3GPP TSG CN Plenary **Tdoc NP-010055**
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 1**

Agenda item: **6.2.1**

Document for: **APPROVAL**

Introduction:

This document contains **11** 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.

Following relations exists for some of these CRs towards CRs on 29.078 v3.6.0 R99,- brought to this Plenary for approval for work item CAMEL3, documented in NP-010057 :

23.078-256r2 (N2-010209) ←---→ 29.078-137r2 (N2-010210)
23.078-258r1 (N2-010084) ←---→ 29.078-139r2 (N2-010112)
23.078-259r1 (N2-010086) ←---→ 29.078-140r1 (N2-010087)
23.078-260r1 (N2-010095) ←---→ 29.078-141r1 (N2-010096)
23.078-263r1 (N2-010089) ←---→ 29.078-143r2 (N2-010113)

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
23.078	256	2	N2-010209	R99	Clarification on APN usage in the ConnectGPRS operation	F	3.7.0
23.078	257		N2-010009	R99	Update of References	F	3.7.0
23.078	258	1	N2-010084	R99	Hand-over indication for GPRS	F	3.7.0
23.078	259	1	N2-010086	R99	Description of Entity Released GPRS	F	3.7.0
23.078	260	1	N2-010095	R99	Correction to description of 'O-CSI Applicable' parameter	F	3.7.0
23.078	261	1	N2-010079	R99	Restriction on SS-CSI to VLR - no marking for CCBS	F	3.7.0
23.078	263	1	N2-010089	R99	No Volume charging on GPRS Session (clarifying text)	F	3.7.0
23.078	264	2	N2-010114	R99	Correction of "Call Forwarding Notification" feature in CAMEL Phase 3.	F	3.7.0
23.078	267	1	N2-010081	R99	Usage of MSISDN for CAMEL - USSD Information Flows	F	3.7.0
23.078	268	1	N2-010082	R99	Correction of error implementing CR 23.078-118r2	F	3.7.0
23.078	271	1	N2-010093	R99	Correction on GPRS related information flows	F	3.7.0

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

Tdoc N2-010209

CR-Form-v3

CHANGE REQUEST

⌘ **23.078** **CR** **256** ⌘ rev **2** ⌘ 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:	⌘	Clarification on APN usage in the ConnectGPRS operation
Source:	⌘	Nokia
Work item code:	⌘	CAMEL3
Date:	⌘	30th of Jan 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: ⌘

1. It is not clearly specified whether the SCP can give any Access Point Name (APN), or whether the APN must be allowed by the subscription. Nokia proposes that only the PDP contexts allowed by the subscription would be possible. This aligns with the circuit switched calls & barring handling. In the APN selection algorithm it is also verified that an already active PDPc is not created again.

2. The secondary PDP context (PDPc) uses the same parameters as the corresponding primary one, except QoS. The MS requests a secondary PDP context with a distinct operation. The SCP shall know whether this is a secondary PDPc, and it shall be specified that APN can not be changed for a secondary PDPc.
3. It is not clear how to handle SCP provided APN. The APN consists either of NI, or NI+OI. OI is in format of MCCxxx.MNCyy.gprs. NI identifies the packet data network. When the SCP gives NI only it must be clarified what shall be done for the MS provided OI. Nokia proposes to ignore MS provided OI, thus the SCP could leave it up to the SGSN. The same option is already possible for the MS, it can send NI, or NI+OI.

Summary of change: ⌘

1. The APN of ConnectGPRS must be allowed by the subscription.
2. Once SGSN receives ConnectGPRS(APN) it would run *APN and GGSN selection* procedure described in Annex A of 23.060 against the modified APN.
3. The PDP context Establishment DP IDP/ERP would contain the MS requested APN and PDP-type. In PDP Context Establishment Ack and ChangeOfPosition DP would contain the selected ones. IDP operation did not list these cases. PDP-type usage was not specified in ERB-GPRS operation.

4. It is proposed that APN change by SCP would not be allowed for a secondary PDPc. (Since all parameters except QoS are equal). If the new information element *Secondary PDP Context* is not accepted by CN2, then the SGSN must reject ConnectGPRS operation that is sent for a secondary PDPc (plan B for R99). However, then it would be difficult for the SCP to know the PDP-type, PDP address etc.
5. The SCP can give a partial APN as well. The APN consists of a network-id and an operator-id. It is proposed that MS provided OI would be ignored if SCP gives NI only. The SCP can also provide NI+OI.
6. For R99 the IDP/EDP would indicate whether it is a primary / secondary PDPc. The new parameter shall be after the ellipsis.
7. The *PDP Type* field of Stage 2 consist of PDP-Type, PDP-Address and PDP-Type_organization. This CR tries to clarify usage of PDP Type in the information flow tables.
8. For the Secondary PDP Context the SGSN would not report PDP Type fields since the MS can not request these values.
9. PDP Type is called as End User Address. That Corresponds better to the 29.060.

~~9.~~10. The PDP-address can either be:

- Static address
- Dynamic address. Dynamic address can either:
  - Be allocated by the GGSN during the PDP context activation (CreatePDPContextResponse).
  - Be allocated by external Packet Data Network after PDP context activation. The SGSN receives the address in a separate "GGSN initiated PDP context modification" procedure from the GGSN.

It is clarified therefore that sometimes the PDP-Address of the PDP Type is not always valid in CAP, although it is marked as Mandatory.

Consequences if not approved: ⌘
- Ambiguities in CAMEL3 GPRS control.
- The pre-paid subsribers may have problems with secondary PDP contexts.

Clauses affected: ⌘

Other specs affected: ⌘
- ☐ Other core specifications ⌘ 29.078-CR137
- ☐ Test specifications
- ☐ O&M Specifications

Other comments: ⌘

~~B.~~A. The GGSN address can be either a DNS derived address, a (GTP) protocol address, or (user) data address. Typically GGSNs have the same address for GTP and user data. The GGSN can return a GGSN address in the first response.

~~C.~~B. If the new information element *Secondary PDP Context* is not accepted, then the SGSN must reject ConnectGPRS operation that is sent for a secondary PDPc (plan B for R99).

~~D.~~C. Compared to the previous version of the CR, PDP Context Establishment DP is before *APN and GGSN* selection procedure. This aligns with the CN2 endorsed Alcatel 23.060 CR.

~~E.~~D. It should be noted that there are different possibilities how the MS can indicate the APN:

1) MS sends PDP Type only
2) MS sends PDP type & PDP address
3) MS sends PDP type & APN
4) MS sends PDP type, PDP address & APN
5) MS sends none of the abo

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

6.4.3 GPRS PDP Context State Model

The GPRS PDP Context State Model is used to model the behaviour for the GPRS PDP Context procedures. There is one PDP Context State Model per GPRS PDP context.

When encountering a DP the PDP Context State Model processing is suspended at the DP and the SGSN indicates this to the gprsSSF which determines what action, if any, shall be taken in case the DP is armed.

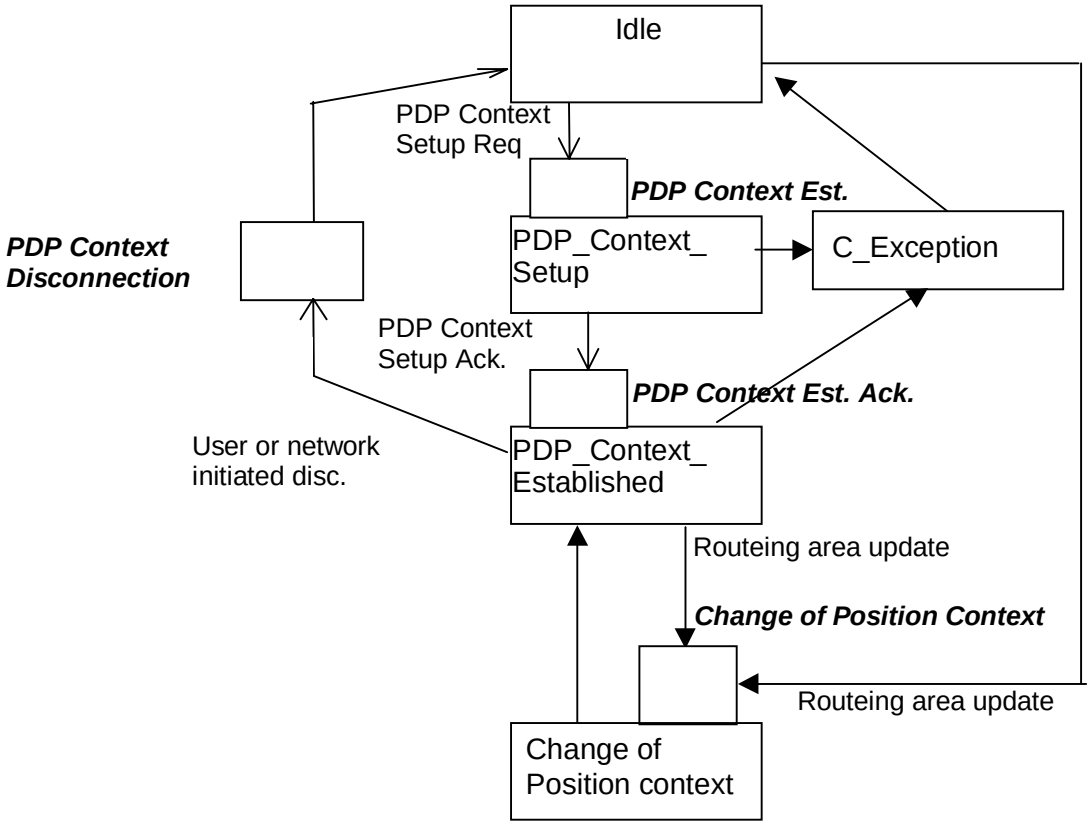

Figure Error! Reference source not found..**1: GPRS PDP Context State Model**

Table Error! Reference source not found.**.1: Description of GPRS PDP Context DPs in the SGSN**

CAMEL Detection Point	DP Type	Description
DP PDP Context Establishment	TDP-R[1)], EDP-R	Activate PDP Context request is received from the MS.
DP PDP Context Establishment Acknowledgement	TDP-R[2)], EDP-R, EDP-N	Create PDP Context response is received from the GGSN.
DP PDP Context Disconnection	EDP-N, EDP-R	Deactivate PDP Context Request is received from the MS, Delete PDP Context request is received from the GGSN. Inter SGSN Routeing update occured in old SGSN.
DP Change of Position Context	TDP-R[3)], EDP-N, EDP-R	Routeing Area Update is accepted.

NOTE 1: The PDP Context Establishment shall be reported as TDP-R (provided that this DP is statically armed in GPRS-CSI) if there is no relationship with the gsmSCF. If there is a relationship with the gsmSCF it shall be reported as EDP-R or EDP-N if armed so.

NOTE 2: The PDP Context Establishment Acknowledgment shall be reported as TDP-R (provided that this DP is statically armed in GPRS-CSI) if there is no relationship with gsmSCF. If there is a relationship with the gsmSCF, it shall be reported as EDP-R or EDP-N if armed so.

NOTE 3: Change of Position Context is reported as TDP-R in the case of Inter-SGSN Routeing Area Update (provided that this DP is statically armed in GPRS-CSI) if there is no relationship with the gsmSCF.
Change of Position Context is reported as EDP-N or EDP-R in the case of Inter-SGSN Routeing Area Update (provided that this DP is armed as generic EDP) if there is a relationship with the gsmSCF.
Change of Position Context is reported as EDP-N in the case of Intra-SGSN Routeing Area Update (provided that this DP is dynamically armed by the Service Logic).

6.4.3.1 Description of the PDP Context model (PIAs)

This subclause describes the model for PDP Context State Model in the SGSN. For each PIA a description can be found of the entry events, actions and exit events.

6.4.3.1.1 Idle

Entry events:

- Deactivation (user or network initiated) and clearing of a previous PDP Context.
- Processing of exceptional conditions.

Actions:

- Interface is idled.
- Activate PDP Context request is received from MS (containing NSAPI, PDP Type, PDP Address, Access Point Name, QoS Requested, PDP Configuration Options), or Inter-SGSN Routeing Area Update is accepted (DP Change of Position Context).
- Information being analyzed, e.g. GPRS-CSI is analyzed.

Exit events:

- GPRS-CSI is analyzed (DP PDP Context Establishment or DP Change of Position Context, new SGSN).

6.4.3.1.2 PDP Context Setup

Entry events:

- GPRS-CSI is analyzed (DP PDP Context Establishment).

Actions:

- *APN and GGSN selection* procedure is performed for a primary PDP context as specified in Annex A of 3GPP TS 23.060. *APN and GGSN selection* procedure is not performed ~~done~~ for a secondary PDP context.
- Access Point Name is verified against the subscription. If the gsmSCF has provided an Access Point Name then the Access Point Name provided by the gsmSCF is checked against the subscription-. For details refer to 3GPP TS 23.060 [11] ~~a~~Annex A.

- The SGSN ensures that an already active PDP context is not reactivated.

- GGSN address is derived from the Access Point Name by interrogation of a DNS. The Access Point Name consists of a Network Identifier and an Operator Identifier.

- Create PDP Context Request is sent to the GGSN.

Exit events:
- Create PDP Context Response is received from the the GGSN (DP PDP Context Establishment Acknowledgement).

- An exception is encountered.

6.4.3.1.3 PDP Context Established

Entry events:
- GPRS-CSI is analyzed (DP PDP Context Establishment Acknowledgement or DP Change of Position Context).

Actions:
- PDP context is established at the MS and the SGSN.

Exit events:
- Deactivation of the PDP Context is received from the MS or the GGSN, or is due to an inter SGSN routing area update (DP PDP Context Disconnection, old SGSN).

- Intra-SGSN Routeing Area Update Request is received from the MS (DP Change of Position Context).

- Inter-SGSN Routeing Area Update (DP Change of Position Context, new SGSN).

- An exception is encountered.

6.4.3.1.4 Change of Position Context

Entry events:
- Inter SGSN Routing Area update accepted (new SGSN).

- Intra SGSN Routeing Area update request received from the MS.

Actions:
- PDP Context (containing NSAPI, PDP Type, PDP Address, Access Point Name, QoS Requested, PDP Configuration Options) is reestablished in case of Inter-SGSN Routeing Area update accepted (new SGSN).

- Intra SGSN Routeing Area updated.

Exit events:
- reestablishement of the PDP context at the new SGSN and return to PDP context established in case of inter SGSN Routeing Area update accepted in new SGSN (PIA PDP context established).

- Routeing Area update completed in case of intra SGSN Routeing Area update (PIA PDP context established).

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

6.6 Description of information flows

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6.6.1.4 Event Report GPRS

6.6.1.4.1 Description

This IF is used to notify the gsmSCF of a GPRS event (e.g. Attach or Detach) previously requested by the gsmSCF in a Request Report GPRS Event IF.

6.6.1.4.2 Information Elements

The following information elements are required:

Information element name	Required	Description
Gprs Reference Number	C	This IE consists of a number assigned by the gprsSSF and a number assigned by the gsmSCF. It is used for TCAP dialogue segmentation. Refer to 3GPP TS 29.078 [5] for the usage of this element.
GPRS Event type	M	This IE specifies the type of event that is reported.
Misc GPRS Info	M	This IE indicates the DP type (EDP-N or EDP-R).
GPRS Event Specific Information	M	This IE contains information specific to the reported event.
PDP ID	C	This IE identifies the PDP context, which the Report GPRS Event is applicable for. If not present the dialogue corresponds to the Attach/Detach State Model or to one single PDP context.

M Mandatory (The IE shall always be sent).

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

If the *GPRS Event type* contains DP Change of Position GPRS Session, then the GPRS Event Specific Information IE contains the following information elements:

Information element name	Required	Description
Location Information in SGSN	M	See subclause 7.6.1.2.2.

M Mandatory (The IE shall always be sent).

If the *GPRS Event type* contains DP Change of Position Context, then the GPRS Event Specific Information IE contains the following information elements:

Information element name	Required	Description
Access Point Name	C1	This IE identifies the address Access Point Name to which the MS is connected.
Charging ID	C1	This IE contains the Charging ID received from the GGSN for the PDP context.
Location Information in SGSN	M	See subclause 7.6.1.2.2.
~~PDP Type~~End User Address	C1	~~This IE identifies the PDP Type. See 3GPP TS 23.060 [11]. Described in a table below, s~~See subclause 6.6.1.5.2.
Quality Of Service	C1	This IE is described in the table below.
Time and Time Zone	C1	This IE contains the time that the gprsSSF met the detection point, and the time zone the gprsSSF resides in.
GGSN Address	C1	This IE contains the Address of the GGSN to which the MS is connected, see 3GPP TS 23.003 [37].

M Mandatory (The IE shall always be sent).

C1 Conditional (The IE shall be sent, if available at inter-SGSN routing area update. Shall not be sent at intra-SGSN routing area update).

If the *GPRS Event type* contains DP Detach or DP PDP context disconnection, then the GPRS Event Specific Information IE contains the following information elements:

Information element name	Required	Description
Initiating Entity	M	This IE identifies the entity that has initiated the disconnection or detachment.

M Mandatory (The IE shall always be sent).

If the *GPRS Event type* contains DP PDP context establishment, then the GPRS Event Specific Information IE contains the following information elements:

Information element name	Required	Description
Access Point Name	~~M~~C	This IE identifies the ~~address~~ Access Point Name the MS has requested to connect to.
End User Address~~PDP Type~~	~~M~~C	~~This IE identifies the PDP Type. See 3GPP TS 23.060 [11]. Described in a table below, s~~See subclause 6.6.1.5.2.
Quality Of Service	M	This IE is described in the table below.
Location Information in SGSN	M	See subclause 7.6.1.2.2.
Time and Time Zone	M	This IE contains the time that the gprsSSF met the detection point, and the time zone the gprsSSF resides in.
PDP Initiation Type	M	This IE indicates whether a PDP context was established as a result of a network-initiated request or as a result of a subscriber request.
Secondary PDP context	C	This IE indicates ~~if~~that the PDP context activation was requested for a secondary PDP context. See 3GPP TS 23.060 [11].

M Mandatory (The IE shall always be sent).

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

If the *GPRS Event type* contains DP PDP context establishment acknowledgement, then the GPRS Event Specific Information IE contains the following information elements:

Information element name	Required	Description
Access Point Name	M	This IE identifies the address Access Point Name to which the MS is connected.
Charging ID	M	This IE contains the Charging ID received from the GGSN for the PDP context.
End User Address~~PDP Type~~	M	~~This IE identifies the PDP Type. See 3GPP TS 23.060 [11]. Described in a table below, s~~See subclause 6.6.1.5.2.
Quality Of Service	M	This IE is described in the table below.
Location Information in SGSN	M	See subclause 7.6.1.2.2.
Time and Time Zone	M	This IE contains the time that the gprsSSF met the detection point, and the time zone the gprsSSF resides in.
GGSN Address	M	This IE contains the Address of the GGSN to which the MS is connected, see 3GPP TS 23.003 [37].

M Mandatory (The IE shall always be sent).

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

6.6.1.5 Initial DP GPRS

6.6.1.5.1 Description

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

6.6.1.5.2 Information Elements

The following information elements are required:

Information element name	Required	Description
Gprs Reference Number	M	This IE consists of a number assigned by the gprsSSF. It is used for TCAP dialogue segmentation. Refer to 3GPP TS 29.078 [5] for the usage of this element.
ServiceKey	M	This IE indicates to the gsmSCF the requested CAMEL Service. It is used to address the required application/SLP within the gsmSCF.
GPRS Event Type	M	This IE indicates the armed GPRS DP event resulting in the Initial Data Event IF.
MSISDN	M	This IE contains the basic MSISDN of the MS.
IMSI	M	This IE identifies the mobile subscriber.
Time and Time zone	M	This IE contains the time that the gprsSSF was triggered, and the time zone the gprsSSF resides in.
GPRS MS Class	C	This IE contains the MS network and radio access capabilities.
End User Address~~PDP Type~~	C	~~This IE identifies the PDP Type, e.g. X.25 or IP.~~Described in a table below.
Quality of Service	C	This IE is described in the table below.
Access Point Name	C	This IE identifies the ~~address~~ Access Point Name~~: the MS has requested to connect to~~. - At DP Change Of Position Context contains the selected APN. - AT DP PDP Context Establishment contains the APN ~~that~~which the MS has requested. - AT DP PDP Context Establishment Acknowledgement contains the selected APN.
Charging ID	C	This IE contains the Charging ID received from the GGSN for the PDP context.
SGSN Capabilities	C	This IE specifies the capabilities of the SGSN node to support the CAMEL interwork, e.g. support of Advice of Charge.
Location Information in SGSN	M	This IE is described in the subclause 7.6.1.2.2.
PDP Initiation Type	M	This IE indicates whether a PDP context was established as a result of a network-initiated request or as a result of a subscriber request.
GGSN Address	C	This IE contains the Address of the GGSN to which the MS is connected, see 3GPP TS 23.003 [37].
Secondary PDP context	C	This IE indicates that the PDP context activation was requested for a secondary PDP context. See 3GPP TS 23.060 [11].

M Mandatory (The IE shall always be sent).

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

Quality of Service contains the following information elements:

Information element name	Required	Description
Requested QoS	C	This IE identifies the QoS requested by the subscriber for a new PDP Context. It shall be included if the InitialDPGPRS is sent at PDP Context Establishment, at PDP Context Establishment Acknowledgement and at Change of Position Context.
Subscribed QoS	C	This IE identifies the subscribed QoS. It shall be included if the InitialDPGPRS is sent at PDP Context Establishment, at PDP Context Establishment Acknowledgement and at Change of Position Context.
Negotiated QoS	C	This IE identifies the QoS which was negotiated between the user, the SGSN and the GGSN. It shall be included if the InitialDPGPRS is sent at PDP Context Establishment Acknowledgement and at Change of Position Context.

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

End User Address shall be populated as follows:

- At DP Change Of Position Context in an Inter-SGSN Routeing Area Update: InitialDPGPRS and EventReportGPRS contain the selected value;
- At DP PDP Context Establishment: InitialDPGPRS and EventReportGPRS contain the value which the MS has requested;
- At DP PDP Context Establishment Acknowledgement: InitialDPGPRS and EventReportGPRS contain the selected value. Note that the PDP Address is not always available at this DP.

For details see 3GPP TS 23.060 [11].

End User Address contains the following information elements:

Information element name	Required	Description
PDP Type Organization	C	This IE identifies the PDP Type Organisation (e.g. IETF). ~~SIt ssentpopulated as follows in the following manner;.thatwhich;.~~
PDP Type Number	C	This IE identifies the PDP type, e.g. IPv4 or IPv6.~~:.:.thatwhich;.~~
PDP Address	C	This IE identifies the address of the subscriber for a new PDP Context.~~:.~~

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

. . . .

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

6.6.2.5 Connect GPRS

6.6.2.5.1 Description

This IF is used by the gsmSCF to request the gprsSSF to modify the APN used when establishing a PDP Context. This IF shall not be used for a secondary PDP context or for a network initiated PDP context.

6.6.2.5.2 Information Elements

The following information elements are required:

Information element name	Required	Description
Access Point Name	M	This IE contains the Access Point Name (APN) to be used when establishing the PDP Context. The gsmSCF should provide an APN which is allowed by the served subscriber's subscription. The APN provided by the gsmSCF is used for selecting the primary PDP context as specified in 3GPP TS 23.060 [11]. The gsmSCF provided APN may consist of Network Identity (NI) only, or Network Identity and Operator Identity (OI). The APN provided by the gsmSCF replaces entirely the APN requested by the MS. I.e. if the gsmSCF does not provide OI in APN then the SGSN selects the OI independent of MS ~~provided OI~~.
PDP Id	C	This IE identifies the PDP Context where the new Access Point Name shall be used. If not present the dialogue corresponds to one single PDP context.

M Mandatory (The IE shall always be sent).

C Conditional

3GPP TSG-CN2 Meeting #16
Beijing, China, 15th – 19th January 2001

Tdoc N2-010009

CR-Form-v3

CHANGE REQUEST

23.078	CR	257	rev	-	Current version:	3.7.0

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

Title:	Update of References
Source:	Vodafone
Work item code:	CAMEL3
Date:	8th January 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:	Some of the SDLs still contain references to GSM specifications
Summary of change:	The references have been updated to 3GPP specifications
Consequences if not approved:	Possible confusion between GSM and 3GPP specifications

Clauses affected:	2, 3.2, 4.5.2.1, 4.5.2.2, 4.5.3.1, 4.5.3.2, 4.5.4.1, 4.5.4.2, 4.5.7, 9.3.1.2, 10.2.2 and 11.2.1.
Other specs affected:	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications
Other comments:	This change request has category C3: Agreed by consensus in the meeting This change request is also applicable to the draft 23.078 for CAMEL Phase 4

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

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: " Vocabulary for 3GPP Specifications ".~~3GPP TS 01.04: "Digital cellular telecommunications system (Phase 2+); Abbreviations and acronyms".~~

…

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

3.2 Abbreviations

Abbreviations used in the present document are listed in 3GPP TR 21.905~~GSM 01.04~~ [1].

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

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

4.5.2.1 Handling of mobile originated calls in the originating MSC

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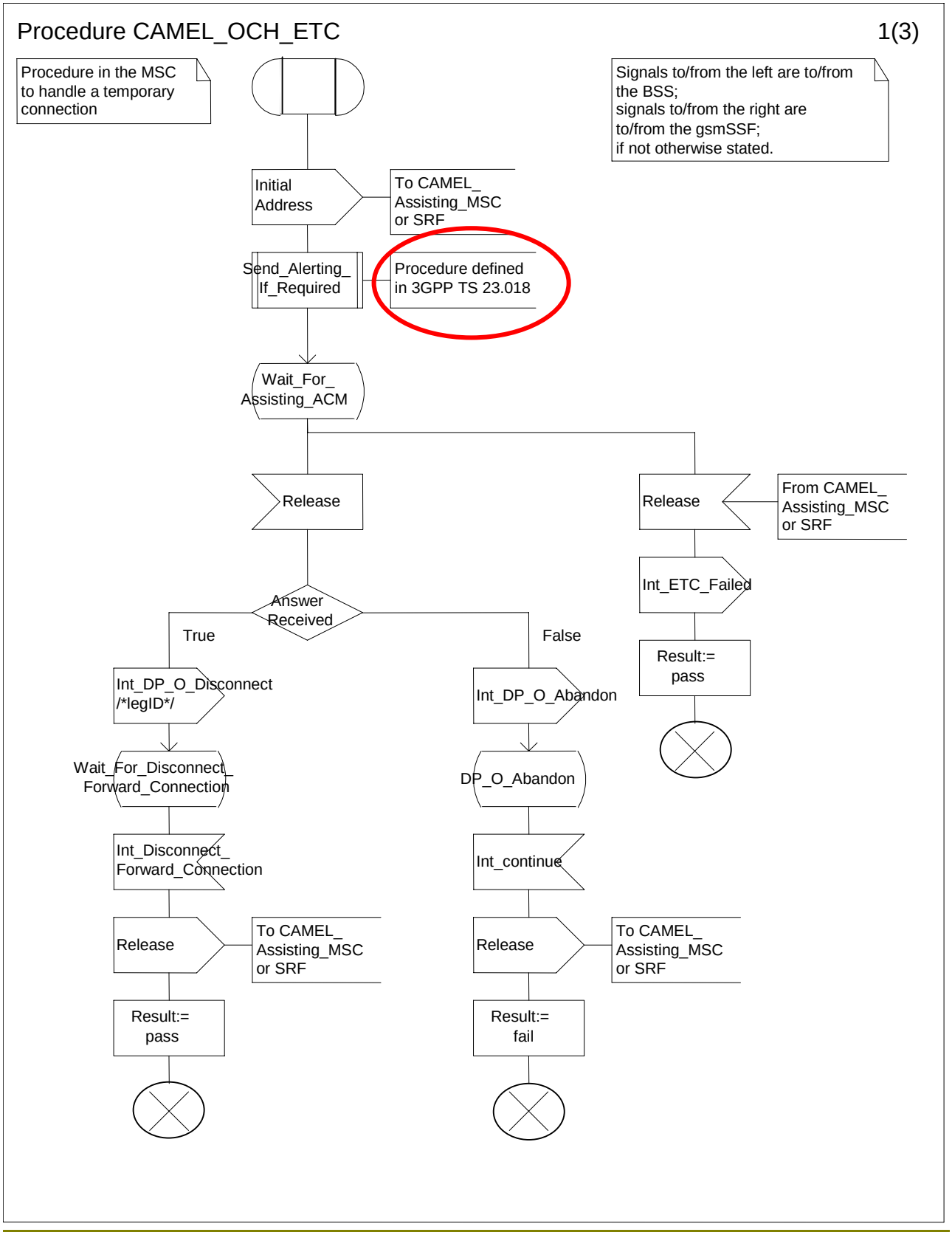

Procedure CAMEL_OCH_ETC
1(3)
Procedure in the MSC to handle a temporary connection
Signals to/from the left are to/from the BSS; signals to/from the right are to/from the gsmSSF; if not otherwise stated.
Initial Address
To CAMEL_ Assisting_MSC or SRF
Send_Alerting_ If_Required
Procedure defined in 3GPP TS 23.018
Wait_For_ Assisting_ACM
Release
Release
From CAMEL_ Assisting_MSC or SRF
Int_ETC_Failed
Result:= pass
Answer Received
True
False
Int_DP_O_Disconnect /*legID*/
Int_DP_O_Abandon
Wait_For_Disconnect_ Forward_Connection
DP_O_Abandon
Int_Disconnect_ Forward_Connection
Int_continue
Release
To CAMEL_ Assisting_MSC or SRF
Release
To CAMEL_ Assisting_MSC or SRF
Result:= pass
Result:= fail

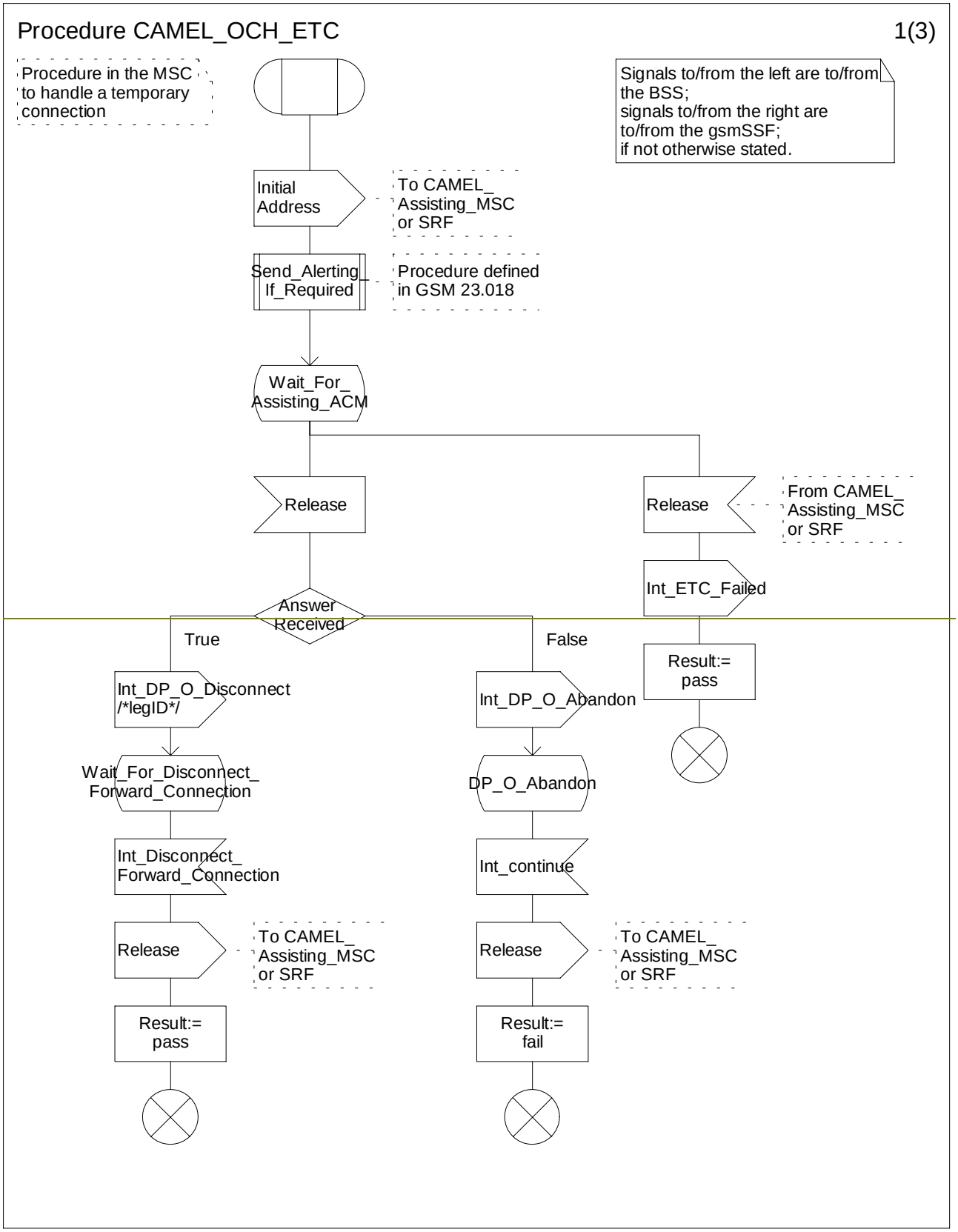
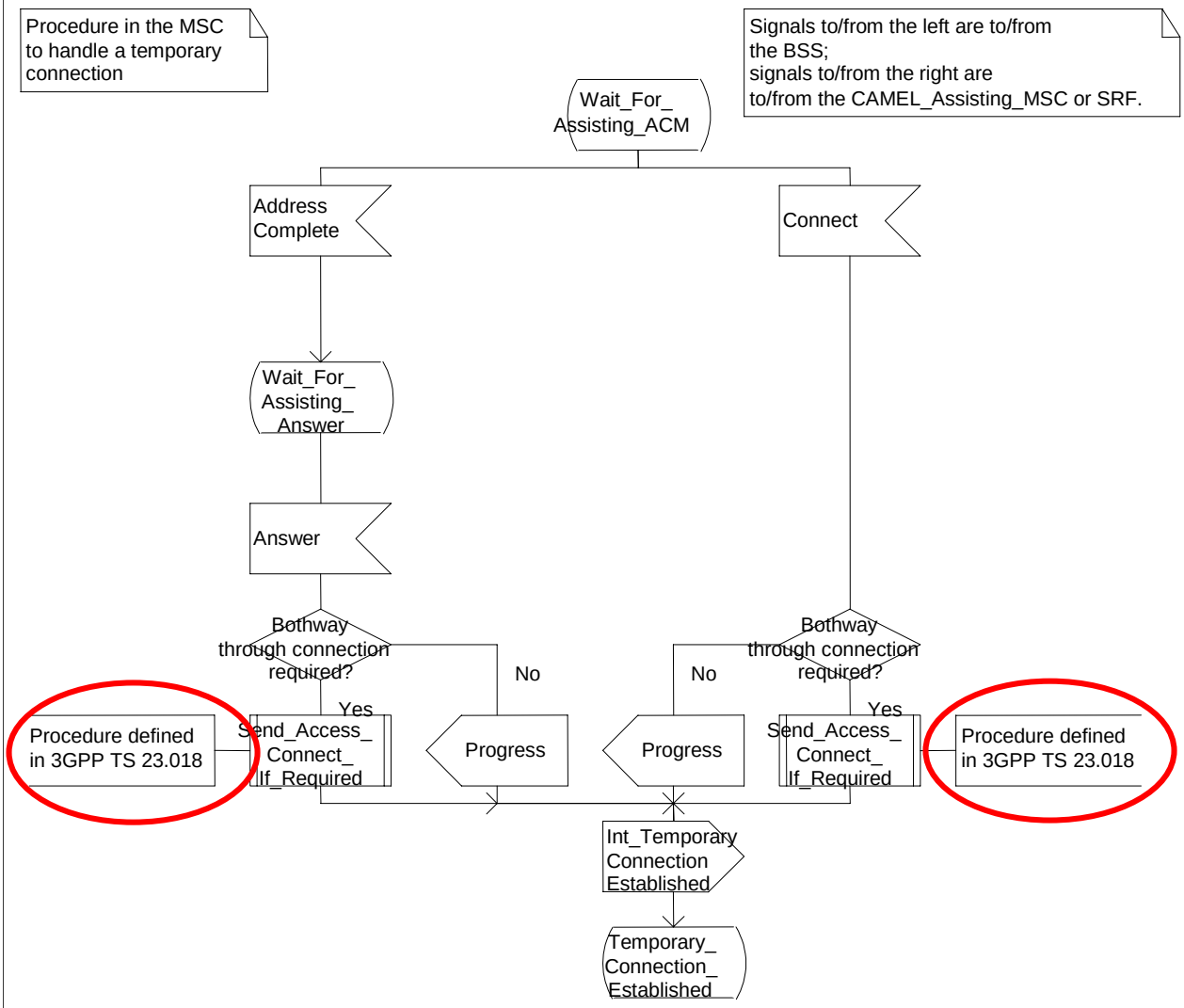


