3GPP TSG CN Plenary **Tdoc NP-010056**
Meeting #11, Palm Springs, U.S.A
14th - 16th March 2001

Source: **TSG CN WG 2**

Title: **CRs to R99 on Work Item CAMEL3 23.078 part 2**

Agenda item: **6.2.1**

Document for: **APPROVAL**

Introduction:

This document contains **10** CRs on **R99** Work Item **"CAMEL3"**, that have been agreed by **TSG CN WG2**, and are forwarded to TSG CN Plenary meeting #11 for approval.

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
23.078	269	4	N2-010205	R99	Correction of reference	F	3.7.0
23.078	272		N2-010125	R99	Corrections to Information Flow Definitions	F	3.7.0
23.078	273	1	N2-010207	R99	Correction of the Location Information IE	F	3.7.0
23.078	274		N2-010158	R99	Correction of Interactions with Call Barring in CAMEL Phase 3.	F	3.7.0
23.078	279		N2-010163	R99	Correction of Triggering after Call Gapping in CAMEL Phase 3.	F	3.7.0
23.078	280	1	N2-010208	R99	Correction of SDL Set_Notification_Type	F	3.7.0
23.078	282	1	N2-010220	R99	Correction to vendor/operator specific GPRS charging response timer handling	F	3.7.0
23.078	283		N2-010215	R99	Marking of Location Number in InitialDP SMS as 'Conditional'	F	3.7.0
23.078	284	1	N2-010221	R99	Correction on checking DP criteria and sending VT/T-CSI	F	3.7.0
23.078	285		N2-010219	R99	Correction of Output Signals in Process Reconnected_MT_Call_VLR	F	3.7.0

3GPP TSG-CN2 Meeting #17 ***N2-010205***
Sofia Antipolis, France, 26 February – 2 March 2001

CR-Form-v3

CHANGE REQUEST

⌘ **23.078** **CR** **269** ⌘ rev **4** ⌘ Current version: **3.7.0** ⌘

*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 reference
Source:	⌘	Siemens
Work item code:	⌘	CAMEL3
Date:	⌘	26 February 2001
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
REL-4 *(Release 4)*
REL-5 *(Release 5)*

Reason for change:	⌘	To resolve inconsistency between the clause 2 and other clauses.
Summary of change:	⌘	Correction of the reference to the vocabulary (TS 0.04 -> TR 21.905) Correction of the date of publication of ITU-T Recommendation Q.1214 and Q.1224. Correction of the version of ETSI EN 301 070-1 Wrong reference number of ITU-T Q.1224 shall be corrected from [6] to [30] (This correction includes the correction of the reference ITU-T Recommendation Q.1214 -> Q.1224 for the description of PICs in the clause 4)
Consequences if not approved:	⌘	Possibility of confusion to the readers or reference to a wrong document.

Clauses affected:	⌘	2, 4.4.2. and 4.4.3.
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	This CR shall be supported as “consensus” in the meeting. Note to MCC: the proposal for the clause 2 overwrites CR 23.078-257. This CR includes editorial changes as follows; • Clause 4: SDL CAMEL_Check_CF_Interaction, which is currently placed at the end of clause 4, shall be placed in the subclause 4.7.2.1. • Clause 3.1 (Abbreviation), in the clause 7 (SMS) to improve readability.

*** First modified section in 2 ***

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

[1] 3GPP TR 21.905~~TS 01.04~~: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Vocabulary for 3GPP Specifications~~Digital cellular telecommunications system (Phase 2+); Abbreviations and acronyms~~".

[2] 3GPP TS 22.078: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Customised Applications for Mobile network Enhanced Logic (CAMEL);Service description, Stage 1~~Digital cellular telecommunications system (Phase 2+); Customized Applications for Mobile network Enhanced Logic (CAMEL) - Phase 3. Service description. Stage 1~~".

[3] 3GPP TS 23.018: "3rd Generation Partnership Project; Technical Specification Group Core Network; Basic call handling; Technical realization~~Digital cellular telecommunications system (Phase 2+); Basic call handling ; Technical realization~~".

[4] 3GPP TS 29.002: "3rd Generation Partnership Project; Technical Specification Group Core Network; Mobile Application Part (MAP) specification~~Digital cellular telecommunications system (Phase 2+); Mobile Application Part (MAP) specification~~".

[5] 3GPP TS 29.078: "3rd Generation Partnership Project; Technical Specification Group Core Network; Customised Applications for Mobile network Enhanced Logic (CAMEL) Phase 3 CAMEL Application Part (CAP) specification~~Digital cellular telecommunications system (Phase 2+); CAMEL Application Part (CAP) specification - Phase 3~~".

[6] ITU-T Recommendation Q.1214, October~~May~~ 1995: "Distributed Functional Plane for Intelligent Network CS-1".

[7] ETSI EN 301 070-1 (V1.2~~1~~.2~~1~~): "Integrated Services Digital Network (ISDN) ; Signalling System No.7 ; ISDN User Part (ISUP) version 3 interactions with the Intelligent Network Application Part (INAP) ; Part 1 : Protocol specification [ITU-T Recommendation Q.1600 (1997), modified]".

[8] 3GPP TS 23.090: "3rd Generation Partnership Project; Technical Specification Group Core Network; Unstructured Supplementary Service Data (USSD) - Stage 2~~Digital cellular telecommunication system (Phase 2+); Unstructured Supplementary Service Data (USSD) - Stage 2~~".

[9] 3GPP TS 23.085: "3rd Generation Partnership Project; Technical Specification Group Core Network; Closed User Group (CUG) supplementary service - Stage 2~~Digital cellular telecommunications system (Phase 2+); Closed User Group (CUG) supplementary services - Stage 2~~".

[10] ANSI T1.113-1995: "Signalling System No. 7~~(SS7), –~~ ISDN~~Integrated Services Digital Network (ISDN)~~ User Part".

[11] 3GPP TS 23.060: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; General Packet Radio Service (GPRS); Service description; Stage 2~~Digital cellular telecommunication system (Phase 2+); General Packet Radio Service (GPRS); Service Description; Stage 2~~".

[12] ITU-T Recommendation Q.1290, May 1998: "Glossary of terms used in the definition of intelligent networks".

[13] ITU-T Recommendation Q.850, May 1998: "Usage of cause and location in the Digital Subscriber Signalling System No. 1 and the Signalling System No. 7 ISDN User Part".

[14] ETSI EN 300 403-1: "Integrated Services Digital Network (ISDN); Digital Subscriber Signalling System No. one (DSS1) protocol; Signalling network layer for circuit-mode basic call control; Part 1: Protocol specification [ITU-T Recommendation Q.931 (1993), modified]".

[15] ITU-T Recommendation Q.762, DecemberSeptember 19991997: "Signalling System No. 7 – ISDN user part general functions of messages and signals".

[16] ITU-T Recommendation Q.763, December 1999: "Signalling System No. 7 – ISDN user part formats and codes".

[17] 3GPP TS 22.071: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Location Services (LCS); Service description, Stage 1Digital cellular telecommunications system (Phase 2+); Location Services (LCS); Service description, Stage 1".

[18] 3GPP TS 2335.305071: "3rd Generation Partnership Project; Technical Specification Radio Access Network; Stage 2 Functional Specification of UE Positioning in UTRANDigital cellular telecommunications system (Phase 2+); Location Services (LCS); Functional description, Stage 2".

[19] 3GPP TS 27.001: "3rd Generation Partnership Project; Technical Specification Group Core Network; Digital cellular telecommunications system (Phase 2+); General on Terminal Adaptation Functions (TAF) for Mobile Stations (MS)".

[20] ETSI EN 300 356-1 (V3.2.2): "Integrated Services Digital Network (ISDN); Signalling System No.7; ISDN User Part (ISUP) version 3 for the international interface; Part 1: Basic services[ITU-T Recommendations Q.761 to Q.764 (1997), modified]".

[21] 3GPP TS 23.040: "3rd Generation Partnership Project; Technical Specification Group Terminals; Technical realization of the Short Message Service (SMS)Digital cellular telecommunications system (Phase 2+); Technical realization of the Short Message Service (SMS); Point-to-Point (PP) (3GPP TS 23.040 version 7.1.0 Release 1998)".

[22] 3GPP TS 22.030: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Man-Machine Interface (MMI) of the User Equipment (UE)Digital cellular telecommunications system (Phase 2+); Man-Machine Interface (MMI) of the Mobile Station (MS)".

[23] 3GPP TS 23.073: "3rd Generation Partnership Project; Technical Specification Group Core Network; Support of Localised Service Area (SoLSA); Stage 2Digital cellular telecommunications system (Phase 2+); Support of Localised Service Area (SoLSA); Stage 2".

[24] 3GPP TS 22.002: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Circuit Bearer Services (BS) supported by a Public Land Mobile Network (PLMN)Bearer Services supported by a GSM PLMN (3GPP TS 22.002 version 3.0.0 Release 1999)".

[25] 3GPP TS 22.004: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; General on supplementary servicesGeneral on suppelementary services (3GPP TS 22.004 version 3.0.0 Release 1999)".

[26] 3GPP TS 23.011: "3rd Generation Partnership Project; Technical Specification Group Core Network; Technical realization of Supplementary ServicesTechnical realization of supplementary services - General Aspects (3GPP TS 23.011 version 3.0.0 Release 1999)".

[27] 3GPP TS 23.082: "3rd Generation Partnership Project; Technical Specification Group Core Network; Call Forwarding (CF) supplementary services - Stage 2Call Forwarding (CF) Supplemantary Services - Stage2 (3GPP TS 23.082 version 3.0.0 Release 1999)".

[28] 3GPP TS 23.084: "3rd Generation Partnership Project; Technical Specification Group Core Network; Multi Party (MPTY) supplementary service - Stage 2~~Digital cellular telecommunications system; Multi Party (MPTY) supplementary services - Stage 2~~".

[29] 3GPP TS 23.091: "3rd Generation Partnership Project; Technical Specification Group Core Network; Explicit Call Transfer (ECT) supplementary service - Stage 2~~Digital cellular telecommunications system; Explicit Call Transfer (ECT) supplementary service - Stage 2~~".

[30] ITU-T Recommendation Q.1224, ~~May 1999~~September 1997: "Distributed Functional Plane for Intelligent Network Capability Set 2".

[31] 3GPP TS 22.024: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Description of Charge Advice Information (CAI)".

[32] 3GPP TS 23.012: "3rd Generation Partnership Project; Technical Specification Group Core Network; Location management procedures".

[33] 3GPP TS 24.008: "3rd Generation Partnership Project; Technical Specification Group Core Network; Mobile radio interface layer 3 specification; Core Network Protocols – Stage 3~~Digital cellular telecommunications system (Phase 2+); Mobile radio interface layer 3 specification~~".

[34] 3GPP TS 23.032: "3rd Generation Partnership Project; Technical Specification Group Core Network; Universal Geographical Area Description (GAD)".

[35] 3GPP TS 23.072: "3rd Generation Partnership Project; Technical Specification Group Core Network; Call Deflection (CD) Supplementary Service - Stage 2~~Digital cellular telecommunications system (Phase 2+); Call Deflection (CD) Supplementary Service; Stage 2~~".

[36] 3GPP TS 23.079: "3rd Generation Partnership Project; Technical Specification Group Core Network; Support of Optimal Routeing (SOR); Technical realization".

[37] 3GPP TS 23.003: "3rd Generation Partnership Project; Technical Specification Group Core Network; Numbering, addressing and identification".

[38] 3GPP TS 23.093: "3rd Generation Partnership Project; Technical Specification Group Core Network; Technical realization of Completion of Calls to Busy Subscriber (CCBS) - Stage 2".

[39] 3GPP TS 23.088: "3rd Generation Partnership Project; Technical Specification Group Core Network; Call Barring (CB) Supplementary Services - Stage 2~~Technical realization of Completion of Call Barring (CB) Supplementary Services - Stage 2~~".

[40] GSM TR 03.47: “Example protocol stacks for interconnecting; Service Centre(s) (SC) and Mobile-services Switching Centre(s) (MSC)”.

*** Next modified section ***

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

Basic Call State Model (BCSM): BCSM provides a high-level model of GMSC- or MSC/VLR-activities required to establish and maintain communication paths for users. As such, it identifies a set of basic call activities in a GMSC or MSC/VLR and shows how these activities are joined together to process a basic call.

Call Control Function (CCF): CCF is the Call Control Function in the network that provides call/service processing and control (see ITU-T Recommendation Q.12~~1~~24 [30~~6~~]).

Detection Points (DP): points in processing at which notifications (to the service logic) can occur and transfer of control (to the gsmSCF) is possible are called Detection Points (DPs).

Dialled Service CAMEL Subscription Information (D-CSI): D-CSI identifies the subscriber as having originating CAMEL dialled services.

Forwarding MSC: MSC which is either an MSC invoking a GSM standardized call forwarding or call deflection service; or an MSC invoking a Camel based call forwarding service.

Gateway MLC (GMLC): functional entity that allows external LCS Clients to request real-time information about a Mobile Station. The information that can be requested from the GMLC is:

- location of Mobile Station

See 3GPP TS 22.071 [17] and 3GPP TS 23.071 [18] for information on the GMLC.

Geodetic Information: information defining the location of a mobile station, coded according to ITU-T Recommendation Q.763 [16]. The derivation of this information from other information defining the location of a mobile station is a network operator option. If an entity derives the geodetic information it shall also provide the equivalent geographical information.

Geographical Information: information defining the location of a mobile station, coded according to 3GPP TS 23.032 [34].

GPRS CAMEL Subscription Information (GPRS-CSI): GPRS-CSI identifies the subscriber as having GPRS CAMEL services.

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GSM Specialised Resource Function (gsmSRF): functional entity which provides various specialized resources. It interfaces with the gsmSCF and with the MSC. This entity is defined in ITU-T Recommendation Q.~~1214~~1224 ~~(~~[~~6~~30]~~)~~ with variations defined in the specification.

Location Information: indicates the location of the Mobile Station. The provision of location information is independent of the MS status. As part of the location information, an indication of the age of this information may be delivered.

*** Next modified section ***

3.2 Abbreviations

Abbreviations used in the present document are listed in TR 21.905~~GSM 01.04~~ [1].

For the purposes of the present document, the following abbreviations apply:

BCSM	Basic Call State Model
CAMEL	Customized Applications for Mobile network Enhanced Logic

*** Next modified section in 4.4.2.1 ***

Table 4.2: Description of O-BCSM DPs in the MSC

CAMEL Detection Point:	DP Type	Description:
DP Collected_Info	TDP-R	Indication that the O-CSI is analysed.
DP Analysed_Information	TDP-R (note 2)	Availability of routeing address and nature of address.
DP Route_Select_Failure	TDP-R (note 3), EDP-N, EDP-R	Indication that the call establishment failed.
DP O_Busy	EDP-N, EDP-R	Indication that: - a busy indication is received from the terminating party, - a not reachable event is determined upon a cause IE in the ISUP release message.
DP O_No_Answer	EDP-N, EDP-R	Indication that: - an application timer associated with the O_No_Answer DP expires, - a no answer event is determined upon a cause IE in the ISUP release message.
DP O_Answer	EDP-N, EDP-R	Indication that the call is accepted and answered by the terminating party.
DP O_Disconnect	EDP-N, EDP-R	A disconnect indication is received from the originating party or from the terminating party.
DP O_Abandon	EDP-N, EDP-R	Indication that a disconnect indication is received from the originating party during the call establishment procedure.
NOTE 1: The DPs are defined in ITU-T Recommendation ~~Q~~Q.1224 ~~([6])~~[30]. NOTE 2: For TDP-R Analysed_Information new relationship to gsmSCF is opened. NOTE 3: DP Route_Select_Failure shall be reported as TDP-R when there is no relationship to gsmSCF. If a relationship to gsmSCF is already open, it shall be reported as EDP-R or EDP-N if armed so.		

4.4.2.1.1 Description of the call model (PICs)

This subclause describes the call model for originating and forwarded calls. For each PIC a description can be found of the entry events, functions and exit events.

It should be noted that although the names used for PICs match those used in ITU-T Recommendation Q.12~~1~~24 [~~6~~30] the specific descriptions differ.

*** Next modified section in 4.4.3.1 ***

Table 4.3: Description of T-BCSM DPs in the GMSC / VMSC

CAMEL Detection Point:	DP Type	Description:
DP Terminating_Attempt_ Authorised	TDP-R	Indication that the T-CSI / VT_CSI is analysed.
DP T_Busy	TDP-R (note 2), EDP-N, EDP-R	Indication that: - a busy indication is received from the destination exchange, - Busy event is determined in the visited MSC, - Not reachable or call establishment failure event is determined from the HLR response or upon a cause IE in the ISUP release message.
DP T_No_Answer	TDP-R (note 2), EDP-N, EDP-R	Indication that an application timer associated with the T_No_Answer DP expires.
DP T_Answer	EDP-N, EDP-R	Call is accepted and answered by terminating party.
DP T_Disconnect	EDP-N, EDP-R	A disconnect indication is received from the terminating party or from the originating party.
DP T_Abandon	EDP-N, EDP-R	A disconnect indication is received from the originating party during the call establishment procedure.
NOTE 1: The DPs are defined in ITU-T Recommendation ~~Q~~Q.1224 ~~([6])~~[30]. NOTE 2: DP T_No_Answer and DP T_Busy shall be reported as TDP-R when there is no relationship to gsmSCF. If a relationship to gsmSCF is already open, it shall be reported as EDP-R or EDP-N if armed so.		

4.4.3.1.1 Description of the call model (PICs)

This subclause describes the call model for terminating calls in the GMSC and in the VMSC. For each PIC a description can be found of the entry events, functions, information available and exit events.

It should be noted that although the names used for PICs match those used in ITU-T Recommendation Q.1224 [30~~6~~] the specific descriptions differ.

*** Next modified (editorial correction) section in 4 ***

4.7 Interaction with supplementary services

4.7.1 Line identification

For an MO call subject to CAMEL interactions, the gsmSCF shall have the option to include the the Calling Party Restriction Indicator parameter in the Connect message to the gsmSSF. This will be sent to the MSC and shall indicate whether the CLI Presentation Indicator present in the Calling Party Number Parameter shall be set by CAMEL action to Restricted.

