Source:	TSG CN WG2
Title:	CRs on Rel-5 Work Item CAMEL4, CR Pack 5
Agenda item:	8.3
Document for:	APPROVAL

Introduction:

This document contains 6 CRs on Rel-5 WI CAMEL4. These CRs have been agreed by TSG CN WG2 and are forwarded to TSG CN Plenary meeting #17 for approval.

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
29.078	273		N2-020687	Rel-5	Removal of "Note that" in descriptions of CPH operations	F	5.0.0
23.078	429		N2-020688	Rel-5	Wrong State Name in CSA_gsmSSF	F	5.0.0
23.078	430		N2-020689	Rel-5	Change Int_Continue_Without_Leg2 to Int_Disconnect_Leg (Leg2)	F	5.0.0
23.078	431		N2-020690	Rel-5	Contents of CWA at MidCall DP	C	5.0.0
23.078	426	1	N2-020792	Rel-5	CSA_gsmSSF: Handling signals in states such as DL_ack	F	5.0.0
29.078	267	1	N2-020797	Rel-5	Move Leg and Split Leg Error - Task Refused	F	5.0.0

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CHANGE REQUEST

| ⌘ | **29.078 CR** ⌘ **273** | ⌘ **rev** | **-** | ⌘ | Current version: | **5.0.0** | ⌘ |

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

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

Title: ⌘	Removal of "Note that" in descriptions of CPH operations
Source: ⌘	Vodafone

Work item code: ⌘	CAMEL4	***Date:*** ⌘	08/07/2002

Category: ⌘	**F**	***Release:*** ⌘	Rel-5
	Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.		*Use 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)* *Rel-6 (Release 6)*

Reason for change: ⌘	The descriptions of the Disconnect Leg, Move Leg and Split Leg operations contain an editor's note asking for clarification on the sentence "Note that no Mid_Call EDP will be reported for this case."
Summary of change: ