey identifies to the gsmSCF the service logic that shall be applied.
 4. Default GPRS handling. The default GPRS handling indicates whether the GPRS submission request shall be rejected or continued in the case of error in the dialogue between the gprsSSF and gsmSCF.
- CAMEL Capability Handling. CAMEL Capability Handling indicates the CAMEL Phase that is required for the GPRS service. The CAMEL Capability Handling for GPRS-CSI shall have the value CAMEL phase 3.
- The CSI state indicates whether the GPRS-CSI is active or not.
- The notification flag indicates whether the change of the GPRS-CSI shall trigger Notification on change of subscriber Data or not.

2.14.1.11 Dialed service CAMEL Subscription Information (D-CSI)

This data defines the contents of the dialed service CAMEL subscription information used to interwork with the gsmSCF for MO and MF call. It is applicable at TDP Analysed Info. It consists of:

- DP Criteria list. This consists of 1 to 10 entries. Each entry shall contain the following items:
 1. DP Criterion. It indicates when the gsmSSF shall request gsmSCF for instructions. It is a destination number.
 2. A gsmSCF address. It is the gsmSCF address (E164 number) where this Subscribed Dialed CAMEL service is treated for the subscriber. A gsmSCF address is associated to each DP Criterion.
 3. A serviceKey. The serviceKey identifies to the gsmSCF the service logic. A serviceKey is associated to each DP Criterion.
 4. A default Call Handling. It indicates whether the call shall be released or continued as requested in case of error in the gsmSSF to gsmSCF dialogue. A default Call Handling is associated to each DP Criterion.
- CAMEL capability handling. It indicates the CAMEL phase associated to the D-CSI (CAMEL phase3 shall be indicated).
- CSI state: indicates whether the D-CSI is active or not.
- Notification Flag. It indicates whether the change of the D-CSI shall trigger the Notification on Change of Subscriber Data.

2.14.1.12 Mobility Management for GPRS event notification (MG-CSI)

This data indicates which Mobility Management for GPRS subscriber events shall be reported to the gsmSCF. It consists of:

- gsmSCF address: this is the address of the gsmSCF where the Mobility Management event notification shall be sent to. The gsmSCF address is in E.164 format.
- ServiceKey: the serviceKey is included in the notification to the gsmSCF and indicates to the gsmSCF which Service Logic shall be applied.
- Mobility Management Triggers: these triggers define which Mobility Managements events shall be reported to the gsmSCF. The mobility management triggers may contain one or any combination of the following elements:
 - GPRS-Routeing area update of MS to a different SGSN service area;

- ~~GPRS~~ Routeing area update of MS within the same SGSN service area;
 - ~~GPRS~~ Attach of MS for ~~GPRS~~ subscriber (e.g. MS switched on, successful routeing area update after network initiated detach);
 - MS-initiated GPRS detach (e.g. MS switched off);
 - Network-initiated ~~GPRS detach~~ transfer to the "not reachable for paging" state (the network has not received a periodic routeing area update from the MS and assumes that the MS is unreachable).
- The CSI state indicates whether the MG-CSI is active or not.
 - Notification flag. The notification flag indicates whether the change of MG-CSI shall trigger Notification on Change of Subscriber data.

2.14.2 Other Data stored in the HLR

2.14.2.1 Negotiated CAMEL Capability Handling

The HLR shall have a set of *negotiated CAMEL Capability Handling* variables. Each CSI that may be downloaded to the VLR or to the SGSN shall have a negotiated CAMEL Capability Handling (CCH) variable associated with it.

The negotiated CCH variable for a CSI indicates what CAMEL Phase is indicated in that CSI in the VLR or SGSN.

When the negotiated CCH variable has a value NULL, it indicates that the given CSI has not been downloaded to the VLR or SGSN.

The following table shows the *negotiated CAMEL Capability Handling* variables.

Variable name	Associated CSI	CSI stored in	Allowable values for negotiated CCH
O-CSI Negotiated CAMEL Capability Handling	O-CSI	VLR	NULL, 1, 2, 3, 4
D-CSI Negotiated CAMEL Capability Handling	D-CSI	VLR	NULL, 3, 4
SS-CSI Negotiated CAMEL Capability Handling	SS-CSI	VLR	NULL, 2, 3, 4
VT-CSI Negotiated CAMEL Capability Handling	VT-CSI	VLR	NULL, 3, 4
MO-SMS-CSI VLR Negotiated CAMEL Capability Handling	MO-SMS-CSI	VLR	NULL, 3, 4
MT-SMS-CSI VLR Negotiated CAMEL Capability Handling	MT-SMS-CSI	VLR	NULL, 4
M-CSI Negotiated CAMEL Capability Handling	M-CSI	VLR	NULL, 3, 4
MG-CSI Negotiated CAMEL Capability Handling	MG-CSI	SGSN	NULL, 4
MO-SMS-CSI SGSN Negotiated CAMEL Capability Handling	MO-SMS-CSI	SGSN	NULL, 3
MT-SMS-CSI SGSN Negotiated CAMEL Capability Handling	MT-SMS-CSI	SGSN	NULL, 4
GPRS-CSI Negotiated CAMEL Capability Handling	GPRS-CSI	SGSN	NULL, 3

There is no *negotiated CAMEL Capability handling* variable associated with TIF-CSI.

The HLR does not store a *Negotiated CAMEL Capability Handling* for CSIs that are sent to the GMSC, since a subscriber is not permanently registered in a GMSC.

2.14.2.2 Supported CAMEL Phases

The HLR shall store the supported CAMEL Phases of the VLR where the subscriber is currently registered and the SGSN where the subscriber is currently attached.

The following variables are required:

- VLR Supported CAMEL Phases
- SGSN Supported CAMEL Phases

The HLR does not store the Supported CAMEL Phases of the GMSC, since a subscriber is not permanently registered at a GMSC.

2.14.2.3 UG-CSI

The USSD general CAMEL service(UG-CSI) is also stored in the HLR. This data is used on USSD request receipt from the MS. It consists of a list of:

- a service code. The service code defines a specific application in the gsmSCF;
- a gsmSCFAddress. It is the gsmSCF address (E.164 number) where the USSD application is treated for this subscriber.

2.14.2.4 gsmSCF address for CSI

This information element contains the list of gsmSCF address(E164 address) to which Notification on Change of Subscriber Data is to be sent.

2.14.3 Subscriber data stored in VLR

2.14.3.1 Originating CAMEL Subscription Information (O-CSI)

The Originating CAMEL Subscription Information (O-CSI) are stored in the VLR.

This data defines the contents of the originating CAMEL subscription information used to interwork with the gsmSCF for MO and CF calls. It consists of:

- A TDP list: The TDP list is a list of TDP descriptions. Each TDP description contains the following elements:
 1. DP Value. The DP value identifies the DP in the MO State Model where service triggering may take place. For O-CSI, the allowed DP value are *DP Collected_info*, *DP Route_Select_Failure*.
 2. A gsmSCF address. It is the gsmSCF address (E164 number) where the CAMEL service is treated for the subscriber. A gsmSCF address is associated to each serviceKey.
 3. A serviceKey. The serviceKey identifies to the gsmSCF the service logic.. A serviceKey is associated to each TDP.
 4. A default Call Handling. The default call handling indicates whether the call shall be released or continued as requested in case of error in the gsmSSF to gsmSCF dialogue. A default Call Handling is associated to each serviceKey.
 5. DP criteria: The DP criteria indicates on which criteria the gsmSSF shall access the gsmSCF. DP criteria is associated to each TDP.
- CAMEL capability handling. It gives the CAMEL phase associated to the O-CSI (CAMEL phase1, or phase2, or phase3).

2.14.3.2 VMSC Terminating CAMEL Subscription Information (VT-CSI)

This data defines the contents of the visited terminating CAMEL subscription information used by the VMSC to interwork with the gsmSCF for an MT call. It consists of:

- A TDP list. The TDP list is a list of TDP descriptions. Each TDP description contains the following elements:
 1. DP Value. The DP value identifies the DP in the MT State Model where service triggering may take place. For VT-CSI, the allowed DP value are *DP Terminating Attempt Authorised*, *DP T_Busy*, *DP T_No_Answer*.
 2. A gsmSCF address. It is the gsmSCF address (E164 number) where the CAMEL service is treated for the subscriber. A gsmSCF address is associated to each serviceKey.
 3. A serviceKey. The serviceKey identifies to the gsmSCF the service logic. A serviceKey is associated to each TDP.

4. A default Call Handling. The default call handling indicates whether the call shall be released or continued as requested in case of error in the gsmSSF to gsmSCF dialogue. A default Call Handling is associated to each serviceKey.
 5. DP criteria: The DP criteria indicates on which criteria the gsmSSF shall access the gsmSCF.
- CAMEL capability handling. It gives the CAMEL phase associated to the VT-CSI. It is CAMEL phase3.

2.14.3.3 Supplementary Service invocation notification(SS-CSI)

This data is used to notify the gsmSCF about Supplementary Service invocation. It consists of :

- a notification criterion, which may be ECT, CD or MPTY
- a gsmSCFaddress. It is the gsmSCF address (E164 number) where the notification of the Supplementary service invocation is treated for this subscriber.

2.14.3.4 Mobility Management event notification (M-CSI)

This data indicates which Mobility Management events shall be reported to the gsmSCF. It consists of:

- gsmSCF address : This is the address of the gsmSCF where the Mobility Management event notification shall be sent to. The gsmSCF address must be in E.164 format.
- ~~Service Key~~ServiceKey: The ~~service Key~~serviceKey is included in the notification to the gsmSCF and indicates to the gsmSCF which Service Logic shall be applied.
- Mobility Management Triggers. These triggers define which Mobility Managements events shall be reported to the gsmSCF. The mobility managements triggers may contain one or any combination of the following elements:
 - Location update in the same VLR service area;
 - Location update to another VLR service area;
 - IMSI attach;
 - MS initiated IMSI detach (explicit detach);
 - Network initiated IMSI detach (implicit detach).

2.14.3.5 Mobile Originating Short Message Service CAMEL Subscription Information (MO-SMS-CSI)

This data defines the contents of the MO SMS CAMEL subscription information used for the interworkingbetween gsmSCF and gsmSSF, for CAMEL control of circuit switched MO SMS.

MO-SMS-CSI consists of the following data items:

- TDP List. The TDP list is a list of SMS TDP descriptions. Each TDP description contains the following elements:

1. DP Value. The DP value identifies the DP in the MO SMS State Model where service triggering may take place.
For MO-SMS-CSI, the only allowed DP value is *SMS_Collected_Info*.
 2. gsmSCF Address. The gsmSCF address is the address (E164 number) of the gsmSCF.
 3. ~~Service Key~~ServiceKey. The ~~service Key~~serviceKey identifies to the gsmSCF the service logic that shall be applied.
 4. Default SMS handling. The default SMS handling indicates whether the MO SMS submission request shall be rejected or continued in the case of error in the dialogue between the gsmSSF and gsmSCF or between the gprsSSF and gsmSCF;
- CAMEL Capability Handling. CAMEL Capability Handling indicates the CAMEL Phase that is required for the MO SMS service.
The CAMEL Capability Handling for MO-SMS-CSI shall have the value CAMEL phase 3.

2.14.3.6 Mobile Terminating Short Message Service CAMEL Subscription Information (MT-SMS-CSI)

This data defines the contents of the mobile terminating short message service CAMEL subscription information. The MT-SMS-CSI CAMEL Subscription Information is used for interworking between gsmSCF and gsmSSF, for CAMEL control of circuit switched MT SMS.

MT-SMS-CSI consists of the following data items:

- TDP List. The TDP list is a list of MT SMS TDP descriptions. Each TDP description contains the following elements:
 1. DP Value. The DP value identifies the DP in the MT SMS State Model where service triggering may take place.
For MT-SMS-CSI, the only allowed DP value is *SMS-Delivery-Request*
 2. gsmSCF Address. The gsmSCF address is the address (E164 number) of the gsmSCF where the MT SMS CAMEL Service associated with this TDP, is located for this subscriber.
 3. ServiceKey. The serviceKey identifies to the gsmSCF the service logic that shall be applied.
 4. Default SMS handling. The default SMS handling indicates whether the MT SMS delivery request shall be rejected or continued in the case of error in the dialogue between the gsmSSF and gsmSCF or between the gprsSSF and gsmSCF
 5. . DP criterion. The DP criterion indicates on which criterion the gsmSSF shall access the gsmSCF. A DP criterion is associated with each TDP. For MT-SMS the DP criterion is the TDPU type. The criterion may be absent.

TDP	Triggering Criterion	ServiceKey	gsmSCF address	Default SMS Handling
DP SMS-Delivery Request	TDPU type	One serviceKey	One E164 gsmSCF address	One Default SMS handling

- CAMEL Capability Handling. CAMEL Capability Handling indicates the CAMEL Phase that is required for the MT SMS service. The CAMEL Capability Handling for MT-SMS-CSI shall have the value CAMEL phase 4.

2.14.3.7 Dialed service CAMEL Subscription Information (D-CSI)

This data defines the contents of the dialed service CAMEL subscription information used to interwork with the gsmSCF for MO and MF call. It is applicable at TDP Analysed Info. It consists of:

- DP Criteria list, this consists of 1 to 10 entries containing : DP Criterion: It indicates when the gsmSSF shall request gsmSCF for instructions.

1. A gsmSCF address. It is the gsmSCF address (E164 number) where this Subscribed Dialed CAMEL service is treated for the subscriber. A gsmSCF address is associated to each DP Criterion.
 2. A serviceKey. The serviceKey identifies to the gsmSCF the service logic. A serviceKey is associated to each DP Criterion.
 3. A default Call Handling. It indicates whether the call shall be released or continued as requested in case of error in the gsmSSF to gsmSCF dialogue. A default Call Handling is associated to each DP Criterion.
- CAMEL capability handling. It indicates the CAMEL phase associated to the D-CSI (CAMEL phase3 shall be indicated).

2.14.3.8 Translation Information flag (TIF-CSI)

This flag is used to indicate that the VLR shall not attempt to perform any actions on the deflected to number (DTN).

2.14.4 Data stored in SGSN

2.14.4.1 Mobile Originating Short Message Service CAMEL Subscription Information (MO-SMS-CSI)

This data defines the contents of the MO SMS CAMEL subscription information. The MO-SMS-CSI in SGSN is used for the Interworking between SGSN and gsmSCF, for CAMEL control of packet switched MO SMS.

MO-SMS-CSI consists of the following data items:

- TDP List. The TDP list is a list of SMS TDP descriptions. Each TDP description contains the following elements:
 1. DP Value. The DP value identifies the DP in the MO SMS State Model where service triggering may take place.
For MO-SMS-CSI, the only allowed DP value is *SMS_Collected_Info*.
 2. gsmSCF Address. The gsmSCF address is the address (E.164 number) of the gsmSCF where the MO SMS CAMEL Service associated with this TDP, is located for this subscriber.
 3. ~~Service Key~~ServiceKey. The ~~service Key~~serviceKey identifies to the gsmSCF the service logic that shall be applied.
 4. Default SMS handling. The default SMS handling indicates whether the MO SMS submission request shall be rejected or continued in the case of error in the dialogue between the gprsSSF and gsmSCF.
- CAMEL Capability Handling. CAMEL Capability Handling indicates the CAMEL Phase that is required for the MO SMS service.
The CAMEL Capability Handling for MO-SMS-CSI in SGSN shall have the value CAMEL phase 3.

