3GPP TSG_CN **Tdoc NP-000457**
Plenary Meeting #9, Oahu, Hawaii
20th – 22nd September 2000.

Source: **TSG_N WG2**

Title: **CRs to R99 Work Item CAMEL phase 3 - corrections to 23.078 cont**

Agenda item: **8.2.2**

Document for: **APPROVAL**

Introduction:

This document contains 11 CRs on R99 Work Item **CAMEL phase 3** that has been agreed by TSG_N WG2, and is forwarded to TSG_N Plenary meeting #9 for approval.

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C	Ver_N
23.078	204		N2-000331	R99	Interaction with CUG	F	3.5.0	3.6.0
23.078	205	1	N2-000419	R99	Handling of the Call Diversion Treatment Indicator	F	3.5.0	3.6.0
23.078	206	1	N2-000408	R99	GPRS location information in GPRSEventSpecificInformation	F	3.5.0	3.6.0
23.078	207	1	N2-000420	R99	Removal of NPI check in DP Analyzed_Information	F	3.5.0	3.6.0
23.078	208	2	N2-000436	R99	SDL modelling and overlapping dialogue case	F	3.5.0	3.6.0
23.078	209		N2-000380	R99	Correction CAMEL_MT_GMSC_INIT	F	3.5.0	3.6.0
23.078	213	1	N2-000416	R99	Correction of MO-SMS SDL's	F	3.5.0	3.6.0
23.078	215		N2-000367	R99	Correction to description of DP Collected_Info	F	3.5.0	3.6.0
23.078	216	1	N2-000440	R99	Introduction of Guard Timer for GPRS TCAP dialogue handling	F	3.5.0	3.6.0
23.078	218	1	N2-000434	R99	Clarification of description of number comparison for dialled services	F	3.5.0	3.6.0
23.078	219		N2-000427	R99	Correction to Initial DP SMS Information Flow	F	3.5.0	3.6.0

3GPP TSG-N2 #3
Helsinki, Finland, 17-21 July 2000

3GPP Tdoc ***N2-000331***

CHANGE REQUEST

23.078	**CR**	**204**	Current Version:	3.5.0

For submission to: TSG-N #9 — for approval [X] / for information [ ] — strategic [ ] / non-strategic [ ]

Proposed change affects: (U)SIM [ ] ME [ ] UTRAN / Radio [ ] Core Network [X]

Source: N2 **Date:** 19th July 2000

Subject: Interaction with CUG

Work item: CAMEL Phase 3

Category:

F	Correction	[X]
A	Corresponds to a correction in an earlier release	[ ]
B	Addition of feature	[ ]
C	Functional modification of feature	[ ]
D	Editorial modification	[ ]

Release:

Phase 2	[ ]
Release 96	[ ]
Release 97	[ ]
Release 98	[ ]
Release 99	[X]
Release 00	[ ]

Reason for change:
3G TS 22.078 v3.4.0 subclause 18.6: Closed User Group (CUG) states
"For an MT call which is not subject to CAMEL forwarding, the CSE shall not be able to modify the CUG information for the call."
This means that CUG information should not be modified using Continue With Argument for an MT call.

Clauses affected: 4.5.3.1, 4.5.4.1 and 4.6.2.9

Other specs affected:

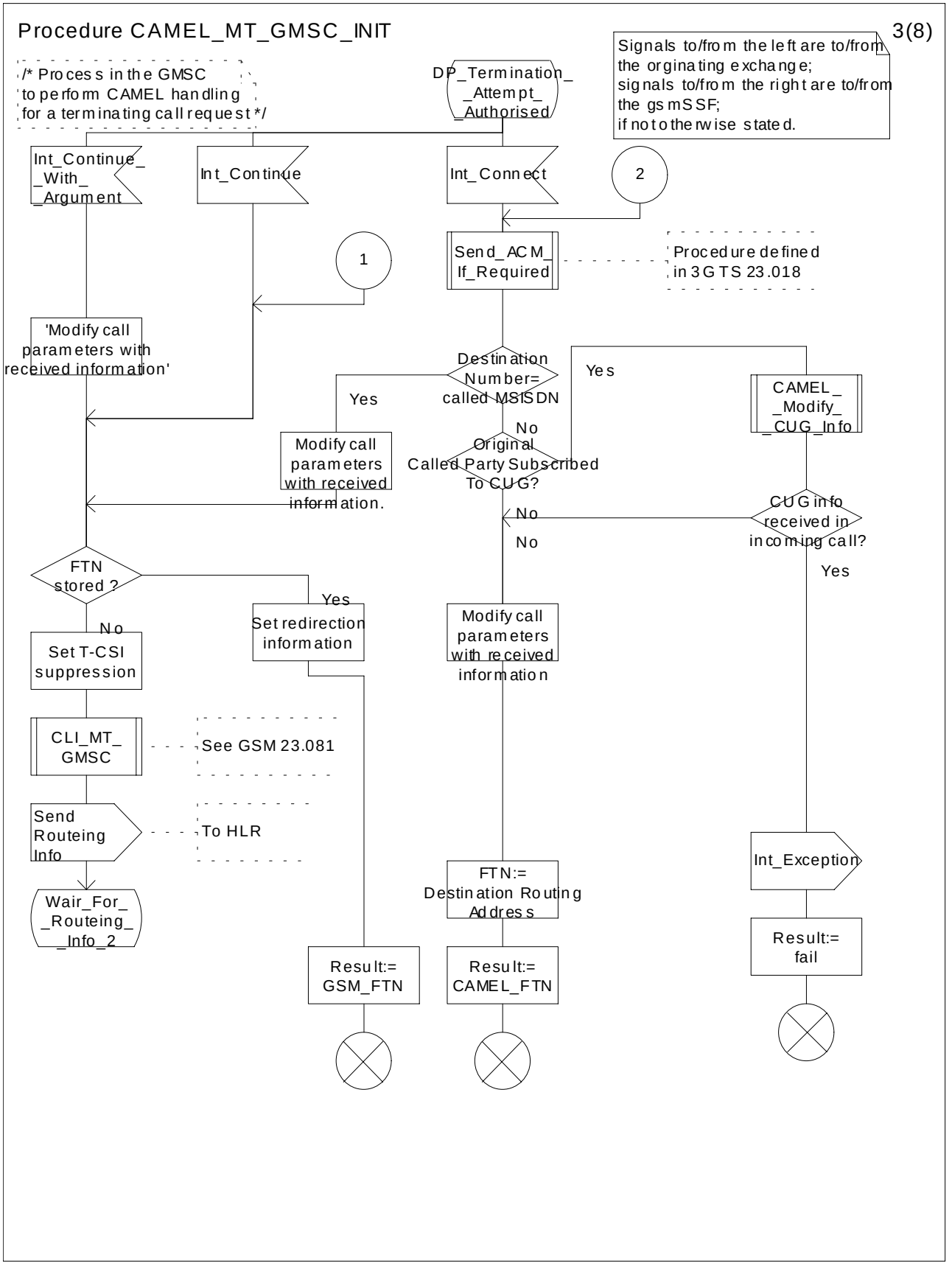
Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

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

4.5.3.1 Retrieval of routeing information in the GMSC

…


Procedure CAMEL_MT_GMSC_INIT
3(8)
/* Process in the GMSC to perform CAMEL handling for a terminating call request */
DP_Termination_Attempt_Authorised
Signals to/from the left are to/from the orginating exchange;
signals to/from the right are to/from the gsmSSF;
if not otherwise stated.
Int_Continue_With_Argument
Int_Continue
Int_Connect
2
1
Send_ACM_If_Required
Procedure defined in 3G TS 23.018
'Modify call parameters with received information'
Destination Number= called MSISDN
Yes
Yes
CAMEL_Modify_CUG_Info
Modify call parameters with received information.
No
Original Called Party Subscribed To CUG?
No
CUG info received in incoming call?
No
Yes
FTN stored ?
Yes
Set redirection information
No
Set T-CSI suppression
Modify call parameters with received information
CLI_MT_GMSC
See GSM 23.081
Send Routeing Info
To HLR
Int_Exception
FTN:= Destination Routing Address
Wair_For_Routeing_Info_2
Result:= fail
Result:= GSM_FTN
Result:= CAMEL_FTN

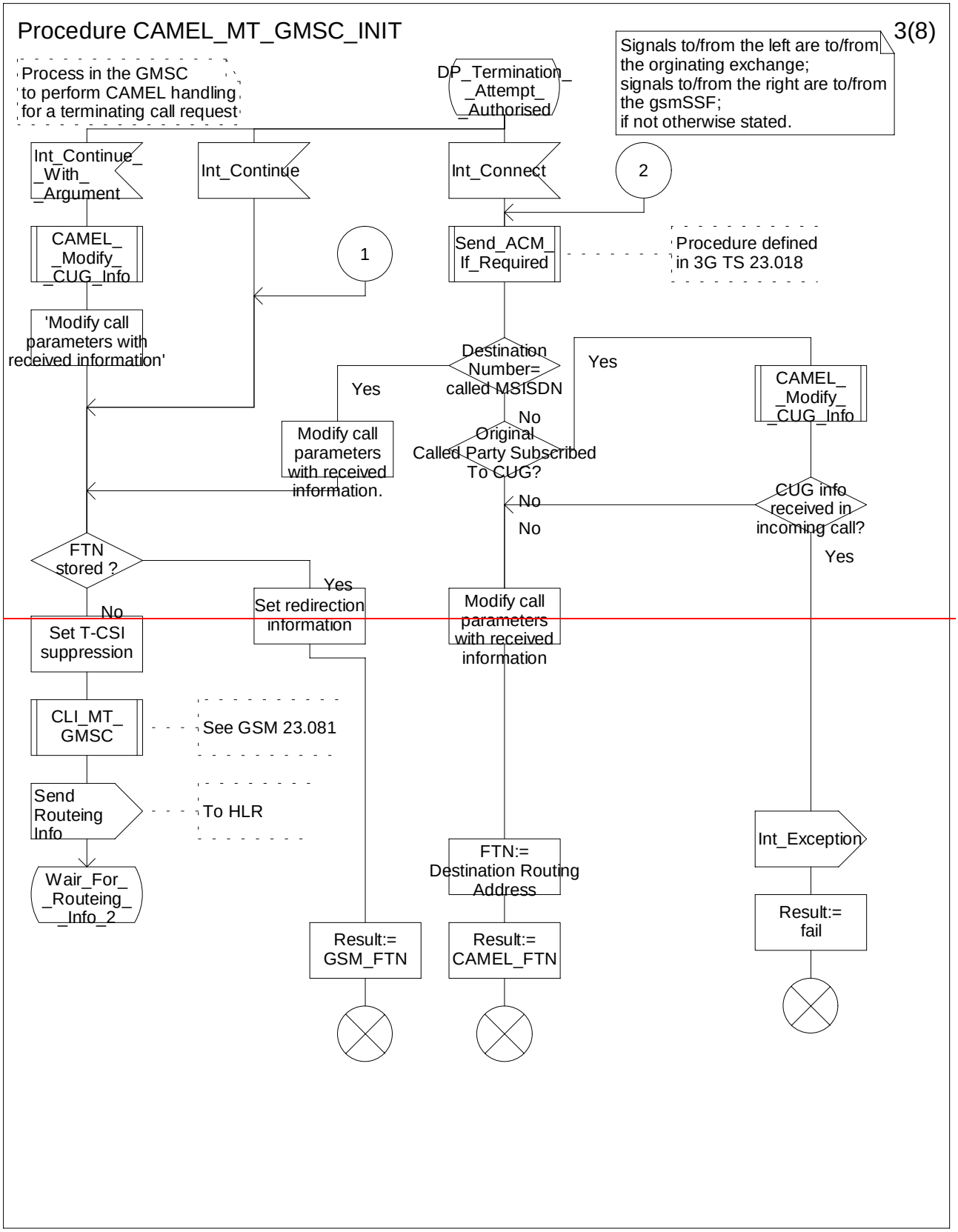
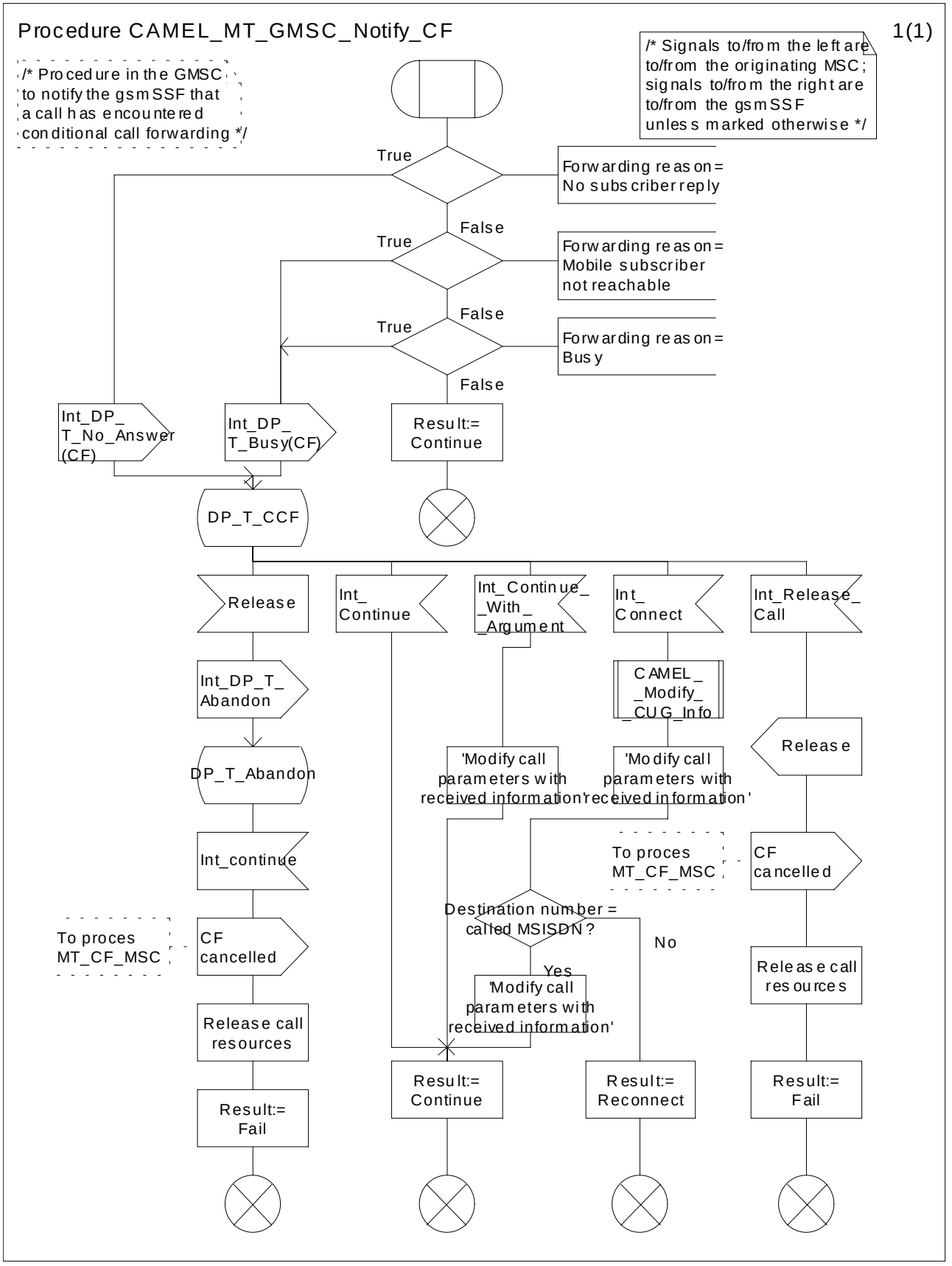


Figure 4.30c: Procedure CAMEL_MT_GMSC_INIT (sheet 1)

…


Procedure CAMEL_MT_GMSC_Notify_CF
1(1)
/* Procedure in the GMSC to notify the gsmSSF that a call has encountered conditional call forwarding */
/* Signals to/from the left are to/from the originating MSC; signals to/from the right are to/from the gsmSSF unless marked otherwise */
True
Forwarding reason = No subscriber reply
False
True
Forwarding reason = Mobile subscriber not reachable
False
True
Forwarding reason = Busy
False
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
CAMEL_ _Modify_ _CUG_Info
DP_T_Abandon
'Modify call parameters with received information'
'Modify call parameters with received information'
Release
Int_continue
To proces MT_CF_MSC
CF cancelled
Destination number = called MSISDN?
No
Yes
To proces MT_CF_MSC
CF cancelled
'Modify call parameters with received information'
Release call resources
Release call resources
Result:= Continue
Result:= Reconnect
Result:= Fail
Result:= Fail

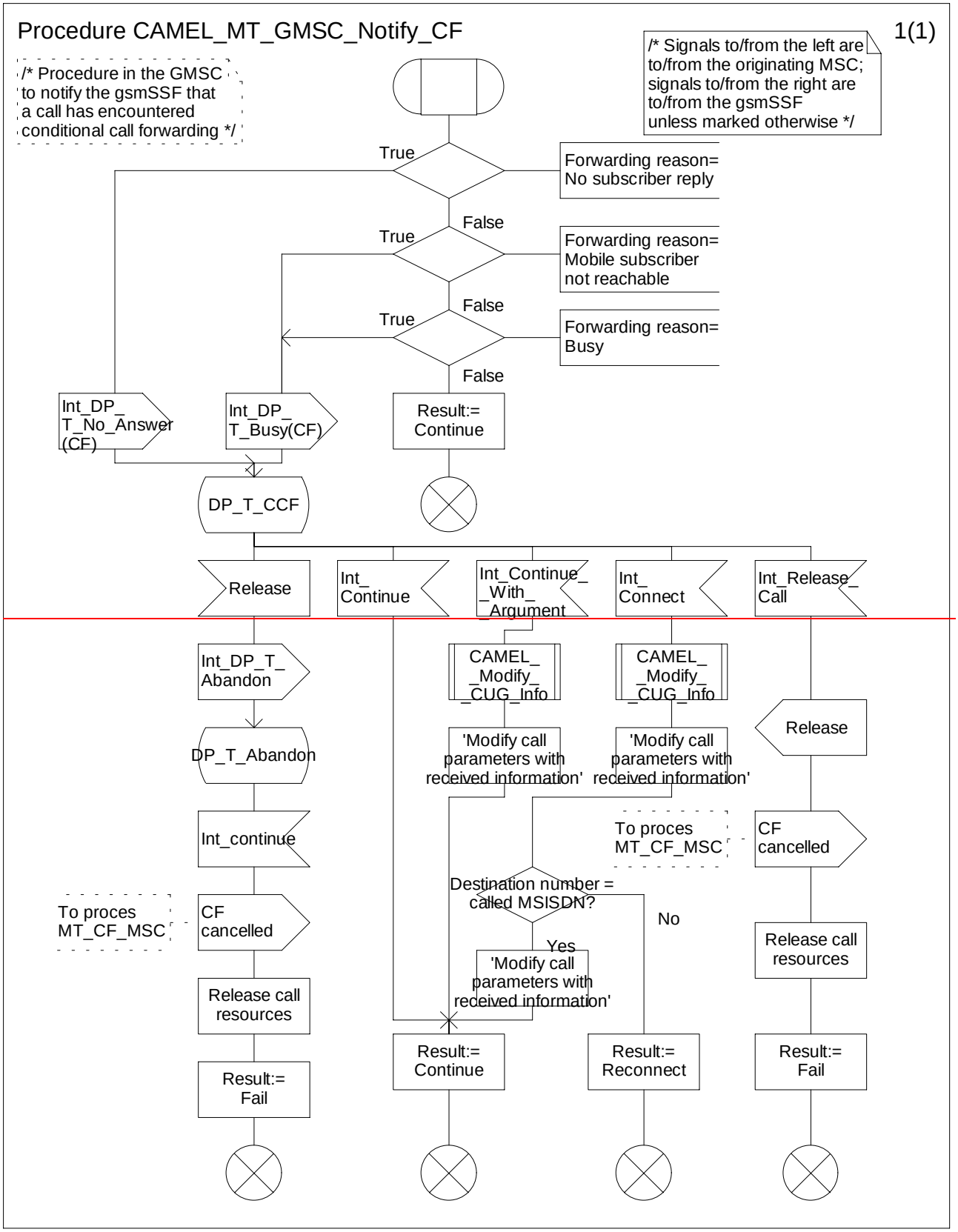
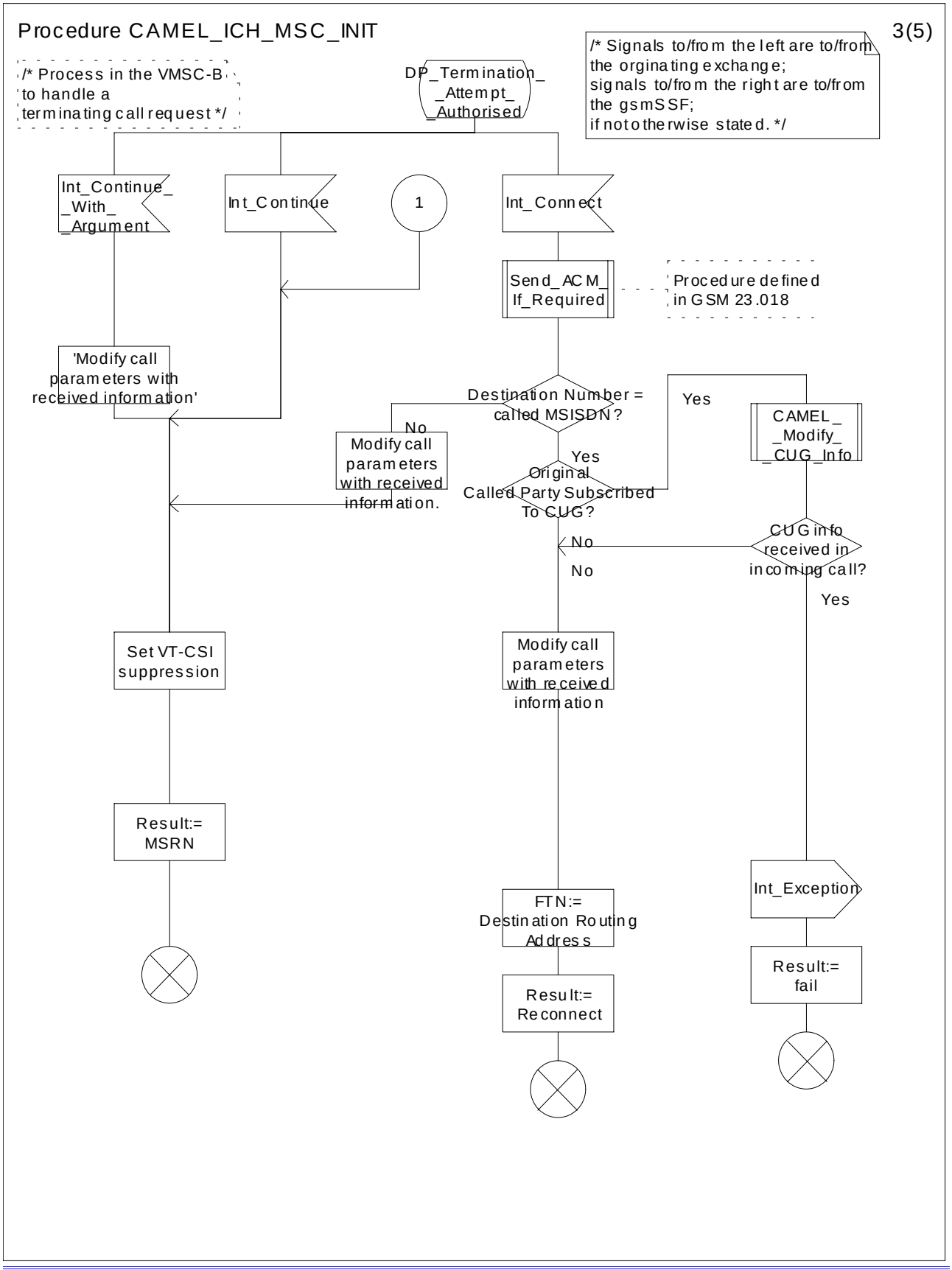


Figure 4.40: Procedure CAMEL_MT_GMSC_Notify_CF (sheet 1)

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

4.5.4.1 Handling of mobile terminating calls in the terminating VMSC

…


Procedure CAMEL_ICH_MSC_INIT
3(5)
/* Process in the VMSC-B to handle a terminating call request */
DP_Termination_Attempt_Authorised
/* Signals to/from the left are to/from the orginating exchange; signals to/from the right are to/from the gsmSSF; if not otherwise stated. */
Int_Continue_With_Argument
Int_Continue
1
Int_Connect
Send_ACM_If_Required
Procedure defined in GSM 23.018
'Modify call parameters with received information'
Destination Number = called MSISDN?
Yes
No
CAMEL_Modify_CUG_Info
Modify call parameters with received information.
Yes
Original Called Party Subscribed To CUG?
CUG info received in incoming call?
No
No
Yes
Set VT-CSI suppression
Modify call parameters with received information
Result:= MSRN
FTN:= Destination Routing Address
Int_Exception
Result:= Reconnect
Result:= fail

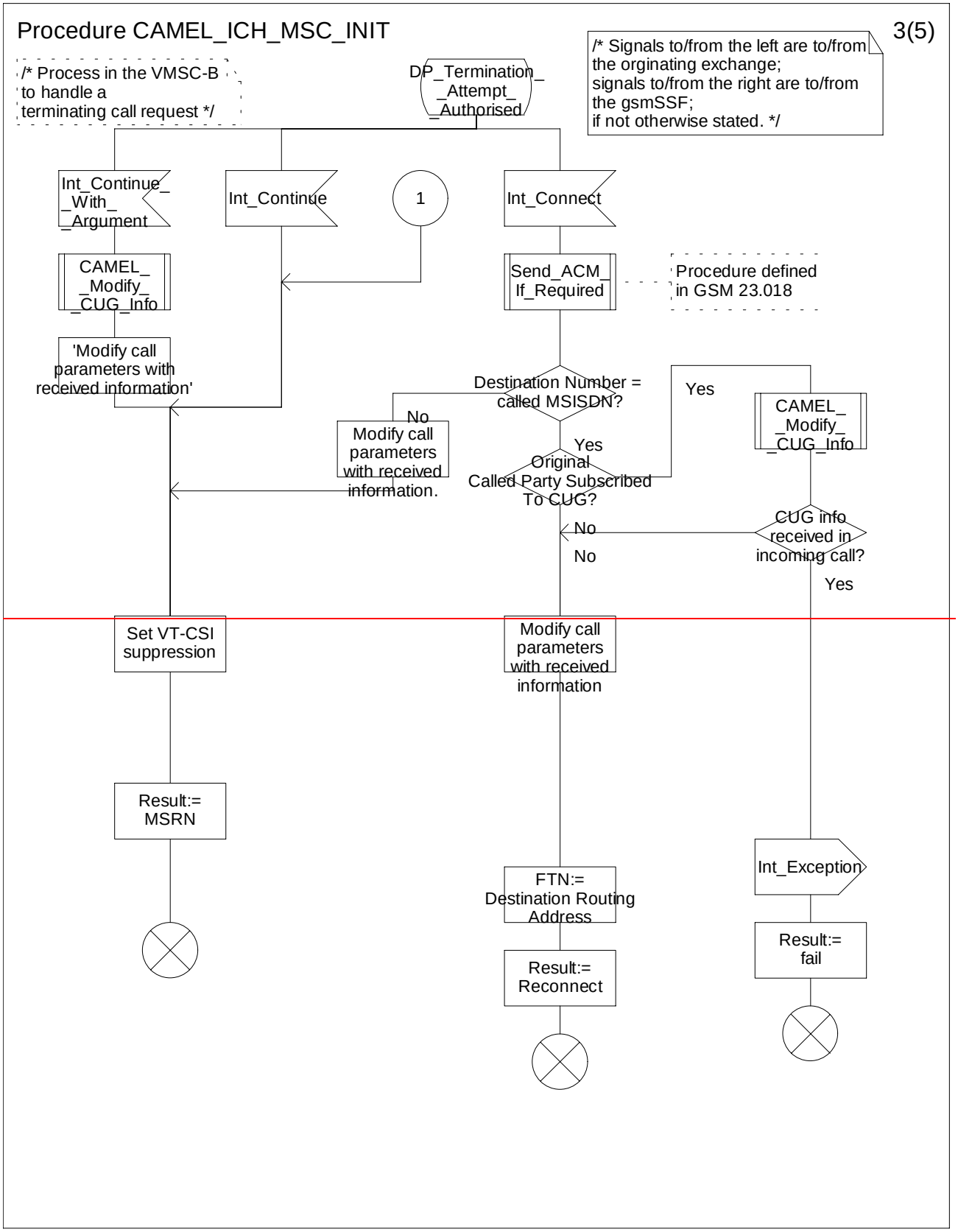
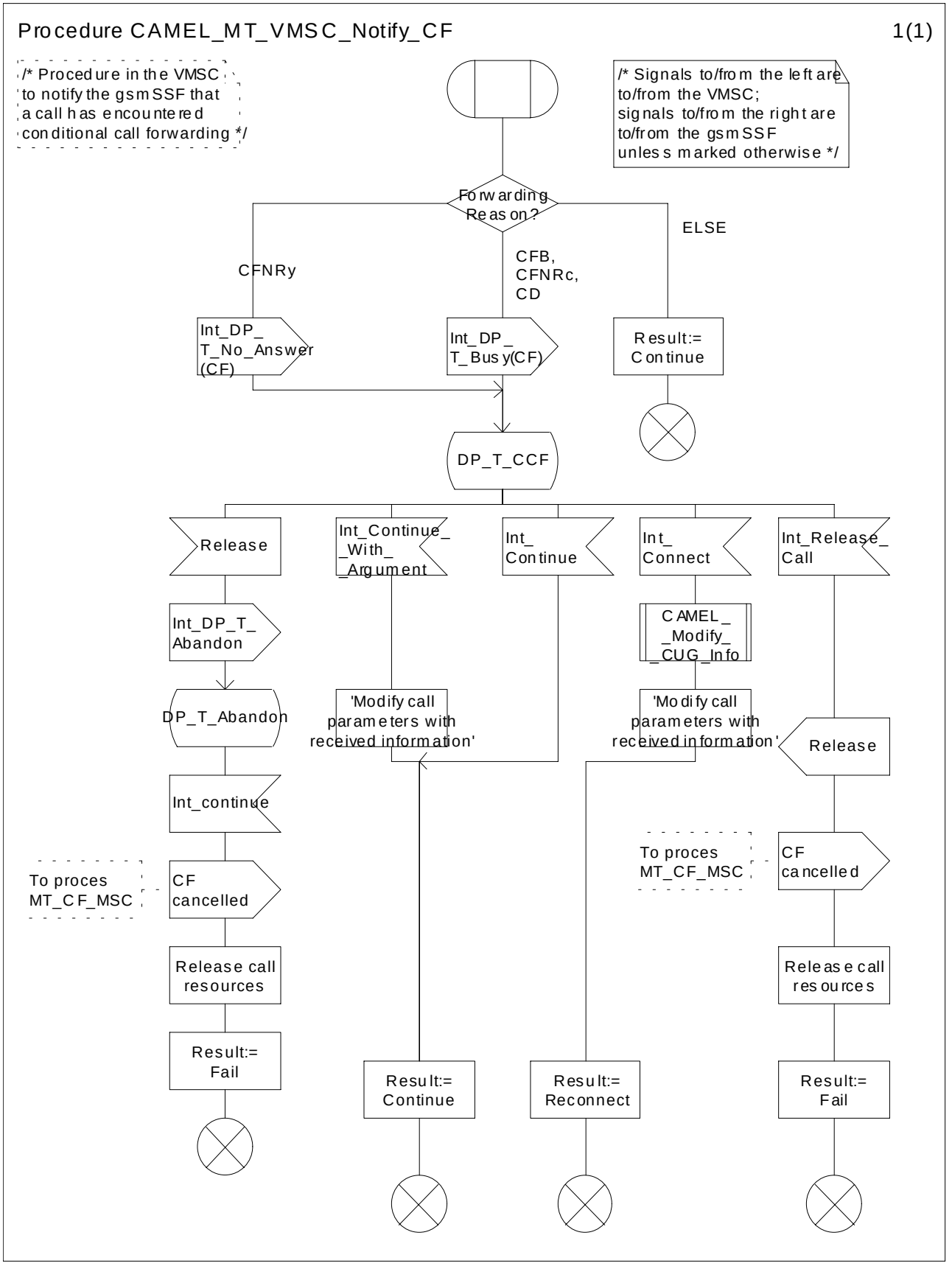


Figure 4.51c: Procedure CAMEL_ICH_MSC_INIT (sheet 3)

…


Procedure CAMEL_MT_VMSC_Notify_CF
1(1)
/* 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 */
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_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 proces 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

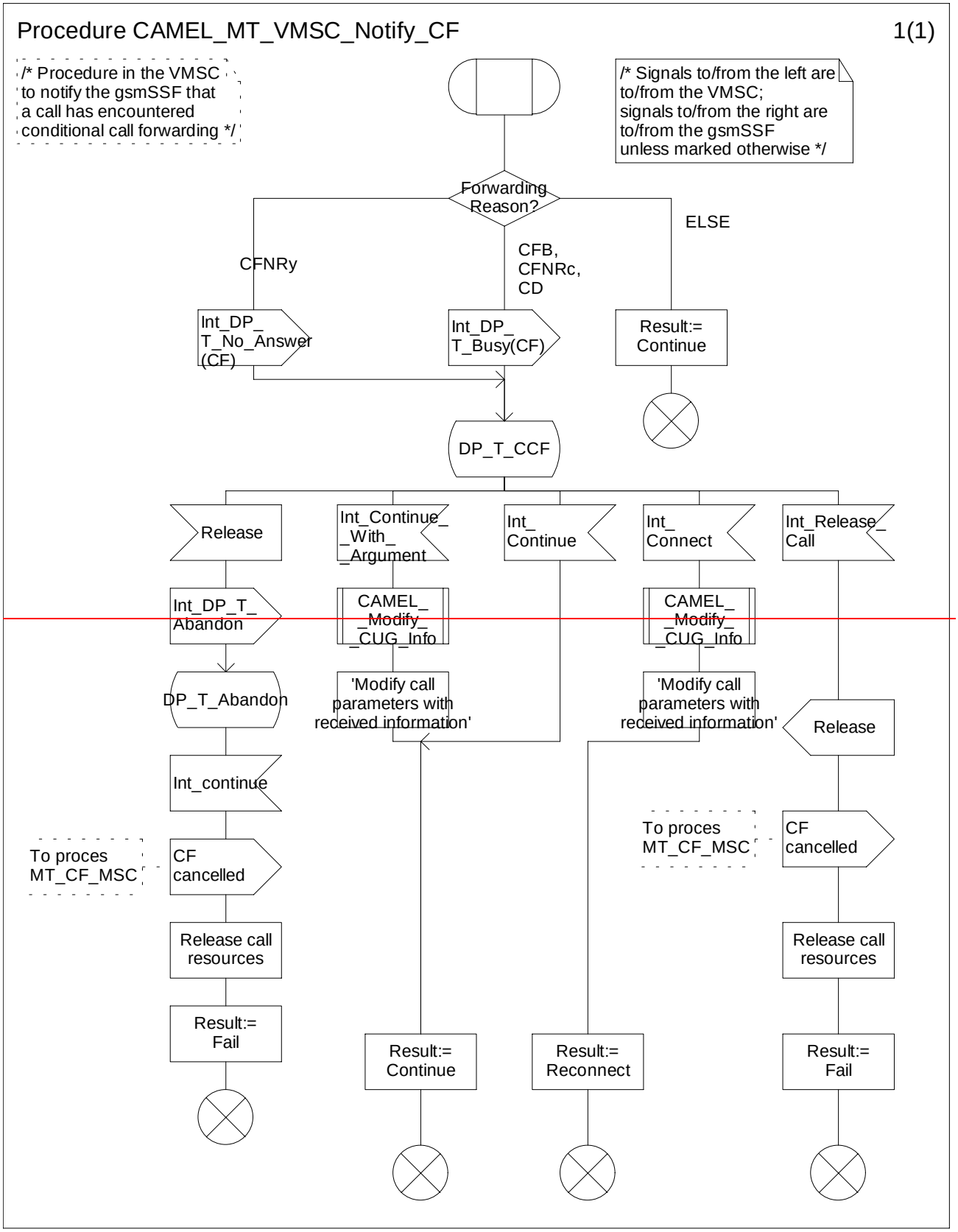


Figure 4.52: Procedure CAMEL_MT_VMSC_Notify_CF (sheet 1)

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

4.6.2.9 Continue With Argument

4.6.2.9.1 Description

This information flow requests the gsmSSF to proceed the call processing with modified information at the DP at which it previously suspended call processing to await gsmSCF instructions. The gsmSSF completes DP processing, and continues basic call processing (i.e., proceeds to the next point in call in the BCSM) with the modified call setup information as received from the gsmSCF.

4.6.2.9.2 Information Elements

The following information elements are required:

Information element name	MO	MF	MT	VT	Description
Alerting Pattern	-	-	O	O	This parameter indicates the kind of Alerting Pattern to be applied.
Calling Partys Category	O	O	O	O	This IE indicates the type of calling party (e.g., operator, pay phone, ordinary subscriber).
Generic Number	O	O	O	O	This IE contains the generic number. Its used to convey the additional calling party number, which e.g. could be used to modify the calling line ID presented to the called user.
Carrier	O	O	O	O	This IE is described in the next table.
NA Originating Line Information	O	O	O	O	This IE identifies the type of number in the Charge Number (e.g. subscriber versus PLMN operator number).
Charge Number	O	O	O	O	This IE identifies the chargeable number for the usage of a North American carrier.
Suppression Of Announcements	-	-	O	O	This IE indicates that announcements or tones generated as a result of unsuccessful call setup shall be suppressed.
Service Interaction Indicators Two	O	O	O	O	~~See the Information Flow table of the Connect operation for an explanation of this parameter.~~This IE is described in a table below.
CUG Interlock Code	O	O	~~O~~	~~O~~	See 3G TS 23.085 [9] for details of this IE.
Outgoing Access Indicator	O	O	~~O~~	~~O~~	See 3G TS 23.085 [9] for details of this IE.

O Optional (Service logic dependent).

- 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	O	O	O	O	See the Information Flow table for the Service Interaction Indicators Two IE in the Connect operation for an explanation of this parameter.
Backward Service Interaction Indicator	O	O	O	O	See the Information Flow table for the Service Interaction Indicators Two IE in the Connect operation for an explanation of this parameter.
HOLD Treatment Indicator	O	-	-	O	This IE indicates whether the CAMEL subscriber can invoke HOLD for the call.
CW Treatment Indicator	O	-	-	O	This IE indicates whether CW can be applied for a call to the CAMEL subscriber whilst this call is ongoing.
ECT Treatment Indicator	O	-	-	O	This IE indicates whether the call leg can become part of an ECT call initiated by the CAMEL subscriber.
Connected number treatment indicator	O	O	O	O	This IE indicates the treatment of the connected number at the originating side.
Non-CUG Call	O	O	-	-	This IE indicates that no parameters for CUG should be used for the call (i.e. the call should be a non-CUG call).

O Optional (Service logic dependent).

- Not applicable.

NOTE: Non-CUG Call shall not be present if at least one of CUG Interlock Code and Outgoing Access Indicator are present in the Information Flow.

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

3GPP TSG-N2 #4
Seattle, USA, 28 Aug - 01 Sep 2000

Tdoc 3GPP N2-000419

CHANGE REQUEST

23.078	CR	205R1	Current Version:	3.5.0

For submission to: TSG-N #9 — for approval [X] / for information [ ] — strategic [ ] / non-strategic [ ]

Proposed change affects: (U)SIM [ ] ME [ ] UTRAN / Radio [ ] Core Network [X]

Source: N2 **Date:** 30th August 2000

Subject: Handling of the Call Diversion Treatment Indicator

Work item: CAMEL Phase 3

Category:

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: TSG-N4 have agreed that the Call Diversion Treatment Indicator shall be checked in the VLR. Hence, the Call Diversion Treatment Indicator is included in the Send Info for Incoming Call IF.

Clauses affected: 4.6.10.1 and 4.6.12.1

Other specs affected:

Other 3G core specifications	X	→ List of CRs:	23.018-057 (N4-000577), 23.072-004 (N4-000534), 23.072-005 (N4-000578), 23.078-187 (N2-000358), 23.093-004 (N4-000579)
Other GSM core specifications		→ List of CRs:	
MS test specifications		→ List of CRs:	
BSS test specifications		→ List of CRs:	
O&M specifications		→ List of CRs:	

Other comments: Editorial corrections have also been made to the definition of the Call Diversion Treatment Indicator in Send Routeing Info.

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

4.6.10.1 Send Routeing Info

…

4.6.10.1.2 Information Elements

Send Routeing Info contains the following CAMEL specific IE:

Information element name	Required	Description
Alerting Pattern	C	This IE indicates the kind of Alerting Pattern to be applied.
Suppression Of Announcement	C	This IE indicates that announcements or tones generated as a result of unsuccessful call setup shall be suppressed. Shall be sent in the interrogation if available, i.e., when it has been received from the gsmSCF.
Suppress T-CSI	C	This IE indicates that T-CSI shall be suppressed. Shall always be sent in the second interrogation
Supported CAMEL Phases	M	This IE lists the supported CAMEL phases.
Call Reference Number	M	This IE carries the Call Reference Number allocated for the call by the GMSC. Shall be allocated once per call and sent in both first and second interrogations.
GMSC Address	M	This IE is the E.164 address of the GMSC
Call Diversion Treatment Indicator	C	This IE indicates whether or not~~if~~ the call can be forwarded using the Call Forwarding or Call Deflection Supplementary Services. Shall be sent if received within Forward Service Interaction Indicator in Service Interaction Indicators Two from the IAM or previous CAMEL processing.

C Conditional (The IE shall be sent, if received from the gsmSCF or set by the gsmSSF).

M Mandatory (The IE shall always be sent when the GMSC supports CAMEL).

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

4.6.12.1 Send Info For Incoming Call

…

4.6.12.1.2 Information Elements

Send Info For Incoming Call contains the following CAMEL specific IE

Information element name	Required	Description
Suppress VT-CSI	C	This IE indicates that VT-CSI shall be suppressed. Shall never be sent in the first interrogation; shall always be sent in the second interrogation.
Call Diversion Treatment Indicator	C	This IE indicates whether or not the call can be forwarded using the Call Forwarding or Call Deflection Supplementary Services. Shall be sent if received within the Forward Service Interaction Indicator in the Service Interaction Indicators Two from the IAM or previous CAMEL processing.

C Conditional (The IE shall be sent if applicable)

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

3GPP/SMG Meeting #13
Seattle, USA, 28 Aug - 1 Sep 2000

Document N2-000408
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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23.078	CR	206r1	Current Version:	3.5.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to: CN#9	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑	for information		non-strategic		

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

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

Source: N2 **Date:** 30 Aug 2000

Subject: GPRS location information in GPRSEventSpecificInformation

Work item: CAMEL phase 3

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: Location information was agreed in principle to be added in the IDP-GPRS operation. However, for scenario 1 it is vital to get the location information in ERB-GPRS operation, since the location may have changed between GPRS attach and PDP context establishment. Also the change of position should contain location.

The current stage 2 does not specify, in which EDP what information is needed.

Clauses affected:

Other specs affected:

Other 3G core specifications	X	→ List of CRs:	29.078-CR115 (tdoc N2-000374)
Other GSM core specifications		→ List of CRs:	
MS test specifications		→ List of CRs:	
BSS test specifications		→ List of CRs:	
O&M specifications		→ List of CRs:	

Other comments: Alcatel/Vodafone CRs 338 and 299 introduce the location information to IDP-GPRS. Lucent CRs N2-000280 and N2-000337 of the N2 Helsinki meeting require a separate CR. That will be in tdoc N2-000409 and in its successors.

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

6.6.1 gprsSSF to gsmSCF Information Flows

…..

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 3G 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~~C~~	This IE contains information specific to the reported event~~, e.g. new routeing area in case of change of position or charging id in case of PDP Context Establishment Acknowledgement~~.
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 3G TS 23.060.
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.

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	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 3G TS 23.060.
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.

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 3G TS 23.060.
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.

M Mandatory (The IE shall always be sent).

3GPP/SMG Meeting #13
Seattle, USA, 28 Aug - 1 Sep 2000

Document N2-000420
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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

23.078 **CR** **207r1** Current Version: 3.5.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to: CN#9 *list expected approval meeting # here ↑*

for approval [ ] for information [ ]

strategic [ ] non-strategic [ ] *(for SMG use only)*

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

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

Source: N2 **Date:** 31 Aug 2000

Subject: Removal of NPI check in DP Analyzed_Information

Work item: CAMEL phase 3

Category: *(only one category shall be marked with an X)*

F	Correction	[X]	**Release:**	Phase 2	[ ]
A	Corresponds to a correction in an earlier release	[ ]		Release 96	[ ]
B	Addition of feature	[ ]		Release 97	[ ]
C	Functional modification of feature	[ ]		Release 98	[ ]
D	Editorial modification	[ ]		Release 99	[X]
				Release 00	[ ]

Reason for change: The NPI check in DP3 was removed from stage 1 of CAMEL (22.078). The check shall be removed from stage 2 as well, since it cause more trouble than solves problems.

Clauses affected:

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

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

4.2 Detection Points (DPs)

4.2.1 Definition and description

….

4.2.1.2 Criteria

…

4.2.1.2.2 Criteria at DP Analysed_Information

4.2.1.2.2.1 General

The criteria for a mobile originating call are checked in the originating MSC. The criteria for a mobile forwarded call are checked in the forwarding MSC.

For early forwarded calls in the GMSC, the HLR shall always include the trigger criteria in the subscriber data sent to the GMSC. Reason is that the HLR can not check the criteria applicable at DP Analysed Info, since the number that the criteria check shall be based on, may be modified by a Mobile Terminating or Mobile Forwarding Service Logic for this call.

For optimally routed late forwarded calls, the MSC shall always include the trigger criteria in the RCH message sent to the GMSC. Reason is that the MSC can not check the criteria applicable at DP Analysed Info, since the number that the criteria check shall be based on, may be modified by a Mobile Terminating or Mobile Forwarding Service Logic for this call.

The following criteria are applicable for DP Analysed_Information:

- Destination number triggering criterion: The HLR may store a list of up to 10 destination numbers. There is no restriction on the nature of address. There is no restriction on the numbering plan indicator.

For MO calls, triggering at DP Analysed_Info shall be based on the called party number received over the access network.

For MF calls at the VMSC, triggering at DP Analysed_Info shall be based on the number received over the access network (the Deflected-to-Number in case of Call Deflection), the Forwarded-to-Number retained in the VLR, or the Destination Routing Address in the Connect operation from the SCF during a Mobile Terminated or Mobile Forwarded CAMEL Service.

For MF calls at the GMSC, triggering at DP Analysed_Info shall be based on the Forwarded-to-Number received from HLR, on the Destination Routing Address received in the Connect operation from SCF during a Mobile Terminated or Mobile Forwarded CAMEL Service, or on the Forwarded-to-Number received in the RCH message.

