

**3GPP TSG CN Plenary Meeting #20**  
**4<sup>th</sup> – 6<sup>th</sup> June 2003 Hämeenlinna, FINLAND.**

**NP-030217**

**Source:** TSG CN WG4  
**Title:** Corrections on Camel 4  
**Agenda item:** 8.3  
**Document for:** APPROVAL

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<b>Spec</b>	<b>CR</b>	<b>Rev</b>	<b>Doc-2nd-Level</b>	<b>Phase</b>	<b>Subject</b>	<b>Cat</b>	<b>Ver_C</b>
23.018	123		N4-030440	Rel-5	Release Result from CAMEL_MT_GMSC_Notify_CF	F	5.6.0
29.002	618		N4-030677	Rel-5	Correction to naming of PRN parameter	F	5.5.0
29.002	619		N4-030678	Rel-6	Correction to naming of PRN parameter	A	6.1.0
23.018	115	2	N4-030679	Rel-5	Stopping No_Answer timer in the case of forwarding notification	F	5.6.0

## CHANGE REQUEST

⌘ **23.018** CR **115** ⌘ rev **2** ⌘ Current version: **5.6.0** ⌘

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

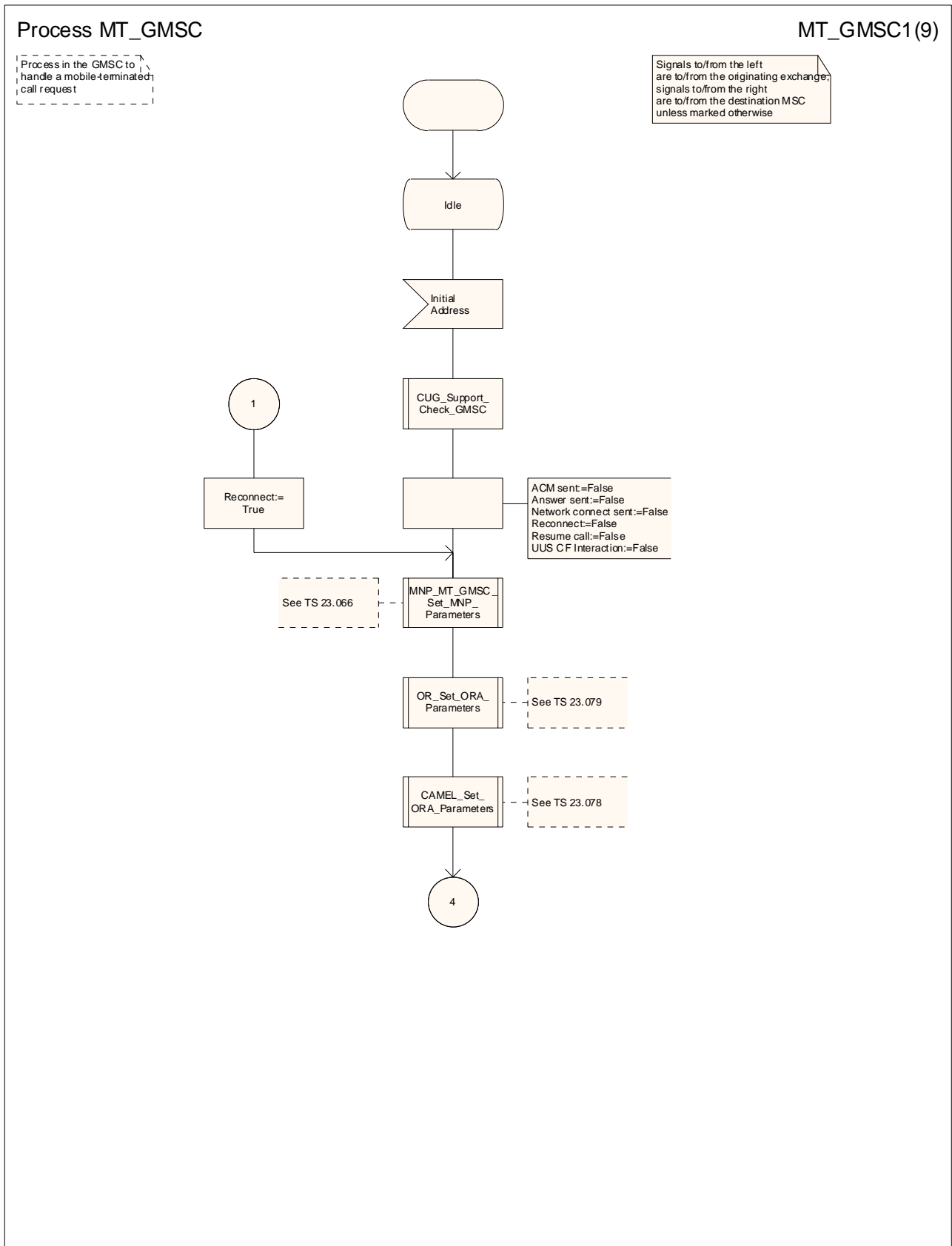
<b>Title:</b>	⌘ Stopping No_Answer timer in the case of forwarding notification		
<b>Source:</b>	⌘ CN4		
<b>Work item code:</b>	⌘ CAMEL4	<b>Date:</b>	⌘ 21 May, 2003
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ Rel-5
	Use <u>one</u> of the following categories: <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (addition of feature), <b>C</b> (functional modification of feature) <b>D</b> (editorial modification)		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) Rel-6 (Release 6)

<b>Reason for change:</b>	⌘ When the gsmSCF arms the No_Answer DP in the gsmSSF, the gsmSCF may provide a No_Answer expiry time value. This timer value is used to start a No_Answer timer in the MSC. The timer is started on reception of ISUP ACM. When this timer expires, the MSC generates a No_Answer internal signal to the gsmSSF. The internal answer timer is sent from the procedure CAMEL_Stop_TNRy.  When the MSC receives the Answer event, it stops the No_Answer timer. The timer is also stopped in the case of call set up failure.  The timer is, however, not stopped when conditional call forwarding in combination with ORLCF is signalled to the gsmSCF.  Currently, the No_Answer timer, that relates to the call set up to the original MT call handling, is still running after forwarding notification. Since the original MT call will not take place, the associated No_Answer timer shall be stopped.
<b>Summary of change:</b>	⌘ In figure 36e: process MT_GMSC (sheet 5), before procedure call OR_Handle_RCH, the No_Answer timer shall be stopped (procedure call CAMEL_Stop_TNRy).
<b>Consequences if not approved:</b>	⌘ If the No_Answer timer is set to a low value, it may expire before the forwarded-to destination answers the call. This may occur e.g. when the forwarding is accompanied by an announcement.

<b>Clauses affected:</b>	⌘ Figure 36: process MT_GMSC
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<b>Other specs affected:</b>	⌘	<table border="1"><tr><td>Y</td><td>N</td></tr><tr><td></td><td>X</td></tr><tr><td></td><td>X</td></tr><tr><td></td><td>X</td></tr></table>	Y	N		X		X		X	Other core specifications	⌘	
	Y	N											
		X											
	X												
	X												
		Test specifications											
		O&M Specifications											
<b>Other comments:</b>	⌘												

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



**Figure 36a: Process MT\_GMSC (sheet 1)**

Process MT\_GMSC

MT\_GMSC2(9)

Process in the GMSC to handle a mobile-terminated call request

Signals to/from the left are to/from the originating exchange, signals to/from the right are to/from the destination MSC unless marked otherwise

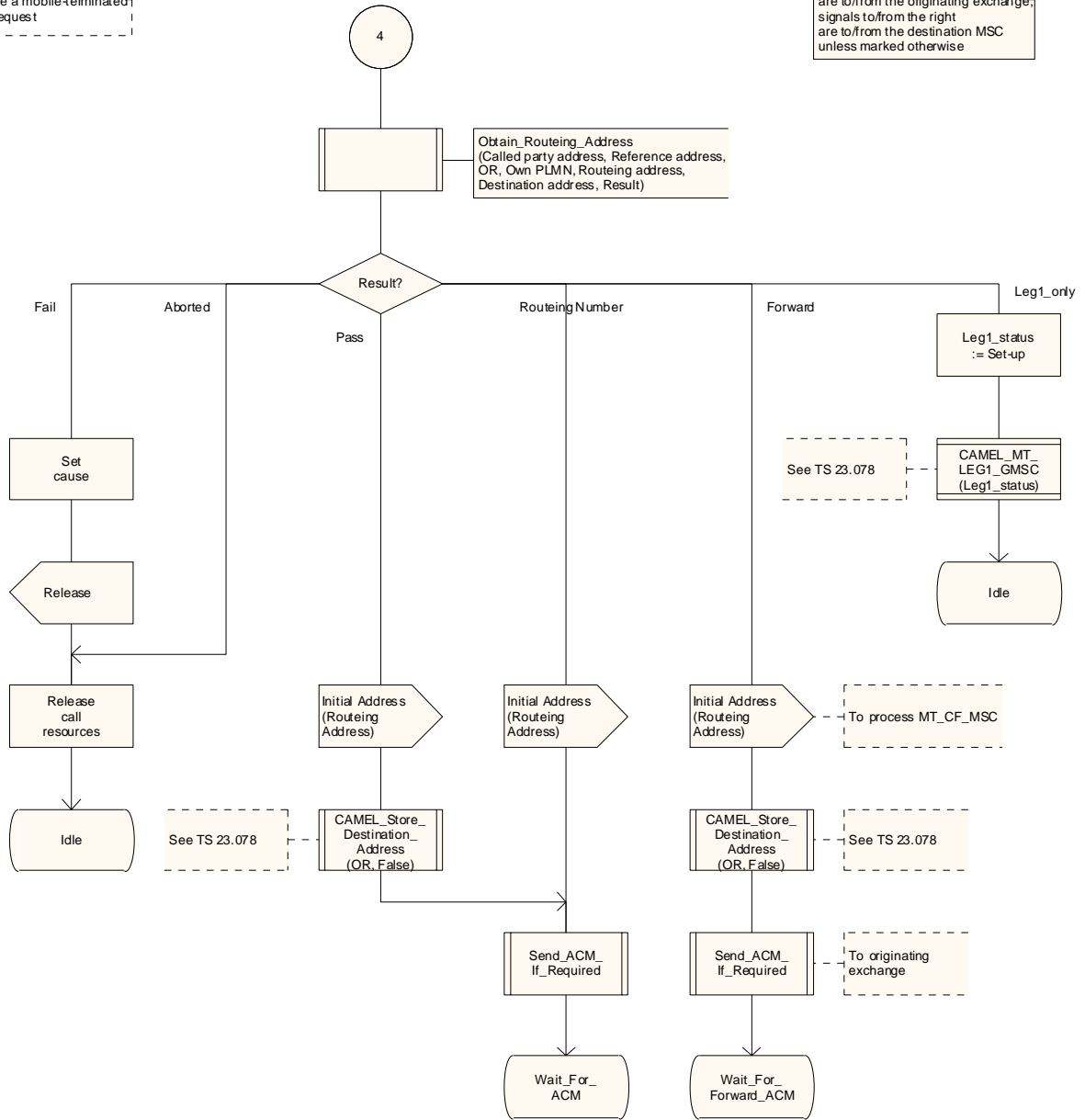
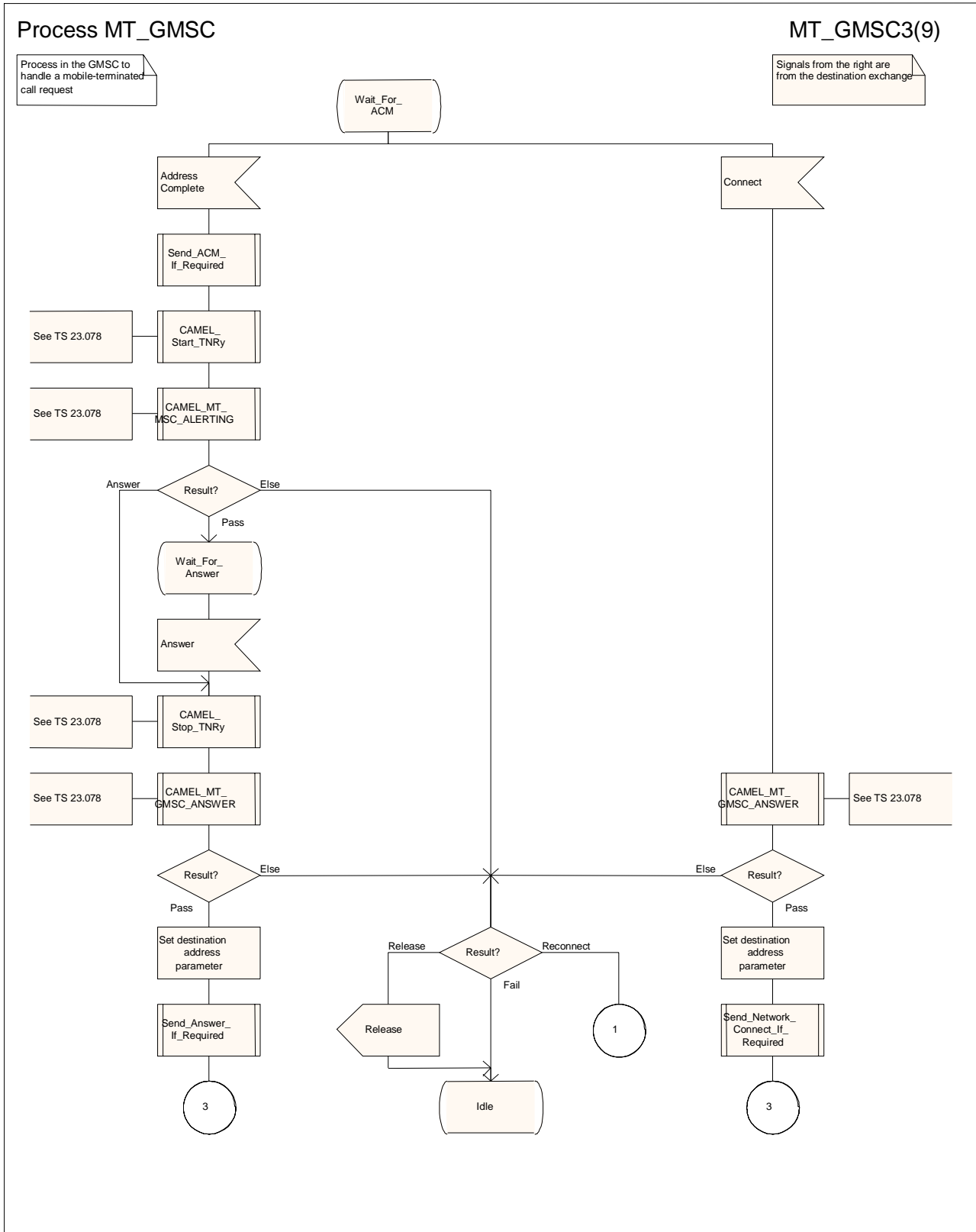