4.7.2 Call forwarding services

4.7.2.1 Registration of Call Forwarding

The functional behaviour for the registration of the Call Forwarding supplementary service is defined in 3GPP TS 23.082 [27]. The procedure specific to CAMEL is defined in this subclause:

- CAMEL_Check_CF_Interaction.

Procedure CAMEL_Check_CF_Interaction 1(1)

Procedure in the HLR to check the provision of TIF-CSI.

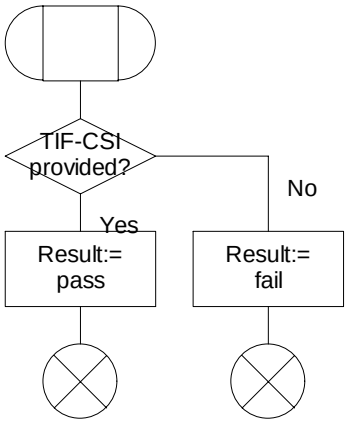


Figure Error! Reference source not found.**.1: Procedure CAMEL_Check_CF_Interaction**

4.7.2.2 Invocation of Call Forwarding

The functional behaviour for the invocation of the Call Forwarding supplementary service is defined in 3GPP TS 23.018 [3] and 3GPP TS 23.082 [27]. The following additional requirements apply.

When Call Forwarding is invoked for a CAMEL subscriber with O-CSI, the gsmSSF shall send the FTN to the gsmSCF in the format in which it was received from the HLR. When Call Forwarding is invoked for a CAMEL subscriber with D-CSI or if a N-CSI is present in the forwarding MSC, then the FTN shall be treated as defined in subclause 4.2.1.2.2.

If the Service Interaction Indicators Two parameter was included in the Initial Address Message, the Continue With Argument message or the Connect message, the appropriate indicator shall be applied for the forwarded call.

An HLR shall not send an FTN which is not in international format to a GMSC which does not support CAMEL phase 2, i.e. if the HLR is handling a request from a GMSC for routeing information and the forwarded-to number is registered in a format other than international, the service logic in the HLR shall behave as if the call forwarding is provisioned but not registered.

4.7.2.3 Invocation of Call Deflection

The functional behaviour for the invocation of the Call Deflection supplementary service is defined in 3GPP TS 23.018 [3] and 3GPP TS 23.072 [35]. The following additional requirements apply.

When Call Deflection is invoked by a CAMEL subscriber with O-CSI, the gsmSSF shall send the DTN to the gsmSCF in the format in which it was received from the MS. When Call Deflection is invoked by a CAMEL subscriber with D-CSI or if a N-CSI is present in the VMSC, then the DTN shall be treated as defined in subclause 4.2.1.2.2.

If the Service Interaction Indicators Two parameter was included in the Initial Address Message, the Continue With Argument message or the Connect message, the appropriate indicator shall be applied for the deflected call.

4.7.3 Call Barring services

When a CAMEL subscriber with O-CSI and TIF-CSI attempts to activate a conditional call barring service (BOIC,BOIC-exHC), the HLR shall not check the interactions with call forwarding.

4.7.4 Closed User Group

For a CUG subscriber with CAMEL services:

- The HLR shall store (and transfer to the VLR) the necessary subscriber data to ensure that the served subscriber is not unnecessarily prevented by CUG constraints from originating calls.

- The HLR shall store the necessary subscriber data to ensure that the served subscriber is not unnecessarily prevented by CUG constraints from receiving calls.

For an MO or MF call, the CUG information for that call shall be sent to the gsmSCF in the Initial DP.

If the gsmSCF returns a Continue message, the call shall continue with the original CUG information unchanged.

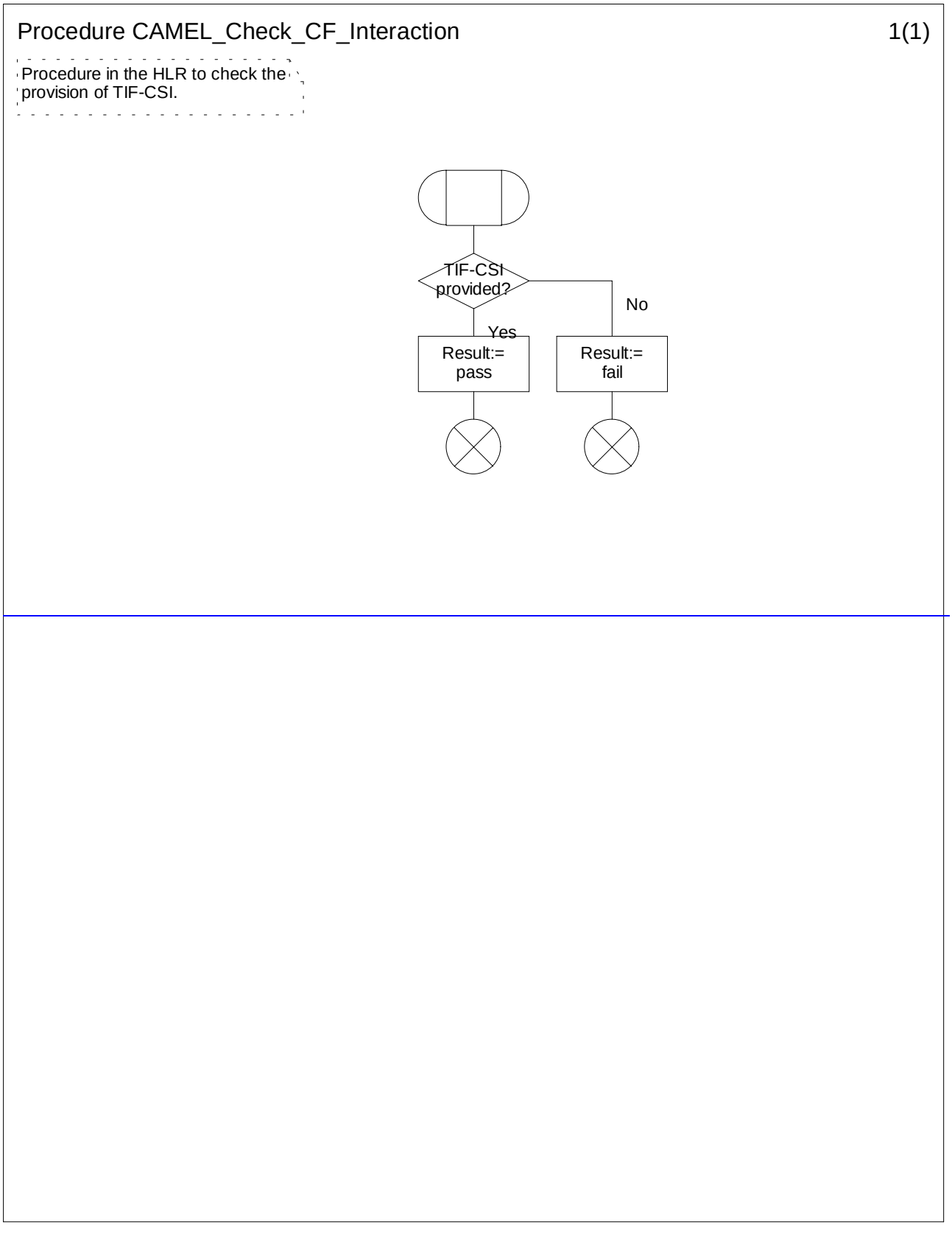
If the gsmSCF returns a Connect or Continue With Argument message, the CUG handling in table **Error! Reference source not found.**.1 applies.

Table Error! Reference source not found.**.1: CUG handling on receipt of Connect or Continue With Argument for an MO or MF call**

CUG parameters in message	Handling
Non-CUG call (note 1)	Remove CUG information for the call and continue as a non-CUG call
CUG information (note 2)	Call shall continue with modified CUG information
No CUG information	Call shall continue with original CUG information
NOTE 1: Received in Service Interaction Indicators Two IE. NOTE 2: CUG information consists of at least one of CUG Interlock Code and Outgoing Access Indicator.	

For an MT or VT call which is to be routed to the terminating subscriber, the CUG information shall be extracted from the incoming ISUP IAM and sent to the gsmSCF in the Initial DP, but the gsmSCF shall not have the ability to change the CUG information for the call.

For an MT or VT call which is to be forwarded under CAMEL control, if the gsmSCF returns a Connect or Continue With Argument message, the CUG information is extracted and the CUG handling in table **Error! Reference source not found.**.1 applies.



~~Figure 4.88: Procedure CAMEL_Check_CF_Interaction~~

*** Next modified (editorial correction) section in 7 ***

CR editor's note: Following change proposed in the CR is to remove the duplicate description if the information flows are common to VLR and HLR, unless otherwise stated.

7.6.3 HLR to VLR/SGSN information flows

7.6.3.1 Delete Subscriber Data

7.6.3.1.1 Description

This IF is specified in 3GPP TS 29.002 [4] and is used by the HLR to delete subscriber data in the VLR/SGSN.

7.6.3.1.2 Information Elements

The Delete Subscriber Data contains the following CAMEL specific IE:

Information element name	Required	Description
CAMEL Subscription Info Withdraw	C	This IE identifies that all CSIs shall be deleted from the subscriber data in VLR/SGSN.
Specific CSI Withdraw	C	This IE is used to indicate that only SMS-CSI shall be deleted from the VLR/SGSN. This IE should not be sent when CAMEL Subscription Info Withdraw is present.

C Conditional (The IE shall be sent when deletion is requested).

7.6.3.2 Insert Subscriber Data

7.6.3.2.1 Description

This IF is specified in 3GPP TS 29.002 [4] and is used by the HLR to insert subscriber data in the VLR/SGSN.

7.6.3.2.2 Information Elements

The Insert Subscriber Data contains the following CAMEL specific IE ~~for MO SMS~~:

Information element name	Required	Description
SMS-CSI	C	This IE identifies the subscriber having MO SMS CAMEL services.

C Conditional (The IE shall be sent, if required).

SMS-CSI contains the following information:

Information element name	Required	Description
gsmSCF Address	M	See subclause 7.3.1.1.
Service Key	M	See subclause 7.3.1.2.
Default SMS Handling	M	See subclause 7.3.1.3.
CAMEL Capability Handling	M	See subclause 7.3.1.5.
SMS Triggers	M	See subclause 7.3.1.4. It includes the following trigger: *SMS_Collected_Info*

M Mandatory (the IE shall always be sent).

7.6.4 VLR/SGSN to HLR information flows

7.6.4.1 Insert Subscriber Data ack

See subclause 4.6.8.1.

7.6.4.2 Update Location

See subclause 4.6.8.3. This information flow is sent by the VLR.

7.6.4.3 Update GPRS Location

See subclause 6.6.4.1. This information flow is sent by the SGSN.

7.6.5 HLR – SGSN information flows

7.6.5.1 Delete Subscriber Data

7.6.5.1.1 Description

This IF is specified in 3GPP TS 29.002 [4] and is used by the HLR to delete subscriber data in the SGSN.

7.6.5.1.2 Information Elements

The Delete Subscriber Data contains the following CAMEL specific IE for MO SMS:

Information element name	Required	Description
CAMEL Subscription Info Withdraw	C	This IE identifies that all CSIs shall be deleted from the subscriber data in SGSN.
Specific CSI Withdraw	C	This IE is used to indicate that only SMS CSI shall be deleted from the VLR. This IE should not be sent when CAMEL Subscription Info Withdraw is present.

C Conditional (The IE shall be sent when deletion is requested).

7.6.5.2 Insert Subscriber data

7.6.5.2.1 Description

This IF is specified in 3GPP TS 29.002 [4] and used by the HLR to insert subscriber data in the SGSN.

7.6.5.2.2 Information Elements

Insert Subscriber Data contains the following MO SMS specific IE:

Information element name	Required	Description
SMS-CSI	C	This IE identifies the subscriber having MO SMS CAMEL services.

C Conditional (The IE shall be sent, if required).

SMS-CSI contains the following information:

Information element name	Required	Description
gsmSCF Address	M	See subclause 7.3.1.1.
Service Key	M	See subclause 7.3.1.2.
Default SMS Handling	M	See subclause 7.3.1.3.
CAMEL Capability Handling	M	See subclause 7.3.1.5.
SMS Triggers	M	See subclause 7.3.1.4. It includes the following trigger: *SMS_Collected_Info*

M Mandatory (The IE shall always be sent).

7.6.6 SGSN to HLR Information Flows

7.6.6.1 Insert Subscriber Data ack

See subclause 4.6.8.1.

~~7.6.6.2 Update GPRS Location~~

~~See subclause 6.6.4.1.~~

7.6.7 VLR to MSC Information Flows

7.6.5~~7~~.1 Send Info For MO SMS Ack

7.6.5~~7~~.1.1 Description

This IF is specified in 3GPP TS 29.002 [4]. It is used to transport MO SMS related subscription data from the VLR to the MSC.

The Send Info For MO SMS Ack contains the following information:

Information element name	Required	Description
SMS-CSI	C	This IE contains the CAMEL Subscription Information for MO-SMS.
ODB Data	C	This IE contains ODB data. This information is used to apply ODB for a reconnected Short Message, if needed.
CB SS Data	C	This IE contains CB SS data. This information is used to apply CB for a reconnected Short Message, if needed.

C Conditional (shall be sent if available).

*** End of Document ***

3GPP TSG-CN2 Meeting #17
Sophia Antipolis, France, 26th February - 2nd March 2001

Tdoc N2-010125

CR-Form-v3

CHANGE REQUEST

23.078	**CR**	**272**	rev		Current version:	**3.7.0**

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

Title:	Corrections to Information Flow definitions		
Source:	Vodafone		
Work item code:	CAMEL phase 3	***Date:***	25 Jan 2001
Category:	**F** Non-critical, agreed by consensus	***Release:***	R99

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change:	1. The IEs required in the Complete Call IF are different for the MO and VT call cases; they are shown as being the same 2. The Process Unstructured SS Data IF is wrongly described as going from the gsmSCF to the MS.
Summary of change:	1. Distinguish correctly between IEs for the MO and VT call cases 2. Change the description of the Process Unstructured SS Data IF to show that it goes from the MS to the gsmSCF
Consequences if not approved:	Confusion over the use of the Process Unstructured SS Data IF for GSM Phase 1 MSs

Clauses affected:		
Other specs affected:	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	
Other comments:	The equivalent changes have been proposed for inclusion in the draft stage 2 for CAMEL phase 4	

**** First Modified Section ****

4.6.13.1 Complete Call

4.6.13.1.1 Description

This IF is described in 3G TS 23.018 [3] and is used to instruct the MSC to continue the connection of a call.

4.6.13.1.2 Information Elements

Complete Call contains the following CAMEL specific IE:

~~Information element name~~	~~Required~~	~~Description~~
~~O-CSI~~	~~C~~	~~This IE indicates that CAMEL handling applies for an MO call. Shall be present in the response to the first interrogation for an MO call if CAMEL handling applies; otherwise shall be absent. Shall be absent in the response to the second interrogation for an MO call and in the response to the interrogation for an MT call.~~
~~D-CSI~~	~~C~~	~~This IE identifies the subscriber as having originating CAMEL dialled services.~~
~~Call Reference Number~~	~~M~~	~~This IE carries the Call Reference Number provided by the HLR in the Provide Roaming Number IF.~~
~~GMSC Address~~	~~M~~	~~This IE is the E.164 address of the GMSC.~~

Information element name	MO	MF	MT	VT	Description
O-CSI	C	-	-	-	This IE indicates that CAMEL handling applies for an MO call. It shall be present in the response to the first interrogation for an MO call if CAMEL handling applies; otherwise it shall be absent. It shall be absent from the response to the second interrogation for an MO call and in the response to the interrogation for an MT call.
D-CSI	C	-	-	-	This IE identifies the subscriber as having originating CAMEL dialled services.
Call Reference Number	-	-	-	M	This IE carries the Call Reference Number provided by the HLR in the Provide Roaming Number IF.
GMSC Address	-	-	-	M	This IE is the E.164 address of the GMSC.

M Mandatory (The IE shall always be sent).

C Conditional (The IE shall be sent if applicable).

**** Next Modified Section ****

5.5.2.3 Process Unstructured SS Data

5.5.2.3.1 Description

This IF is used for the ~~gsmSCF~~ MS to request data from the ~~MS~~ gsmSCF via the HLR.

5.5.2.3.2 Information Elements

The following information element is required:

Information element name	Required	Description
SS User Data	M	This IE contains the string that ~~will be sent to~~was received from the MS.

M Mandatory (The IE shall always be sent).

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

3GPP TSG-CN2 Meeting #17
Sophia Antipolis, France, 26 Feb 02 Mar 2001

Tdoc N2-010207

CR-Form-v3

CHANGE REQUEST

⌘ **23.078** **CR** **273** ⌘ rev **1** ⌘ Current version: **3.7.0** ⌘

*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 Location Information IE
Source:	⌘	Nokia
Work item code:	⌘	Camel 3
Date:	⌘	6 Feb 2001
Category:	⌘	**F** (essential correction)
Release:	⌘	R99

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
REL-4 *(Release 4)*
REL-5 *(Release 5)*

Reason for change:	⌘	Incorrect conditions of the information elements
Summary of change:	⌘	The Service Area ID, Cel ID and Location Area ID information element contition will be corrected to C2 in MT and VT cases instead of the existing C.
Consequences if not approved:	⌘	Mispacked Location Information IE.

Clauses affected:	⌘	4.6.1.5
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ 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://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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 Change* ***

4.6.1.5 Initial DP

4.6.1.5.1 Description

This IF is generated by the gsmSSF when a trigger is detected at a DP in the BCSM, to request instructions from the gsmSCF.