2.14.4.2 Mobile Terminating Short Message Service CAMEL Subscription Information (MT-SMS-CSI)

This data defines the contents of the mobile terminating short message service CAMEL subscription information. The MT-SMS-CSI CAMEL Subscription Information is used for the Interworking between gsmSCF and gprsSSF, for CAMEL control of packet switched MT SMS.

MT-SMS-CSI consists of the following data items:

- TDP List. The TDP list is a list of MT SMS TDP descriptions. Each TDP description contains the following elements:
 1. DP Value. The DP value identifies the DP in the MT SMS State Model where service triggering may take place.
For MT-SMS-CSI, the only allowed DP value is *SMS-Delivery-Request*

2. **gsmSCF Address.** The gsmSCF address is the address (E164 number) of the gsmSCF where the MT SMS CAMEL Service associated with this TDP, is located for this subscriber.
3. ~~Service Key~~**ServiceKey.** The ~~service Key~~**serviceKey** identifies to the gsmSCF the service logic that shall be applied.
4. **Default SMS handling.** The default SMS handling indicates whether the MT SMS delivery request shall be rejected or continued in the case of error in the dialogue between the gprsSSF and gsmSCF.
5. **DP criterion.** The DP criterion indicates on which criterion the gsmSSF shall access the gsmSCF. A DP criterion is associated with each TDP. For MT-SMS the DP criterion is the TDPU type. The criterion may be absent.

TDP	Triggering Criterion	ServiceKey	gsmSCF address	Default SMS Handling
DP SMS-Delivery Request	TDPU type	One serviceKey	One E164 gsmSCF address	One Default SMS handling

- **CAMEL Capability Handling.** CAMEL Capability Handling indicates the CAMEL Phase that is required for the MT SMS service. The CAMEL Capability Handling for MT-SMS-CSI shall have the value CAMEL phase 4.

2.14.4.3 GPRS CAMEL Subscription Information (GPRS-CSI)

This data defines the contents of the GPRS CAMEL subscription information. The GPRS CAMEL Subscription Information is used for the interworking between gsmSCF and gprsSSF, for CAMEL control of packet switch call.

The GPRS-CSI consists of the following data items:

- **TDP List.** The TDP list is a list of GPRS TDP descriptions. Each TDP description contains the following elements:
 1. **DP Value.** The DP value identifies the DP in the GPRS State Model where service triggering may take place.
 2. **gsmSCF Address.** The gsmSCF address is the address (E164 number) of the gsmSCF where the GPRS CAMEL Service associated with this TDP, is located for this subscriber.
 3. **ServiceKey.** The serviceKey identifies to the gsmSCF the service logic that shall be applied.
 4. **Default GPRS handling.** The default GPRS handling indicates whether the GPRS submission request shall be rejected or continued in the case of error in the dialogue between the gprsSSF and gsmSCF.
- **CAMEL Capability Handling.** CAMEL Capability Handling indicates the CAMEL Phase that is required for the GPRS service. The CAMEL Capability Handling for GPRS-CSI in SGSN shall have the value CAMEL phase 3.

2.14.4.4 Mobility Management for GPRS event notification (MG-CSI)

This data indicates which Mobility Management for GPRS events shall be reported to the gsmSCF. It consists of:

- **gsmSCF address :** This is the address of the gsmSCF where the Mobility Management for GPRS event notification shall be sent to. The gsmSCF address must be in E.164 format.
- **ServiceKey:** The serviceKey is included in the notification to the gsmSCF and indicates to the gsmSCF which Service Logic shall be applied.
- **Mobility Management Triggers.** These triggers define which Mobility Management events shall be reported to the gsmSCF. The mobility management triggers may contain one or any combination of the following elements:
 - ~~GPRS~~ Routeing area update of MS to a different SGSN service area;
 - ~~GPRS~~ Routeing area update of MS within the same SGSN service area;

- GPRS attach (e.g. MS switched on, successful routing area update after network initiated detach);
detach);
- MS-initiated GPRS detach (e.g. MS switched off);
- Network-initiated ~~GPRS detach~~ transfer to the "not reachable for paging" state (the network has not received a periodic routing area update from the MS and assumes that the MS is unreachable).

CR-Form-v5

CHANGE REQUEST

⌘ **29.002 CR 408** ⌘ rev **2** ⌘ Current version: **5.1.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Transferring the MS classmark & IMEI to the gsmSCF		
Source:	⌘ CN4		
Work item code:	⌘ CAMEL4	Date:	⌘ 08 April 2002
Category:	⌘ C	Release:	⌘ REL-5
	Use <u>one</u> 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 <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ The MS classmark & IMEI (including the software version) of the ME allow the gsmSCF to determine information about the capabilities of the ME, which can be useful to service logic designers
Summary of change:	⌘
Consequences if not approved:	⌘ CAMEL-based services will not be able to take account of the capabilities of the MS.

Clauses affected:	⌘ 7.6.3.31; 8.11.1.2; 8.11.2.2; 17.7.1	
Other specs affected:	⌘ <input checked="" type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘ 23.018 (CR 23.018-100r1, approved in CN #15); 23.078 (Tdoc N2-020205, incorporated into 23.078 v5D13.5); 29.078 (Tdoc N2-020324)
Other comments:	⌘ Changes since previous version: <ul style="list-style-type: none"> • Section 7.6.3.31: changed "&" to "and" • ASN.1 definition of subscriber info: changed "}" to "," after PS-SubscriberState data type. 	

****** First modified section ******

7.6.3.30 Subscriber State

This parameter indicates the state of the MS as defined in 3GPP TS 23.018 [97].

7.6.3.31 Requested Info

This parameter indicates the subscriber information being requested as defined in 3GPP TS ~~TS 23.018-018~~ [97] and 3GPP TS 23.078 [98].

7.6.3.32 Suppression of Announcement

This parameter indicates if the announcement or tones shall be suppressed as defined in 3GPP TS 23.078.

****** Next modified section ******

8.11 Subscriber Information services

8.11.1 MAP-ANY-TIME-INTERROGATION service

8.11.1.1 Definition

This service is used by the gsmSCF, to request information (e.g. subscriber state and location) from the HLR or the GMLC at any time.

When this service is used to the HLR, the subscriber state or location may be requested.

When this service is used to the GMLC, only the location may be requested.

The MAP-ANY-TIME-INTERROGATION service is a confirmed service using the service primitives defined in table 8.11/1.

8.11.1.2 Service primitives

Table 8.11/1: Any_Time_Interrogation

Parameter name	Request	Indication	Response	Confirm
Invoke id	M	M(=)	M(=)	M(=)
Requested Info	M	M(=)		
gsmSCF-Address	M	M(=)		
IMSI	C	C(=)		
MSISDN	C	C(=)		
Location Information			C	C(=)
Location Information for GPRS			C	C(=)
Subscriber State			C	C(=)
IMEI			C	C(=)
MS Classmark 2			C	C(=)
GPRS MS Class			C	C(=)
User error			C	C(=)
Provider error				O

****** Next modified section ******

8.11.2 MAP-PROVIDE-SUBSCRIBER-INFO service

8.11.2.1 Definition

This service is used to request information (e.g. subscriber state and location) from the VLR or SGSN at any time.

The MAP-PROVIDE-SUBSCRIBER-INFO service is a confirmed service using the primitives defined in table 8.11/2.

8.11.2.2 Service primitives

Table 8.11/2: Provide_Subscriber_Information

Parameter name	Request	Indication	Response	Confirm
Invoke id	M	M(=)	M(=)	M(=)
Requested Info	M	M(=)		
IMSI	M	M(=)		
LMSI	U	O		
Location Information			C	C(=)
Location Information for GPRS			C	C(=)
Subscriber State			C	C(=)
<u>IMEI</u>			<u>C</u>	<u>C(=)</u>
<u>MS Classmark 2</u>			<u>C</u>	<u>C(=)</u>
<u>GPRS MS Class</u>			<u>C</u>	<u>C(=)</u>
User error			C	C(=)
Provider error				O

****** Next modified section ******

17.7 MAP constants and data types

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) version7 (7)}
```

DEFINITIONS

IMPLICIT TAGS

::=

BEGIN

EXPORTS

```
-- location registration types
UpdateLocationArg,
UpdateLocationRes,
CancelLocationArg,
CancelLocationRes,
PurgeMS-Arg,
PurgeMS-Res,
SendIdentificationArg,
SendIdentificationRes,
UpdateGprsLocationArg,
UpdateGprsLocationRes,
IST-SupportIndicator,
SupportedLCS-CapabilitySets,

-- gprs location registration types
GSN-Address,
```

```
-- handover types
ForwardAccessSignalling-Arg,
PrepareHO-Arg,
PrepareHO-Res,
PrepareSubsequentHO-Arg,
PrepareSubsequentHO-Res,
ProcessAccessSignalling-Arg,
SendEndSignal-Arg,
SendEndSignal-Res,

-- authentication management types
SendAuthenticationInfoArg,
SendAuthenticationInfoRes,
AuthenticationFailureReportArg,
AuthenticationFailureReportRes,

-- security management types
EquipmentStatus,
Kc,

-- subscriber management types
InsertSubscriberDataArg,
InsertSubscriberDataRes,
LSAIdentity,
DeleteSubscriberDataArg,
DeleteSubscriberDataRes,
Ext-QoS-Subscribed,
SubscriberData,
ODB-Data,
SubscriberStatus,
ZoneCodeList,
maxNumOfZoneCodes,
O-CSI,
D-CSI,
O-BcsmCamelTDPCriteriaList,
T-BCSM-CAMEL-TDP-CriteriaList,
SS-CSI,
ServiceKey,
DefaultCallHandling,
CamelCapabilityHandling,
BasicServiceCriteria,
SupportedCamelPhases,
maxNumOfCamelTDPData,
CUG-Index,
CUG-Interlock,
InterCUG-Restrictions,
IntraCUG-Options,
NotificationToMSUser,
QoS-Subscribed,
IST-AlertTimerValue,
T-CSI,
T-BcsmTriggerDetectionPoint,
APN,

-- fault recovery types
ResetArg,
RestoreDataArg,
RestoreDataRes,

-- provide subscriber info types
GeographicalInformation,
MS-Classmark2,
GPRSMSCClass,

-- subscriber information enquiry types
ProvideSubscriberInfoArg,
ProvideSubscriberInfoRes,
SubscriberInfo,
LocationInformation,
LocationInformationGPRS,
RAIdentity,
SubscriberState,
GPRSChargingID,

-- any time information enquiry types
AnyTimeInterrogationArg,
AnyTimeInterrogationRes,
```

```

-- any time information handling types
AnyTimeSubscriptionInterrogationArg,
AnyTimeSubscriptionInterrogationRes,
AnyTimeModificationArg,
AnyTimeModificationRes,

-- subscriber data modification notification types
NoteSubscriberDataModifiedArg,
NoteSubscriberDataModifiedRes,

-- gprs location information retrieval types
SendRoutingInfoForGprsArg,
SendRoutingInfoForGprsRes,

-- failure reporting types
FailureReportArg,
FailureReportRes,

-- gprs notification types
NoteMsPresentForGprsArg,
NoteMsPresentForGprsRes,

-- Mobility Management types
NoteMM-EventArg,
NoteMM-EventRes

;

IMPORTS
    maxNumOfSS,
    SS-SubscriptionOption,
    SS-List,
    SS-ForBS-Code,
    Password
FROM MAP-SS-DataTypes {
    ccitt identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-SS-DataTypes (14) version7 (7)}

    SS-Code
FROM MAP-SS-Code {
    ccitt identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-SS-Code (15) version7 (7)}

    Ext-BearerServiceCode
FROM MAP-BS-Code {
    ccitt identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-BS-Code (20) version7 (7)}

    Ext-TeleserviceCode
FROM MAP-TS-Code {
    ccitt identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-TS-Code (19) version7 (7)}

    AddressString,
    ISDN-AddressString,
    ISDN-SubaddressString,
    FTN-AddressString,
    AccessNetworkSignalInfo,
    IMSI,
    TMSI,
    HLR-List,
    LMSI,
    Identity,
    GlobalCellId,
    CellGlobalIdOrServiceAreaIdOrLAI,
    Ext-BasicServiceCode,
    NAEA-PreferredCI,
    EMLPP-Info,
    MC-SS-Info,
    SubscriberIdentity,
    AgeOfLocationInformation,
    LCSClientExternalID,
    LCSClientInternalID,
    Ext-SS-Status

```

```

FROM MAP-CommonDataTypes {
  ccitt identified-organization (4) etsi (0) mobileDomain (0)
  gsm-Network (1) modules (3) map-CommonDataTypes (18) version7 (7)}

  ExtensionContainer
FROM MAP-ExtensionDataTypes {
  ccitt identified-organization (4) etsi (0) mobileDomain (0)
  gsm-Network (1) modules (3) map-ExtensionDataTypes (21) version7 (7)}

  AbsentSubscriberDiagnosticSM
FROM MAP-ER-DataTypes {
  ccitt identified-organization (4) etsi (0) mobileDomain (0)
  gsm-Network (1) modules (3) map-ER-DataTypes (17) version7 (7)}

  AddressString,
  ISDN-AddressString,
  ISDN-SubaddressString,
  FTN-AddressString,
  AccessNetworkSignalInfo,
  IMSI,
  IMEI,
  TMSI,
  HLR-List,
  LMSI,
  Identity,
  GlobalCellId,
  CellGlobalIdOrServiceAreaIdOrLAI,
  Ext-BasicServiceCode,
  NAEA-PreferredCI,
  EMLPP-Info,
  MC-SS-Info,
  SubscriberIdentity,
  AgeOfLocationInformation,
  LCSClientExternalID,
  LCSClientInternalID,
  Ext-SS-Status
FROM MAP-CommonDataTypes {
  ccitt identified-organization (4) etsi (0) mobileDomain (0)
  gsm-Network (1) modules (3) map-CommonDataTypes (18) version7 (7)}

  ExtensionContainer
FROM MAP-ExtensionDataTypes {
  ccitt identified-organization (4) etsi (0) mobileDomain (0)
  gsm-Network (1) modules (3) map-ExtensionDataTypes (21) version7 (7)}

  AbsentSubscriberDiagnosticSM
FROM MAP-ER-DataTypes {
  ccitt identified-organization (4) etsi (0) mobileDomain (0)
  gsm-Network (1) modules (3) map-ER-DataTypes (17) version7 (7)}

;
. . .
Unmodified ASN.1
. . .

```

```

SubscriberInfo ::= SEQUENCE {
    locationInformation          [0] LocationInformation          OPTIONAL,
    subscriberState             [1] SubscriberState             OPTIONAL,
    extensionContainer          [2] ExtensionContainer           OPTIONAL,
    . . . ,
    locationInformationGPRS     [3] LocationInformationGPRS     OPTIONAL,
    ps-SubscriberState         [4] PS-SubscriberState         OPTIONAL,
    imei                        [5] IMEI                       OPTIONAL,
    ms-Classmark2              [6] MS-Classmark2              OPTIONAL,
    gprs-MS-Class              [7] GPRSMSClass                OPTIONAL}

-- If the HLR receives locationInformation, subscriberState or ms-Classmark2 from an SGSN
-- it shall discard them.
-- If the HLR receives locationInformationGPRS, ps-SubscriberState or gprs-MS-Class from
-- a VLR it shall discard them.
-- If the HLR receives parameters which it has not requested, it shall discard them.
-- locationInformation shall be present only in a response to a request for
-- information from the CS domain.
-- locationInformationGPRS shall be present only in a response to a request
-- for information from the PS domain.
-- subscriberState shall be present only in a response to a request for
-- information from the CS domain.
-- ps-Subscriber state shall be present only in a response to a request
-- for information from the PS domain.

```