Figure 36b: Process MT\_GMSC (sheet 2)



**Figure 36c: Process MT\_GMSC (sheet 3)**

Process MT\_GMSC

MT\_GMSC4(9)

Process in the GMSC to handle a mobile-terminated call request

Signals from the right are from the process MT\_CF\_MSC

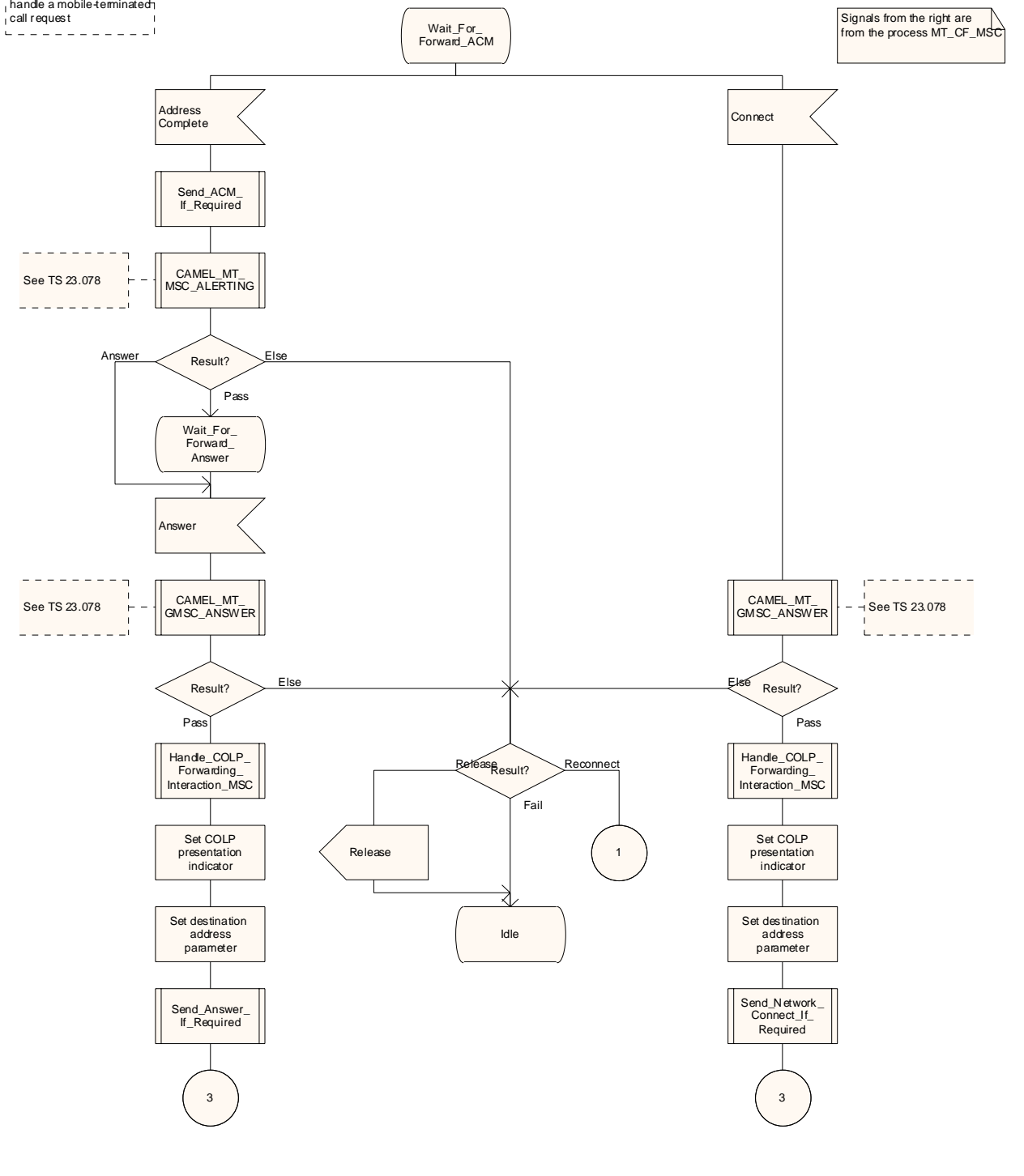


Figure 36d: Process MT\_GMSC (sheet 4)

Process MT\_GMSC

MT\_GMSC5(9)

Process in the GMSC to handle a mobile-terminated call request

Signals to/from the right are to/from the destination MSC unless marked otherwise

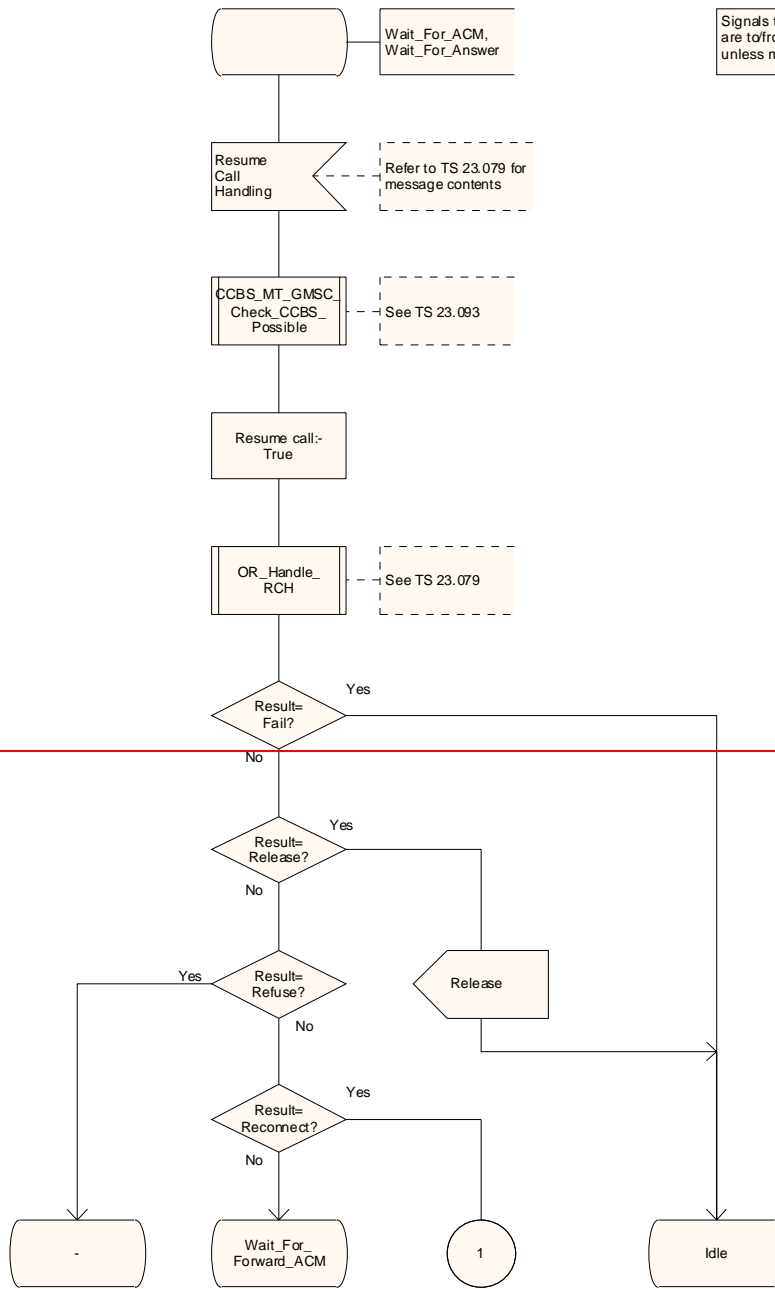


Figure 36e: Process MT\_GMSC (sheet 5)



Process MT\_GMSC

MT\_GMSC5(9)

Process in the GMSC to handle a mobile-terminated call request

Signals to/from the right are to/from the destination MSC unless marked otherwise

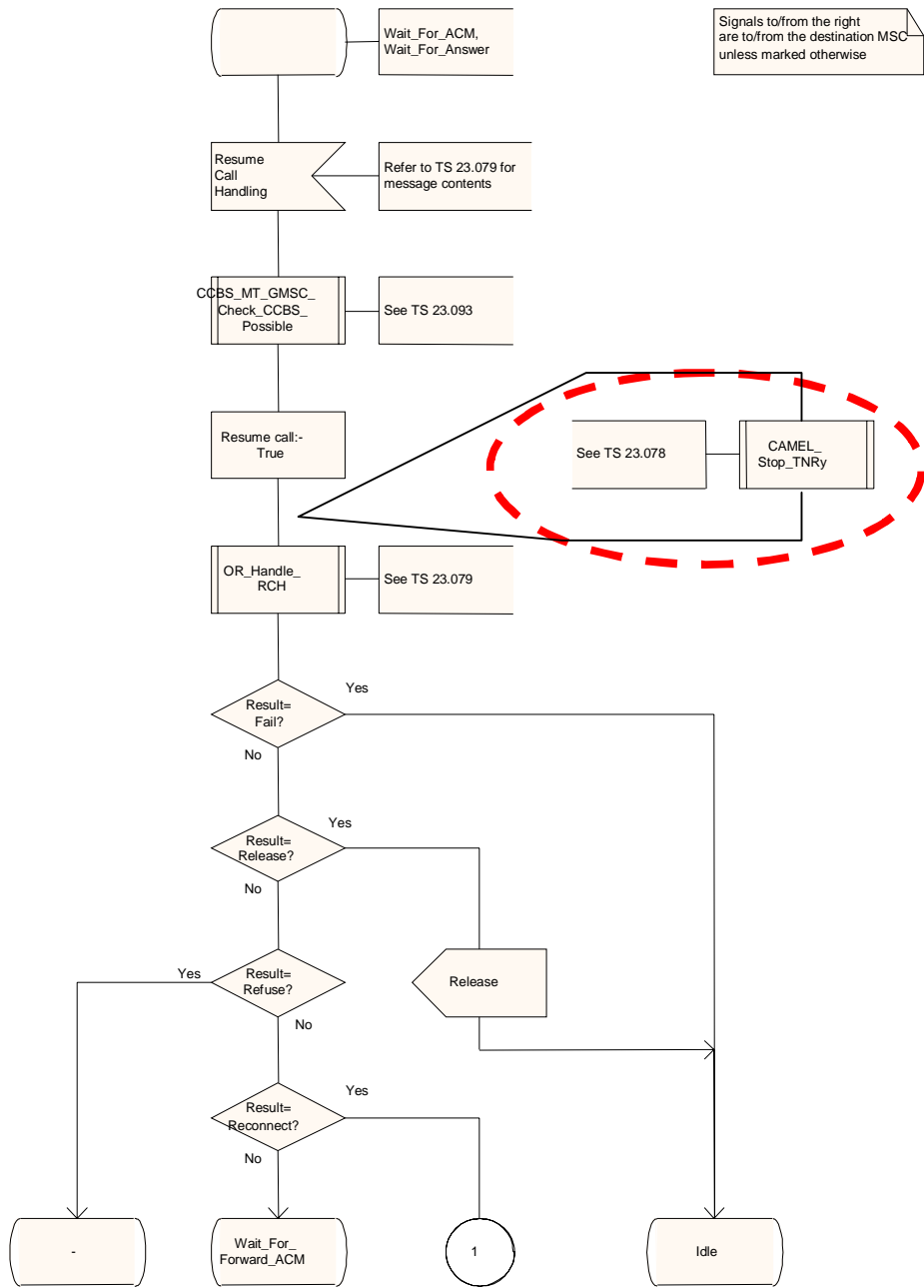


Figure 36e: Process MT\_GMSC (sheet 5)

Process MT\_GMSC

MT\_GMSC6(9)

Process in the GMSC to handle a mobile-terminated call request

Signals to/from the left are to/from the originating MSC, signals to/from the right are to/from the destination MSC unless marked otherwise

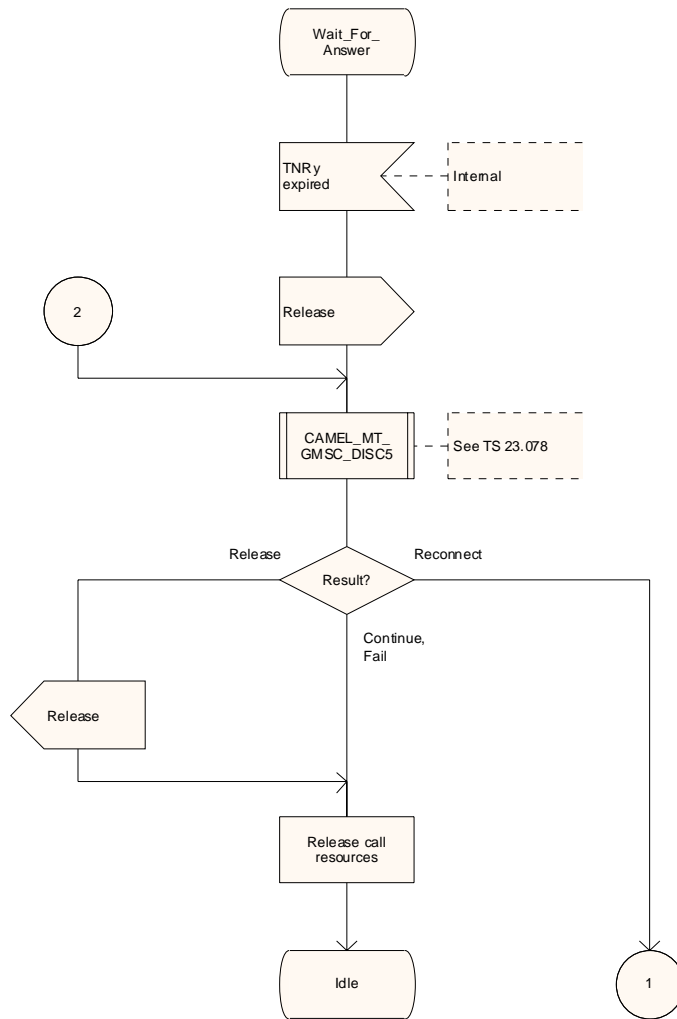
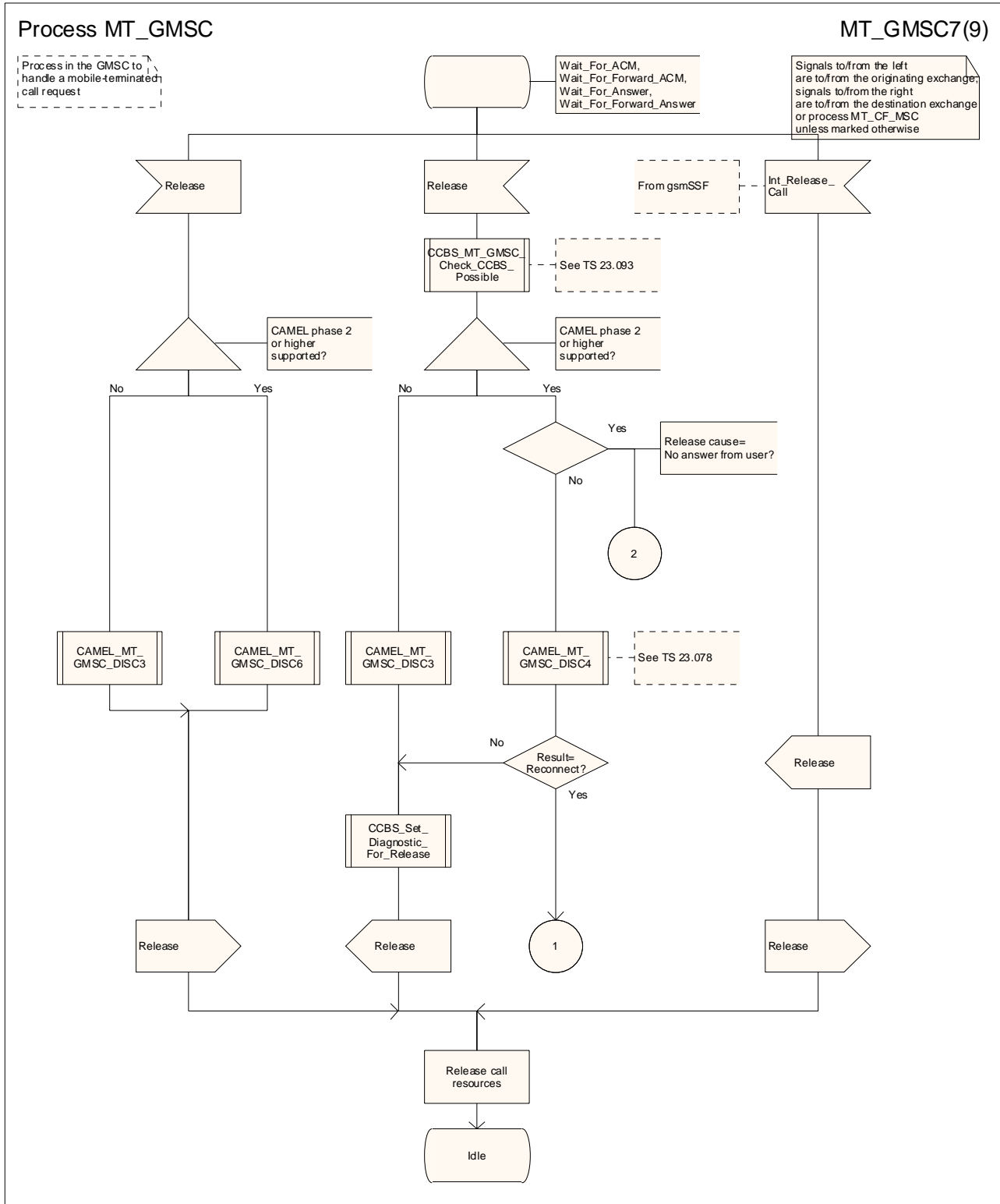


Figure 36f: Process MT\_GMSC (sheet 6)



**Figure 36g: Process MT\_GMSC (sheet 7)**

Process MT\_GMSC

MT\_GMSC8(9)

Process in the GMSC to handle a mobile-terminated call request

Signals to/from the left are to/from the originating exchange, signals to/from the right are to/from the destination exchange or the process MT\_CF\_MSC unless marked otherwise