Figure 4.20a: Procedure CAMEL_OCH_ETC (sheet 1)

Procedure CAMEL_OCH_ETC 2(3)



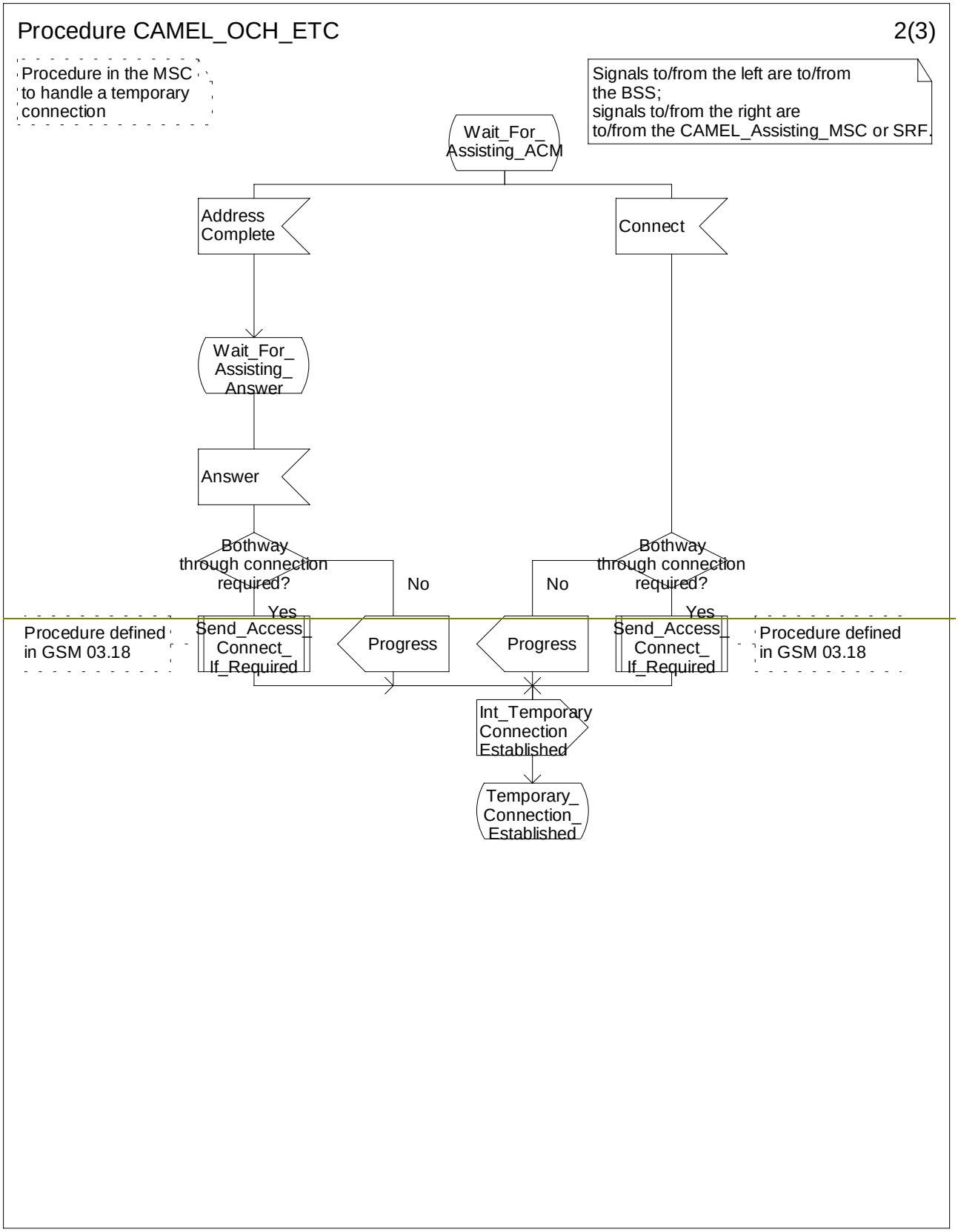
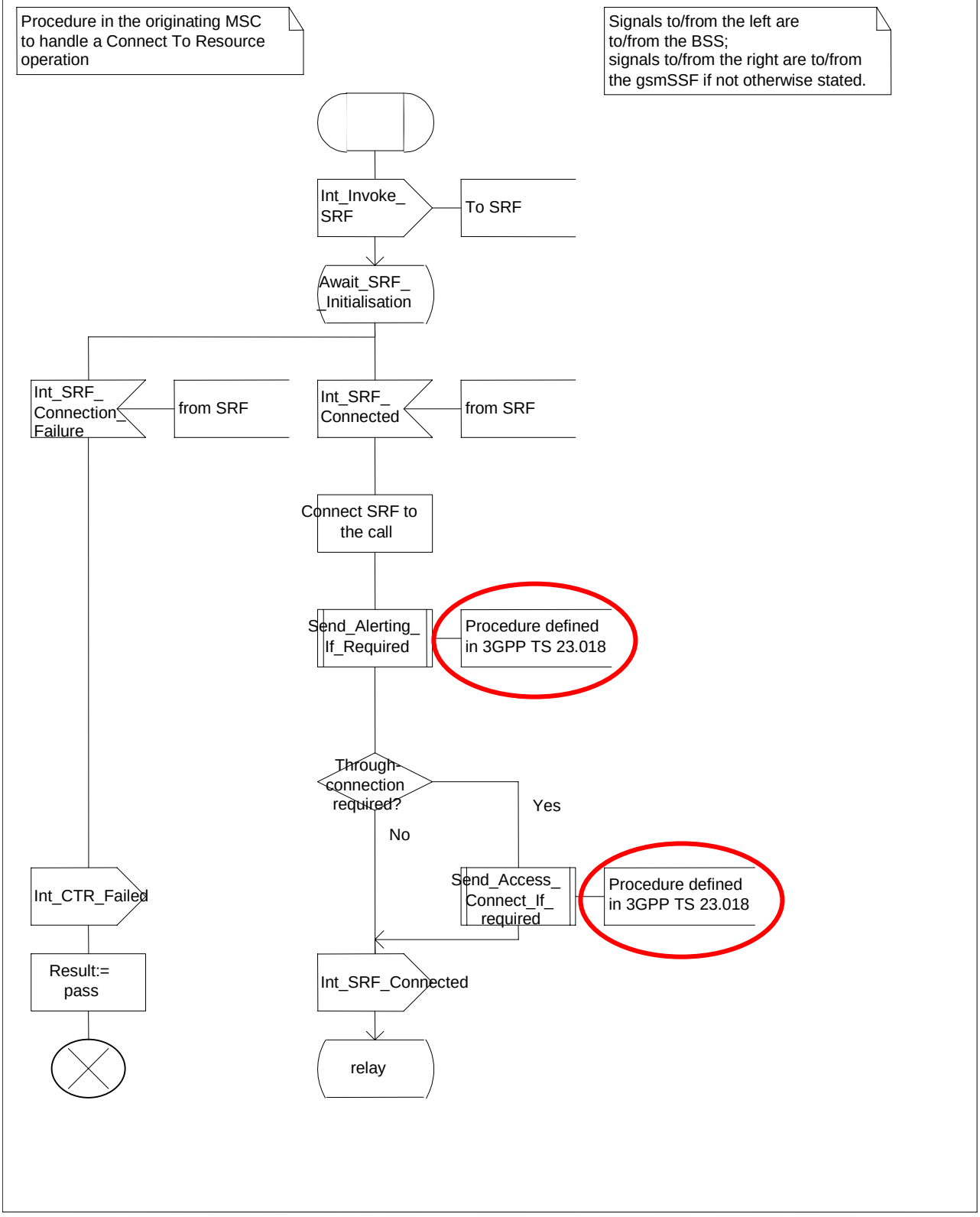


Figure 4.20b: Procedure CAMEL_OCH_ETC (sheet 2)

…

Procedure CAMEL_OCH_CTR 1(4)



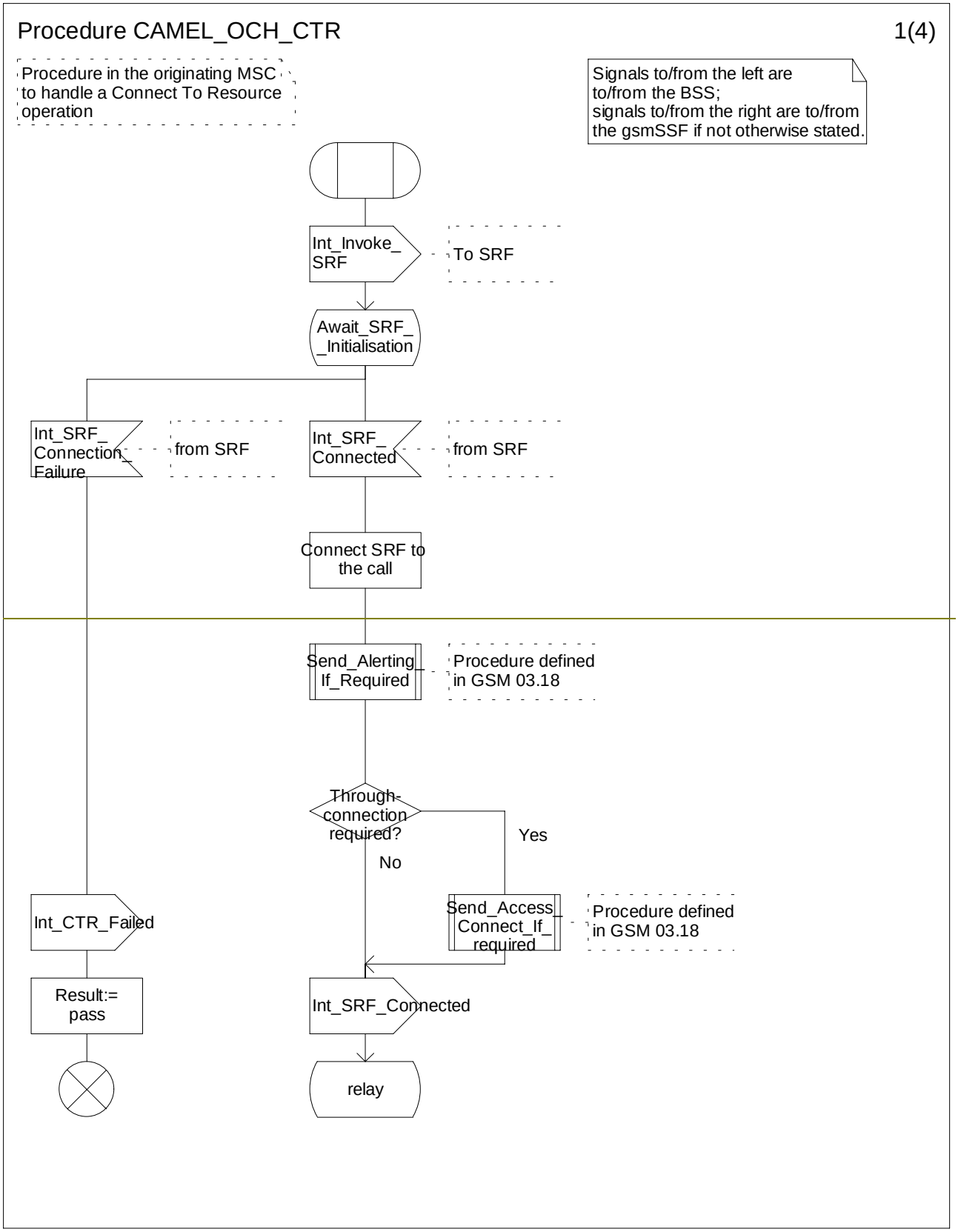


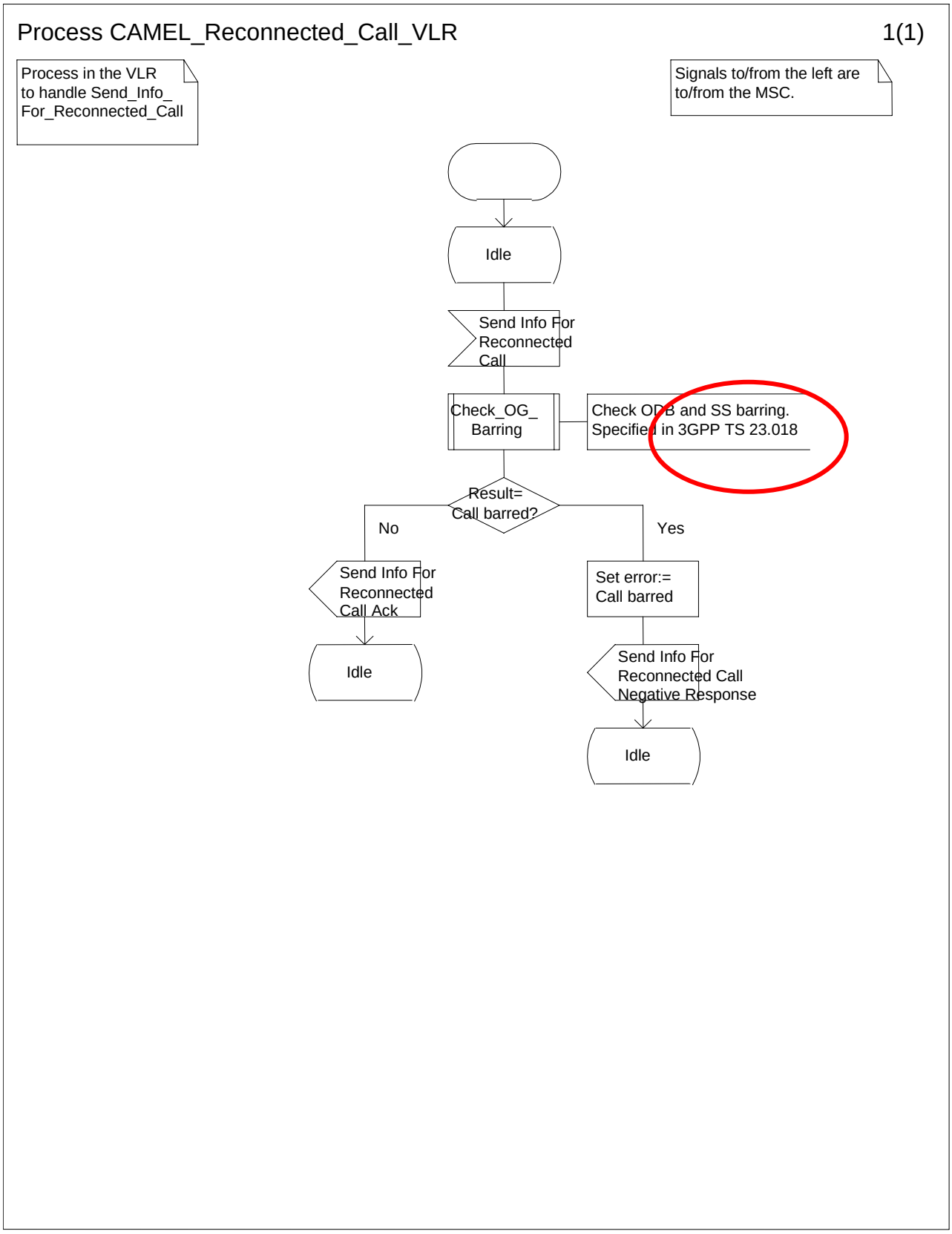
Figure 4.21a: Procedure CAMEL_OCH_CTR (sheet 1)

…

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

4.5.2.2 Handling of mobile originating calls in the originating VLR

…



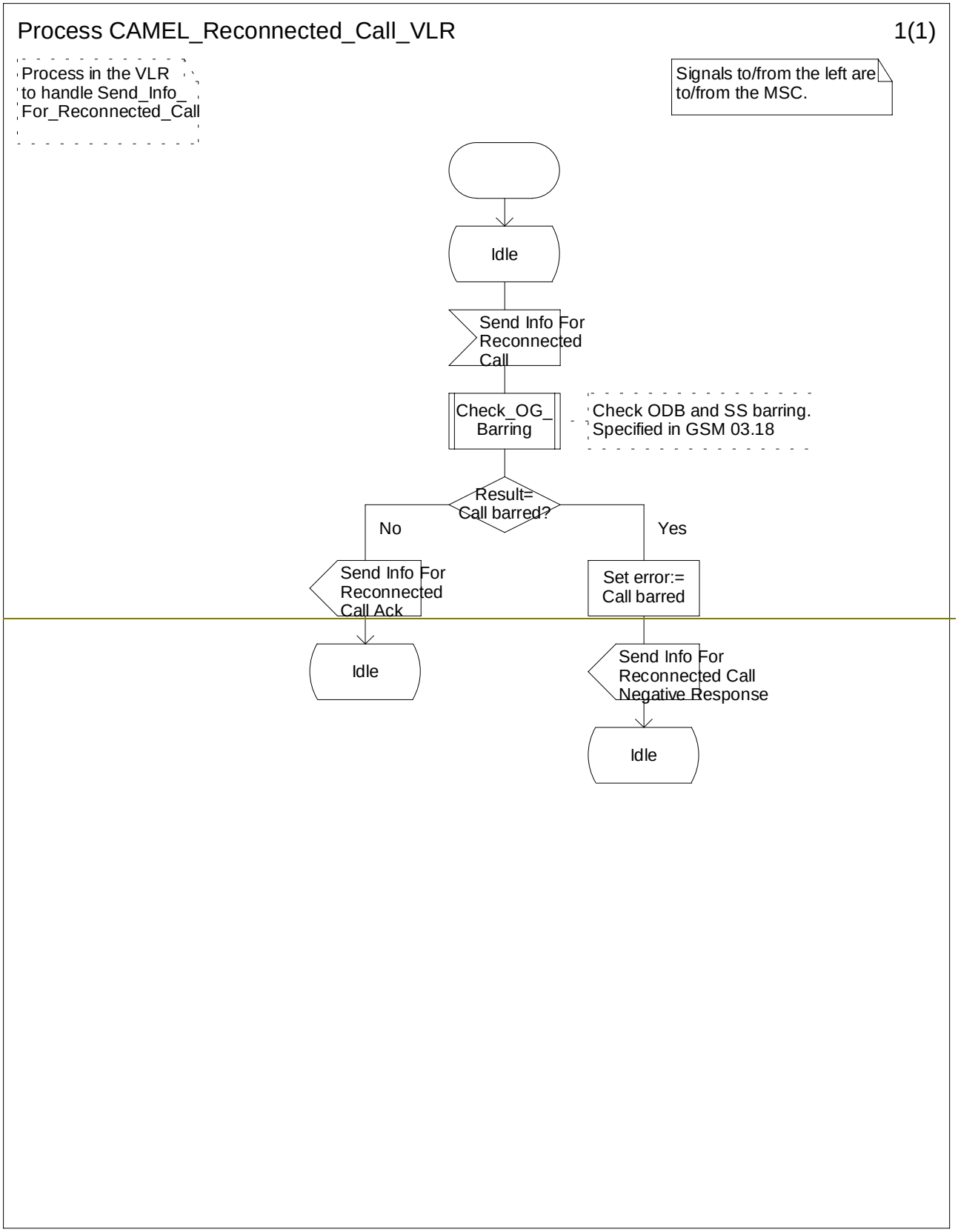
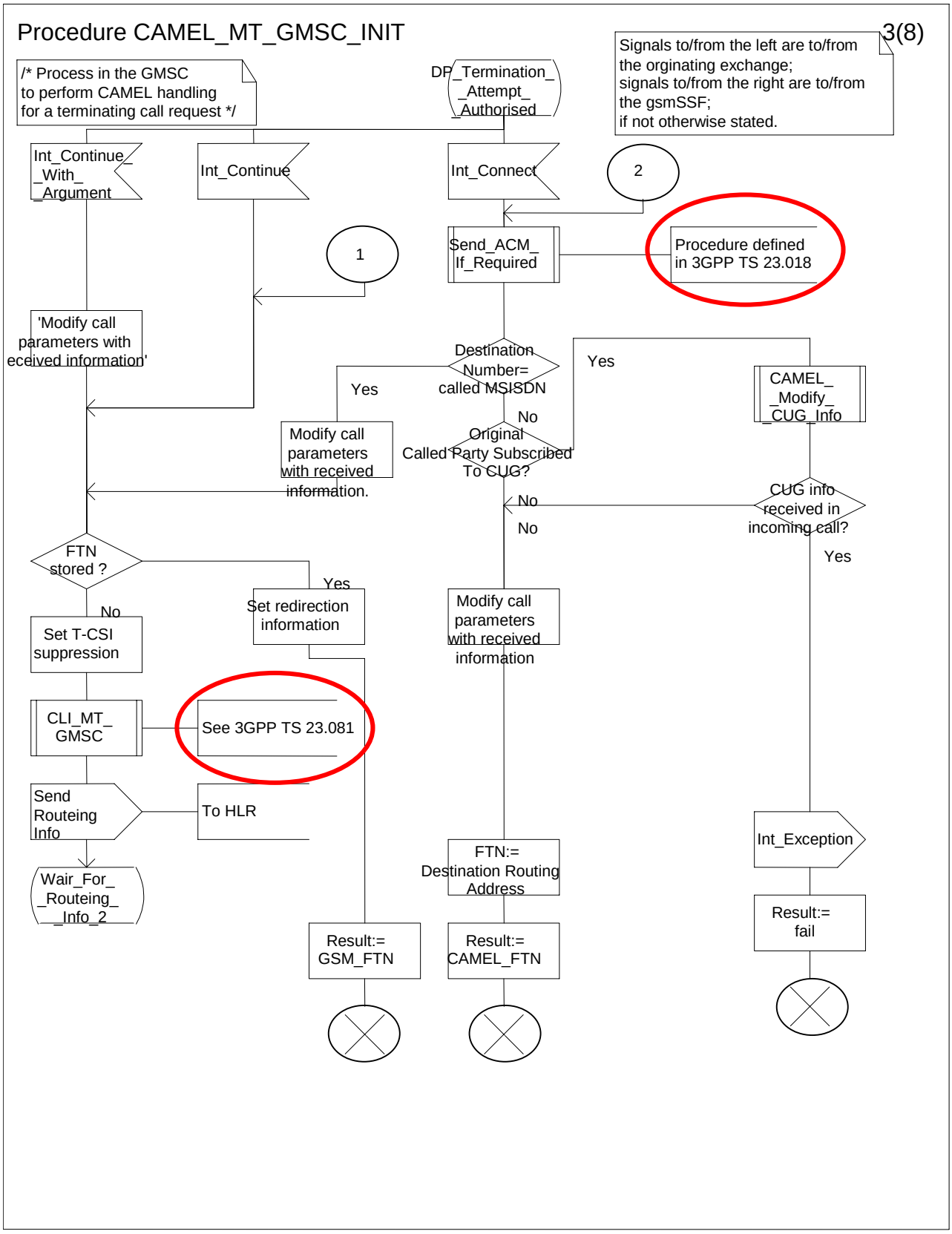


Figure 4.28a: Process CAMEL_Reconnected_Call_VLR (sheet 1)

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

4.5.3.1 Retrieval of routeing information in the GMSC

…



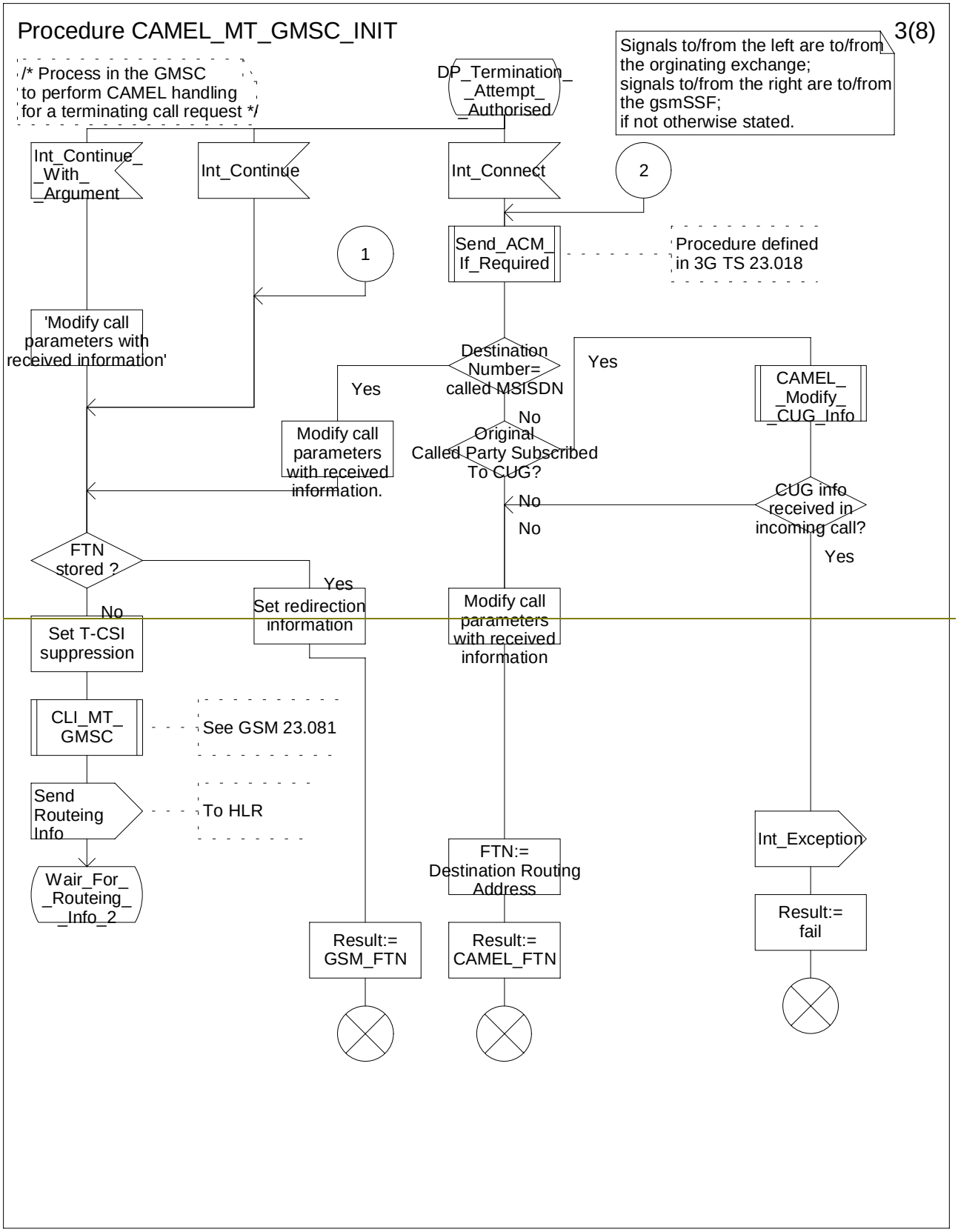
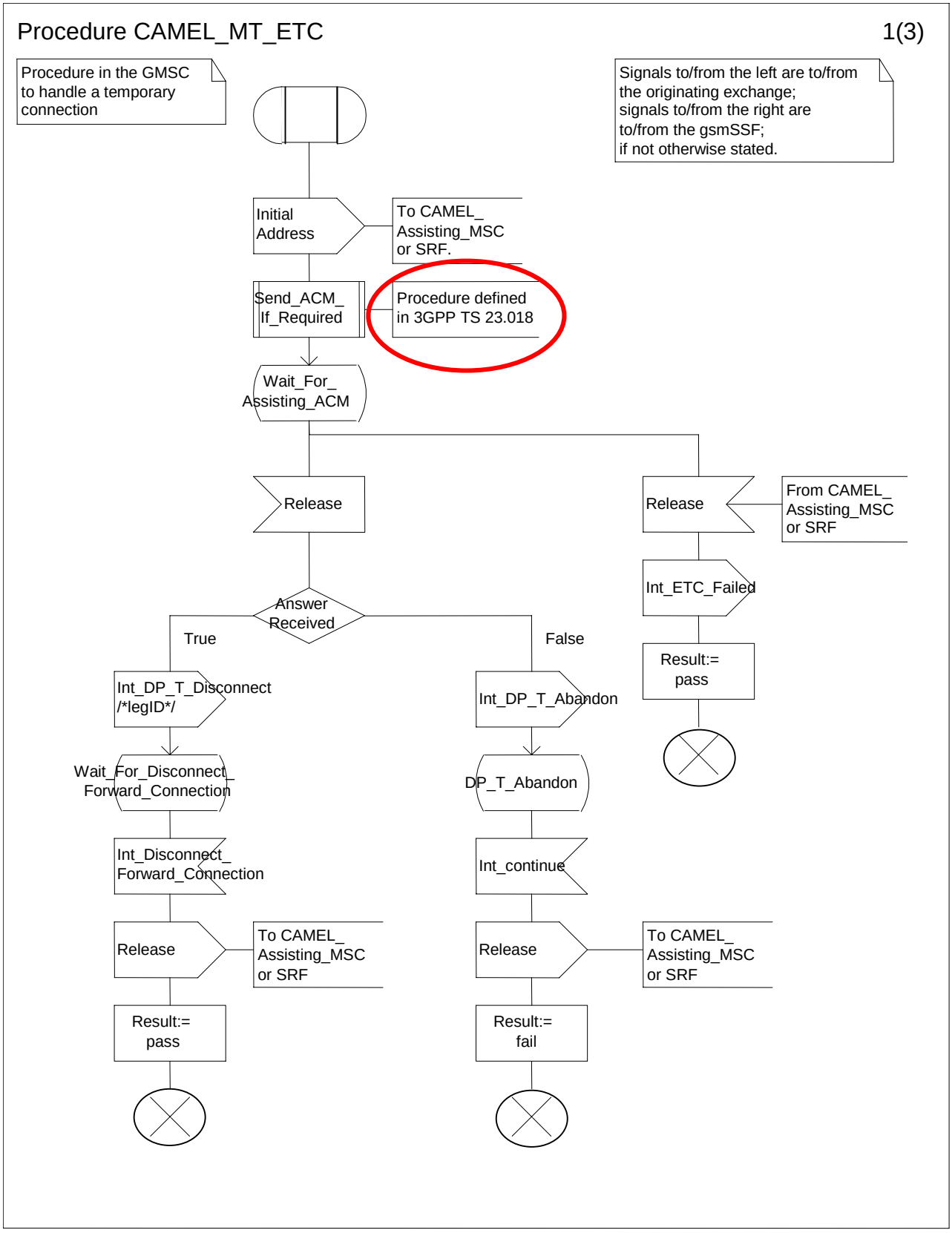


Figure 4.30c: Procedure CAMEL_MT_GMSC_INIT (sheet 3)

…


Procedure CAMEL_MT_ETC
1(3)
Procedure in the GMSC to handle a temporary connection
Signals to/from the left are to/from the originating exchange; signals to/from the right are to/from the gsmSSF; if not otherwise stated.
Initial Address
To CAMEL_ Assisting_MSC or SRF.
Send_ACM_ If_Required
Procedure defined in 3GPP TS 23.018
Wait_For_ Assisting_ACM
Release
Release
From CAMEL_ Assisting_MSC or SRF
Int_ETC_Failed
Result:= pass
Answer Received
True
False
Int_DP_T_Disconnect /*legID*/
Int_DP_T_Abandon
Wait_For_Disconnect_ Forward_Connection
DP_T_Abandon
Int_Disconnect_ Forward_Connection
Int_continue
Release
To CAMEL_ Assisting_MSC or SRF
Release
To CAMEL_ Assisting_MSC or SRF
Result:= pass
Result:= fail

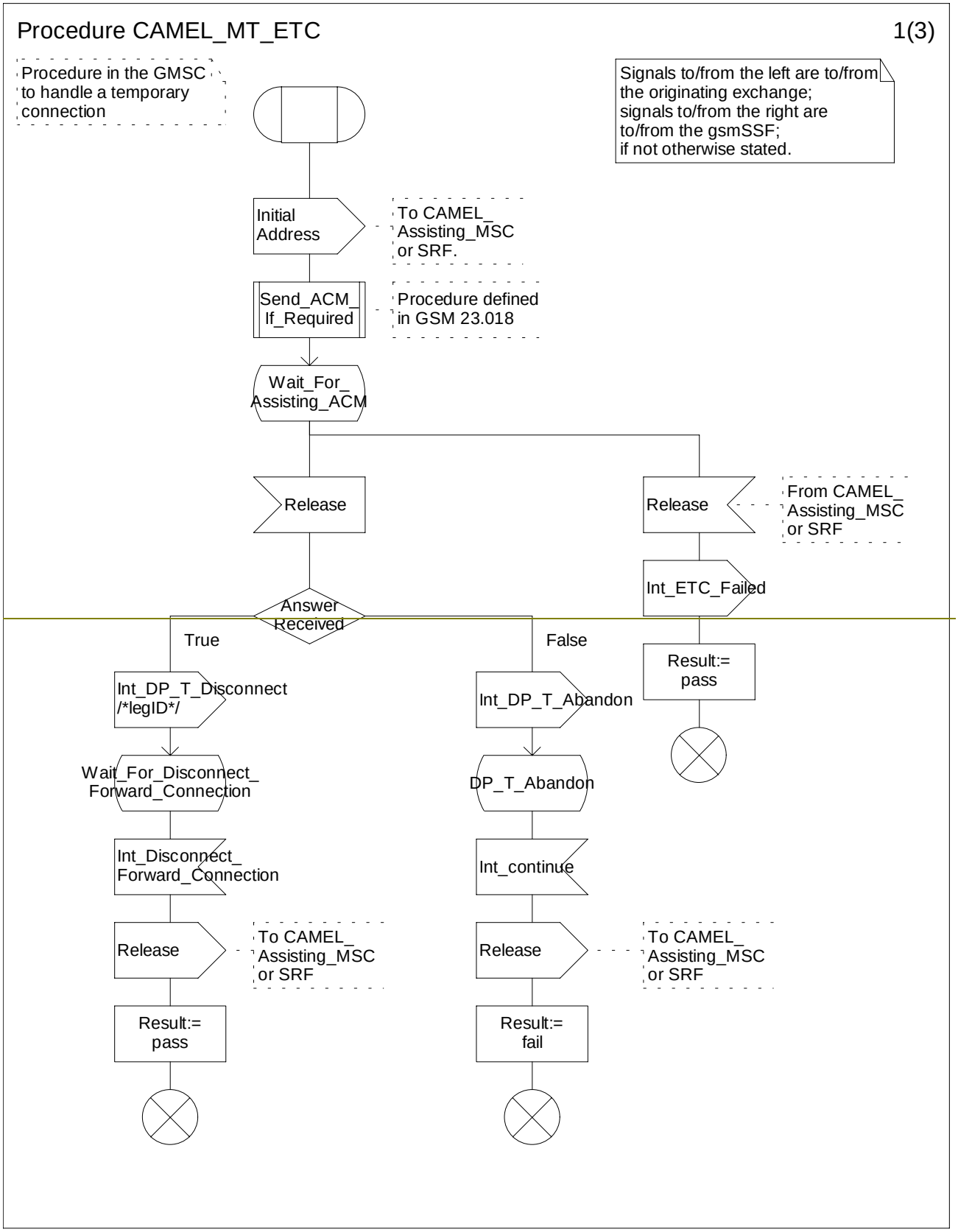
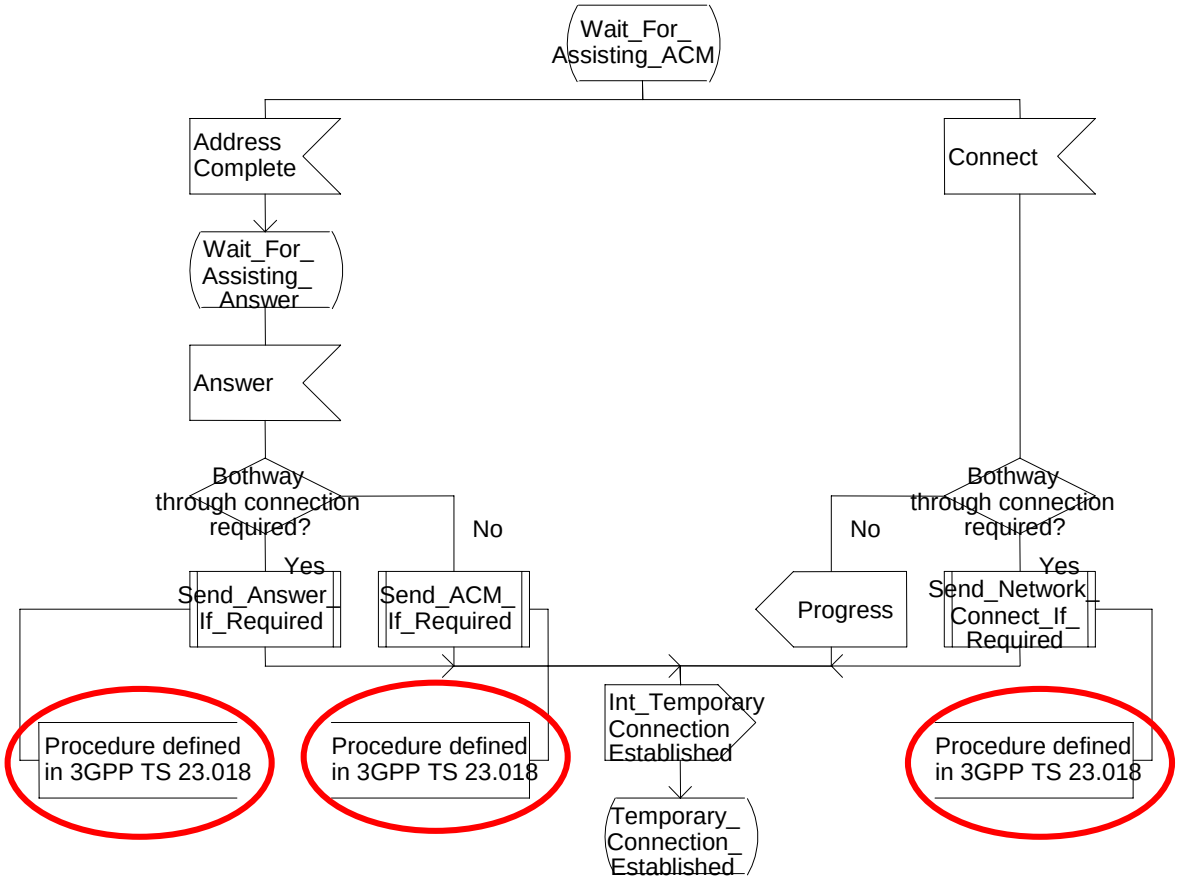


Figure 4.38a: Procedure CAMEL_MT_ETC (sheet 1)

Procedure CAMEL_MT_ETC 2(3)

Procedure in the GMSC to handle a temporary connection

Signals to/from the left are to/from the originationg exchange; signals to/from the right are to/from the CAMEL_Assisting_MSC or SRF.