```

MS-Classmark2 ::= OCTET STRING (SIZE (3))
-- This parameter carries the value part of the MS Classmark 2 IE defined in
-- 3GPP TS 24.008 [35].

```

```

GPRSMSClass ::= SEQUENCE {
    mSNetworkCapability          [0] MSNetworkCapability,
    mSRadioAccessCapability     [1] MSRadioAccessCapability    OPTIONAL
}

```

```

MSNetworkCapability ::= OCTET STRING (SIZE (1..8))
-- This parameter carries the value part of the MS Network Capability IE defined in
-- 3GPP TS 24.008 [35].

```

```

MSRadioAccessCapability ::= OCTET STRING (SIZE (1..50))
-- This parameter carries the value part of the MS Radio Access Capability IE defined in
-- 3GPP TS 24.008 [35].

```

```

RequestedInfo ::= SEQUENCE {
    locationInformation          [0] NULL                      OPTIONAL,
    subscriberState             [1] NULL                      OPTIONAL,
    extensionContainer          [2] ExtensionContainer         OPTIONAL,
    . . . ,
    currentLocation             [3] NULL                      OPTIONAL,
    imei                        [4] NULL                      OPTIONAL,
    ms-classmark                [5] NULL                      OPTIONAL,
    gprs-MS-Class              [6] NULL                      OPTIONAL}

-- currentLocation shall not be present if locationInformation
-- is not present in the RequestedInfo parameter
-- currentLocation shall be absent if locationInformation is absent

```

****** End of document ******

3GPP TSG-CN WG2 Meeting #23
Helsinki, Finland
3GPP TSG-CN WG4 Meeting #13
Fort Lauderdale, Florida, USA
8th – 12th April 2002

Tdoc N2-020413
(Revision of N2-020336)
Tdoc N4-020468
(Revision of N4-020346)

CR-Form-v5

CHANGE REQUEST

⌘ **29.002 CR 414** ⌘ rev **1** ⌘ Current version: **5.1.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Corrections to the handling of Any Time Interrogation and Provide Subscriber Info		
Source:	⌘ CN4		
Work item code:	⌘ CAMEL4	Date:	⌘ 08 April 2002
Category:	⌘ F	Release:	⌘ REL-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)
	B (addition of feature),		R97 (Release 1997)
	C (functional modification of feature)		R98 (Release 1998)
	D (editorial modification)		R99 (Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		REL-4 (Release 4)
			REL-5 (Release 5)

Reason for change:	⌘ The changes to TS 29.002 for enhancements to subscriber information retrieval in the PS domain, contained in N2-011023, incorporated into the collective CAMEL phase 4 CR on 29.002 and approved in CN #15, contained errors: <ul style="list-style-type: none"> - The requested domain IE, which is shown in the Any Time Interrogation IF in 23.078, is not reflected into the MAP-ANY-TIME-INTERROGATION service definition in subclause 8.11.1 or in the ASN.1 definition of AnyTimeInterrogationArg in subclause 17.7.1; - The PS Subscriber State parameter is missing from the the MAP-ANY-TIME-INTERROGATION service definition in subclause 8.11.1 and the MAP-PROVIDE-SUBSCRIBER-INFO service definition in subclause 8.11.2, although it is in the ASN.1 definition of ProvideSubscriberInfoAck in subclause 17.7.1.
Summary of change:	⌘ Add missing definitions as shown in the "Reason for Change"
Consequences if not approved:	⌘ Misalignment between stage 2 & stage 3 definitions

Clauses affected:	⌘ 7.6.3.31A (new); 8.11.1.2; 8.11.2.2; 17.7.1		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications	⌘ <input type="checkbox"/>	
	<input type="checkbox"/> Test specifications		
	<input type="checkbox"/> O&M Specifications		
Other comments:	⌘ Changes since previous version: <ul style="list-style-type: none"> • New section numbered 7.6.3.31<u>A</u> not 7.6.3.31 • In service primitives for ATI, Requested Domain is C not M 		

****** First modified section ******

7.6.3.31 Requested Info

This parameter indicates the subscriber information being requested as defined in 3GPP TS 23.018 [97].

7.6.3.31A Requested Domain

This parameter indicates the domain (circuit switched, i.e. from the MSC/VLR, or packet switched, i.e. from the SGSN) from which the requested information should be retrieved.

7.6.3.32 Suppression of Announcement

This parameter indicates if the announcement or tones shall be suppressed as defined in 3GPP TS 23.078 [98].

****** Next modified section ******

8.11 Subscriber Information services

8.11.1 MAP-ANY-TIME-INTERROGATION service

8.11.1.1 Definition

This service is used by the gsmSCF, to request information (e.g. subscriber state and location) from the HLR or the GMLC at any time.

When this service is used to the HLR, the subscriber state or location may be requested.

When this service is used to the GMLC, only the location may be requested.

The MAP-ANY-TIME-INTERROGATION service is a confirmed service using the service primitives defined in table 8.11/1.

8.11.1.2 Service primitives

Table 8.11/1: Any_Time_Interrogation

Parameter name	Request	Indication	Response	Confirm
Invoke id	M	M(=)	M(=)	M(=)
Requested Info	M	M(=)		
Requested domain	CM	MC(=)		
gsmSCF-Address	M	M(=)		
IMSI	C	C(=)		
MSISDN	C	C(=)		
Location Information			C	C(=)
Location Information for GPRS			C	C(=)
Subscriber State			C	C(=)
PS Subscriber State			C	C(=)
User error			C	C(=)
Provider error				O

****** Next modified section ******

8.11.2 MAP-PROVIDE-SUBSCRIBER-INFO service

8.11.2.1 Definition

This service is used to request information (e.g. subscriber state and location) from the VLR or SGSN at any time.

The MAP-PROVIDE-SUBSCRIBER-INFO service is a confirmed service using the primitives defined in table 8.11/2.

8.11.2.2 Service primitives

Table 8.11/2: Provide_Subscriber_Information

Parameter name	Request	Indication	Response	Confirm
Invoke id	M	M(=)	M(=)	M(=)
Requested Info	M	M(=)		
IMSI	M	M(=)		
LMSI	U	O		
Location Information			C	C(=)
Location Information for GPRS			C	C(=)
Subscriber State			C	C(=)
<u>PS Subscriber State</u>			<u>C</u>	<u>C(=)</u>
User error			C	C(=)
Provider error				O

****** Next modified section ******

17.7 MAP constants and data types

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) version7 (7)}

```

Unmodified ASN.1

```
SubscriberInfo ::= SEQUENCE {
  locationInformation          [0] LocationInformation          OPTIONAL,
  subscriberState              [1] SubscriberState              OPTIONAL,
  extensionContainer           [2] ExtensionContainer           OPTIONAL,
  ...,
  locationInformationGPRS      [3] LocationInformationGPRS      OPTIONAL,
  ps-SubscriberState           [4] PS-SubscriberState           OPTIONAL}

```

```
-- locationInformation shall be present only in a response to a request for
-- information from the CS domain.
-- locationInformationGPRS shall be present only in a response to a request
-- for information from the PS domain.
-- subscriberState shall be present only in a response to a request for
-- information from the CS domain.
-- ps-Subscriber state shall be present only in a response to a request
-- for information from the PS domain.

```

```
RequestedInfo ::= SEQUENCE {
    locationInformation          [0] NULL                OPTIONAL,
    subscriberState             [1] NULL                OPTIONAL,
    extensionContainer          [2] ExtensionContainer  OPTIONAL,
    ...,
    currentLocation             [3] NULL                OPTIONAL,
    requestedDomain             [4] DomainType          OPTIONAL}
-- currentLocation shall not be present if locationInformation
-- is not present in the RequestedInfo parameter
```

```
DomainType ::= ENUMERATED {
    cs-Domain                   (0),
    ps-Domain                   (1),
    ...}
-- exception handling:
-- reception of values > 1 shall be mapped to 'cs-Domain'
```

****** End of document ******

CHANGE REQUEST

⌘ **29.002 CR 422** ⌘ rev **1** ⌘ Current version: **5.1.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Triggering of gsmSCF for MT-SMS-CSI		
Source:	⌘ CN4		
Work item code:	⌘ CAMEL4	Date:	⌘ 25/03/2002
Category:	⌘ F	Release:	⌘ Rel-5
	<p>Use <u>one</u> of the following categories:</p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>		<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>REL-4 (Release 4)</p> <p>REL-5 (Release 5)</p>

Reason for change:	⌘ There's a mismatch in the SDL's describing the interaction of MT-SMS and Camel phase 4 and the relative text. In the textual part of section 23.3.2 it's stated that the interaction with CAMEL is triggered, in case the user has MT-SMS-CSI, after the VLR has checked that the user does not have the detached flag set, nor has the LA Not Allowed flag set. The SDL on the other hand triggers CAMEL before doing those checks. Ericsson believes that the textual section is correct since there's no point in triggering the CAMEL handling and contacting the gsmSCF if the user is detached or is camping in a not allowed LA in case of MT-SMS. The gsmSCF can do nothing to help the delivery of this SMS if the user is switched off. The effect of triggering the gsmSCF would only be to waste signalling and processing power in the involved nodes.
Summary of change:	⌘ Align the SDL of the process MT-SM-VLR to the text in section 23.3.2
Consequences if not approved:	⌘ Ambiguity in the specification, and waste of signalling and processing power in the MSC and in the gsmSCF

Clauses affected:	⌘ 23.3.2		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications	⌘ <input type="checkbox"/>	
	<input type="checkbox"/> Test specifications	<input type="checkbox"/>	
	<input type="checkbox"/> O&M Specifications	<input type="checkbox"/>	
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.

23.3.2 Procedures in the VLR

When receiving the MAP_SEND_INFO_FOR_MT_SMS indication, the VLR will act as follows:

- the parameters and data in the primitive are checked by the macro "Check_Indication". A data failure is reported as an unexpected data value error or a data missing error depending on the nature of the failure;
- for mobile terminated short message the mobile subscriber is identified either by the IMSI only or by the IMSI accompanied by the LMSI. The subscriber identity information that may be included in the MAP_OPEN indication primitive and in the MAP service indication primitive is checked by the macro "Check_Subscr_Identity_For_MT_SMS". In the first case, the IMSI is included in the sm-RP-DA information field and the Destination Reference must not be present in the MAP_OPEN primitive. In the latter case the IMSI must be obtained from the Destination Reference of the MAP_OPEN indication primitive and an LMSI must be present in the sm-RP-DA information field of the MAP_SEND_INFO_FOR_MT_SMS indication. If the mobile subscriber is unknown, the unidentified subscriber error is returned;
- if the "Confirmed by HLR" indicator is set to "Not Confirmed", the unidentified subscriber error is returned;
- if the IMSI Detached Flag is set to detached or the LA Not Allowed Flag is set to not allowed in the VLR, an absent subscriber error with the diagnostic indication set to 'IMSI Detached' is returned and the MS not reachable flag (MNRF) is set;
- if the MAP_SEND_INFO_FOR_MT_SMS indication has passed the tests and the subscriber is provisioned with MT-SMS-CSI in the VLR, then the VLR shall send MT-SMS-CSI to the MSC in order to have the MSC initiate a CAMEL dialogue with the CSE.
- if the MAP_SEND_INFO_FOR_MT_SMS indication has passed all the tests, the VLR will initiate the paging procedure. If the location area identification is known and the "Confirmed by Radio Contact" indicator is set to "Confirmed", the MAP_PAGE service is used. Otherwise the MAP_SEARCH_FOR_MOBILE_SUBSCRIBER service is started.

The following responses to the paging procedure may be received from the MSC:

- the MAP_SEARCH_FOR_MOBILE_SUBSCRIBER confirmation indicating a successful outcome, if the search procedure is used. After that the VLR awaits the MAP_PROCESS_ACCESS_REQUEST indication from the MSC;
- the MAP_PAGE confirmation or MAP_SEARCH_FOR_MOBILE_SUBSCRIBER confirmation indicating unsuccessful outcome. If an absent subscriber error is received, the MS not reachable flag (MNRF) is set in the VLR. The errors are forwarded to the MSC in the MAP_SEND_INFO_FOR_MT_SMS response, the absent subscriber error is forwarded with the diagnostic indication set to 'No Paging Response for non GPRS'. If the unexpected data value, or unknown location area error is received, the system failure indication is given to the MSC; if subscriber busy for MT SMS is received, this cause is given to the MSC.
- the MAP_PROCESS_ACCESS_REQUEST indication telling that the outcome of the service MAP_PAGE is successful.

If the paging procedure or process access request procedure or any other procedure invoked fails, the appropriate error is reported to the MSC.

If the process access request procedure is successful, the VLR will send the MAP_SEND_INFO_FOR_MT_SMS response to the MSC and the transaction is terminated in the VLR.

The mobile terminated short message transfer procedure in the VLR is shown in figure 23.3/5.

Process MT_SM_VLR

23.3_5.1(3)

Figure 23.3/5: The mobile terminated short message service process in the VLR

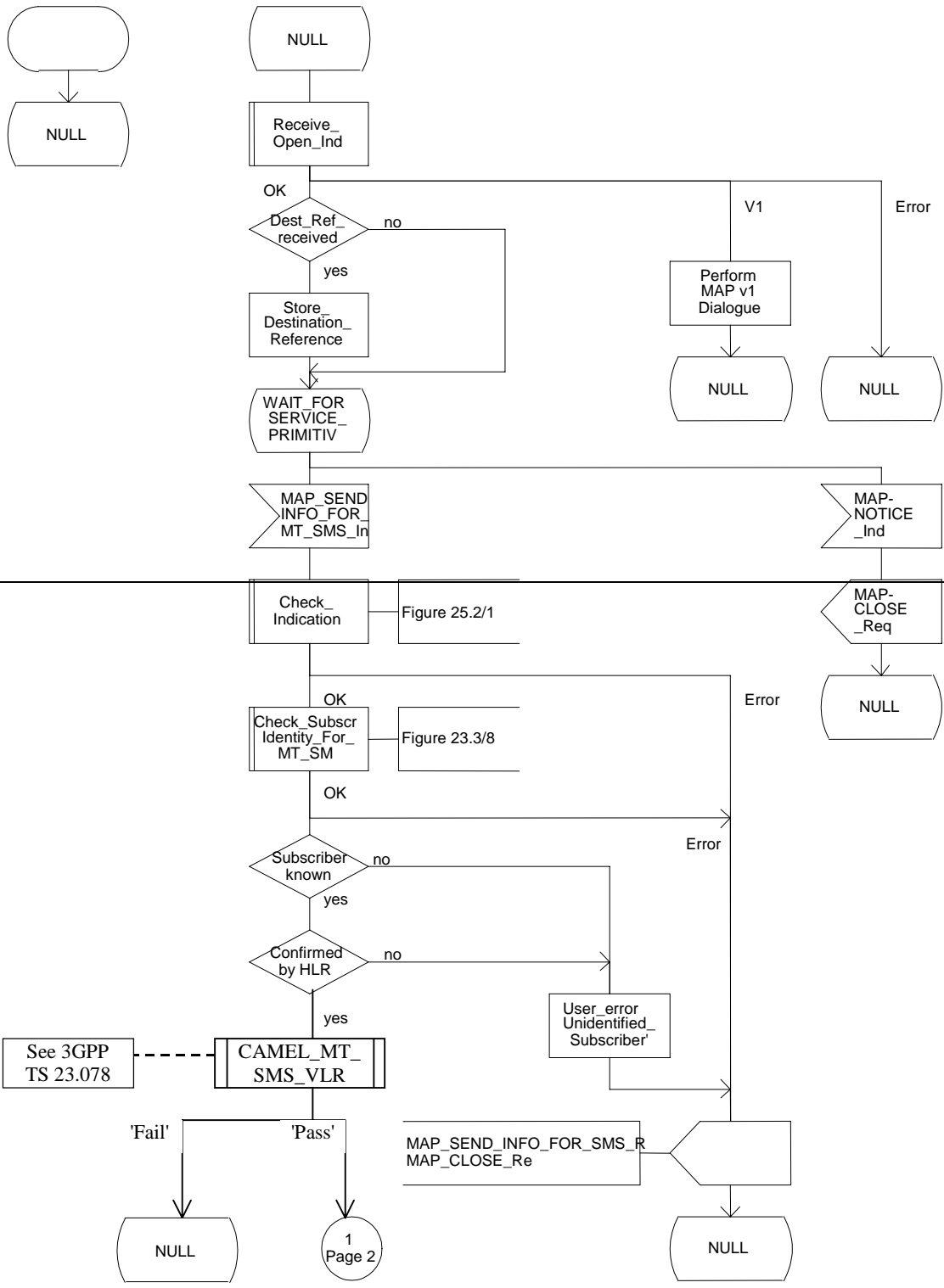


Figure 23.3/5 (sheet 1 of 3): Process MT_SM_VLR

Process MT_SM_VLR

23.3_5.2(3)

Figure 23.3/5: The mobile terminated short message service process in the VLR

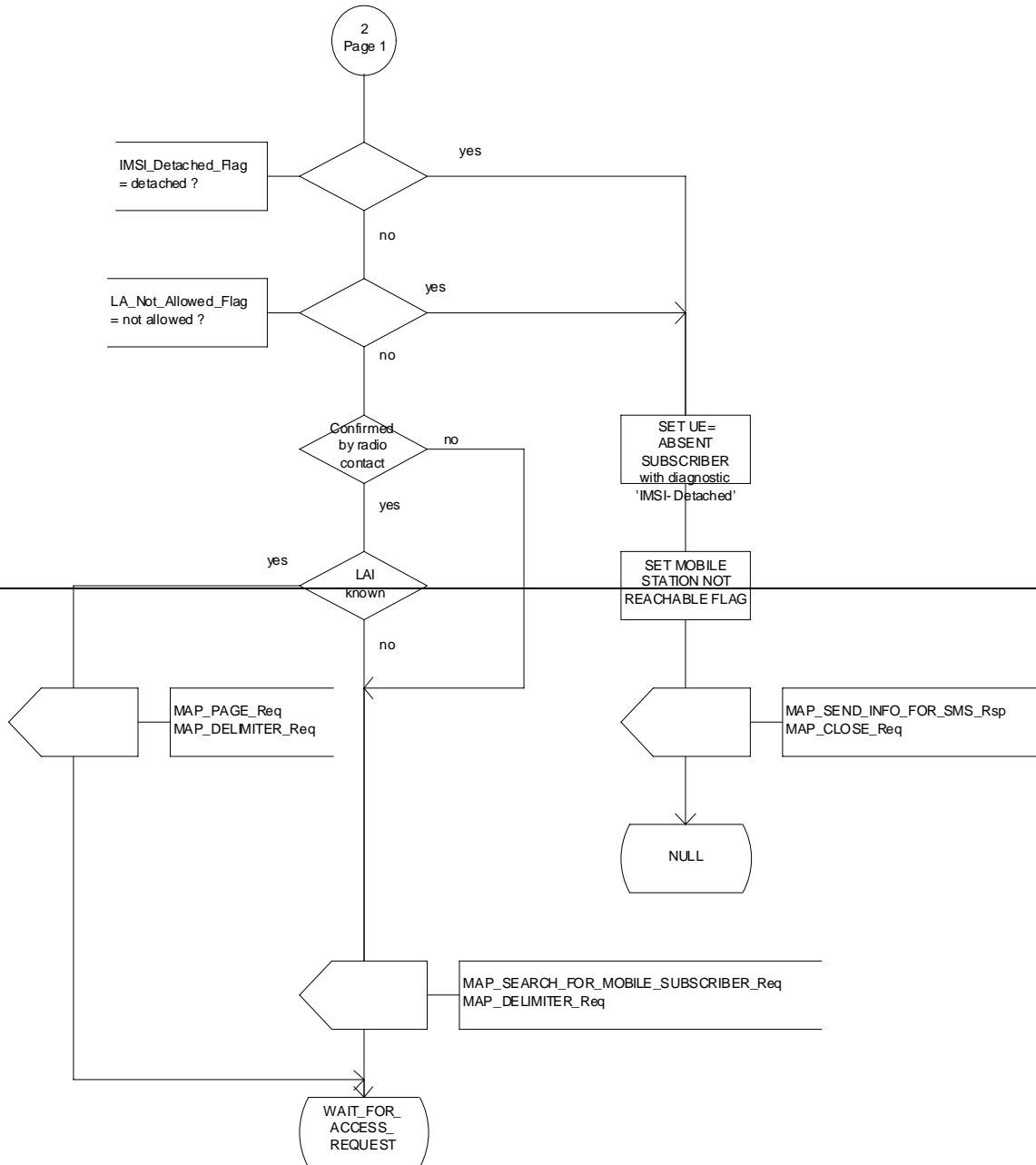


Figure 23.3/5 (sheet 2 of 3): Process MT_SM_VLR

Process MT_SM_VLR

23.3_5.1(3)

Figure 23.3/5: The mobile terminated short message service process in the VLR

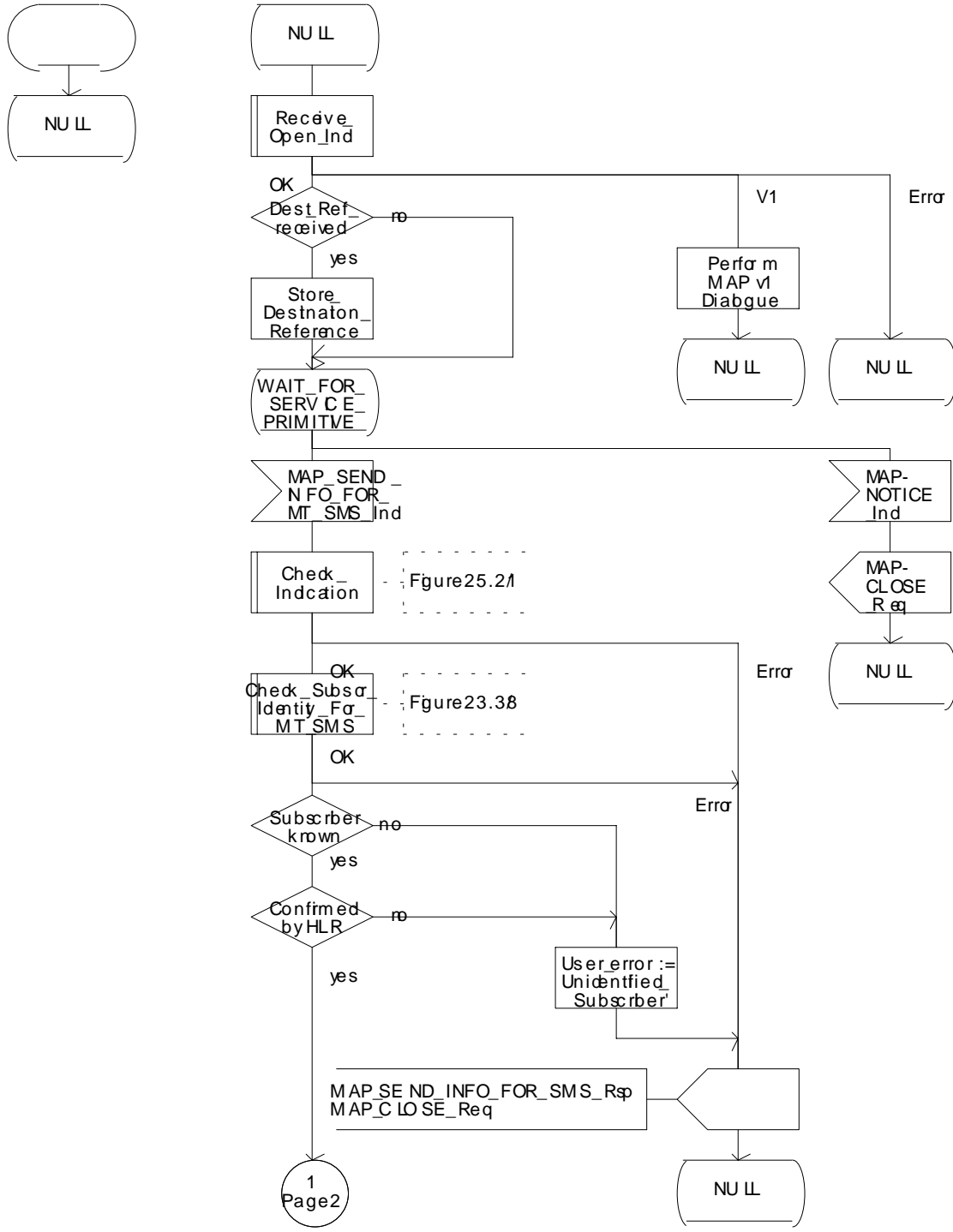


Figure 23.3/5 (sheet 1 of 3): Process MT_SM_VLR

Process MT_SM_VLR

23.3_5.2(3)

Figure 23.3/5: The mobile terminated short message service process in the VLR

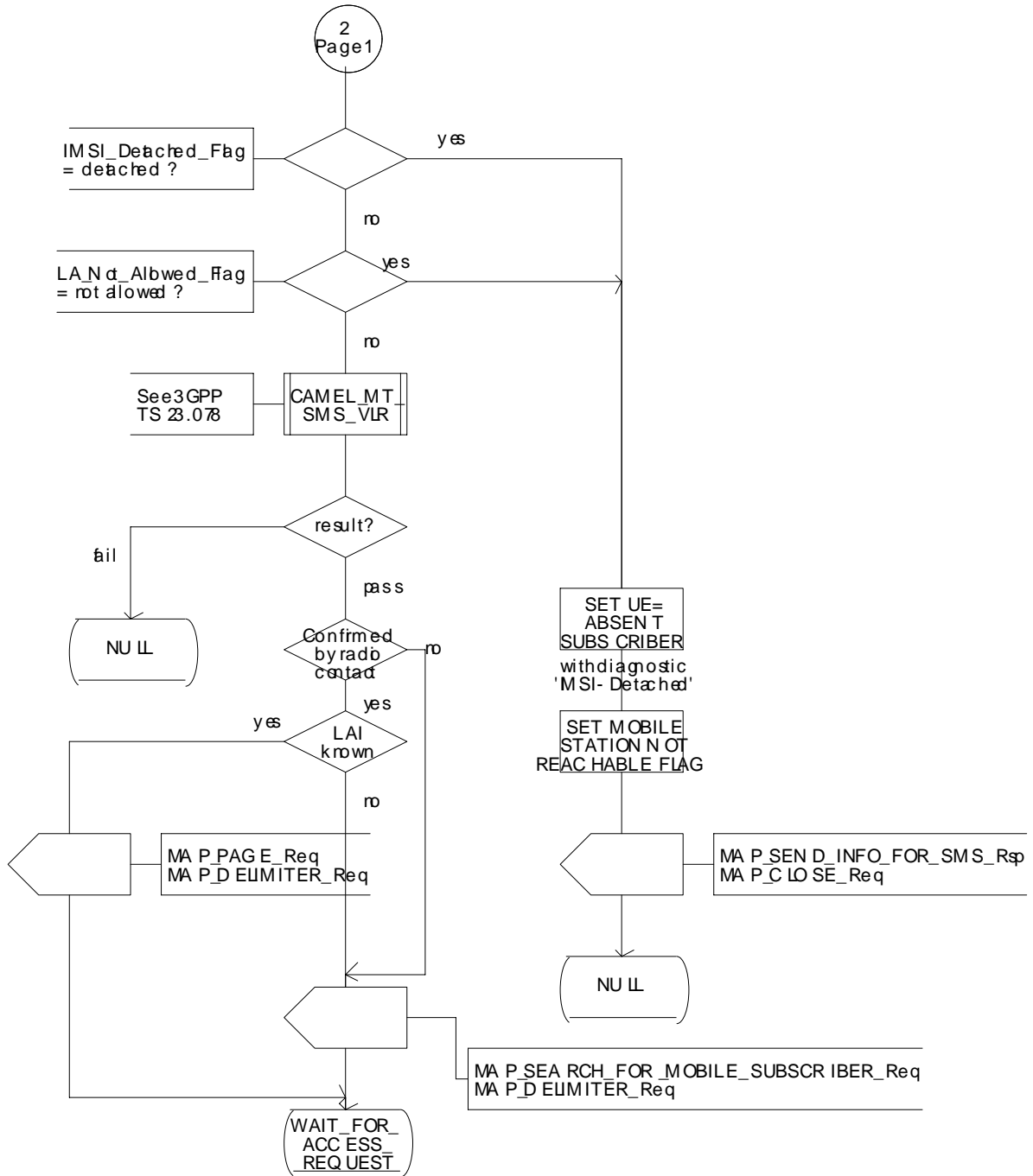


Figure 23.3/5 (sheet 2 of 3): Process MT_SM_VLR

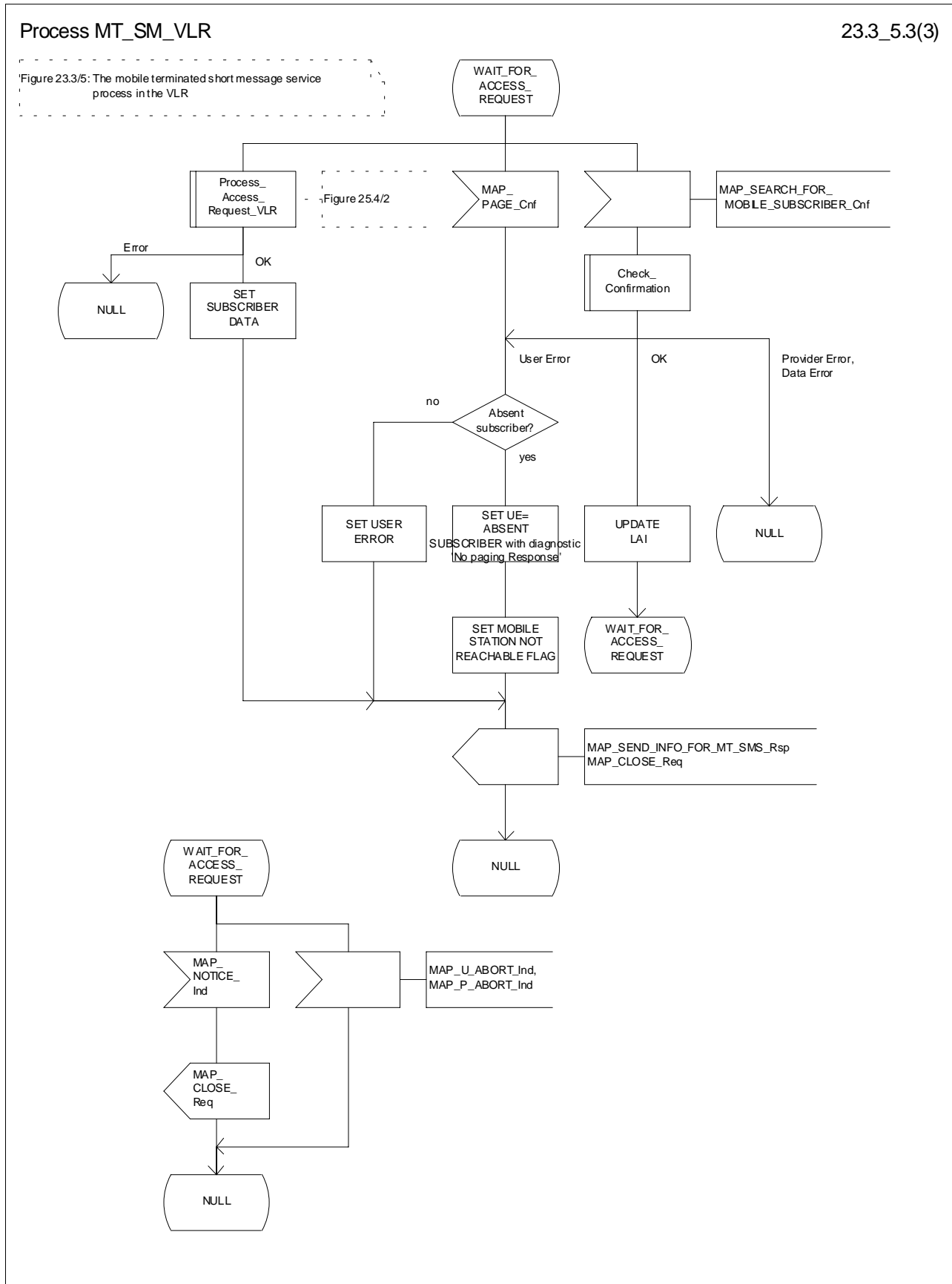


Figure 23.3/5 (sheet 3 to 3): Process MT_SM_VLR

3GPP TSG CN WG4 Meeting #13
 Fort Lauderdale, US, 8th April – 12th April 2002

N4-020408

CR-Form-v5.1
CHANGE REQUEST
⌘ 29.002 CR 423 ⌘ rev - ⌘ Current version: 5.1.0 ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Clarification of handling of MT-SMS-TPDU-Type and SMS-TDP		
Source:	⌘ CN4		
Work item code:	⌘ CAMEL4	Date:	⌘ 25/03/2002
Category:	⌘ C	Release:	⌘ Rel-5
	Use <u>one</u> 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 <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ In the ASN.1 definition of MT-SMS-TPDU-Type the exception handling is defined in case undefined values are received, but there's no handling described in case the the value sms-SUBMIT-REPORT is received. This value is defined but shall not be used in CAMEL phase 4. The current error handling description does not specify if the reception of sms-SUBMIT-REPORT shall be ignored or shall trigger the rejection of the ISD. For MT-SMS the only allowed TDP is sms-DeliveryRequest. The current error handling does not specify what to do if a wrong TDP is received. For MO-SMS the only allowed TDP is sms-CollectedInfo. The current error handling does not specify what to do if a wrong TDP is received.
Summary of change:	⌘ Define error handling when sms-SUBMIT-REPORT is received, and when the wrong TDP is received for MT-SMS or MO-SMS
Consequences if not approved:	⌘ Different understandings of the error handling can arise.

Clauses affected:	⌘ 17.7.1
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications
Other comments:	⌘ Warning: The base document for this CR is the draft version of 29.002 v5.1.0

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 ****

17.7 MAP constants and data types

17.7.1 Mobile Service data types

Unchanged text removed for clarity

```

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,
    mo-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,
    mt-sms-CSI           [10] SMS-CSI             OPTIONAL,
    mt-smsCAMELTDP-CriteriaList [11] MT-smsCAMELTDP-CriteriaList OPTIONAL
}

```

```

MT-smsCAMELTDP-CriteriaList ::= SEQUENCE SIZE (1.. maxNumOfCamelTDPData) OF
    MT-smsCAMELTDP-Criteria

```

```

MT-smsCAMELTDP-Criteria ::= SEQUENCE {
    sms-TriggerDetectionPoint    SMS-TriggerDetectionPoint,
    tpdu-TypeCriterion           [0] TPDU-TypeCriterion    OPTIONAL,
    ...
}

```

```

TPDU-TypeCriterion ::= SEQUENCE SIZE (1..maxNumOfTPDUtypes) OF
    MT-SMS-TPDU-Type

```

```

maxNumOfTPDUtypes INTEGER ::= 5

```

```

MT-SMS-TPDU-Type ::= ENUMERATED {
    sms-DELIVER                (0),
    sms-SUBMIT-REPORT           (1),
    sms-STATUS-REPORT           (2),
    ...
}

-- exception handling:
-- For TPDU-TypeCriterion sequences containing this parameter with any
-- other value than the ones listed above the receiver shall ignore
-- the whole TPDU-TypeCriterion sequence.
-- In CAMEL phase 4, sms-SUBMIT-REPORT shall not be used and a received TPDU-TypeCriterion
-- sequence containing sms-SUBMIT-REPORT shall be wholly ignored.

```

```

D-CSI ::= SEQUENCE {
  dp-AnalysedInfoCriteriaList      [0] DP-AnalysedInfoCriteriaList  OPTIONAL,
  camelCapabilityHandling           [1] CamelCapabilityHandling        OPTIONAL,
  extensionContainer                [2] ExtensionContainer            OPTIONAL,
  notificationToCSE                 [3] NULL                          OPTIONAL,
  csi-Active                        [4] NULL                          OPTIONAL,
  ...}
-- notificationToCSE and csi-Active shall not be present when D-CSI is sent to VLR/GMSC.
-- They may only be included in ATSI/ATM ack/NSDC message.
-- DP-AnalysedInfoCriteria and camelCapabilityHandling shall be present in
-- the D-CSI sequence.
-- If D-CSI is segmented, dp-AnalysedInfoCriteriaList and camelCapabilityHandling shall be
-- present in the first segment

```

```

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 ack/NSDC message.
}

```

```

SS-CamelData ::= SEQUENCE {
  ss-EventList                     SS-EventList,
  gsmSCF-Address                   ISDN-AddressString,
  extensionContainer                [0] ExtensionContainer            OPTIONAL,
  ...}

```

```

SS-EventList ::= SEQUENCE SIZE (1..maxNumOfCamelSSEvents) OF SS-Code
-- Actions for the following SS-Code values are defined in CAMEL Phase 3:
-- ect                               SS-Code ::= '00110001'B
-- multiPTY                           SS-Code ::= '01010001'B
-- cd                                 SS-Code ::= '00100100'B
-- ccbs                               SS-Code ::= '01000100'B
-- all other SS codes shall be ignored
-- When SS-CSI is sent to the VLR, it shall not contain a marking for ccbs.
-- If the VLR receives SS-CSI containing a marking for ccbs, the VLR shall discard the
-- ccbs marking in SS-CSI.

```

```

maxNumOfCamelSSEvents INTEGER ::= 10

```

```

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 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,
  ...
}

```

```

ServiceKey ::= INTEGER (0..2147483647)

```

```

O-BcsmTriggerDetectionPoint ::= ENUMERATED {
  collectedInfo (2),
  ...,
  routeSelectFailure (4) }
-- exception handling:
-- For O-BcsmCamelTDPData sequences containing this parameter with any
-- other value than the ones listed the receiver shall ignore the whole
-- O-BcsmCamelTDPDatasequence.
-- For O-BcsmCamelTDP-Criteria sequences containing this parameter with any
-- other value than the ones listed the receiver shall ignore the whole
-- O-BcsmCamelTDP-Criteria sequence.

```

```

O-BcsmCamelTDPCriteriaList ::= SEQUENCE SIZE (1..maxNumOfCamelTDPData) OF
  O-BcsmCamelTDP-Criteria

```

```

T-BCSM-CAMEL-TDP-CriteriaList ::= SEQUENCE SIZE (1..maxNumOfCamelTDPData) OF
  T-BCSM-CAMEL-TDP-Criteria

```

```

O-BcsmCamelTDP-Criteria ::= SEQUENCE {
  o-BcsmTriggerDetectionPoint      O-BcsmTriggerDetectionPoint,
  destinationNumberCriteria        [0] DestinationNumberCriteria   OPTIONAL,
  basicServiceCriteria              [1] BasicServiceCriteria         OPTIONAL,
  callTypeCriteria                  [2] CallTypeCriteria             OPTIONAL,
  ...,
  o-CauseValueCriteria              [3] O-CauseValueCriteria         OPTIONAL,
  extensionContainer                 [4] ExtensionContainer           OPTIONAL }

```

```

T-BCSM-CAMEL-TDP-Criteria ::= SEQUENCE {
  t-BCSM-TriggerDetectionPoint      T-BcsmTriggerDetectionPoint,
  basicServiceCriteria              [0] BasicServiceCriteria         OPTIONAL,
  t-CauseValueCriteria              [1] T-CauseValueCriteria         OPTIONAL,
  ... }

```

```

DestinationNumberCriteria ::= SEQUENCE {
  matchType                         [0] MatchType,
  destinationNumberList              [1] DestinationNumberList       OPTIONAL,
  destinationNumberLengthList        [2] DestinationNumberLengthList  OPTIONAL,
  -- one or both of destinationNumberList and destinationNumberLengthList
  -- shall be present
  ... }

```

```

DestinationNumberList ::= SEQUENCE SIZE (1..maxNumOfCamelDestinationNumbers) OF
  ISDN-AddressString
-- The receiving entity shall not check the format of a number in
-- the dialled number list

```

```

DestinationNumberLengthList ::= SEQUENCE SIZE (1..maxNumOfCamelDestinationNumberLengths)
OF
  INTEGER(1..maxNumOfISDN-AddressDigits)

```

```

BasicServiceCriteria ::= SEQUENCE SIZE(1..maxNumOfCamelBasicServiceCriteria) OF
  Ext-BasicServiceCode

```

```

maxNumOfISDN-AddressDigits INTEGER ::= 15

```

```

maxNumOfCamelDestinationNumbers INTEGER ::= 10

```

```

maxNumOfCamelDestinationNumberLengths INTEGER ::= 3

```

```

maxNumOfCamelBasicServiceCriteria INTEGER ::= 5

```

```

CallTypeCriteria ::= ENUMERATED {
  forwarded (0),
  notForwarded (1)}

```

```

MatchType ::= ENUMERATED {
    inhibiting (0),
    enabling (1)}

```

```

O-CauseValueCriteria ::= SEQUENCE SIZE(1..maxNumOfCAMEL-O-CauseValueCriteria) OF
    CauseValue

```

```

T-CauseValueCriteria ::= SEQUENCE SIZE(1..maxNumOfCAMEL-T-CauseValueCriteria) OF
    CauseValue

```

```

maxNumOfCAMEL-O-CauseValueCriteria INTEGER ::= 5

```

```

maxNumOfCAMEL-T-CauseValueCriteria INTEGER ::= 5

```

```

CauseValue ::= OCTET STRING (SIZE(1))
-- Type extracted from Cause parameter in ITU-T Recommendation Q.763.
-- For the use of cause value refer to ITU-T Recommendation Q.850.

```

```

DefaultCallHandling ::= ENUMERATED {
    continueCall (0) ,
    releaseCall (1) ,
    ...}
-- exception handling:
-- reception of values in range 2-31 shall be treated as "continueCall"
-- reception of values greater than 31 shall be treated as "releaseCall"

```

```

CamelCapabilityHandling ::= INTEGER(1..16)
-- value 1 = CAMEL phase 1,
-- value 2 = CAMEL phase 2,
-- value 3 = CAMEL Phase 3,
-- value 4 = CAMEL phase 4:
-- reception of values greater than 4 shall be treated as CAMEL phase 4.

```

```

SupportedCamelPhases ::= BIT STRING {
    phase1 (0),
    phase2 (1),
    phase3 (2),
    phase4 (3)} (SIZE (1..16))
-- A node shall mark in the BIT STRING all CAMEL Phases it supports.
-- Other values than listed above shall be discarded.

```

```

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,
    csi-Active [4] NULL OPTIONAL,
    ...}
-- notificationToCSE and csi-Active shall not be present
-- when MO-SMS-CSI or MT-SMS-CSI is sent to VLR or SGSN.
-- They may only be included in ATSI/ATM ack/NSDC message.
-- SMS-CAMEL-TDP-Data and camelCapabilityHandling shall be present in
-- the SMS-CSI sequence.
-- If SMS-CSI is segmented, sms-CAMEL-TDP-DataList and camelCapabilityHandling shall be
-- present in the first segment

```

```

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,
    ...
}

```



```
SMS-TriggerDetectionPoint ::= ENUMERATED {
    sms-CollectedInfo (1),
    ...,
    sms-DeliveryRequest (2)
}
-- exception handling:
-- For SMS-CAMEL-TDP-Data and MT-smsCAMELTDP-Criteria sequences containing this parameter
with any
-- other value than the ones listed the receiver shall ignore the whole
-- SMS-CAMEL-TDP-Data-sequence.
--
-- If this parameter is received with any other value than sms-CollectedInfo
-- in an SMS-CAMEL-TDP-Data sequence contained in mo-sms-CSI, then the receiver shall
-- ignore the whole SMS-CAMEL-TDP-Data sequence.
--
-- If this parameter is received with any other value than sms-DeliveryRequest
-- in an SMS-CAMEL-TDP-Data sequence contained in mt-sms-CSI then the receiver shall
-- ignore the whole SMS-CAMEL-TDP-Data sequence.
--
-- If this parameter is received with any other value than sms-DeliveryRequest
-- in an MT-smsCAMELTDP-Criteria sequence then the receiver shall
-- ignore the whole MT-smsCAMELTDP-Criteria sequence.
```

```
DefaultSMS-Handling ::= ENUMERATED {
    continueTransaction (0) ,
    releaseTransaction (1) ,
    ...}
-- exception handling:
-- reception of values in range 2-31 shall be treated as "continueTransaction"
-- reception of values greater than 31 shall be treated as "releaseTransaction"
```

Unchanged text removed for clarity

***** END OF MODIFICATIONS *****

Miami, Florida-USA, 8th-12th April 2002

CR-Form-v4

CHANGE REQUEST⌘ **29.002 CR 435** ⌘ rev **1** ⌘ Current version: **5.1.0** ⌘For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Change PS-connected in PS-PDPActive		
Source:	⌘ CN2		
Work item code:	⌘ CAMEL phase4	Date:	⌘ 10/03/02
Category:	⌘ D	Release:	⌘ REL-05
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2	(GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96	(Release 1996)
	B (addition of feature),	R97	(Release 1997)
	C (functional modification of feature)	R98	(Release 1998)
	D (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		REL-4 (Release 4)
			REL-5 (Release 5)

Reason for change:	⌘ CAMEL is using the state <<connected>> to say that there is at least a PDP context active. However, this state doesn't correspond to the 3G state <<PMM connected>> and can be misinterpreted.
Summary of change:	⌘ . Proposal to change CAMEL <<connected>> into CAMEL <<PDPActive>>
Consequences if not approved:	⌘ Possible mixing of CAMEL states and 3G states

Clauses affected:	⌘ 17.7.1,		
Other specs affected:	⌘ <input checked="" type="checkbox"/> Other core specifications	⌘ 23.078 N2-020420, 22-078 N2-020419	
	<input type="checkbox"/> Test specifications		
	<input type="checkbox"/> 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/3G_Specs/CRs.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://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

17.7 MAP constants and data types

17.7.1 Mobile Service data types

```
PS-SubscriberState ::= CHOICE {  
  notProvidedFromSGSN [0] NULL,  
  ps-Detached [1] NULL,  
  ps-AttachedNotReachableForPaging [2] NULL,  
  ps-AttachedReachableForPaging [3] NULL,  
  ps-PDP-ActiveConnectedNotReachableForPaging [4] PDP-ContextInfoList,  
  ps-PDP-ActiveConnectedReachableForPaging [5] PDP-ContextInfoList}
```

First modification end

CHANGE REQUEST

⌘ **29.002 CR 436** ⌘ rev **2** ⌘ Current version: **5.1.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Splitting of CAMEL phase 4		
Source:	⌘ CN4		
Work item code:	⌘ CAMEL phase 4	Date:	⌘ 16 May 2002
Category:	⌘ B	Release:	⌘ REL-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2 (GSM Phase 2)	
	A (corresponds to a correction in an earlier release)	R96 (Release 1996)	
	B (addition of feature),	R97 (Release 1997)	
	C (functional modification of feature)	R98 (Release 1998)	
	D (editorial modification)	R99 (Release 1999)	
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.	REL-4 (Release 4)	
		REL-5 (Release 5)	

Reason for change:	⌘ Introduction of the splitting of CAMEL phase 4 mechanism.		
Summary of change:	⌘ Creation of new parameter given the supported CAMEL 4 subsets by an entity		
Consequences if not approved:	⌘ The feature " splitting of CAMEL phase 4 " is not possible.		