4.6.1.5.2 Information Elements

The following information elements are required:

Information element name	MO	MF	MT	VT	Description
Additional Calling Party Number	-	C	C	C	The calling party number provided by the access signalling system of the calling user.
Bearer Capability	M	C	C	C	This IE indicates the type of the bearer capability connection to the user.
Called Party Number	C	M	M	M	This IE contains the number used to identify the called party in the forward direction. For the MO and MF calls this parameter is used in the case of TDP Route_Select_Failure (this is the destination number used to route the call) and in the case of TDP Busy and TDP No Reply (this is the MSISDN when the destination number used for the call is a MSRN, or in the case of unsuccessful establishment received from the HLR via MAP interface, otherwise it is the number used to route the call). For the VT calls when there is no forwarding pending this is the MSISDN received in the Provide Roaming Number; if the MSISDN is not available, the basic MSISDN is used. For the MT and VT call case when there is call forwarding or call deflection pending, this is the MSISDN, i.e. not the forwarded-to or deflected-to number.
Called Party BCD Number	C	-	-	-	This IE contains the number used to identify the called party in the forward direction. It is used for MO call in all cases except in the case of TDP Route_Select_Failure. For the TDP Collected_Information, the number contained in this IE shall be identical to the number received over the access network. It may e.g. include service selection information, such as ∗ and # digits, or carrier selection information dialled by the subscriber. For the TDP Analysed_Information, the number contained in this IE shall be the dialled number received over the network access or received from a gsmSCF in a CONNECT operation, service selection information, such as * and # digits may be present (see subclause 4.2.1.2.2), carrier selection information dialled by the subscriber is not present.
Calling Party Number	M	C	C	C	This IE carries the calling party number to identify the calling party or the origin of the call.
Calling Partys Category	M	C	C	C	Indicates the type of calling party (e.g., operator, pay phone, ordinary subscriber).
CallGap Encountered	C	C	C	C	This parameter indicates the type of gapping the related call have been subjected to. This parameter shall be present only if a call gapping context is applicable to the initialDP operation.
Call Reference Number	M	M	M	M	This IE may be used by the gsmSCF for inclusion in a network optional gsmSCF call record. It has to be coupled with the identity of the MSC which allocated it in order to define unambiguously the identity of the call. For MO calls, the call reference number is set by the serving VMSC and included in the MO call record. For MT calls, the call reference number is set by the GMSC and included in the RCF call record in the GMSC and in the MT call record in the terminating MSC. For VT calls, the call reference number is set by the GMSC and included in the RCF call record in the GMSC and in the MT call record in the terminating MSC. For CF calls, the call reference number is set by the GMSC and included in the CF record in the forwarding MSC.
Cause	C	C	C	C	This IE indicates the cause specific to the armed BCSM DP event. This IE is applicable to DP Route_Select_Failure and DP T_Busy. The cause may be used by the SCF to decide about the further handling of the call.
Event Type BCSM	M	M	M	M	This IE indicates the armed BCSM DP event, resulting in the Initial DP IF.

Information element name	MO	MF	MT	VT	Description
Ext-Basic Service Code	C	C	C	C	This IE indicates the type of basic service i.e., teleservice or bearer service.
High Layer Compatibility	C	C	C	C	This IE indicates the type of the high layer compatibility, which will be used to determine the ISDN-teleservice of a connected ISDN terminal.
IMSI	M	M	M	M	This IE identifies the mobile subscriber.
IP SSP Capabilities	C	C	C	C	This IE indicates which SRF resources are supported within the gsmSSF and are available. If this IE is absent, this indicates that no gsmSRF is attached and available.
Location Information	M	-	C	M	This IE is described in the next table.
Location Number	M	C	C	C	For mobile originated calls this IE represents the location of the calling party. For all other call scenarios this IE contains the location number received in incoming ISUP signalling.
MSC Address	M	M	M	M	For MO calls, the MSC Address carries the international E.164 address of the serving VMSC. For MT calls, the MSC Address carries the international E.164 address of the GMSC. For VT calls, the MSC Address carries the international E.164 address of the serving VMSC. For CF calls, the MSC Address carries the international E.164 address of the forwarding MSC.
GMSC Address	-	M	-	M	For CF calls, the GMSC Address carries the international E.164 address of the GMSC. For VT calls, the GMSC Address carries the international E.164 address of the GMSC.
Carrier	C	C	C	C	The content of this IE is described in the next table. The IE may be sent when the VPLMN and the HPLMN of the subscriber are both North American. For MO calls, this IE shall contain any carrier that was dialed by the calling subscriber. If no carrier was dialed, the IE shall contain the calling subscriber's subscribed carrier. For MT and VT calls, the IE shall contain the carrier subscribed to by the called subscriber. For CF calls, the IE shall contain the carrier subscribed to by the forwarding subscriber.
Original Called Party ID	-	C	C	C	This IE carries the dialled digits if the call has met call forwarding on the route to the gsmSSF.
Redirecting Party ID	-	M	C	C	This IE indicates the directory number the call was redirected from.
Redirection Information	-	M	C	C	This IE contains forwarding related information, such as redirection counter.
Service Key	M	M	M	M	This IE indicates to the gsmSCF the requested CAMEL Service. It is used to address the required application/SLP within the gsmSCF.
Subscriber State	-	-	C	C	This IE indicates the status of the MS. The states are: - CAMELBusy: The MS is engaged on a transaction for a mobile originating or terminated circuit-switched call. - NetworkDeterminedNotReachable: The network can determine from its internal data that the MS is not reachable. - AssumedIdle: The state of the MS is neither "CAMELBusy" nor "NetworkDeterminedNotReachable". - Not provided from VLR.
Time And Timezone	M	M	M	M	This IE contains the time that the gsmSSF was triggered, and the time zone the gsmSSF resides in.
GSM Forwarding Pending	-	-	C	C	This parameter indicates that a forwarded-to-number was received and the call will be forwarded due to GSM supplementary service call forwarding in the GMSC/VMSC. This parameter is present in the following cases: - When the FTN is received from the HLR prior to triggering in the Terminating_Attempt_Authorised DP. - When a conditional call forwarding or call deflection is invoked in the GMSC/MSC, and T_Busy or T_No_answer is reported as a TDP.
Service Interaction Indicators Two	C	C	C	C	This IE is sent if it is received in the ISUP message or due to previous CAMEL processing. The IE is described in a

Information element name	MO	MF	MT	VT	Description
					table below.
CUG Index	C	-	-	-	See 3GPP TS 23.085 [9] for details of this IE.
CUG Interlock Code	C	C	C	C	See 3GPP TS 23.085 [9] for details of this IE. The latest available data shall be used, i.e., if the CUG data which had been obtained in the ISUP IAM or from the VLR has been modified by the previous Connect or Continue With Argument IF, this modified data shall be used.
Outgoing Access Indicator	C	C	C	C	See 3GPP TS 23.085 [9] for details of this IE. In the MO case this IE is received from the VLR.

M Mandatory (The IE shall always be sent).

C Conditional (The IE shall be sent, if available).

- Not applicable.

Location Information is defined in 3GPP TS 23.018 [3]. The following differences apply:

Information element name	MO	MF	MT	VT	Description
Location Number	-	-	C	C	See 3GPP TS 23.018 [3].
Service area ID	C2	-	C2	C2	See 3GPP TS 23.018 [3].
Cell ID	C2		C2	C2	See 3GPP TS 23.018 [3].
Geographical information	C	-	C	C	See 3GPP TS 23.018 [3].
Geodetic information	C	-	C	C	See 3GPP TS 23.018 [3].
VLR number	M	-	C	M	See 3GPP TS 23.018 [3].
Age Of location information	M	-	C	C	See 3GPP TS 23.018 [3].
Current Location Retrieved	-	-	-	-	Not applicable
Location area ID	C2		C2	C2	See 3GPP TS 23.003 [37].
Selected LSA Identity	C1	-	C1	C1	This IE indicates the LSA identity associated with the current position of the MS. Shall be present if the LSA ID in the subscriber data matches the LSA ID of the current cell. In the case of multiple matches the LSA ID with the highest priority shall be sent. See 3GPP TS 23.073 [23].

M Mandatory (The IE shall always be sent).

C Conditional (The IE shall be sent, if available. Further conditions are in the description column.).

C1 Conditional (The IE shall be sent, if available and SoLSA is supported).

C2 Conditional (One and only one of the three conditional IEs shall be sent).

- Not applicable.

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

3GPP TSG_CN_WG2, Meeting #17 ***Tdoc N2-010208***
Sophia-Antipolis, France, 26.th February - 2.nd March, 2001

CR-Form-v3

CHANGE REQUEST

⌘ **23.078** **CR** **280** ⌘ rev **1** ⌘ Current version: **3.7.0** ⌘

*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 SDL Set_Notification_Type
Source:	⌘	Siemens AG
Work item code:	⌘	CAMEL3
Date:	⌘	26 February 2001
Category:	⌘	**F** Critical
Release:	⌘	R99

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	In the SDL: Set_Notification_Type, variable “Notify” shall be set a certain value denoted as “:=”, however currently colone “:” is missing.
Summary of change:	⌘	Add colon “:” as “:=”
Consequences if not approved:	⌘	Error remains as “equal”.

Clauses affected:	⌘	9
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	This CR also contains various editorial corrections to improve readability.

9 Mobility Management

9.1 Architecture

9.1.1 Functional Entities used for CAMEL

This subclause describes the functional architecture required to support Mobility Management in CAMEL. Figure 9.1 shows the functional entities involved in CAMEL support of Mobility Management. The architecture is applicable to the third phase of CAMEL.

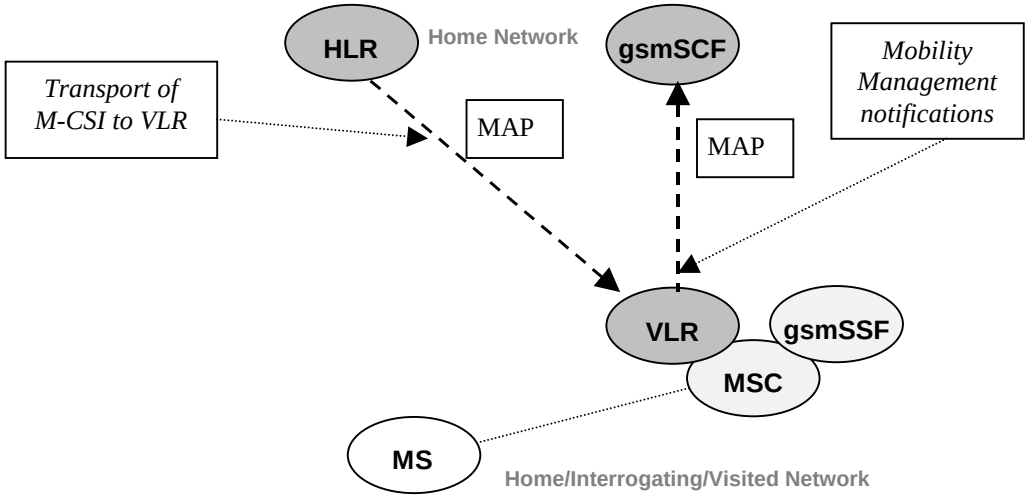


Figure 9.1: Functional architecture for support of CAMEL

gsmSCF: see subclause 4.1.

HLR: The HLR contains Mobility management CAMEL Subscription Information (M-CSI) for those subscribers that require CAMEL control of Mobility Management events.
M-CSI is sent to the VLR during the Location Update and Restore Data procedures or when M-CSI is modified in the HLR. The M-CSI is deleted in the ~~CLR~~ VLR with the Delete Subscriber Data procedure.

MS: Mobile Station (GSM terminal).

MSC: see subclause 4.1.

VLR: After having completed a Mobility Management event from a subscriber, the VLR may necessary to ~~have to~~ send a notification to the gsmSCF. The contents of M-CSI indicates which Mobility Management events shall be reported to the gsmSCF.

9.1.2 Interfaces defined for CAMEL

This subclause describes the different interfaces applicable to CAMEL control of Mobility Management events. It specifies on a high level the functions specific to CAMEL.

9.1.2.2 VLR - gsmSCF interface

This interface is used by the VLR to send Mobility Management event notifications to the gsmSCF. When processing a mobility management event, the VLR may necessary to ~~have to~~ send a notification to the gsmSCF, depending on the presence of M-CSI for the subscriber and the contents of M-CSI.

9.2 Description of CAMEL Subscriber Data

9.2.1 Mobility Management CAMEL Subscription Information (M-CSI)

This subclause specifies the contents of the Mobility Management CAMEL Subscription Information (M-CSI).

9.2.1.1 Mobility Management Triggers

This data indicates which Mobility Management events shall result in a notification to the gsmSCF. One or more events may be marked per subscriber. ~~One or more events may be marked per subscriber.~~ These events are:

CR editor's note: ~~Descriptions are aligned with the stage 1.~~ Style change and each item followed by semicolon.

- 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).

9.2.1.2 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.

9.2.1.3 Service Key

The Service Key is included in the notification message to the gsmSCF. It indicates to the gsmSCF which Service Logic shall be applied.

9.2.1.4 CSI state

The CSI state indicates whether the M-CSI is active or not.

9.2.1.5 Notification flag

The notification flag indicates whether the change of the M-CSI shall trigger Notification on Change of Subscriber Data or not.

9.2.1.6 gsmSCF address list for CSI

The gsmSCF address list indicates a list of gsmSCF addresses to which Notification on Change of Subscriber Data is to be sent. This list is common to all CSI.

9.3 Procedures for Mobility management

CR editor's note: Figure numbers changed to 9.2[a-e] as they are simply the variant of the mobility management. Figure numbers shall be aligned hereafter. After change of the figure numbers, re-order of the list and the figure arrangement.

The different procedures for Mobility Management are shown in Figures 9.2a to 9.~~6~~2e.

CR editor's note: Below style and punctuation change.

Figure 9.2c: Location Update within a single VLR Service Area. (The VLR Service area may be in the HPLMN or in the VPLMN.);

Figure 9.32a: Location Update from one VLR Service Area to another VLR Service Area. (Both VLR Service Areas are in the HPLMN or in the same VPLMN.);

Figure 9.42b: Location Update from one PLMN to another PLMN:;

- update from HPLMN to VPLMN;
- update from VPLMN to HPLMN;
- update from one VPLMN to another VPLMN.

Figure 9.52d: IMSI Detach (in HPLMN or in VPLMN):;

- explicit detach (the MS has been switched off by the subscriber);
- implicit detach (the network has not received a periodic paging update from the MS and assumes that the MS is switched off or unreachable).

Figure 9.62e: IMSI Attach (in HPLMN or in VPLMN):;

- attach (the MS has been switched on by the subscriber – subscription data is still available in the VLR, no location update is needed).

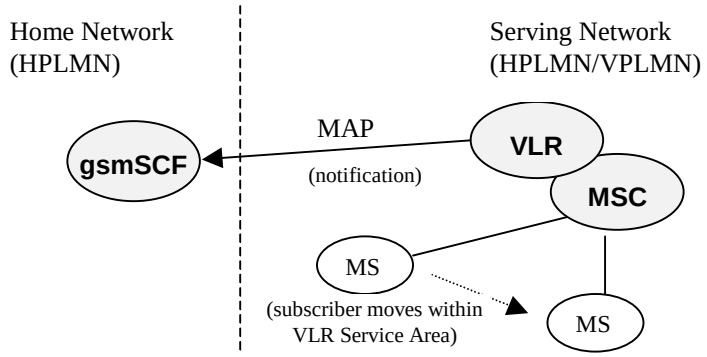


Figure 9.2c: Location Update within a single VLR Service Area

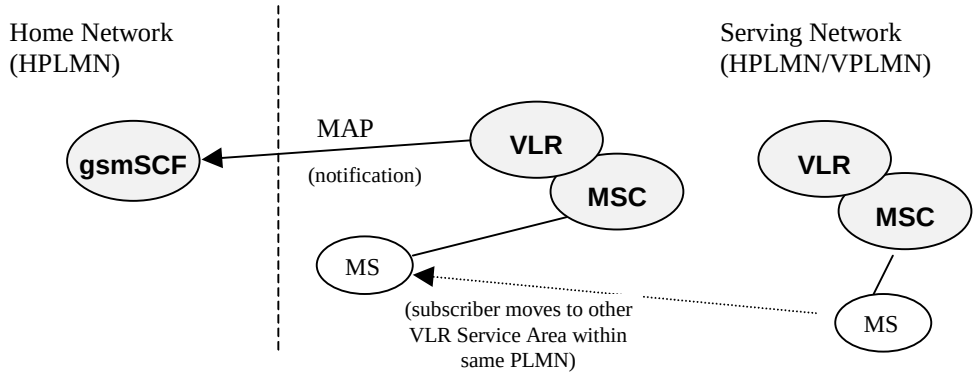


Figure 9.32a: Location Update from one VLR Service Area to another VLR Service Area

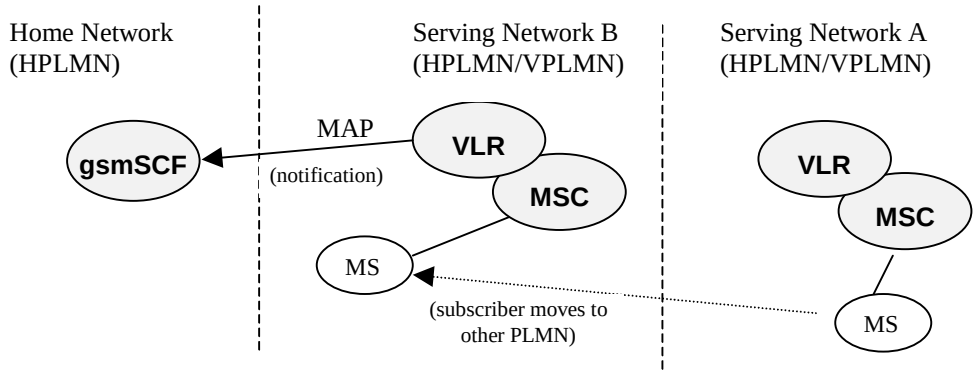


Figure 9.42a: Location Update from one VLR Service Area to Another VLR Service Area

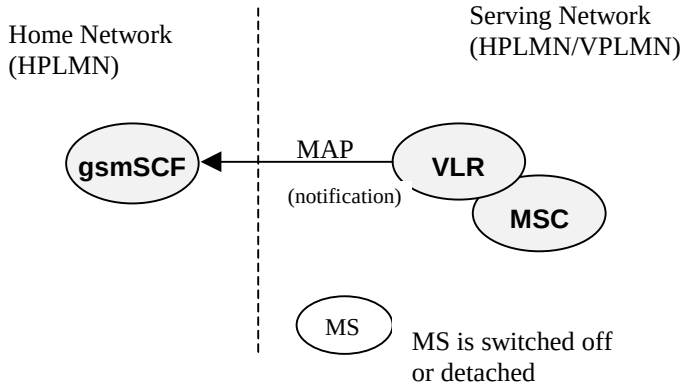


Figure 9.52d: IMSI Detach (implicit/explicit)

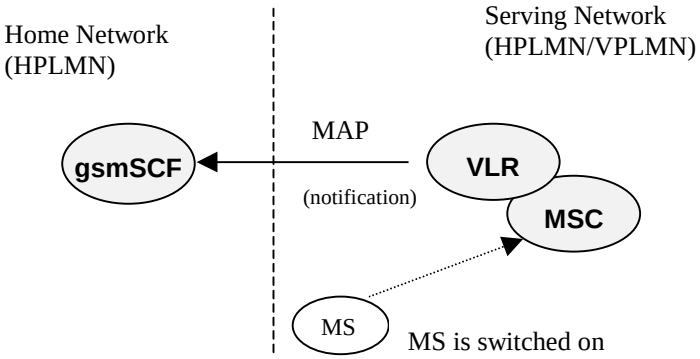


Figure 9.62e: IMSI Attach

When a Mobility Management Event has taken place and the processing has been completed, then the VLR may necessary to ~~have to~~ send a notification to the gsmSCF. The processing of the Mobility Management event in the VLR is not suspended by the sending of the notification nor is it in any way affected by the notification.