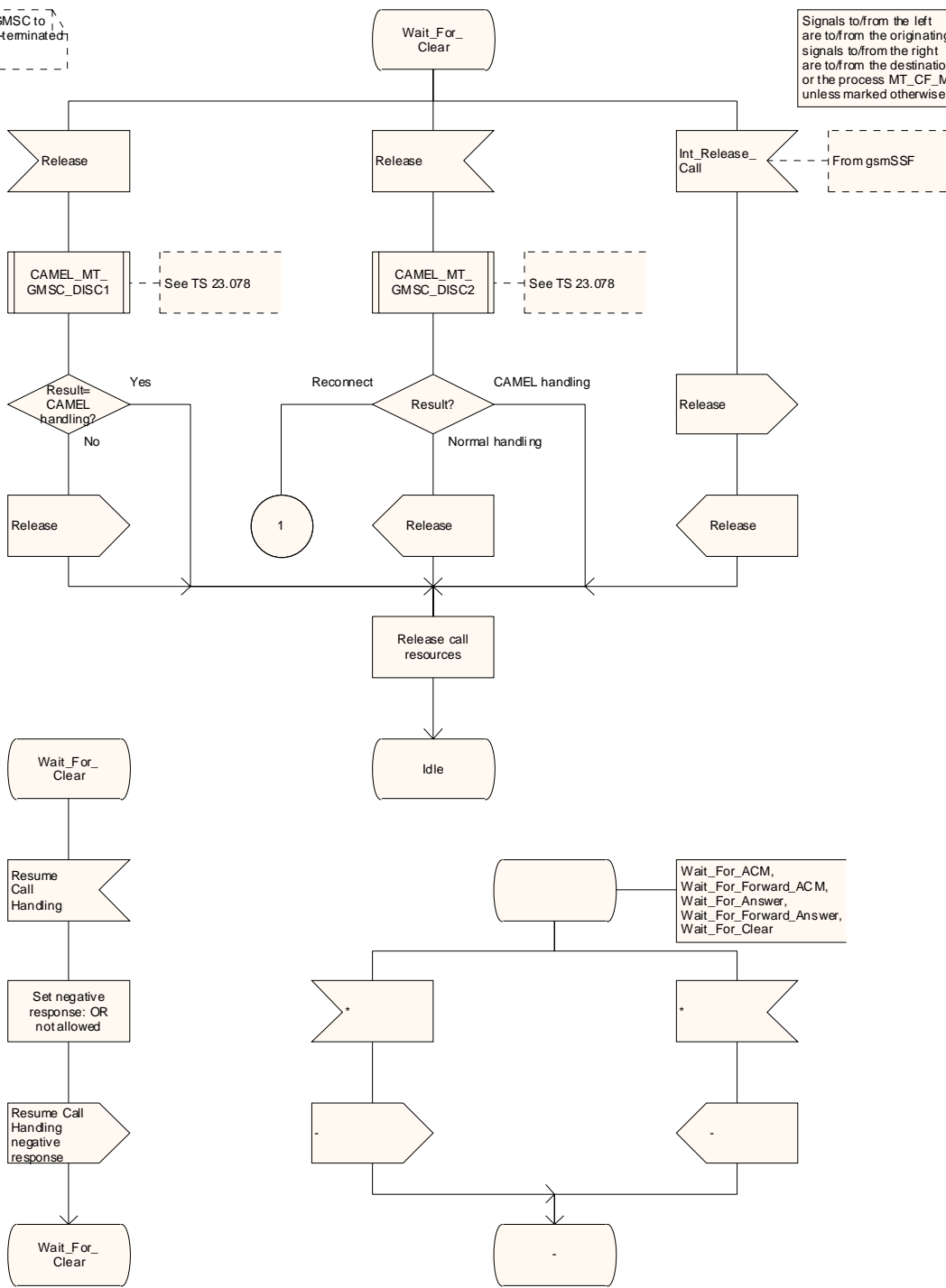


Figure 36h: Process MT\_GMSC (sheet 8)

Process in the GMSC to handle a mobile-terminated call request

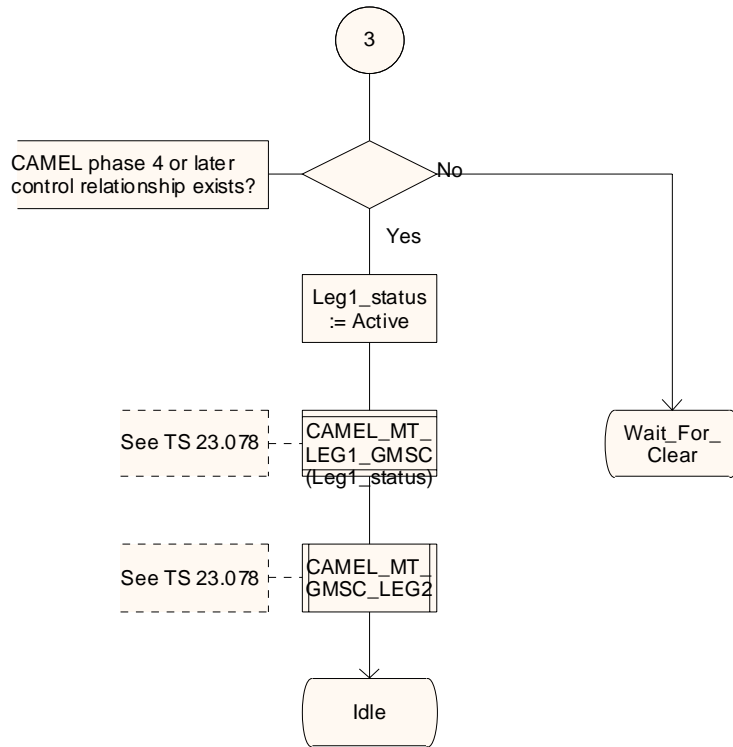


Figure 36i: Process MT\_GMSC (sheet 9)

\*\*\* End of Document \*\*\*

3GPP TSG CN WG2 Meeting #29  
San Diego, USA, 19<sup>th</sup> – 23<sup>rd</sup> May 2003

N2-030202

3GPP TSG CN WG4 Meeting #19  
San Diego, USA, 19<sup>th</sup> – 23<sup>rd</sup> May 2003

N4-030420

CR-Form-v7

## CHANGE REQUEST

⌘ **23.018 CR 122** ⌘ rev **-** ⌘ Current version: **5.6.0** ⌘

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

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Release Result from CAMEL_MT_GMSC_Notify_CF
<b>Source:</b>	⌘ CN4
<b>Work item code:</b>	⌘ CAMEL4
<b>Date:</b>	⌘ 10/03/2003
<b>Category:</b>	⌘ <b>F</b>
	<p>Use <u>one</u> of the following categories:</p> <p><b>F</b> (correction)  <b>A</b> (corresponds to a correction in an earlier release)  <b>B</b> (addition of feature),  <b>C</b> (functional modification of feature)  <b>D</b> (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP <a href="#">TR 21.900</a>.</p>
<b>Release:</b>	⌘ <b>REL-5</b>
	<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)  R96 (Release 1996)  R97 (Release 1997)  R98 (Release 1998)  R99 (Release 1999)  Rel-4 (Release 4)  Rel-5 (Release 5)  Rel-6 (Release 6)</p>

<b>Reason for change:</b>	⌘ With the introduction of Call Party Handling, the return result "Release" was added to procedure CAMEL_MT_GMSC_Notify_CF. However, the handling of this result was not included in the calling procedure Obtain_Routeing_Address.
<b>Summary of change:</b>	⌘ Inclusion of the return result "Release" after procedure Obtain_Routeing_Address calls procedure CAMEL_MT_GMSC_Notify_CF. In this case, the handling of the "Release" result is the same as that of the "Fail" result.
<b>Consequences if not approved:</b>	⌘ No handling of the "Release" result.

<b>Clauses affected:</b>	⌘ 7.2.1.2												
<b>Other specs affected:</b>	<table border="1"> <tr> <td>Y</td> <td>N</td> <td></td> </tr> <tr> <td></td> <td>X</td> <td>Other core specifications</td> </tr> <tr> <td></td> <td>X</td> <td>Test specifications</td> </tr> <tr> <td></td> <td>X</td> <td>O&amp;M Specifications</td> </tr> </table>	Y	N			X	Other core specifications		X	Test specifications		X	O&M Specifications
Y	N												
	X	Other core specifications											
	X	Test specifications											
	X	O&M Specifications											
<b>Other comments:</b>	⌘												

**\*\*\* Section for Information from 23.078 \*\*\***

4.5.3.1 Retrieval of routing information in the GMSC

...

Procedure CAMEL\_MT\_GMSC\_Notify\_CF

1(1)

/\* Procedure in the GMSC to notify the gsmSSF that a call has encountered conditional call forwarding \*/

/\* Signals to/from the left are to/from the originating MSC; signals to/from the right are to/from the gsmSSF unless marked otherwise \*/

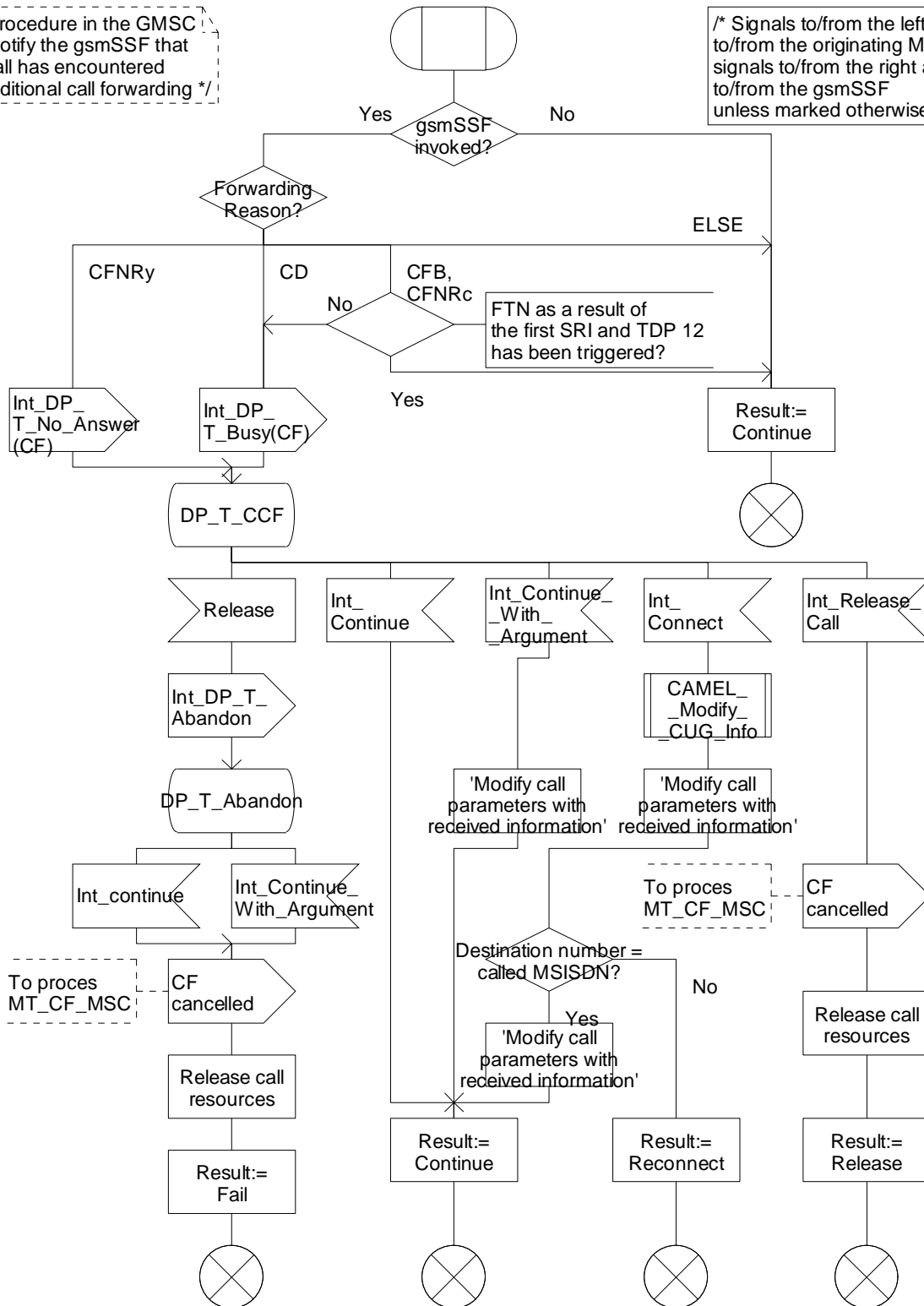


Figure 4.50-1: Procedure CAMEL\_MT\_GMSC\_Notify\_CF (sheet 1)

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**\*\*\* Modified Section from 23.018 \*\*\***