Clauses affected:	⌘		
Other specs affected:	⌘ <input checked="" type="checkbox"/> Other core specifications	⌘ 3GPP 23.078; 23.008; 29.078	
	<input type="checkbox"/> Test specifications		
	<input type="checkbox"/> O&M Specifications		
Other comments:	⌘ "... " indicates that some original text from the specification has been left out. The Bits of the ASN.1 data type SupportedCamel4Subsets has been renamed to be more in-line with the stage 2 subset names. The parameter descriptions have been added.		

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.

7.6 Definition of parameters

Following is an alphabetic list of parameters used in the common MAP-services in clause 7.3:

Application context name	7.3.1	Refuse reason	7.3.1
Destination address	7.3.1	Release method	7.3.2
Destination reference	7.3.1	Responding address	7.3.1
Diagnostic information	7.3.4	Result	7.3.1
Originating address	7.3.1	Source	7.3.5
Originating reference	7.3.1	Specific information	7.3.1/7.3.2/7.3.4
Problem diagnostic	7.3.6	User reason	7.3.4
Provider reason	7.3.5		

Following is an alphabetic list of parameters contained in this clause:

Absent Subscriber Diagnostic SM	7.6.8.9	Invoke Id	7.6.1.1
Access connection status	7.6.9.3	ISDN Bearer Capability	7.6.3.41
		IST Alert Timer	7.6.3.66
		IST Information Withdrawn	7.6.3.68
Access signalling information	7.6.9.5	IST Support Indicator	7.6.3.69
Additional Absent Subscriber Diagnostic SM	7.6.8.12	Kc	7.6.7.4
Additional Location Estimate	7.6.11.21	Linked Id	7.6.1.2
Additional number	7.6.2.46		
		LMSI	7.6.2.16
Additional signal info	7.6.9.10	Location Information	7.6.2.30
Additional SM Delivery Outcome	7.6.8.11	Location Information for GPRS	7.6.2.30a
		Location update type	7.6.9.6
Age Indicator	7.6.3.72	Long Forwarded-to Number	7.6.2.22A
		Long FTN Supported	7.6.2.22B
		Lower Layer Compatibility	7.6.3.42
Alert Reason	7.6.8.8	LSA Information	7.6.3.56
Alert Reason Indicator	7.6.8.10	LSA Information Withdraw	7.6.3.58
Alerting Pattern	7.6.3.44	MC Information	7.6.4.48
All GPRS Data	7.6.3.53	MC Subscription Data	7.6.4.47
All Information Sent	7.6.1.5	Mobile Not Reachable Reason	7.6.3.51
AN-apdu	7.6.9.1	Modification request for CSI	7.6.3.81
APN	7.6.2.42	Modification request for SS Information	7.6.3.82
Authentication set list	7.6.7.1	More Messages To Send	7.6.8.7
B-subscriber Address	7.6.2.36	MS ISDN	7.6.2.17
B subscriber Number	7.6.2.48	MSC number	7.6.2.11
B subscriber subaddress	7.6.2.49	MSISdn-Alert	7.6.2.29
Basic Service Group	7.6.4.40	Multicall Bearer Information	7.6.2.52
Bearer service	7.6.4.38	Multiple Bearer Requested	7.6.2.53
Call Barring Data	7.6.3.83	Multiple Bearer Not Supported	7.6.2.54
Call barring feature	7.6.4.19	MWD status	7.6.8.3
Call barring information	7.6.4.18	NbrUser	7.6.4.45
Call Direction	7.6.5.8	Network Access Mode	7.6.3.50
Call Forwarding Data	7.6.3.84	Network node number	7.6.2.43
Call Info	7.6.9.9	Network resources	7.6.10.1
Call reference	7.6.5.1	Network signal information	7.6.9.8
Call Termination Indicator	7.6.3.67	New password	7.6.4.20
Called number	7.6.2.24	No reply condition timer	7.6.4.7
Calling number	7.6.2.25	North American Equal Access preferred Carrier Id	7.6.2.34
CAMEL Subscription Info	7.6.3.78	Number Portability Status	7.6.5.14
CAMEL Subscription Info Withdraw	7.6.3.38	ODB Data	7.6.3.85
Cancellation Type	7.6.3.52	ODB General Data	7.6.3.9
Category	7.6.3.1	ODB HPLMN Specific Data	7.6.3.10
CCBS Feature	7.6.5.8	OMC Id	7.6.2.18
		Originally dialled number	7.6.2.26

CCBS Request State	7.6.4.49	Originating entity number	7.6.2.10
Channel Type	7.6.5.9	Override Category	7.6.4.4
Chosen Channel	7.6.5.10	P-TMSI	7.6.2.47
Chosen Radio Resource Information	7.6.6.10B	PDP-Address	7.6.2.45
Ciphering mode	7.6.7.7	PDP-Context identifier	7.6.3.55
Cksn	7.6.7.5	PDP-Type	7.6.2.44
CLI Restriction	7.6.4.5	Pre-paging supported	7.6.5.15
CM service type	7.6.9.2	Previous location area Id	7.6.2.4
Complete Data List Included	7.6.3.54	Protocol Id	7.6.9.7
CS Allocation Retention priority	7.6.3.87	Provider error	7.6.1.3
CS LCS Not Supported by UE	7.6.11.9	PS LCS Not Supported by UE	7.6.11.10
CUG feature	7.6.3.26	QoS-Subscribed	7.6.3.47
CUG index	7.6.3.25	Radio Resource Information	7.6.6.10
CUG info	7.6.3.22	Radio Resource List	7.6.6.10A
CUG interlock	7.6.3.24	Rand	7.6.7.2
CUG Outgoing Access indicator	7.6.3.8	Regional Subscription Data	7.6.3.11
CUG subscription	7.6.3.23	Regional Subscription Response	7.6.3.12
CUG Subscription Flag	7.6.3.37	Relocation Number List	7.6.2.19A
Current location area Id	7.6.2.6	Requested Info	7.6.3.31
		Requested Subscription Info	7.6.3.86
Current password	7.6.4.21	Roaming number	7.6.2.19
		Roaming Restricted In SGSN Due To	7.6.3.49
Deferred MT-LR Data	7.6.11.3	Unsupported Feature	
		Roaming Restriction Due To	7.6.3.13
Deferred MT-LR Response Indicator	7.6.11.2	Unsupported Feature	
eMLPP Information	7.6.4.41	Current Security Context	7.6.7.8
Encryption Information	7.6.6.9	Selected RAB ID	7.6.2.56
Equipment status	7.6.3.2	Service centre address	7.6.2.27
Extensible Basic Service Group	7.6.3.5	Serving Cell Id	7.6.2.37
Extensible Bearer service	7.6.3.3	SGSN address	7.6.2.39
Extensible Call barring feature	7.6.3.21	SGSN CAMEL Subscription Info	7.6.3.75
Extensible Call barring information	7.6.3.20	SGSN number	7.6.2.38
		SIWF Number	7.6.2.35
Extensible Call barring information for CSE	7.6.3.79	SoLSA Support Indicator	7.6.3.57
		SM Delivery Outcome	7.6.8.6
Extensible Forwarding feature	7.6.3.16	SM-RP-DA	7.6.8.1
Extensible Forwarding info	7.6.3.15	SM-RP-MTI	7.6.8.16
Extensible Forwarding information for CSE	7.6.3.80	SM-RP-OA	7.6.8.2
Extensible Forwarding Options	7.6.3.18	SM-RP-PRI	7.6.8.5
Extensible No reply condition timer	7.6.3.19	SM-RP-SMEA	7.6.8.17
Extensible QoS-Subscribed	7.6.3.74	SM-RP-UI	7.6.8.4
Extensible SS-Data	7.6.3.29	Sres	7.6.7.3
Extensible SS-Info	7.6.3.14	SS-Code	7.6.4.1
Extensible SS-Status	7.6.3.17	SS-Data	7.6.4.3
Extensible Teleservice	7.6.3.4	SS-Event	7.6.4.42
External Signal Information	7.6.9.4	SS-Event-Data	7.6.4.43
Failure Cause	7.6.7.9	SS-Info	7.6.4.24
Forwarded-to number	7.6.2.22	SS-Status	7.6.4.2
Forwarded-to subaddress	7.6.2.23	Stored location area Id	7.6.2.5
Forwarding feature	7.6.4.16	Subscriber State	7.6.3.30
Forwarding information	7.6.4.15	Subscriber Status	7.6.3.7
Forwarding Options	7.6.4.6	Super-Charger Supported in HLR	7.6.3.70
GGSN address	7.6.2.40	Super-Charger Supported in Serving Network Entity	7.6.3.71
		<u>Supported CAMEL4 Subsets</u>	<u>7.6.3.36D</u>
		<u>Supported CAMEL4 Subsets in GMSC</u>	<u>7.6.3.36E</u>
		<u>Supported CAMEL4 Subsets in VMSC</u>	<u>7.6.3.36F</u>
		<u>Supported CAMEL4 Subsets in VLR</u>	<u>7.6.3.36B</u>
		<u>Supported CAMEL4 Subsets in SGSN</u>	<u>7.6.3.36C</u>
GGSN number	7.6.2.41	Supported CAMEL Phases in VLR	7.6.3.36
GMSC CAMEL Subscription Info	7.6.3.34	Supported CAMEL Phases in SGSN	7.6.3.36A
GPRS enhancements support indicator	7.6.3.73	Supported GAD Shapes	7.6.11.20
GPRS Node Indicator	7.6.8.14	Supported LCS Capability Sets	7.6.11.17
		Suppress Incoming Call Barring	7.6.3.b
GPRS Subscription Data	7.6.3.46	Suppress T-CSI	7.6.3.33
		Suppress VT-CSI	7.6.3.a
GPRS Subscription Data Withdraw	7.6.3.45	Suppression of Announcement	7.6.3.32

GPRS Support Indicator	7.6.8.15	Target cell Id	7.6.2.8
Group Id	7.6.2.33	Target location area Id	7.6.2.7
GSM bearer capability	7.6.3.6	Target RNC Id	7.6.2.8A
gsmSCF Initiated Call	7.6.3.c		
Guidance information	7.6.4.22	Target MSC number	7.6.2.12
Handover number	7.6.2.21	Teleservice	7.6.4.39
High Layer Compatibility	7.6.3.43	TMSI	7.6.2.2
HLR Id	7.6.2.15	Trace reference	7.6.10.2
HLR number	7.6.2.13	Trace type	7.6.10.3
HO-Number Not Required	7.6.6.7	User error	7.6.1.4
IMEI	7.6.2.3	USSD Data Coding Scheme	7.6.4.36
IMSI	7.6.2.1	USSD String	7.6.4.37
Integrity Protection Information	7.6.6.8	UU Data	7.6.5.12
Inter CUG options	7.6.3.27	UUS CF Interaction	7.6.5.13
Intra CUG restrictions	7.6.3.28	VBS Data	7.6.3.40
		VGCS Data	7.6.3.39
		VLR CAMEL Subscription Info	7.6.3.35
		VLR number	7.6.2.14
		VPLMN address allowed	7.6.3.48
		Zone Code	7.6.2.28

7.6.3 Subscriber management parameters

7.6.3.36 Supported CAMEL Phases in the VLR

This parameter indicates which phases of CAMEL are supported in the VLR.

7.6.3.36A Supported CAMEL Phases in the SGSN

This parameter indicates which phases of CAMEL are supported in the SGSN.

7.6.3.36B Supported CAMEL4 Subsets in the VLR

This parameter indicates which subsets of CAMEL phase 4 are supported in the VLR as defined in 3GPP TS 23.078.

7.6.3.36C Supported CAMEL4 Subsets in the SGSN

This parameter indicates which subsets of CAMEL phase 4 are supported in the SGSN as defined in 3GPP TS 23.078.

7.6.3.36D Supported CAMEL4 Subsets

This parameter indicates which subsets of CAMEL phase 4 are supported as defined in 3GPP TS 23.078.

7.6.3.36E Supported CAMEL4 Subsets in GMSC

This parameter indicates which subsets of CAMEL phase 4 are supported in the GMSC as defined in 3GPP TS 23.078.

7.6.3.36F Supported CAMEL4 Subsets in VMSC

This parameter indicates which subsets of CAMEL phase 4 are supported in the VMSC as defined in 3GPP TS 23.078.

8.1.2 MAP_UPDATE_LOCATION service

...

8.1.2.2 Service primitives

Table 8.1/2: MAP_UPDATE_LOCATION

Parameter name	Request	Indication	Response	Confirm
Invoke Id	M	M(=)	M(=)	M(=)
IMSI	M	M(=)		
MSC Address	M	M(=)		
VLR number	M	M(=)		
LMSI	U	C(=)		
Supported CAMEL Phases	C	C(=)		
SoLSA Support Indicator	C	C(=)		
IST Support Indicator	C	C(=)		
Super-Charger Supported in Serving Network Entity	C	C(=)		
Long FTN Supported	C	C(=)		
Supported LCS Capability Sets	C	C(=)		
Supported CAMEL 4 Subsets	C	C(=)		
Inform Previous Network Entity	C	C(=)		
CS LCS Not Supported by UE	C	C(=)		
HLR number			C	C(=)
User error			C	C(=)
Provider error				O

8.1.2.3 Parameter definitions and use

...

Supported LCS Capability Sets

This parameter indicates, if present, the capability sets of LCS which are supported. If the parameter is sent but no capability set is marked as supported then the VLR does not support LCS at all.

If this parameter is absent then the VLR may support at most LCS capability set 1, that is LCS Release98 or Release99 version.

Supported CAMEL 4 Subsets

This parameter indicates the CAMEL phase 4 subsets supported in the VMSC/VLR (see clause 7.6.3.36D).

...

8.1.7 MAP_UPDATE_GPRS_LOCATION service

...