4.2.1.2.2.2 Removal of information significant to the serving entity

In order to decide whether triggering shall take place, the trigger criteria need to be compared with the address information. Before the comparison takes place the following information shall be removed from the destination address information:

- Operator specific service selection information that is recognised and treated locally in the serving entity. This shall not lead to a change of the type of number indicator of the address information.

- Carrier selection information. If the removal of carrier selection information also removes international or national (trunk) prefixes (depending on regulatory requirements), then the type of number indicator of the address information shall be changed to "international number" or "national (significant) number" respectively. Otherwise the type of number indicator shall remain unchanged.

The address information in a subsequent Initial DP message at DP Analysed_Info shall not contain the removed information, however in the further call handling the serving entity shall invoke the requested services (e.g. carrier selection).

4.2.1.2.2.3 Number comparison

The following procedure shall be performed for the comparison of the destination number triggering criterion and the address information in the given order.

1. The numbering plan indicators of both numbers are ~~compared~~ ignored. ~~The numbering plan indicators match if they are set to the same value or if one of the numbering plan indicators is set to "unknown". If there is no match of the numbering plan indicators then the destination number does not match the destination number triggering criterion. If there is a match of the numbering plan indicators the comparison procedure shall continue as follows.~~

2. The type of number indicators of both numbers are compared. If there is a match of the type of number indicator, then the check shall be performed by comparing the digits. If there is no match of the type of number the comparison procedure shall continue as follows.

3. If there are other type of number indicators present than "unknown", "national (significant) number" or "international number" then the destination number does not match the destination number triggering criterion. Otherwise the comparison procedure shall continue as follows.

4. If there is a number with type of number "unknown" this number shall be translated based on the numbering plan of the serving entity in either of the following ways:

   - if the leading digits refer to an international prefix, those digits shall be removed and the type of number shall be set to "international number".

   - if the leading digits refer to a national (trunk) prefix, those digits shall be removed and the type of number shall be set to "national (significant) number".

   If the leading digits refer neither to an international prefix nor to a national (trunk) prefix, then the destination number does not match the destination number triggering criterion.

   If there is a match of the type of number indicator after this number modification, then the check shall be performed by comparing the digits, otherwise the comparison procedure shall continue as follows.

5. If there is a number with type of number "national (significant) number" this number shall be translated based on the numbering plan of the serving entity to international format by adding the country code of the serving entity to the number string. After this modification both numbers shall be in international format and shall be checked by comparing the digits.

If the number digits of the address information are compared with the number digits of the destination number triggering criterion, then there is a match if:

- the destination number is at least as long as the destination number string of the destination number triggering criterion, and

- all the digits in the destination number string of the destination number triggering criterion match the leading digits of the destination number.

The check described in this section shall be repeated for every number contained in the destination number triggering criterion of the D-CSI until a match is recognised and DP Analysed_Info is triggered.

The procedures for the destination number triggering criterion check for the N-CSI are network specific.

The modifications of the address information described in this section shall be only be done for comparison purposes, i.e. they shall not affect the format of the destination address information sent in the Initial DP message.

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

CHANGE REQUEST

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23.078	CR	208r2	Current Version:	3.5.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to: CN#9	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑	for information		non-strategic		

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

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

Source: N2 **Date:** 31 Aug 2000

Subject: SDL modelling and overlapping dialogue case

Work item: CAMEL phase 3

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: The GPRS_Dialogue_Handler Process is not covered by the SDL modell.
The overlapping dialogue case will be presented also in GPRS_Dialogue_Handler Process.

Clauses affected: 6.5.1 and 6.5.3.2

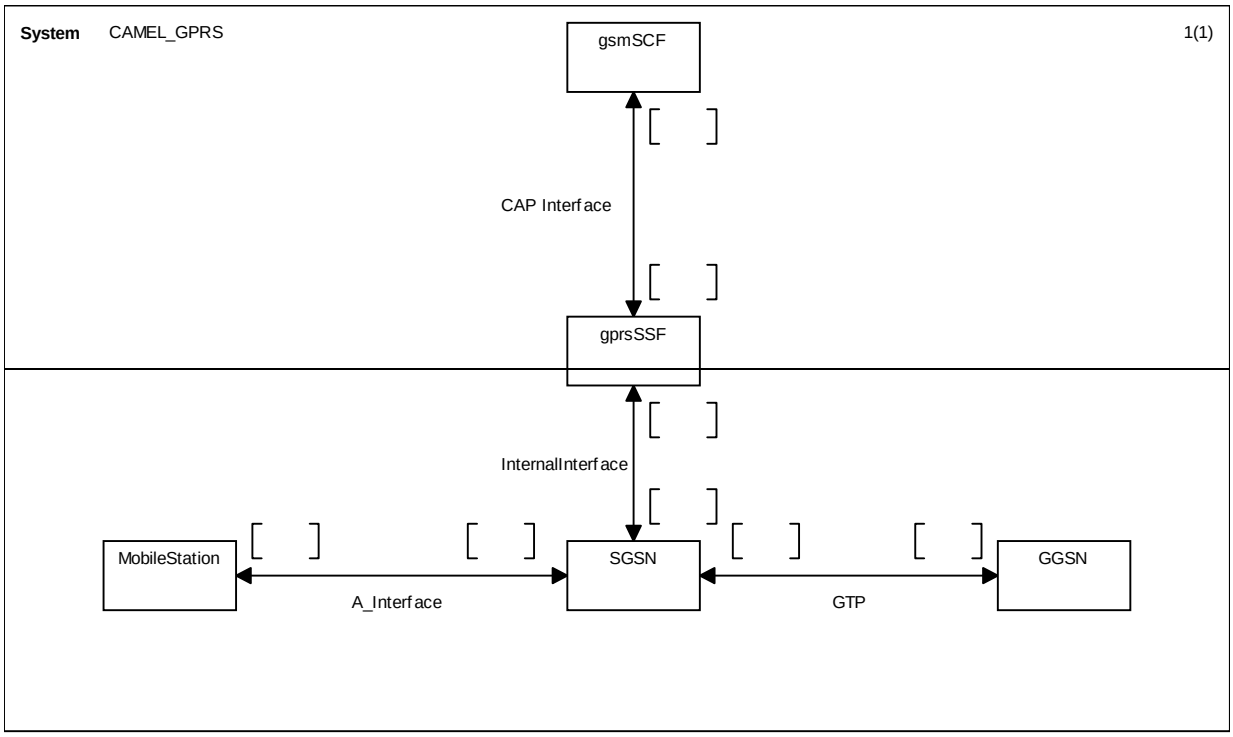
Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

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

6.5.1 Overall SDL Architecture



~~**Figure 6.7: Architecture for CAMEL/GPRS interworking**~~

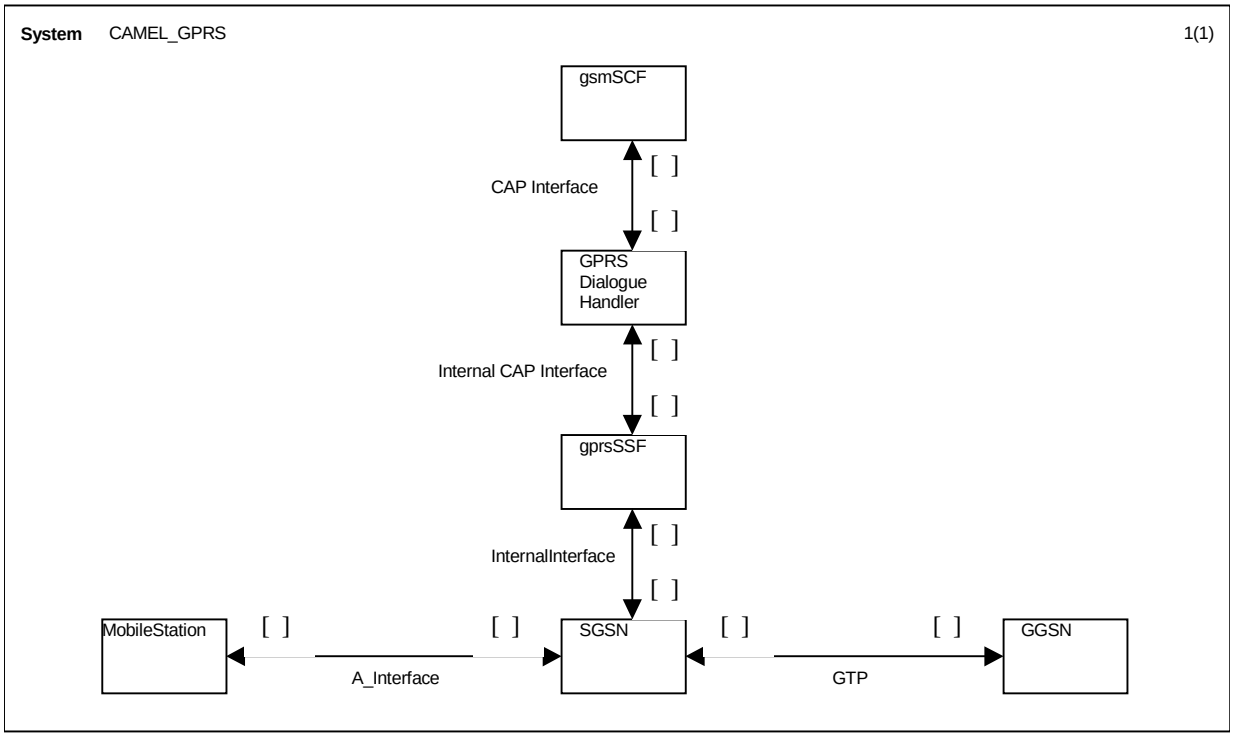
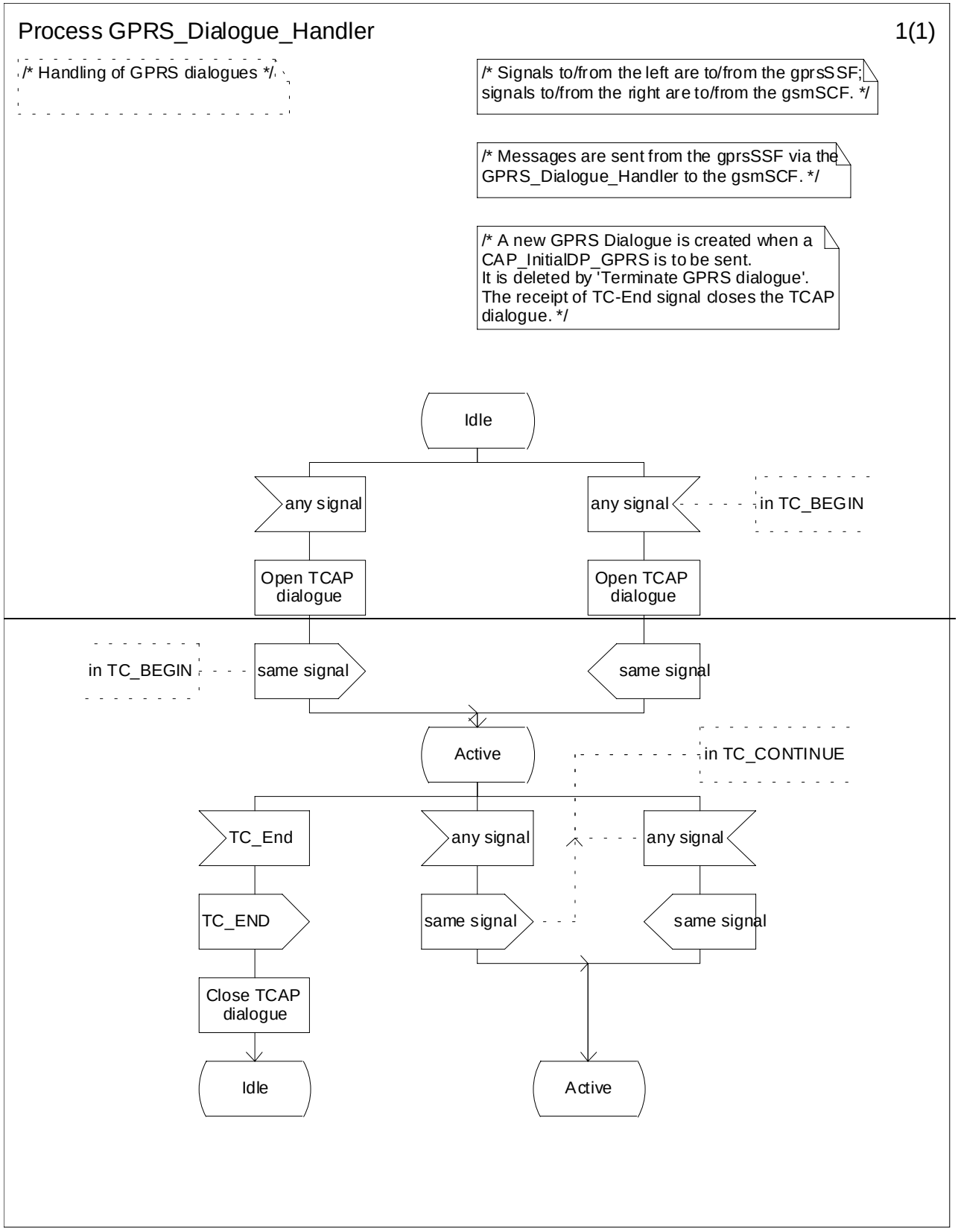


Figure 6.7: Architecture for CAMEL/GPRS interworking

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



~~Figure 6.18a: Process GPRS_Dialogue_Handler (sheet 1)~~

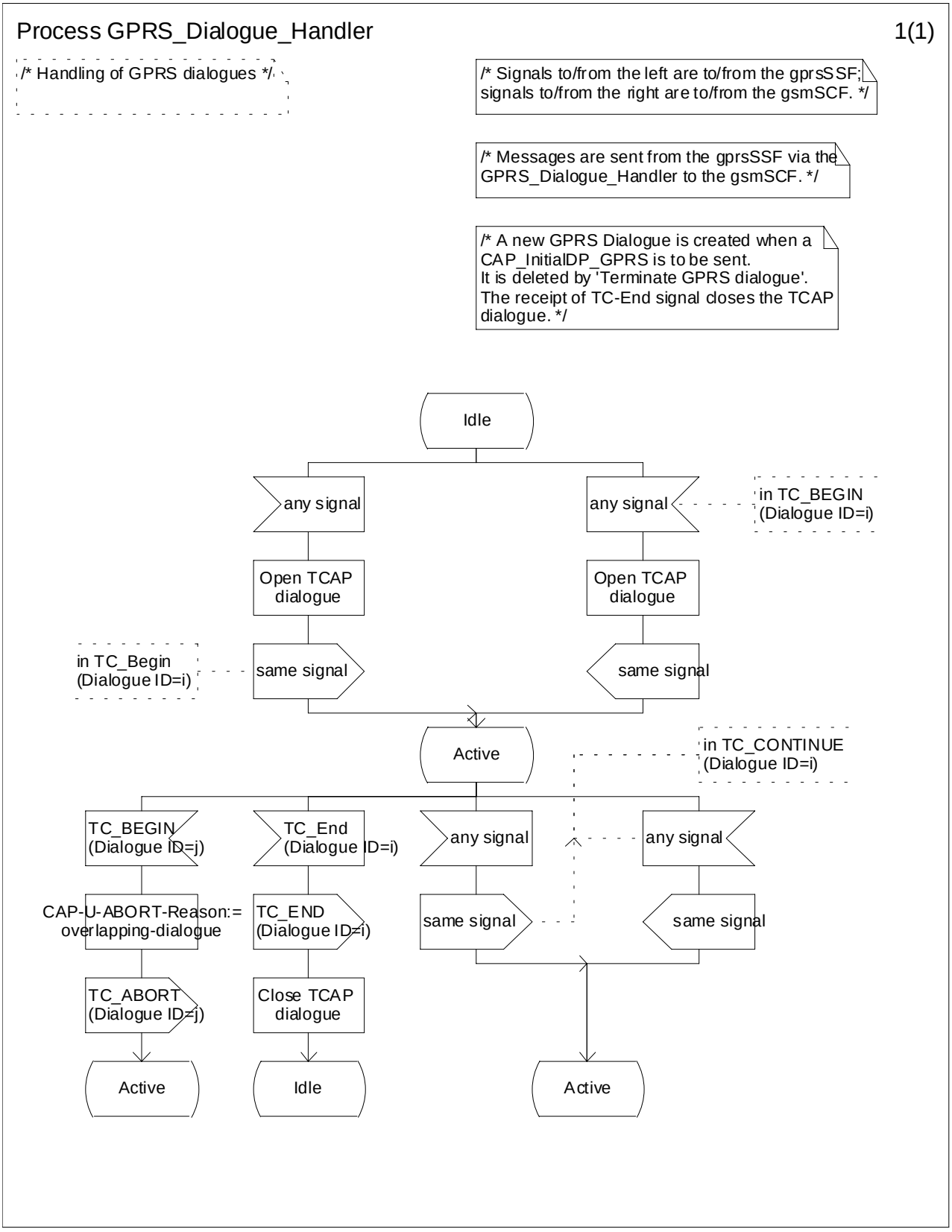


Figure Error! Reference source not found.**.3a: Process GPRS_Dialogue_Handler (sheet 1)**

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Document N2-000380
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

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23.078	CR	209	Current Version:	3.5.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	CN#9	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

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

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

Source: N2 **Date:** 24 August 2000

Subject: Correction CAMEL_MT_GMSC_INIT

Work item: CAMEL Phase 3

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: The output 'Result=FTN' in the procedure CAMEL_MT_GMSC_INIT (sheet 7) shall be changed to 'Result=GSM_FTN', in line with CR 23.078-091r1 approved at CN#7.

Clauses affected: 4 (Figure 4.30g: Procedure CAMEL_MT_GMSC_INIT (sheet 7))

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

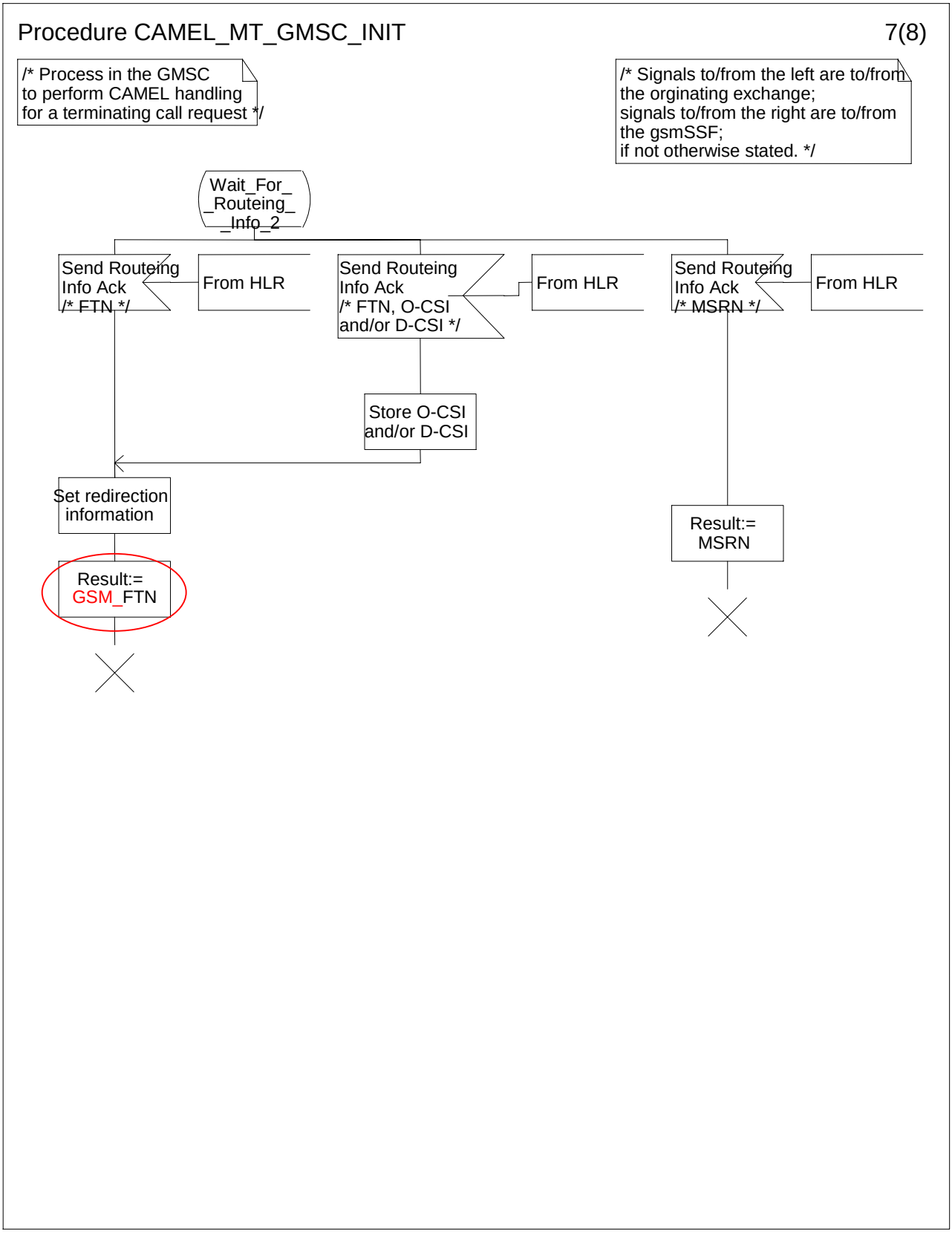

Figure 4.30g: Procedure CAMEL_MT_GMSC_INIT (sheet 7)

3GPP TSG-N2
Seattle, USA, 28 Aug - 1 Sep 2000

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CHANGE REQUEST

23.078	CR	213r1	Current Version:	3.5.0

For submission to: CN#9 | for approval [X] | for information [ ] | strategic [ ] | non-strategic [ ]

Proposed change affects: (U)SIM [ ] ME [ ] UTRAN / Radio [ ] Core Network [X]

Source: N2 **Date:** 28 August 2000

Subject: Corrections to MO-SMS SDL's

Work item: CAMEL Phase 3

Category:

F	Correction	[X]	
A	Corresponds to a correction in an earlier release	[ ]	
B	Addition of feature	[ ]	
C	Functional modification of feature	[ ]	
D	Editorial modification	[ ]	

Release:

Phase 2	[ ]
Release 96	[ ]
Release 97	[ ]
Release 98	[ ]
Release 99	[X]
Release 00	[ ]

Reason for change: See 'Other comments'.

Clauses affected: 7.5.2

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

The following errors are corrected in this CR.

- Sect 7.5.2 shall explain the behaviour of the MSC/SGSN when the radio link is lost. It shall also be described what the MSC/SGSN shall do in the case of no reply from the SMSC.
- Figure 1a: The reception of the Int_Error shall be removed from the SDL. When the Int_Error signal is received in this state of CAMEL_O_SMS_INIT Procedure, the gprsSSF has not yet been invoked; no CAMEL handling is applicable in this case.
- Figure 1a: The signal Int_O_SMS_Failure does not denote a 'SMS Submission Failure'. The SM was not yet submitted to the SMSC. To prevent confusion with the signal in e.g. figure 2, this signal shall be remamed to 'Int_SMS_Failure'.
- Figure 1c. When the MSC/SGSN is in state DP_SMS_Collected_Info then the Short Message has not yet been sent to the SMSC. If at that moment A_MM_Release or A_LL_Release occurs, then the resulting signal to the SMS_SSF shall therefore not indicate 'SM Submission Failure'. Instead, the signal shall indicate a SMS Process failure; the signal name shall

therefore be ‘Int_SMS_Failure’. See also correction to figure 1a.

- Figure 2: When the EDP is not armed or is armed as EDP-N, the SMS_SSF shall return Int_Continue. This signal must therefore be received here.