The sending of a Mobility Management notification to gsmSCF is independent of other CAMEL subscription data for a subscriber. Eg. a subscriber may have M-CSI without ~~having~~ O-CSI or VT-CSI.

The sending of a Mobility Management event notification is subscription based.

Refer to subclause 9.2.1 for a description of M-CSI and the different Mobility Management events that may lead to a notification to the gsmSCF.

9.3.1 Procedure descriptions

9.3.1.1 Procedure Set_Notification_Type

CR editor's note: The words "mobile station" do not have to start with the capital letters.

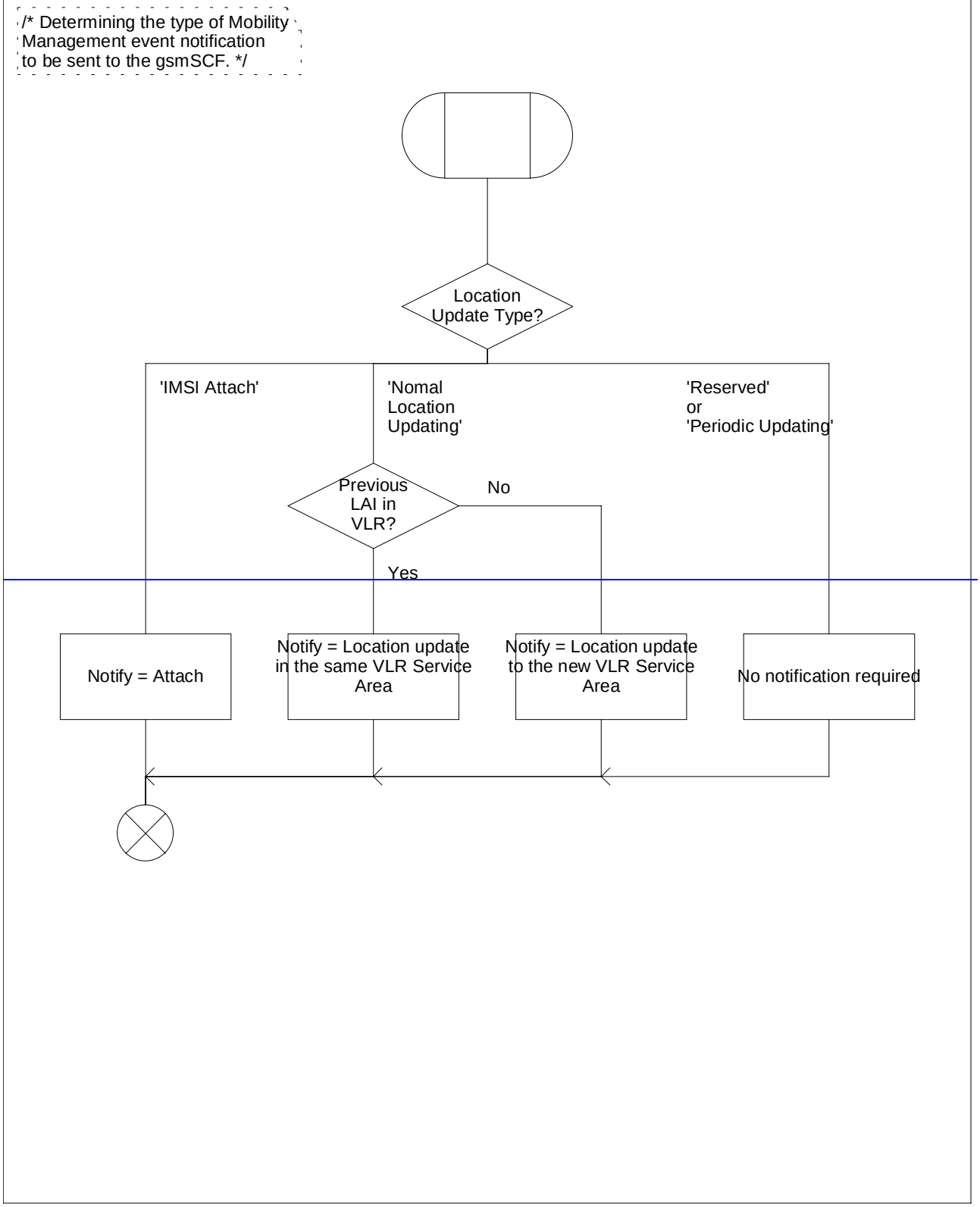
This procedure is called from process Update_Location_VLR in 3GPP TS 23.012 [32]. It checks the information element 'Location Update Type', which the VLR receives from the MSC via MAP_UPDATE_LOCATION_AREA service. This element identifies the type of Location Update requested by the m~~M~~obile s~~S~~tation.

The possible values of this parameter are specified in 3GPP TS 24.008 [33].

The type of Location Update that was requested by the m~~M~~obile s~~S~~tation determines which Mobility Management notification message shall be sent to the gsmSCF.

The values 'Periodic Updating' and 'Reserved' shall not lead to a Mobility Management notification to the gsmSCF.

Procedure Set_Notification_Type 1(1)



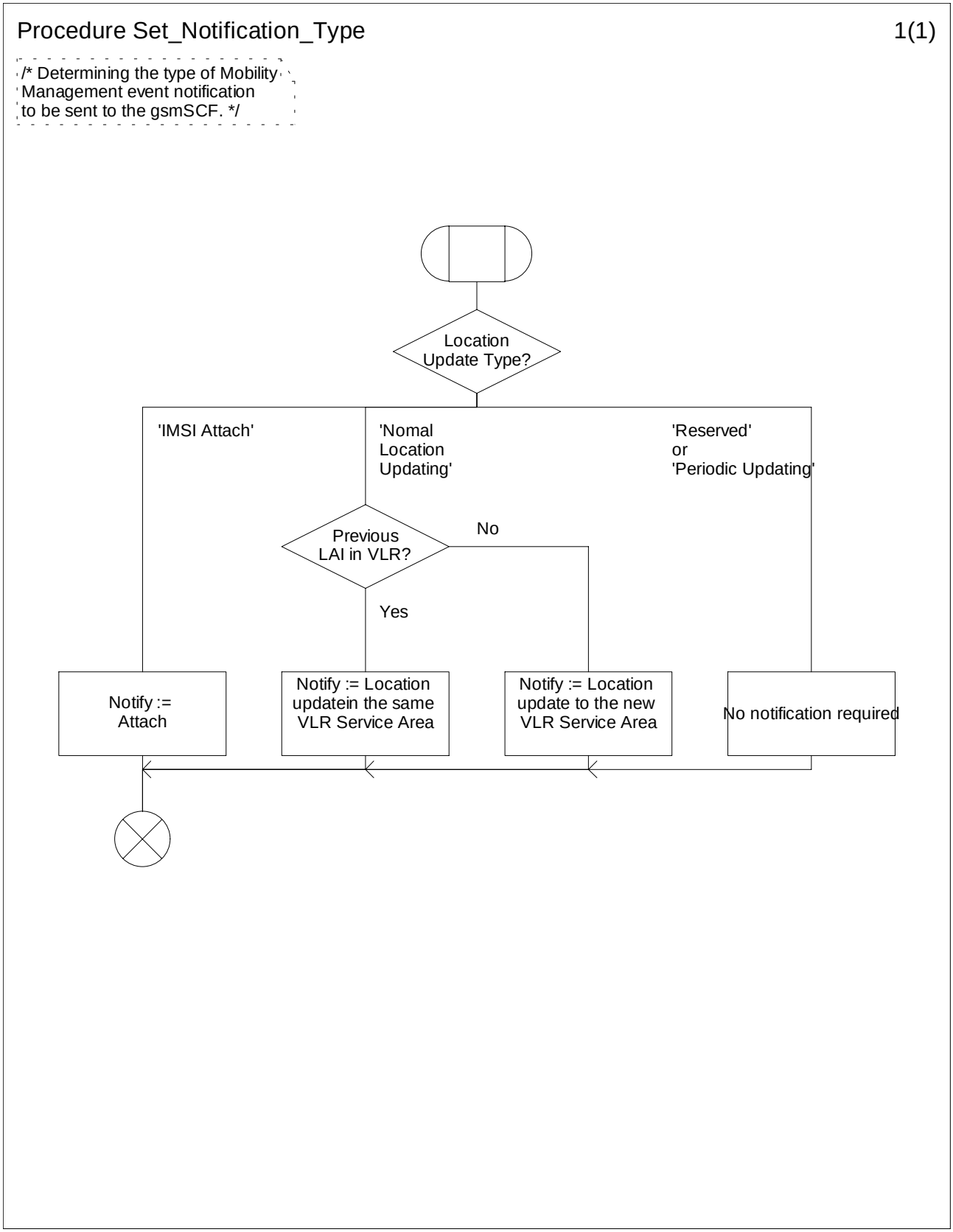


Figure 9.~~7~~3: Procedure Set_Notification_Type (sheet 1)

9.3.1.2 Procedure Notify_gsmSCF

This procedure is called from the process ‘Update_Location_Area_VLR’ and process ‘Detach_IMSI_VLR’ in 3GPP TS 23.012 [32].
It is also called from the process ‘Update_Location_VLR’ in 3GPP TS 29.002 [4].

The calling process passes on the variable ‘Notify’ to the procedure ‘Notify_gsmSCF’. This variable indicates which Mobility Management notification may necessary to ~~have to~~ be sent to the gsmSCF.
If this variable has a value NULL, then no notification shall be sent to the gsmSCF.

~~CR editor’s note: Below sentence unclear who decides to send the notification. Delete it to clarify what is done in the procedure.~~

If a notification may necessary to ~~have to~~ be sent to the gsmSCF, then the procedure checks the presence of M-CSI.

- If M-CSI is present and the Mobility Management event indicated in the variable ‘Notify’ is marked in M-CSI, then a notification shall be sent to the gsmSCF.

- If M-CSI is not present or the Mobility Management event indicated in the variable ‘Notify’ is not marked in M-CSI, then no notification shall be sent to the gsmSCF.

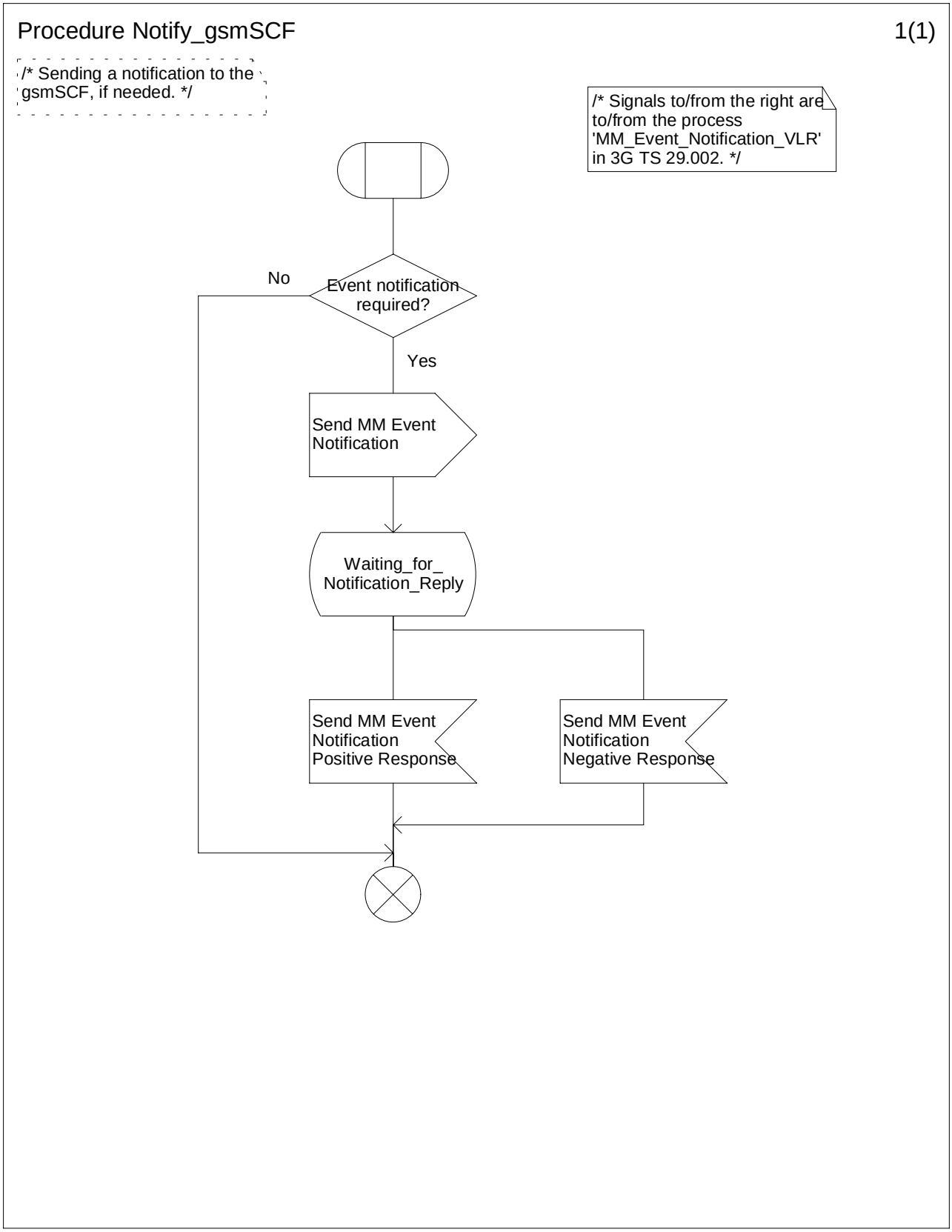


Figure 9.84: Procedure Notify_gsmSCF (sheet 1)

9.4 Description of information flows

This subclause contains the detailed description of the information flows used by CAMEL for Mobility Management control.

Each Information Element (IE) is marked as Mandatory (M), Conditional (C), Optional (O) or Not applicable (-). This categorization is a functional classification, i.e., stage 2 information, and not a stage 3 classification to be used for the ASN.1 syntax of the protocol.

The following principles apply for the handling of the IEs by the receiving entity:

- The gsmSCF may silently discard any IE which it does not functionally support.
- The VLR shall functionally support all IE's which can be sent to it.

9.4.1 VLR to gsmSCF information flows

9.4.1.1 Mobility Management event Notification

9.4.1.1.1 Description

This IF is generated by the VLR when it shall notify the gsmSCF of a Mobility Management event.

9.4.1.1.2 Information Elements

The following information elements are required:

Information element name	Required	Description
Event Met	M	This IE indicates the type of Mobility Management that lead to the notification. The value of this IE shall be one of the following. - Location update in the same VLR service area - Location update to ~~an~~another VLR service area - IMSI attach - MS initiated IMSI detach (explicit detach) - Network initiated IMSI detach (implicit detach)
Service Key	M	This IE indicates the Service Logic that the gsmSCF shall apply.
IMSI	M	This IE identifies the mobile subscriber to whom the Mobility Event applies.
Basic MSISDN	M	This IE identifies the mobile subscriber to whom the Mobility Event applies.
Location Information	C	This IE indicates the current location of the MS. This IE is described in the next table.
Supported CAMEL Phases	M	This IE indicates the CAMEL Phases that are supported by the MSC/VLR in which the MS is registered after the mobility management event.

M Mandatory (The IE shall always be sent).

C Conditional (The IE shall be sent, if available).

3GPP TSG-CN2 Meeting #17
Sophia Antipolis, France, 26 February – 2 March 2001

N2-010220
(revision of N2-010214)

CHANGE REQUEST

⌘ **23.078** **CR** **282** ⌘ rev **1** ⌘ Current version: 3.7.0 ⌘

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

Title:	⌘	Correction to vendor/operator specific GPRS charging-response timer handling
Source:	⌘	Ericsson
Work item code:	⌘	CAMEL3
Date:	⌘	1 March 2001
Category:	⌘	F (agreed by concensus)
Release:	⌘	R99

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change: ⌘

Section 6.5.3.8.2.1 contains a warning to Service Logic desginers. This warning entails that the behaviour in the gprsSSF may be unpredictable in the case that the gsmSCF does not respond on an "Apply Charging Report GPRS" with a corresponding "Apply Charging GPRS" or "Release GPRS" instruction, provided that the PDP Context or GPRS Session, for which the "Apply Charging Report GPRS" was sent, is still active.

However, the gsmSCF shall also be allowed to respond on an "Apply Charging Report GPRS" with "Cancel GPRS". The sending of "Cancel GPRS" will result in the disarming of all detection points and the discarding of all outstanding reports for that PDP Context or Session. The relationship with that PDP Context or Session will then be terminated. The PDP Context or for the Session may then proceed with CAMEL supervision.

The scenario described in above paragraph is a valid scenario and is a requirement of GPRS pre-paid Service Logic designers.

The SDL in 23.078 (Process "GSM_SSF", figure 6.17, sheet 12), reflects the correct behaviour, as proposed in the present CR. That is, when the gprsSSF sends "Apply Charging Report GPRS" to the gsmSCF and the gsmSCF responds with "Cancel GPRS" for the PDP Context or Session for which the Apply Charging Report GPRS was sent, then the armed EDPs for that PDP Context or Session are disarmed. The relationship for that PDP Context or Session shall be terminated. The PDP Context or Session shall continue.