8.1.7.2 Service primitives

Table 8.1/7: MAP_UPDATE_GPRS_LOCATION

Parameter name	Request	Indication	Response	Confirm
Invoke Id	M	M(=)	M(=)	M(=)
IMSI	M	M(=)		
SGSN number	M	M(=)		
SGSN address	M	M(=)		
Supported CAMEL Phases	C	C(=)		
SoLSA Support Indicator	C	C(=)		
Super-Charger Supported in Serving Network Entity	C	C(=)		
GPRS enhancements support indicator	C	C(=)		

Parameter name	Request	Indication	Response	Confirm
Supported LCS Capability Sets	C	C(=)		
Supported CAMEL 4 Subsets	C	C(=)		
Inform Previous Network Entity	C	C(=)		
PS LCS Not Supported by UE	C	C(=)		
HLR number			C	C(=)
User error			C	C(=)
Provider error				O

8.1.7.3 Parameter definitions and use

...

Supported LCS Capability Sets

This parameter indicates, if present, the capability sets of LCS which are supported. If the parameter is sent but no capability set is marked as supported then the SGSN does not support LCS at all.

The SGSN is not allowed to indicate support for LCS capability set 1.

If this parameter is absent then the SGSN does not support LCS at all.

Supported CAMEL 4 Subsets

This parameter indicates the CAMEL phase 4 subsets supported in the SGSN (see clause 7.6.3.36D).

...

8.1.8 MAP-NOTE-MM-EVENT

...

8.1.8.2 Service primitives

The service primitives are shown in table 8.1/8.

Table 8.1/8: MAP_NOTE_MM_EVENT parameters

Parameter name	Request	Indication	Response	Confirm
Invoke id	M	M(=)	M(=)	M(=)
Event Met	M	M(=)		
Service Key	M	M(=)		
IMSI	M	M(=)		
Basic MSISDN	M	M(=)		
Location Information for GPRS	C	C(=)		
Location Information	C	C(=)		
LSA Identity	C	C(=)		
Supported CAMEL Phases	M	M(=)		
Supported CAMEL 4 Subsets	C	C(=)		
User error			C	C(=)
Provider error				O

8.1.8.3 Parameter use

...

Supported CAMEL Phases

See clause 7.6.x. This information shall always be sent.

Supported CAMEL 4 Subsets

This parameter indicates the CAMEL phase 4 subsets supported by the sending entity, {VMSC/VLR or SGSN} (see clause 7.6.3.36D).

...

8.8.1 MAP-INSERT-SUBSCRIBER-DATA service

...

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(=)		
MC-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(=)		
CS Allocation/Retention priority	C	C(=)		
Super-Charger Supported In HLR	C	C(=)		
Regional Subscription Response			C	C(=)
Supported CAMEL Phases			C	C(=)
<u>Supported CAMEL 4 Subsets</u>			<u>C</u>	<u>C(=)</u>
User error			U	C(=)
Provider error				O

8.8.1.3 Parameter use

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

...

CS Allocation/Retention priority

The CS Allocation/Retention priority is used only for Circuit Switched (CS). This parameter specifies relative importance to compare with other bearers about allocation and retention of bearer. This parameter is used only by the VLR and if the SGSN receives this parameter it shall ignore it.

Supported CAMEL 4 Subsets

This parameter indicates the CAMEL phase 4 subsets supported in the VMSC/VLR (see clause 7.6.3.36D).

User error

Only one of the following values is applicable:

- Unidentified subscriber;
- Data missing;
- Unexpected data value.

8.10.3 MAP_RESTORE_DATA service

...

8.10.3.2 Service primitives

Table 8.10/3: MAP_RESTORE_DATA

Parameter name	Request	Indication	Response	Confirm
Invoke Id	M	M(=)	M(=)	M(=)
IMSI	M	M(=)		
LMSI	U	C(=)		
Supported CAMEL phases	C	C(=)		
SoLSA Support Indicator	C	C(=)		
IST Support Indicator	C	C(=)		
Super-Charger Supported in Serving Network Entity	C	C(=)		
Long FTN Supported	C	C(=)		
Supported LCS Capability Sets	C	C(=)		
<u>Supported CAMEL 4 Subsets</u>	<u>C</u>	<u>C(=)</u>		
HLR number			C	C(=)
MS Not Reachable Flag			C	C(=)
User error			C	C(=)
Provider error				O

8.10.3.3 Parameter definitions and use

...

Supported LCS Capability Sets

This parameter indicates, if present, the capability sets of LCS which are supported. If the parameter is sent but no capability set is marked as supported then the VLR does not support LCS at all.

If this parameter is absent then the VLR may support at most LCS capability set 1, that is LCS Release98 or Release99 version.

Supported CAMEL 4 Subsets

This parameter indicates the CAMEL phase 4 subsets supported in the VMSC/VLR (see clause 7.6.3.36D).

...

8.11.3 MAP-ANY-TIME-SUBSCRIPTION-INTERROGATION service

...

8.11.3.2 Service primitives

Table 8.11/3: Any_Time_Subscription_Interrogation

Parameter name	Request	Indication	Response	Confirm
Invoke id	M	M(=)	M(=)	M(=)
Requested Subscription Info	M	M(=)		
GsmSCF-Address	M	M(=)		
IMSI	C	C(=)		
MSISDN	C	C(=)		
Long FTN Supported	C	C(=)		
Call Forwarding Data			C	C(=)
Call Barring Data			C	C(=)
ODB Info			C	C(=)
CAMEL Subscription Info			C	C(=)
Supported CAMEL phases in VLR			C	C(=)
Supported CAMEL phases in SGSN			C	C(=)
Supported CAMEL 4 Subsets in VLR			C	C(=)
Supported CAMEL 4 Subsets in SGSN			C	C(=)
User error			C	C(=)
Provider error				O

8.11.3.3 Parameter definition and use

All parameters are described in clause 7.6.

...

10.1 MAP_SEND_ROUTING_INFORMATION service

...

10.1.2 Service primitives

Table 10.1/1: MAP_SEND_ROUTING_INFORMATION parameters

Parameter name	Request	Indication	Response	Confirm
Invoke Id	M	M(=)	M(=)	M(=)
Interrogation Type	M	M(=)		
GMSC or gsmSCF Address	M	M(=)		
MSISDN	M	M(=)	C	C(=)
OR Interrogation	C	C(=)		
OR Capability	C	C(=)		
CUG Interlock	C	C(=)	C	C(=)
CUG Outgoing Access	C	C(=)	C	C(=)
Number of Forwarding	C	C(=)		
Network Signal Info	C	C(=)		
Supported CAMEL Phases	C	C(=)	C	C(=)
Suppress T-CSI	C	C(=)		

Parameter name	Request	Indication	Response	Confirm
Supported CAMEL 4 Subsets	C	C(=)		
Suppression of Announcement	C	C(=)		
Call Reference Number	C	C(=)		
Forwarding Reason	C	C(=)		
Basic Service Group	C	C(=)		
Alerting Pattern	C	C(=)		
CCBS Call	C	C(=)		
Supported CCBS Phase	C	C(=)		
Additional Signal Info	C	C(=)		
IST Support Indicator	C	C(=)		
Pre-paging supported	C	C(=)		
Call Diversion Treatment Indicator	C	C(=)		
Long FTN Supported	C	C(=)		
Suppress VT-CSI	C	C(=)		
Suppress Incoming Call Barring	C	C(=)		
gsmSCF Initiated Call	C	C(=)		
IMSI			C	C(=)
MSRN			C	C(=)
Forwarding Data			C	C(=)
Forwarding Interrogation Required			C	C(=)
VMSC address			C	C(=)
GMSC Camel Subscription Info			C	C(=)
Location Information			C	C(=)
Subscriber State			C	C(=)
Basic Service Code			C	C(=)
CUG Subscription Flag			C	C(=)
North American Equal Access preferred			U	C(=)
Carrier Id				
User error			C	C(=)
SS-List			U	C(=)
CCBS Target			C	C(=)
Keep CCBS Call Indicator			C	C(=)
IST Alert Timer			C	C(=)
Number Portability Status			U	C(=)
Supported CAMEL Phases in VMSC			C	C(=)
Supported CAMEL 4 Subsets in VMSC			C	C(=)
Provider error				O

10.1.3 Parameter use

See clause 7.6 for a definition of the parameters used in addition to the following. Note that:

...

T-CSI Suppression

The use of this parameter and the requirements for its presence are specified in 3GPP TS 23.078.

Supported CAMEL 4 Subsets

This parameter indicates the CAMEL phase 4 subsets supported in the GMSC/VLR The use of this parameter and the requirements for its presence are specified in 3GPP TS 23.078(see clause 7.6.3.36D).

...

Number Portability Status

This parameter indicates the number portability status of the subscriber. This parameter may be present if the sender of SRIack is NPLR.

Supported CAMEL Phases in VMSC

The use of this parameter and the requirements for its presence are specified in 3GPP TS 23.078.

Supported CAMEL 4 Subsets in VMSC

This parameter is defined in clause 7.6.3.36F. The use of this parameter and the requirements for its presence are specified in 3GPP TS 23.078.

...

10.2 MAP_PROVIDE_ROAMING_NUMBER service

...

10.2.2 Service primitives

Table 10.2/1: MAP_PROVIDE_ROAMING_NUMBER parameters

Parameter name	Request	Indication	Response	Confirm
Invoke Id	M	M(=)	M(=)	M(=)
IMSI	M	M(=)		
MSC Number	M	M(=)		
MSISDN	U	C(=)		
LMSI	C	C(=)		
GSM Bearer Capability	C	C(=)		
Network Signal Info	C	C(=)		
Suppression Of Announcement	C	C(=)		
Call Reference Number	C	C(=)		
GMSC Address	C	C(=)		
OR Interrogation	C	C(=)		
OR Not Supported in GMSC	C	C(=)		
Alerting Pattern	C	C(=)		
CCBS Call	C	C(=)		
Supported CAMEL Phases in GMSC	C	C(=)		
Additional Signal Info	C	C(=)		
Pre-paging supported	C	C(=)		
Long FTN Supported	C	C(=)		
Suppress VT-CSI	C	C(=)		
Supported CAMEL 4 Subsets in GMSC	C	C(=)		
Roaming Number			C	C(=)
User error			C	C(=)
Provider error				O

10.2.3 Parameter use

See clause 7.6 for a definition of the parameters used, in addition to the following. Note that:

...

Suppress VT-CSI

See 3GPP TS 23.078 for the use of this parameter and the conditions for its presence.

Supported CAMEL 4 Subsets in GMSC

This parameter is defined in clause 7.6.3.36E. See 3GPP TS 23.078 [98] for the use of this parameter and the conditions for its presence.

...

17.7 MAP constants and data types

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) version7 (7)}
```

DEFINITIONS

IMPLICIT TAGS

::=

BEGIN

EXPORTS

```
    -- location registration types  
    UpdateLocationArg,  
    UpdateLocationRes,  
    CancelLocationArg,  
    CancelLocationRes,  
    PurgeMS-Arg,  
    PurgeMS-Res,  
    SendIdentificationArg,  
    SendIdentificationRes,  
    UpdateGprsLocationArg,  
    UpdateGprsLocationRes,  
    IST-SupportIndicator,  
    SupportedLCS-CapabilitySets,  
  
    -- gprs location registration types  
    GSN-Address,  
  
    -- handover types  
    ForwardAccessSignalling-Arg,  
    PrepareHO-Arg,  
    PrepareHO-Res,  
    PrepareSubsequentHO-Arg,  
    PrepareSubsequentHO-Res,  
    ProcessAccessSignalling-Arg,  
    SendEndSignal-Arg,  
    SendEndSignal-Res,  
  
    -- authentication management types  
    SendAuthenticationInfoArg,  
    SendAuthenticationInfoRes,  
    AuthenticationFailureReportArg,  
    AuthenticationFailureReportRes,  
  
    -- security management types  
    EquipmentStatus,  
    Kc,  
  
    -- subscriber management types  
    InsertSubscriberDataArg,  
    InsertSubscriberDataRes,  
    LSAIdentity,  
    DeleteSubscriberDataArg,  
    DeleteSubscriberDataRes,  
    Ext-QoS-Subscribed,  
    SubscriberData,  
    ODB-Data,  
    SubscriberStatus,  
    ZoneCodeList,  
    maxNumOfZoneCodes,  
    O-CSI,  
    D-CSI,  
    O-BcsmCamelTDPCriteriaList,  
    T-BCSM-CAMEL-TDP-CriteriaList,  
    SS-CSI,  
    ServiceKey,  
    DefaultCallHandling,  
    CamelCapabilityHandling,
```

```

BasicServiceCriteria,
SupportedCamelPhases,
SupportedCamel4Subsets,
maxNumOfCamelTDPData,
CUG-Index,
CUG-Info,
CUG-Interlock,
InterCUG-Restrictions,
IntraCUG-Options,
NotificationToMSUser,
QoS-Subscribed,
IST-AlertTimerValue,
T-CSI,
T-BcsmTriggerDetectionPoint,
APN,

-- fault recovery types
ResetArg,
RestoreDataArg,
RestoreDataRes,

-- provide subscriber info types
GeographicalInformation,

-- subscriber information enquiry types
ProvideSubscriberInfoArg,
ProvideSubscriberInfoRes,
SubscriberInfo,
LocationInformation,
LocationInformationGPRS,
RAIdentity,
SubscriberState,
GPRSChargingID,

-- any time information enquiry types
AnyTimeInterrogationArg,
AnyTimeInterrogationRes,

-- any time information handling types
AnyTimeSubscriptionInterrogationArg,
AnyTimeSubscriptionInterrogationRes,
AnyTimeModificationArg,
AnyTimeModificationRes,

-- subscriber data modification notification types
NoteSubscriberDataModifiedArg,
NoteSubscriberDataModifiedRes,

-- gprs location information retrieval types
SendRoutingInfoForGprsArg,
SendRoutingInfoForGprsRes,

-- failure reporting types
FailureReportArg,
FailureReportRes,

-- gprs notification types
NoteMsPresentForGprsArg,
NoteMsPresentForGprsRes,

-- Mobility Management types
NoteMM-EventArg,
NoteMM-EventRes

;

IMPORTS
maxNumOfSS,
SS-SubscriptionOption,
SS-List,
SS-ForBS-Code,
Password
FROM MAP-SS-DataTypes {
ccitt identified-organization (4) etsi (0) mobileDomain (0)
gsm-Network (1) modules (3) map-SS-DataTypes (14) version7 (7)}

```



```

SS-Code
FROM MAP-SS-Code {
  ccitt identified-organization (4) etsi (0) mobileDomain (0)
  gsm-Network (1) modules (3) map-SS-Code (15) version7 (7)}

Ext-BearerServiceCode
FROM MAP-BS-Code {
  ccitt identified-organization (4) etsi (0) mobileDomain (0)
  gsm-Network (1) modules (3) map-BS-Code (20) version7 (7)}

Ext-TeleserviceCode
FROM MAP-TS-Code {
  ccitt identified-organization (4) etsi (0) mobileDomain (0)
  gsm-Network (1) modules (3) map-TS-Code (19) version7 (7)}

AddressString,
ISDN-AddressString,
ISDN-SubaddressString,
FTN-AddressString,
AccessNetworkSignalInfo,
IMSI,
TMSI,
HLR-List,
LMSI,
Identity,
GlobalCellId,
CellGlobalIdOrServiceAreaIdOrLAI,
Ext-BasicServiceCode,
NAEA-PreferredCI,
EMLPP-Info,
MC-SS-Info,
SubscriberIdentity,
AgeOfLocationInformation,
LCSClientExternalID,
LCSClientInternalID,
Ext-SS-Status

FROM MAP-CommonDataTypes {
  ccitt identified-organization (4) etsi (0) mobileDomain (0)
  gsm-Network (1) modules (3) map-CommonDataTypes (18) version7 (7)}