- Figure 3: See correction on figure 2.

- Figure 4a: Right branche. These signals can not be received here.
  The signals Int_O_SMS_Failure and Int_O_SMS_Submitted are sent by the MSC or SGSN to SMS_SSF only in the case that the SMS_SSF has been invoked. In that case, the SMS_SSF has made already a transition to state WFR, WFI and Monitoring.
  If the SMS_SSF transits to Idle in DP SMS_Collected_Info, then the SMS_SSF is no longer invoked and the MSC/SGSN will not send these signals to SMS_SSF.

- Figure 4b. When the gprsSSF is in state WFR, it can receive signal Int_SMS_Failure. This signal is sent by the MSC/SGSN from figure 1a. It is sent in the case that A_MM_Release or A_LL_Release occurs before the MSC/SGSN received the Int_SMS_SSF_Invoked signal from the gprsSSF. SMS_SSF has not yet invoked the CAMEL service, it shall therefore go to Idle.

- Figure 4b: Correction to Tssf task box.

- Figure 4c: Correction in operation name; correct name in the SDL is ‘CAP_Reset_Timer_SMS’.

- Figure 4d: The verification of the data received in CAP_Request_Report_SMS_Event is described in the procedures. It doesn’t have to be modelled in the SDL.

- New figure added. SMS_SSF has sent CAP_InitialDPSMS to the gsmSCF and is in state WFI. A_MM_Release or A_LL_Release occurs (see figure 1c). The MSC/SGSN sends signal ‘Int_SMS_Failure’ to process SMS_SSF.
  SMS_SSF shall terminate the dialogue (‘Application_End’). It may have received charging data already, so it shall close the CDR first.

- Figure 4e: ‘Override’ shall be ‘Overwrite’. The final state can only be WFI.

- Figure 4f: When the DP is not armed or is armed as EDP-N, SMS_SSF shall send ‘Int_Continue’ to the calling procedure (CAMEL_O_SMS_Failure or CAMEL_O_SMS_Submitted in resp. figure 2 and 3). Otherwise these procedures would be left hanging.
  If the event is not armed, then an ‘Application_End’ shall be sent to the gsmSCF to terminate the service logic.
  If the event is armed as EDP-R, then the Tssf shall be restarted.

- Figure5: There may be at the most one CAMEL logical SMS record. The text in the task box has been corrected in line with the above.

7.5.2 Handling of mobile originating SMS

7.5.2.1 Handling of mobile originating SMS in the originating MSC/SGSN

The functional behaviour of the originating VMSC/SGSN is specified in ~~3G TS 23.018 [3]~~3G TS 29.002 [4] and~~,~~ 3G TS 23.060 [11]. The procedures specific to CAMEL are specified in this subclause:

- Procedure CAMEL_O_SMS_INIT;
- Procedure CAMEL_O_SMS_SUBMITTED;
- Procedure CAMEL_O_SMS_FAILURE.

7.5.2.1.1 Actions of the VMSC/SGSN on receipt of Int_Error

The MSC/SGSN checks the default SMS Handling parameter in SMS-CSI.

If the default SMS handling is release SM, a A_RP_ERROR is sent to the MS. The MSC/SGSN then releases all resources and the procedure CAMEL_O_SMS_INIT ends.

If the default SMS handling is continue SMS submission, the MSC/SGSN continues processing without CAMEL support.

7.5.2.1.2 Actions of the MSC/SGSN on receipt of Int_Continue_SMS

The MSC/SGSN continues processing with modified SM parameters. The MSC/SGSN shall transparently modify the SMS parameters with the received information. Parameters which are not included in the Int_Continue_SMS message are unchanged.

7.5.2.1.3 Actions of the MSC/SGSN on receipt of Int_Connect_SMS

The MSC/SGSN continues processing with modified SM parameters. The MSC/SGSN shall transparently modify the SMS parameters with the received information. Barring is checked with the modified parameters. Parameters which are not included in the Int_Connect_SMS message are unchanged.

7.5.2.1.4 Actions of the MSC/SGSN on receipt of Int_Release_SMS

A A_RP_ERROR is sent to the MS and SMS is deleted. The SMS cause received in the Int_Release_SMS is used. The MSC/SGSN then releases all resources and the procedure CAMEL_O_SMS_INIT ends.

7.5.2.2 Handling of A_MM_Release and A_LLC_Release

If the radio link with the subscriber is lost during the handling of a CAMEL procedure in the MSC/SGSN, then the MSC/SGSN sends signal A_MM_Release_ind or A_LLC_Release_ind to that procedure. This results in the termination of that CAMEL procedure. (Refer to 3G TS 29.002 [4] for details.)

7.5.2.3 Handling of time-out from SMSC

If the MSC/SGSN does not receive a confirmation from the SMSC after submission of a Short Message, then the MSC/SGSN calls procedure CAMEL_O_SMS_FAILURE. (Refer to 3G TS 29.002 [4] for details.)

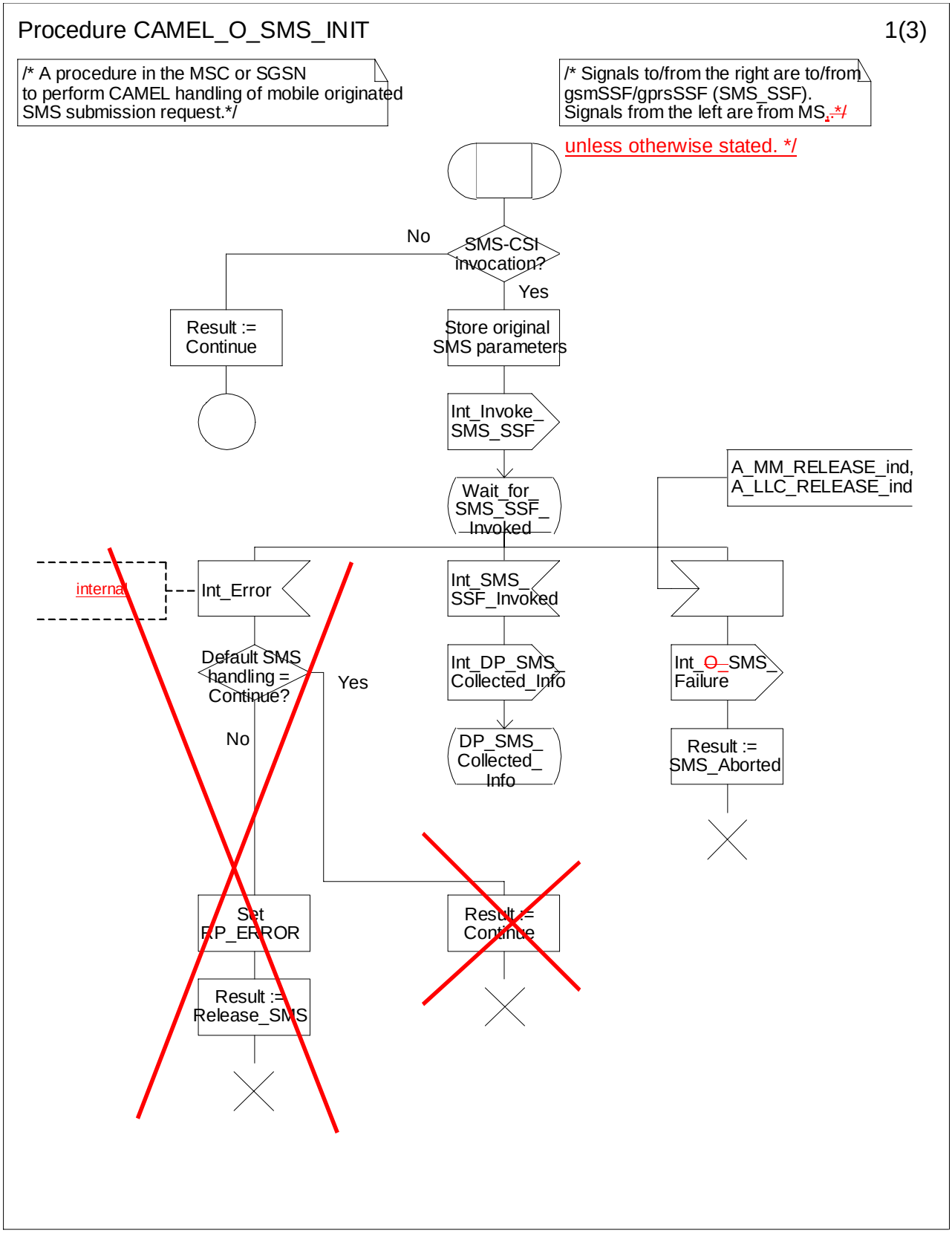

Figure Error! Reference source not found..**1 a: Procedure CAMEL_O_SMS_INIT (sheet1)**

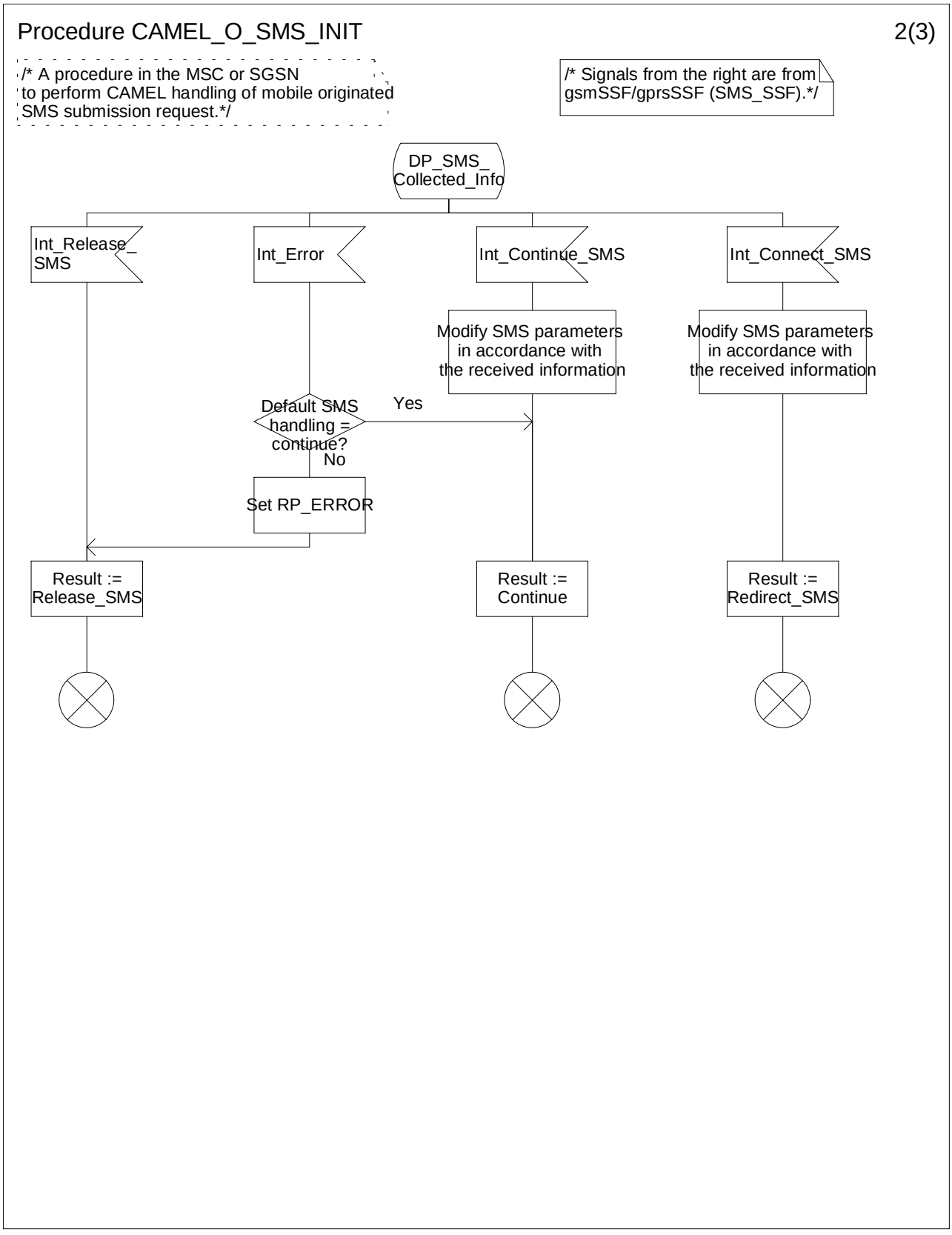

Figure Error! Reference source not found..1 **b: Procedure CAMEL_O_SMS_INIT (sheet2)**

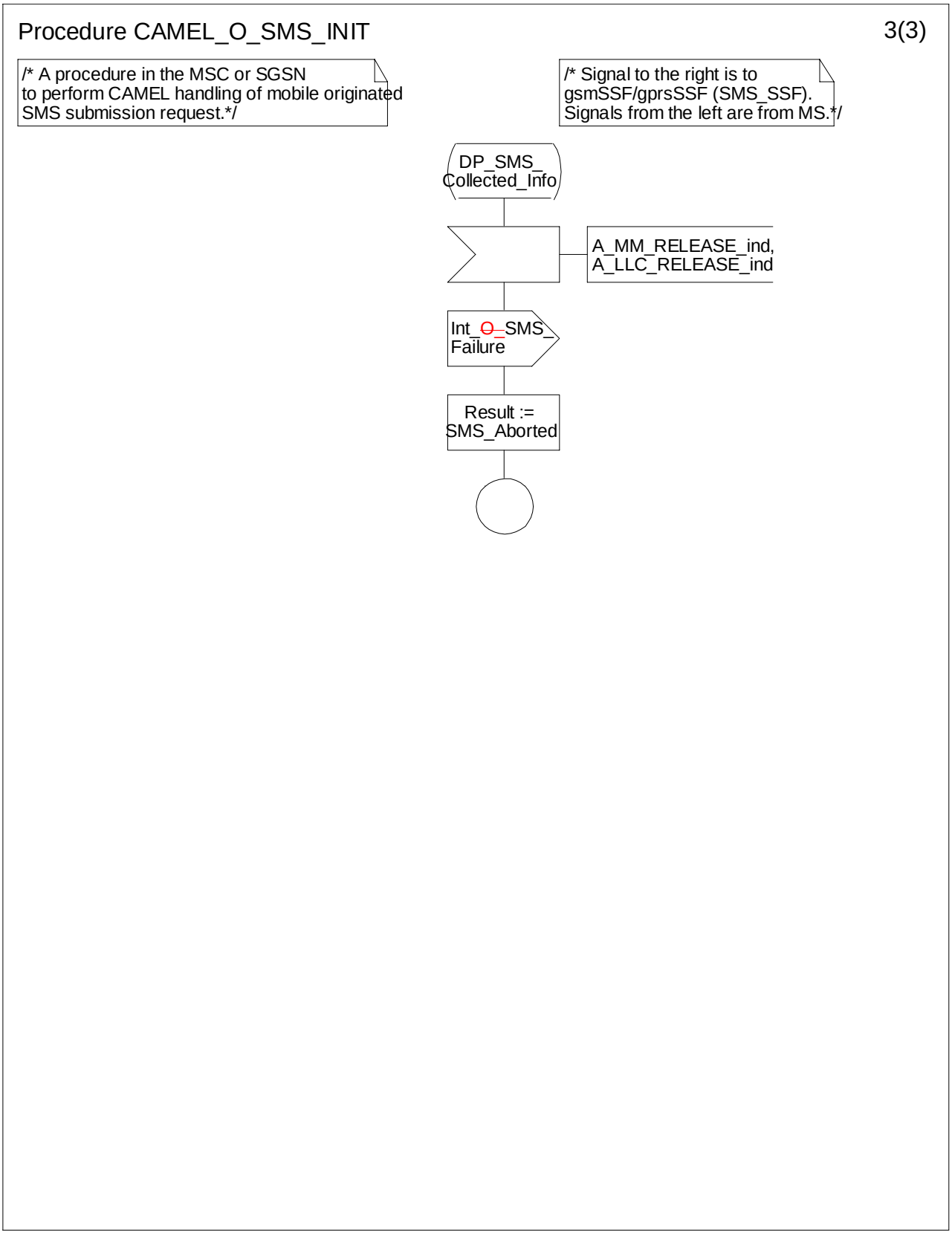

Figure Error! Reference source not found..1 **c: Procedure CAMEL_O_SMS_INIT (sheet3)**

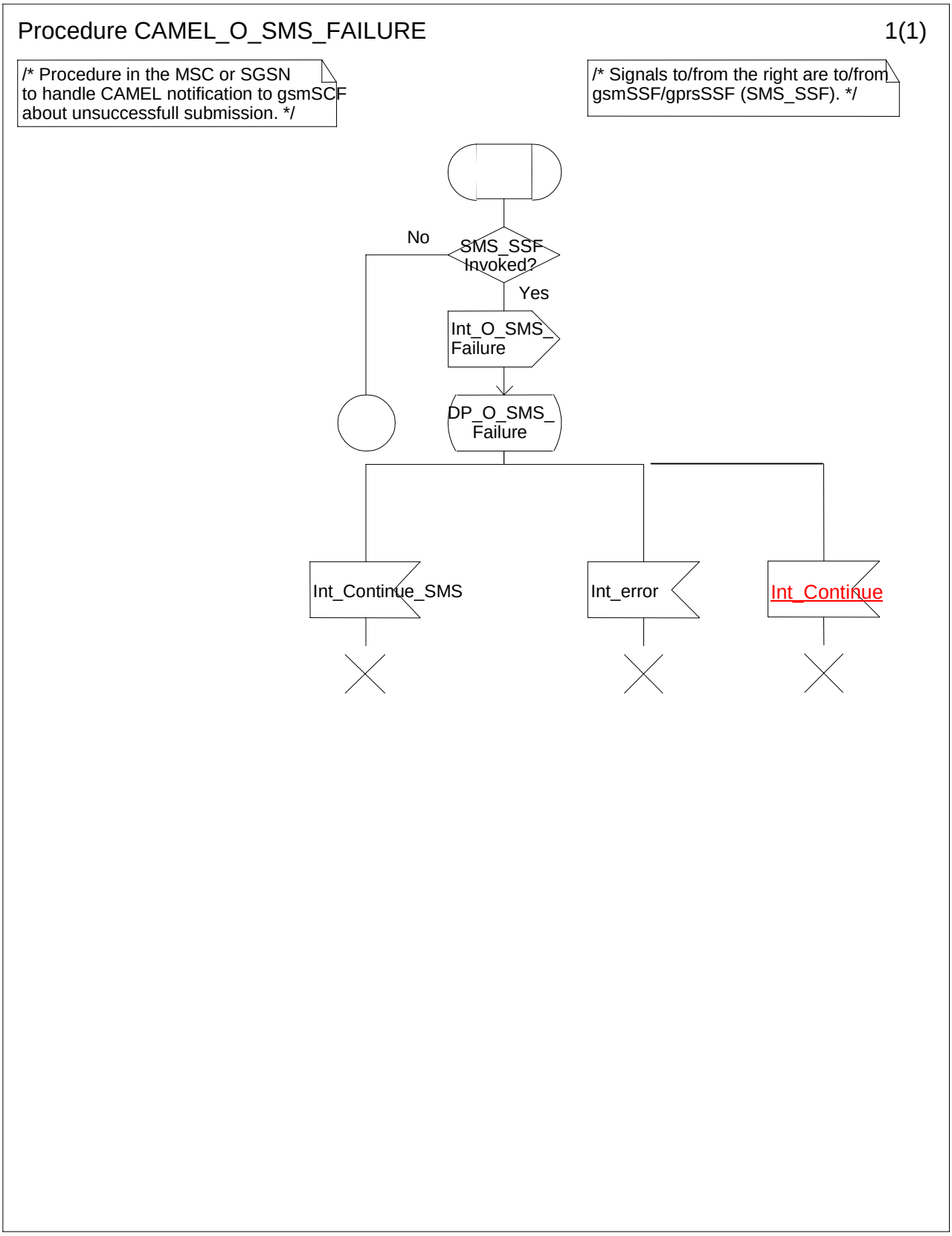

Figure Error! Reference source not found.**.2: Procedure CAMEL_O_SMS_FAILURE (sheet1)**

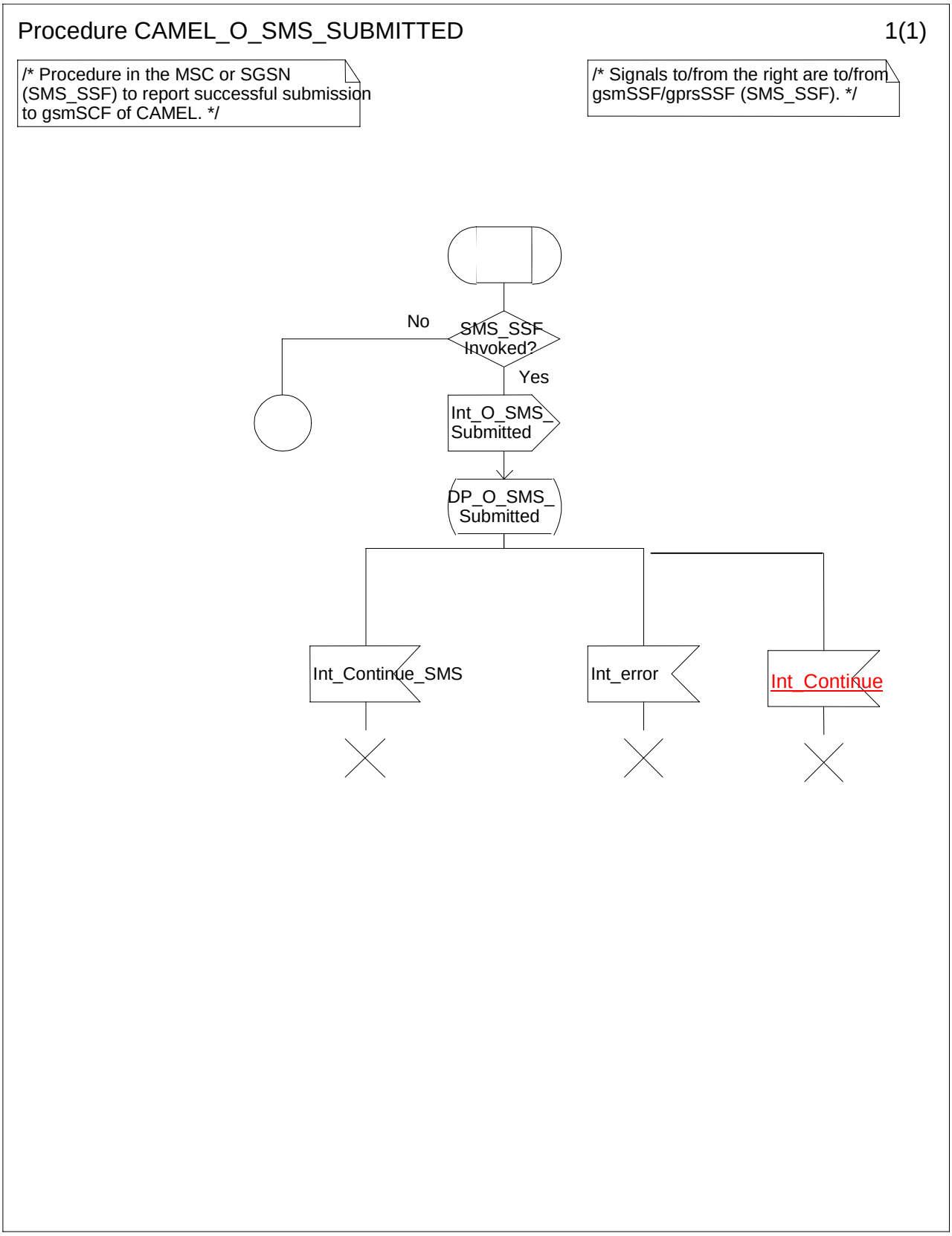

Figure Error! Reference source not found..**3: Procedure CAMEL_O_SMS_SUBMITTED (sheet1)**