Summary of change: ⌘ Textual correction to section 6.5.3.8.2.1.

Consequences if not approved: ⌘ GPRS pre-paid service may not function properly due to inconsistent behaviour of gprsSSFs from different vendors.

Clauses affected:	⌘	6.5.3.8.2.1
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	The following additional textual corrections to the warning note are proposed in the present CR: - The logic of the warning has been corrected. First it is stated that there may be additional timers in the gprsSSF. It is then stated what the implication of these additional timers may be. - The note states that service behaviour may be unpredictable when the gsmSCF does not respond with "Apply Charging GPRS" or "Release GPRS". The additional clause in the sentence thereafter, 'unless the gprsSSF releases the PDP Context or Session', is therefore superfluous and shall be removed. Rationale of above reasoning is that if the gsmSCF does not respond with "Release GPRS", then a gprsSSF-initiated PDP Context or Session release is by definition unpredictable behaviour.

*** First Change ***

6.5.3.8.2 TC guard timer

6.5.3.8.2.1 General

When the gprsSSF sends an Apply Charging Report GPRS operation to the gsmSCF, with SessionActive or ContextActive variable set to TRUE, then the gprsSSF shall start the TC guard timer. The gprsSSF shall also mark for the Session or PDP Context for which the Apply Charging Report GPRS was sent, that a corresponding Apply Charging GPRS operation from the gsmSCF is expected.

When the gprsSSF receives an Apply Charging GPRS operation or a Release GPRS operation, then the 'Waiting-for-AC' marking(s) for the Session or PDP Context shall be removed. The gprsSSF shall then check if the TC guard timer shall be stopped (task box 'Check TC guard timer'). The TC guard timer shall be stopped if there are no more Apply Charging GPRS operations expected for the Session and all PDP Contexts.

When an event occurs that results in the termination of a PDP Context, then the 'Waiting-for-AC' markings for that PDP Context shall be removed. The gprsSSF shall then check if the TC guard timer shall be stopped (task box 'Check TC guard timer'). The TC guard timer shall be stopped if there are no more ApplyChargingGPRS operations expected for the Session and all PDP Contexts.

When the TC guard timer expires in state Monitoring, then the gprsSSF shall close the TC dialogue, provided that all conditions for closing the TC dialogue are fulfilled, ie. there are no Operation Results expected from the gsmSCF, no Operations or Errors to be sent to the gsmSCF and no Operations from the gsmSCF received and waiting to be processed.

When the TC guard timer expires in state Waiting_for_Instructions, then no action shall be taken.

~~Service Designers should note that if the gsmSCF does not send an Apply Charging GPRS or Release GPRS in response to an Apply Charging Report GPRS when the gprsSSF is awaiting such response, service behaviour may be unpredictable, unless the gprsSSF releases the PDP Context or Session involved. There may be additional timer(s) in gprsSSF to supervise the response from the gsmSCF on the Apply Charging Report GPRS operation.~~

Service Designers should note that t~~T~~here may be additional timer(s) in the gprsSSF to supervise the response from the gsmSCF on the Apply Charging Report GPRS procedure. As a result of this, ~~Service Designers shall note that~~ if the gsmSCF does not send an Apply Charging GPRS, Release GPRS or Cancel GPRS in response to an Apply Charging Report GPRS when the gprsSSF is awaiting such response, then service behaviour may be unpredictable.~~,~~

*** End of Document ***

3GPP TSG-CN2 Meeting #17 **N2-010215**
Sophia Antipolis, France, 26 February – 2 March 2001

CHANGE REQUEST

⌘ **23.078** **CR** **283** ⌘ rev ⌘ Current version: 3.7.0 ⌘

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

Title:	⌘	Marking of Location Number in Initial DP SMS as 'Conditional'
Source:	⌘	Ericsson
Work item code:	⌘	CAMEL3
Date:	⌘	28 February 2001
Category:	⌘	F (agreed by concensus)
Release:	⌘	R99

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change: ⌘

For CAMEL control of MO-SMS, the Initial DP SMS procedure contains Information Element "Location Information in MSC". Location Information in MSC contains the Information Element "Location Number".

Location Number is marked as Mandatory in Initial DP for circuit switched call control. For SMS purposes, it has been agreed not to mark this element as mandatory.

For CAMEL control of MT-SMS, which forms part of CAMEL Phase 4, the Initial DP SMS procedure has the Location Number marked as Conditional. The Location Number shall be provided to the SCP if the MSC has the required configuration for the sending of Location Number.

The provisioning of Location Number in the MSC is an operator option.

As Location Number may be needed for pre-paid charging purposes for MO-SMS, it shall be marked as Conditional in Initial DP SMS for MO-SMS. If it is marked as '-' (not applicable), then it may never be provided to the SCP, even if the MSC has the required configuration for the sending of Location Number.

Marking Location Number as 'Conditional' in Initial DP SMS for MO-SMS also results in more consistent service behaviour for CAMEL control of MO-SMS and CAMEL control of MT-SMS.

The marking of Location Number as Conditional has no impact on the CAP protocol, as this parameter is available as an OPTIONAL parameter in CAP already.

Summary of change: ⌘ Location Number in "Initial DP SMS" Information Flow is marked as 'Conditional'.

Consequences if not approved:	⌘	MO-SMS Service Logic may not receive Location Number in situations where this may be required.

Clauses affected:	⌘	7.6.1.2		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

****** First Change ******

7.6.1.2 Initial DP SMS

7.6.1.2.1 Description

This IF is generated by the gsmSSF/gprsSSF when a trigger is detected at a DP in the state model, to request instructions from the gsmSCF.

7.6.1.2.2 Information Elements

The following information elements are required:

Information element name	Required	Description
Destination Subscriber Number	M	This IE contains a number to identify the Destination short message entity. The Destination Subscriber Number shall be retrieved from the SMS-SUBMIT TPDU or the SMS-COMMAND TPDU, which are specified in 3GPP TS 23.040 [21].
Calling Party Number	M	This IE carries the MSISDN of the subscriber who sent the short message.
Event Type	M	This IE indicates the armed event (i.e., *SMS_Collected_Info*) resulting in the Initial DP SMS IF.
IMSI	M	This IE identifies the mobile subscriber.
Location Information in MSC	C	This IE is described in a table below.
Location Information in SGSN	C	This IE is described in a table below.
Service Key	M	This IE indicates to the gsmSCF the requested CAMEL Service. It is used to address the required application/SLP within the gsmSCF.
Time And Timezone	M	This IE contains the time that the gsmSSF/gprsSSF was triggered, and the time zone the gsmSSF/gprsSSF resides in.
TP Short Message Submission Specific Information	M	This IE contains the 1st octect of the SMS-SUBMIT TPDU or the SMS-COMMAND TPDU, which are specified in 3GPP TS 23.040 [21]. For the SMS-SUBMIT TPDU, the 1st octet contains the following information: - Message Type Indicator - Reject Duplicates - Validity Period Format - Status Report Request - User Data Header Indicator - Reply Path For the SMS-COMMAND TPDU, the 1st octet contains the following information: - Message Type Indicator - User Data Header Indicator - Status Report Request Refer to 3GPP TS 23.040 [21] for an indication of which elements of this 1st octet are Mandatory and which elements are Conditional.
TP Protocol Identifier	M	This IE indicates the protocol used above SM-Transfer Layer. The TP Protocol Identifier shall be retrieved from the SMS-SUBMIT TPDU or the SMS-COMMAND TPDU, which are specified in 3GPP TS 23.040 [21].
TP Data Coding Scheme	C	This IE indicates the data coding scheme of the TP-User Data field, and may indicate a message class. The message class may indicate e.g. the originator of the Short Message. The TP Data Coding Scheme shall be retrieved from the SMS-SUBMIT TPDU, which is specified in 3GPP TS 23.040 [21].
TP Validity Period	C	This IE indicates the length of the validity period or the absolute time of the validity period termination. This IE is only used for the SMS-SUBMIT TPDU. The TP Validity Period shall be retrieved from the SMS-SUBMIT TPDU which is specified in 3GPP TS 23.040 [21].
SMSC Address	M	This IE defines the address of the SMSC to which the MO short message is intended to be submitted.

M Mandatory (The IE shall always be sent).

C Conditional (The IE shall be sent, if available).

Location Information in MSC is based on the Location Information IE defined in 3GPP TS 23.018 [3]. The following differences apply:

Information element name	Required	Description
Location number	~~-~~C	See 3GPP TS 23.018 [3].~~Not applicable~~
VLR number	M	See 3GPP TS 23.018 [3].
Age of location information	-	Not applicable
Current Location Retrieved	-	Not applicable
Selected LSA Identity	C1	This IE indicates the LSA identity associated with the current position of the MS. Shall be sent if the LSA ID in the subscriber data matches the LSA ID of the current cell. In the case of multiple matches the LSA ID with the highest priority shall be sent. See 3GPP TS 23.073 [23].

M Mandatory (The IE shall always be sent).

C Conditional (The IE shall be sent, if available).

C1 Conditional (The IE shall be sent, if available and SoLSA is supported).

- Not applicable

Location Information in SGSN is based on the Location Information IE defined in 3GPP TS 23.018 [3]. The following differences apply:

Information element name	Required	Description
Location number	-	Not applicable
Service area ID	C1	See 3GPP TS 23.018 [3].
Cell ID	C1	See 3GPP TS 23.018 [3].
Location area ID	C1	See 3GPP TS 23.018 [3].
Routeing area ID	C	See 3GPP TS 23.003 [37].
Geographical information	C	See 3GPP TS 23.032 [34].
Geodetic information	-	Not applicable
VLR number	-	Not applicable
Age of location information	-	Not applicable
Current Location Retrieved	-	Not applicable
SGSN number	M	Global Title of the Serving GPRS Service Node. See 3GPP TS 23.060 [11].
Selected LSA Identity	C2	This IE indicates the LSA identity associated with the current position of the MS. Shall be sent if the LSA ID in the subscriber data matches the LSA ID of the current cell. In the case of multiple matches the LSA ID with the highest priority shall be sent. See 3GPP TS 23.073 [23]

M Mandatory (The IE shall always be sent).

C Conditional (The IE shall be sent, if available).

C1 Conditional (The IE shall be sent, if available. One and only one of the three conditional IEs shall be sent).

C2 Conditional (The IE shall be sent, if available and SoLSA is supported).

- Not applicable

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

3GPP TSG_CN_WG2, Meeting #17 ***Tdoc N2-010221***
Sophia-Antipolis, France, 26.th February - 2.nd March, 2001

CR-Form-v3

CHANGE REQUEST

⌘ **23.078** **CR** **284** ⌘ rev **1** ⌘ Current version: **3.7.0** ⌘

*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 on checking DP criteria and sending VT/T-CSI
Source:	⌘	Siemens AG
Work item code:	⌘	CAMEL3
Date:	⌘	1 March 2001
Category:	⌘	**F** Essential correction
Release:	⌘	R99

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
REL-4	*(Release 4)*
REL-5	*(Release 5)*

Reason for change:	⌘	Current description on the criteria for DP Terminating_Attempt_Authorised was copied from CAMEL phase 2. It was valid when there was only one TDP: Terminating_Attempt_Authorised. As CAMEL phase 3 defined more TDPs, T_Busy and T_No_Answer, current description, if it was left unchanged, no T/VT-CSI would be sent to the GMSC/MSC if any of the criteria for DP Terminating_Attempt_Authorised is not valid.
Summary of change:	⌘	Change description in the subclause 4.2.1.2.4 so that the VT/T-CSI are still sent even if the criteria for DP Terminating_Attempt_Authorised are not met.
Consequences if not approved:	⌘	Serious misunderstanding to the HLR/VLR implementors. No possibility of providing valid VT/T-CSI for other DPs if any of the criteria for DP Terminating_Attempt_Authorised is not met.

Clauses affected:	⌘	4.2.1.2.4
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

4.2.1.2.4 Criteria at DP Terminating_Attempt_Authorised

The HLR may store a list of up to 5 basic service codes, each of which may represent an individual basic service or a basic service group. Compound basic service group codes, as defined in 3GPP TS 29.002 [4], are not allowed for conditional triggering. This list is a triggering list.

The criteria for DP Terminating_Attempt_Authorised are checked in the HLR for the GMSC or in the VLR for the MSC. The HLR shall ~~only~~ include the information for this TDP ~~T-CSI~~ in the CAMEL subscription information sent to the GMSC only if the criteria are met. The VLR shall ~~only~~ include the information for this TDP ~~VT-CSI~~ in the CAMEL subscription information sent to the MSC only if the criteria are met.

The basic service criterion is met if the basic service for the call matches a stored individual basic service code or is a member of the group defined by a stored basic service group code. For the purpose of this paragraph a general bearer service is a member of the corresponding bearer service group.

3GPP TSG-CN2 Meeting #17
Sophia Antipolis, France, 26 February - 2 March 2001

Tdoc N2-010158

CR-Form-v3

CHANGE REQUEST

⌘ **23.078** **CR** **274** ⌘ rev **-** ⌘ Current version: **3.7.0** ⌘

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*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 Interactions with Call Barring in CAMEL Phase 3.
Source:	⌘	Alcatel
Work item code:	⌘	CAMEL3
Date:	⌘	06 February 2001
Category:	⌘	**F** Classification: Essential correction
Release:	⌘	R99

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change: ⌘

The Call Barring checks are currently not consistent in the SDL diagrams for all call situations, and they are not in line with 22.078.

This CR corrects these interactions in accordance with 22.078.

The current situation in the SDL diagrams is as follows:

1. MO case:

BAOC and the corresponding ODB category are checked before the CAMEL trigger (as for non-CAMEL calls).

The remaining outgoing barring checks are performed after the CAMEL trigger. If there are multiple CAMEL triggers, CB is checked after the last one, i.e. after the O-CSI, D-CSI and N-CSI trigger.

There is however the following problem:

- If there is a D-CSI or an N-CSI present, a barring check is only performed in procedure CAMEL_MO_Dialled_Services. This check is made independently of whether the trigger criteria for the dialled triggers are fulfilled or not.
  This behaviour is correct.

- If there is no D-CSI and no N-CSI present (see procedure CAMEL_OCH_MSC_INIT, sheet 2), two identical barring checks are performed in sequence, one in procedure CAMEL_OCH_MSC_INIT (which is unnecessary), and one in procedure CAMEL_MO_Dialled_Services.

  Note that procedure CAMEL_MO_Dialled_Services is called by procedure Outgoing_Call_Setup_MSC (sheet 3) also if no dialled trigger is performed.

If there is a reconnect in the MO case, a barring check is made in one of the procedures CAMEL_OCH_MSC1, CAMEL_OCH_MSC2 or CAMEL_OCH_MSC_DISC2. Processing continues with “Reconnect = True” in procedure Outgoing_Call_Setup_MSC (sheet 3), which calls the procedure CAMEL_MO_Dialled_Services. The procedure CAMEL_MO_Dialled_Services is

called independently of a dialled trigger and performs again a barring check.

2. CF case:

According to 22.078, no barring check shall be performed for the forwarding leg in the MSC.

This is reflected in procedures CAMEL_CF_MSC_INIT and CAMEL_CF_Dialled_Services, where no barring check is made.

However, procedure MT_CF_MSC (23.018) uses the procedures CAMEL_MO_MSC1, CAMEL_MO_MSC2 and CAMEL_MO_MSC_DISC2, which include the barring check.

Furthermore, MT_CF_MSC uses procedure CAMEL_CF_MSC_ANSWER, which again uses CAMEL_MO_MSC_DISC2.

A barring check is therefore performed in the CF case after a reconnect, which is against 22.078. This barring check is even performed in case of CF in the GMSC, where a Send Info For Reconnected Call must fail.

3. MT / VT case:

No barring check is performed in the MT and VT cases. This behaviour is in line with 22.078.

Summary of change: ⌘ Correction of SDL diagrams:

- Delete the decision boxes “D-CSI present” and “N-CSI present” and the barring check (Send Info for Outgoing Call) in procedure CAMEL_OCH_MSC_INIT (sheet 2).
- Delete the barring check (Send Info for Reconnected Call) in procedures CAMEL_OCH_MSC1, CAMEL_OCH_MSC2 and CAMEL_OCH_MSC_DISC2.