ExtensionContainer
FROM MAP-ExtensionDataTypes {
  ccitt identified-organization (4) etsi (0) mobileDomain (0)
  gsm-Network (1) modules (3) map-ExtensionDataTypes (21) version7 (7)}

AbsentSubscriberDiagnosticSM
FROM MAP-ER-DataTypes {
  ccitt identified-organization (4) etsi (0) mobileDomain (0)
  gsm-Network (1) modules (3) map-ER-DataTypes (17) version7 (7)}

```

;

-- location registration types

UpdateLocationArg ::= SEQUENCE {		
imsi	IMSI,	
msc-Number	[1] ISDN-AddressString,	
vlr-Number	ISDN-AddressString,	
lmsi	[10] LMSI OPTIONAL,	
extensionContainer	ExtensionContainer	OPTIONAL,
...	,	
vlr-Capability	[6] VLR-Capability	OPTIONAL,
informPreviousNetworkEntity	[11] NULL	OPTIONAL,
cs-LCS-NotSupportedByUE	[12] NULL	OPTIONAL }

```

VLR-Capability ::= SEQUENCE{
    supportedCamelPhases          [0] SupportedCamelPhases          OPTIONAL,
    extensionContainer            ExtensionContainer              OPTIONAL,
    ... ,
    solsaSupportIndicator         [2] NULL                        OPTIONAL,
    istSupportIndicator           [1] IST-SupportIndicator        OPTIONAL,
    superChargerSupportedInServingNetworkEntity [3] SuperChargerInfo OPTIONAL,
    longFTN-Supported            [4] NULL                        OPTIONAL,
    supportedLCS-CapabilitySets   [5] SupportedLCS-CapabilitySets OPTIONAL,
    supportedCamel4Subsets       [6] SupportedCamel4Subsets      OPTIONAL }

```

...

-- gprs location registration types

```

UpdateGprsLocationArg ::= SEQUENCE {
    imsi                IMSI,
    sgsn-Number         ISDN-AddressString,
    sgsn-Address        GSN-Address,
    extensionContainer  ExtensionContainer              OPTIONAL,
    ... ,
    sgsn-Capability    [0] SGSN-Capability             OPTIONAL,
    informPreviousNetworkEntity [1] NULL              OPTIONAL,
    ps-LCS-NotSupportedByUE [2] NULL                OPTIONAL }

```

```

SGSN-Capability ::= SEQUENCE{
    solsaSupportIndicator         NULL                OPTIONAL,
    extensionContainer            [1] ExtensionContainer  OPTIONAL,
    ... ,
    superChargerSupportedInServingNetworkEntity [2] SuperChargerInfo OPTIONAL,
    gprsEnhancementsSupportIndicator [3] NULL          OPTIONAL,
    supportedCamelPhases         [4] SupportedCamelPhases OPTIONAL,
    supportedLCS-CapabilitySets   [5] SupportedLCS-CapabilitySets OPTIONAL,
    supportedCamel4Subsets       [6] SupportedCamel4Subsets OPTIONAL }

```

...

```

InsertSubscriberDataRes ::= SEQUENCE {
    teleserviceList          [1] TeleserviceList          OPTIONAL,
    bearerServiceList        [2] BearerServiceList        OPTIONAL,
    ss-List                  [3] SS-List                  OPTIONAL,
    odb-GeneralData          [4] ODB-GeneralData          OPTIONAL,
    regionalSubscriptionResponse [5] RegionalSubscriptionResponse OPTIONAL,
    supportedCamelPhases     [6] SupportedCamelPhases     OPTIONAL,
    extensionContainer        [7] ExtensionContainer        OPTIONAL,
    ... ,
    supportedCamel4Subsets   [8] SupportedCamel4Subsets   OPTIONAL }

```

...

```

SupportedCamelPhases ::= BIT STRING {
    phase1 (0),
    phase2 (1),
    phase3 (2),
    phase4 (3)} (SIZE (1..16))
-- A node shall mark in the BIT STRING all CAMEL Phases it supports.
-- Other values than listed above shall be discarded.

```

```

SupportedCamel4Subsets ::= BIT STRING {
    cs-CallHandling          (0),
    chargingNotification     (1),
    cAMELControlOver-MT-SMS  (2),
    gprs-MobilityManagement  (3),
    gprs-AnyTimeInterrogation (4)
} (SIZE (±5..16))
-- A node supporting Camel phase 4 shall mark in the BIT STRING all Camel4 subsets
-- it supports.
-- Other values than listed above shall be discarded.

```

...

-- fault recovery types

...

RestoreDataArg ::= SEQUENCE {		
imsi	IMSI,	
lmsi	LMSI	OPTIONAL,
extensionContainer	ExtensionContainer	OPTIONAL,
...		
vlr-Capability	[6] VLR-Capability	OPTIONAL }

...

-- any time information handling types

AnyTimeSubscriptionInterrogationArg ::= SEQUENCE {		
subscriberIdentity	[0] SubscriberIdentity,	
requestedSubscriptionInfo	[1] RequestedSubscriptionInfo,	
gsmSCF-Address	[2] ISDN-AddressString,	
extensionContainer	[3] ExtensionContainer	OPTIONAL,
longFTN-Supported	[4] NULL	OPTIONAL,
...		

AnyTimeSubscriptionInterrogationRes ::= SEQUENCE {		
callForwardingData	[1] CallForwardingData	OPTIONAL,
callBarringData	[2] CallBarringData	OPTIONAL,
odb-Info	[3] ODB-Info	OPTIONAL,
camel-SubscriptionInfo	[4] CAMEL-SubscriptionInfo	OPTIONAL,
supportedVLR-CAMEL-Phases	[5] SupportedCamelPhases	OPTIONAL,
supportedSGSN-CAMEL-Phases	[6] SupportedCamelPhases	OPTIONAL,
extensionContainer	[7] ExtensionContainer	OPTIONAL,
...		
supportedVLR-Camel4SubsetsInVLR	[8] SupportedCamel4Subsets	OPTIONAL,
supportedSGSN-Camel4SubsetsInSGSN	[9] SupportedCamel4Subsets	OPTIONAL }

...

-- 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,
supportedCAMELPhases	[5] SupportedCamelPhases	OPTIONAL,
extensionContainer	[6] ExtensionContainer	OPTIONAL,
...		
supportedCamel4Subsets	[7] SupportedCamel4Subsets	OPTIONAL }

...

17.7.3 Call handling data types

```
MAP-CH-DataTypes {
    ccitt identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-CH-DataTypes (13) version7 (7)}

DEFINITIONS

IMPLICIT TAGS

 ::=

BEGIN

EXPORTS
    SendRoutingInfoArg,
    SendRoutingInfoRes,
    ProvideRoamingNumberArg,
    ProvideRoamingNumberRes,
    ResumeCallHandlingArg,
    ResumeCallHandlingRes,
    NumberOfForwarding,
    SuppressionOfAnnouncement,
    CallReferenceNumber,
    ProvideSIWFSNumberArg,
    ProvideSIWFSNumberRes,
    SIWFSSignallingModifyArg,
    SIWFSSignallingModifyRes,
    SetReportingStateArg,
    SetReportingStateRes,
    StatusReportArg,
    StatusReportRes,
    RemoteUserFreeArg,
    RemoteUserFreeRes,
    IST-AlertArg,
    IST-AlertRes,
    IST-CommandArg,
    IST-CommandRes
;

IMPORTS
    SubscriberInfo,
    SupportedCamelPhases,
    SupportedCamel4Subsets,
    CUG-Interlock,
    O-CSI,
    D-CSI,
    O-BcsmCamelTDPCriteriaList,
    T-BCSM-CAMEL-TDP-CriteriaList,
    IST-SupportIndicator,
    IST-AlertTimerValue,
    T-CSI

FROM MAP-MS-DataTypes {
    ccitt identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-MS-DataTypes (11) version7 (7)}

    ForwardingOptions,
    SS-List,
    CCBS-Feature
FROM MAP-SS-DataTypes {
    ccitt identified-organization (4) etsi (0) mobileDomain (0)
    gsm-Network (1) modules (3) map-SS-DataTypes (14) version7 (7)}

    ISDN-AddressString,
    ISDN-SubaddressString,
    FTN-AddressString,
    ExternalSignalInfo,
    Ext-ExternalSignalInfo,
    IMSI,
    LMSI,
    Ext-BasicServiceCode,
    AlertingPattern,
    NAEA-PreferredCI

FROM MAP-CommonDataTypes {
```

```
ccitt-identified-organization (4) etsi (0) mobileDomain (0)
gsm-Network (1) modules (3) map-CommonDataTypes (18) version7 (7)}
```

```
ExtensionContainer
```

```
FROM MAP-ExtensionDataTypes {
  ccitt-identified-organization (4) etsi (0) mobileDomain (0)
  gsm-Network (1) modules (3) map-ExtensionDataTypes (21) version7 (7)}
;
```

```
...
```

```
SendRoutingInfoArg ::= SEQUENCE {
  msisdn [0] ISDN-AddressString,
  cug-CheckInfo [1] CUG-CheckInfo OPTIONAL,
  numberOfForwarding [2] NumberOfForwarding OPTIONAL,
  interrogationType [3] InterrogationType,
  or-Interrogation [4] NULL OPTIONAL,
  or-Capability [5] OR-Phase OPTIONAL,
  gsmc-OrGsmSCF-Address [6] ISDN-AddressString,
  callReferenceNumber [7] CallReferenceNumber OPTIONAL,
  forwardingReason [8] ForwardingReason OPTIONAL,
  basicServiceGroup [9] Ext-BasicServiceCode OPTIONAL,
  networkSignalInfo [10] ExternalSignalInfo OPTIONAL,
  camelInfo [11] CamelInfo OPTIONAL,
  suppressionOfAnnouncement [12] SuppressionOfAnnouncement OPTIONAL,
  extensionContainer [13] ExtensionContainer OPTIONAL,
  ...,
  alertingPattern [14] AlertingPattern OPTIONAL,
  ccbs-Call [15] NULL OPTIONAL,
  supportedCCBS-Phase [16] SupportedCCBS-Phase OPTIONAL,
  additionalSignalInfo [17] Ext-ExternalSignalInfo OPTIONAL,
  istSupportIndicator [18] IST-SupportIndicator OPTIONAL,
  pre-pagingSupported [19] NULL OPTIONAL,
  callDiversionTreatmentIndicator [20] CallDiversionTreatmentIndicator OPTIONAL,
  longFTN-Supported [21] NULL OPTIONAL,
  suppress-VT-CSI [22] NULL OPTIONAL,
  suppressIncomingCallBarring [23] NULL OPTIONAL,
  gsmSCF-InitiatedCall [24] NULL OPTIONAL
}
```

```
...
```

```
SendRoutingInfoRes ::= [3] SEQUENCE {
  imsi [9] IMSI OPTIONAL,
  -- IMSI must be present if SendRoutingInfoRes is not segmented.
  -- If the TC-Result-NL segmentation option is taken the IMSI must be
  -- present in one segmented transmission of SendRoutingInfoRes.
  extendedRoutingInfo ExtendedRoutingInfo OPTIONAL,
  cug-CheckInfo [3] CUG-CheckInfo OPTIONAL,
  cugSubscriptionFlag [6] NULL OPTIONAL,
  subscriberInfo [7] SubscriberInfo OPTIONAL,
  ss-List [1] SS-List OPTIONAL,
  basicService [5] Ext-BasicServiceCode OPTIONAL,
  forwardingInterrogationRequired [4] NULL OPTIONAL,
  vmsc-Address [2] ISDN-AddressString OPTIONAL,
  extensionContainer [0] ExtensionContainer OPTIONAL,
  ...,
  naea-PreferredCI [10] NAEA-PreferredCI OPTIONAL,
  -- naea-PreferredCI is included at the discretion of the HLR operator.
  ccbs-Indicators [11] CCBS-Indicators OPTIONAL,
  msisdn [12] ISDN-AddressString OPTIONAL,
  numberPortabilityStatus [13] NumberPortabilityStatus OPTIONAL,
  istAlertTimer [14] IST-AlertTimerValue OPTIONAL,
  supportedCamelPhasesInVMSC [15] SupportedCamelPhases OPTIONAL,
  supportedCamel4SubsetsInVMSC [16] SupportedCamel4Subsets OPTIONAL
}
```

```
...
```

```

ProvideRoamingNumberArg ::= SEQUENCE {
    imsi [0] IMSI,
    msc-Number [1] ISDN-AddressString,
    msisdn [2] ISDN-AddressString OPTIONAL,
    lmsi [4] LMSI OPTIONAL,
    gsm-BearerCapability [5] ExternalSignalInfo OPTIONAL,
    networkSignalInfo [6] ExternalSignalInfo OPTIONAL,
    suppressionOfAnnouncement [7] SuppressionOfAnnouncement OPTIONAL,
    gmsc-Address [8] ISDN-AddressString OPTIONAL,
    callReferenceNumber [9] CallReferenceNumber OPTIONAL,
    or-Interrogation [10] NULL OPTIONAL,
    extensionContainer [11] ExtensionContainer OPTIONAL,
    ... /
    alertingPattern [12] AlertingPattern OPTIONAL,
    ccbs-Call [13] NULL OPTIONAL,
    supportedCamelPhasesInGMSC [15] SupportedCamelPhases OPTIONAL,
    additionalSignalInfo [14] Ext-ExternalSignalInfo OPTIONAL,
    orNotSupportedInGMSC [16] NULL OPTIONAL,
    pre-pagingSupported [17] NULL OPTIONAL,
    longFTN-Supported [18] NULL OPTIONAL,
    suppress-VT-CSI [19] NULL OPTIONAL,
    supportedCamel4SubsetsInGMSC [20] SupportedCamel4Subsets OPTIONAL
}

```

...

```

CamelInfo ::= SEQUENCE {
    supportedCamelPhases SupportedCamelPhases,
    suppress-T-CSI NULL OPTIONAL,
    extensionContainer ExtensionContainer OPTIONAL,
    ... /
    supportedCamel4Subsets [0] SupportedCamel4Subsets OPTIONAL }

```

CHANGE REQUEST

⌘ **29.002 CR 454** ⌘ rev **-** ⌘ Current version: **5.1.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Addition of Location Information GPRS to Note MM Event operation		
Source:	⌘ CN4		
Work item code:	⌘ CAMEL4-NMM	Date:	⌘ 03.05.2002
Category:	⌘ F	Release:	⌘ REL-5
	<i>Use one of the following categories:</i> 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.		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ The Location Information GPRS parameter is missing from the ASN.1 definition of Note MM Event operation.		
Summary of change:	⌘		
Consequences if not approved:	⌘ There is a misalignment between ASN.1 definitions and service definitions in chapter 8.1.8 of 3GPP TS 29.002 and with 3GPP TS 23.078.		

Clauses affected:	⌘		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> 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.

17.7 MAP constants and data types

17.7.1 Mobile Service data types

```
. . .
Unmodified ASN.1
. . .
```

```
-- mobility management event notificatioon info types
```

Note MM-EventArg ::= SEQUENCE {			
serviceKey	ServiceKey,		
eventMet	[0] MM-Code,		
imsi	[1] IMSI,		
msisdn	[2] ISDN-AddressString,		
locationInformation	[3] LocationInformation	OPTIONAL,	
supportedCAMELPhases	[5] SupportedCamelPhases	OPTIONAL,	
extensionContainer	[6] ExtensionContainer	OPTIONAL,	
...			
locationInformationGPRS	[7] LocationInformationGPRS	OPTIONAL	
}			