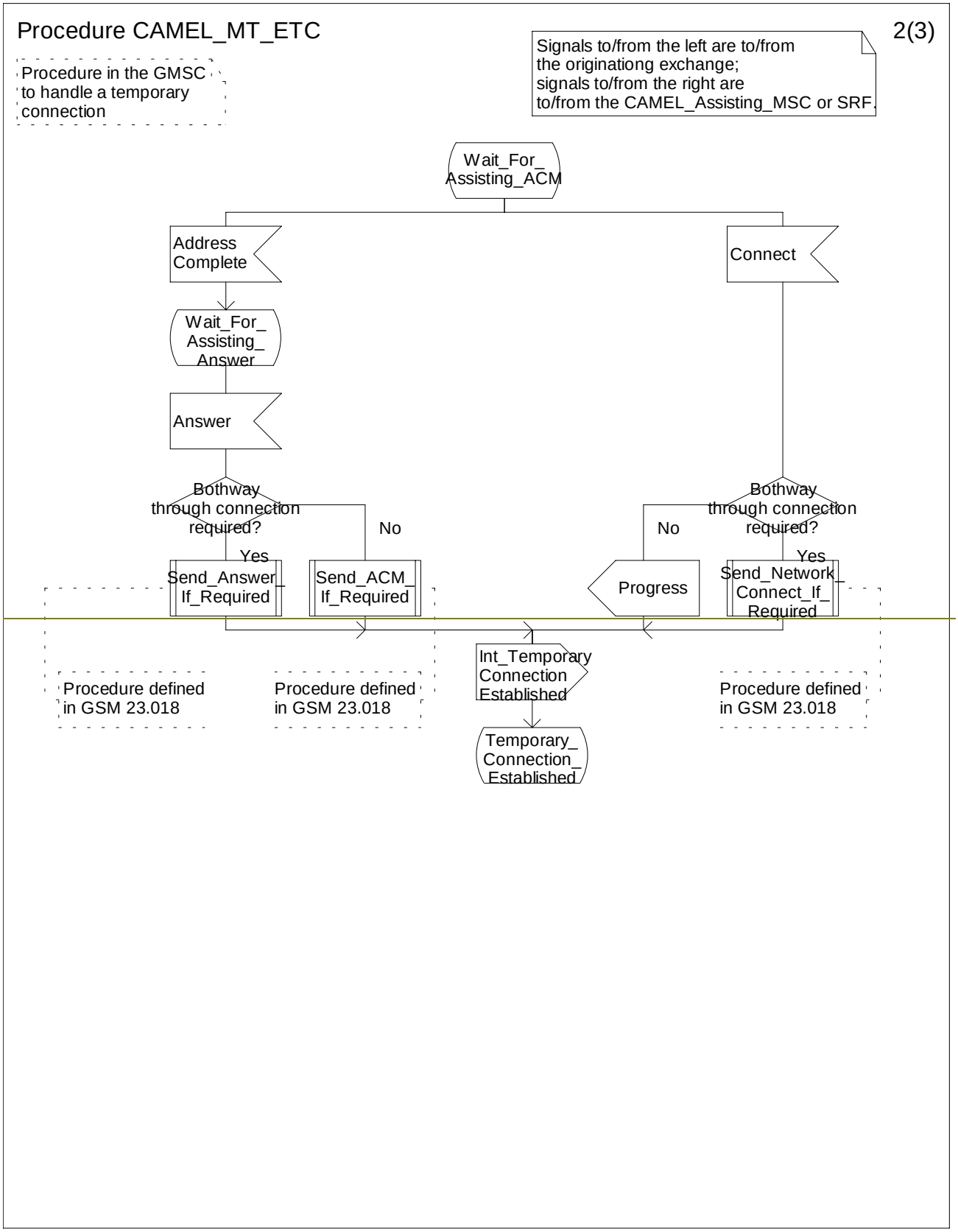
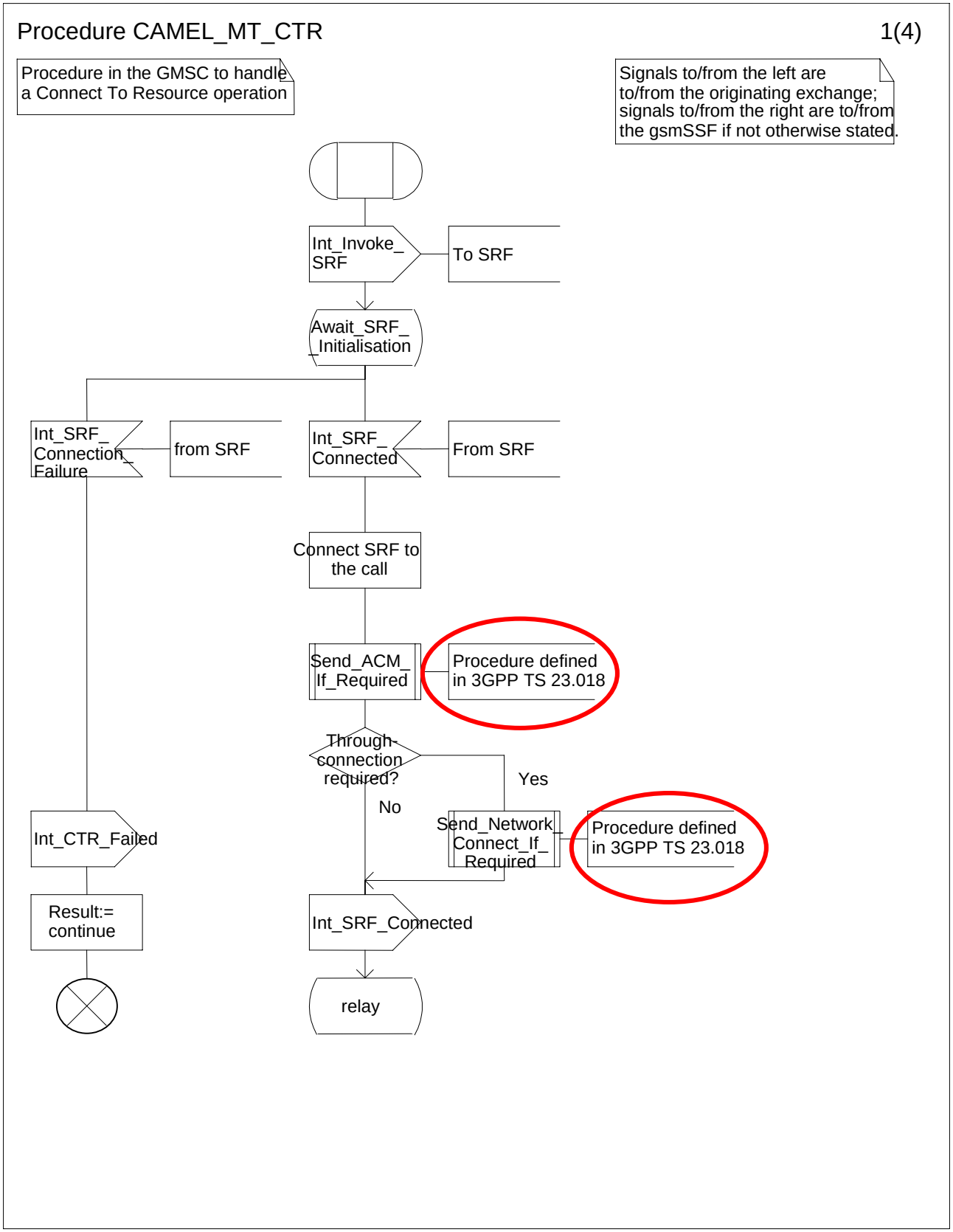


Figure 4.38b: Procedure CAMEL_MT_ETC (sheet 2)

…


Procedure CAMEL_MT_CTR
1(4)
Procedure in the GMSC to handle a Connect To Resource operation
Signals to/from the left are to/from the originating exchange; signals to/from the right are to/from the gsmSSF if not otherwise stated.
Int_Invoke_ SRF
To SRF
Await_SRF_ _Initialisation
Int_SRF_ Connection_ Failure
from SRF
Int_SRF_ Connected
From SRF
Connect SRF to the call
Send_ACM_ If_Required
Procedure defined in 3GPP TS 23.018
Through-connection required?
Yes
No
Send_Network_ Connect_If_ Required
Procedure defined in 3GPP TS 23.018
Int_CTR_Failed
Result:= continue
Int_SRF_Connected
relay

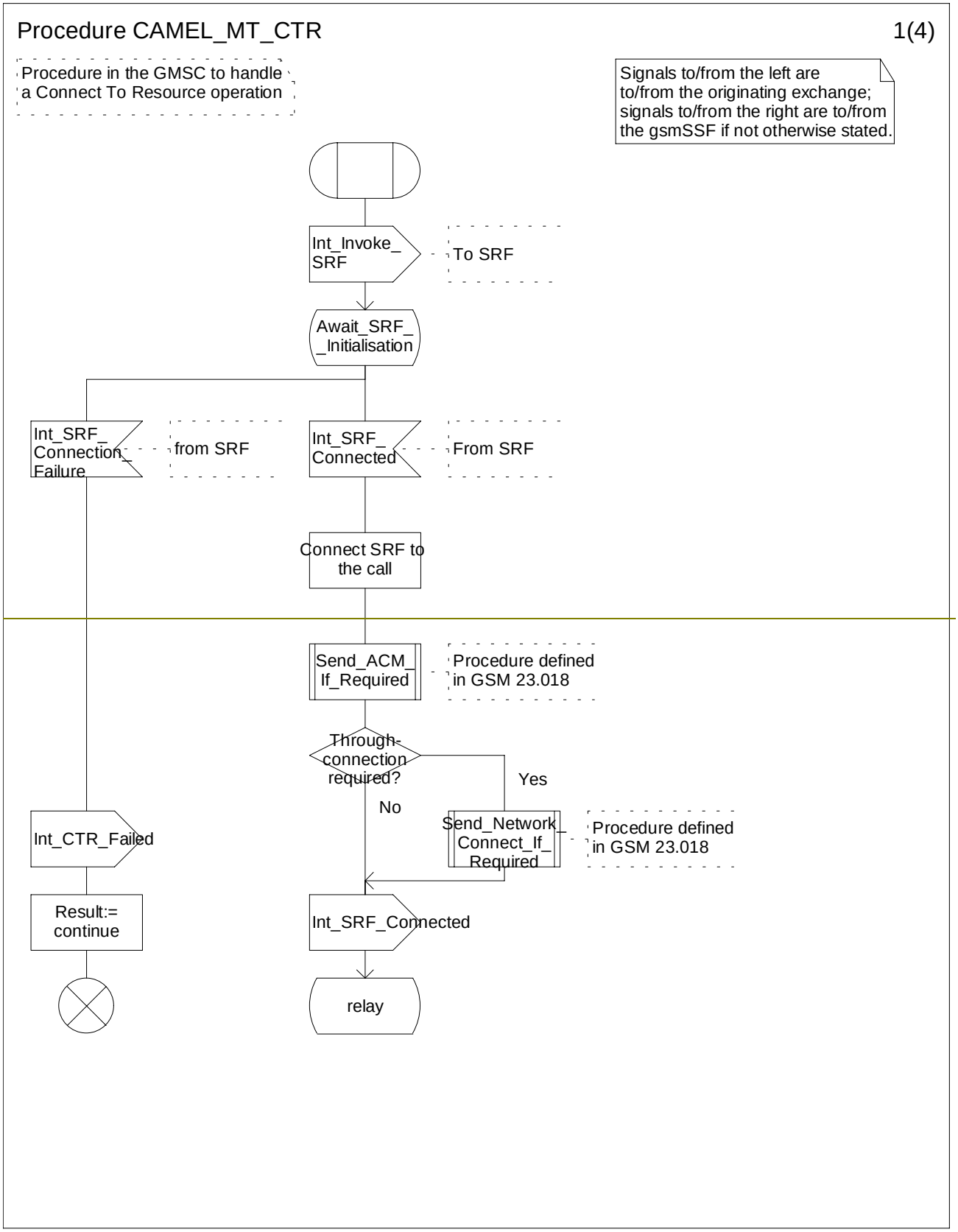


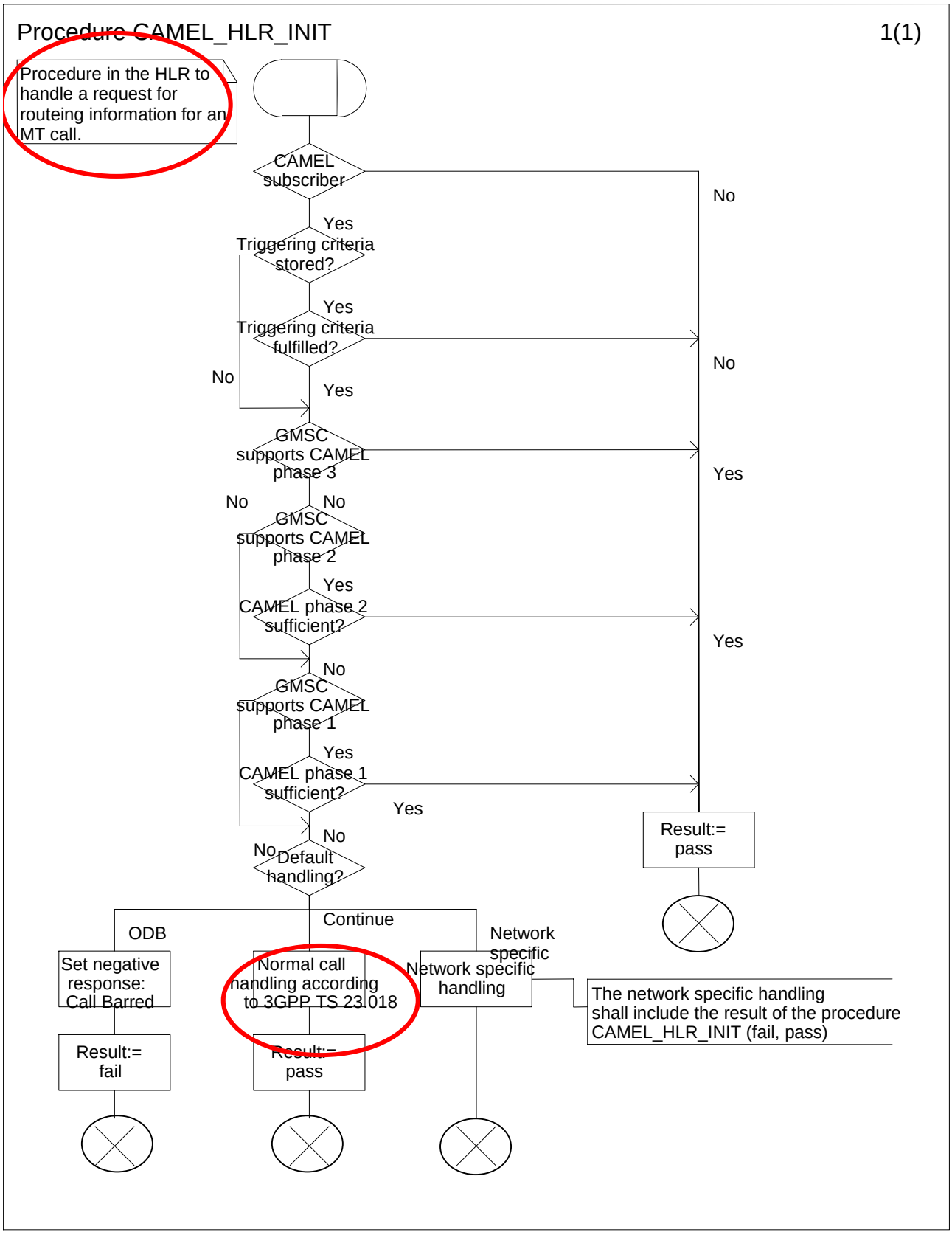
Figure 4.39a: Procedure CAMEL_MT_CTR (sheet 1)

…

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

4.5.3.2 Retrieval of routeing information in the HLR

…



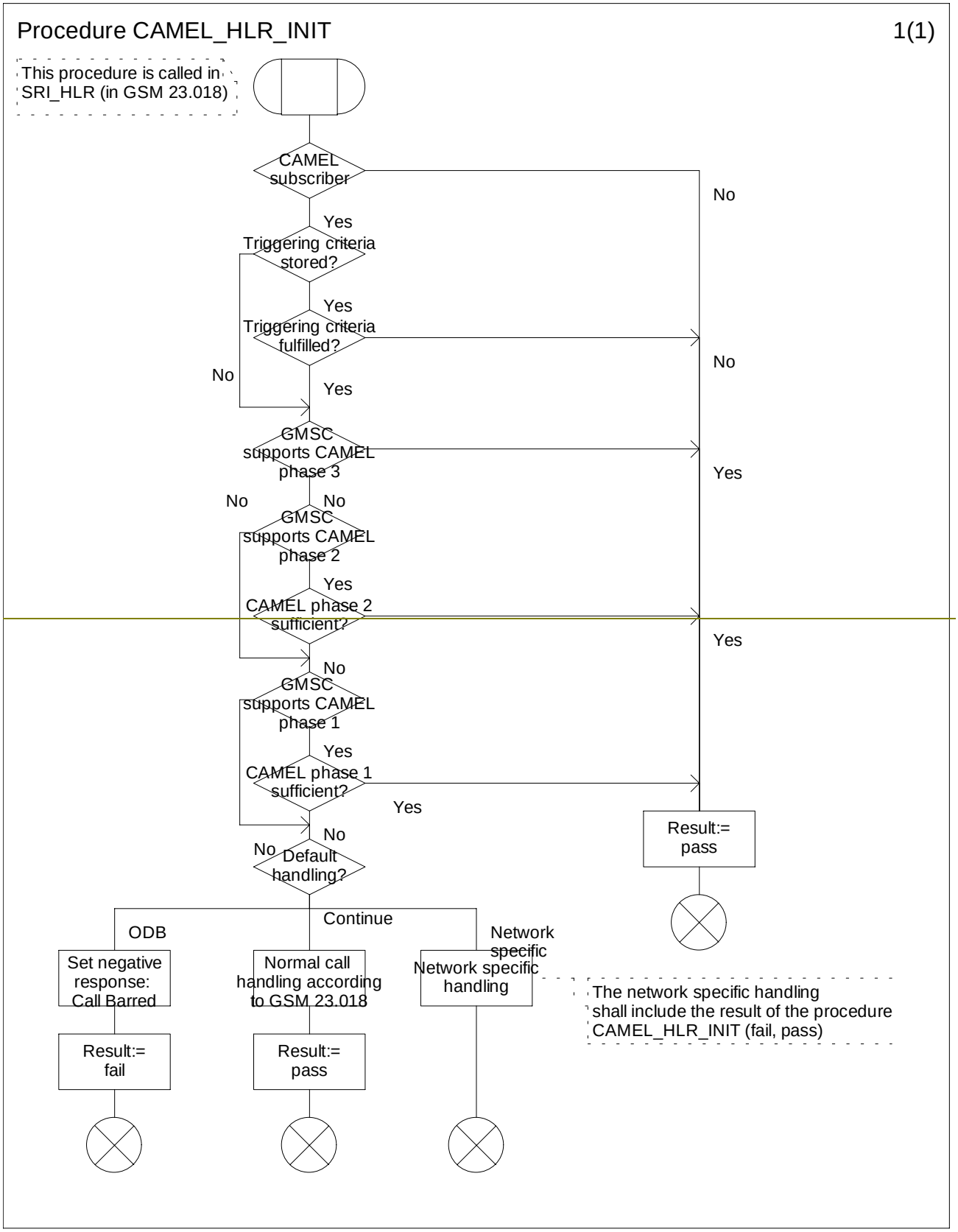


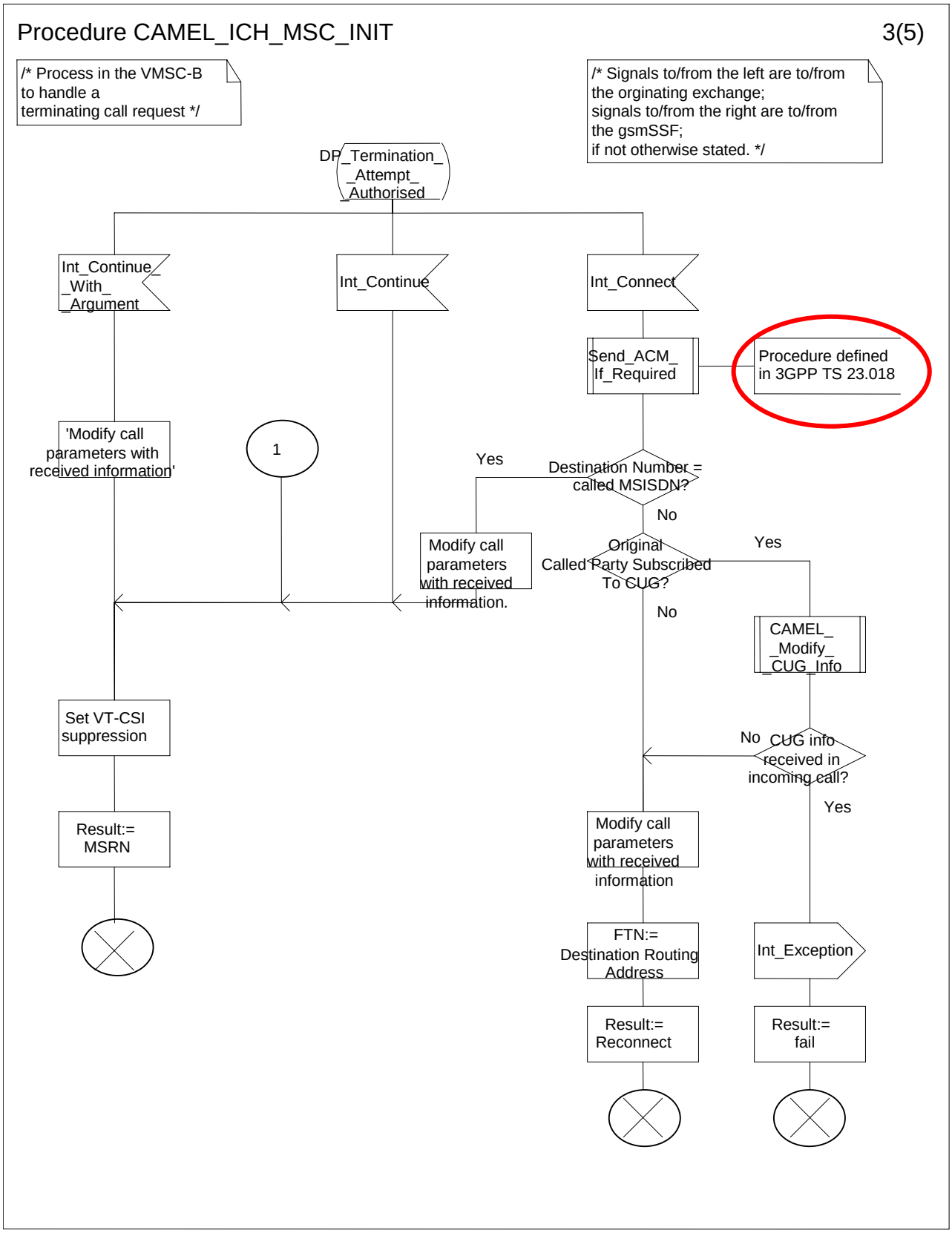
Figure 4.41: Procedure CAMEL_HLR_INIT (sheet 1)

…

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

4.5.4.1 Handling of mobile terminating calls in the terminating VMSC

…



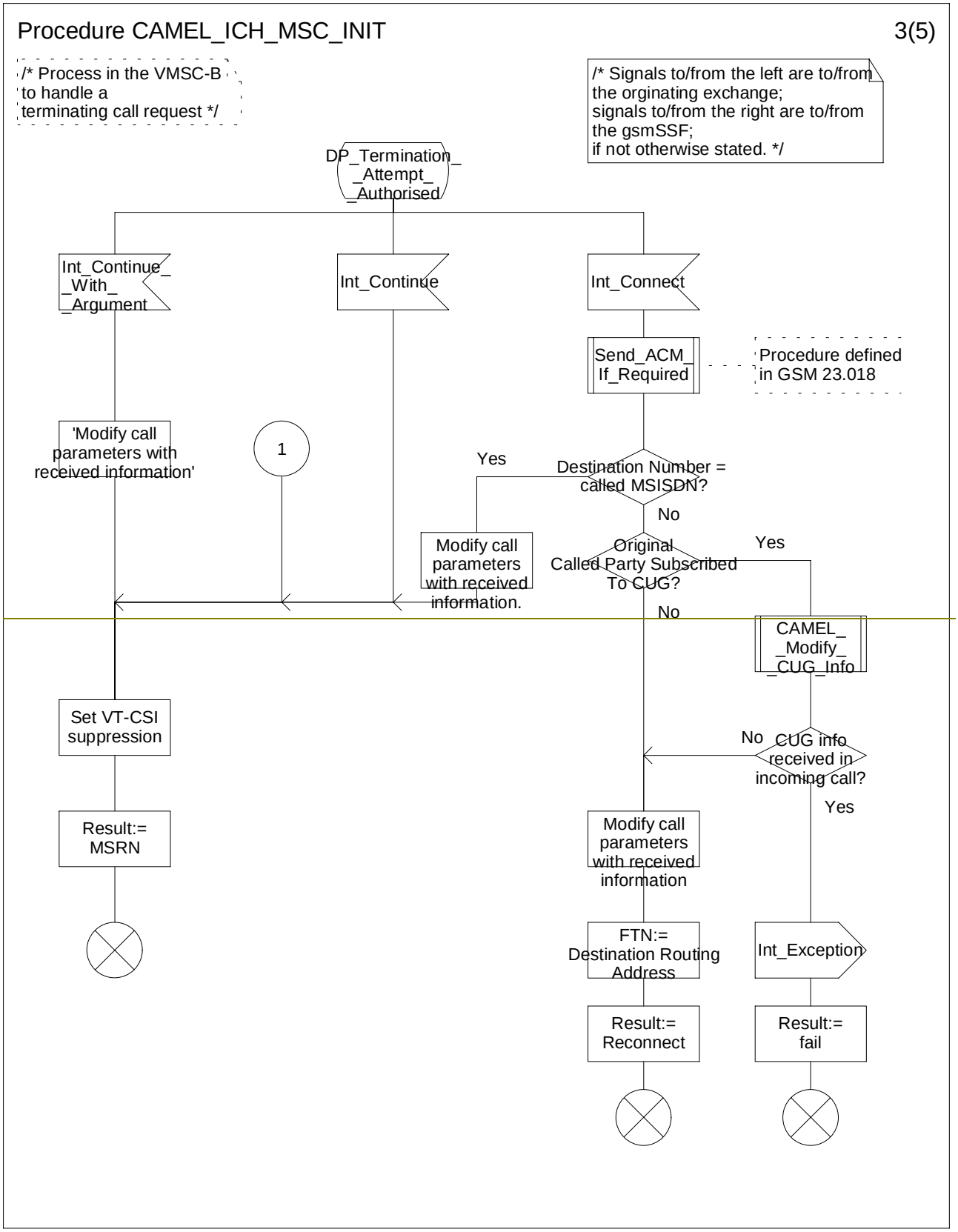


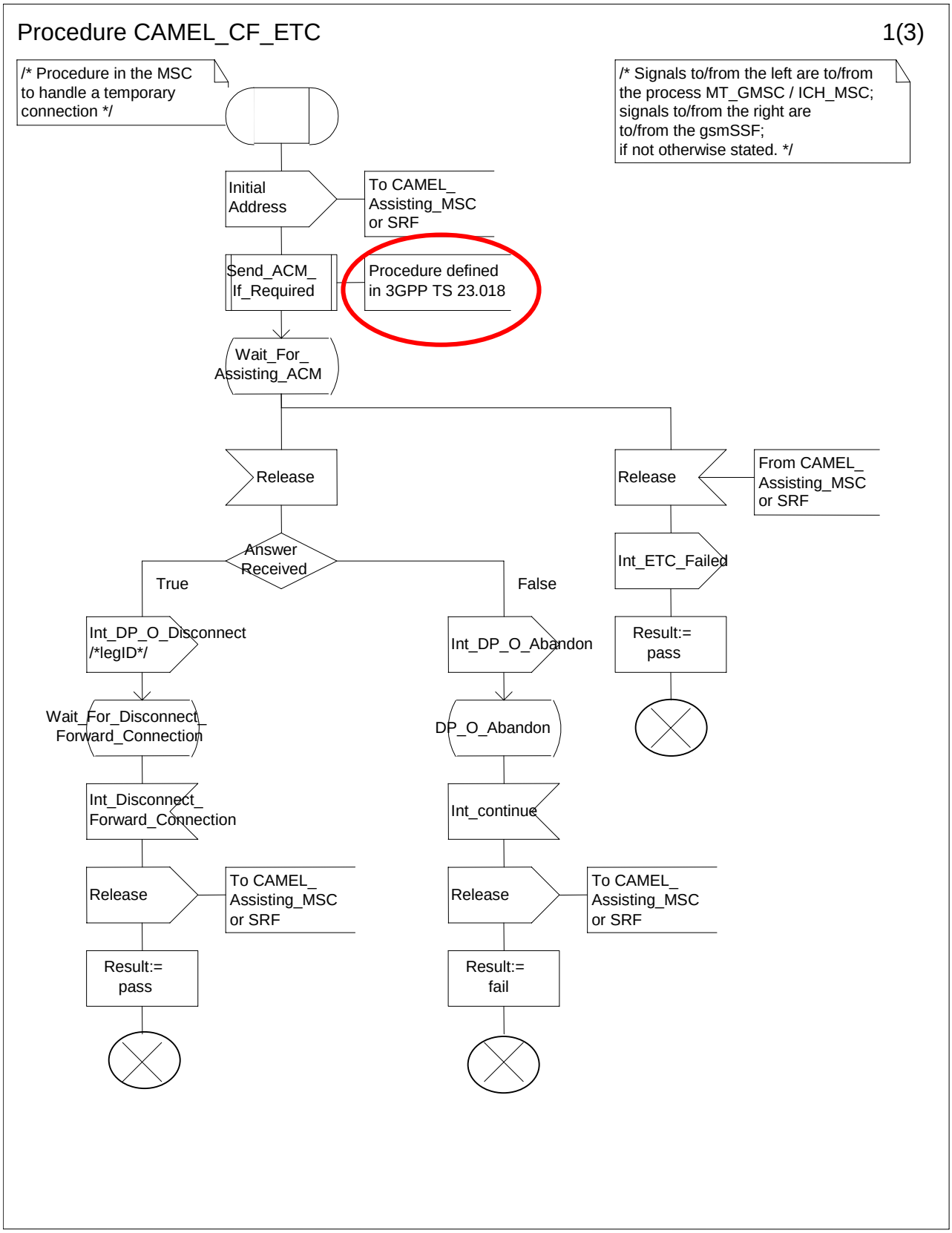
Figure 4.52c: Procedure CAMEL_ICH_MSC_INIT (sheet 3)