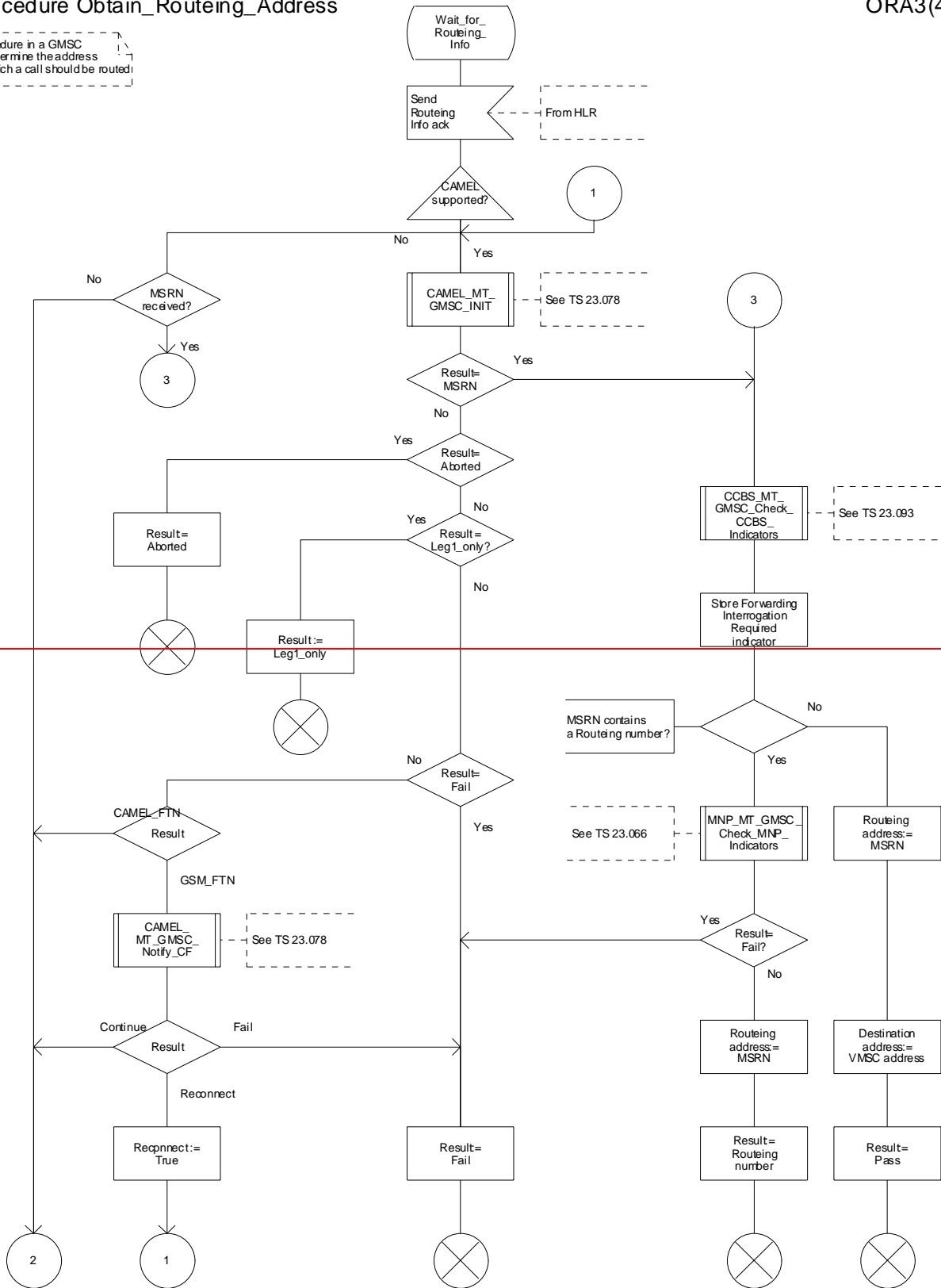
7.2.1.2 Procedure Obtain\_Routeing\_Address

...

Procedure Obtain\_Routeing\_Address

ORA3(4)

Procedure in a GMSC to determine the address to which a call should be routed



Procedure Obtain\_Routeing\_Address

ORA3(4)

Procedure in a GMSC to determine the address to which a call should be routed

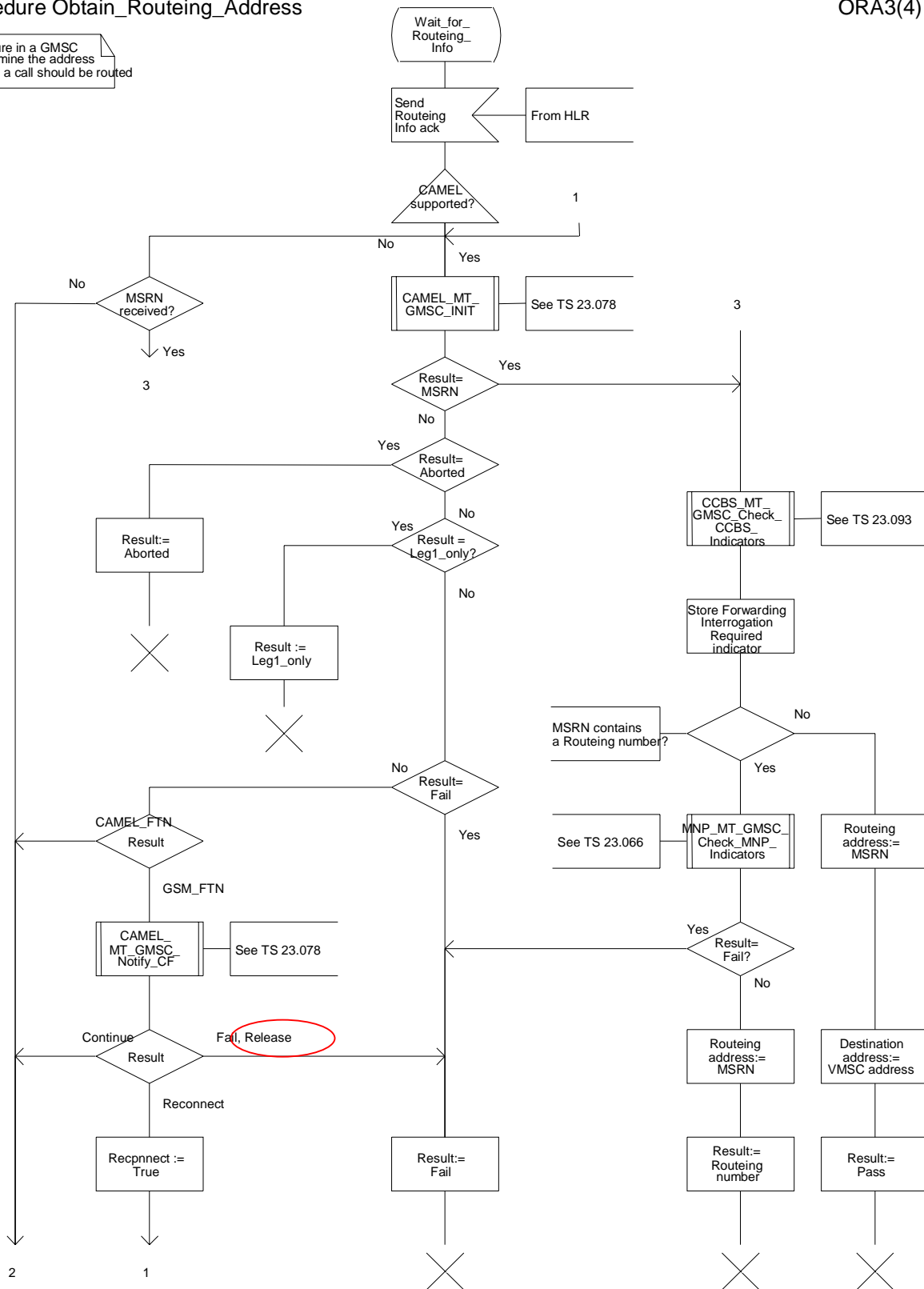


Figure 37c: Procedure Obtain\_Routeing\_Address (sheet 3)

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**\*\*\* End of Document \*\*\***

## CHANGE REQUEST

⌘ **29.002** CR **618** ⌘ rev **1** ⌘ Current version: **5.5.0** ⌘

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Correction to naming of PRN parameter		
<b>Source:</b>	⌘ CN4		
<b>Work item code:</b>	⌘ CAMEL4	<b>Date:</b>	⌘ 21 May 20003
<b>Category:</b>	⌘ F	<b>Release:</b>	⌘ 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)
			Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

<b>Reason for change:</b>	⌘ The present CR corrects the following errors in TS 29.002.  The MAP PRN that includes the parameters “offeredCamel4CSIsInGMSC” and “supportedCamelPhasesInGMSC” may be the result of MAP SRI from the gsmSCF. In that case, these IEs pertain to capability in the gsmSCF, not to capability in the GMSC.
<b>Summary of change:</b>	⌘ In order to specify that the parameters “offeredCamel4CSIsInGMSC” and “supportedCamelPhasesInGMSC” relate not only to GMSC but also to gsmSCF, the wording “InGMSC” is replaced by “inInterrogatingNode”.
<b>Consequences if not approved:</b>	⌘ Incompatibility between MAP SRI and MAP PRN will remain introducing inconsistencies and difficulties in implementing SCP-initiated calls.

<b>Clauses affected:</b>	⌘ 7.6, 10.2, 17.7.3										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> </table>	Y	N		X		X		X	Other core specifications	⌘
Y	N										
	X										
	X										
	X										
		Test specifications									
		O&M Specifications									
<b>Other comments:</b>	⌘										

## — First modified section —

## 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	Location Information	7.6.2.30
Access connection status	7.6.9.3	Location Information for GPRS	7.6.2.30a
Access signalling information	7.6.9.5	Location update type	7.6.9.6
Additional Absent Subscriber Diagnostic SM	7.6.8.12	Long Forwarded-to Number	7.6.2.22A
Additional Location Estimate	7.6.11.21	Long FTN Supported	7.6.2.22B
Additional number	7.6.2.46	Lower Layer Compatibility	7.6.3.42
Additional signal info	7.6.9.10	LSA Information	7.6.3.56
Additional SM Delivery Outcome	7.6.8.11	LSA Information Withdraw	7.6.3.58
Age Indicator	7.6.3.72	MC Information	7.6.4.48
Alert Reason	7.6.8.8	MC Subscription Data	7.6.4.47
Alert Reason Indicator	7.6.8.10	Mobile Not Reachable Reason	7.6.3.51
Alerting Pattern	7.6.3.44	Modification request for CSI	7.6.3.81
All GPRS Data	7.6.3.53	Modification request for SS Information	7.6.3.82
All Information Sent	7.6.1.5	More Messages To Send	7.6.8.7
AN-apdu	7.6.9.1	MS ISDN	7.6.2.17
APN	7.6.2.42	MSC number	7.6.2.11
Authentication set list	7.6.7.1	MSISdn-Alert	7.6.2.29
B-subscriber Address	7.6.2.36	Multicall Bearer Information	7.6.2.52
B subscriber Number	7.6.2.48	Multiple Bearer Requested	7.6.2.53
B subscriber subaddress	7.6.2.49	Multiple Bearer Not Supported	7.6.2.54
Basic Service Group	7.6.4.40	MWD status	7.6.8.3
Bearer service	7.6.4.38	NbrUser	7.6.4.45
BSSMAP Service Handover	7.6.6.5	Network Access Mode	7.6.3.50
BSSMAP Service Handover List	7.6.6.5A	Network node number	7.6.2.43
Call Barring Data	7.6.3.83	Network resources	7.6.10.1
Call barring feature	7.6.4.19	Network signal information	7.6.9.8
Call barring information	7.6.4.18	New password	7.6.4.20
Call Direction	7.6.5.8	No reply condition timer	7.6.4.7
Call Forwarding Data	7.6.3.84	North American Equal Access preferred Carrier Id	7.6.2.34
Call Info	7.6.9.9	Number Portability Status	7.6.5.14
Call reference	7.6.5.1	ODB Data	7.6.3.85
Call Termination Indicator	7.6.3.67	ODB General Data	7.6.3.9
Called number	7.6.2.24	ODB HPLMN Specific Data	7.6.3.10
Calling number	7.6.2.25	OMC Id	7.6.2.18
CAMEL Subscription Info	7.6.3.78	Originally dialled number	7.6.2.26
CAMEL Subscription Info Withdraw	7.6.3.38	Originating entity number	7.6.2.10
Cancellation Type	7.6.3.52	Override Category	7.6.4.4
Category	7.6.3.1	P-TMSI	7.6.2.47
CCBS Feature	7.6.5.8	PDP-Address	7.6.2.45
CCBS Request State	7.6.4.49	PDP-Context identifier	7.6.3.55
Channel Type	7.6.5.9	PDP-Type	7.6.2.44
Chosen Channel	7.6.5.10	Pre-paging supported	7.6.5.15
Chosen Radio Resource Information	7.6.6.10B	Previous location area Id	7.6.2.4
Ciphering mode	7.6.7.7	Protocol Id	7.6.9.7
Cksn	7.6.7.5	Provider error	7.6.1.3
CLI Restriction	7.6.4.5		