Consequences if not approved: ⌘ Incorrect handling of Call Barring checks. Misalignment with 22.078

Clauses affected: ⌘ 4.5.2.1.8 Action of the MSC in procedure CAMEL_Store_Destination_Address

Figure 4.9a: Procedure CAMEL_MO_Dialled_Services (sheet 1)

Figure 4.10b: Procedure CAMEL_OCH_MSC_INIT (sheet 2)

Figure 4.14a: Procedure CAMEL_OCH_MSC1 (sheet 1)

Figure 4.15a: Procedure CAMEL_OCH_MSC2 (sheet 1)

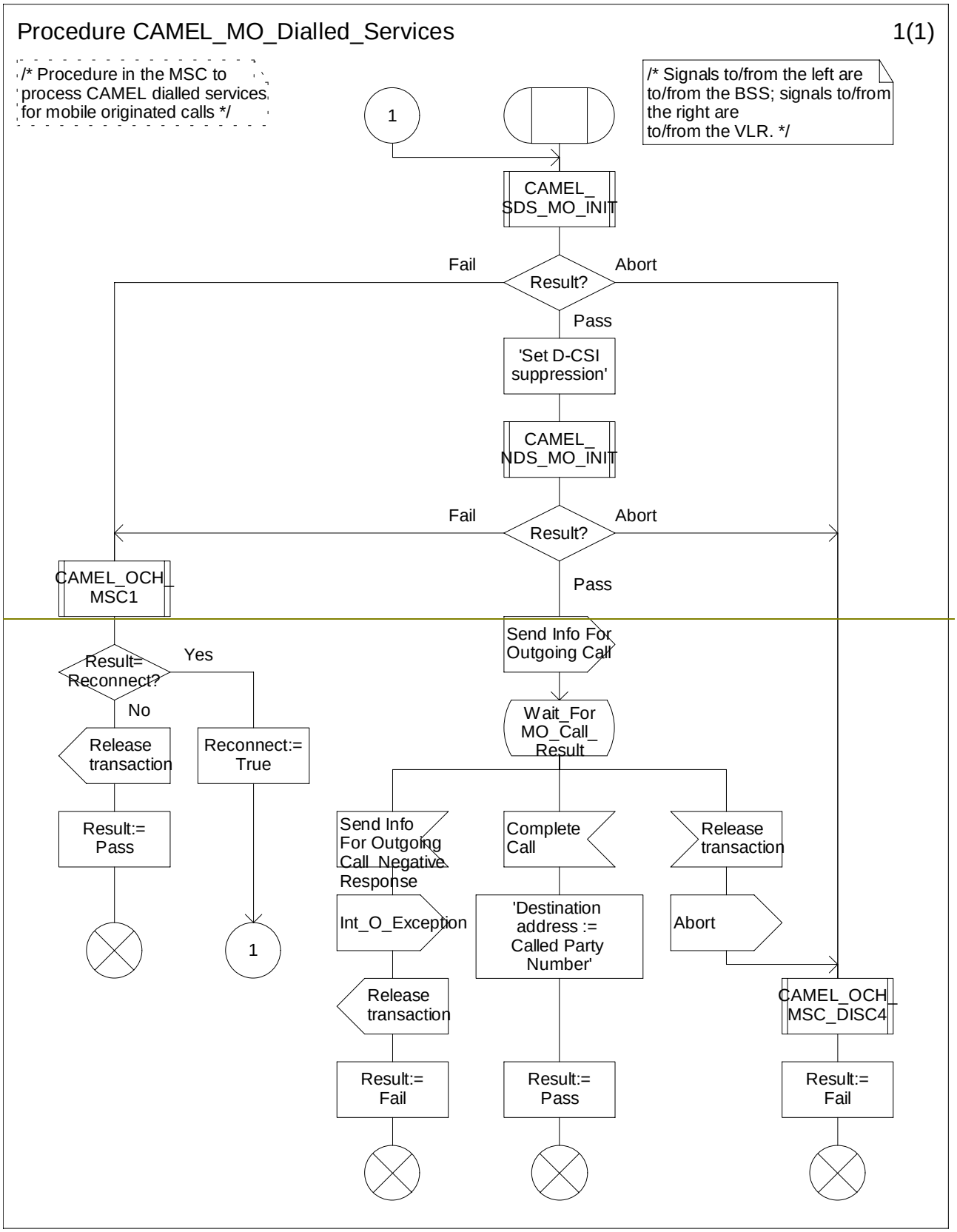
Figure 4.17a: Procedure CAMEL_OCH_MSC_DISC2 (sheet 1)

Other specs affected: ⌘

- ☐ Other core specifications ⌘
- ☐ Test specifications
- ☐ O&M Specifications

Other comments: ⌘

— First modified section —



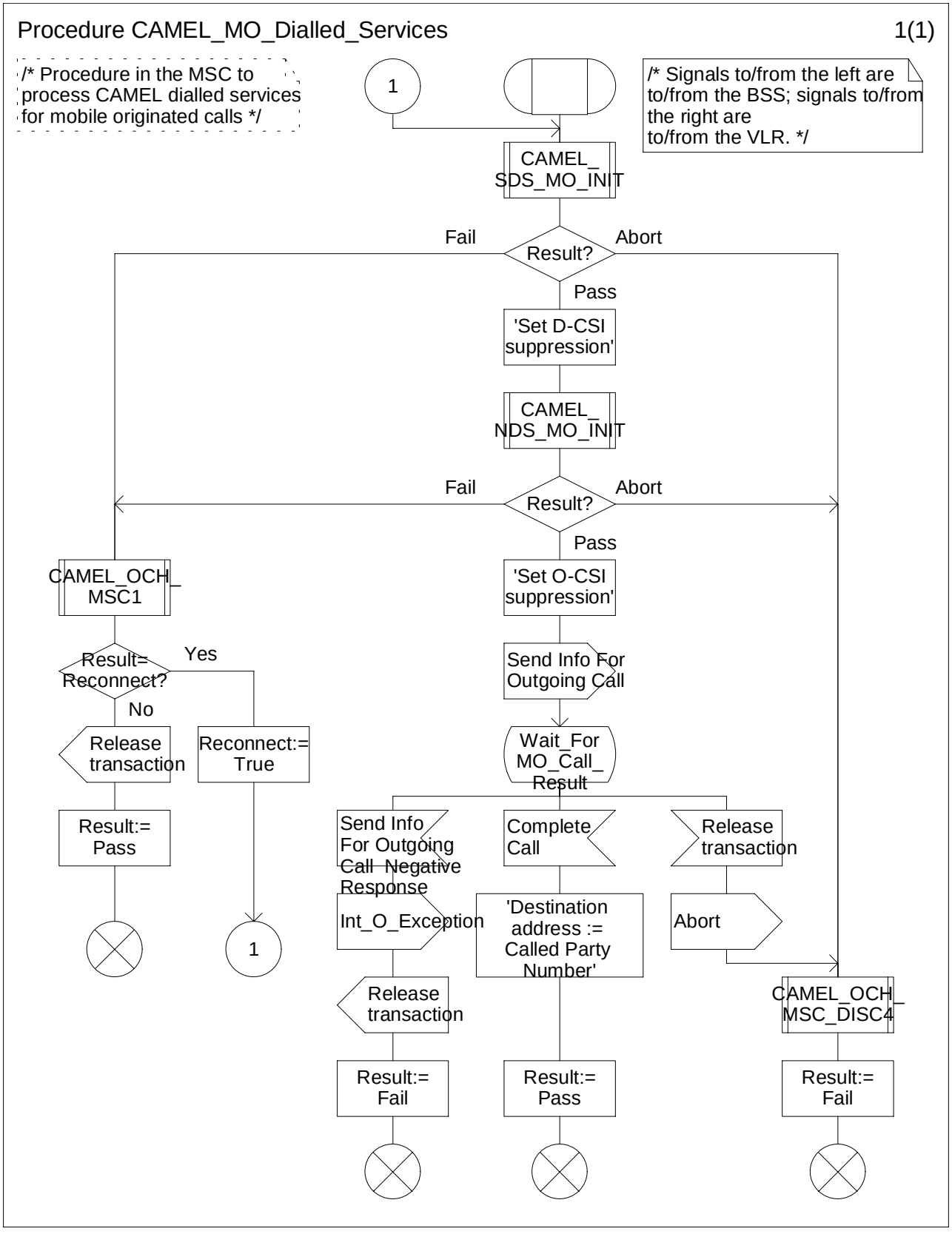
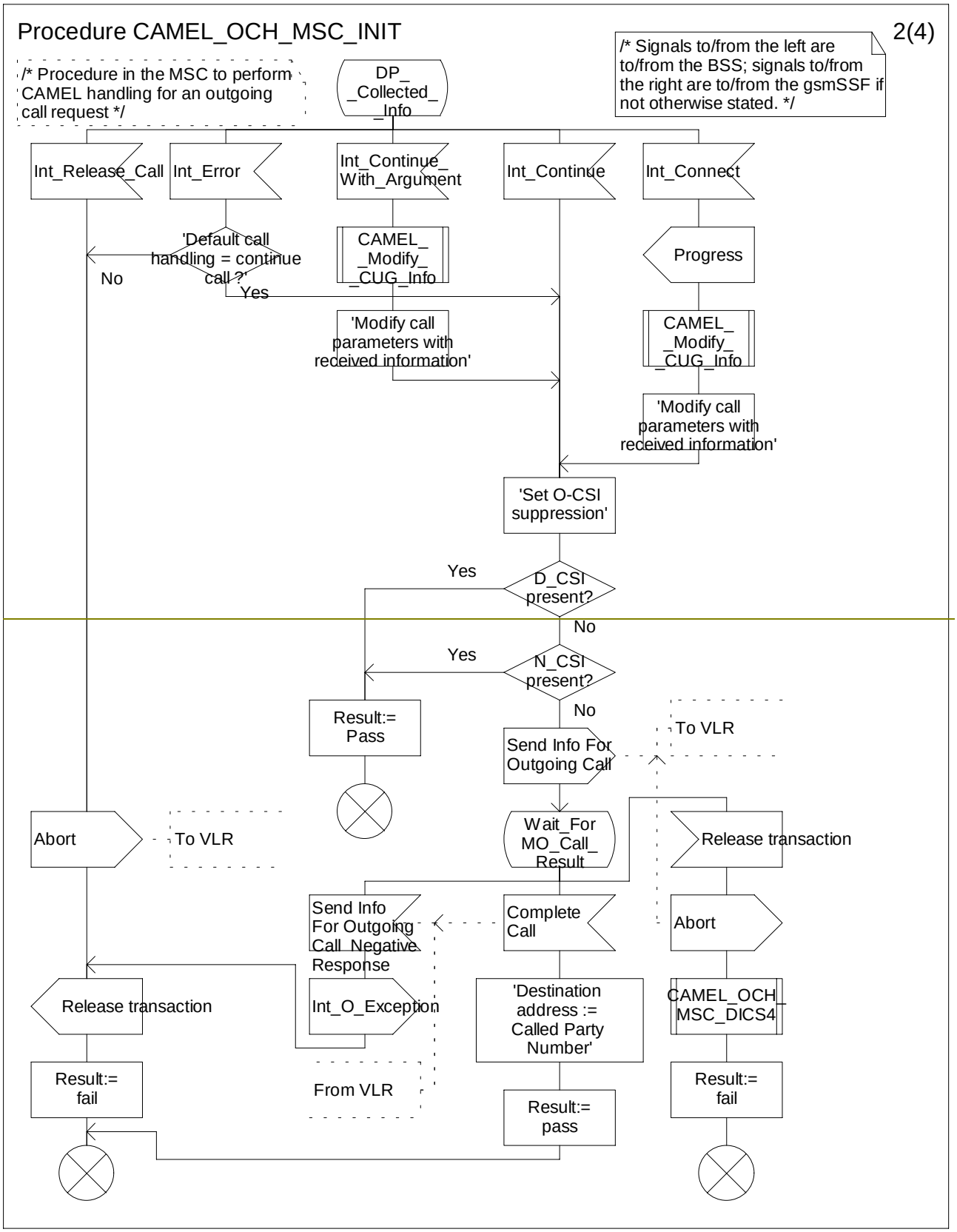


Figure 4.9a: Procedure CAMEL_MO_Dialled_Services (sheet 1)

— Next modified section —



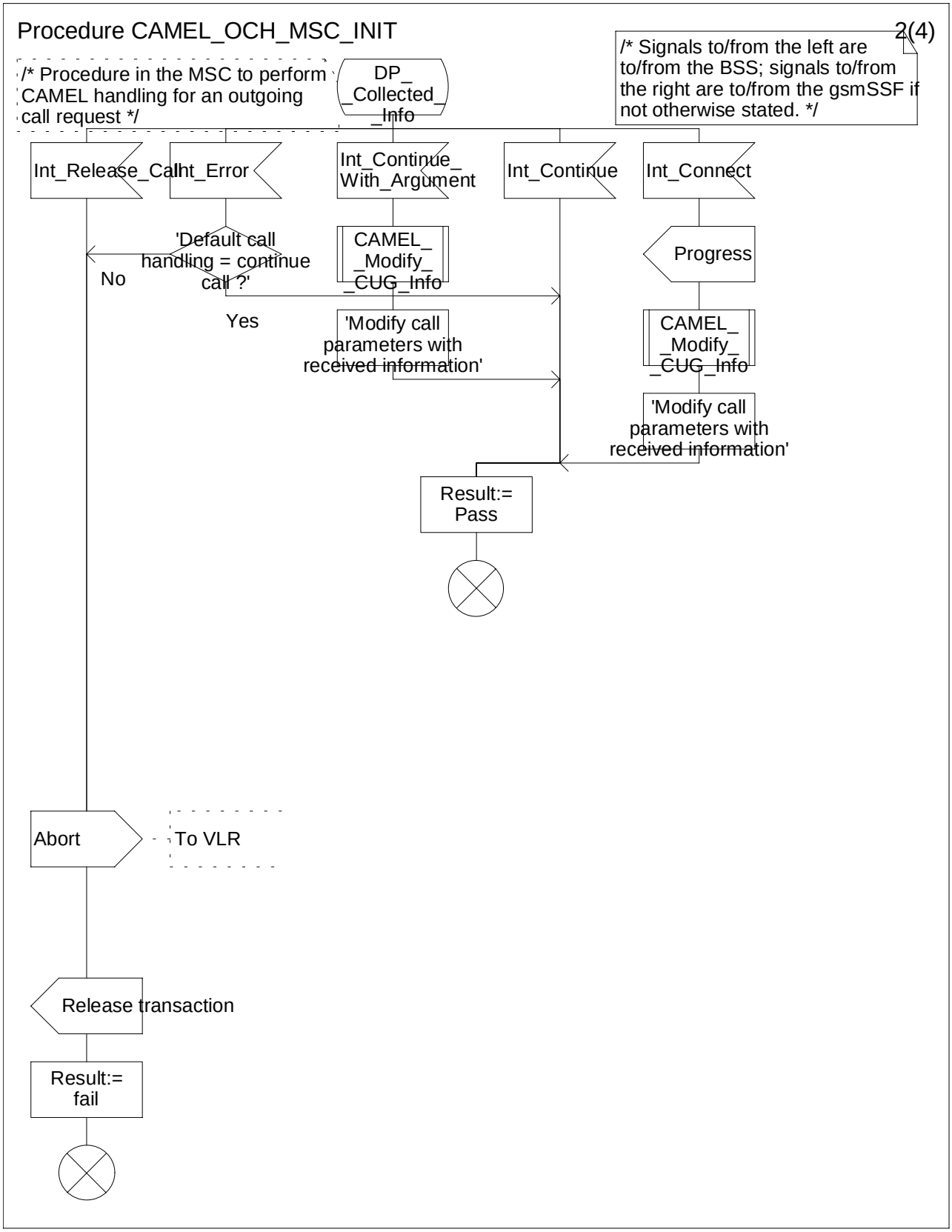


Figure 4.10b: Procedure CAMEL_OCH_MSC_INIT (sheet 2)

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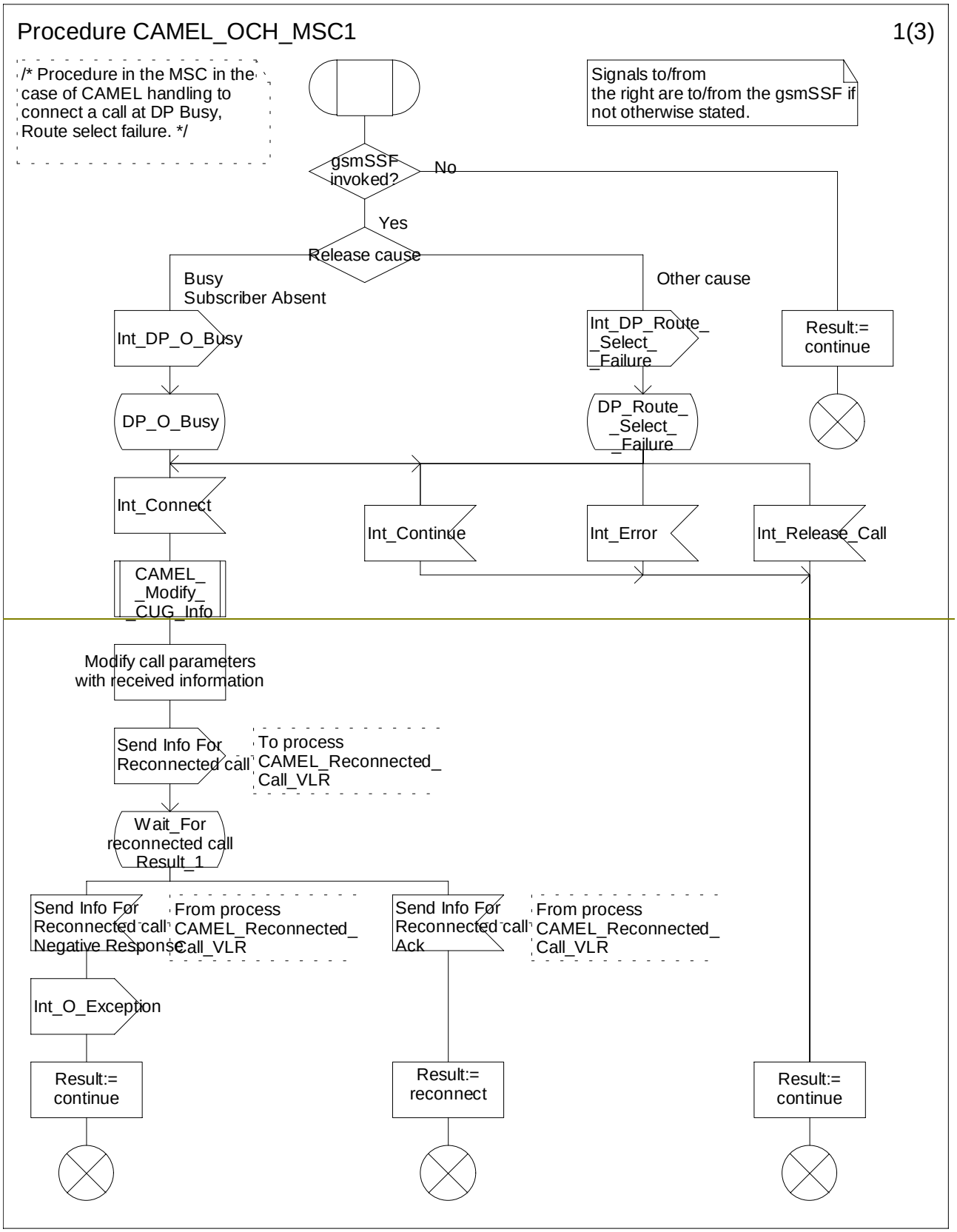