…

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

4.5.4.2 Handling of mobile terminating calls in the VLR

…



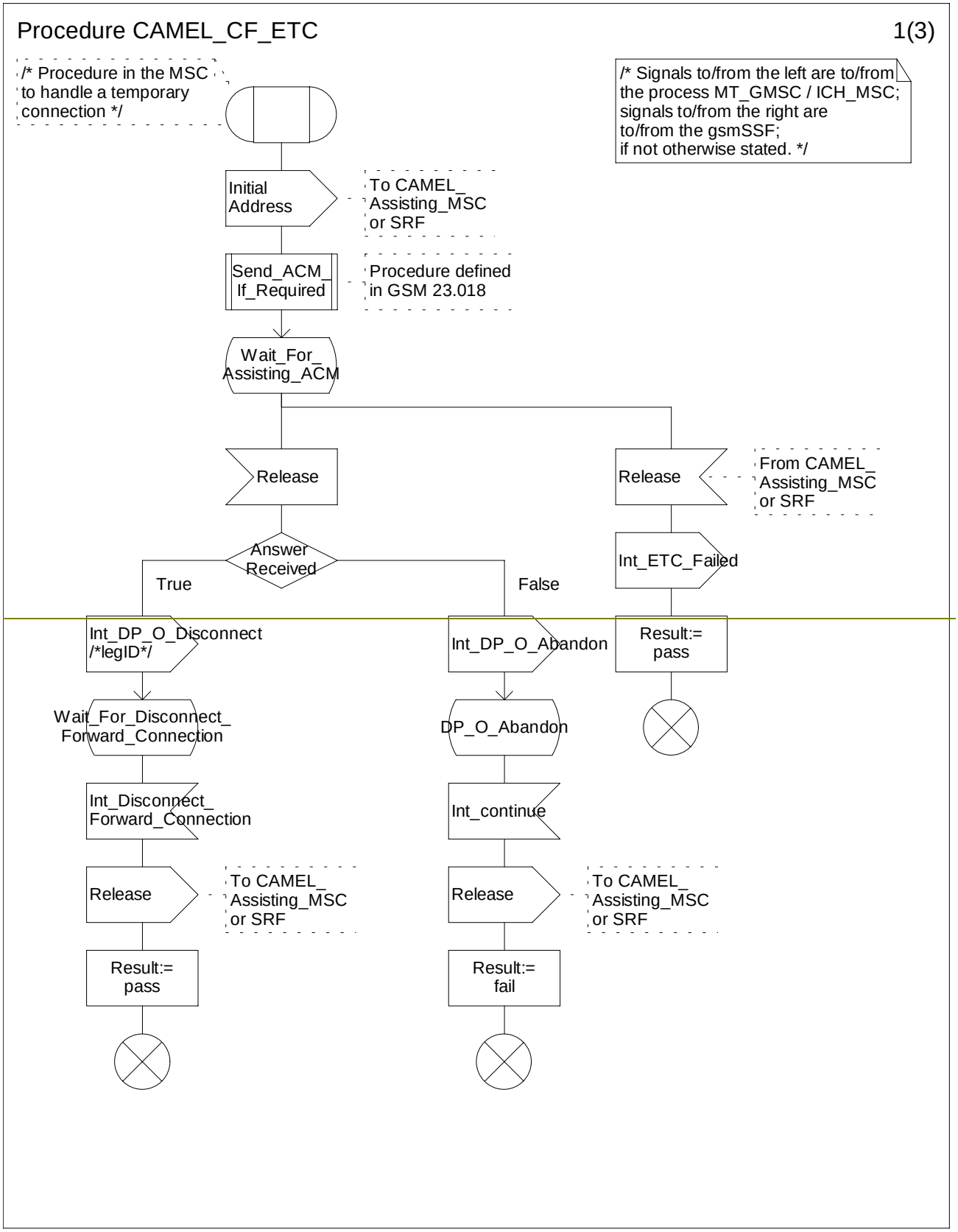
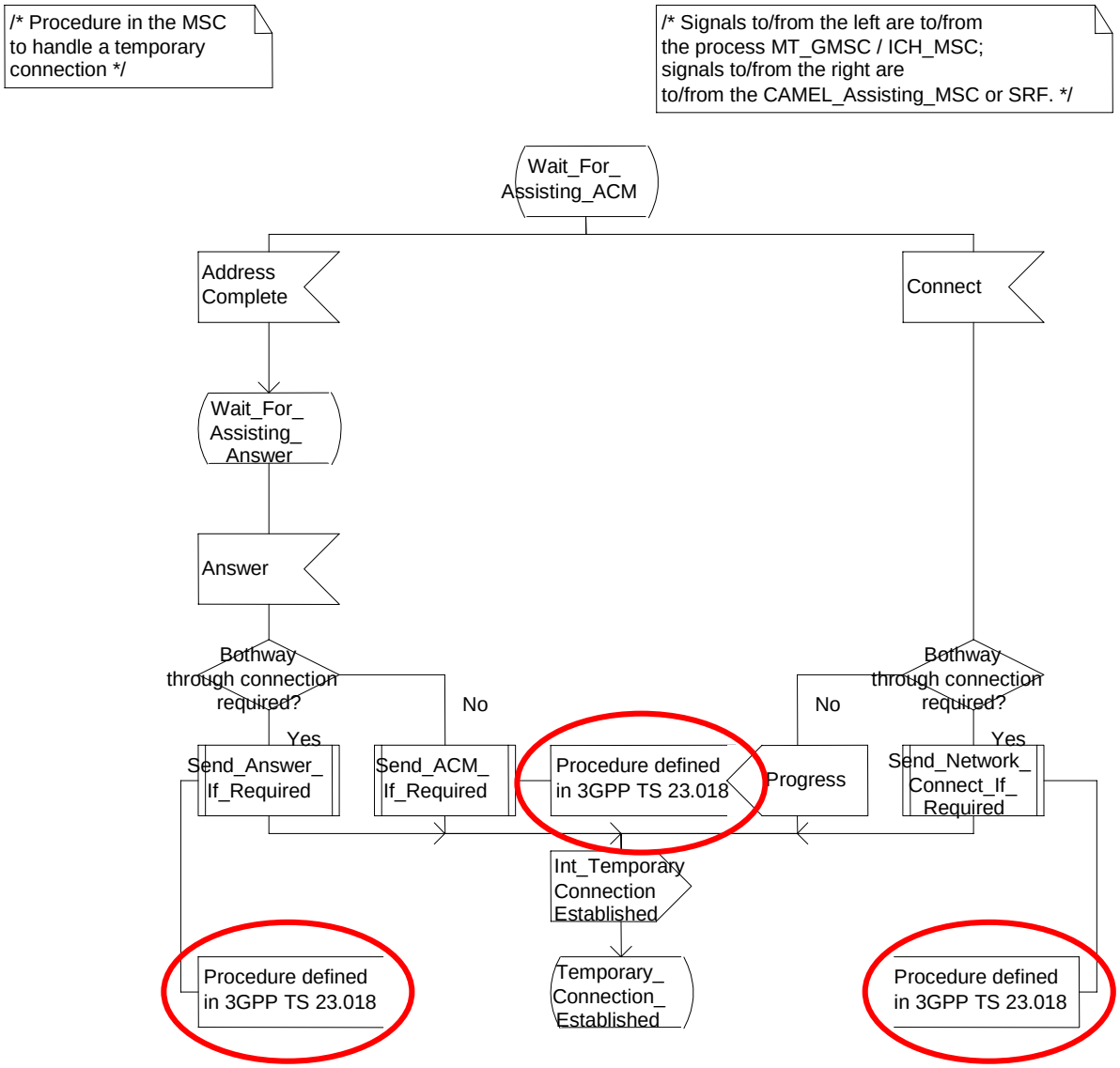


Figure 4.61 a: Process CAMEL_CF_ETC (sheet 1)

Procedure CAMEL_CF_ETC 2(3)



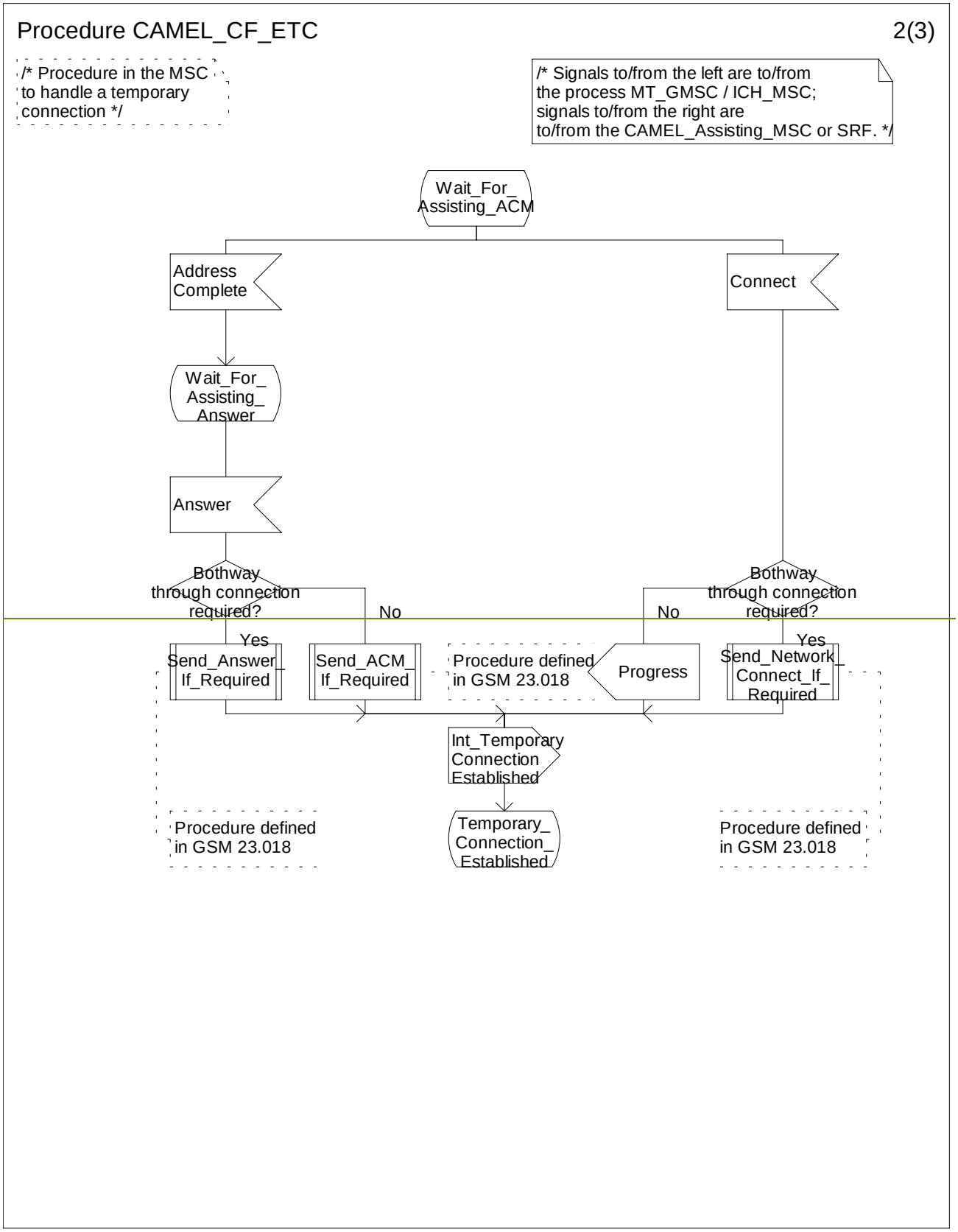
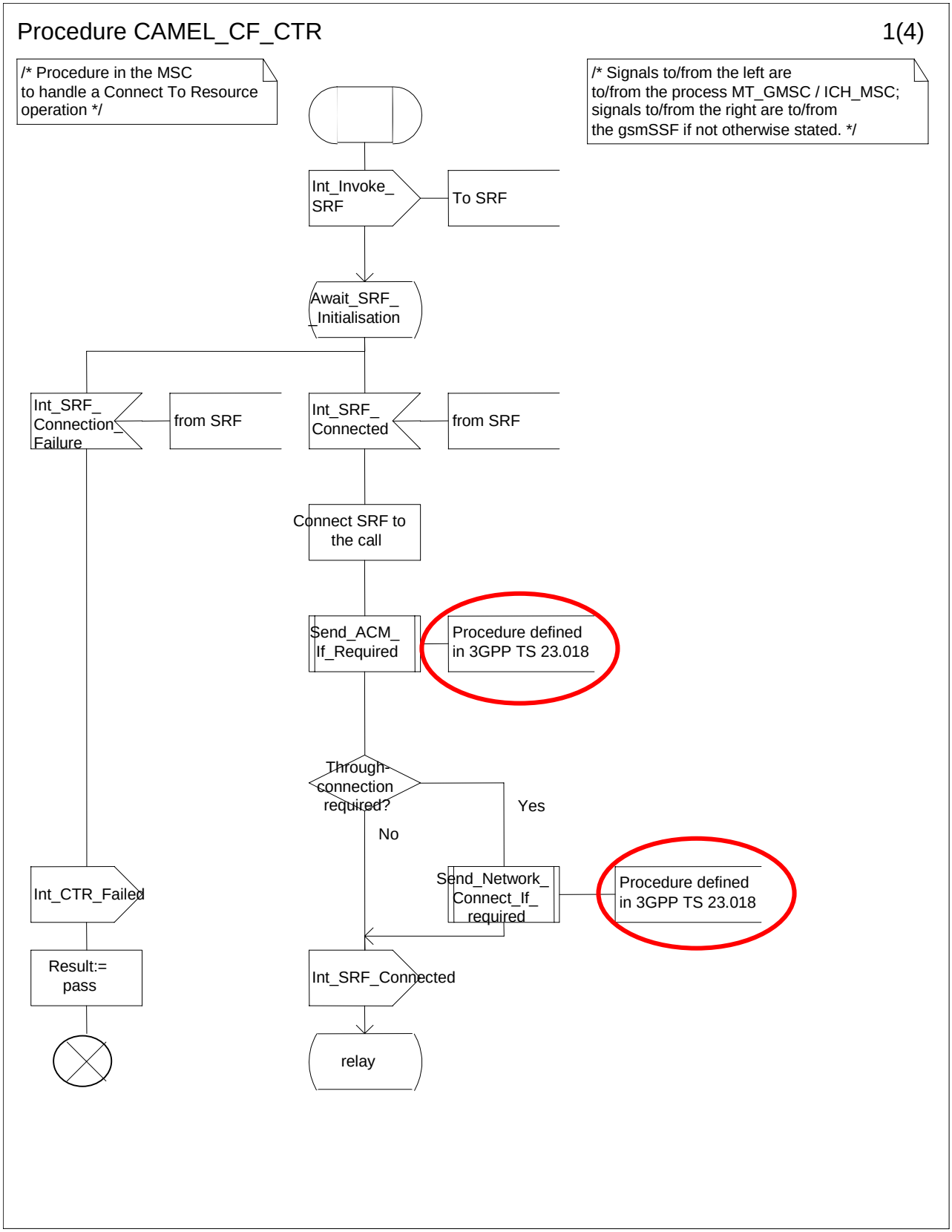


Figure 4.61b: Procedure CAMEL_CF_ETC (sheet 2)

…


Procedure CAMEL_CF_CTR
1(4)
/* Procedure in the MSC
to handle a Connect To Resource
operation */
/* Signals to/from the left are
to/from the process MT_GMSC / ICH_MSC;
signals to/from the right are to/from
the gsmSSF if not otherwise stated. */
Int_Invoke_
SRF
To SRF
Await_SRF_
_Initialisation
Int_SRF_
Connection_
Failure
from SRF
Int_SRF_
Connected
from SRF
Connect SRF to
the call
Send_ACM_
If_Required
Procedure defined
in 3GPP TS 23.018
Through-
connection
required?
Yes
No
Send_Network_
Connect_If_
required
Procedure defined
in 3GPP TS 23.018
Int_CTR_Failed
Result:=
pass
Int_SRF_Connected
relay

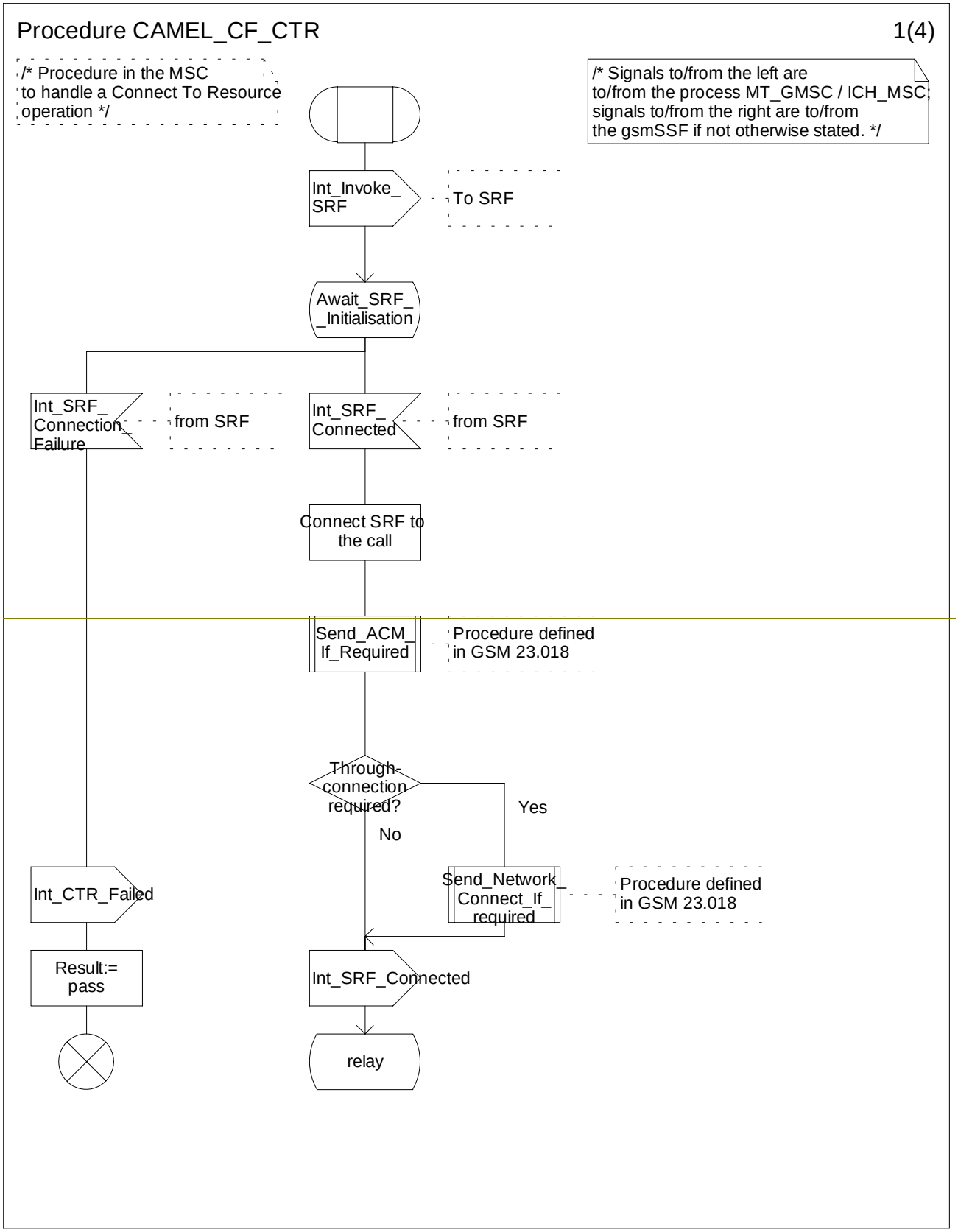


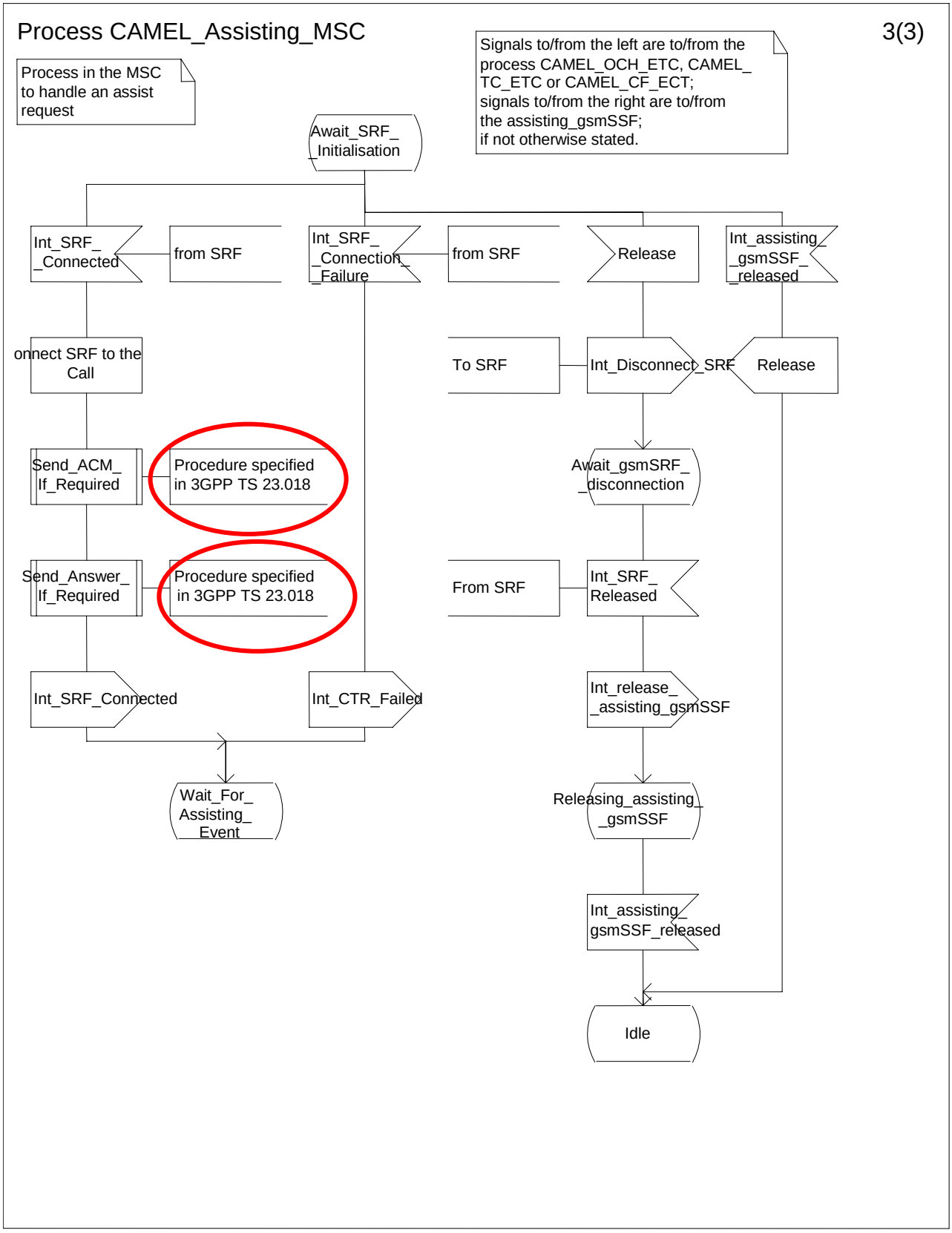
Figure 4.62 a: Process CAMEL_CF_CTR (sheet 1)

…

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

4.5.7 Assisting case

…



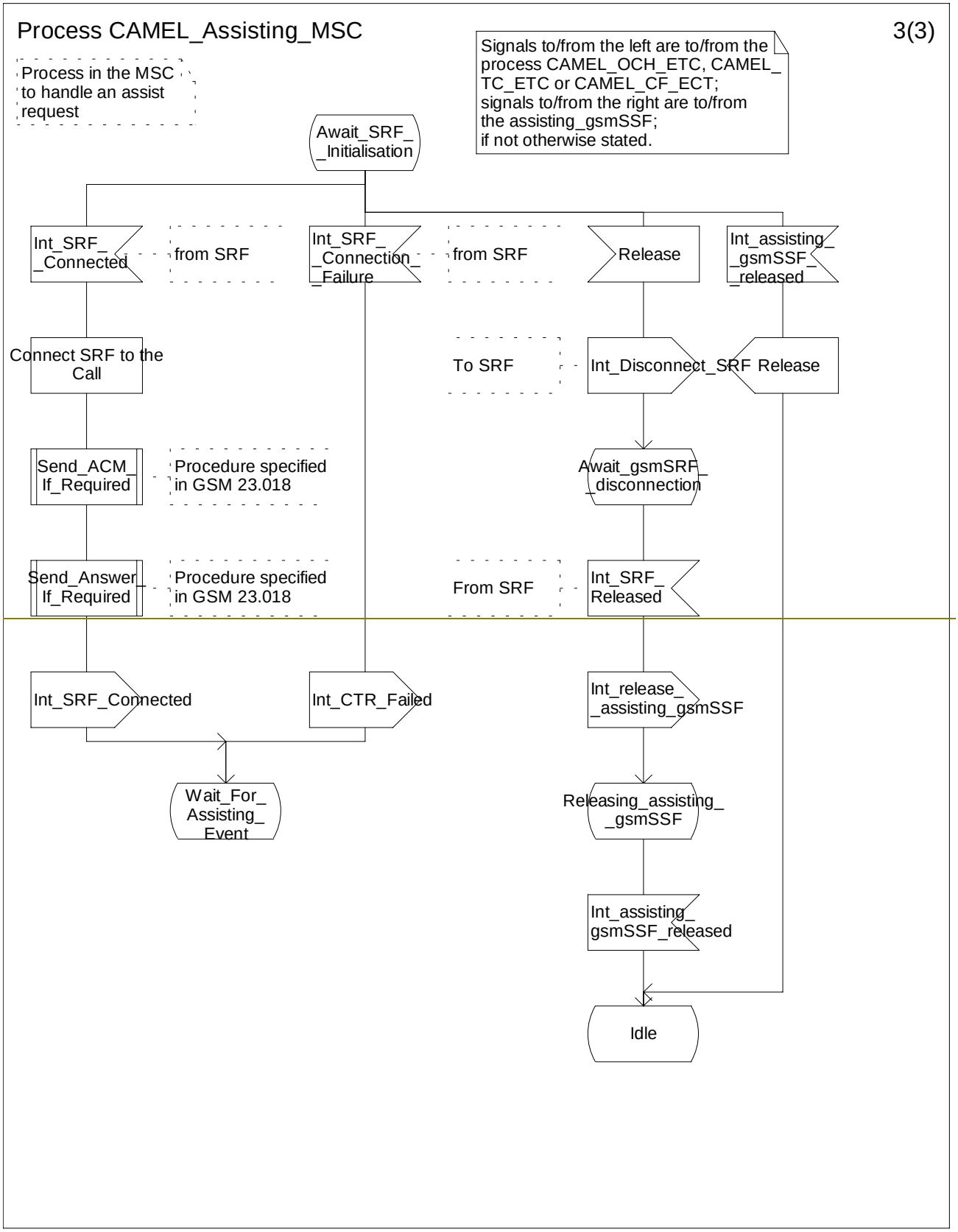


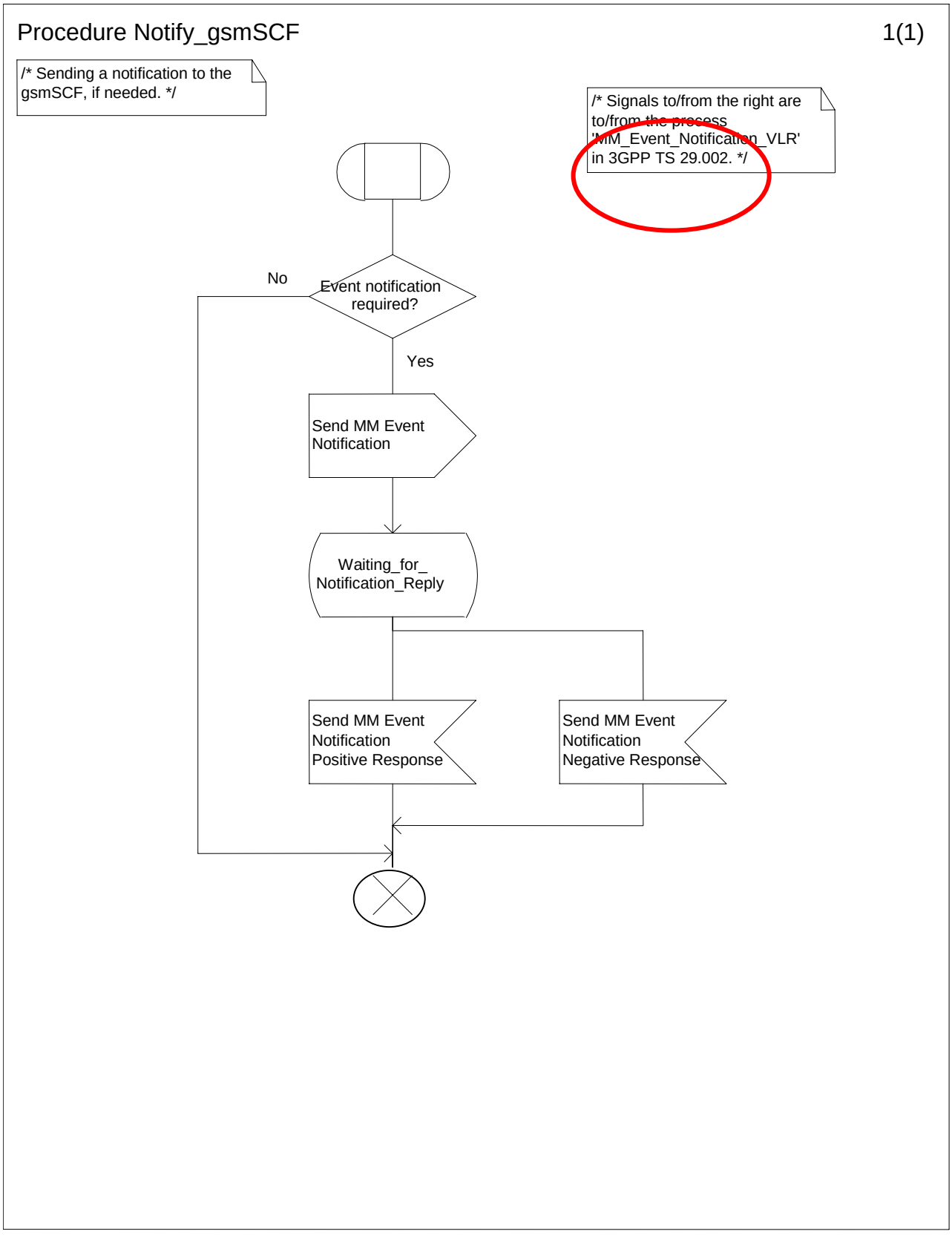
Figure 4.78c: Process CAMEL_Assisting_MSC (sheet 3)

…

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

9.3.1.2 Procedure Notify_gsmSCF

…



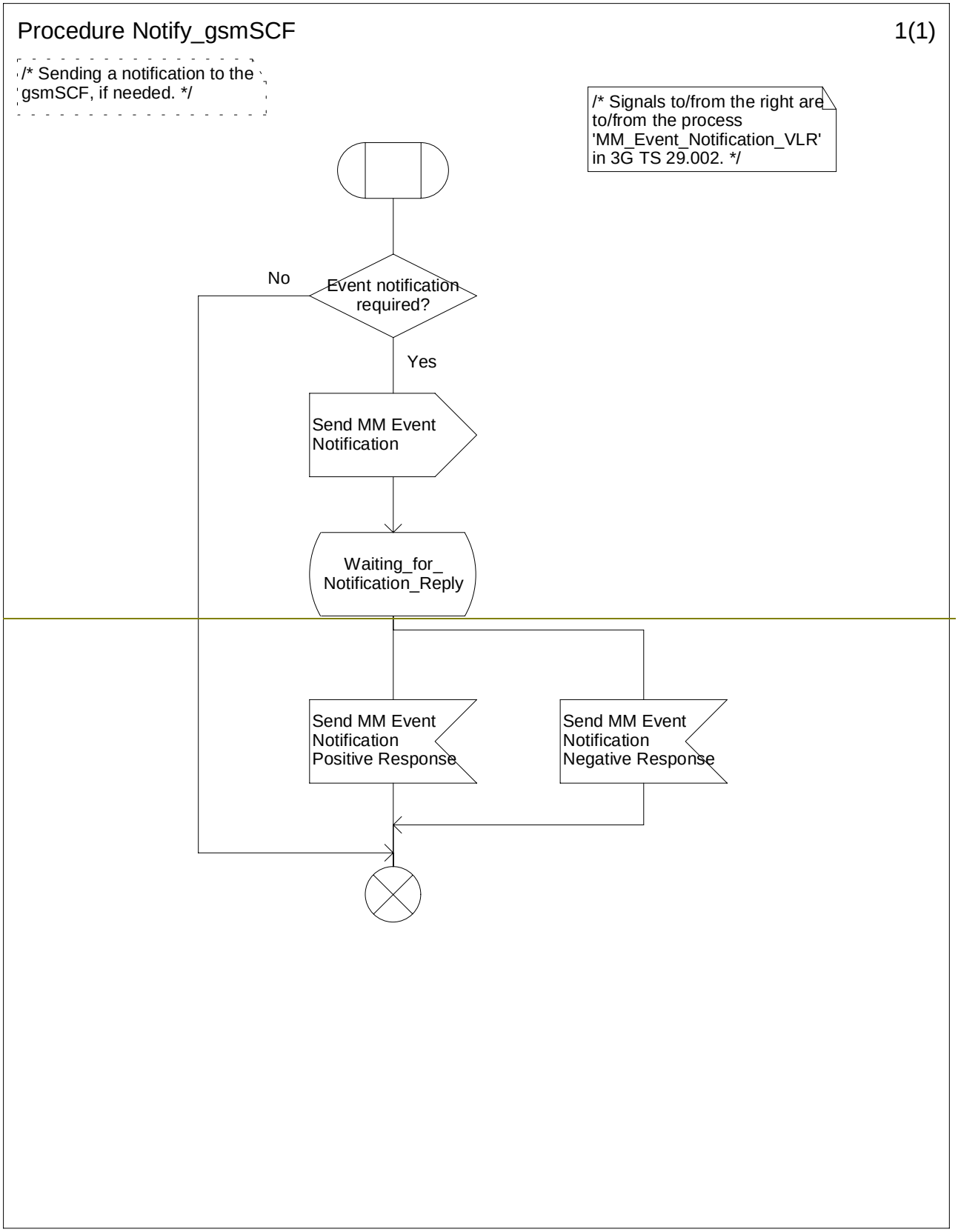
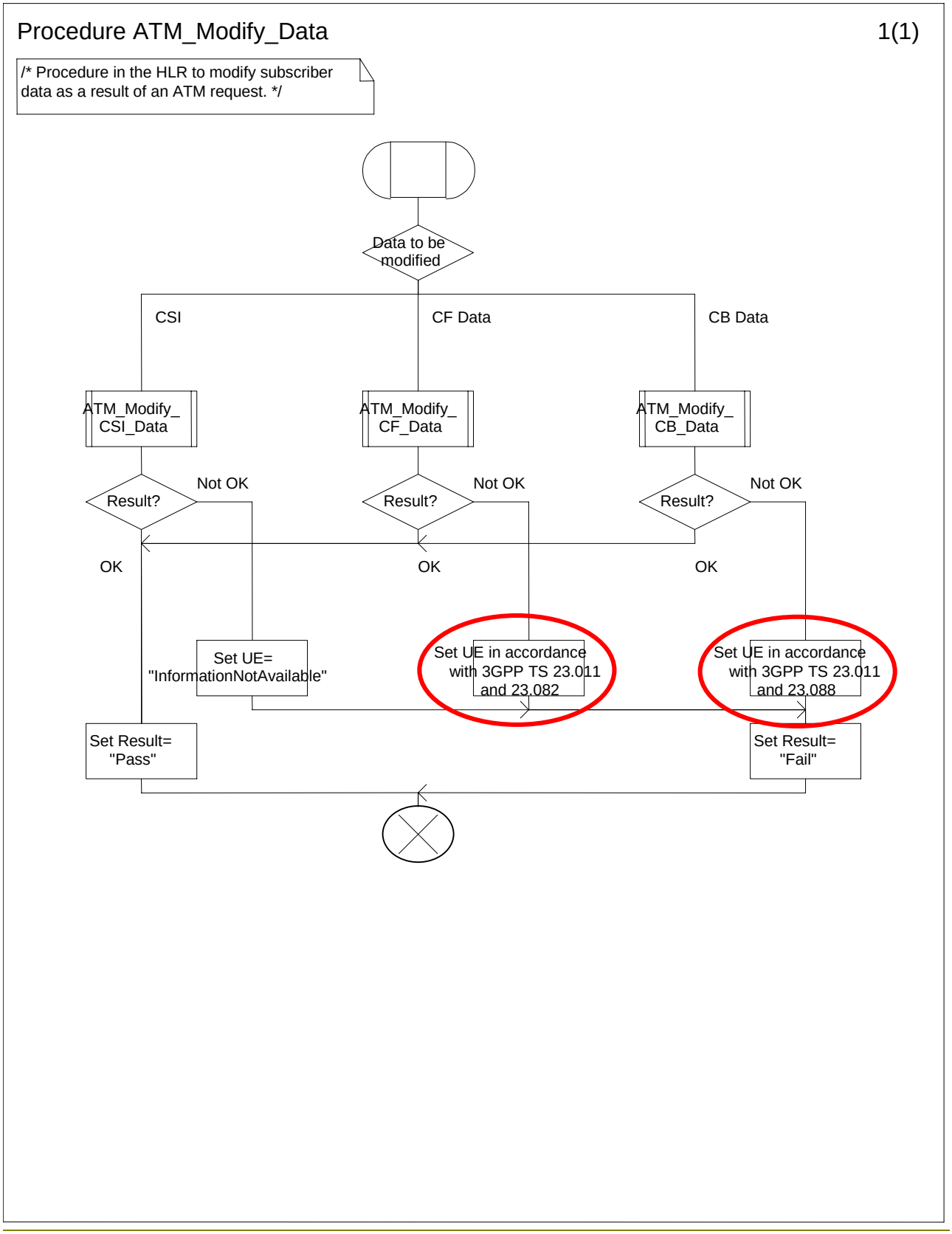


Figure 9.8: Procedure Notify_gsmSCF (sheet 1)