CM service type	7.6.9.2	PS LCS Not Supported by UE	7.6.11.10
Complete Data List Included	7.6.3.54	QoS-Subscribed	7.6.3.47
CS Allocation Retention priority	7.6.3.87	Radio Resource Information	7.6.6.10
CS LCS Not Supported by UE	7.6.11.9	Radio Resource List	7.6.6.10A
CUG feature	7.6.3.26	RANAP Service Handover	7.6.6.6
CUG index	7.6.3.25	Rand	7.6.7.2
CUG info	7.6.3.22	LCS-Reference Number	7.6.11.23
CUG interlock	7.6.3.24	Regional Subscription Data	7.6.3.11
CUG Outgoing Access indicator	7.6.3.8	Regional Subscription Response	7.6.3.12
CUG subscription	7.6.3.23	Relocation Number List	7.6.2.19A
CUG Subscription Flag	7.6.3.37	Requested Info	7.6.3.31
Current location area Id	7.6.2.6	Requested Subscription Info	7.6.3.86
Current password	7.6.4.21	Roaming number	7.6.2.19
Deferred MT-LR Data	7.6.11.3	Roaming Restricted In SGSN Due To Unsupported Feature	7.6.3.49
Deferred MT-LR Response Indicator	7.6.11.2	Roaming Restriction Due To Unsupported Feature	7.6.3.13
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
Extensible Call barring information for CSE	7.6.3.79	SIWF Number	7.6.2.35
Extensible Forwarding feature	7.6.3.16	SoLSA Support Indicator	7.6.3.57
Extensible Forwarding info	7.6.3.15	SM Delivery Outcome	7.6.8.6
Extensible Forwarding information for CSE	7.6.3.80	SM-RP-DA	7.6.8.1
Extensible Forwarding Options	7.6.3.18	SM-RP-MTI	7.6.8.16
Extensible No reply condition timer	7.6.3.19	SM-RP-OA	7.6.8.2
Extensible QoS-Subscribed	7.6.3.74	SM-RP-PRI	7.6.8.5
Extensible SS-Data	7.6.3.29	SM-RP-SMEA	7.6.8.17
Extensible SS-Info	7.6.3.14	SM-RP-UI	7.6.8.4
Extensible SS-Status	7.6.3.17	Sres	7.6.7.3
Extensible Teleservice	7.6.3.4	SS-Code	7.6.4.1
External Signal Information	7.6.9.4	SS-Data	7.6.4.3
Failure Cause	7.6.7.9	SS-Event	7.6.4.42
Forwarded-to number	7.6.2.22	SS-Event-Data	7.6.4.43
Forwarded-to subaddress	7.6.2.23	SS-Info	7.6.4.24
Forwarding feature	7.6.4.16	SS-Status	7.6.4.2
Forwarding information	7.6.4.15	Stored location area Id	7.6.2.5
Forwarding Options	7.6.4.6	Subscriber State	7.6.3.30
GERAN Classmark	7.6.6.4	Subscriber Status	7.6.3.7
GGSN address	7.6.2.40	Super-Charger Supported in HLR	7.6.3.70
GGSN number	7.6.2.41	Super-Charger Supported in Serving Network Entity	7.6.3.71
GMSC CAMEL Subscription Info	7.6.3.34	Offered Camel4 CSIs	7.6.3.36D
GPRS enhancements support indicator	7.6.3.73	Offered Camel4 CSIs in <a href="#">GMSCinterrogating node</a>	7.6.3.36E
GPRS Node Indicator	7.6.8.14	Offered Camel4 CSIs in VMSC	7.6.3.36F
GPRS Subscription Data	7.6.3.46	Offered Camel4 CSIs in VLR	7.6.3.36B
GPRS Subscription Data Withdraw	7.6.3.45	Offered Camel4 CSIs in SGSN	7.6.3.36C
GPRS Support Indicator	7.6.8.15	Offered Camel4 Functionalities <a href="#">Supported CAMEL Phases</a>	7.6.3.36G <a href="#">7.6.3.36X</a>
Group Id	7.6.2.33	Supported CAMEL Phases in VLR	7.6.3.36
GSM bearer capability	7.6.3.6	Supported CAMEL Phases in SGSN <a href="#">Supported CAMEL Phases in interrogating node</a>	7.6.3.36A <a href="#">7.6.3.36Y</a>
gsmSCF Address	7.6.2.58	Supported GAD Shapes	7.6.11.20
gsmSCF Initiated Call	7.6.3.c	Supported LCS Capability Sets	7.6.11.17
Guidance information	7.6.4.22	Suppress Incoming Call Barring	7.6.3.b
Handover number	7.6.2.21	Suppress T-CSI	7.6.3.33
High Layer Compatibility	7.6.3.43	Suppress VT-CSI	7.6.3.a
HLR Id	7.6.2.15	Suppression of Announcement	7.6.3.32
HLR number	7.6.2.13	Target cell Id	7.6.2.8
HO-Number Not Required	7.6.6.7	Target location area Id	7.6.2.7
IMEI	7.6.2.3	Target RNC Id	7.6.2.8A

IMSI	7.6.2.1	Target MSC number	7.6.2.12
Integrity Protection Information	7.6.6.8	Teleservice	7.6.4.39
Inter CUG options	7.6.3.27	TMSI	7.6.2.2
Intra CUG restrictions	7.6.3.28	Trace reference	7.6.10.2
Invoke Id	7.6.1.1	Trace type	7.6.10.3
ISDN Bearer Capability	7.6.3.41	User error	7.6.1.4
IST Alert Timer	7.6.3.66	USSD Data Coding Scheme	7.6.4.36
IST Information Withdrawn	7.6.3.68	USSD String	7.6.4.37
IST Support Indicator	7.6.3.69	UU Data	7.6.5.12
LCS Codeword	7.6.11.18	UUS CF Interaction	7.6.5.13
LCS Information	7.6.3.60	VBS Data	7.6.3.40
LCS Service Type Id	7.6.11.15	VGCS Data	7.6.3.39
Kc	7.6.7.4	VLR CAMEL Subscription Info	7.6.3.35
Linked Id	7.6.1.2	VLR number	7.6.2.14
LMSI	7.6.2.16	VPLMN address allowed	7.6.3.48
		Zone Code	7.6.2.28

## 7.6.1 Common parameters

The following set of parameters is used in several MAP service-primitives.



— Next modified section —

### 7.6.3 Subscriber management parameters

...

#### 7.6.3.34 GMSC CAMEL Subscription Info

This parameter contains CAMEL subscription information, i.e. O-CSI and/or D-CSI and/or T-CSI, which indicates to the GMSC that originating and/or terminating CAMEL services shall be invoked for the incoming call.

#### 7.6.3.35 VLR CAMEL Subscription Info

This parameter identifies the subscriber as having CAMEL services that are invoked in the MSC or VLR.

#### 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.

#### [7.6.3.36x Supported CAMEL Phases](#)

[This parameter indicates which phases of CAMEL are supported as defined in 3GPP TS 23.078.](#)

#### [7.6.3.36y Supported CAMEL Phases in interrogating node](#)

[This parameter indicates which phases of CAMEL are supported as defined in 3GPP TS 23.078. The interrogating node may be a GMSC or a gsmSCF.](#)

#### 7.6.3.36B Offered CAMEL4 CSIs in the VLR

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

#### 7.6.3.36C Offered CAMEL4 CSIs in the SGSN

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

#### 7.6.3.36D Offered CAMEL4 CSIs

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

#### 7.6.3.36E Offered CAMEL4 CSIs in ~~GMSC~~interrogating node

This parameter indicates which CSIs of CAMEL phase 4 are offered in the GMSC or in the gsmSCF as defined in 3GPP TS 23.078.

#### 7.6.3.36F Offered CAMEL4 CSIs in VMSC

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

#### 7.6.3.36G Offered CAMEL4 Functionalities

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

### 7.6.3.37 CUG Subscription Flag

This parameter indicates ~~a~~ that a subscriber with a T-CSI also has a CUG subscription. It is defined in 3GPP TS 23.078.

— Next modified section —

## 10.2 MAP\_PROVIDE\_ROAMING\_NUMBER service

### 10.2.1 Definition

This service is used between the HLR and VLR. The service is invoked by the HLR to request a VLR to send back a roaming number to enable the HLR to instruct the GMSC to route an incoming call to the called MS.

This is a confirmed service which uses the primitives described in table 10.2/1.

### 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 <a href="#">GMSCinterrogating node</a>	C	C(=)		
Additional Signal Info	C	C(=)		
Pre-paging supported	C	C(=)		
Long FTN Supported	C	C(=)		
Suppress VT-CSI	C	C(=)		
Roaming Number			C	C(=)
Offered CAMEL 4 CSIs in <a href="#">GMSCinterrogating node</a>	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:

- a conditional parameter whose use is defined only in 3GPP TS 23.078 [98] shall be absent if the sending entity does not support CAMEL;
- a conditional parameter whose use is defined only in 3GPP TS 23.079 [99] shall be absent if the sending entity does not support optimal routing;
- a conditional parameter whose use is defined only in 3GPP TS 23.078 [98] & 3GPP TS 23.079 [99] shall be absent if the sending entity supports neither CAMEL nor optimal routing.

#### IMSI

This is the IMSI of the called Subscriber.

#### MSC Number

This is the ISDN number assigned to the MSC currently serving the MS. The MSC number will have been stored in the HLR as provided at location updating.

#### MSISDN

See 3GPP TS 23.018 [97] for the use of this parameter and the conditions for its presence.

#### LMSI

See 3GPP TS 23.018 [97] for the use of this parameter and the conditions for its presence.

#### GSM Bearer Capability

See 3GPP TS 23.018 [97] for the use of this parameter and the conditions for its presence.

This information is passed according to the rules specified in TS 3GPP TS 29.007 [56].

There may be two GSM Bearer Capabilities supplied.

#### Network Signal Info

See 3GPP TS 23.018 [97] for the conditions for the presence of the components of this parameter.

#### Suppression Of Announcement

The use of this parameter and the requirements for its presence are specified in 3GPP TS 23.078 [98].

#### Call Reference Number

The use of this parameter and the conditions for its presence are specified in 3GPP TS 23.078 [98] and 3GPP TS 23.079 [99].

#### GMSC Address

The use of this parameter and the conditions for its presence are specified in 3GPP TS 23.078 [98] and 3GPP TS 23.079 [99].