7.5.3 Handling of mobile originating SMS in the gsmSSF/gprsSSF

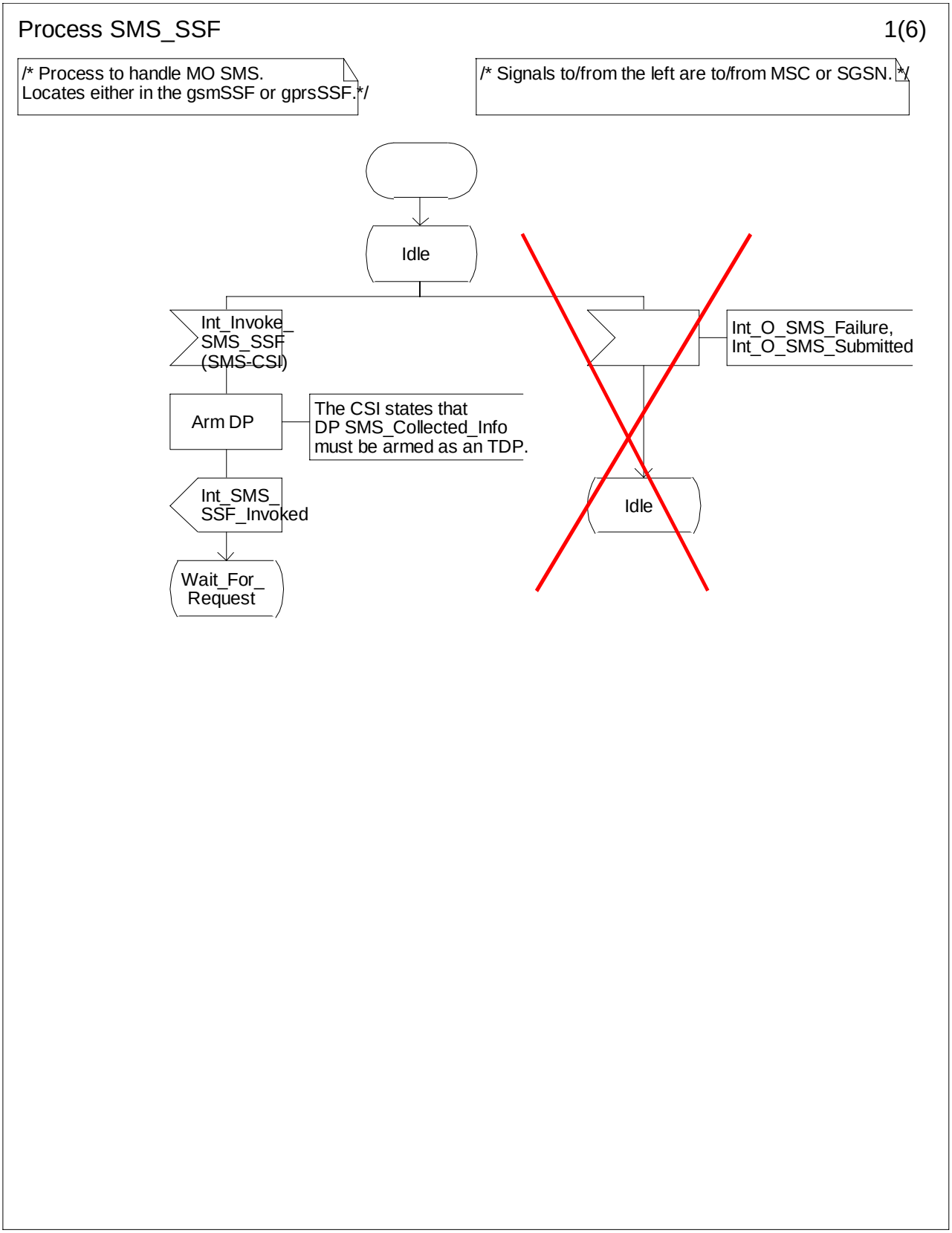

Figure Error! Reference source not found..**4 a: Process SMS_SSF (sheet 1)**

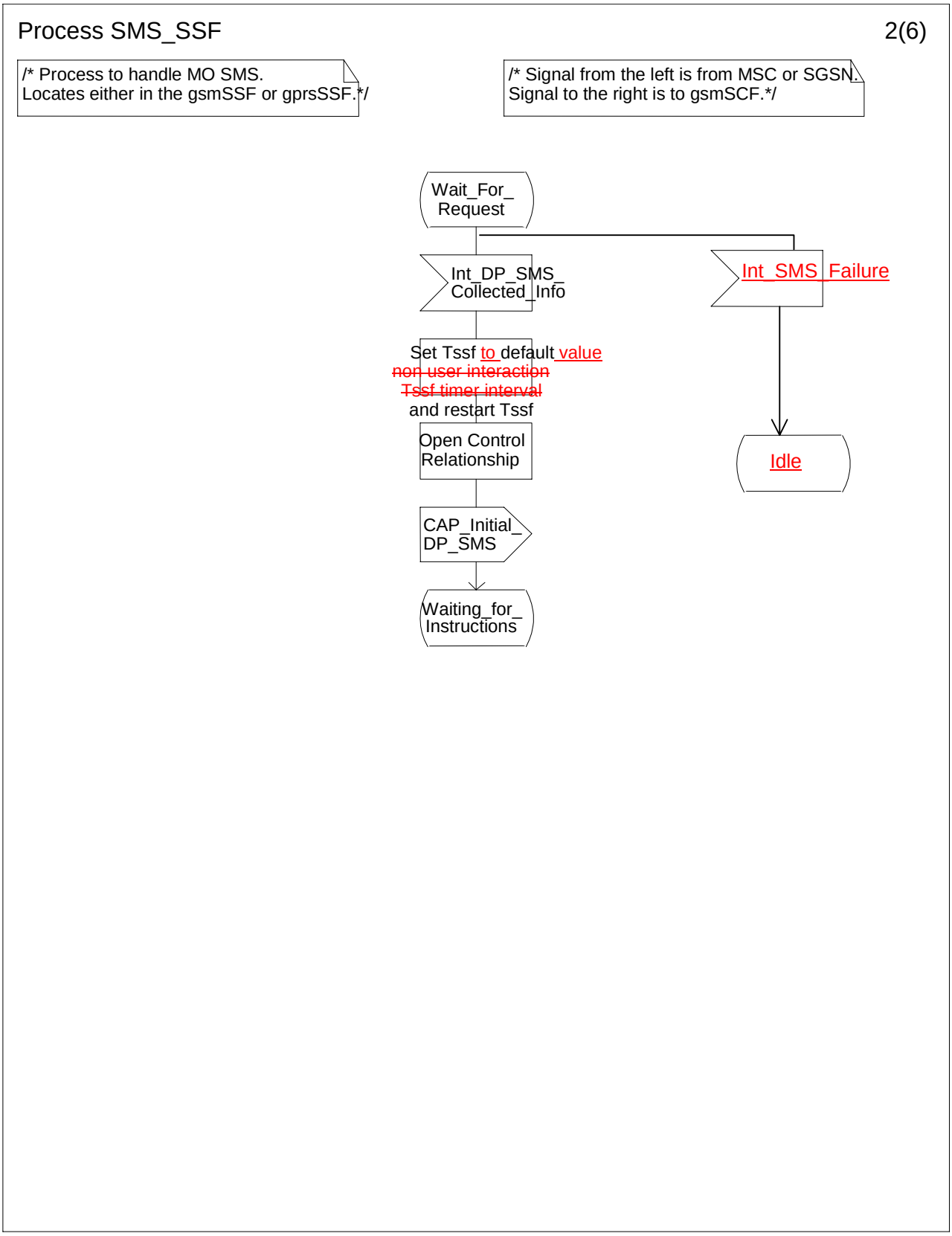

Figure Error! Reference source not found..4 **b: Process SMS_SSF (sheet 2)**

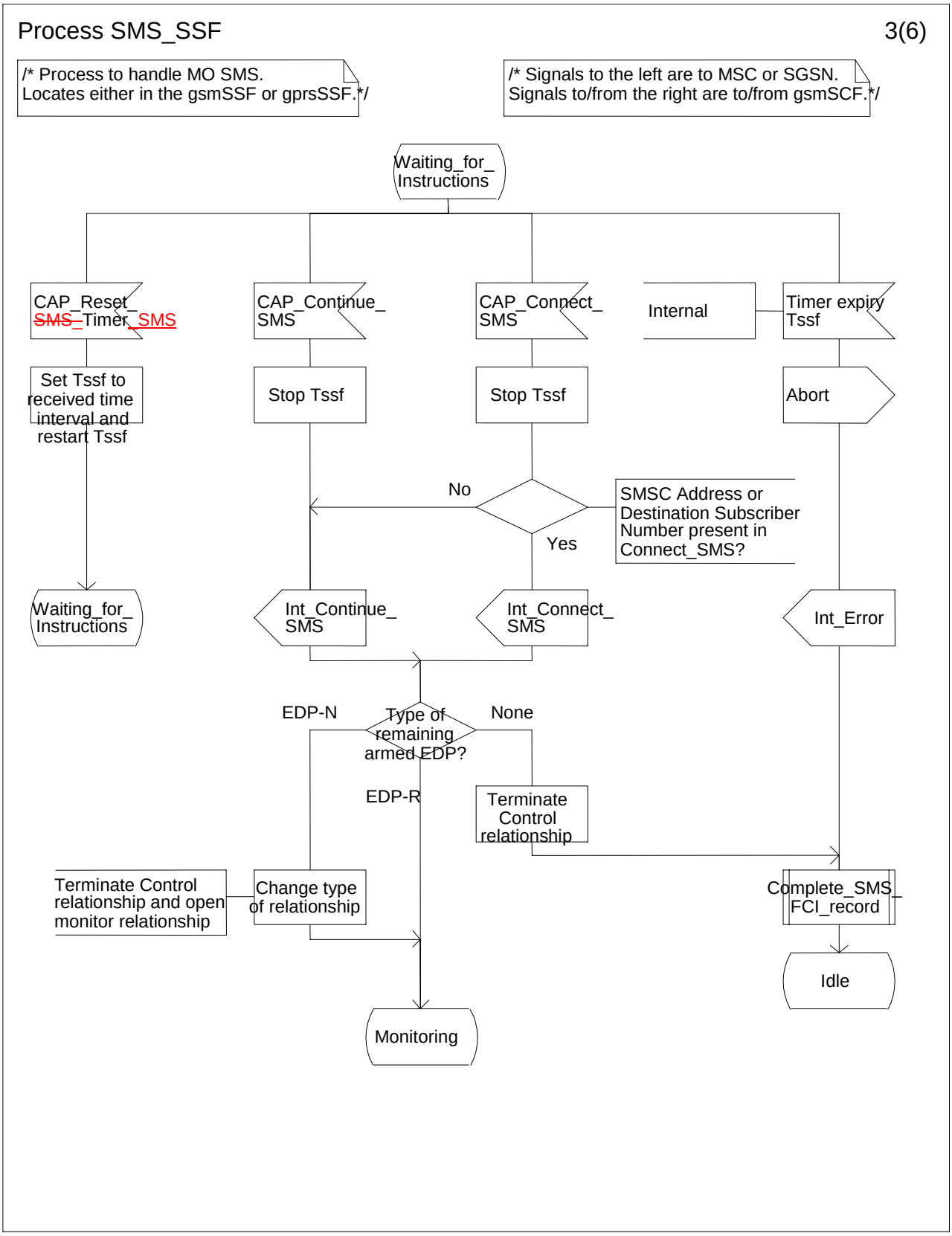

Figure Error! Reference source not found..4 **c: Process SMS_SSF (sheet 3)**

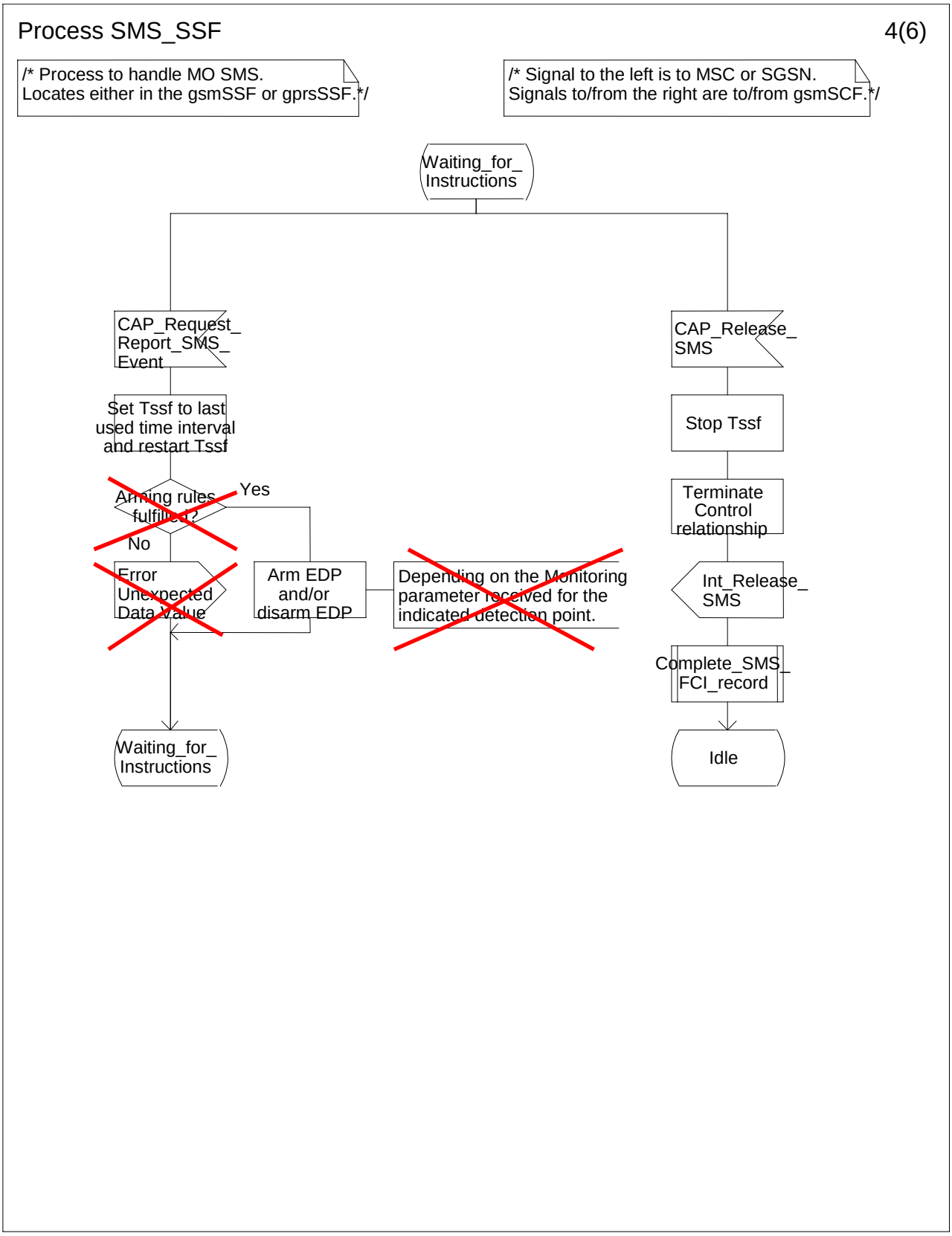

Figure Error! Reference source not found..4 **d: Process SMS_SSF (sheet 4)**

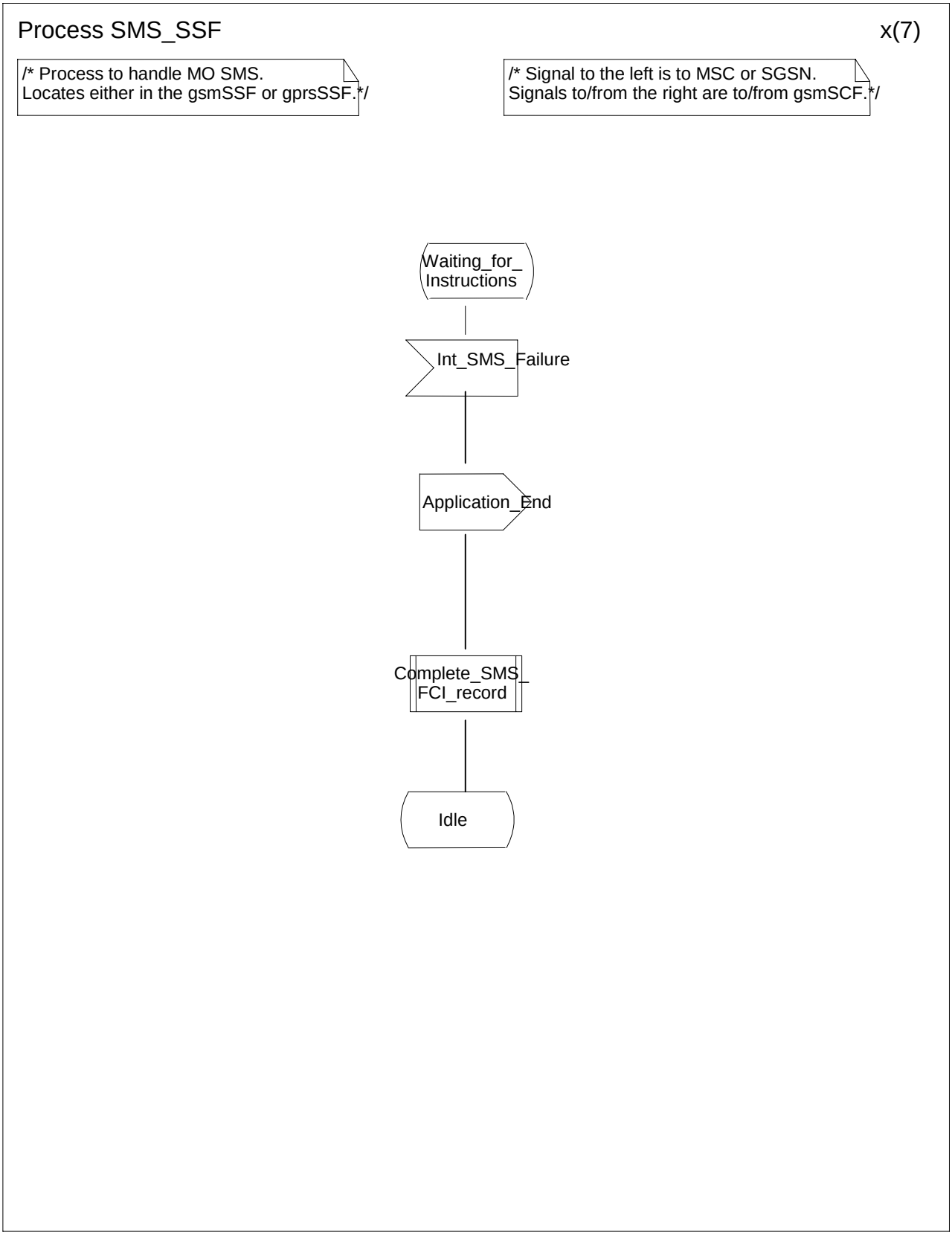

Figure Error! Reference source not found..4 **x: Process SMS_SSF (sheet x)**

New Figure

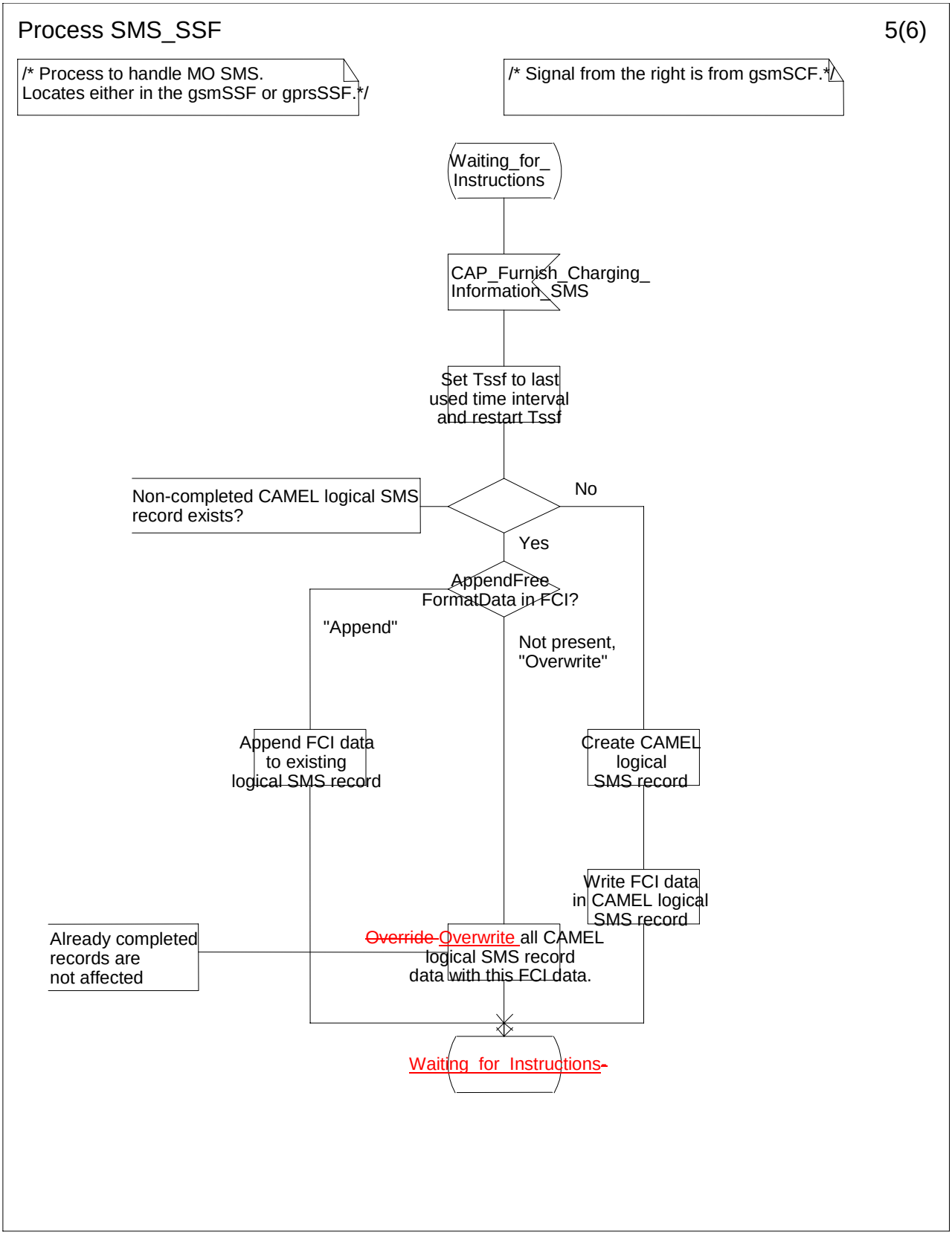

Figure Error! Reference source not found..4 **e: Process SMS_SSF (sheet 5)**

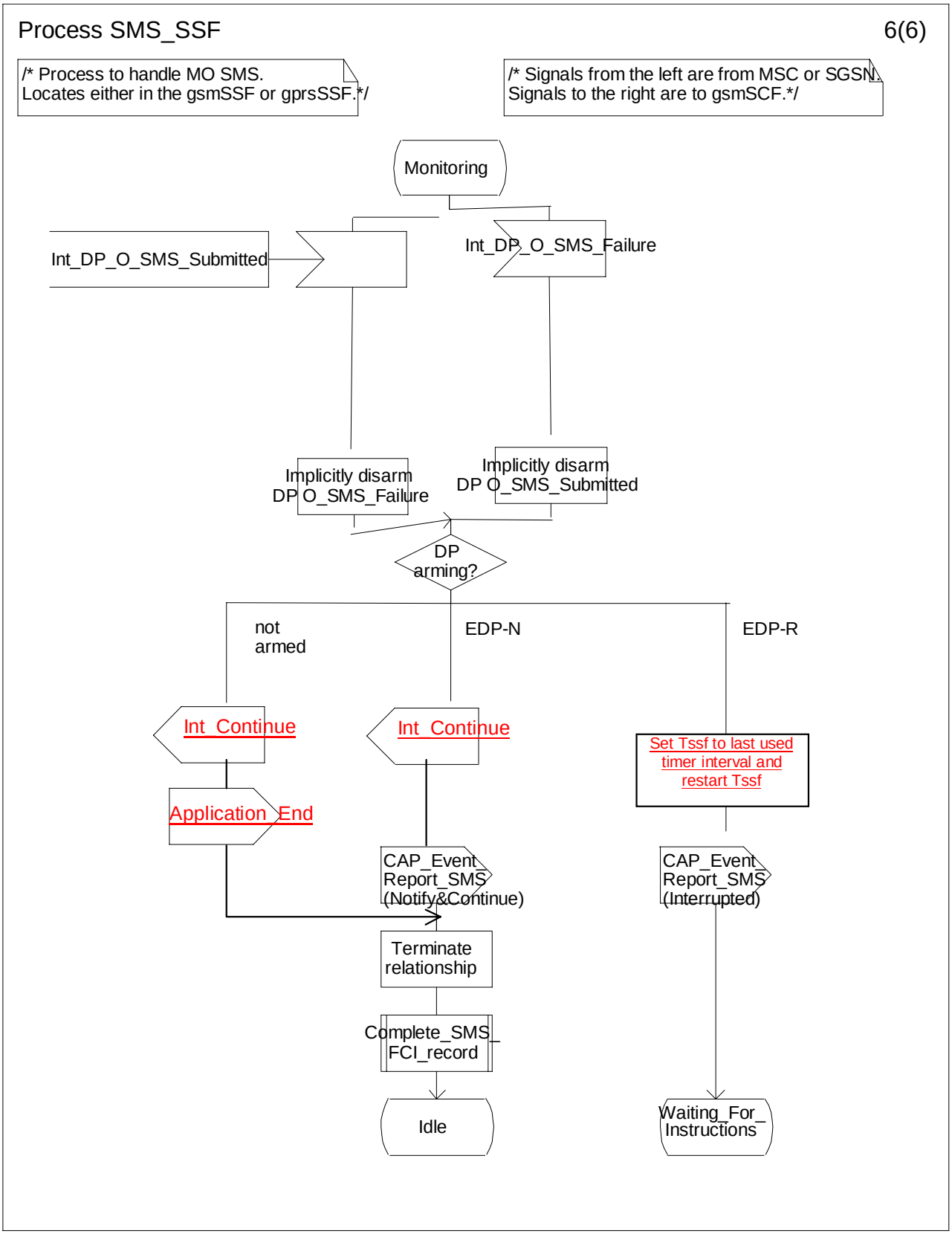

Figure Error! Reference source not found..4 **f: Process SMS_SSF (sheet 6)**

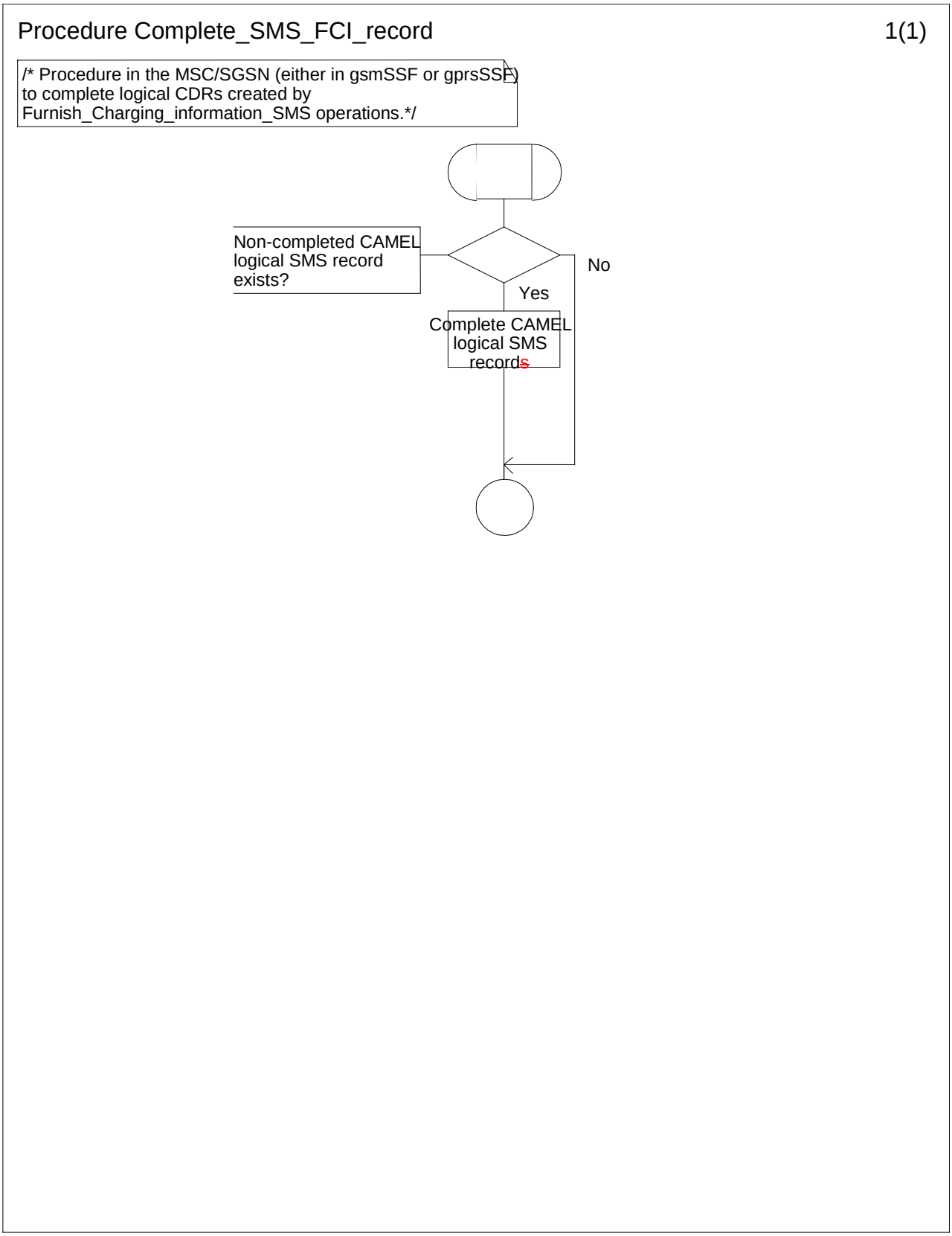

Figure Error! Reference source not found.**.5: Procedure Complete_SMS_FCI_record (sheet 1)**

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

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Seattle, USA, 28 August- 1st Sept2000

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or for SMG, use the format P-99-xxx

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23.078	CR	215	Current Version:	3.5.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to:	CN#9	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

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

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

Source: N2 **Date:** 2nd August 2000

Subject: Correction to description of DP Collected_Info

Work item: CAMEL Phase 3

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

Reason for change: The description associated with DP Collected Information still referees to CSE initiated calls. CSE initiated calls were removed form the scope of CAMEL Phase 3.

Clauses affected: 4.4.2.1

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

Other comments:

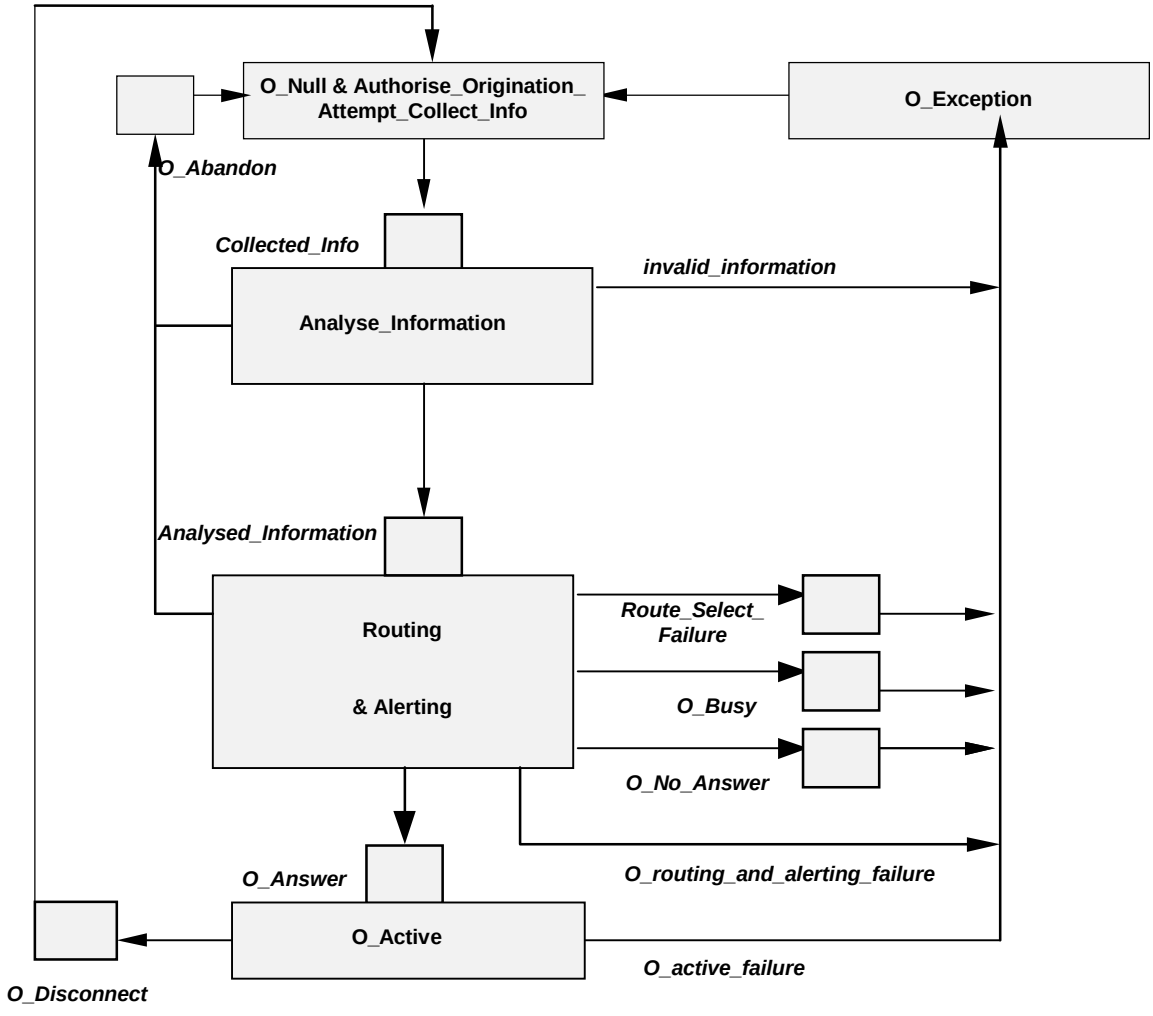
<--------- double-click here for help and instructions on how to create a CR.

— First Modified section —

4.4.2 Originating Basic Call State Model (O-BCSM)

4.4.2.1 Description of O-BCSM

The O-BCSM is used to describe the actions in an MSC during originating (MSC) or forwarded (MSC or GMSC) calls.
When encountering a DP the O-BCSM processing is suspended at the DP and the MSC/GMSC indicates this to the gsmSSF which determines what action, if any, shall be taken in case the DP is armed.



NOTE: The *O_Busy* DP includes also the 'not reachable' case.

Figure Error! Reference source not found..**1: Originating BCSM for CAMEL**

The following table defines the different DPs which apply to mobile originating and forwarded calls.

Table 4.1: Description of O-BCSM DPs in the MSC

CAMEL Detection Point:	DP Type	Description:
DP Collected_Info	TDP-R	Indication that the O-CSI is analysed. ~~This DP is also used for gsmSCF initiated call setup. In this case the DP is neither triggered nor reported.~~
DP Analysed_Information	TDP-R (note 2)	Availability of routeing address and nature of address.
DP Route_Select_Failure	TDP-R (note 3), EDP-N, EDP-R	Indication that the call establishment failed
DP O_Busy	EDP-N, EDP-R	Indication that: - a busy indication is received from the terminating party, - a not reachable event is determined upon a cause IE in the ISUP release message.
DP O_No_Answer	EDP-N, EDP-R	Indication that: - an application timer associated with the O_No_Answer DP expires, - a no answer event is determined upon a cause IE in the ISUP release message.
DP O_Answer	EDP-N, EDP-R	Indication that the call is accepted and answered by the terminating party.
DP O_Disconnect	EDP-N, EDP-R	A disconnect indication is received from the originating party or from the terminating party.
DP O_Abandon	EDP-N, EDP-R	Indication that a disconnect indication is received from the originating party during the call establishment procedure

NOTE 1: The DPs are defined in ITU-T Q.1224 ([6]).
NOTE 2: For TDP-R Analysed_Information new relationship to gsmSCF is opened.
NOTE 3: DP Route_Select_Failure shall be reported as TDP-R when there is no relationship to gsmSCF. If a relationship to gsmSCF is already open, it shall be reported as EDP-R or EDP-N if armed so.

3GPP TSG-N2 #4
Seattle, USA, 28 Aug - 1 Sep 2000

Tdoc 3GPP N2-00 0440

CHANGE REQUEST

23.078	CR	216r1	Current Version:	3.5.0

For submission to: CN#9 | for approval [X] | for information [ ] | strategic [ ] | non-strategic [ ]

Proposed change affects: (U)SIM [ ] ME [ ] UTRAN / Radio [ ] Core Network [X]

Source: N2 **Date:** 30 August 2000

Subject: Introduction of Guard Timer for GPRS TC dialogue handling

Work item: CAMEL Phase 3

Category:

F	Correction	[X]
A	Corresponds to a correction in an earlier release	[ ]
B	Addition of feature	[ ]
C	Functional modification of feature	[ ]
D	Editorial modification	[ ]

Release:

Phase 2	[ ]
Release 96	[ ]
Release 97	[ ]
Release 98	[ ]
Release 99	[X]
Release 00	[ ]

Reason for change:

The present CR introduces a guard timer in the GPRS TC dialogue handling. This guard timer is a mechanism by means of which the gprsSSF can decide when to close a TC dialogue. This mechanism is needed to ensure that the gsmSCF can respond with an Apply Charging operation when it has received an Apply Charging Report operation, without having to open a new TC dialogue.
At the same time, the gprsSSF does not have to keep the TC dialogue open longer than needed.

This mechanism resolves the problem that the gprsSSF does not know when to close the TC dialogue.