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

10.2.2 Any Time Modification

…



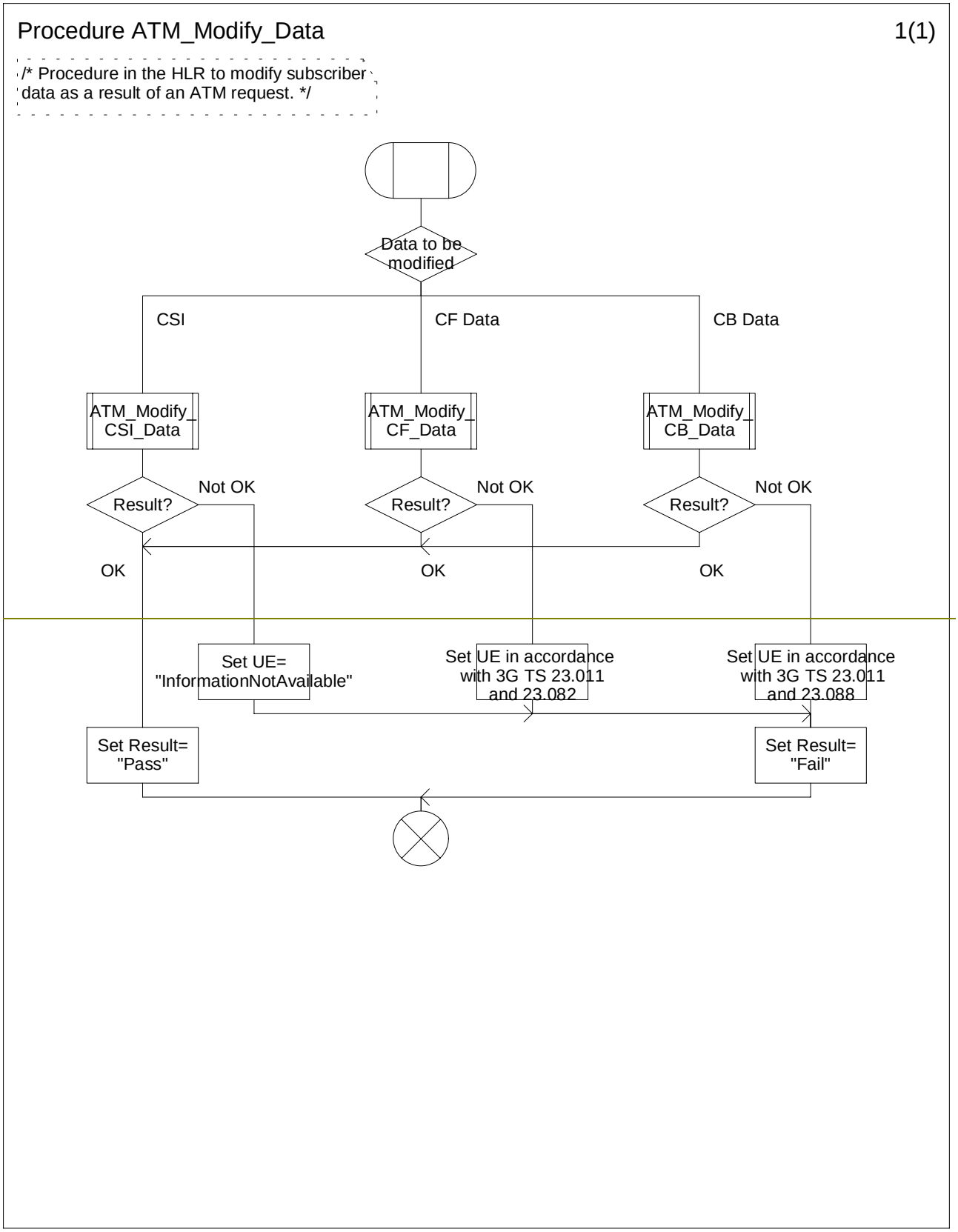
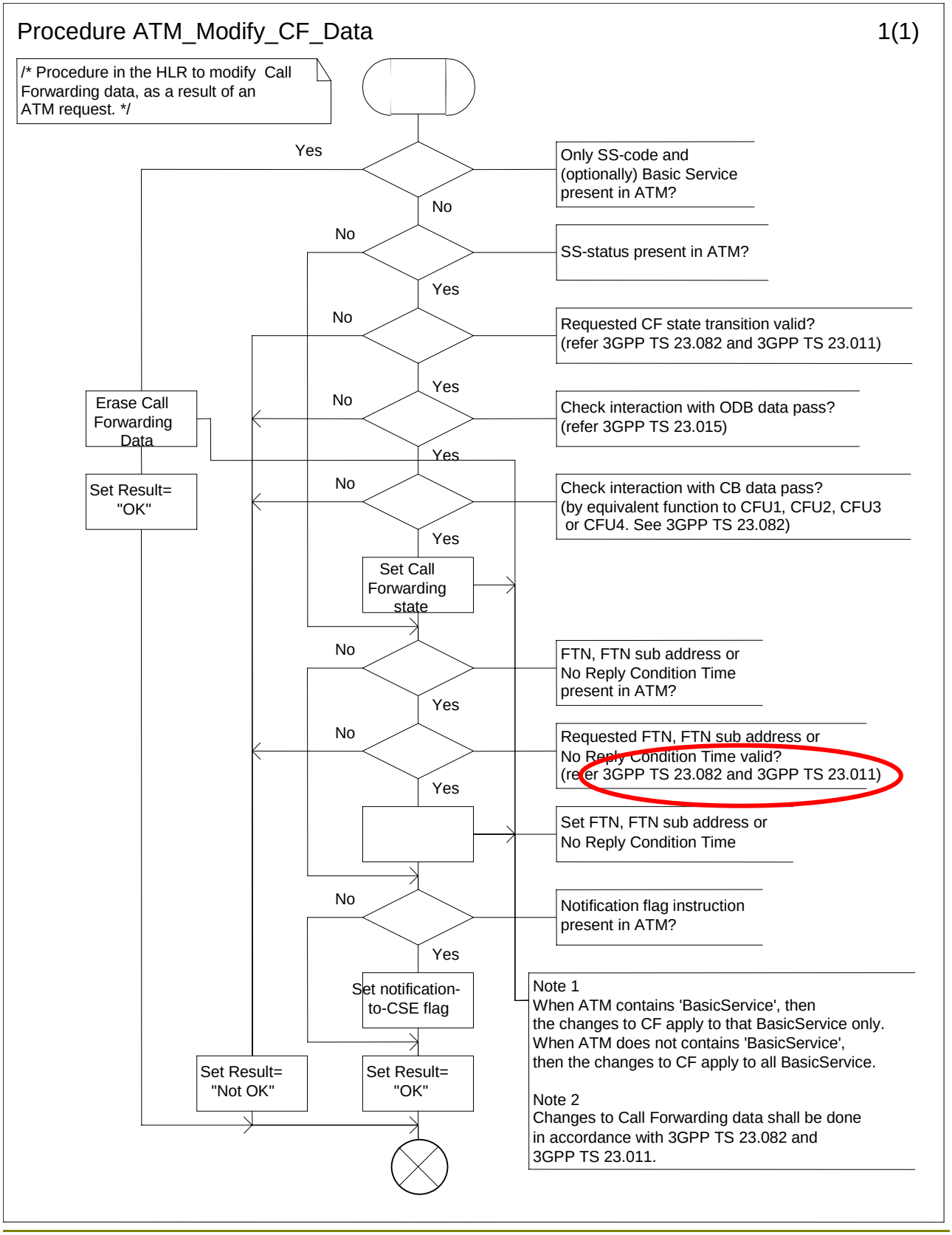


Figure 10.5: Procedure ATM_Modify_Data (sheet 1)

…


Procedure ATM_Modify_CF_Data
1(1)
/* Procedure in the HLR to modify Call Forwarding data, as a result of an ATM request. */
Only SS-code and (optionally) Basic Service present in ATM?
SS-status present in ATM?
Requested CF state transition valid? (refer 3GPP TS 23.082 and 3GPP TS 23.011)
Check interaction with ODB data pass? (refer 3GPP TS 23.015)
Check interaction with CB data pass? (by equivalent function to CFU1, CFU2, CFU3 or CFU4. See 3GPP TS 23.082)
FTN, FTN sub address or No Reply Condition Time present in ATM?
Requested FTN, FTN sub address or No Reply Condition Time valid? (refer 3GPP TS 23.082 and 3GPP TS 23.011)
Set FTN, FTN sub address or No Reply Condition Time
Notification flag instruction present in ATM?
Yes
No
Erase Call Forwarding Data
Set Result= "OK"
Set Call Forwarding state
Set notification-to-CSE flag
Set Result= "Not OK"
Set Result= "OK"
Note 1
When ATM contains 'BasicService', then the changes to CF apply to that BasicService only. When ATM does not contains 'BasicService', then the changes to CF apply to all BasicService.
Note 2
Changes to Call Forwarding data shall be done in accordance with 3GPP TS 23.082 and 3GPP TS 23.011.

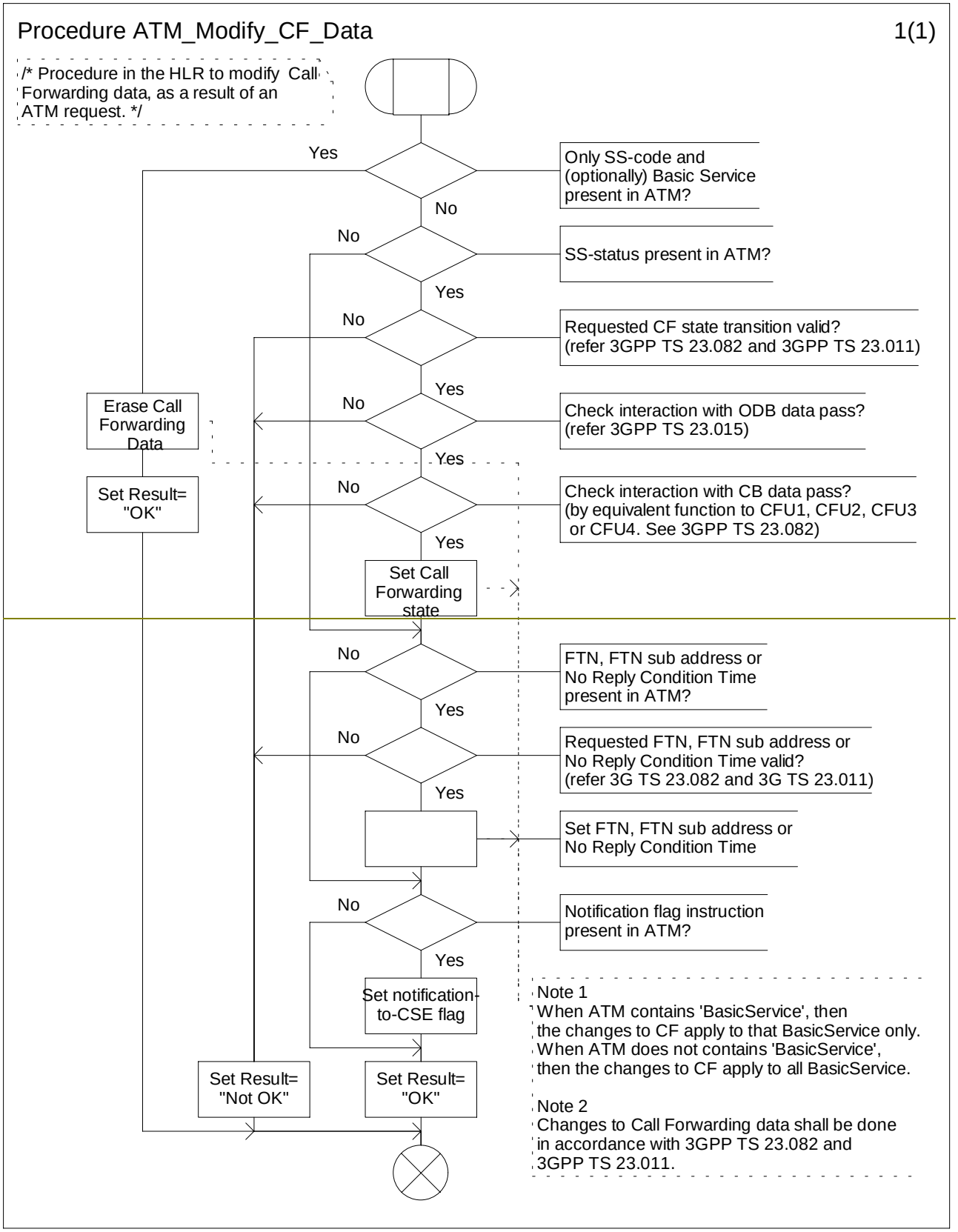
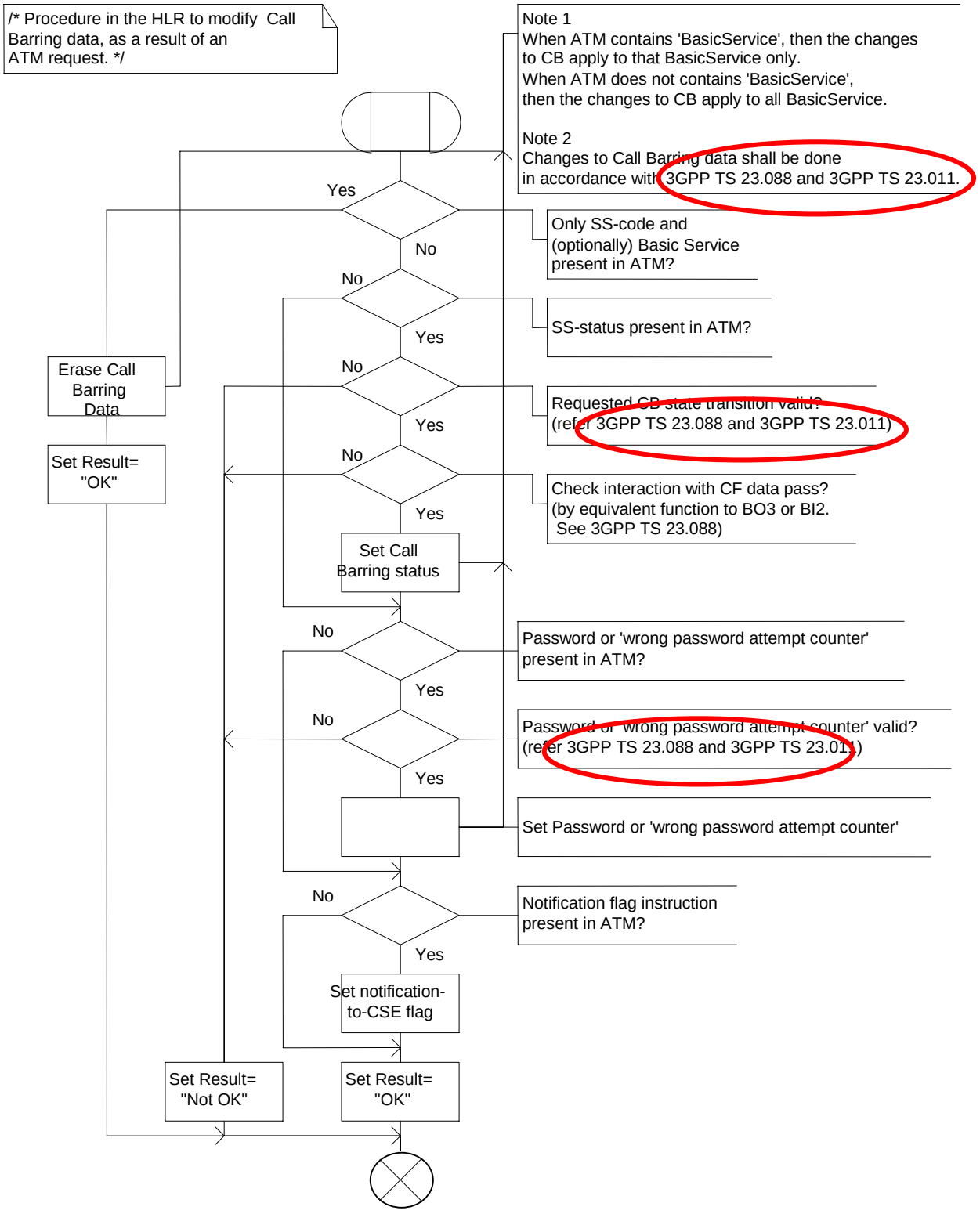


Figure 10.7: Procedure ATM_Modify_CF_Data (sheet 1)

Procedure ATM_Modify_CB_Data 1(1)



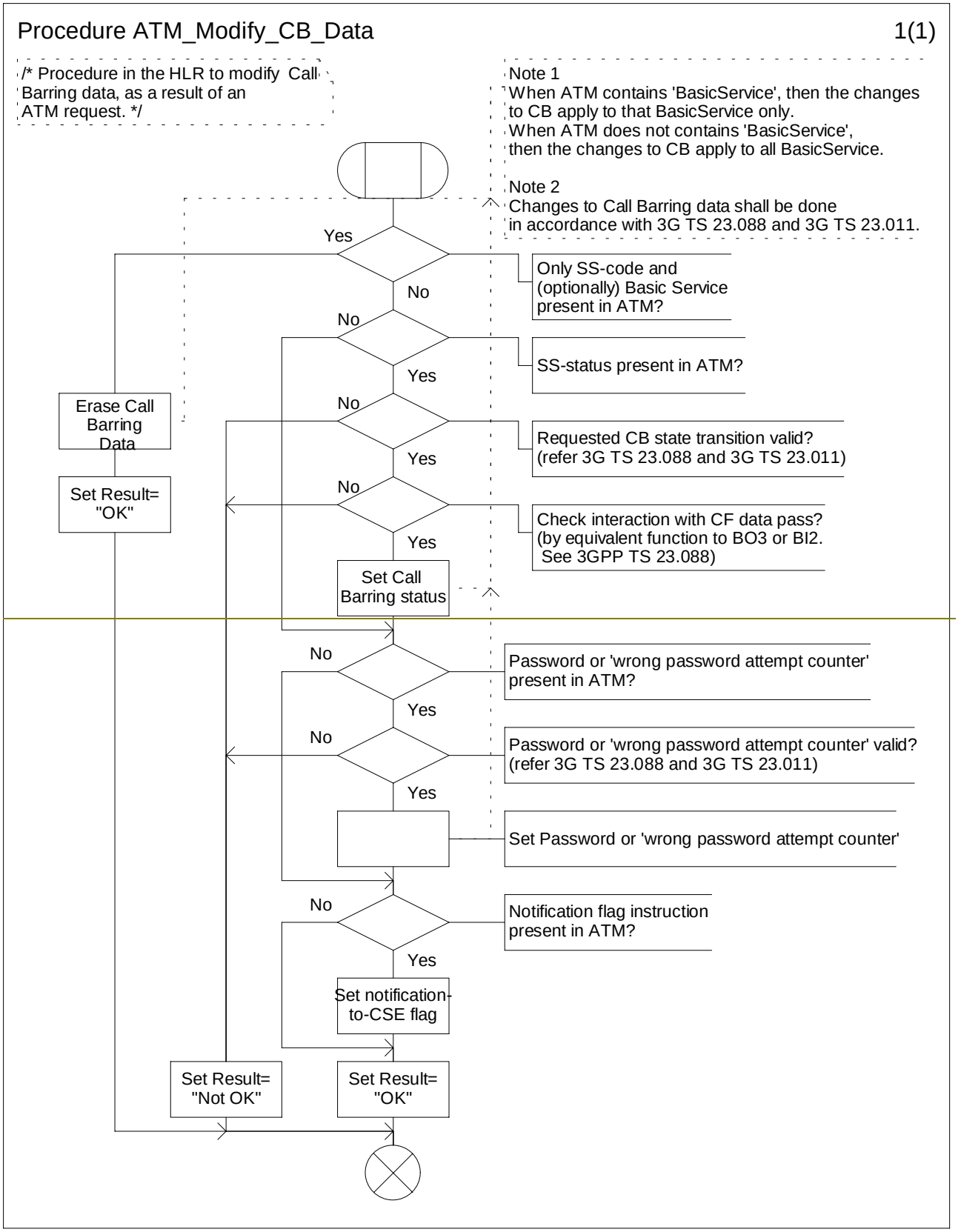
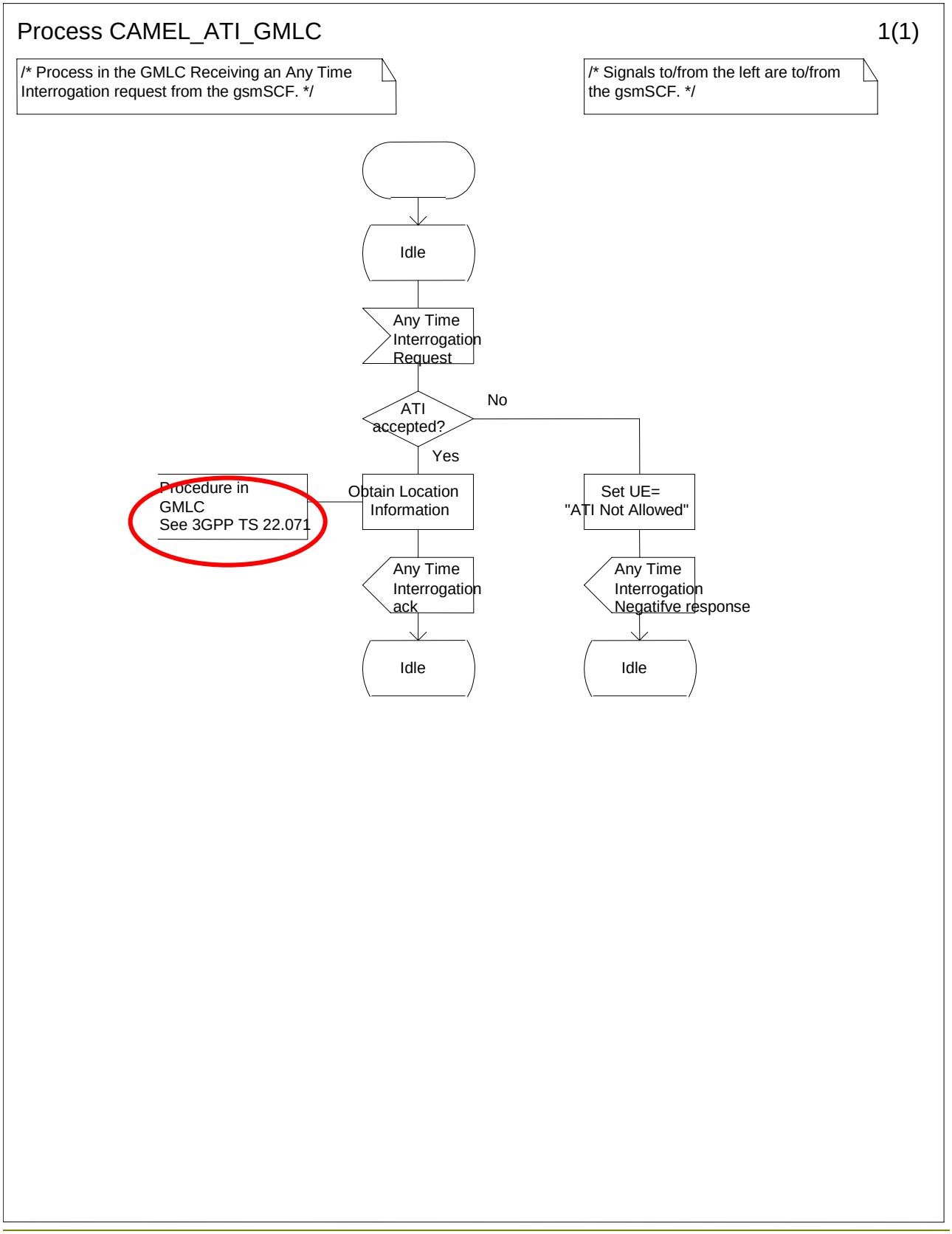


Figure 10.8: Procedure ATM_Modify_CB_Data (sheet 1)

****** Last Modified Section ******

11.2.1 Location Services

…



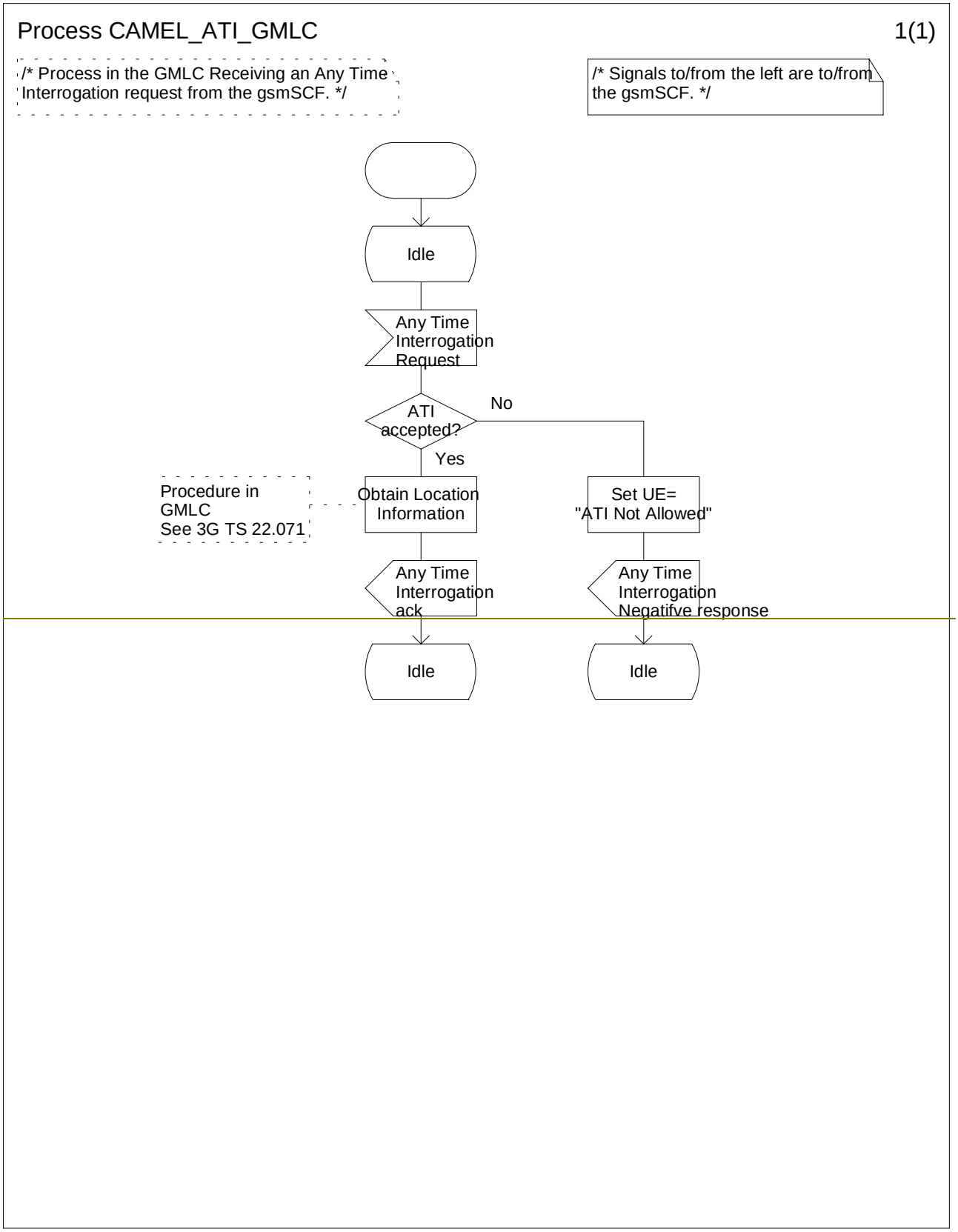


Figure 11.2: Process CAMEL_ATI_GMLC (sheet 1)

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

3GPP TSG-CN2 Meeting #16 ***N2-010084***
Beijing, China, 15 – 19 January 2001 (revision of N2-010014)

CHANGE REQUEST

⌘ **23.078 CR 258** ⌘ rev **1** ⌘ Current version: 3.7.0 ⌘

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

Title:	⌘	Routeing Area Update indication to Detach and Disconnect notifications to SCP
Source:	⌘	Ericsson
Work item code:	⌘	CAMEL3
Date:	⌘	18 January 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)*

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 Situation

GPRS Sessions and PDP Contexts may be handed over from one SGSN to another SGSN. The service logic which is running in the SCP for that Session and/or PDP Context will be resumed after hand-over.

At the moment of hand-over, the SCP will store relevant information of the active Session and/oer PDP Context(s). When the service logic for this Session and/or PDP Context(s) is resumed after hand-over, the service logic may retrieve this information for the Session and/or PDP Context(s) and resume the handling hereof, taking the 'history' of that Session and/or PDP Context(s) into account.

The SCP therefore needs to know that when a Detacgh or PDP Context Disconnect is reported, whether this Detach or PDP Context Disconnect is due to a genuine Detach or PDP Context Disconnect or due to hand-over to a new SGSN.

In the case of a genuine Detach or PDP Context Disconnect, no information needs to be stored. In the case of hand-over, relevant information needs to be stored.

Problem

Currently, such indication, as described in the previous section, is not present in the event reporting. The result is that the SCP would either:

- not store any data on the Session or PDP Context.
  The result of this behaviour may be that in the case of hand-over, no proper charging may be possible after service resumption from the new SGSN.

Or

	- always store relevant data on the Session or PDP Context. The SCP would then discard the data of there is no service re-invocation within a pre-defined period. The result of this behaviour may be that in all genuine Detach or PDP Context Disconnect events, the data of the Session or PDP Context is stored unnecessarily, resulting in downgraded performance. **Proposed Solution** The event specific information for the Detach or PDP Context Disconnect event shall be able to indicate 'routeing area update'. This enbables the SCP to decide whether or not relevant data for the Session or that PDP Context shall be stored.
Summary of change: ⌘	Addition of new information element in Detach and PDP Context Disconnect event specific information.
Consequences if not approved: ⌘	Misinterpretation of the Detach and PDP Context Disconnect events by the SCP by different manufacturers, possibly resulting in incorrect action taken by SCP.

Clauses affected:	⌘	6.6.1.4		
Other specs affected:	⌘	[X] Other core specifications [ ] Test specifications [ ] O&M Specifications	⌘	29.078 (CR 139r1)
Other comments:	⌘	This discussion was started in Tdoc N2-000312, CR 110 (cat C) on 29.078, 'Adding 'Hand-over' indication to Disconnect and Detach notification'. No conclusion was reached when the document was presented. The author was requested to re-submit the document.		

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

6.6.1.4 Event Report GPRS

6.6.1.4.1 Description

This IF is used to notify the gsmSCF of a GPRS event (e.g. Attach or Detach) previously requested by the gsmSCF in a Request Report GPRS Event IF.

6.6.1.4.2 Information Elements

The following information elements are required:

Information element name	Required	Description
Gprs Reference Number	C	This IE consists of a number assigned by the gprsSSF and a number assigned by the gsmSCF. It is used for TCAP dialogue segmentation. Refer to 3GPP TS 29.078 [5] for the usage of this element.
GPRS Event type	M	This IE specifies the type of event that is reported.
Misc GPRS Info	M	This IE indicates the DP type (EDP-N or EDP-R).
GPRS Event Specific Information	M	This IE contains information specific to the reported event.
PDP ID	C	This IE identifies the PDP context, which the Report GPRS Event is applicable for. If not present the dialogue corresponds to the Attach/Detach State Model or to one single PDP context.

M Mandatory (The IE shall always be sent).

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

If the *GPRS Event type* contains DP Change of Position GPRS Session, then the GPRS Event Specific Information IE contains the following information elements:

Information element name	Required	Description
Location Information in SGSN	M	See subclause 7.6.1.2.2.

M Mandatory (The IE shall always be sent).

If the *GPRS Event type* contains DP Change of Position Context, then the GPRS Event Specific Information IE contains the following information elements:

Information element name	Required	Description
Access Point Name	C1	This IE identifies the address Access Point Name to which the MS is connected.
Charging ID	C1	This IE contains the Charging ID received from the GGSN for the PDP context.
Location Information in SGSN	M	See subclause 7.6.1.2.2.
PDP Type	C1	This IE identifies the PDP Type. See 3GPP TS 23.060 [11].
Quality Of Service	C1	This IE is described in the table below.
Time and Time Zone	C1	This IE contains the time that the gprsSSF met the detection point, and the time zone the gprsSSF resides in.
GGSN Address	C1	This IE contains the Address of the GGSN to which the MS is connected, see 3GPP TS 23.003 [37].

M Mandatory (The IE shall always be sent).

C1 Conditional (The IE shall be sent, if available at inter-SGSN routing area update. Shall not be sent at intra-SGSN routing area update).

If the *GPRS Event type* contains DP Detach or DP PDP context disconnection, then the GPRS Event Specific Information IE contains the following information elements:

Information element name	Required	Description
Initiating Entity	M	This IE identifies the entity that has initiated the disconnection or detachment.
Routeing Area Update	C	This IE indicates that the Detach or Disconnection is due to inter-SGSN routeing area update.

M Mandatory (The IE shall always be sent).
C Optional (The IE shall be sent, if applicable)

If the *GPRS Event type* contains DP PDP context establishment, then the GPRS Event Specific Information IE contains the following information elements:

Information element name	Required	Description
Access Point Name	M	This IE identifies the address Access Point Name the MS has requested to connect to.
PDP Type	M	This IE identifies the PDP Type. See 3GPP TS 23.060 [11].
Quality Of Service	M	This IE is described in the table below.
Location Information in SGSN	M	See subclause 7.6.1.2.2.
Time and Time Zone	M	This IE contains the time that the gprsSSF met the detection point, and the time zone the gprsSSF resides in.
PDP Initiation Type	M	This IE indicates whether a PDP context was established as a result of a network-initiated request or as a result of a subscriber request.

M Mandatory (The IE shall always be sent).

If the *GPRS Event type* contains DP PDP context establishment acknowledgement, then the GPRS Event Specific Information IE contains the following information elements:

Information element name	Required	Description
Access Point Name	M	This IE identifies the address Access Point Name to which the MS is connected.
Charging ID	M	This IE contains the Charging ID received from the GGSN for the PDP context.
PDP Type	M	This IE identifies the PDP Type. See 3GPP TS 23.060 [11].
Quality Of Service	M	This IE is described in the table below.
Location Information in SGSN	M	See subclause 7.6.1.2.2.
Time and Time Zone	M	This IE contains the time that the gprsSSF met the detection point, and the time zone the gprsSSF resides in.
GGSN Address	M	This IE contains the Address of the GGSN to which the MS is connected, see 3GPP TS 23.003 [37].

M Mandatory (The IE shall always be sent).

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

3GPP TSG-CN2 Meeting #16 ***N2-010086***
Beijing, China, 15 – 19 January 2001 (revision of N2-010016)

CHANGE REQUEST

⌘ **23.078 CR 259** ⌘ rev **1** ⌘ Current version: 3.7.0 ⌘

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

Title:	⌘	Correction to description of Entity Released GPRS
Source:	⌘	Ericsson
Work item code:	⌘	CAMEL3
Date:	⌘	18 January 2001
Category:	⌘	**F (non-essential, 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:	⌘	When a GPRS Session is detached or a PDP Context is disconnected and the corresponding event detection point is not armed at that moment (ie. neither armed as EDP-N nor armed as EDP-R), then the gprsSSF shall use the operation Entity Released GPRS. The use of this operation is independent of the functional entity that initiates the release of the Session or PDP Context. The use of this operation is also independent of the reason why the detach or PDP Context disconnect occurred. This behaviour is correctly reflected in the GPRS SDL's in 3G TS 23.078. However, the description of the operation (in the ASN.1 syntax) and the Procedure Desscription (capter 11 in 3G TS 29.078) imply that the procedure Entity Released GPRS shall be used only when the release is caused by the SGSN and the release is due to an abnormal event. That description is not in-line with the behaviour of the gprsSSF, as currently depicted by the GPRS SDL in 3G TS 23.078. The description of the procedure shall therefore be corrected. This correction is needed to prevent ambiguity about the usage of this procedure.
Summary of change:	⌘	Correction to description of procedure Entity Released GPRS.
Consequences if not approved:	⌘	Designers from different vendors may interpret the description of this procedure differently, which may result in interworking problems for CAMEL GPRS Services.

Clauses affected:	⌘	6.6.1.3		
Other specs affected:	⌘	☒ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	29.078 (CR 140r1)
Other comments:	⌘			

*** First Change ***

6.6.1.3 Entity Released GPRS

6.6.1.3.1 Description

This IF is used by the gprsSSF to inform the gsmSCF at any phase that a GPRS ~~S~~session has been detached or a PDP ~~C~~context has been ~~terminated~~ disconnected ~~by the SGSN~~ without reporting any EDP.

6.6.1.3.2 Information Elements

The following information elements are required:

Information element name	Required	Description
Gprs Reference Number	C	This IE consists of a number assigned by the gprsSSF and a number assigned by the gsmSCF. It is used for TCAP dialogue segmentation. Refer to 3GPP TS 29.078 [5] for the usage of this element.
GPRS Cause	M	~~This IE contains the Cause value indicating the reason for discontinuation of the PDP context.~~ This IE contains the Cause value indicating the reason for the GPRS Session Detach event or the PDP Context Disconnection event.
PDP ID	C	This IE identifies the PDP context which has been terminated ~~by the SGSN~~. If not present the relationship corresponds to the Attach/Detach State Model or to one single PDP context within a PDP context relationship.

M Mandatory (The IE shall always be sent).

C Conditional.

*** End of Document ***

3GPP TSG-CN2 Meeting #16 ***N2-010095***
Beijing, China, 15 – 19 January 2001 (revision of N2-010018)

CHANGE REQUEST

⌘ **23.078** **CR** **260** ⌘ rev **1** ⌘ Current version: 3.7.0 ⌘

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

Title:	⌘	Correction to usage of the term 'O-BCSM'
Source:	⌘	Ericsson
Work item code:	⌘	CAMEL3
Date:	⌘	18 January 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)*

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 description of the CAMEL interaction with Call Forwarding at the GMSC/VMSC is incorrect and misleading. The triggering mechanism in CAMEL Phase 3 is more complicated than in CAMEL Phase 2. A clear and unambiguous description is vital for correct and consistent implementation.

The following corrections are needed:

(1) Sect. 4.4.5.1. The text refers to the invocation of an O-BCSM under the condition of the presence of O-CSI, D-CSI etc. This wording is incorrect. For a Mobile Originated call, an instance of the O-BCSM will always created. The creation of an instance of the O-BCSM is part of Basic Call handling.