#### OR Interrogation

See 3GPP TS 23.079 [99] for the use of this parameter and the conditions for its presence.

#### OR Not Supported in GMSC

See 3GPP TS 23.079 [99] for the use of this parameter and the conditions for its presence.

#### Supported CAMEL Phases in ~~GMSC~~interrogating node

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

#### Alerting Pattern

See 3GPP TS 23.078 [98] for the use of this parameter and the conditions for its presence.

#### CCBS Call

See 3GPP TS 23.093 [107] for the use of this parameter and the conditions for its presence.

#### Additional Signal Info

See 3GPP TS 23.081 [27] for the conditions for the presence of the components of this parameter.

#### Pre-paging supported

See 3GPP TS 23.018 for the use of this parameter and the conditions for its presence.

#### Long FTN supported

See 3GPP TS 23.082 for the use of this parameter and the conditions for its presence.

Suppress VT-CSI

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

Offered CAMEL 4 CSIs in [GMSCinterrogating node](#)

This parameter is defined in clause ~~7.6.3.36E~~[7.6.3.36E](#).

Roaming Number

See 3GPP TS 23.018 [97] for the use of this parameter and the conditions for its presence.

User error

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

- Absent Subscriber;

This error will be returned if the IMSI detach flag is set.

- No Roaming Number Available;
- OR Not Allowed;

This indicates that the MAP\_PROVIDE\_ROAMING\_NUMBER indication included the OR interrogation indicator, but the VLR does not support optimal routeing.

- Facility Not Supported;
- System Failure;
- Data Missing;
- Unexpected Data Value.

See clause 7.6 for a definition of these reasons.

Provider error

These are defined in clause 7.6.

— Next modified section —

### 17.7.3 Call handling data types

...

```

ForwardingData ::= SEQUENCE {
    forwardedToNumber          [5] ISDN-AddressString          OPTIONAL,
    -- When this datatype is sent from an HLR which supports CAMEL Phase 2
    -- to a GMSC which supports CAMEL Phase 2 the GMSC shall not check the
    -- format of the number
    forwardedToSubaddress     [4] ISDN-SubaddressString       OPTIONAL,
    forwardingOptions          [6] ForwardingOptions           OPTIONAL,
    extensionContainer         [7] ExtensionContainer           OPTIONAL,
    ...,
    longForwardedToNumber     [8] FTN-AddressString            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,
    supportedCamelPhasesInGMSCInterrogatingNode [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,
    offeredCamel4CSIsInGMSCInterrogatingNode [20] OfferedCamel4CSIs  OPTIONAL
}

```

```

ProvideRoamingNumberRes ::= SEQUENCE {
    roamingNumber             ISDN-AddressString,
    extensionContainer        ExtensionContainer              OPTIONAL,
    ...}

```

```

ResumeCallHandlingArg ::= SEQUENCE {
    callReferenceNumber       [0] CallReferenceNumber          OPTIONAL,
    basicServiceGroup         [1] Ext-BasicServiceCode        OPTIONAL,
    forwardingData            [2] ForwardingData              OPTIONAL,
    imsi                      [3] IMSI                        OPTIONAL,
    cug-CheckInfo             [4] CUG-CheckInfo               OPTIONAL,
    o-CSI                     [5] O-CSI                       OPTIONAL,
    extensionContainer         [7] ExtensionContainer          OPTIONAL,
    ccbs-Possible              [8] NULL                       OPTIONAL,
    msisdN                    [9] ISDN-AddressString          OPTIONAL,
    uu-Data                   [10] UU-Data                     OPTIONAL,
    allInformationSent        [11] NULL                        OPTIONAL,
    ...,
    d-csi                     [12] D-CSI                       OPTIONAL,
    o-BcsmCamelTDPCriteriaList [13] O-BcsmCamelTDPCriteriaList OPTIONAL}

```

— End of Document —

## CHANGE REQUEST

⌘ **29.002** CR **619** ⌘ rev **1** ⌘ Current version: **6.1.0** ⌘

**Proposed change affects:** UICC apps  ME  Radio Access Network  Core Network

<b>Title:</b>	⌘ Correction to naming of PRN parameter		
<b>Source:</b>	⌘ CN4		
<b>Work item code:</b>	⌘ CAMEL4	<b>Date:</b>	⌘ 21 May 20003
<b>Category:</b>	⌘ A	<b>Release:</b>	⌘ Rel-6
	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)
			Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

<b>Reason for change:</b>	⌘ The present CR corrects the following errors in TS 29.002.  The MAP PRN that includes the parameters “offeredCamel4CSIsInGMSC” and “supportedCamelPhasesInGMSC” may be the result of MAP SRI from the gsmSCF. In that case, these IEs pertain to capability in the gsmSCF, not to capability in the GMSC.
<b>Summary of change:</b>	⌘ In order to specify that the parameters “offeredCamel4CSIsInGMSC” and “supportedCamelPhasesInGMSC” relate not only to GMSC but also to gsmSCF, the wording “InGMSC” is replaced by “inInterrogatingNode”.
<b>Consequences if not approved:</b>	⌘ Incompatibility between MAP SRI and MAP PRN will remain introducing inconsistencies and difficulties in implementing SCP-initiated calls.

<b>Clauses affected:</b>	⌘ 7.6, 10.2, 17.7.3										
<b>Other specs affected:</b>	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"> </td> <td style="text-align: center;">X</td> </tr> </table>	Y	N		X		X		X	Other core specifications	⌘
Y	N										
	X										
	X										
	X										
		Test specifications									
		O&M Specifications									
<b>Other comments:</b>	⌘										



## — First modified section —

## 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	Location Information	7.6.2.30
Access connection status	7.6.9.3	Location Information for GPRS	7.6.2.30a
Access signalling information	7.6.9.5	Location update type	7.6.9.6
Additional Absent Subscriber Diagnostic SM	7.6.8.12	Long Forwarded-to Number	7.6.2.22A
Additional Location Estimate	7.6.11.21	Long FTN Supported	7.6.2.22B
Additional number	7.6.2.46	Lower Layer Compatibility	7.6.3.42
Additional signal info	7.6.9.10	LSA Information	7.6.3.56
Additional SM Delivery Outcome	7.6.8.11	LSA Information Withdraw	7.6.3.58
Age Indicator	7.6.3.72	MC Information	7.6.4.48
Alert Reason	7.6.8.8	MC Subscription Data	7.6.4.47
Alert Reason Indicator	7.6.8.10	Mobile Not Reachable Reason	7.6.3.51
Alerting Pattern	7.6.3.44	Modification request for CSI	7.6.3.81
All GPRS Data	7.6.3.53	Modification request for SS Information	7.6.3.82
All Information Sent	7.6.1.5	More Messages To Send	7.6.8.7
AN-apdu	7.6.9.1	MS ISDN	7.6.2.17
APN	7.6.2.42	MSC number	7.6.2.11
Authentication set list	7.6.7.1	MSISdn-Alert	7.6.2.29
B-subscriber Address	7.6.2.36	Multicall Bearer Information	7.6.2.52
B subscriber Number	7.6.2.48	Multiple Bearer Requested	7.6.2.53
B subscriber subaddress	7.6.2.49	Multiple Bearer Not Supported	7.6.2.54
Basic Service Group	7.6.4.40	MWD status	7.6.8.3
Bearer service	7.6.4.38	NbrUser	7.6.4.45
BSSMAP Service Handover	7.6.6.5	Network Access Mode	7.6.3.50
BSSMAP Service Handover List	7.6.6.5A	Network node number	7.6.2.43
Call Barring Data	7.6.3.83	Network resources	7.6.10.1
Call barring feature	7.6.4.19	Network signal information	7.6.9.8
Call barring information	7.6.4.18	New password	7.6.4.20
Call Direction	7.6.5.8	No reply condition timer	7.6.4.7
Call Forwarding Data	7.6.3.84	North American Equal Access preferred Carrier Id	7.6.2.34
Call Info	7.6.9.9	Number Portability Status	7.6.5.14
Call reference	7.6.5.1	ODB Data	7.6.3.85
Call Termination Indicator	7.6.3.67	ODB General Data	7.6.3.9
Called number	7.6.2.24	ODB HPLMN Specific Data	7.6.3.10
Calling number	7.6.2.25	OMC Id	7.6.2.18
CAMEL Subscription Info	7.6.3.78	Originally dialled number	7.6.2.26
CAMEL Subscription Info Withdraw	7.6.3.38	Originating entity number	7.6.2.10
Cancellation Type	7.6.3.52	Override Category	7.6.4.4
Category	7.6.3.1	P-TMSI	7.6.2.47
CCBS Feature	7.6.5.8	PDP-Address	7.6.2.45
CCBS Request State	7.6.4.49	PDP-Context identifier	7.6.3.55
Channel Type	7.6.5.9	PDP-Type	7.6.2.44
Chosen Channel	7.6.5.10	Pre-paging supported	7.6.5.15
Chosen Radio Resource Information	7.6.6.10B	Previous location area Id	7.6.2.4
Ciphering mode	7.6.7.7	Protocol Id	7.6.9.7
Cksn	7.6.7.5	Provider error	7.6.1.3
CLI Restriction	7.6.4.5		