The TC guard timer is introduced in accordance with the following principles:

1. There shall be a single guard timer in the gprsSSF.
2. When the gprsSSF sends an Apply Charging Report GPRS operation with the SessionActive or ContextActive variable set to TRUE, then the gprsSSF shall start the guard timer.
3. For every Apply Charging Report GPRS operation with the SessionActive or ContextActive variable set to TRUE, the gprsSSF shall set a marker for the Session or that PDP Context that an Apply Charging GPRS operation or Release GPRS operation is expected.
4. When the gprsSSF sends a Volume report and a Time report for a PDP Context, then the gprsSSF shall mark for that PDP Context that two Apply Charging GPRS operations or a single Release GPRS operation is expected.

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

6. When an event occurs that results in the termination of a PDP Context, then the 'Waiting-for-AC' markings for that PDP Context shall be removed. The gprsSSF shall then check if the guard timer shall be stopped: the guard timer shall be stopped if there are no more Apply Charging GPRS operations expected for the Session and all PDP Contexts.

7. When an Apply Charging Report operation is sent due to timer or counter expiry or due a change in PDP Context Quality of Service, then no TC_End request primitive shall be sent to the GPRS Dialogue Handler. The TC dialogue shall in that case not be closed before the corresponding Apply Charging operations have been received or the guard timer has expired.

8. When the guard timer expires in state Monitoring, then the gprsSSF shall close the TC dialogue, provided that all conditions for closing a TC dialogue have been fulfilled at that moment.
   When the guard timer expires in state Waiting_for_Instructions, then no action is taken. The TC dialogue will be closed when the gprsSSF transits to state Monitoring and the other conditions for closing a TC dialogue have been fulfilled.

Clauses affected: 6.5.3.A (new), 6.5.3.B (new), 6.5.3.2

Other specs affected:

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

Other comments:

Tdoc N2-000438 (CR 23.078-194r3) specifies changes required in sheet 15 of Process GPRS_SSF: the insertion of a check box before calling procedure Handle_ACR_GPRS and the sending of the TC_End primitive after the procedure call.

With the introduction of a guard timer for TC dialogue termination, the above mentioned additions are not needed. When procedure Handle_ACR_GPRS is called due to a change in QoS of a PDP Context, then the TC dialogue shall not be closed before the guard timer expires or the corresponding Apply Charging GPRS operations from gsmSCF have been received.
Therefore, the TC_End primitive is not needed in this sheet, and hence, the check box can also be removed.

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

6.5.3.A TC guard timer

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

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

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

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

Service Designers should note that if the gsmSCF does not send an Apply Charging GPRS or Release GPRS in response to an Apply Charging Report when the gprsSSF is awaiting such response, service behaviour may be unpredictable, unless the gprsSSF releases the PDP Context or Session involved.

6.5.3.B Check guard timer

This clause describes the actions to be taken in the task box 'Check guard timer'.

The tasks to be executed in the 'Check guard timer' box depend on the event that resulted in execution of the task box.

Apply Charging GPRS

If 'Check guard timer' is executed as a result of an Apply Charging GPRS operation from the gsmSCF, then the appropriate 'Waiting-for-AC' marker shall be removed, dependig on the information received in the Apply Charging GPRS operation:

- if the Apply Charging GPRS operation carries a Session Volume threshold, then the Session-Volume 'Waiting-for-AC' marker shall be removed.
- if the Apply Charging GPRS operation carries a Session Time threshold, then the Session-Period 'Waiting-for-AC' marker shall be removed.
- if the Apply Charging GPRS operation carries a PDP Context Volume threshold, then the PDP Context-Volume 'Waiting-for-AC' marker shall be removed.
- if the Apply Charging GPRS operation carries a PDP Context Time threshold, then the PDP Context -Period 'Waiting-for-AC' marker shall be removed.

The gprsSSF then checks if there is any 'Waiting-for-AC' marker for the Session or any PDP Context. If there is no 'Waiting-for-AC' marker remaining, then the guard timer shall be stopped.

Release GPRS

If 'Check guard timer' is executed as a result of a Release GPRS operation from the gsmSCF, then the appropriate 'Waiting-for-AC' markers shall be removed, dependig on the information received in the Release GPRS operation:

- if the Release GPRS operation is for the Session, then the Session 'Waiting-for-AC' markers shall be removed.
- if the Release GPRS operation is for the PDP Context, then the PDP Context 'Waiting-for-AC' markers shall be removed.

The gprsSSF then checks if there is any 'Waiting-for-AC' marker for the Session or any PDP Context. If there is no 'Waiting-for-AC' marker remaining, then the guard timer shall be stopped.

PDP Context Disconnect

If 'Check guard timer' is executed as a result of a PDP Context Disconnect signal from the SGSN, then the 'Waiting-for-AC' markers for that PDP Context shall be removed.

The gprsSSF then checks if there is any 'Waiting-for-AC' marker for the Session or any PDP Context. If there is no 'Waiting-for-AC' marker remaining, then the guard timer shall be stopped.