From within the instance of the O-BCSM, one or more CAMEL relationships may be established, dependent on the presence of O-CSI and/or D-CSI and the fulfillment of available trigger criteria.

The present CR proposes corrective text to reflect the above principle.

(2) Section 4.4.5.1 refers to O-CSI only. D-CSI shall be referred as well.

(3) Sect. 4.4.5.2. See (1) concerning the correct usage of the term T(A-B) and the usage of T-CSI and VT-CSI.

(4) Sect. 4.4.5.3. See (1) concerning the correct usage of the term T(A-B) and the usage of T-CSI and VT-CSI.

Call Deflection needs to be added in the list of GSM based forwarding services.

For CAMEL based forwarding services, N-CSI is referred. It shall also be referred in sect. 4.4.5.1 (Mobile Originated calls) and in sect. 4.4.5.3, GSM

		based forwarded calls.
Summary of change:	⌘	Textual correction of section 4.4.5
Consequences if not approved:	⌘	Misinterpretation of the CAMEL specification, resulting in possible incorrect and incompatible implementation of the CAMEL standard. This may lead to interworking problems.

Clauses affected:	⌘	4.4.5			
Other specs affected:	⌘	[X]	Other core specifications	⌘	29.078 (CR 141r1)
		[ ]	Test specifications		
		[ ]	O&M Specifications		
Other comments:	⌘				

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

4.4.5 BCSM Modelling of Call Scenarios

This subclause describes how the BCSMs defined above are used to model GSM call scenarios. For each scenario the used and unused BCSMs involved in the call are shown.

In some cases these models may have an allocation to physical nodes different from that shown. However, the physical separation of the logic functions shown shall not impact the modelling. This subclause describes the call scenarios without optimal routeing. If optimal routeing is invoked the physical configurations may be different from those shown, but the modelling is not changed.

CAMEL may be applied simultaneously and independently for each GSM subscriber involved in a call. This is not shown in these scenarios.

Subscribers other than those being served by CAMEL may be either PSTN subscribers, other GSM subscribers or any other addressable subscriber.

4.4.5.1 Mobile Originated Call

For the call from A to B, an instance of the O-BCSM ~~shall~~will be ~~invoked~~created in the MSC (labelled "O(A-B)"). If the A-party has an active O-CSI or D-CSI, or the MSC has an active N-CSI, and the trigger criteria, if present, are fulfilled, then a CAMEL control relationship with gsmSCF(1) shall be ~~created~~established.

~~The O-BCSM for the call from A to B (labelled "O(A-B)") is invoked if the A-party has an active O-CSI. A control relationship with gsmSCF (1) will be created.~~

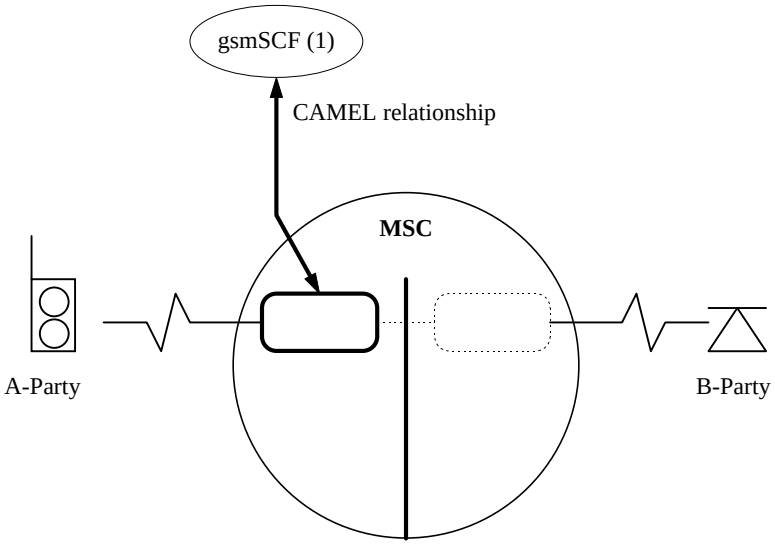


Figure 4.5: BCSM Scenario for Mobile Originated Call

4.4.5.2 Mobile Terminated Call at the GMSC / VMSC

For the call from A to B, an instance of the T-BCSM ~~shall~~will be ~~invoked~~created in the GMSC (labelled "T(A-B)") and an instance of the T-BCSM ~~shall~~will be ~~invoked~~created in the VMSC (labelled "T(A-B)").
If the B-party has an active T-CSI in the GMSC and the trigger criteria, if present, are fulfilled, then a CAMEL control relationship between the GMSC and the gsmSCF(1) shall be ~~created~~established. If the B-party has an active VT-CSI in the VMSC and the trigger criteria, if present, are fulfilled, then a CAMEL control relationship between the VMSC and the gsmSCF(2) shall be ~~created~~established.

~~The T-BCSM for the call from A to B (labelled "T(A-B)") is invoked if the B-party has an active T-CSI (in GMSC) or VT-CSI (in VMSC). A control relationship with gsmSCF (1) / gsmSCF (2) will be created.~~

The relationships with gsmSCF (1) and gsmSCF(2) may exist simultaneously. The two gsmSCF end points of the relationships are treated independently.

The nodes gsmSCF (1) and gsmSCF (2) may be the same or different entities.

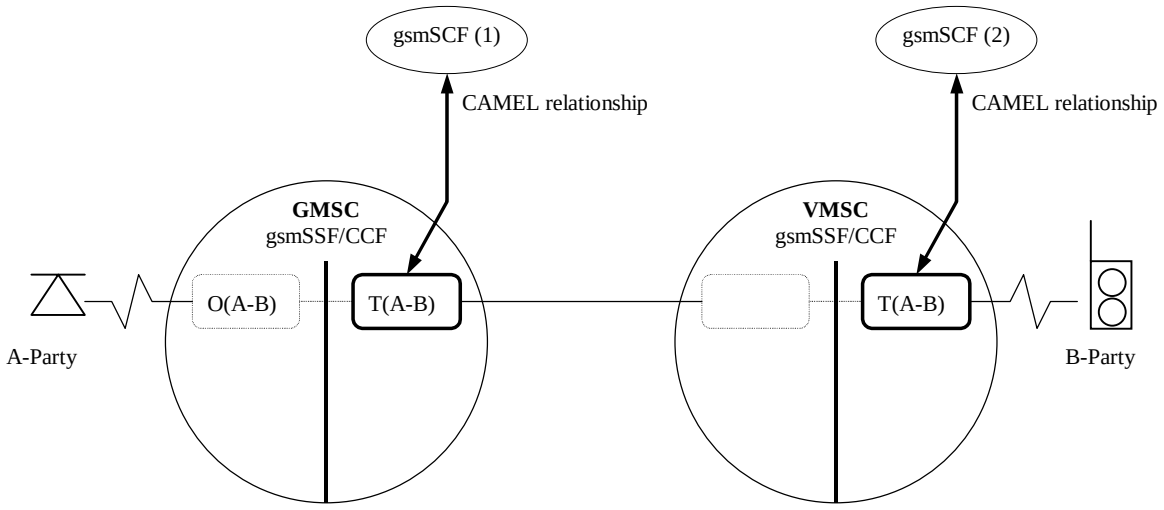


Figure 4.6: BCSM Scenario for Mobile Terminated Calls at the GMSC / VMSC

4.4.5.3 Call Forwarding at the GMSC / VMSC

If the B-party has an active T-CSI in the GMSC or VT-CSI in the VMSC and the trigger criteria, if present, are fulfilled, then a CAMEL control relationship between the GMSC ~~resp.~~or VMSC and the gsmSCF(1) shall be ~~created~~established.~~The T-BCSM for the call from A to B (labelled "T(A-B)") is invoked if the B-party has an active T-CSI (in GMSC) or VT-CSI (in VMSC). A control relationship with gsmSCF (1) will be created.~~

Following processing at the GMSC / VMSC the call will be extended to the VMSC serving the B-party. This VMSC may be physically integrated with the GMSC.

A new call leg to a "C" party ~~is~~ shall be created if:

- a GSM call forwarding or call deflection supplementary service forwards the call to C.

  An instance of the O-BCSM O(B-C) ~~shall~~will be created for the forwarding leg. If the B-party has an active O-CSI or D-CSI in the GMSC or VMSC, or the GMSC or VMSC has an active N-CSI, and the trigger criteria, if present, are fulfilled, then a CAMEL control relationship between the GMSC ~~resp.~~or VMSC and the gsmSCF(2) shall be ~~created~~established; or
  ~~In this case O-BCSM O(B-C) is always invoked for the forwarding party if an O-CSI or D-CSI has been received by the GMSC or VMSC from the HLR or VLR respectively or N-CSI is available in the GMSC or VMSC, and the trigger criteria are satisfied; or~~

- a CAMEL service in a control relationship with T(A-B) performs a CAMEL-based call forwarding by using a Connect information flow.

  An instance of the O-BCSM O(B-C) ~~shall~~will be created for the forwarding leg. If the B-party has an active O-

CSI or D-CSI in the GMSC or VMSC, or the GMSC or VMSC has an active N-CSI, and the trigger criteria, if present, are fulfilled, then a CAMEL control relationship between the GMSC ~~resp.~~or VMSC and the gsmSCF(2) shall be ~~created~~established.
The O-CSI shall be used for the forwarding leg only if the last Connect operation includes the "O-CSI applicable" flag.

~~In this case O-BCSM O(B-C) is created.~~

~~The O-BCSM opens a control relationship if the following conditions are met:~~

- ~~The subscriber has an active O-CSI or there is an active N-CSI or there is an active D-CSI.~~
- ~~The triggering criteria are satisfied.~~
- ~~The last Connect operation included the "O-CSI applicable" flag. This flag affects to O-CSI only.~~

~~A control relationship with gsmSCF (2) will be created.~~

The relationship~~s~~ with gsmSCF (1) and the relationship with gsmSCF(2) may exist simultaneously. The two relationships are treated independently at the GMSC. The instance of the BCSM T(A-B) and the instance of the BCSM O(B-C) are linked by an internal interface which is assumed to behave in a similar way to an ISUP interface.

The nodes gsmSCF (1) and gsmSCF (2) may be the same or different physical entities.

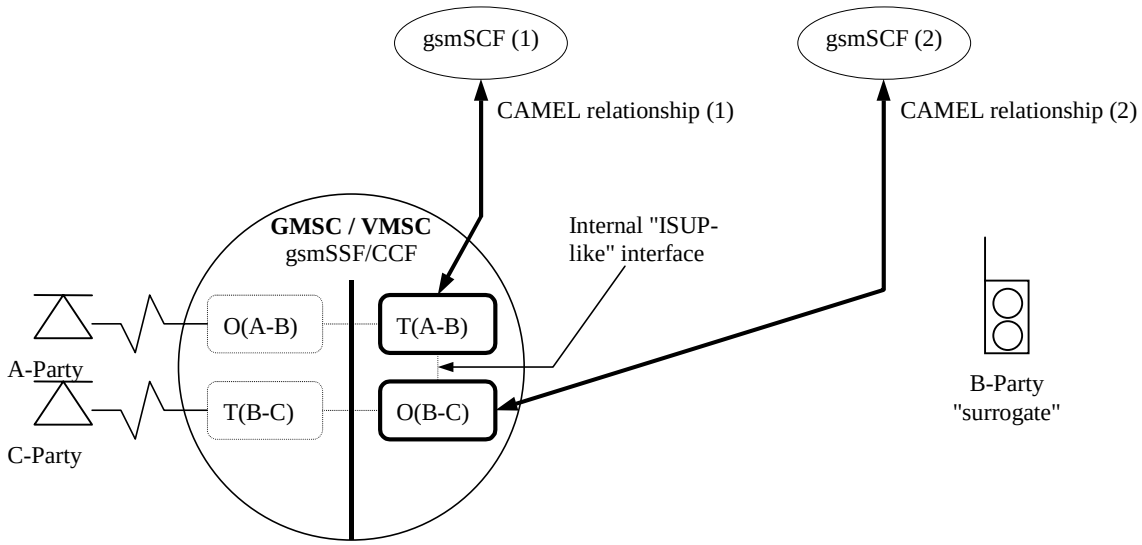


Figure Error! Reference source not found.**.1: BCSM Scenario for Call Forwarding at the GMSC / VMSC**

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

3GPP TSG-CN2 Meeting #16 ***N2-010079***
Beijing, China, 15 – 19 January 2001 (revision of N2-010020)

CHANGE REQUEST

⌘ **23.078** **CR** **261** ⌘ rev **1** ⌘ Current version: 3.7.0 ⌘

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

Title:	⌘	Correction to description of SS-CSI in HLR to VLR information flow
Source:	⌘	Ericsson
Work item code:	⌘	CAMEL3
Date:	⌘	15 January 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)*

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 description of SS-CSI in the Information Flow Insert Subscriber Data, from HLR to VLR, does not specify that SS-CSI shall not contain a marking for CCBS. Reason why the marking for CCBS in SS-CSI shall not be sent to the VLR is that the SS Invocation Notifications for CCBS are initiated by the HLR, not by the MSC. This restriction needs to be specified clearly. It may otherwise lead to the impression to designers of CAMEL Phase 3 functionality in the VLR, that the Insert Subscriber Data information flow (MAP protocol) needs to be updated, to receive the marking for CCBS in SS-CSI. The category of this CR is 'agreed by concensus'.
Summary of change:	⌘	Textual correction in the Insert Subscriber Data information flow for SS-CSI.
Consequences if not approved:	⌘	Misinterpretation by CAMEL Phase 3 designers.

Clauses affected:	⌘	8.4.2.2		
Other specs affected:	⌘	☒ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	3G TS 29.002
Other comments:	⌘			

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

8.4 Description of information flows

This subclause contains the detailed description of the information flows used by CAMEL.

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.

Details of errors and exceptions to these rules are specified in are specified in 3GPP TS 29.002 [4].

…

< unmodified text >

…

8.4.2.2 Insert Subscriber Data

8.4.2.2.1 Description

This IF is used by an HLR to update a VLR with certain subscriber data. This IF is specified in 3GPP TS 29.002 [4].

8.4.2.2.2 Information Elements

The Insert Subscriber Data contains the following CAMEL specific IE for SS Notifications:

Information element name	Required	Description
SS-CSI	C	This IE identifies the subscriber as having supplementary service invocation notification services. It contains the Notification Criteria and gsmSCFAddress. This IE is described in subclause 8.2.1. When SS-CSI is sent to the VLR, it shall not contain a marking for CCBS.

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

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

3GPP TSG-CN2 Meeting #16 ***N2-010089***
Beijing, China, 15 – 19 January 2001 (revision of N2-010035)

CHANGE REQUEST

⌘ **23.078** **CR** **263** ⌘ rev **1** ⌘ Current version: 3.7.0 ⌘

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

Title:	⌘	Correction to description of Apply Charging GPRS (No volume charging for GPRS Session)
Source:	⌘	Ericsson
Work item code:	⌘	CAMEL3
Date:	⌘	18 January 2001
Category:	⌘	**F (non-essential, 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:	⌘	The description of the Apply Charing GPRS Procedure does not specify that volume charging is allowed only for PDP Contexts and not for GPRS Session. This restriction shall be specified unambiguously to prevent misinterpretation by implementors of CAMEL GPRS functionality.
Summary of change:	⌘	Textual correction to Apply Charing GPRS Procedure description.
Consequences if not approved:	⌘	Possible misinterpretation of GPRS functionality, leading to incorrect implementation.

Clauses affected:	⌘	6.6.2.2		
Other specs affected:	⌘	☒ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	29.078 (CR 143r1)
Other comments:	⌘			

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

6.6.2.2 Apply Charging GPRS

6.6.2.2.1 Description

This IF is used for interacting from the gsmSCF with the gprsSSF charging mechanisms to control the charging of a GPRS session or a PDP Context.

6.6.2.2.2 Information Elements

The following information elements are required:

Information element name	Required	Description
Gprs Reference Number	C	This IE consists of a number assigned by the gprsSSF and a number assigned by the gsmSCF. It is used for TCAP dialogue segmentation. Refer to 3GPP TS 29.078 [5] for the usage of this element.
Charging Characteristics	M	This IE specifies the charging related information to be provided by the ~~gsmSSF~~ gprsSSF and the conditions on which this information has to be provided back to the gsmSCF. It is a choice between granted volume and granted time for the data transfer. Time charging may be applied to GPRS Session or PDP Contexts; volume charging may be applied to PDP Contexts only.
Tariff Switch Interval	O	This information element specifies the time duration until the next tariff switch occurrence.
PDP ID	C	This IE identifies the PDP context, which the Apply GPRS Charging is applicable for. If not present the dialogue corresponds to the GPRS session or to one single PDP context.

M Mandatory (The IE shall always be sent).

O Optional (Service logic dependent).

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

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

3GPP TSG-CN2 Meeting #16
Beijing, China, 15-19 January 2001

Tdoc N2-010114
rev of Tdoc N2-010097

CR-Form-v3

CHANGE REQUEST

⌘ **23.078** **CR** **264** ⌘ rev **2** ⌘ 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 "Call Forwarding Notification" feature in CAMEL Phase 3.
Source:	⌘	Alcatel
Work item code:	⌘	CAMEL3
Date:	⌘	17 January 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 Forwarding Notification is not correctly specified in the SDL diagrams for the procedures CAMEL_MT_GMSC_Notify_CF and CAMEL MT_VMSC_Notify_CF. The tables on the following pages describe under which condition a CF notification shall apply. The CF notification can either take place as EDP T_Busy or EDP_No_Answer, if a terminating CAMEL dialogue is still active (triggered at TerminatingAttemptAuthorized), or it can take place as a new CAMEL trigger at TDP T_Busy or TDP_No_Answer, if the terminating dialogue is already closed or was not triggered at all and the TDP T_Busy resp. T_No_Answer was contained in the corresponding CSI (T-CSI resp. VT-CSI). The SDL diagrams for CF notification in the GMSC and VMSC are corrected accordingly. The decission 'gsmSSFInvoked' needs some clarification.
Summary of change:	⌘	Change of SDL diagrams
Consequences if not approved:	⌘	Incorrect handling of CF notification

Clauses affected:	⌘	4.5.6.4 (Figure 4.64a), 4.5.3 (Figure 4.40) and 4.5.4 (Figure 4.53)
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

The following tables before the "First modified section" are included in this CR for information.

CF Notification in the GMSC due to CF received during first or second HLR interrogation:

Result of 1st SRI		Result of 2nd SRI	Actions in GMSC/gsmSSF
T-CSI	**FTN**		
no T-CSI	CFU or CFNRc	n.a.	invoke CF (no notification)
Term.Att.Auth	CFU or CFNRc	n.a.	Trigger CAMEL at TDP Term.Att.Auth (IDP includes parameter *gsm-ForwPending)* Invoke CF if destination not changed, NO CF notification
Term.Att.Auth and T_Busy	CFU or CFNRc	n.a.	Trigger CAMEL at TDP Term.Att.Auth (IDP includes parameter *gsm-ForwPending)* Invoke CF if destination not changed, NO CF notification
T_Busy	CFU	n.a.	Invoke CF, NO CF notification
T_Busy	CFNRc	n.a.	Trigger CAMEL at TDP T_Busy before CF is invoked (IDP includes parameter *gsm-ForwPending)*
Term.Att.Auth	-	CFNRc	Trigger CAMEL at TDP Term.Att.Auth CF notification at EDP T_Busy before CF is invoked (if dialogue still active)
Term.Att.Auth and T_Busy	-	CFNRc	Trigger CAMEL at TDP Term.Att.Auth CF notification at T_Busy before CF is invoked (EDP if terminating dialogue still active, TDP otherwise) (IDP includes parameter *gsm-ForwPending)*
T_Busy	-	CFNRc	Trigger CAMEL at TDP T_Busy before CF is invoked (IDP includes parameter *gsm-ForwPending)*

Note: TDP T_No_Answer is not relevant for CF notification related to HLR interrogation.

CF Notification in the GMSC after Optimal Routeing on late CF:

A ResumeCallHandling message is received by the GMSC in case of Optimal Routeing on late CF. A CF Notification applies according to the following table:

Contents of T-CSI	RCH reason	Action in GMSC/gsmSSF
no T-CSI	CD, CFB, CFNRc, CFNRy	Invoke CF without notification
Term.Att.Auth	CD, CFB, CFNRc,	CF notification at EDP T_Busy before CF is invoked (if dialogue still active)
Term.Att.Auth	CFNRy	CF notification at EDP T_No_Answer before CF is invoked (if dialogue still active)
Term.Att.Auth and T_Busy (T_No_Answer not relevant)	CD, CFB, CFNRc,	CF notification at T_Busy before CF is invoked (EDP if terminating dialogue still active, TDP otherwise) (IDP includes parameter *gsm-ForwPending)*
Term.Att.Auth and T_No_Answer (T_Busy not relevant)	CFNRy	CF notification at T_No_Answer before CF is invoked (EDP if terminating dialogue still active, TDP otherwise) (IDP includes parameter *gsm-ForwPending)*
T_Busy (T_No_Answer not relevant)	CD, CFB, CFNRc,	Trigger CAMEL at TDP T_Busy before CF is invoked (IDP includes parameter *gsm-ForwPending)*
T_No_Answer (T_Busy not relevant)	CFNRy	Trigger CAMEL at TDP T_No_Answer before CF is invoked (IDP includes parameter *gsm-ForwPending)*

CF Notification in the VMSC:

Contents of VT-CSI	**CF reason**	**Action in VMSC/gsmSSF**
no VT-CSI	CD, CFB, CFNRc, CFNRy	Invoke CF without notification
Term.Att.Auth	CD, CFB, CFNRc,	CF notification at EDP T_Busy before CF is invoked (if dialogue still active)
Term.Att.Auth	CFNRy	CF notification at EDP T_No_Answer before CF is invoked (if dialogue still active)
Term.Att.Auth and T_Busy (T_No_Answer not relevant)	CD, CFB, CFNRc,	CF notification at T_Busy before CF is invoked (EDP if terminating dialogue still active, TDP otherwise) (IDP includes parameter *gsm-ForwPending)*
Term.Att.Auth and T_No_Answer (T_Busy not relevant)	CFNRy	CF notification at T_No_Answer before CF is invoked (EDP if terminating dialogue still active, TDP otherwise) (IDP includes parameter *gsm-ForwPending)*
T_Busy (T_No_Answer not relevant)	CD, CFB, CFNRc,	Trigger CAMEL at TDP T_Busy before CF is invoked (IDP includes parameter *gsm-ForwPending)*
T_No_Answer (T_Busy not relevant)	CFNRy	Trigger CAMEL at TDP T_No_Answer before CF is invoked (IDP includes parameter *gsm-ForwPending)*

— First modified section —

4.5.6.4 Process gsmSSF and procedures

The call gap operation can only be received for an opened transaction between the gsmSSF and the gsmSCF.

Process gsmSSF 1(33)

/* Invocation of gsmSSF in MO, MT, VT or CF call case. */

/* Timers used in the gsmSSF process:

Tssf: Application timer in the ssf.
Tcp: Timer for call period.
This timer measures the duration of a call period.
Tsw: Timer for tariff switch.
At the expiration of this timer, a new tariff switch shall be started.
Tw: Warning timer.
At the expiration of this timer, a warning tone shall be played to the calling party.
DELTA: time, measured in the gsmSSF, elapsed between the time an
ApplyChargingReport operation is send to the gsmSCF and an
ApplyCharging operation is received from the gsmSCF.
Tccd: Control of call duration timer.
This timer supervises if after sending of ACR a new AC is received.
Tccd has a value range of 1 to 20 seconds.

Ranges for the default values for Tssf.
- non user interaction Tssf timer value: 1 second to 20 seconds
- user interaction Tssf timer value: 1 minute to 30 minutes
*/

/* TASK definition:
The sending of an Application_Begin signal opens a new relationship to the gsmSCF.
The sending of an Application_End or Abort signal terminates the relationship to the gsmSCF.
*/

/* Decision box definition:

'armed TDPs for this CSI?'
It is questioned whether or not the ongoing call can encounter further TDPs which are indicated in the current CSI.

'Call to be released?'
It is questioned whether or not the ongoing call will be released imediately after gsmSSF has responded; that is the ongoing call will not send any signals furtheron to the gsmSSF.
NOTE: In this case the gsmSSF shall also go to idle.

*/

Process gsmSSF 1(33)

/* Invocation of gsmSSF in MO, MT, VT or CF call case. */

/* Timers used in the gsmSSF process:

Tssf: Application timer in the ssf.
Tcp: Timer for call period.
This timer measures the duration of a call period.
Tsw: Timer for tariff switch.
At the expiration of this timer, a new tariff switch shall be started.
Tw: Warning timer.
At the expiration of this timer, a warning tone shall be played to the calling party.
DELTA: time, measured in the gsmSSF, elapsed between the time an ApplyChargingReport operation is send to the gsmSCF and an ApplyCharging operation is received from the gsmSCF.
Tccd: Control of call duration timer.
This timer supervises if after sending of ACR a new AC is received.
Tccd has a value range of 1 to 20 seconds.

Ranges for the default values for Tssf.
- non user interaction Tssf timer value: 1 second to 20 seconds
- user interaction Tssf timer value: 1 minute to 30 minutes
*/

/* TASK definition:
The sending of an Application_Begin signal opens a new relationship to the gsmSCF.
The sending of an Application_End or Abort signal terminates the relationship to the gsmSCF.
*/

/* Decision box definitions (1)
The following decisions are used internal in the gsmSSF.

'armed TDPs for this CSI?'
Can the ongoing call encounter further TDPs which are indicated in the current CSI?

'Call to be released?'
Will the ongoing call be released imediately after gsmSSF has responded? That is the ongoing call will not send any signals furtheron to the gsmSSF.
NOTE: In this case the gsmSSF shall also go to idle.

*/

/* Decision box definitions (2)
The following decisions are used by procedures in CCF.

'gsmSSF invoked?'
Is the gsmSSF process is in any state other than Idle?

*/

Figure 4.64a: Process gsmSSF (sheet 1)

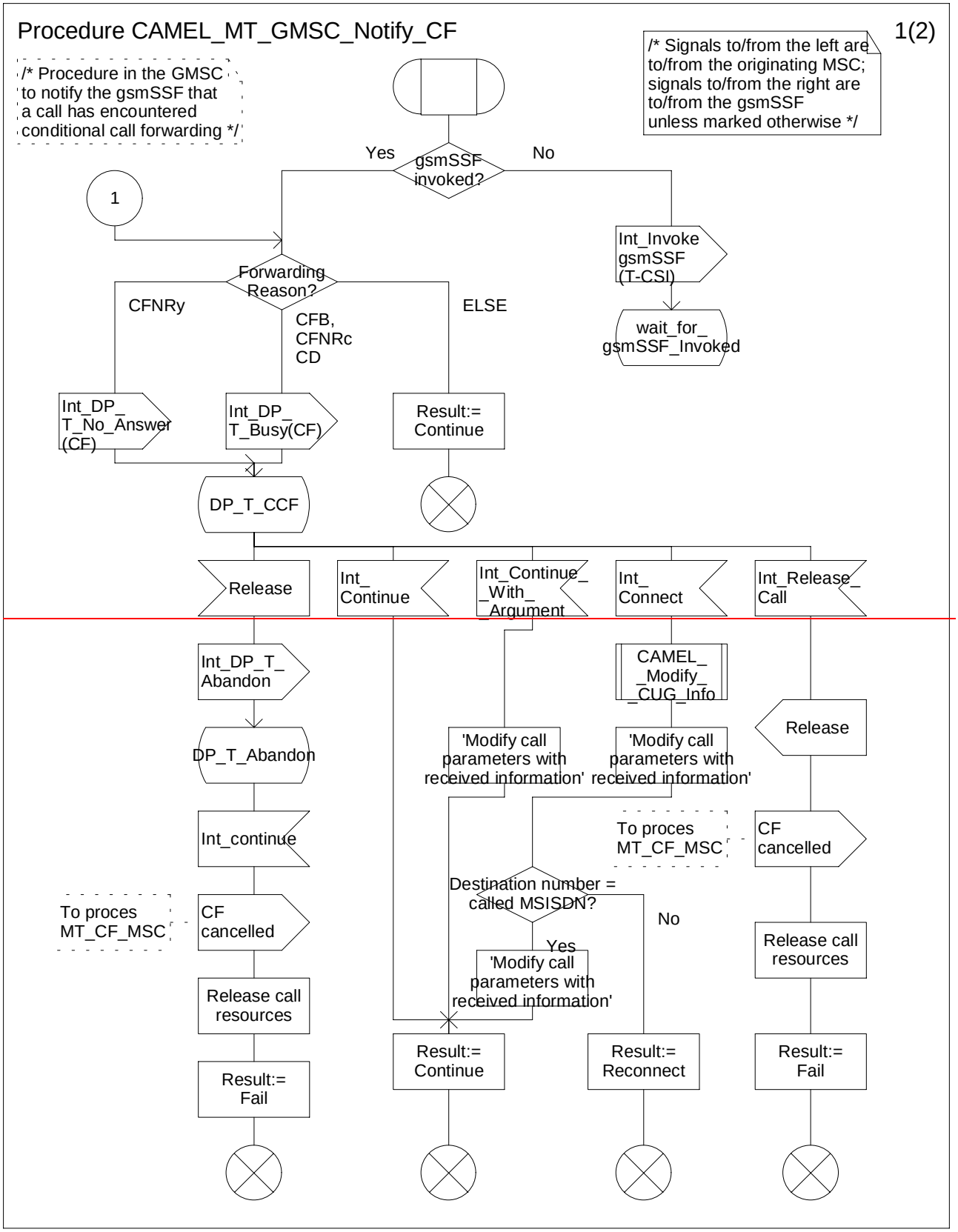
— Next modified section —

4.5.3.1.11 Action of the GMSC in procedure CAMEL_MT_GMSC_Notify_CF

The Forwarding reason is taken from the Send Routeing Info ack (for early call forwarding) or the Resume Call Handling (for Optimal Routeing of Late Call Forwarding).

The Int_DP_T_No_Answer and Int_DP_T_Busy messages include a parameter to indicate that the call has encountered conditional call forwarding. The gsmSSF will transfer this parameter to the CAP_Event_Report_BCSM message which it sends to the gsmSCF.

...


Procedure CAMEL_MT_GMSC_Notify_CF
1(2)
/* 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 */
Yes
gsmSSF invoked?
No
1
Int_Invoke gsmSSF (T-CSI)
wait_for_ gsmSSF_Invoked
Forwarding Reason?
CFNRy
CFB, CFNRc CD
ELSE
Int_DP_ T_No_Answer (CF)
Int_DP_ T_Busy(CF)
Result:= Continue
DP_T_CCF
Release
Int_ Continue
Int_Continue_ _With_ _Argument
Int_ Connect
Int_Release_ Call
Int_DP_T_ Abandon
DP_T_Abandon
Int_continue
To proces MT_CF_MSC
CF cancelled
Release call resources
Result:= Fail
CAMEL_ _Modify_ _CUG_Info
'Modify call parameters with received information'
'Modify call parameters with received information'
To proces MT_CF_MSC
Destination number = called MSISDN?
Yes
No
'Modify call parameters with received information'
Result:= Continue
Result:= Reconnect
Release
CF cancelled
Release call resources
Result:= Fail

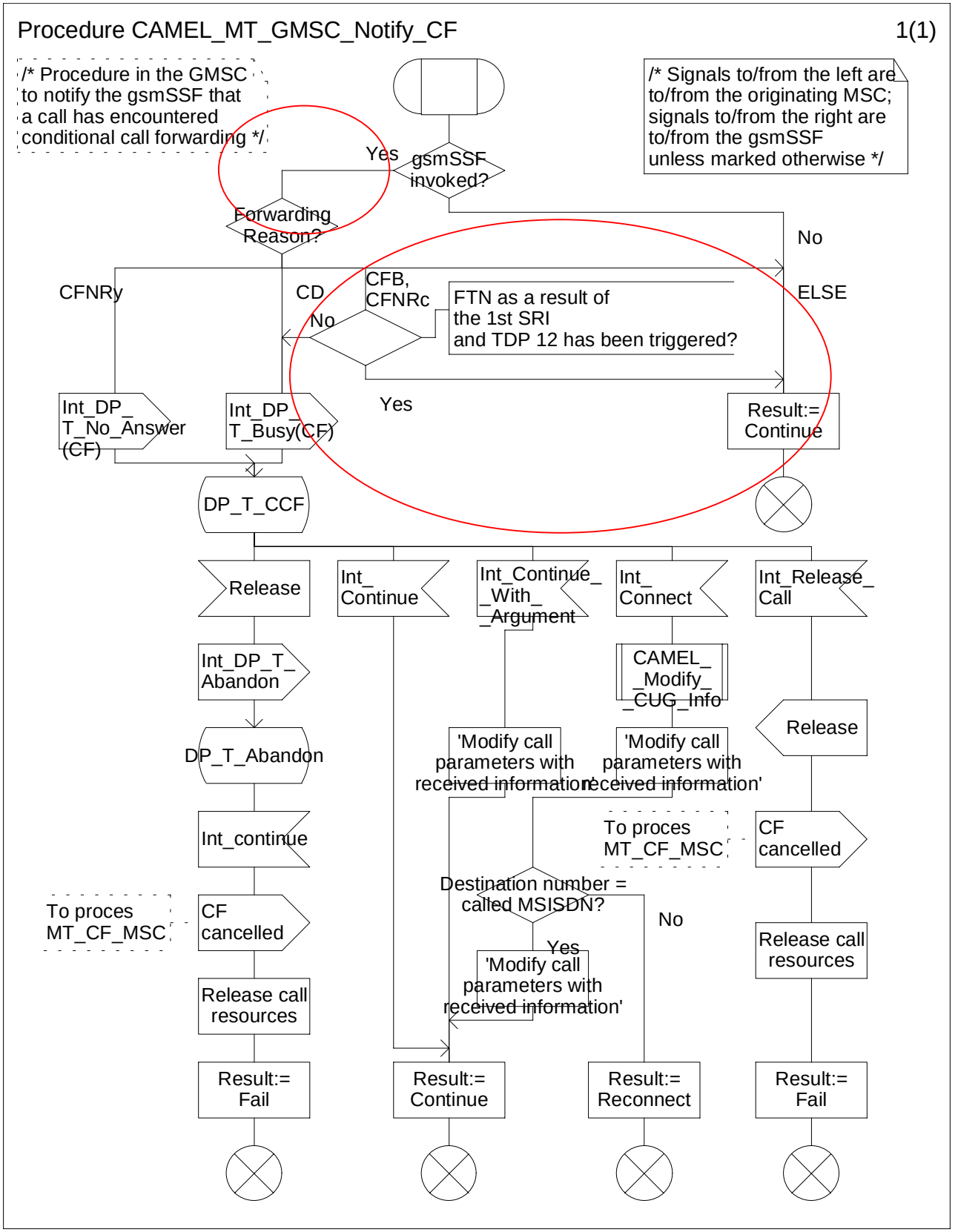
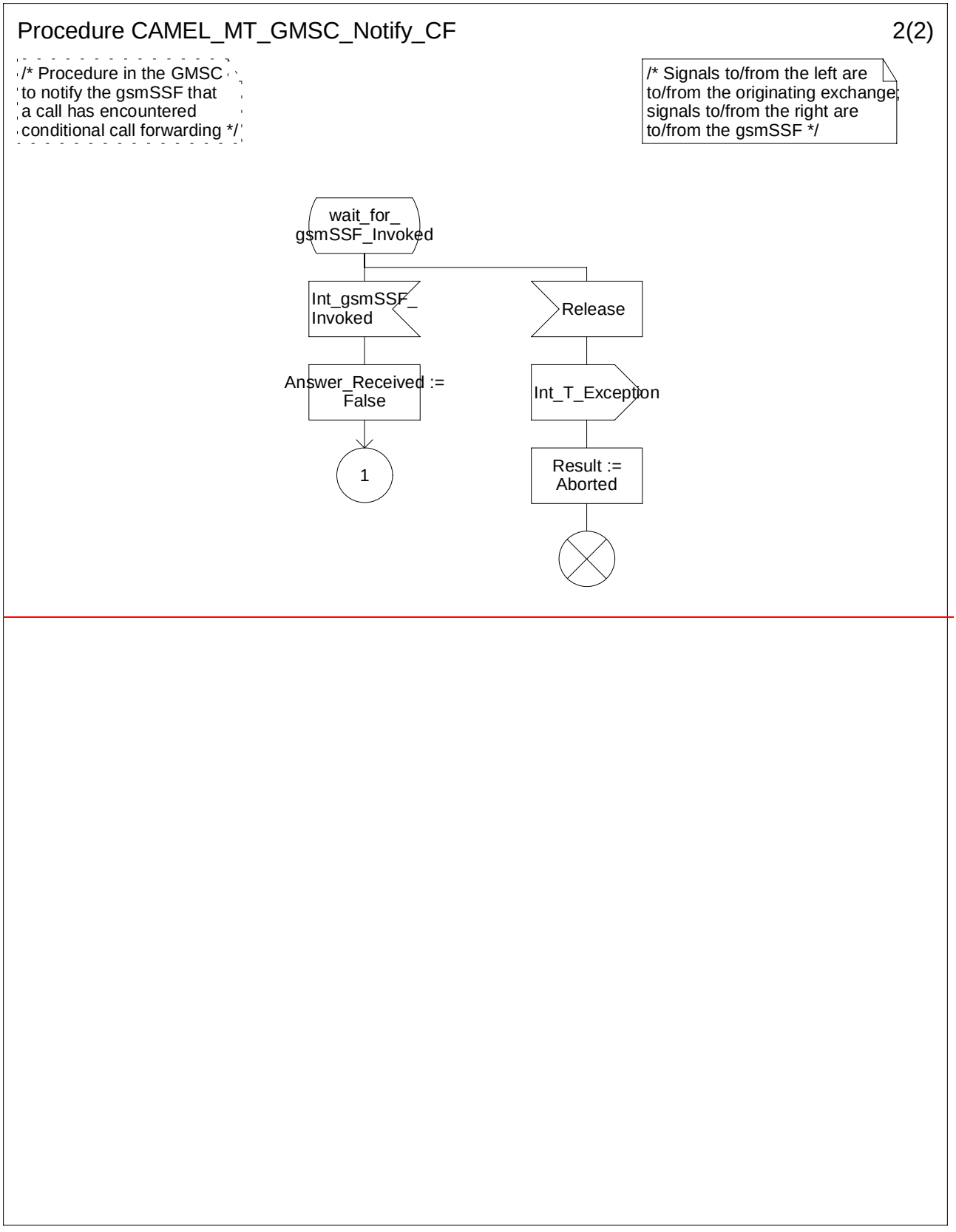