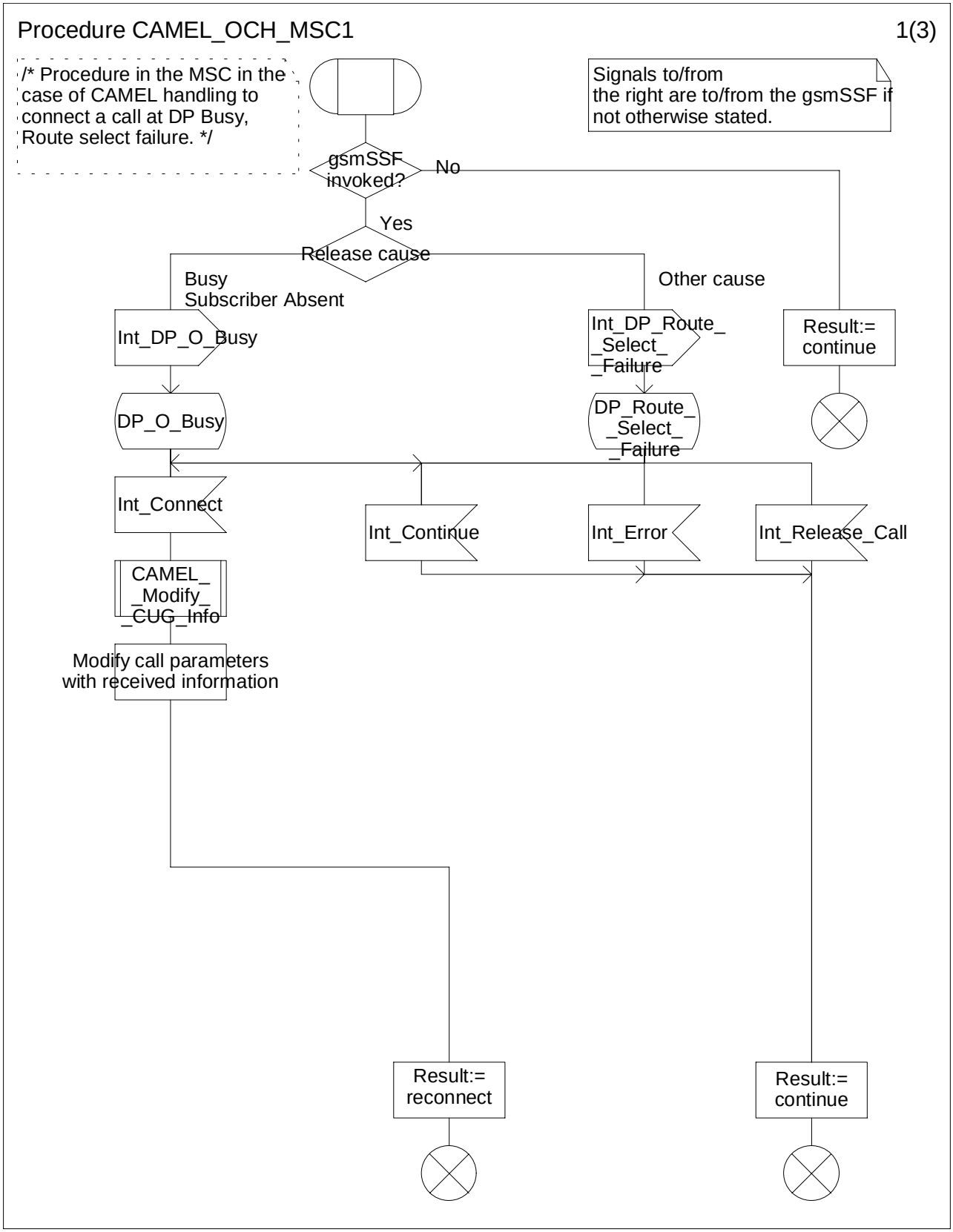

Figure 4.14a: Procedure CAMEL_OCH_MSC1 (sheet 1)

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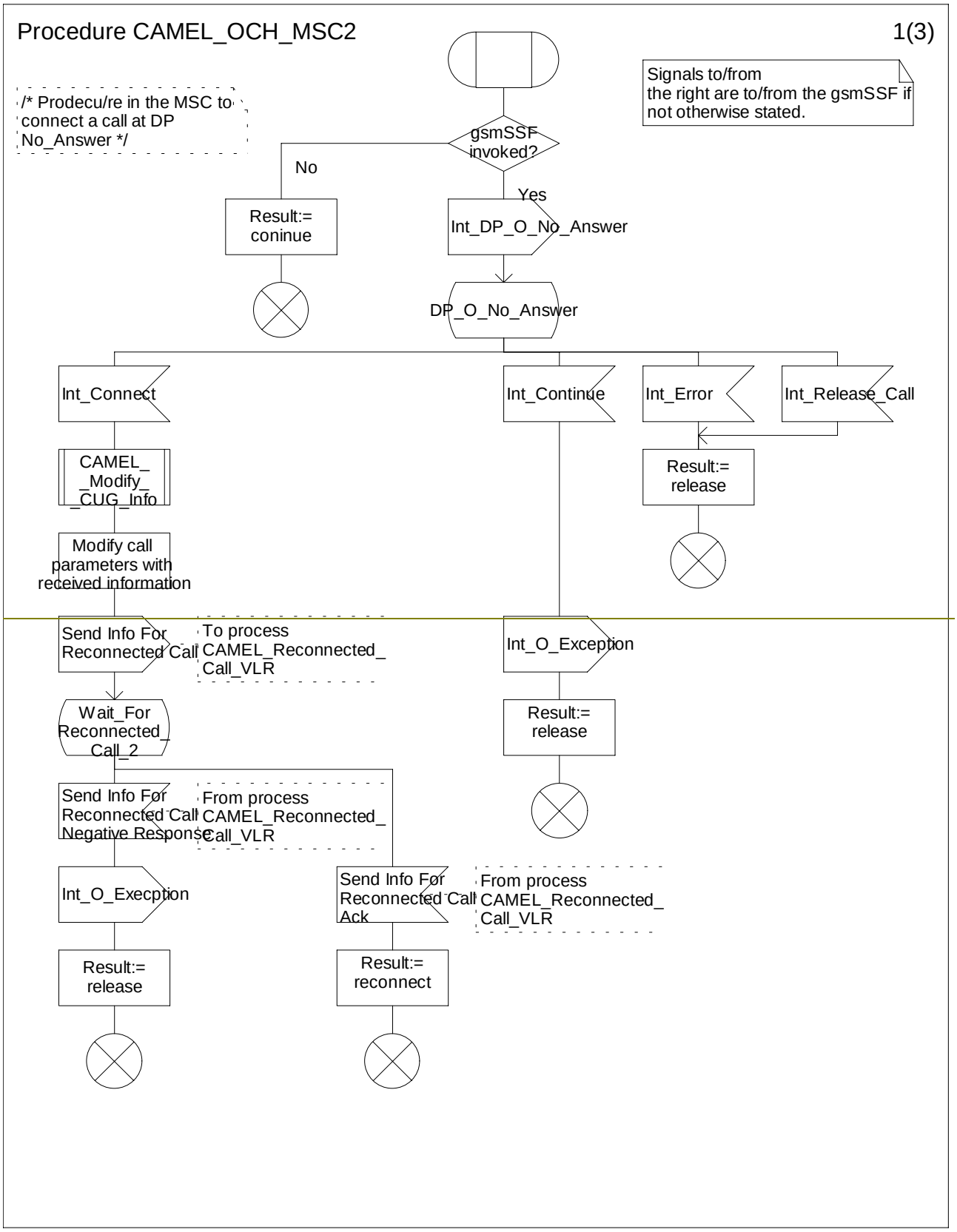

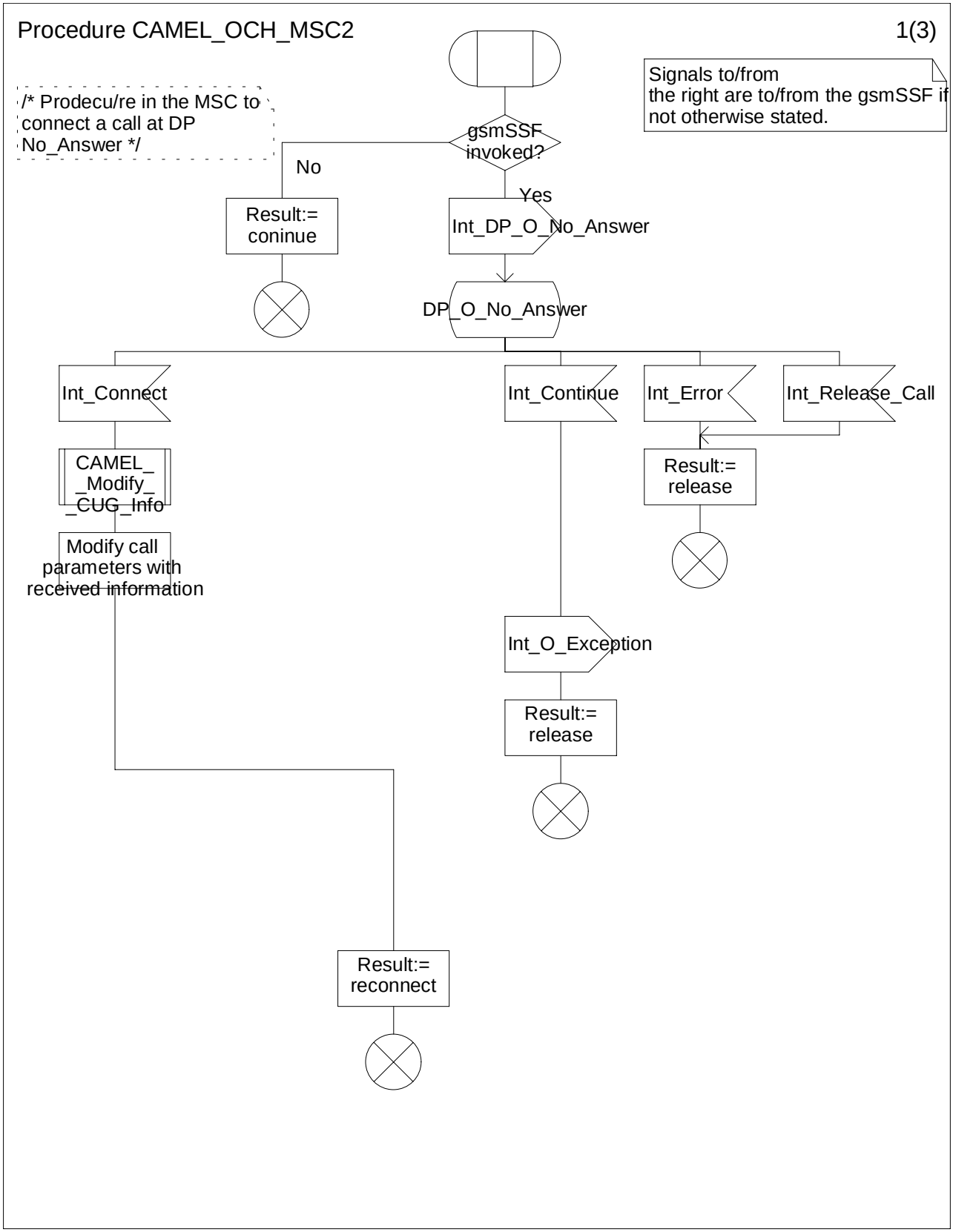

Figure 4.15a: Procedure CAMEL_OCH_MSC2 (sheet 1)

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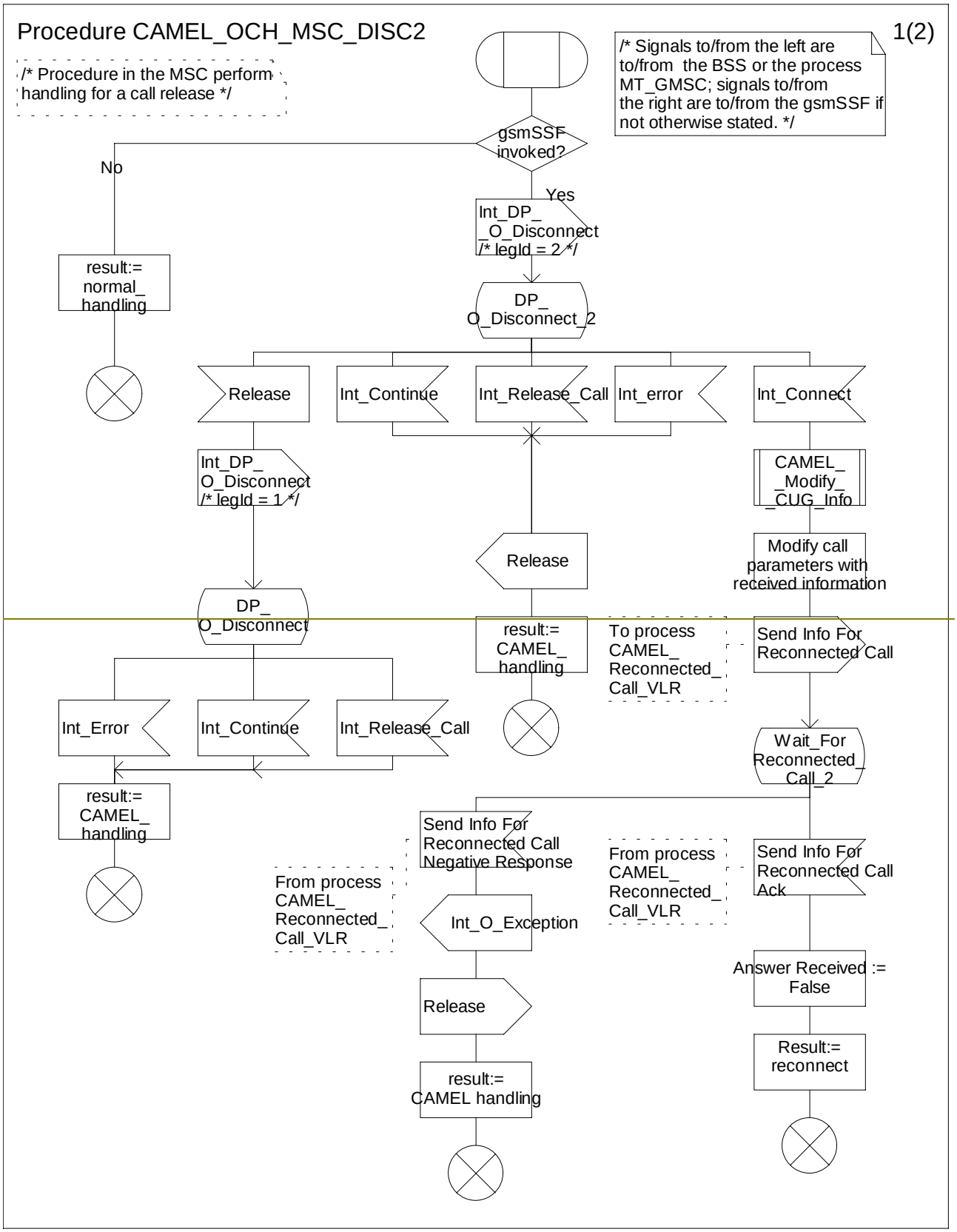


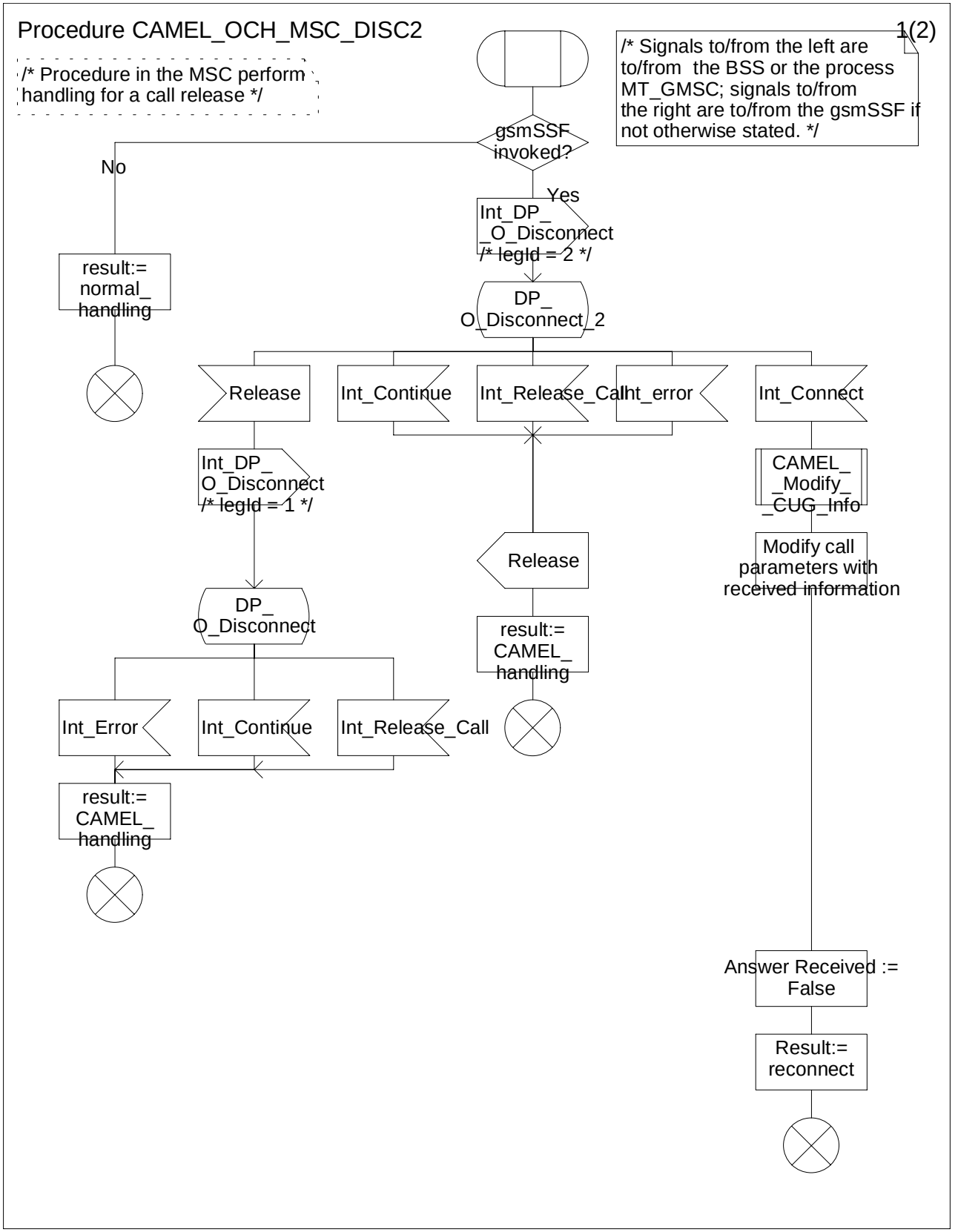


Figure 4.17a: Procedure CAMEL_OCH_MSC_DISC2 (sheet 1)

3GPP TSG-CN2 Meeting #17 ***Tdoc N2-010163***
Sophia Antipolis, France, 26 February - 2 March 2001

CR-Form-v3

CHANGE REQUEST

⌘ **23.078** **CR** **279** ⌘ rev **-** ⌘ Current version: **3.7.0** ⌘

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 Triggering after Call Gapping in CAMEL Phase 3.
Source:	⌘	Alcatel
Work item code:	⌘	CAMEL3
Date:	⌘	7 February 2001
Category:	⌘	**F** Classification: Essential correction
Release:	⌘	R99

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change: ⌘

Currently 23.078 specifies the following behaviour:

Multiple TDPs may be armed in a single CSI e.g. some of DP Collected_Info, DP Route_Select_Failure or some of DP Terminating_Attempt_Authorised, DP T_Busy, DP T_No_Answer. Different gsmSCF addresses may be associated with different TDPs.