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

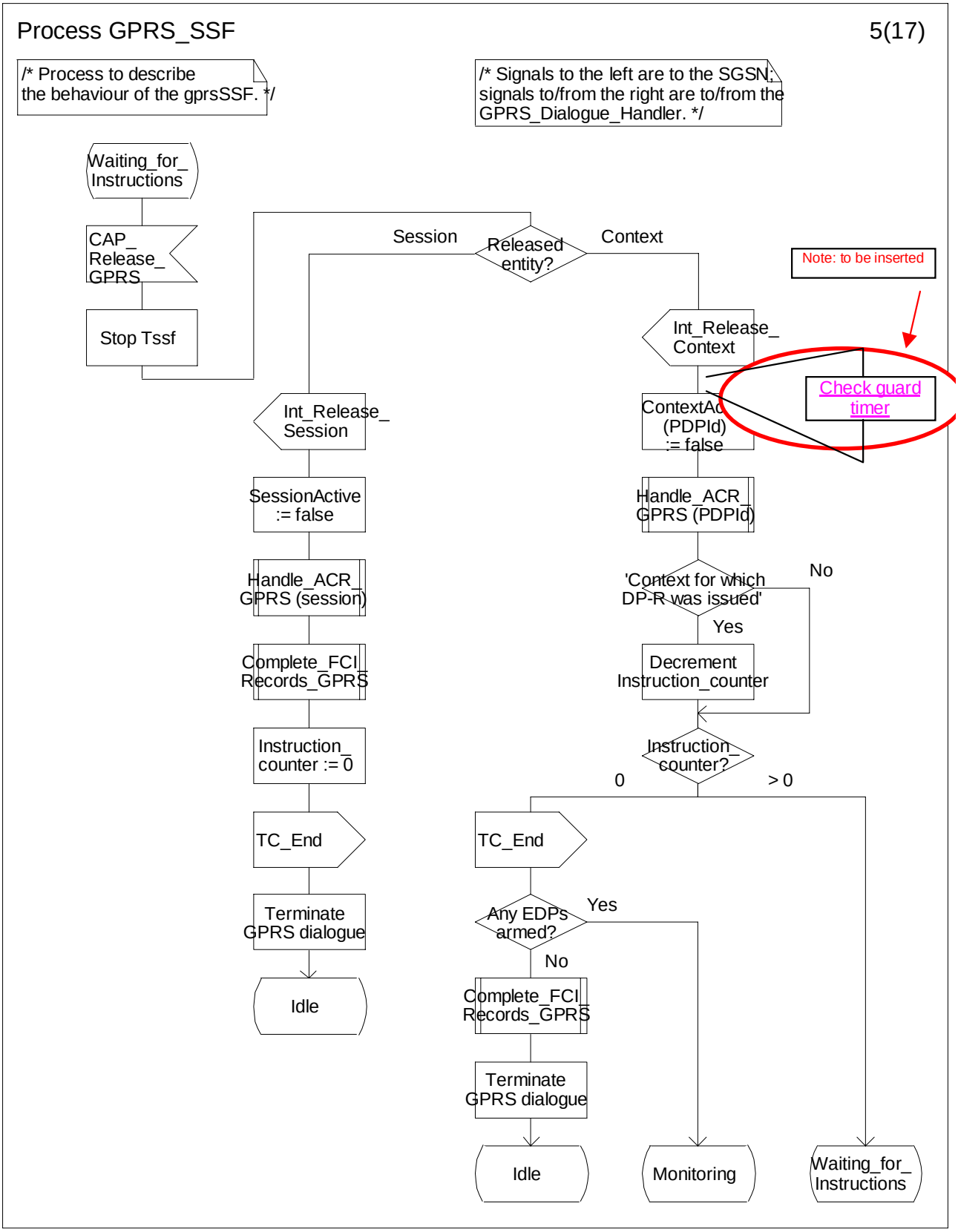


Figure Error! Reference source not found. **a: Process GPRS_SSF (sheet 5)**

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

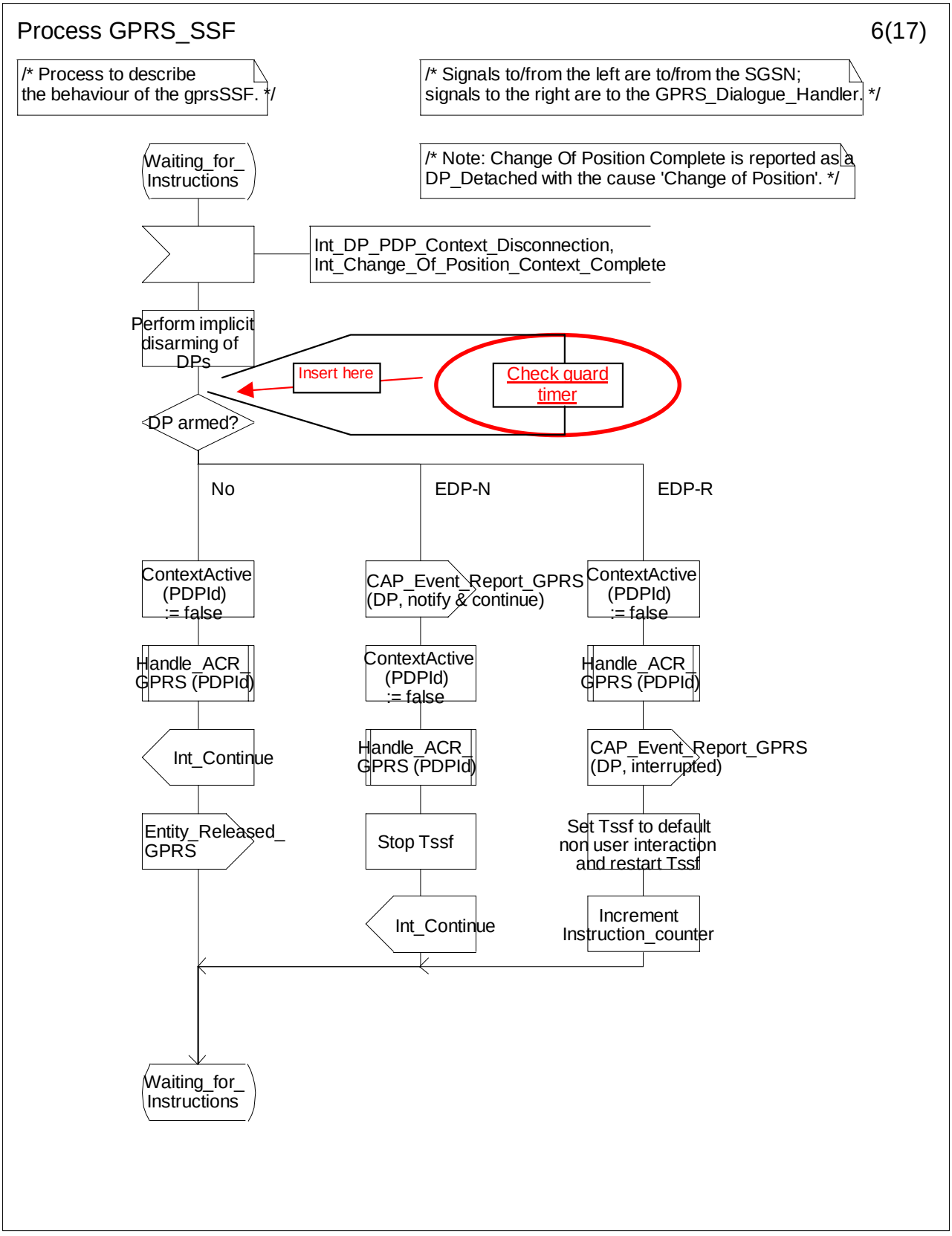


Figure Error! Reference source not found. **b: Process GPRS_SSF (sheet 6)**

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

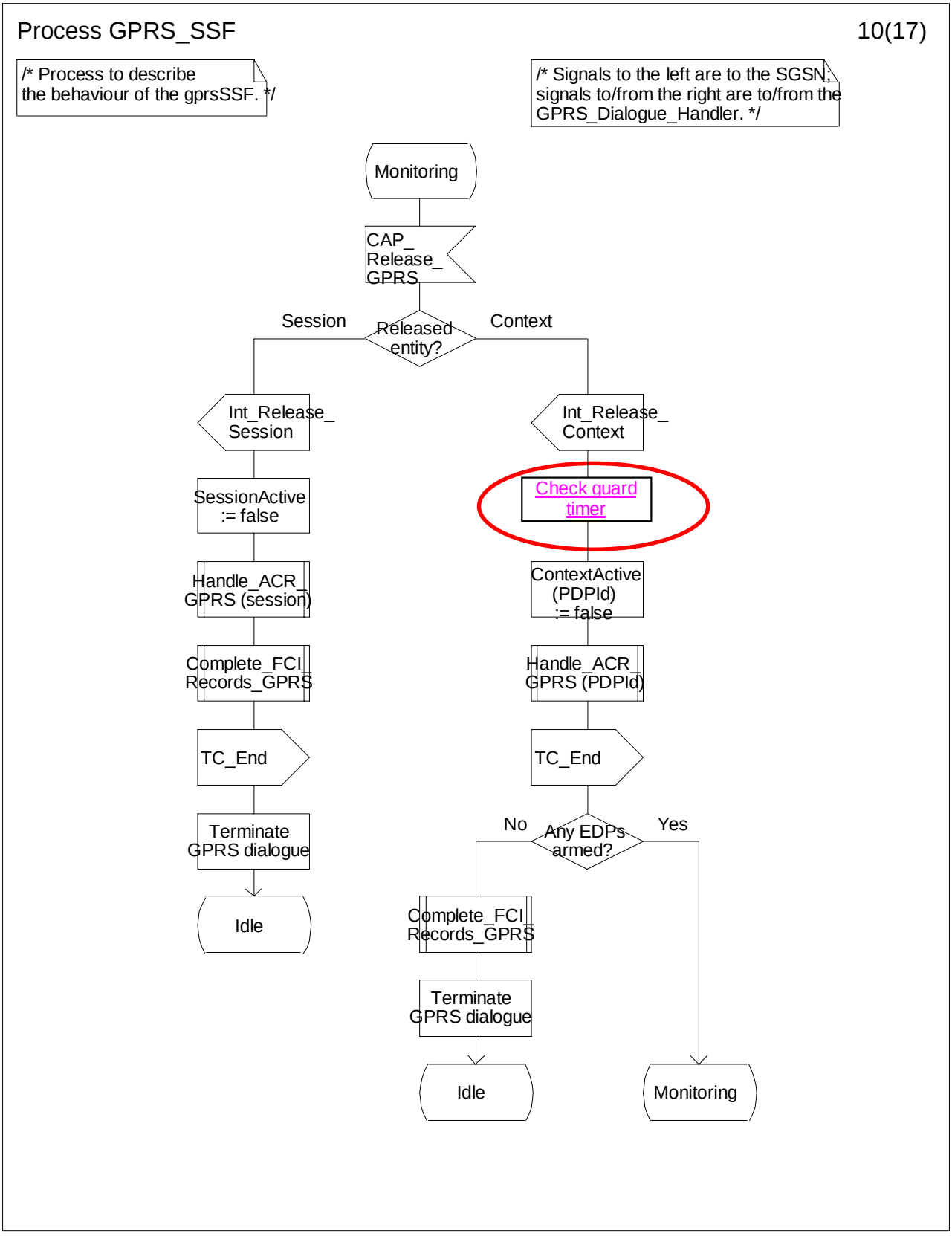


Figure Error! Reference source not found. **c: Process GPRS_SSF (sheet 10)**

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

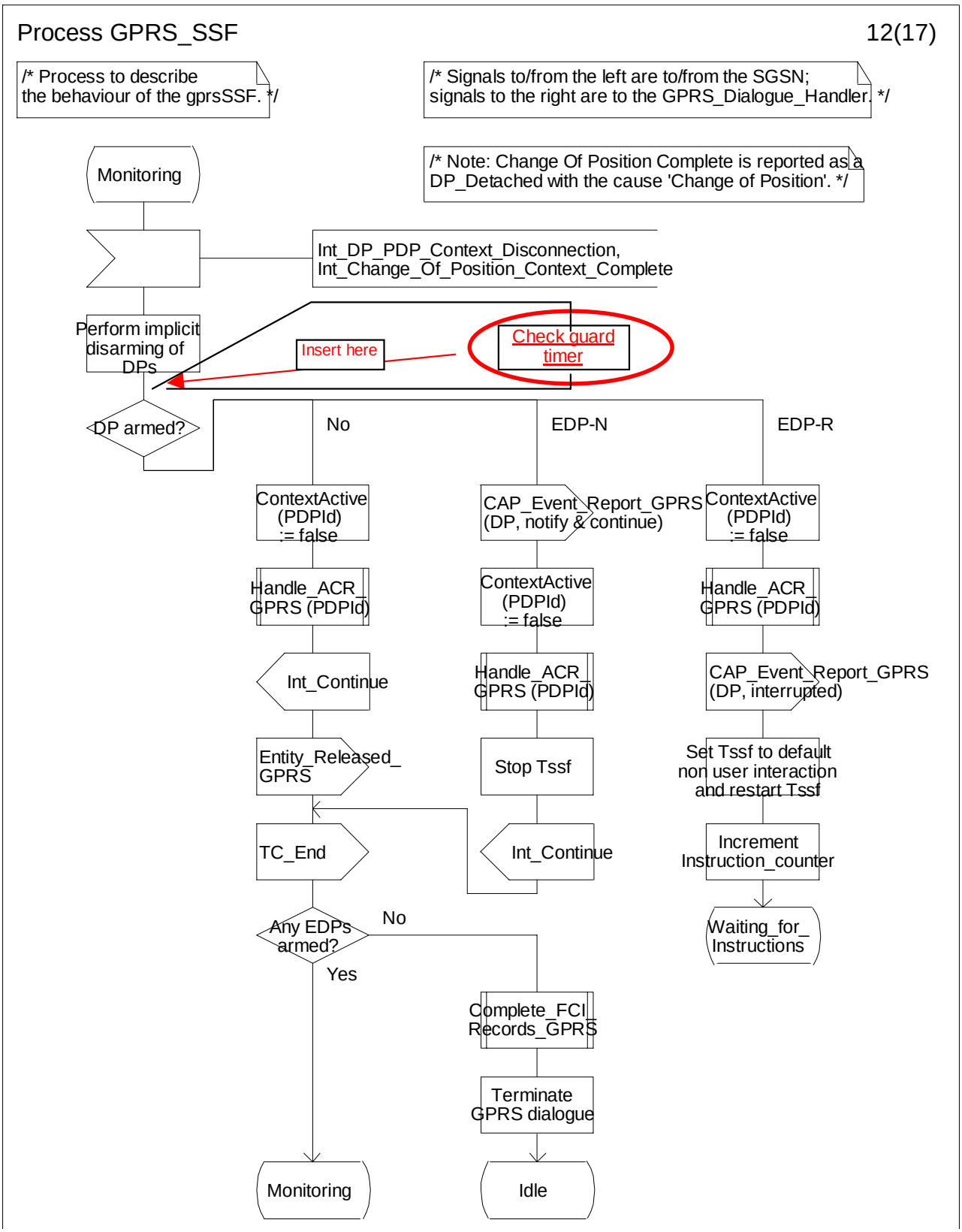


Figure Error! Reference source not found. **d: Process GPRS_SSF (sheet 12)**

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

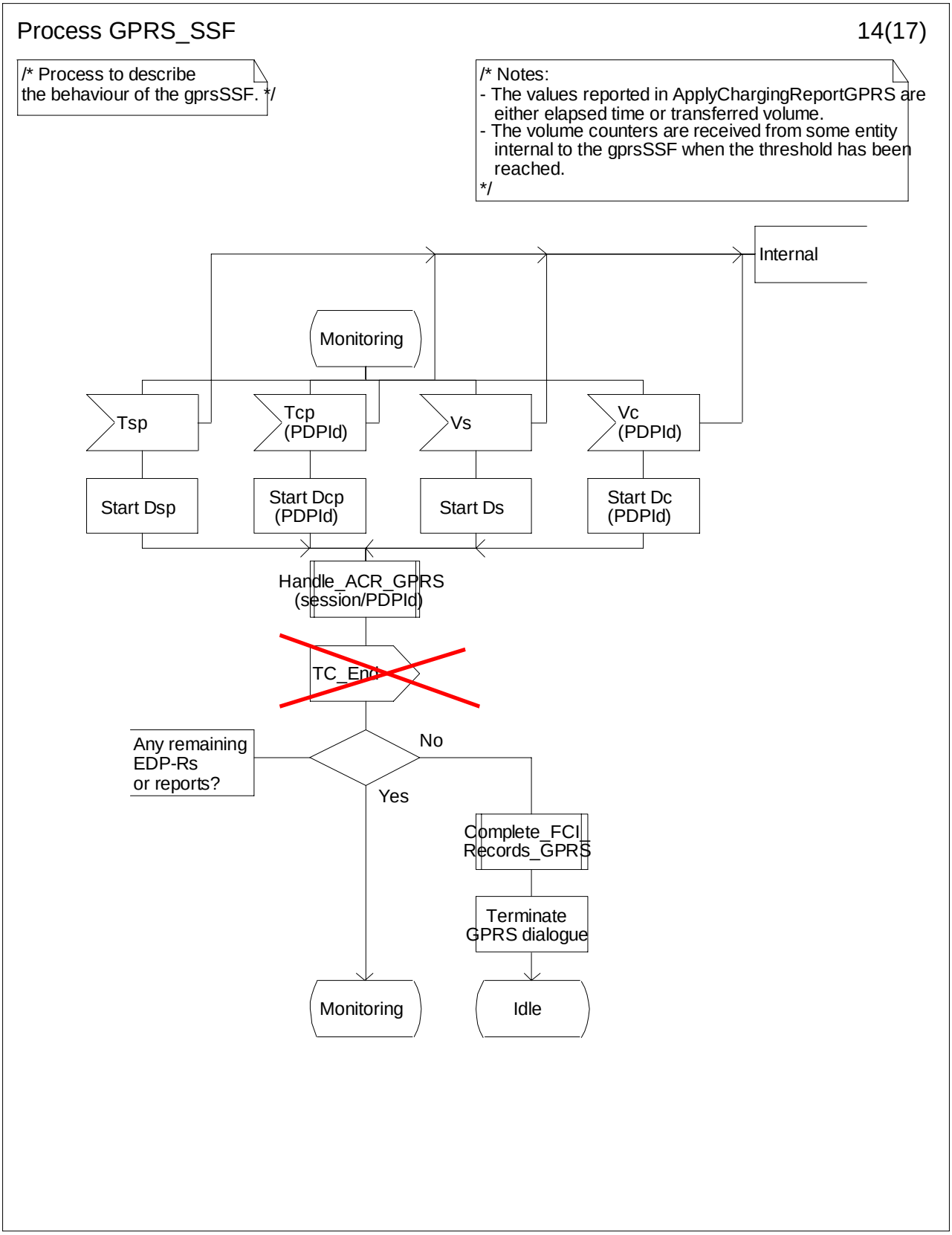


Figure Error! Reference source not found. **e: Process GPRS_SSF (sheet 14)**

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

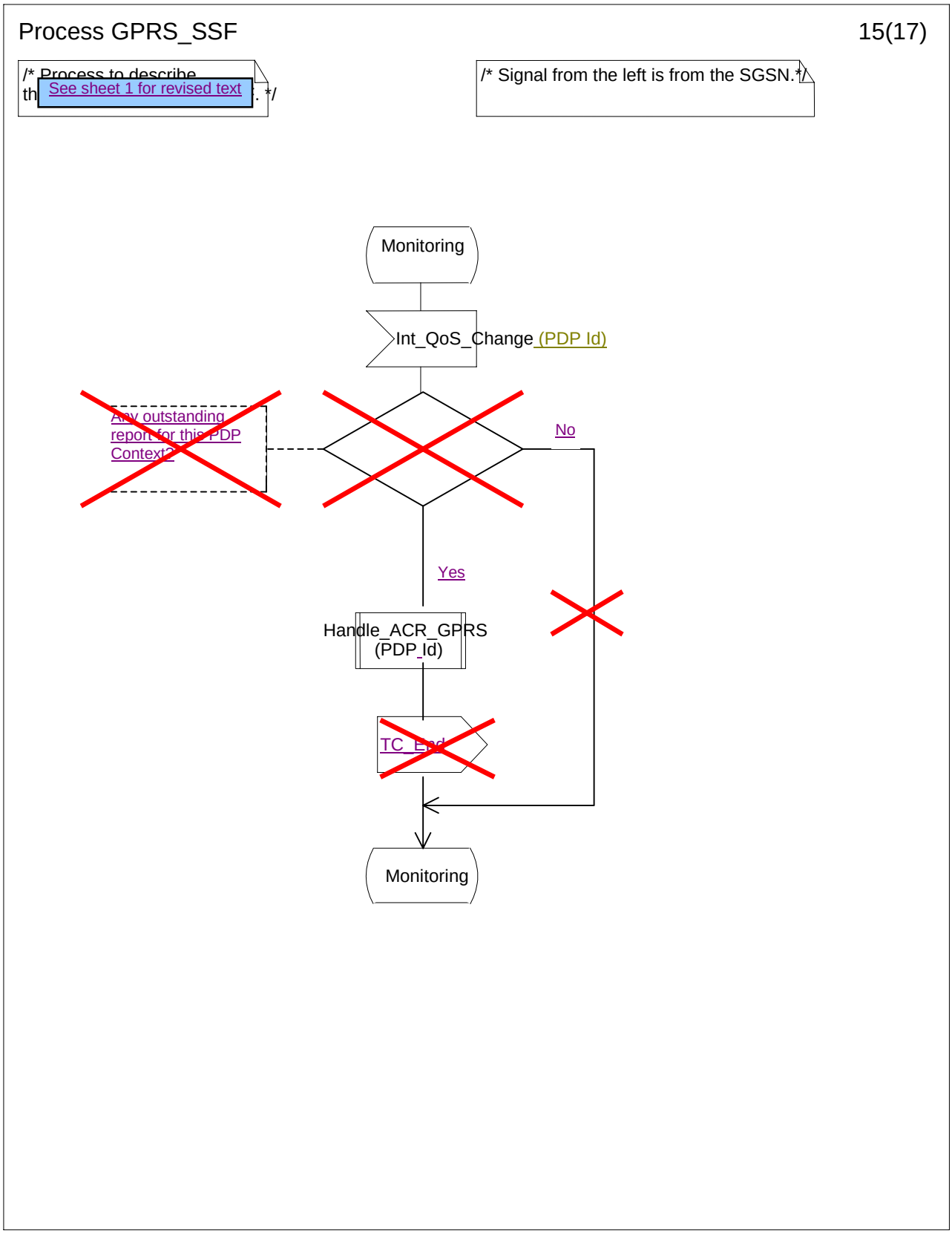


Figure Error! Reference source not found. **f: Process GPRS_SSF (sheet 15)**

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

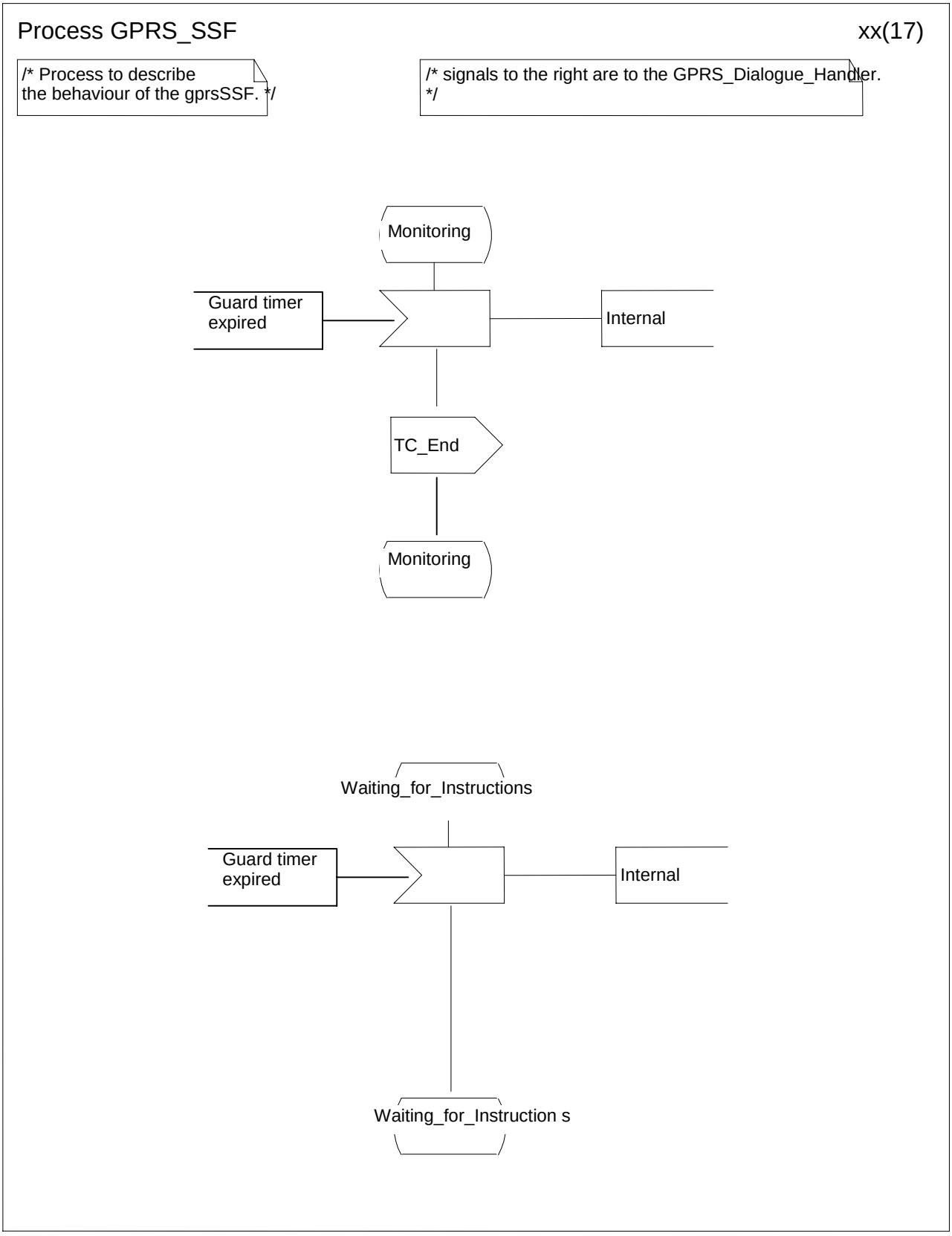


Figure Error! Reference source not found. **xxx: Process GPRS_SSF (sheet ***new ***)**