Figure 4.40a: Procedure CAMEL_MT_GMSC_Notify_CF (sheet 1)



~~Figure 4.40b: Procedure CAMEL_MT_GMSC_Notify_CF (sheet 2)~~

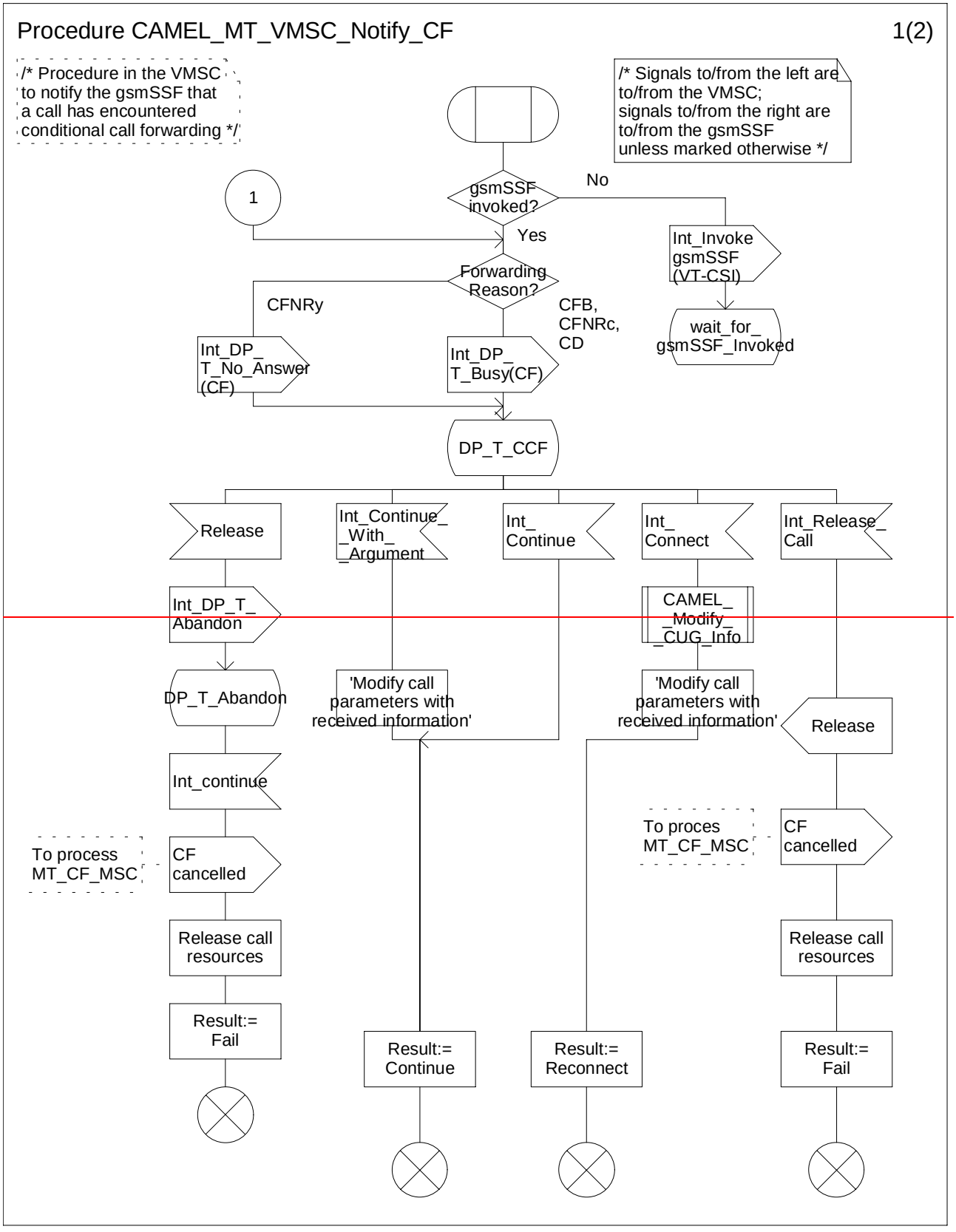
— Next modified section —

4.5.4.1.1 Action of the VMSC in procedure CAMEL_MT_VMSC_Notify_CF

The Forwarding reason is taken from the Complete Call message from the VLR.

The Int_DP_T_No_Answer and Int_DP_T_Busy messages include a parameter to indicate that the call has encountered conditional call forwarding. The gsmSSF will transfer this parameter to the CAP_Event_Report_BCSM message which it sends to the gsmSCF.

...


Procedure CAMEL_MT_VMSC_Notify_CF
1(2)
/* Procedure in the VMSC to notify the gsmSSF that a call has encountered conditional call forwarding */
/* Signals to/from the left are to/from the VMSC; signals to/from the right are to/from the gsmSSF unless marked otherwise */
1
gsmSSF invoked?
No
Yes
Int_Invoke gsmSSF (VT-CSI)
wait_for_ gsmSSF_Invoked
Forwarding Reason?
CFNRy
CFB, CFNRc, CD
Int_DP_ T_No_Answer (CF)
Int_DP_ T_Busy(CF)
DP_T_CCF
Release
Int_Continue_ _With_ _Argument
Int_ Continue
Int_ Connect
Int_Release_ Call
Int_DP_T_ Abandon
CAMEL_ _Modify_ _CUG_Info
DP_T_Abandon
'Modify call parameters with received information'
'Modify call parameters with received information'
Release
Int_continue
To process MT_CF_MSC
CF cancelled
To proces MT_CF_MSC
CF cancelled
Release call resources
Release call resources
Result:= Fail
Result:= Continue
Result:= Reconnect
Result:= Fail

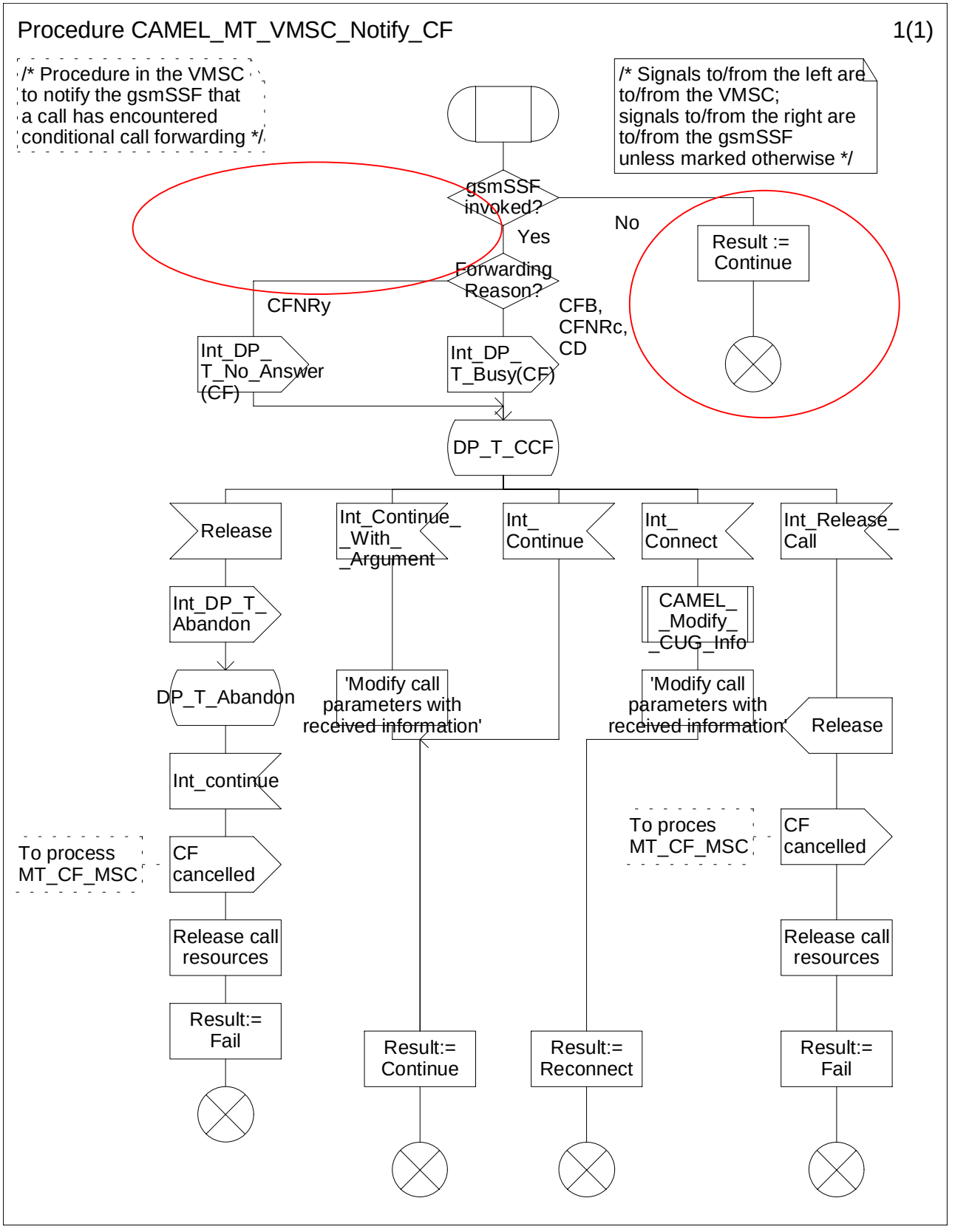
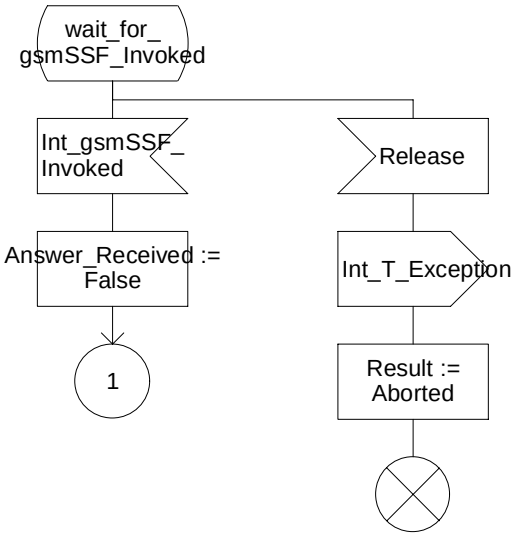


Figure 4.53a: Procedure CAMEL_MT_VMSC_Notify_CF (sheet 1)

Procedure CAMEL_MT_VMSC_Notify_CF 2(2)

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

/* Signals to/from the left are to/from the originating exchange; signals to/from the right are to/from the gsmSSF */



~~Figure 4.53b: Procedure CAMEL_MT_VMSC_Notify_CF (sheet 2)~~

3GPP TSG-CN2 Meeting #16 **N2-010081**
Beijing, China, 15 – 19 January 2001 (revision of N2-010062)

CHANGE REQUEST

⌘ **23.078 CR 267** ⌘ rev **1** ⌘ Current version: **3.7.0** ⌘

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

Title:	⌘	Usage of MSISDN for CAMEL - USSD Information Flows
Source:	⌘	Ericsson
Work item code:	⌘	CAMEL3
Date:	⌘	15 January 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)*

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 CAMEL Phase 2, the USSD information flows between the SCP and HLR, in either direction, may contain, as subscriber reference, IMSI only.

In CAMEL Phase 3, the USSD information flows between the SCP and HLR, in either direction, may contain, as subscriber reference, IMSI or MSISDN.

The current 3G TS 23.078 refers to IMSI only in the applicable information flows. A reference to MSISDN shall be added.

The category of this CR is 'non-essential, agreed by concensus'.

Summary of change: ⌘ Adding MSISDN to USSD Information Flows between HLR and SCP.

Consequences if not approved: ⌘ Misinterpretation of the CAMEL – USSD functionality, possibly leading to incorrect implementation.

Clauses affected: ⌘ 5.5

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

Other comments: ⌘

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

5.5 Description of information flows

This subclause contains the detailed description of the information flows used by CAMEL.

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 HLR shall return an error if it does not functionally support an IE which it receives.

Details of errors and exceptions to these rules are specified in are specified in 3GPP TS 29.002 [4].

5.5.1 gsmSCF to HLR information flows

5.5.1.1 Unstructured SS Request

5.5.1.1.1 Description

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

5.5.1.1.2 Information Elements

The following information elements are required:

Information element name	Required	Description
USSD String	M	This IE contains the string that will be sent to the MS.
Data Coding Scheme	M	This IE indicates the characteristics of the USSD string.
IMSI	C	This IE identifies the subscriber for which the information is requested.
MSISDN	C	This IE identifies the subscriber for which the information is requested.
Alerting Pattern	O	This IE indicates an alerting pattern to be sent to the MS.

M Mandatory (The IE shall always be sent).

C Conditional (This IE shall be sent if this IF is the first IF in a USSD dialogue. Either IMSI or MSISDN shall be present.).

O Optional (Service Logic dependent).

5.5.1.2 Unstructured SS Notify

5.5.1.2.1 Description

This IF is used for the gsmSCF to send data to the MS via the HLR.

5.5.1.2.2 Information Elements

The following information elements are required:

Information element name	Required	Description
USSD String	M	This IE contains the string that will be sent to the MS.
Data Coding Scheme	M	This IE indicates the characteristics of the USSD string.
IMSI	C	This IE identifies the subscriber for which the information is requested.
MSISDN	C	This IE identifies the subscriber for which the information is requested.
Alerting Pattern	O	This IE indicates an alerting pattern to be sent to the MS.

M Mandatory (The IE shall always be sent).

C Conditional (This IE shall be sent if this IF is the first IF in a USSD dialogue. Either IMSI or MSISDN shall be present.).

O Optional (Service Logic dependent).

5.5.1.3 Process Unstructured SS Data ack

5.5.1.3.1 Description

This IF is used for the gsmSCF to send the response to the MS via the HLR for the MS initiated operation.

5.5.1.3.2 Information Elements

The following information element is required:

Information element name	Required	Description
SS User Data	C	This IE contains the string that will be sent to the MS.

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

5.5.1.4 Process Unstructured SS Request ack

5.5.1.4.1 Description

This IF is used for the gsmSCF to send the response to the MS via the HLR for the MS initiated operation.

5.5.1.4.2 Information Elements

The following information elements are required:

Information element name	Required	Description
USSD String	C	This IE contains the string that will be sent to the MS.
Data Coding Scheme	C	This IE indicates the characteristics of the USSD string.

C Conditional (the presence of the IE depends on the application. Both IEs shall be sent).

5.5.2 HLR to gsmSCF information flows

5.5.2.1 Unstructured SS Request ack

5.5.2.1.1 Description

This IF is used for the MS to via the HLR send the response to the gsmSCF for the gsmSCF initiated operation.

5.5.2.1.2 Information Elements

The following information elements are required:

Information element name	Required	Description
USSD String	C	This IE contains the string that will be sent to the gsmSCF.
Data Coding Scheme	C	This IE indicates the characteristics of the USSD string.

C Conditional (The presence of the IE depends on the application. Both IEs shall be sent).

5.5.2.2 Unstructured SS Notify ack

5.5.2.2.1 Description

This IF is used for the MS to via the HLR acknowledge to the gsmSCF that the notification was received.

5.5.2.2.2 Information Elements

This IE contains no information element.

5.5.2.3 Process Unstructured SS Data

5.5.2.3.1 Description

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

M Mandatory (The IE shall always be sent).

5.5.2.4 Process Unstructured SS Request

5.5.2.4.1 Description

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

5.5.2.4.2 Information Elements

The following information elements are required:

Information element name	Required	Description
USSD String	M	This IE contains the string that will be sent to the gsmSCF, including the Service Code.
Data Coding Scheme	M	This IE indicates the characteristics of the USSD string.
IMSI	M	This IE identifies the subscriber.
MSISDN	O	This IE contains the basic MSISDN of the subscriber who has requested the USSD operation. This IE is used as an operator option.
Originating Entity Number	M	This IE identifies the functional entity initiating the information flow. In this case, this shall be the address of the HLR.

M Mandatory (The IE shall always be sent).

O Optional (Operator option).

5.5.2.5 Begin Subscriber Activity

5.5.2.5.1 Description

This IF is used by the HLR to start subscriber activity towards the gsmSCF for USSD purposes.

5.5.2.5.2 Information Elements

The following information elements are required:

Information element name	Required	Description
IMSI	M	This IE identifies the subscriber.
Originating Entity Number	M	This IE identifies the functional entity initiating the subscriber activity. In this case, this shall be the address of the HLR.

M Mandatory (The IE shall always be sent).

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

3GPP TSG-CN2 Meeting #16
Beijing, China, 15 – 19 January 2001

N2-010082

CR-Form-v3

CHANGE REQUEST

⌘ **23.078** **CR** **268** ⌘ 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 error implementing CR 23.078-118r2
Source:	⌘	Rapporteur
Work item code:	⌘	CAMEL3
Date:	⌘	16 January 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:	⌘	Error occured when CR 23.078-118r2 (N2-000411) was implemented.
Summary of change:	⌘	Indicate Cell ID and Location area ID in Location Information IE are not applicable for Initial DP IF in the MF case.
Consequences if not approved:	⌘	Remain wrong implementation of the CR approved. (Unable to decide whether these IEs are required or not.)

Clauses affected:	⌘	4.6.1.5 (Initial DP IF)
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	[redacted] N2-000411.doc This CR shall be approved to remedy the incorrect implementation of a previously approved CR. This CR also contains editorial changes to improve the readability as follows. 1. The SDLs Procedure Handle_O_Answer and Handle_T_Answer are called within the process gsmSSF. Therefore these SDLs shall be moved to the next to the SDL Procedure Complete_all_FCI_record. 2. Four (4) pages between 4.5.6.4.1 Process gsmSSF-SSME_FSM to SDL Procedure Check_Gap_Criteria are currently in the strange position. SDLs before and after these pages are within the process gsmSSF. Therefore these pages are moved to after SDL Procedure Handle_T_Answer (last page

of the process gsmSSF and procedures), with modifying the subtitle level to 5 (new subclause number shall be 4.5.6.5).

As the result, the SDLs in the subclause 4.5.6.4 and 4.5.6.5 appear in the following order.

4.5.6.4: Process gsmSSF and procedures

Process gsmSSF (1-33),
Procedure Check_Criteria_Collected_Info (1),
Procedure Check_Criteria_Analysed_Infor (1),
Procedure Check_Criteria_Unsuccessful (1),
Procedure Connect_To_Resource (1),
Procedure Handle_AC (1),
Procedure Handle_ACR (1),
Procedure Handle_CIR (1),
Procedure Handle_CIR_Leg (1),
Procedure Complete_FCI_record (1),
Procedure Complete_all_FCI_records (1),
Procedure Handle_O_Answer (1),
Procedure Handle_T_Answer (1).

4.5.6.5 Process gsmSSF_SSME_FSM

Process gsm_SSME_SSF (1-2),
Procedure Store_Gap_Criteria (1),
Procedure Check_Gap_Criteria (1).

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.

Information element name	MO	MF	MT	VT	Description
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 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	-	C	C	See 3GPP TS 23.018 [3].
Cell ID	C2	-	C	C	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	-	C	C	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.

Carrier contains the following information:

Information element name	MO	MF	MT	VT	Description
Carrier Identification Code	M	M	M	M	This IE uniquely identifies a North American long distance carrier.
Carrier Selection Information	M	M	M	M	This IE indicates the way the carrier was selected e.g.: – dialled – subscribed

M Mandatory (The IE shall always be sent).

Service Interaction Indicators Two contains the following information:

Information element name	MO	MF	MT	VT	Description
Forward Service Interaction Indicator	C	C	C	C	This IE is described in a table below.
HOLD Treatment Indicator	C	-	-	C	This IE indicates whether the CAMEL subscriber can invoke HOLD for the call.
CW Treatment Indicator	C	-	-	C	This IE indicates whether CW can be applied for a call to the CAMEL subscriber whilst this call is ongoing.
ECT Treatment Indicator	C	-	-	C	This IE indicates whether the call leg can become part of an ECT call initiated by the calling subscriber.

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

- Not applicable.

Forward Service Interaction Indicator contains the following information:

Information element name	MO	MF	MT	VT	Description
Conference Treatment Indicator	C	C	C	C	This IE indicates whether the call leg can become part of a MPTY call initiated by the called subscriber.
Call Diversion Treatment Indicator	C	C	C	C	This IE indicates whether the call can be forwarded using the Call Forwarding or Call Deflection Supplementary Services.

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

Additional modification for better readability and understanding. (See the other comments on the cover page)

*** First modified section ***

4.5.6.4.1 Process gsmSSF_SSME_FSM

One process is instantiated for each Call Gap message received from a gsmSCF.

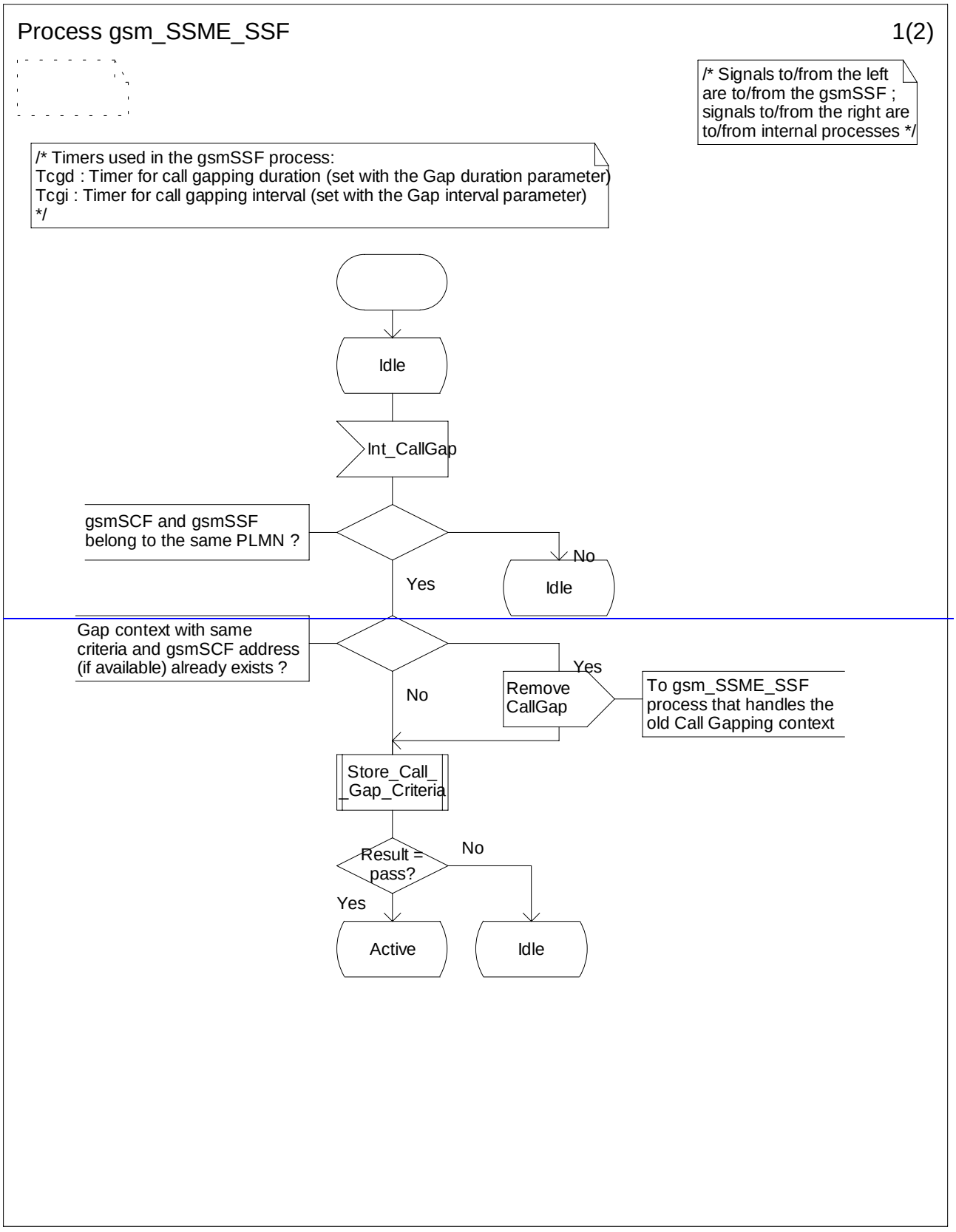
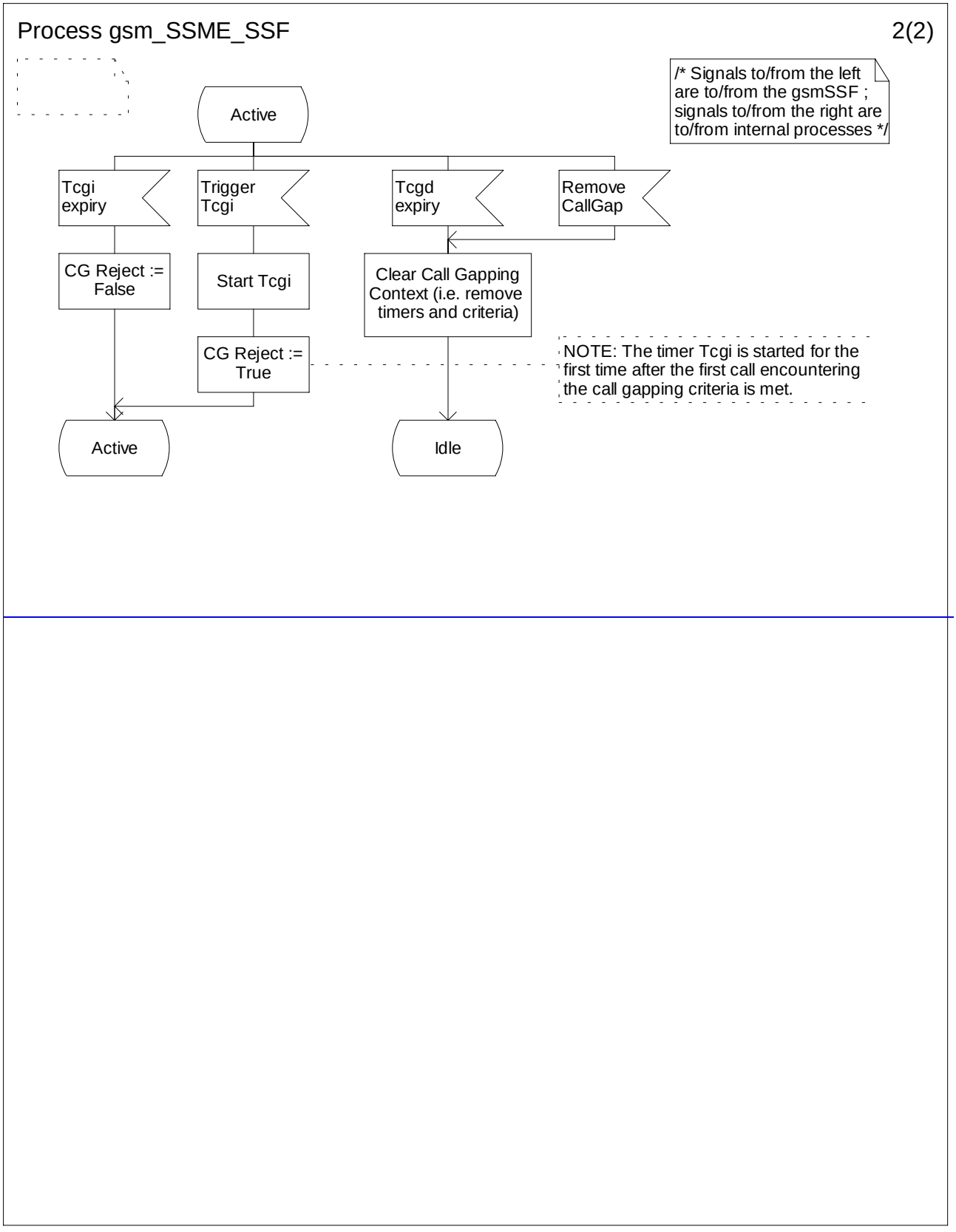
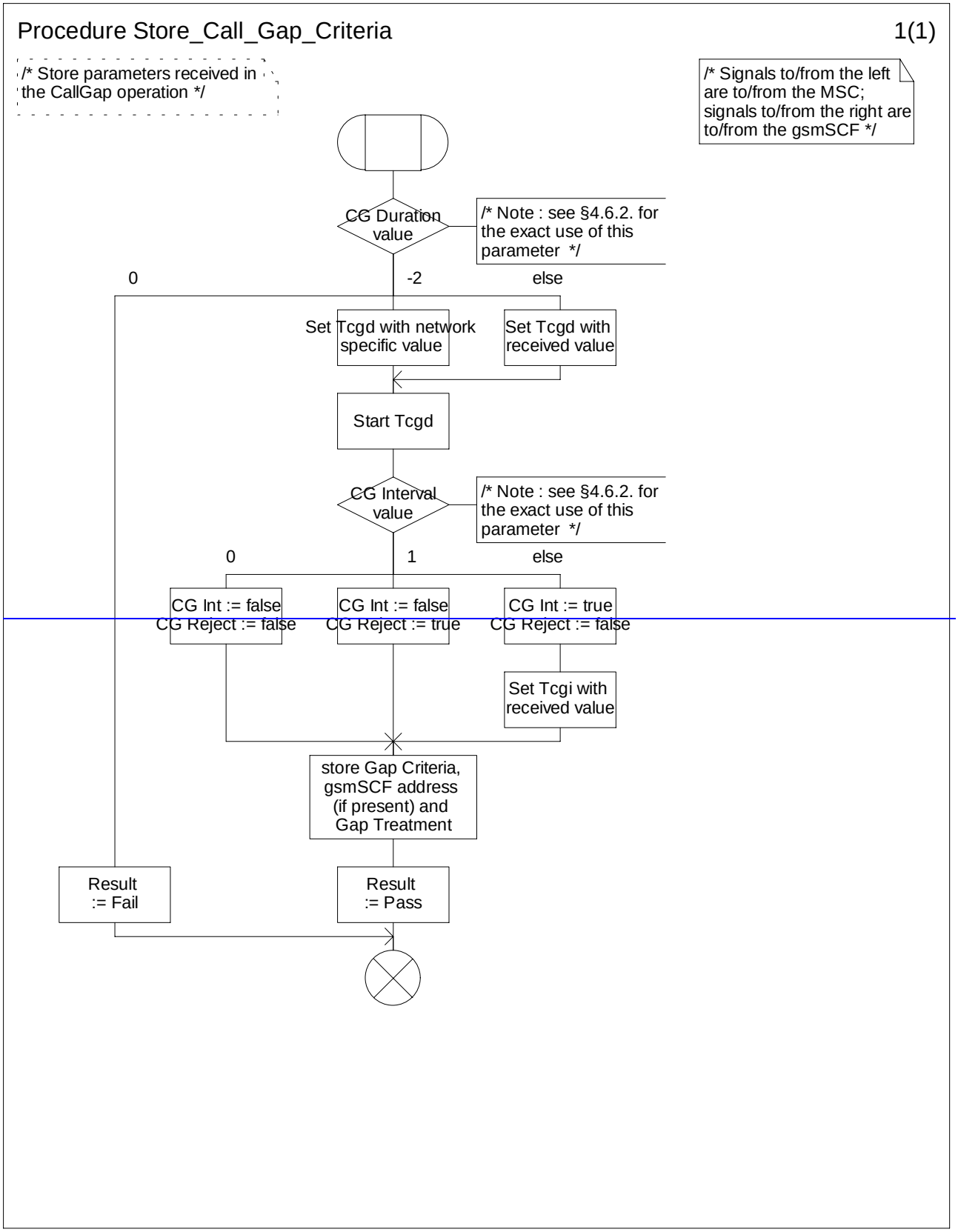


Figure 4.65a: Process gsm_SSME_SSF (sheet 1)

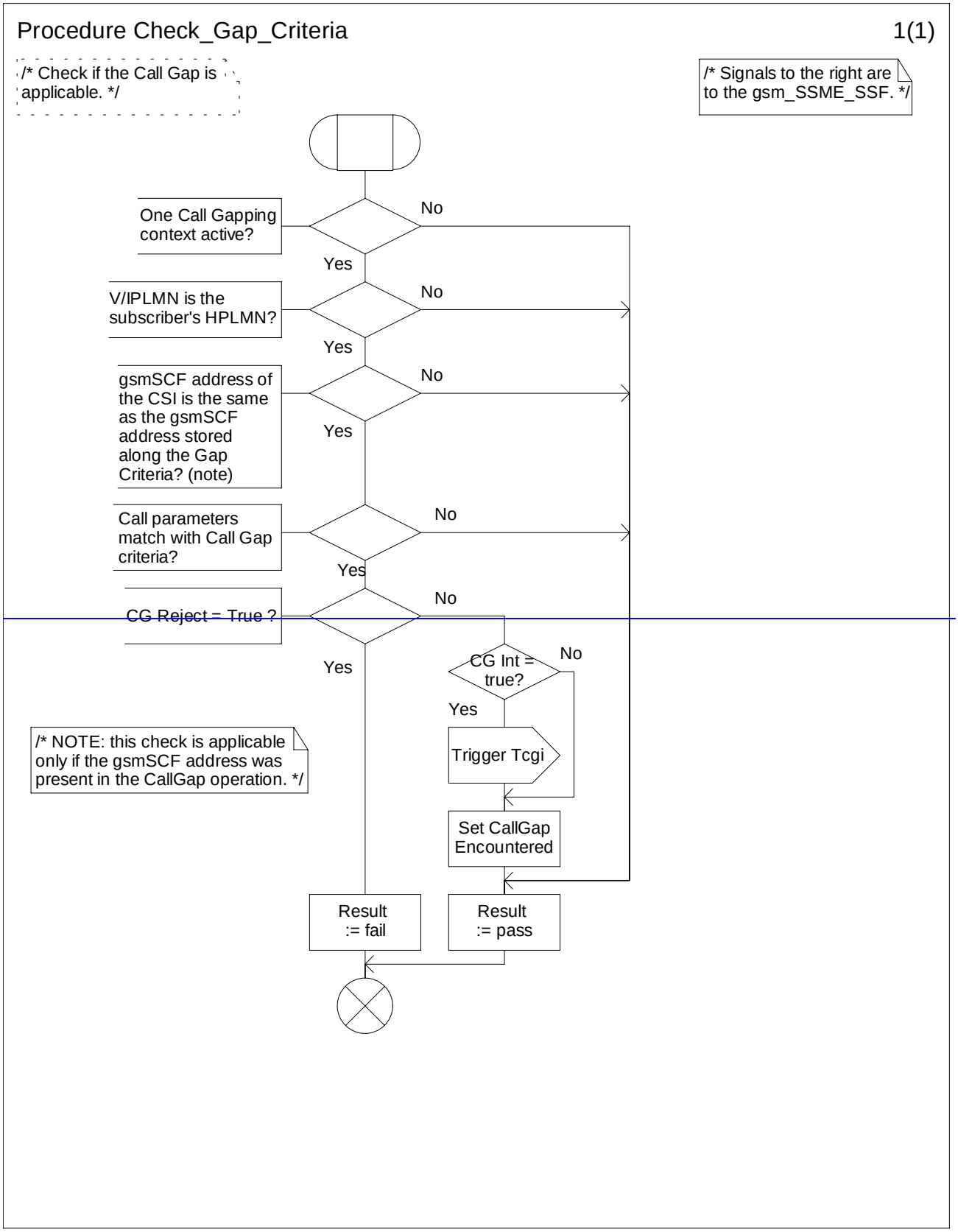


~~Figure 4.65b: Process gsm_SSME_SSF (sheet 2)~~



NOTE: CG Int and CG Reject internal variables are initiated with False value.