CM service type	7.6.9.2	PS LCS Not Supported by UE	7.6.11.10
Complete Data List Included	7.6.3.54	QoS-Subscribed	7.6.3.47
CS Allocation Retention priority	7.6.3.87	Radio Resource Information	7.6.6.10
CS LCS Not Supported by UE	7.6.11.9	Radio Resource List	7.6.6.10A
CUG feature	7.6.3.26	RANAP Service Handover	7.6.6.6
CUG index	7.6.3.25	Rand	7.6.7.2
CUG info	7.6.3.22	LCS-Reference Number	7.6.11.23
CUG interlock	7.6.3.24	Regional Subscription Data	7.6.3.11
CUG Outgoing Access indicator	7.6.3.8	Regional Subscription Response	7.6.3.12
CUG subscription	7.6.3.23	Relocation Number List	7.6.2.19A
CUG Subscription Flag	7.6.3.37	Requested Info	7.6.3.31
Current location area Id	7.6.2.6	Requested Subscription Info	7.6.3.86
Current password	7.6.4.21	Roaming number	7.6.2.19
Deferred MT-LR Data	7.6.11.3	Roaming Restricted In SGSN Due To Unsupported Feature	7.6.3.49
Deferred MT-LR Response Indicator	7.6.11.2	Roaming Restriction Due To Unsupported Feature	7.6.3.13
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
Extensible Call barring information for CSE	7.6.3.79	SIWF Number	7.6.2.35
Extensible Forwarding feature	7.6.3.16	SoLSA Support Indicator	7.6.3.57
Extensible Forwarding info	7.6.3.15	SM Delivery Outcome	7.6.8.6
Extensible Forwarding information for CSE	7.6.3.80	SM-RP-DA	7.6.8.1
Extensible Forwarding Options	7.6.3.18	SM-RP-MTI	7.6.8.16
Extensible No reply condition timer	7.6.3.19	SM-RP-OA	7.6.8.2
Extensible QoS-Subscribed	7.6.3.74	SM-RP-PRI	7.6.8.5
Extensible SS-Data	7.6.3.29	SM-RP-SMEA	7.6.8.17
Extensible SS-Info	7.6.3.14	SM-RP-UI	7.6.8.4
Extensible SS-Status	7.6.3.17	Sres	7.6.7.3
Extensible Teleservice	7.6.3.4	SS-Code	7.6.4.1
External Signal Information	7.6.9.4	SS-Data	7.6.4.3
Failure Cause	7.6.7.9	SS-Event	7.6.4.42
Forwarded-to number	7.6.2.22	SS-Event-Data	7.6.4.43
Forwarded-to subaddress	7.6.2.23	SS-Info	7.6.4.24
Forwarding feature	7.6.4.16	SS-Status	7.6.4.2
Forwarding information	7.6.4.15	Stored location area Id	7.6.2.5
Forwarding Options	7.6.4.6	Subscriber State	7.6.3.30
GERAN Classmark	7.6.6.4	Subscriber Status	7.6.3.7
GGSN address	7.6.2.40	Super-Charger Supported in HLR	7.6.3.70
GGSN number	7.6.2.41	Super-Charger Supported in Serving Network Entity	7.6.3.71
GMSC CAMEL Subscription Info	7.6.3.34	Offered Camel4 CSIs	7.6.3.36D
GPRS enhancements support indicator	7.6.3.73	Offered Camel4 CSIs in <a href="#">GMSCinterrogating node</a>	7.6.3.36E
GPRS Node Indicator	7.6.8.14	Offered Camel4 CSIs in VMSC	7.6.3.36F
GPRS Subscription Data	7.6.3.46	Offered Camel4 CSIs in VLR	7.6.3.36B
GPRS Subscription Data Withdraw	7.6.3.45	Offered Camel4 CSIs in SGSN	7.6.3.36C
GPRS Support Indicator	7.6.8.15	Offered Camel4 Functionalities <a href="#">Supported CAMEL Phases</a>	7.6.3.36G <a href="#">7.6.3.36X</a>
Group Id	7.6.2.33	Supported CAMEL Phases in VLR	7.6.3.36
GSM bearer capability	7.6.3.6	Supported CAMEL Phases in SGSN <a href="#">Supported CAMEL Phases in interrogating node</a>	7.6.3.36A <a href="#">7.6.3.36Y</a>
gsmSCF Address	7.6.2.58	Supported GAD Shapes	7.6.11.20
gsmSCF Initiated Call	7.6.3.c	Supported LCS Capability Sets	7.6.11.17
Guidance information	7.6.4.22	Suppress Incoming Call Barring	7.6.3.b
Handover number	7.6.2.21	Suppress T-CSI	7.6.3.33
High Layer Compatibility	7.6.3.43	Suppress VT-CSI	7.6.3.a
HLR Id	7.6.2.15	Suppression of Announcement	7.6.3.32
HLR number	7.6.2.13	Target cell Id	7.6.2.8
HO-Number Not Required	7.6.6.7	Target location area Id	7.6.2.7
IMEI	7.6.2.3	Target RNC Id	7.6.2.8A

IMSI	7.6.2.1	Target MSC number	7.6.2.12
Integrity Protection Information	7.6.6.8	Teleservice	7.6.4.39
Inter CUG options	7.6.3.27	TMSI	7.6.2.2
Intra CUG restrictions	7.6.3.28	Trace reference	7.6.10.2
Invoke Id	7.6.1.1	Trace type	7.6.10.3
ISDN Bearer Capability	7.6.3.41	User error	7.6.1.4
IST Alert Timer	7.6.3.66	USSD Data Coding Scheme	7.6.4.36
IST Information Withdrawn	7.6.3.68	USSD String	7.6.4.37
IST Support Indicator	7.6.3.69	UU Data	7.6.5.12
LCS Codeword	7.6.11.18	UUS CF Interaction	7.6.5.13
LCS Information	7.6.3.60	VBS Data	7.6.3.40
LCS Service Type Id	7.6.11.15	VGCS Data	7.6.3.39
Kc	7.6.7.4	VLR CAMEL Subscription Info	7.6.3.35
Linked Id	7.6.1.2	VLR number	7.6.2.14
LMSI	7.6.2.16	VPLMN address allowed	7.6.3.48
		Zone Code	7.6.2.28

## 7.6.1 Common parameters

The following set of parameters is used in several MAP service-primitives.

— Next modified section —

### 7.6.3 Subscriber management parameters

...

#### 7.6.3.34 GMSC CAMEL Subscription Info

This parameter contains CAMEL subscription information, i.e. O-CSI and/or D-CSI and/or T-CSI, which indicates to the GMSC that originating and/or terminating CAMEL services shall be invoked for the incoming call.

#### 7.6.3.35 VLR CAMEL Subscription Info

This parameter identifies the subscriber as having CAMEL services that are invoked in the MSC or VLR.

#### 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.

#### [7.6.3.36x Supported CAMEL Phases](#)

[This parameter indicates which phases of CAMEL are supported as defined in 3GPP TS 23.078.](#)

#### [7.6.3.36y Supported CAMEL Phases in interrogating node](#)

[This parameter indicates which phases of CAMEL are supported as defined in 3GPP TS 23.078. The interrogating node may be a GMSC or a gsmSCF.](#)

#### 7.6.3.36B Offered CAMEL4 CSIs in the VLR

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

#### 7.6.3.36C Offered CAMEL4 CSIs in the SGSN

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

#### 7.6.3.36D Offered CAMEL4 CSIs

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

#### 7.6.3.36E Offered CAMEL4 CSIs in ~~GMSC~~interrogating node

This parameter indicates which CSIs of CAMEL phase 4 are offered in the GMSC or in the gsmSCF as defined in 3GPP TS 23.078.

#### 7.6.3.36F Offered CAMEL4 CSIs in VMSC

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

#### 7.6.3.36G Offered CAMEL4 Functionalities

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

### 7.6.3.37 CUG Subscription Flag

This parameter indicates ~~a~~ that a subscriber with a T-CSI also has a CUG subscription. It is defined in 3GPP TS 23.078.

— Next modified section —

## 10.2 MAP\_PROVIDE\_ROAMING\_NUMBER service

### 10.2.1 Definition

This service is used between the HLR and VLR. The service is invoked by the HLR to request a VLR to send back a roaming number to enable the HLR to instruct the GMSC to route an incoming call to the called MS.

This is a confirmed service which uses the primitives described in table 10.2/1.

### 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 <a href="#">GMSCinterrogating node</a>	C	C(=)		
Additional Signal Info	C	C(=)		
Pre-paging supported	C	C(=)		
Long FTN Supported	C	C(=)		
Suppress VT-CSI	C	C(=)		
Roaming Number			C	C(=)
Offered CAMEL 4 CSIs in <a href="#">GMSCinterrogating node</a>	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:

- a conditional parameter whose use is defined only in 3GPP TS 23.078 [98] shall be absent if the sending entity does not support CAMEL;
- a conditional parameter whose use is defined only in 3GPP TS 23.079 [99] shall be absent if the sending entity does not support optimal routing;
- a conditional parameter whose use is defined only in 3GPP TS 23.078 [98] & 3GPP TS 23.079 [99] shall be absent if the sending entity supports neither CAMEL nor optimal routing.

#### IMSI

This is the IMSI of the called Subscriber.

#### MSC Number

This is the ISDN number assigned to the MSC currently serving the MS. The MSC number will have been stored in the HLR as provided at location updating.

#### MSISDN

See 3GPP TS 23.018 [97] for the use of this parameter and the conditions for its presence.

#### LMSI

See 3GPP TS 23.018 [97] for the use of this parameter and the conditions for its presence.

#### GSM Bearer Capability

See 3GPP TS 23.018 [97] for the use of this parameter and the conditions for its presence.

This information is passed according to the rules specified in TS 3GPP TS 29.007 [56].

There may be two GSM Bearer Capabilities supplied.

#### Network Signal Info

See 3GPP TS 23.018 [97] for the conditions for the presence of the components of this parameter.

#### Suppression Of Announcement

The use of this parameter and the requirements for its presence are specified in 3GPP TS 23.078 [98].

#### Call Reference Number

The use of this parameter and the conditions for its presence are specified in 3GPP TS 23.078 [98] and 3GPP TS 23.079 [99].

#### GMSC Address

The use of this parameter and the conditions for its presence are specified in 3GPP TS 23.078 [98] and 3GPP TS 23.079 [99].

#### OR Interrogation

See 3GPP TS 23.079 [99] for the use of this parameter and the conditions for its presence.

#### OR Not Supported in GMSC

See 3GPP TS 23.079 [99] for the use of this parameter and the conditions for its presence.

#### Supported CAMEL Phases in ~~GMSC~~interrogating node

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

#### Alerting Pattern

See 3GPP TS 23.078 [98] for the use of this parameter and the conditions for its presence.

#### CCBS Call

See 3GPP TS 23.093 [107] for the use of this parameter and the conditions for its presence.

#### Additional Signal Info

See 3GPP TS 23.081 [27] for the conditions for the presence of the components of this parameter.

#### Pre-paging supported

See 3GPP TS 23.018 for the use of this parameter and the conditions for its presence.

#### Long FTN supported

See 3GPP TS 23.082 for the use of this parameter and the conditions for its presence.

Suppress VT-CSI

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

Offered CAMEL 4 CSIs in [GMSCinterrogating node](#)

This parameter is defined in clause ~~7.6.3.36E~~[7.6.3.36E](#).

Roaming Number

See 3GPP TS 23.018 [97] for the use of this parameter and the conditions for its presence.

User error

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

- Absent Subscriber;

This error will be returned if the IMSI detach flag is set.

- No Roaming Number Available;
- OR Not Allowed;

This indicates that the MAP\_PROVIDE\_ROAMING\_NUMBER indication included the OR interrogation indicator, but the VLR does not support optimal routeing.

- Facility Not Supported;
- System Failure;
- Data Missing;
- Unexpected Data Value.

See clause 7.6 for a definition of these reasons.

Provider error

These are defined in clause 7.6.



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### 17.7.3 Call handling data types

...

```

ForwardingData ::= SEQUENCE {
    forwardedToNumber          [5] ISDN-AddressString          OPTIONAL,
    -- When this datatype is sent from an HLR which supports CAMEL Phase 2
    -- to a GMSC which supports CAMEL Phase 2 the GMSC shall not check the
    -- format of the number
    forwardedToSubaddress     [4] ISDN-SubaddressString       OPTIONAL,
    forwardingOptions          [6] ForwardingOptions           OPTIONAL,
    extensionContainer         [7] ExtensionContainer           OPTIONAL,
    ...,
    longForwardedToNumber     [8] FTN-AddressString            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,
    supportedCamelPhasesInGMSCInterrogatingNode [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,
    offeredCamel4CSIsInGMSCInterrogatingNode [20] OfferedCamel4CSIs OPTIONAL
}

```

```

ProvideRoamingNumberRes ::= SEQUENCE {
    roamingNumber              ISDN-AddressString,
    extensionContainer         ExtensionContainer              OPTIONAL,
    ...}

```

```

ResumeCallHandlingArg ::= SEQUENCE {
    callReferenceNumber        [0] CallReferenceNumber         OPTIONAL,
    basicServiceGroup          [1] Ext-BasicServiceCode        OPTIONAL,
    forwardingData             [2] ForwardingData              OPTIONAL,
    imsi                       [3] IMSI                        OPTIONAL,
    cug-CheckInfo              [4] CUG-CheckInfo               OPTIONAL,
    o-CSI                      [5] O-CSI                       OPTIONAL,
    extensionContainer         [7] ExtensionContainer           OPTIONAL,
    ccbs-Possible              [8] NULL                       OPTIONAL,
    msisdn                     [9] ISDN-AddressString          OPTIONAL,
    uu-Data                    [10] UU-Data                     OPTIONAL,
    allInformationSent         [11] NULL                       OPTIONAL,
    ...,
    d-csi                      [12] D-CSI                       OPTIONAL,
    o-BcsmCamelTDPCriteriaList [13] O-BcsmCamelTDPCriteriaList  OPTIONAL }

```

— End of Document —