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

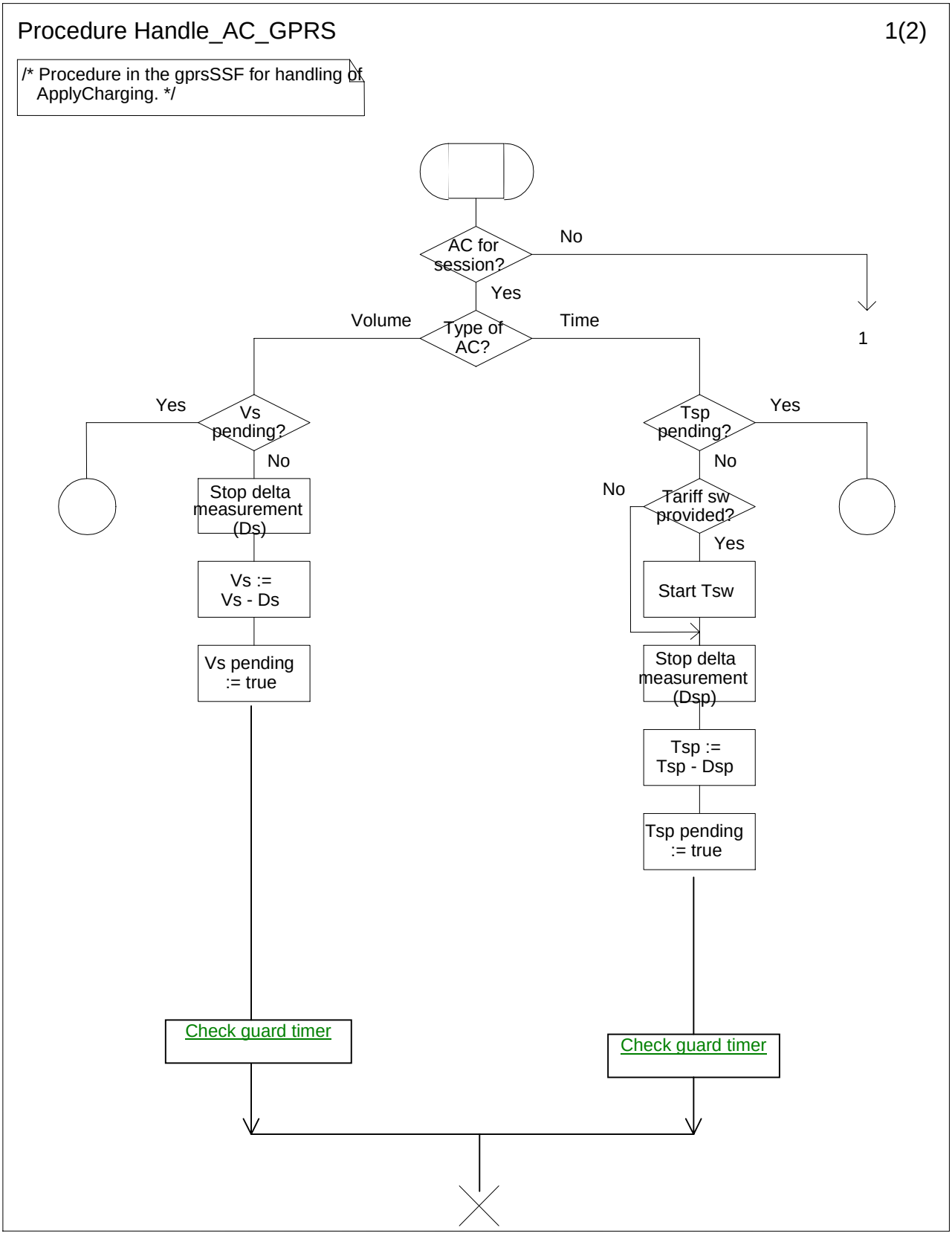


Figure 1 a: Procedure Handle_AC_GPRS (sheet 1)

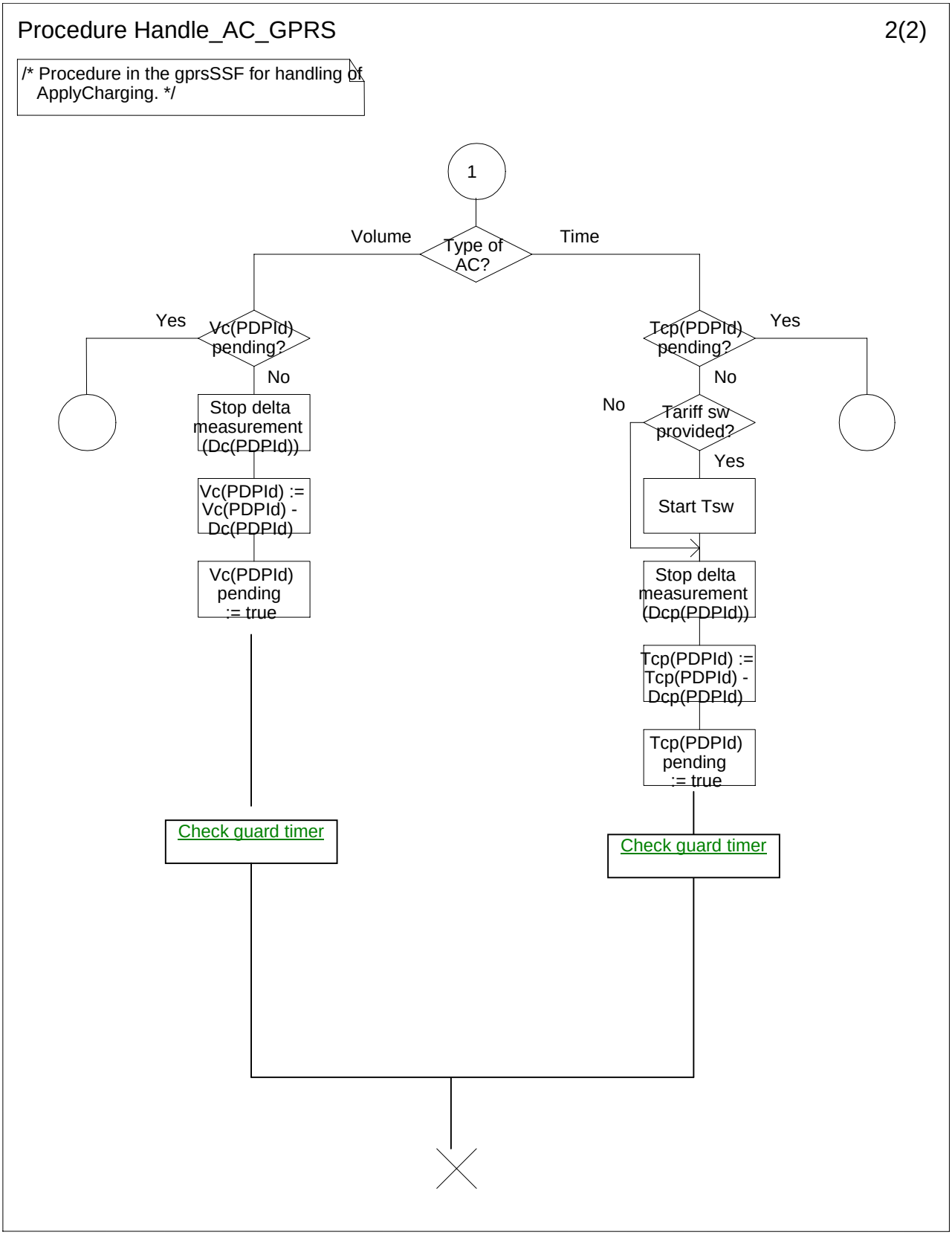


Figure 1b: Procedure Handle_AC_GPRS (sheet 2)

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

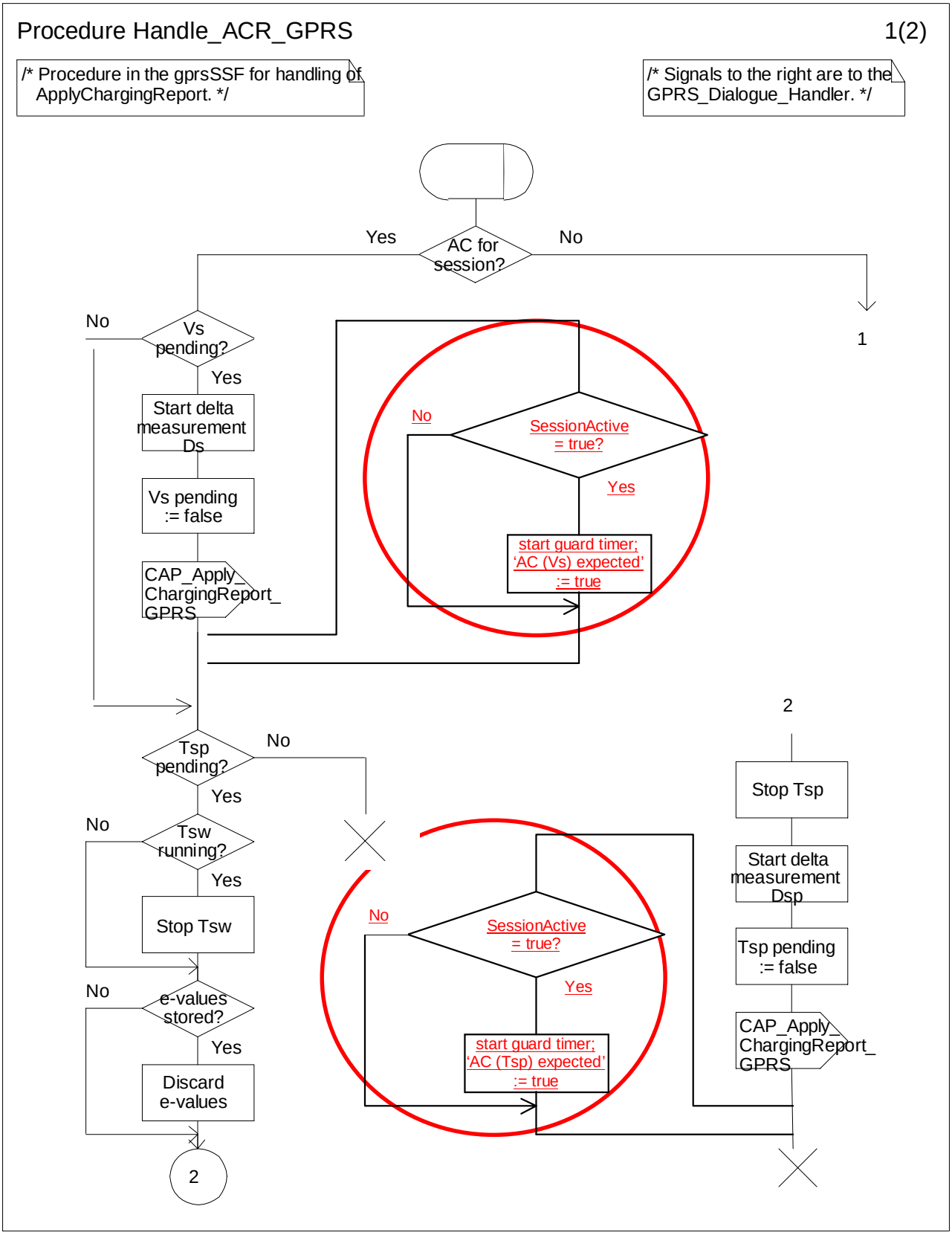


Figure 2a: Procedure Handle_ACR_GPRS (sheet 1)

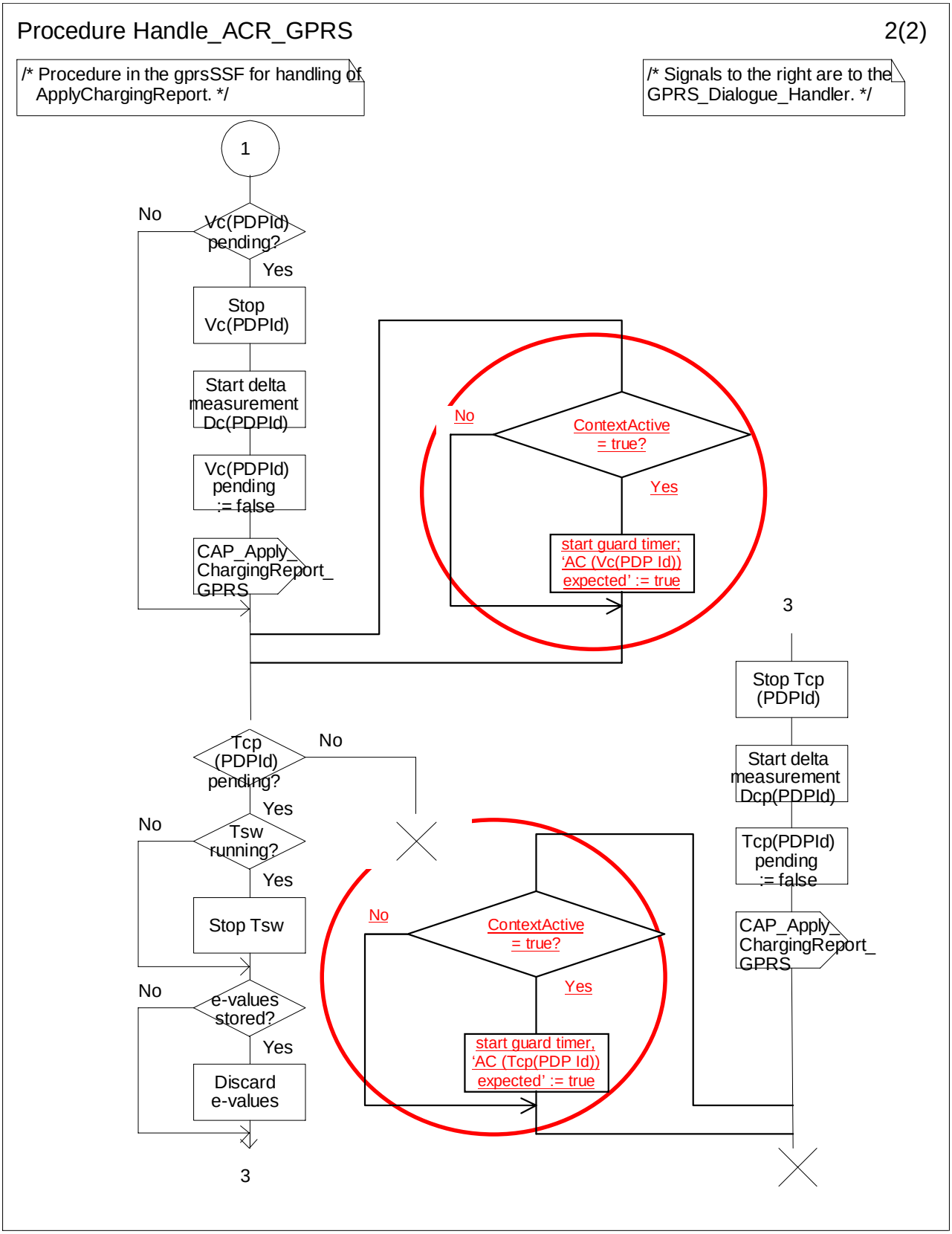


Figure 2b: Procedure Handle_ACR_GPRS (sheet 2)

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

3GPP TSG CN WG 2 Meeting #4
Seattle, WA, 28 Aug-01 Sep 2000

Document N2-000434
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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

23.078	**CR**	**218r1**	Current Version:	3.5.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to: CN#2	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑	for information		non-strategic		

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

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

Source: TSG CN WG2 **Date:** 31 Aug 2000

Subject: Clarification of description of number comparison for dialled services

Work item: CAMEL Phase 3

Category: *(only one category shall be marked with an X)*

F	Correction		**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification	X		Release 99	X
				Release 00	

Reason for change:

The description of the number comparison at the Analysed_Info DP needed some editorial revisions to prevent misunderstandings.

It contains several "GOTO requests", however it was not clear where the processing has to be continued.

In some protocols the term "nature of address indicator" is used. This is reflected in the description.

The check of the destination number criterion may not lead to the trigger of DP Analysed_Info.

Clauses affected:

Other specs affected:

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

Other comments:

help.doc

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

4.2.1.2.2.3 Number comparison

The following procedure shall be performed for the comparison of the destination number triggering criterion and the address information in the given order.

1. The numbering plan indicators of both numbers are compared. The numbering plan indicators match if they are set to the same value or if one of the numbering plan indicators is set to "unknown". If there is no match of the numbering plan indicators then the destination number does not match the destination number triggering criterion. If there is a match of the numbering plan indicators the comparison procedure shall continue as follows.

2. The type of number/nature of address indicators of both numbers are compared. If there is a match of the type of number indicator, then the check shall be performed by comparing the digits as defined in step 6. If there is no match of the type of number the comparison procedure shall continue as follows.

3. If there are other type of number/nature of address indicators present than "unknown", "national (significant) number" or "international number" then the destination number does not match the destination number triggering criterion. Otherwise the comparison procedure shall continue as follows.

4. If there is a number with type of number/nature of address "unknown" this number shall be translated based on the numbering plan of the serving entity in either of the following ways:

   - if the leading digits refer to an international prefix, those digits shall be removed and the type of number/nature of address shall be set to "international number".

   - if the leading digits refer to a national (trunk) prefix, those digits shall be removed and the type of number/nature of address shall be set to "national (significant) number".

   If the leading digits refer neither to an international prefix nor to a national (trunk) prefix, then the destination number does not match the destination number triggering criterion.

   If there is a match of the type of number/nature of address indicator after this number modification, then the check shall be performed by comparing the digits as defined in step 6, otherwise the comparison procedure shall continue as follows.

5. If there is a number with type of number/nature of address "national (significant) number" this number shall be translated based on the numbering plan of the serving entity to international format by adding the country code of the serving entity to the number string. After this modification both numbers shall be in international format and shall be checked by comparing the digits as defined in step 6.

6. If the number digits of the address information are compared with the number digits of the destination number triggering criterion, then there is a match if:

   - the destination number is at least as long as the destination number string of the destination number triggering criterion, and

   - all the digits in the destination number string of the destination number triggering criterion match the leading digits of the destination number.

The check described in this section shall be repeated for every number contained in the destination number triggering criterion of the D-CSI until a match is recognised and DP Analysed_Info is triggered, or until all the destination numbers have been checked without a match being recognised. In the latter case DP Analysed_Info is not triggered.

The procedures for the destination number triggering criterion check for the N-CSI are network specific.

The modifications of the address information described in this section shall be only be done for comparison purposes, i.e. they shall not affect the format of the destination address information sent in the Initial DP message.

4.2.1.2.3 Criteria at DP Route_Select_Failure

The HLR may store a list of up to 5 cause values.

The criteria for a mobile originating call are checked in the originating MSC. The criteria for a mobile forwarded call are checked in the forwarding MSC.

3GPP TSG-N2 #4
Seattle, USA, 28 Aug - 1 Sep 2000

Tdoc 3GPP N2-00 0427

CHANGE REQUEST

23.078 CR 219 Current Version: 3.5.0

For submission to: CN#9 for approval [X] for information [ ] strategic [ ] non-strategic [ ]

Proposed change affects: (U)SIM [ ] ME [ ] UTRAN / Radio [ ] Core Network [X]

Source: N2 **Date:** 28 August 2000

Subject: Correction to Initial DP DMD Information Flow

Work item: CAMEL Phase 3

Category:

F	Correction	X	
A	Corresponds to a correction in an earlier release		
B	Addition of feature		
C	Functional modification of feature		
D	Editorial modification		

Release:

Phase 2	
Release 96	
Release 97	
Release 98	
Release 99	X
Release 00	

Reason for change:

The Initial DP SMS Information Flow contains a set of descriptions that are specific for the SMS_SUBMIT PDU.

However, the invocation of a CAMEL MO-SMS Service is equally valid for a SMS_COMMAND PDU.

Hence, these descriptions need to be corrected, where needed.

A statement has been added in section 7.5.2 that the CAMEL interaction with MO SMS is valid for MO SMS Messages ('SMS-SUBMIT' PDU type) and MO SMS Commands ('SMS-COMMAND' PDU type).

Clauses affected: 3.2, 7.5.2, 7.6.1.2

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

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

3.2 Abbreviations

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

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

BCSM	Basic Call State Model
CAMEL	Customized Applications for Mobile network Enhanced Logic
DP	Detection Point
DTN	Deflected To Number
D-CSI	Dialled Services CAMEL Subscription Information
EDP	Event Detection Point
FTN	Forwarded To Number
GMLC	Gateway MLC
GMSC	Gateway MSC
GPRS	General Packet Radio Service
gprsSSF	GPRS Service Switching Function
GPRS-CSI	GPRS CAMEL Subscription Information
gsmSCF	GSM Service Control Function
gsmSRF	GSM Specialised Resource Function
gsmSSF	GSM Service Switching Function
HLR	Home Location Register
HPLMN	Home PLMN
IE	Information Element
IF	Information Flow
IP	Intelligent Peripheral
IPLMN	Interrogating PLMN
LCS	Location Services
LSA	Localised Service Area
M-CSI	Mobility Management event Notification CAMEL Subscription Information
MF	Mobile Forwarding
MLC	Mobile Location Centre
MO	Mobile Originating
MSC	Mobile service Switching Centre
MT	Mobile Terminating in GMSC
N-CSI	Network CAMEL Service Information
NA	North American
NNI	Network Node Interface
O-BCSM	Originating Basic Call State Model
O-CSI	Originating CAMEL Subscription Information
ODB	Operator Determined Barring
OSS	Operator Specific Service
PDP	Packet Data Protocol
PIC	Point In Call
PLMN	Public Land Mobile Network
SGSN	Serving GPRS Support Node
SLPI	Service Logic Program Instance
SMF	Service Management Function
SMLC	Serving MLC
SMS-CSI	Short Message Service CAMEL Subscription Information
SS-CSI	Supplementary Service Notification CAMEL Subscription Information
T-BCSM	Terminating Basic Call State Model
T-CSI	Terminating CAMEL Subscription Information (in the GMSC)
TDP	Trigger Detection Point
TPDU	Transfer Protocol Data Unit
TIF-CSI	Translation Information Flag

U-CSI	USSD CAMEL Subscription Information
UG-CSI	USSD General CAMEL Service Information
UNI	User Network Interface
VLR	Visitor Location Register
VPLMN	Visited PLMN
VT	Mobile Terminating in VMSC
VT-CSI	VMSC Terminating CAMEL Subscription Information

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

7.5.2 Handling of mobile originating SMS

7.5.2.1 Handling of mobile originating SMS in the originating MSC/SGSN

The functional behaviour of the originating VMSC/SGSN is specified in ~~3G TS 23.018 [3]~~3G TS 29.002 [4] and~~,~~ 23.060 [11]. The procedures specific to CAMEL are specified in this subclause:

- Procedure CAMEL_O_SMS_INIT;
- Procedure CAMEL_O_SMS_SUBMITTED;
- Procedure CAMEL_O_SMS_FAILURE.

A CAMEL Service may be invoked for the following Mobile Originated short message types:

- Short Message Submission (PDU type = SMS-SUBMIT)
- Short Message Command (PDU type = SMS-COMMAND)

Refer to 3G TS 23.040 [21] for a description of the various PDU types.

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

7.6.1.2 Initial DP SMS

7.6.1.2.1 Description

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

7.6.1.2.2 Information Elements

The following information elements are required:

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

M Mandatory (The IE shall always be sent).

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

Location Information in MSC contains the following information:

Information element name	Required	Description
CellGlobalIDOrServiceAreaIdOrLAI	M	See 3G TS 23.018 [3].
Geographical Information	C	See 3G TS 23.018 [3].
Geodetic Information	C	See 3G TS 23.018 [3].
VLR number	M	See 3G TS 23.018 [3].
Selected LSA Identity	C1	This IE indicates the LSA identity associated with the current position of the MS. Send if the LSA ID of subscription and LSA ID of the used cell matches. In the case of multiple matches the one with the highest priority is sent. See 3GPP TS 23.073 [23].

M Mandatory (The IE shall always be sent).

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

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

Location Information in the GPRS case contains the following information:

Information element name	Required	Description
CellGlobalIDOrServiceAreaIdOrRAI	M	See 3G TS 23.018 [3] and 3G TS 23.060 [11].
Geographical Information	C	See 3G TS 23.018 [3].
SGSN number	M	Global Title of the Serving GPRS Service Node. See 3G TS 23.060 [11].

M Mandatory (The IE shall always be sent).

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

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