If Call Gapping now applies to one of the TDPs and if the Call Gap criteria are matched this service trigger will not occur. Instead default call handling will apply. If the call is now allowed to continue the current 23.078 behaviour disables the gsmSSF (next state = Idle). Due to this also the following armed TDPs will not work, even if this service trigger indicates another SCP. So Call Gapping of one service disables all the following ones too.

It is proposed by this CR to correct this behaviour and not to disable one service by a Call Gapping of the previous TDP. That is the gsmSSF shall not go to idle but should wait for the next request if there are further armed TDPs for this CSI.

Summary of change: ⌘

Change of SDL diagrams:

The gsmSSF is going to the state Wait_For_Request and not to Idle if there are armed TDPs.

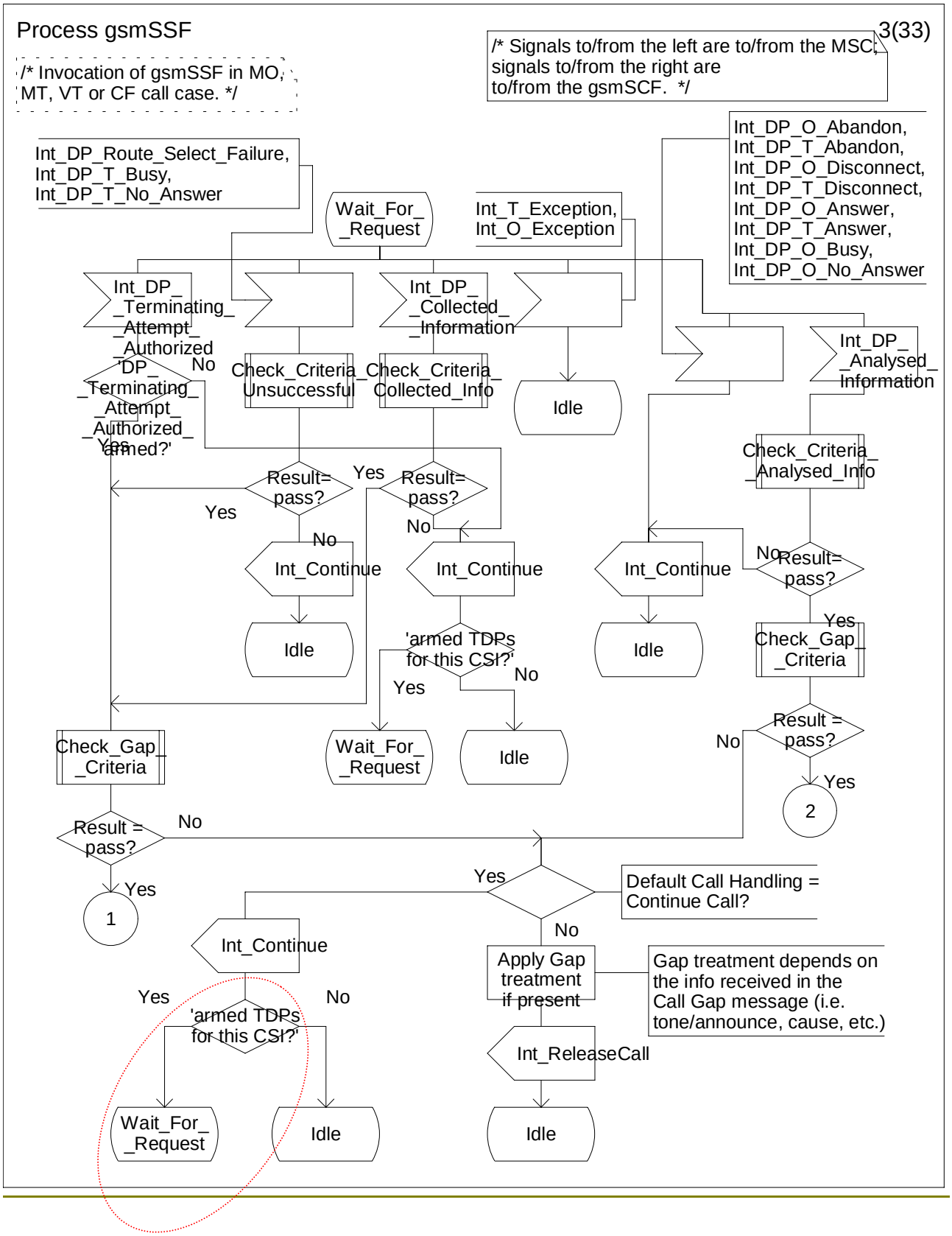
Consequences if not approved: ⌘ Gapped services are disabling other continuing services.

Clauses affected: ⌘ 4.5.6.4 Process gsmSSF and procedures:
Figure 4.64c: Process gsmSSF (sheet 3)

Other specs affected: ⌘
☐ Other core specifications ⌘
☐ Test specifications
☐ O&M Specifications

Other comments: ⌘

— First modified section —



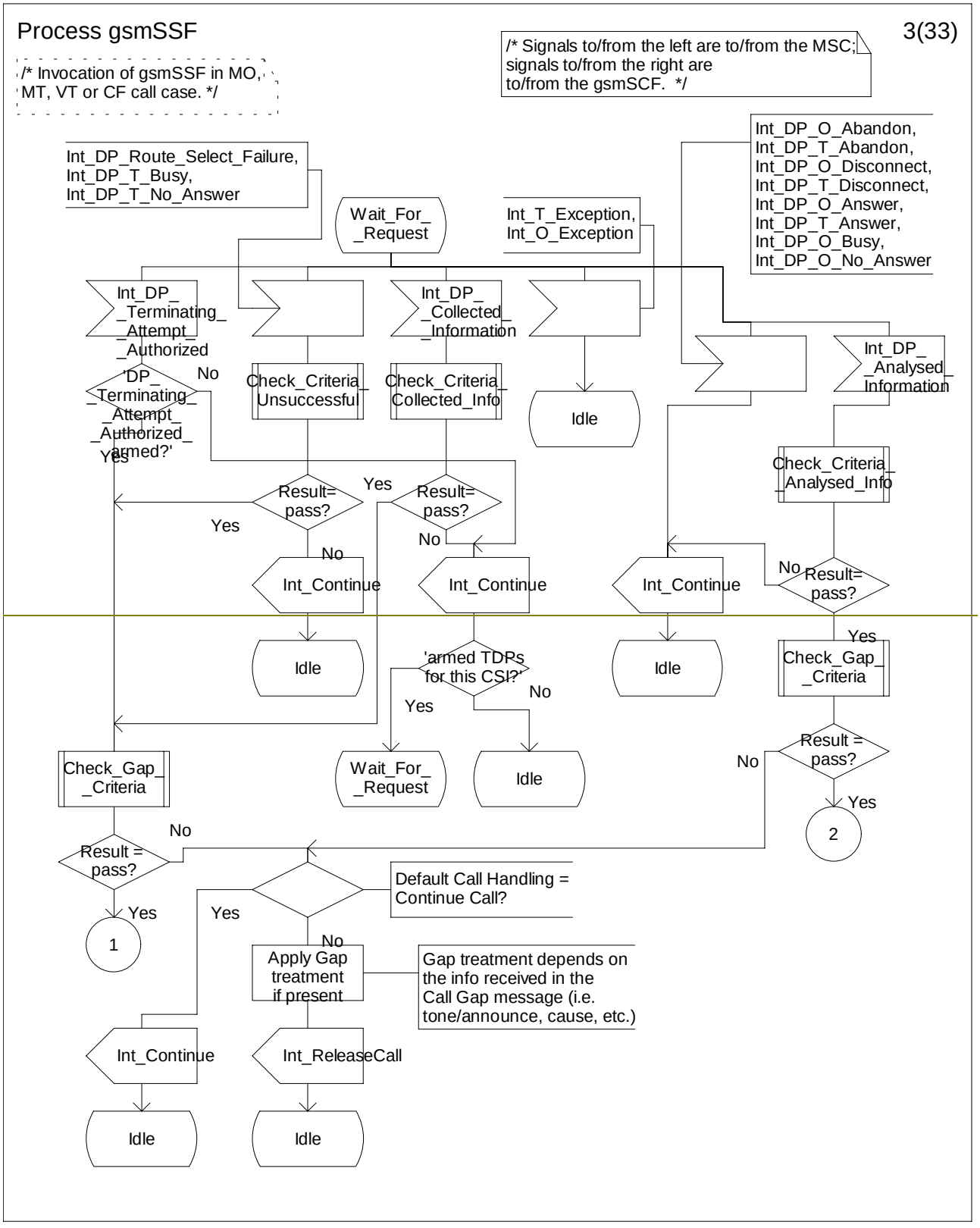


Figure 4.64c: Process gsmSSF (sheet 3)

3GPP TSG-CN2 Meeting #17
Sophia Antipolis, France, 26 February – 2 March 2001

Tdoc N2-010219
N2-010160 rev

CR-Form-v3

CHANGE REQUEST

⌘ **23.078** **CR** **285** ⌘ rev **-** ⌘ Current version: **3.7.0** ⌘

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 Output Signals in Process Reconnected_MT_Call_VLR
Source:	⌘	Alcatel
Work item code:	⌘	CAMEL3
Date:	⌘	1 March 2001
Category:	⌘	**F** Classification: Essential correction
Release:	⌘	R99

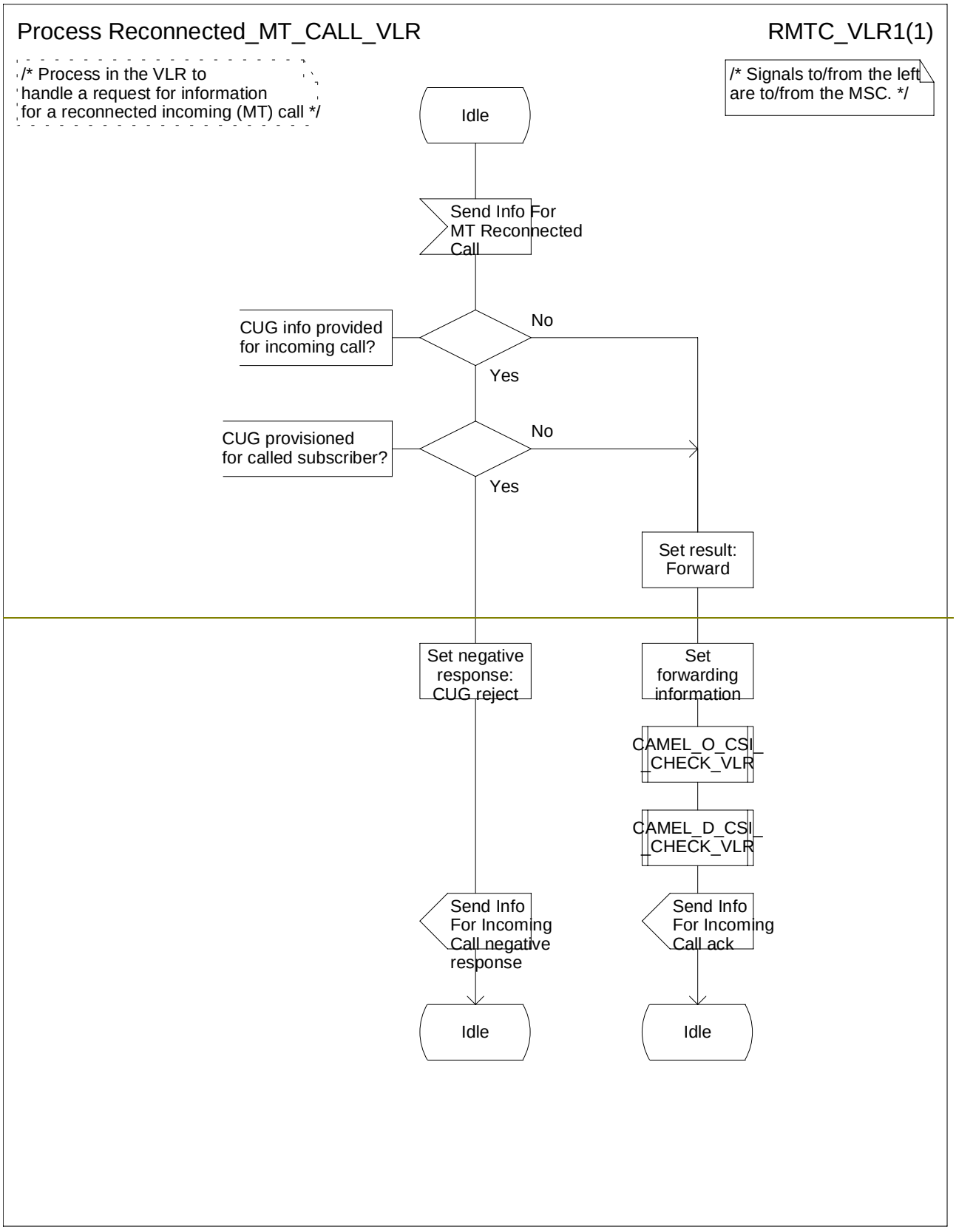
Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change:	⌘	The SDL Process Reconnected_MT_Call_VLR is using the wrong Output Signals.
Summary of change:	⌘	Change of SDL diagrams: Use in Process Reconnected_MT_Call_VLR the correct Output Signals.
Consequences if not approved:	⌘	Incorrect handling in Process Reconnected_MT_Call_VLR

Clauses affected:	⌘	4.5.4.2 Handling of mobile terminating calls in the VLR Figure 4.54: Process Reconnected_MT_Call_VLR (sheet 1)
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

— Modified section —



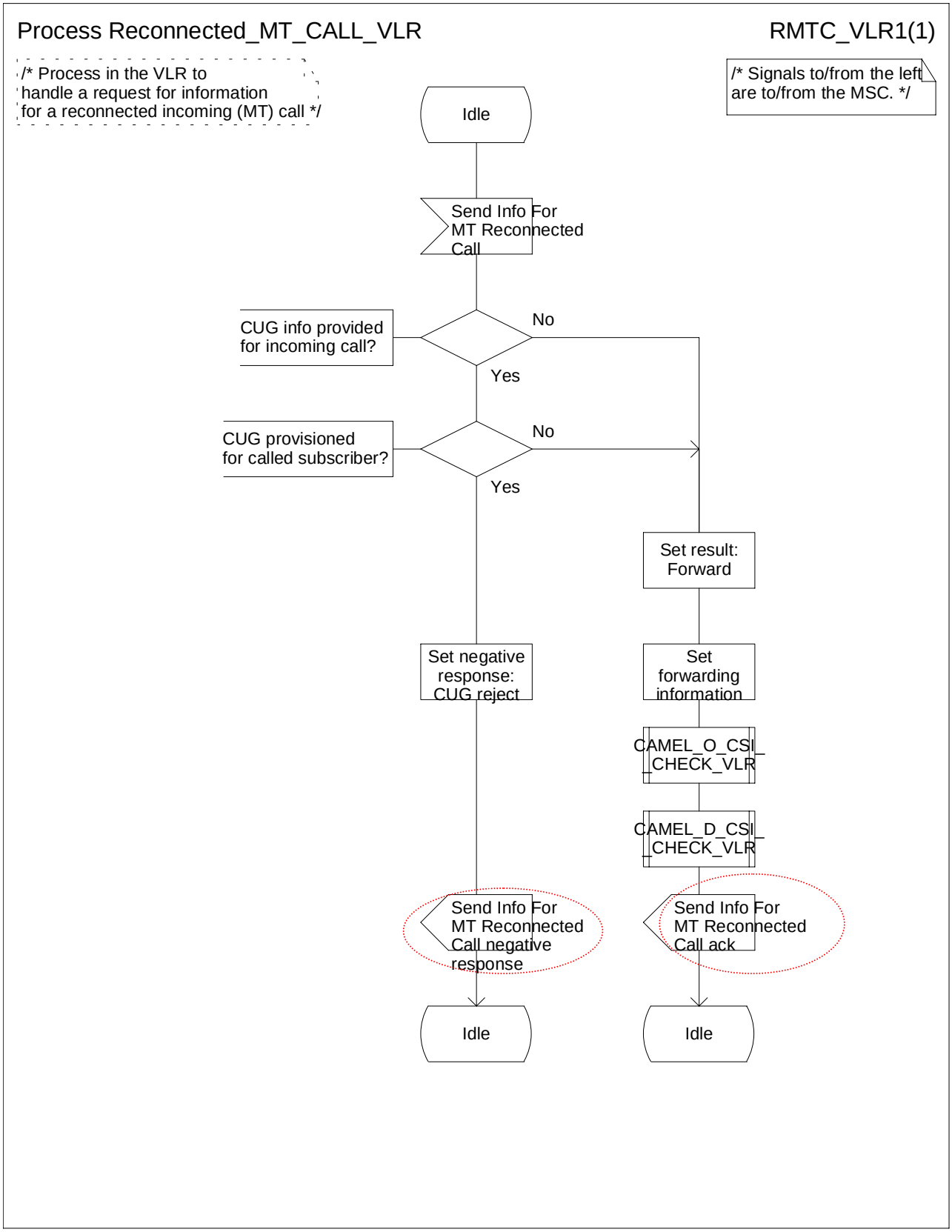


Figure 4.54: Process Reconnected_MT_Call_VLR (sheet 1)