Figure 4.66: Procedure Store_Gap_Criteria (sheet 1)



~~Figure 4.67: Procedure Check_Gap_Criteria (sheet 1)~~

*** Next modified section ***

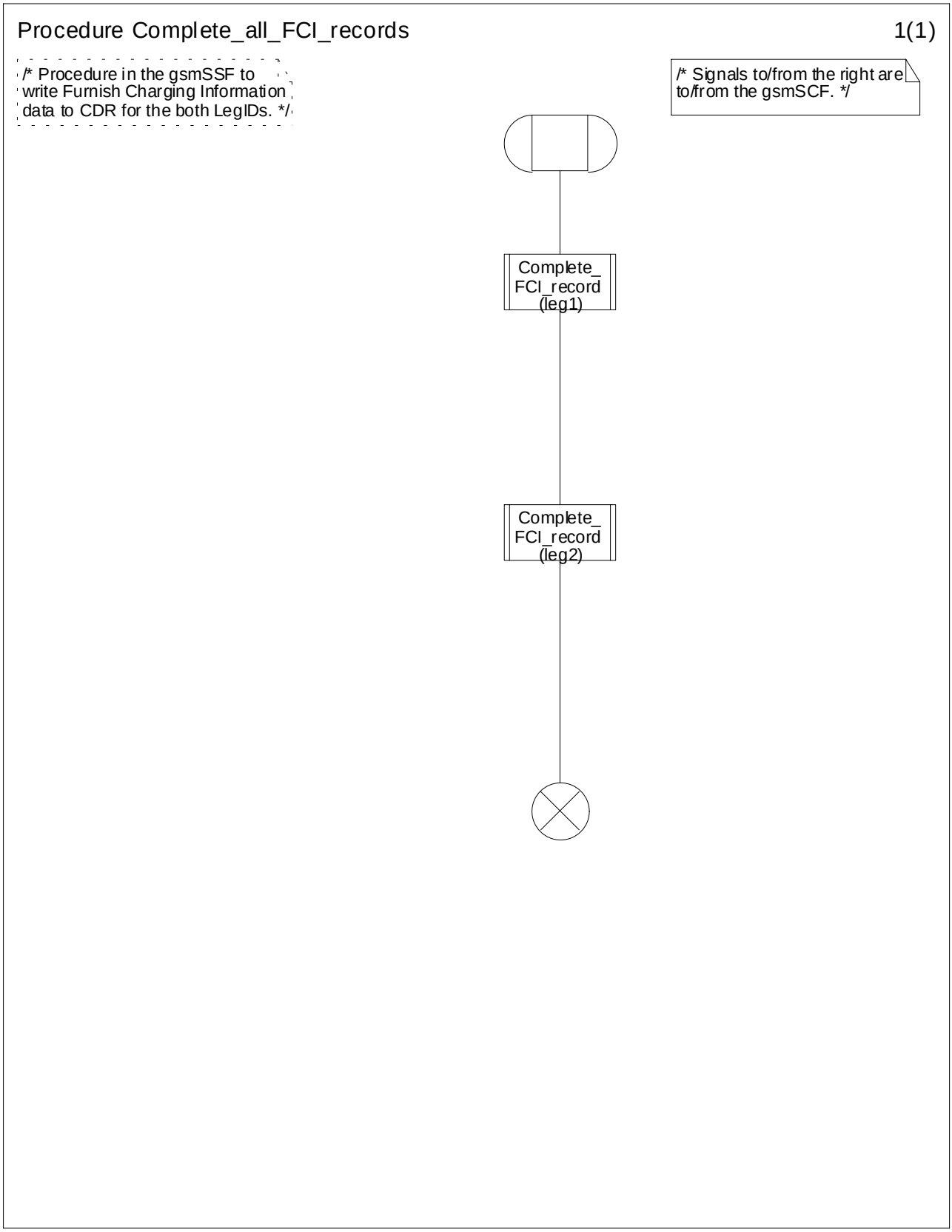


Figure 4.77a: Procedure Complete_all_FCI_records (sheet 1)

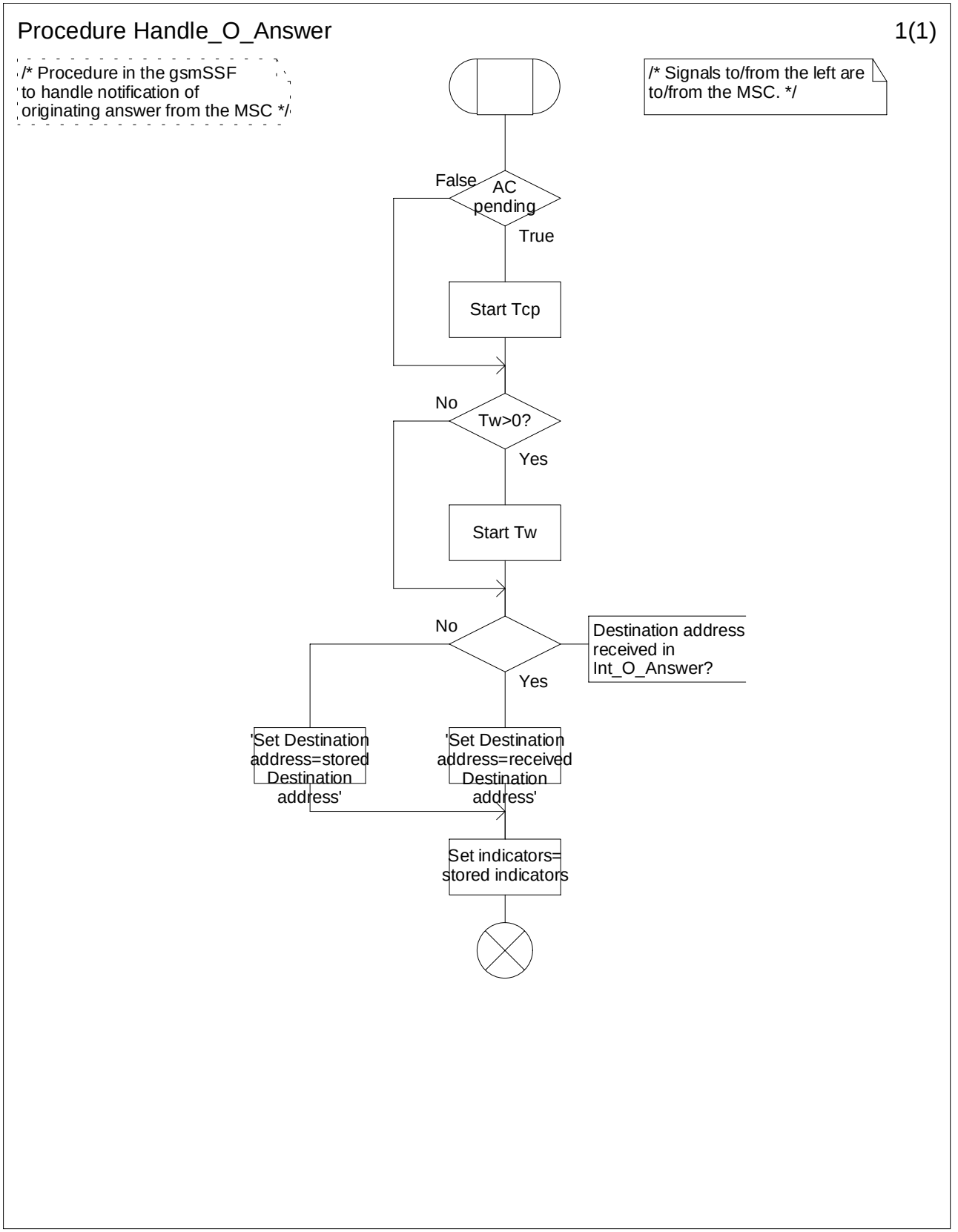


Figure 4.xxa: Procedure Handle_O_Answer (sheet 1)

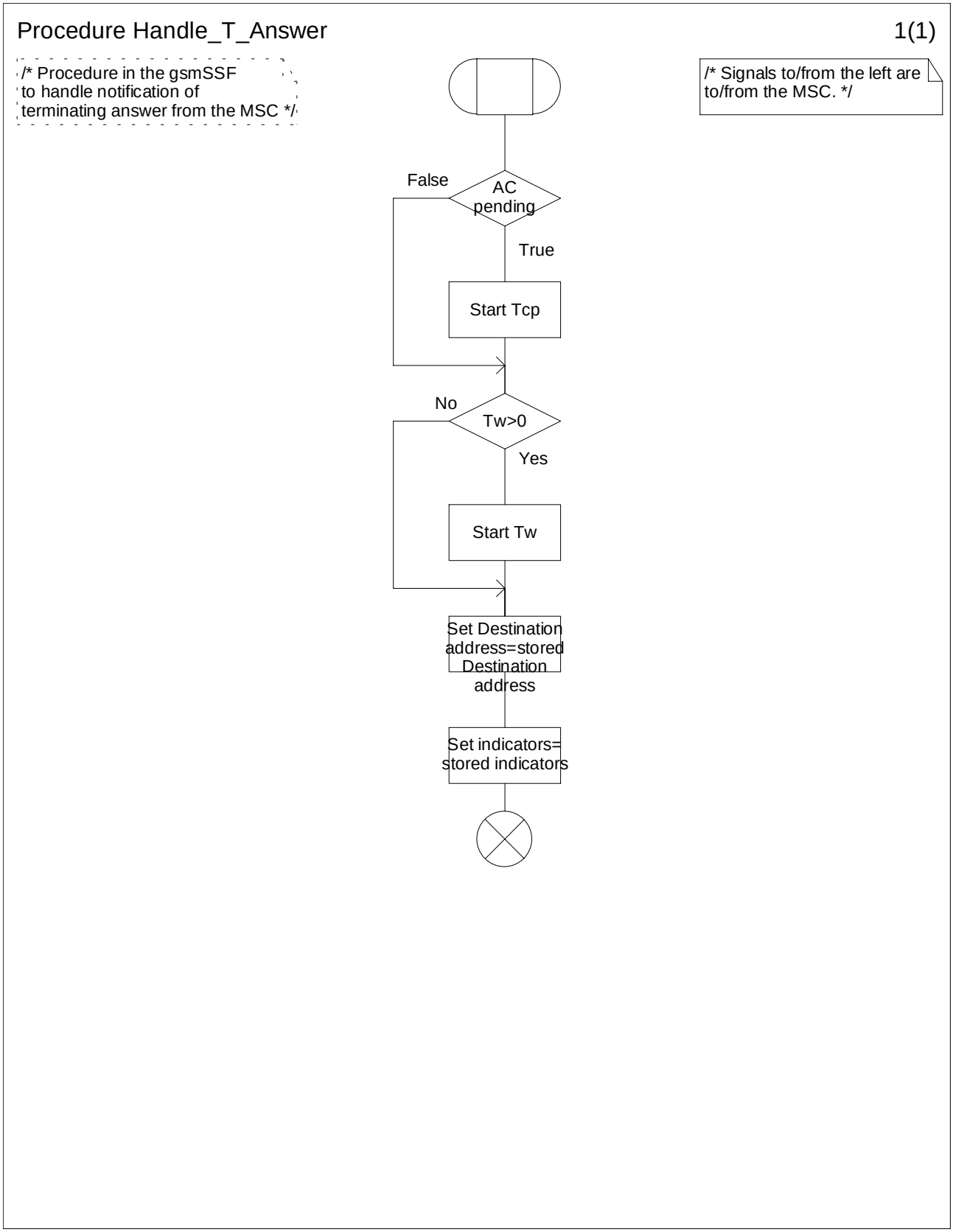


Figure 4.yya: Procedure Handle_T_Answer (sheet 1)

4.5.6.5 Process gsmSSF_SSME_FSM

One process is instantiated for each Call Gap message received from a gsmSCF.

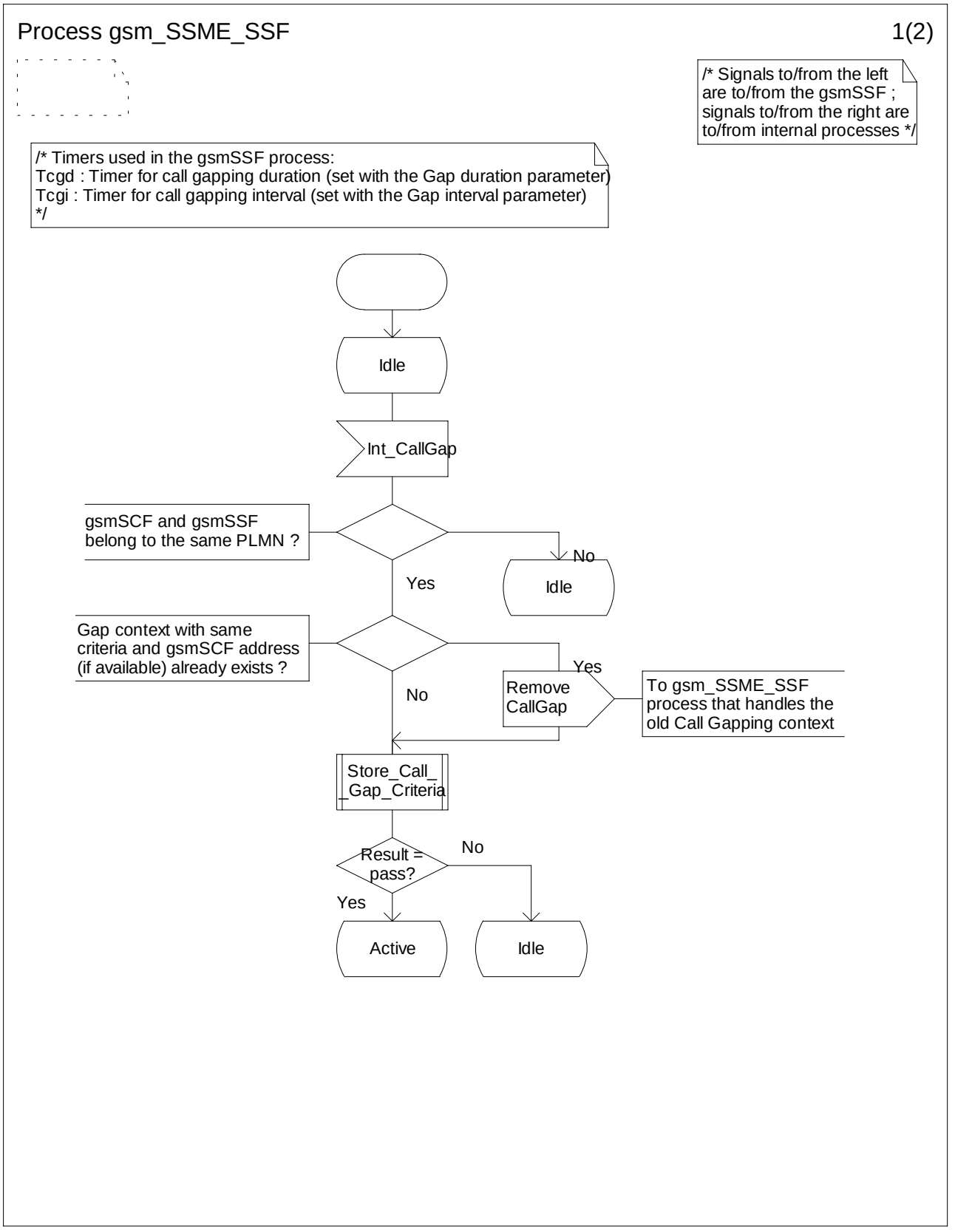


Figure 4.zza: Process gsm_SSME_SSF (sheet 1)

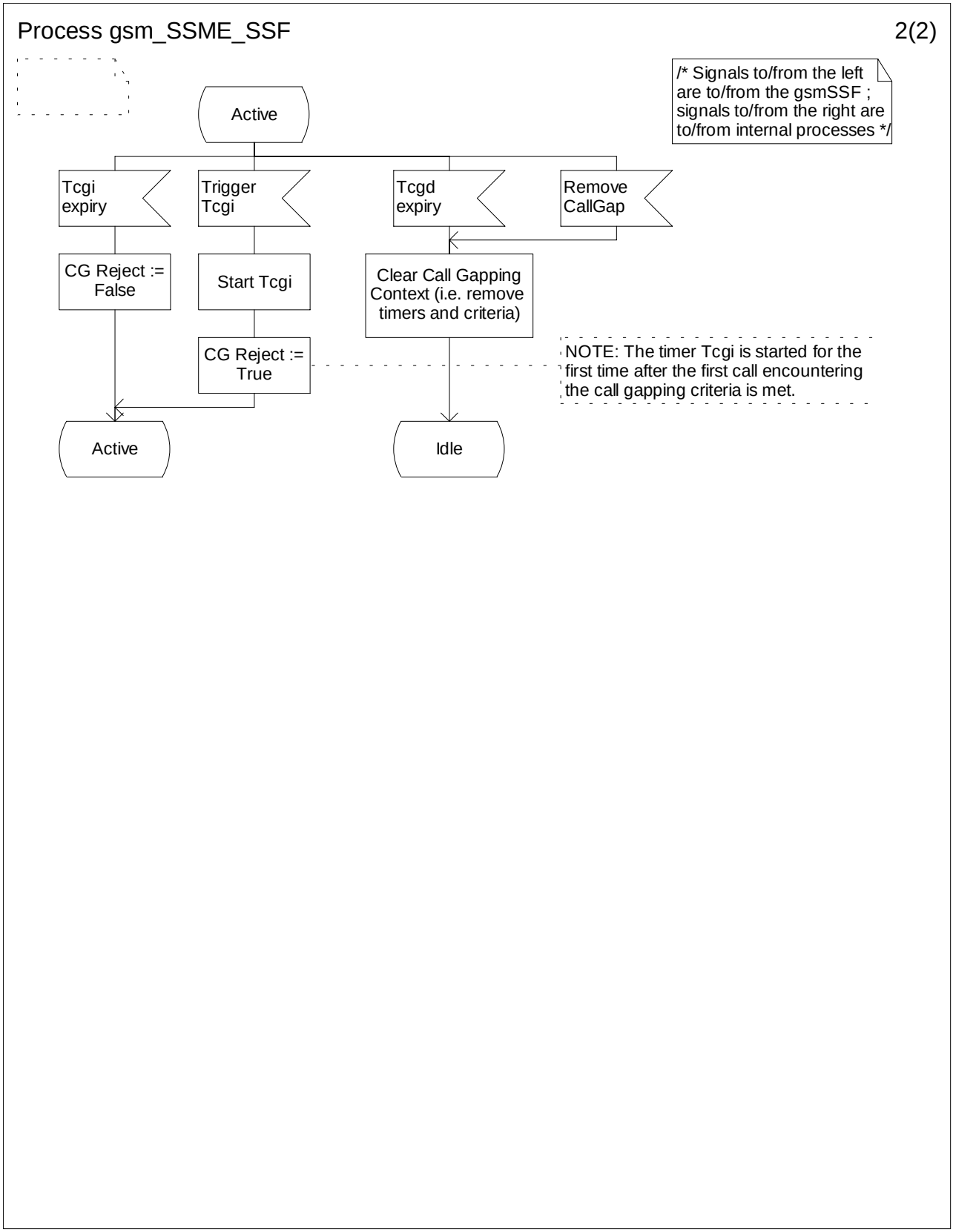
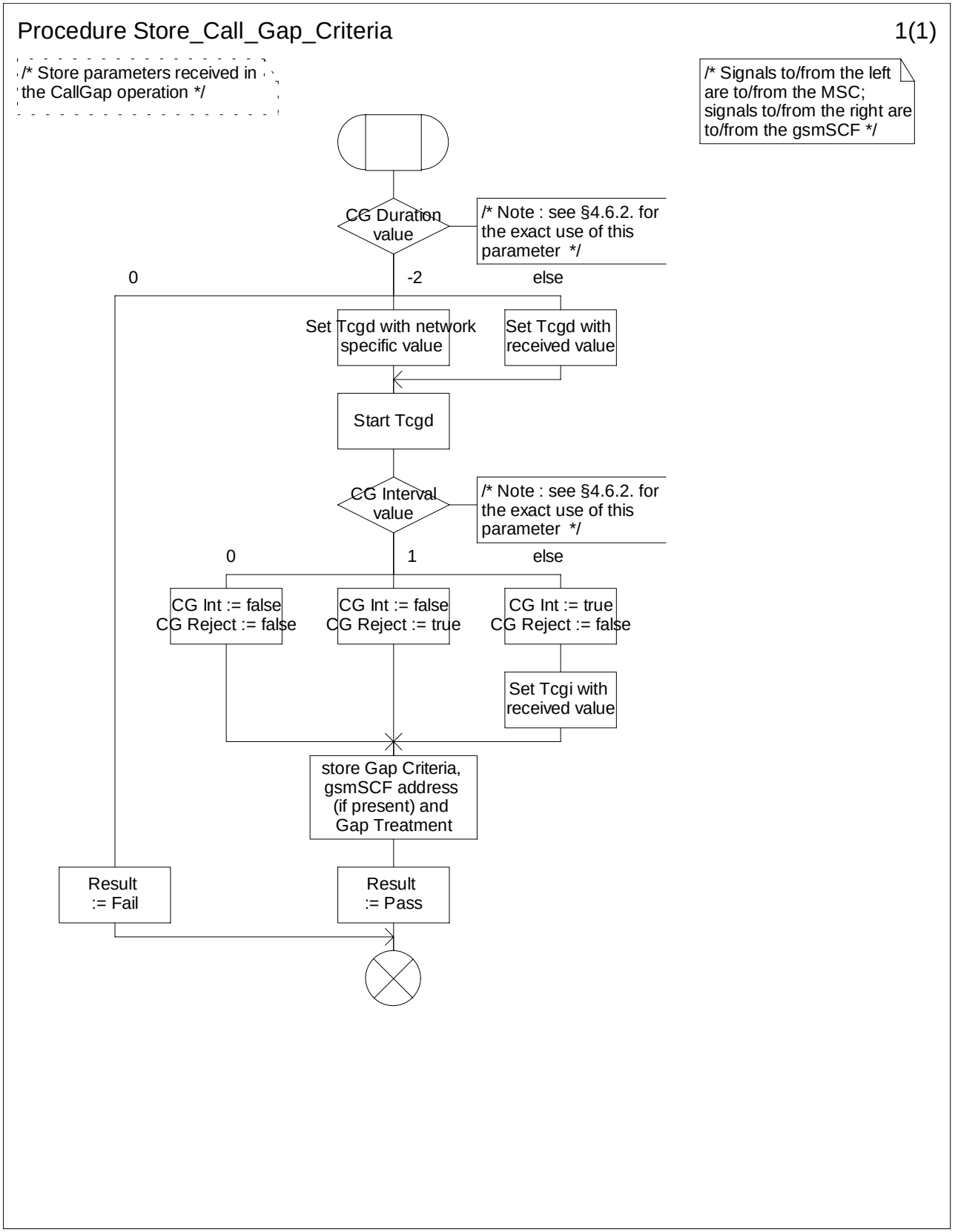


Figure 4.zzb: Process gsm_SSME_SSF (sheet 2)



NOTE: CG Int and CG Reject internal variables are initiated with False value.

Figure 4.wwa: Procedure Store_Gap_Criteria (sheet 1)

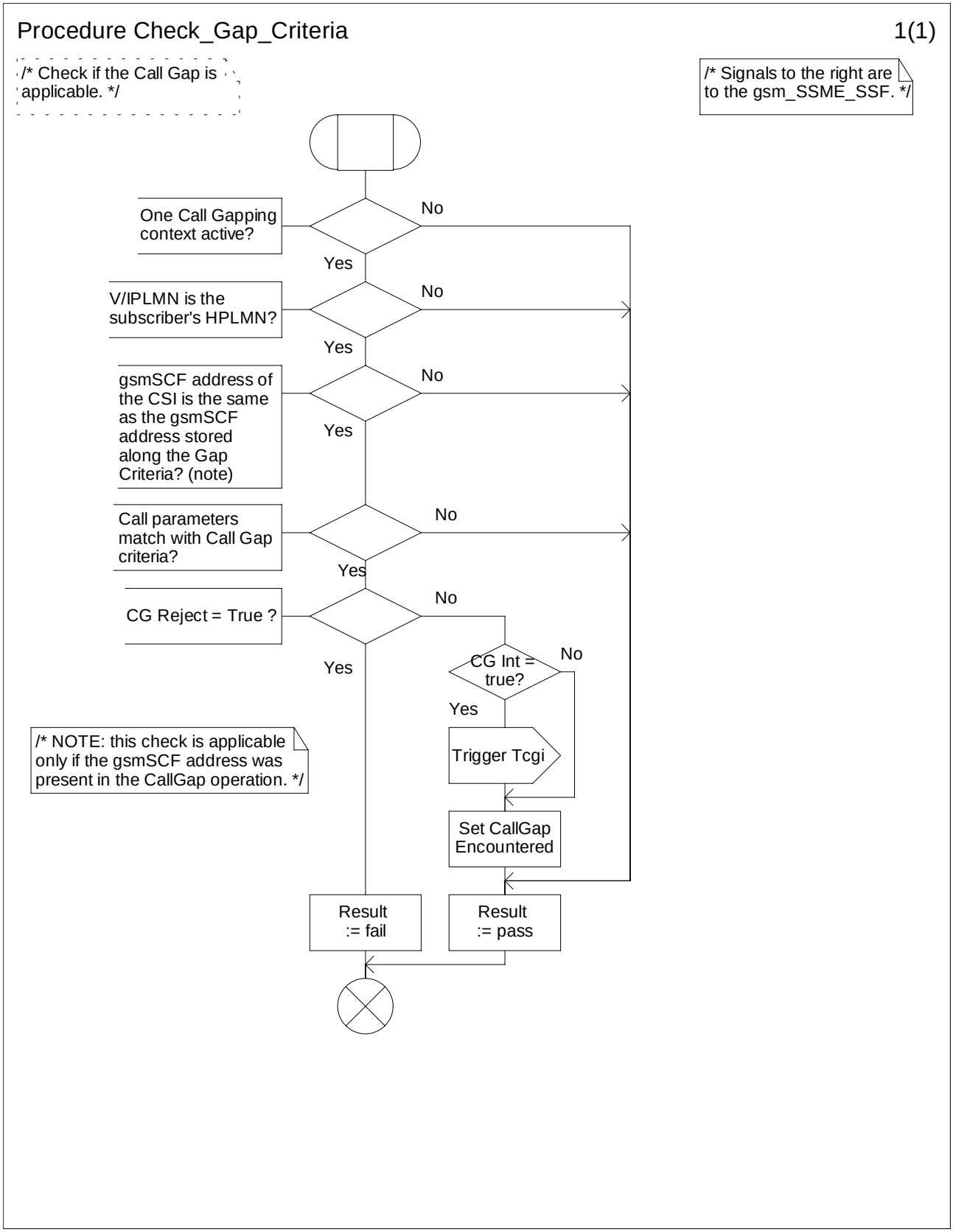


Figure 4.vva: Procedure Check_Gap_Criteria (sheet 1)

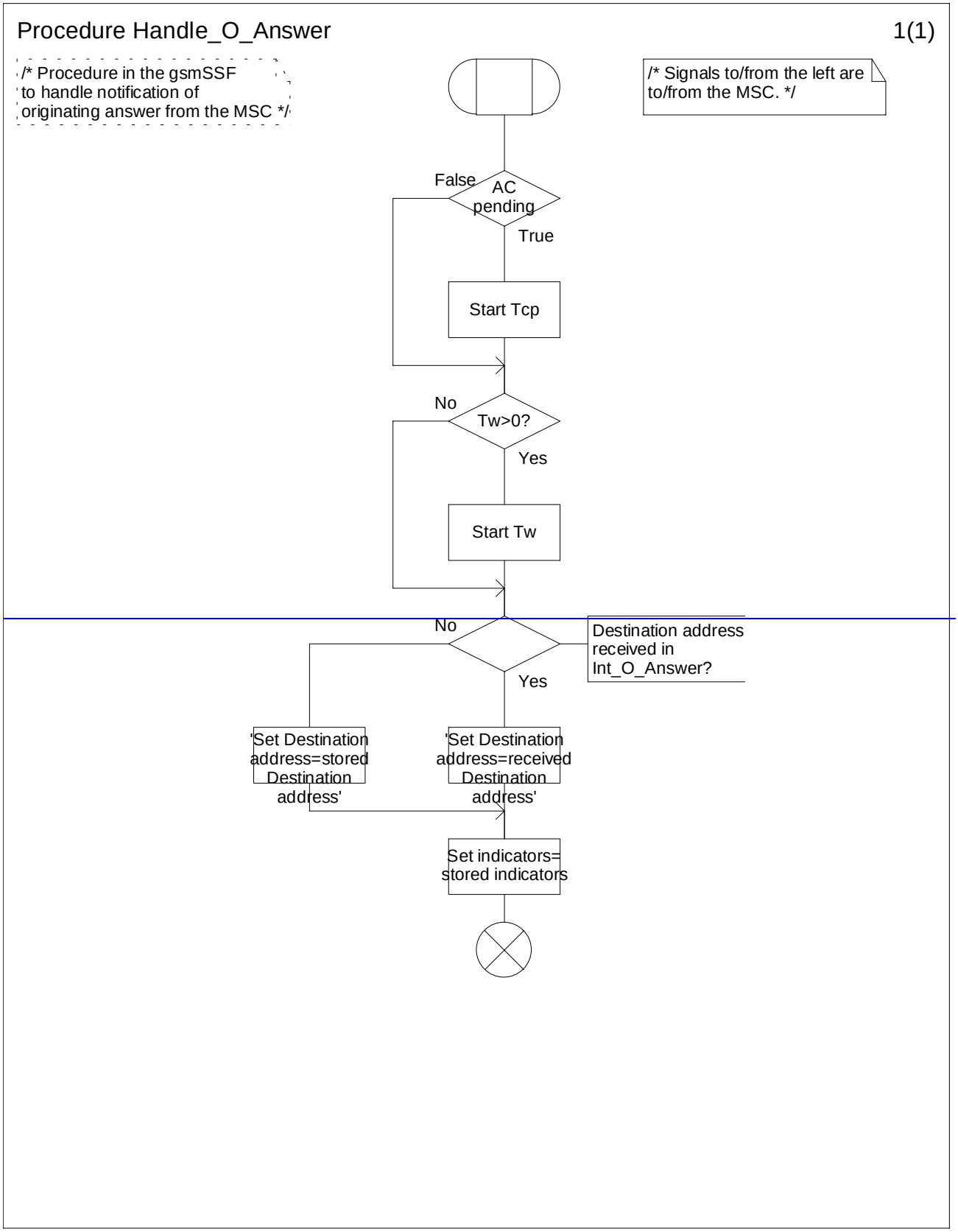
4.5.7 Assisting case

Assisting case involves the following processes:

- CAMEL_Assisting_MSC,
- Assisting_gsmSSF.

The detailed error handling for these 2 processes is specified in 3GPP TS 29.078 [5].

*** Next modified section ***



~~Figure 4.80a: Procedure Handle_O_Answer (sheet 1)~~

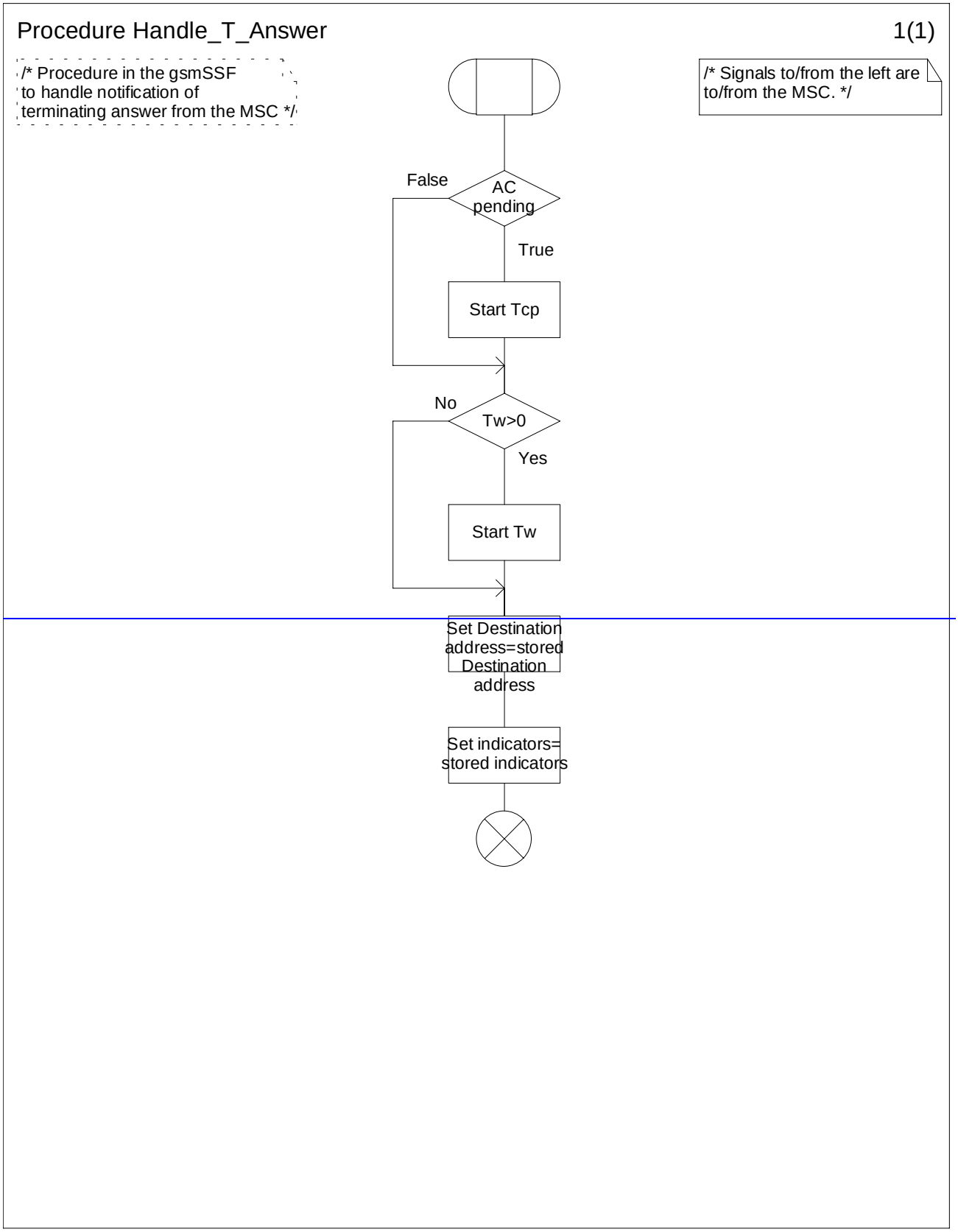


Figure 4.81a: Procedure Handle_T_Answer (sheet 1)

4.5.8 Procedure CAMEL_Provide_Subscriber_Info

4.5.8.1 MS reachable

A Provide_Subscriber_Info Request is sent to VLR and the HLR waits in state Wait_For_Information.

3GPP TSG-CN2 Meeting #16
Beijing, China, 15 – 19 January 2001

N2-010093

CR-Form-v3

CHANGE REQUEST

⌘ **23.078** **CR** **271** ⌘ 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 GPRS related information flows
Source:	⌘	Siemens
Work item code:	⌘	CAMEL3
Date:	⌘	16 January 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:	⌘	There are still small errors in GPRS related information flows.
Summary of change:	⌘	Example in the description for Event Report GPRS deleted
Consequences if not approved:	⌘	Possible misunderstanding of the DP description.

Clauses affected:	⌘	6.6
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	This CR shall be treated by “consensus”

***** First modified part *****

6.6.1.4 Event Report GPRS

6.6.1.4.1 Description

This IF is used to notify the gsmSCF of a GPRS event ~~(e.g. Attach or Detach)~~ previously requested by the gsmSCF in a Request Report GPRS Event IF.

CR editor's note: Attach as EDP not possible.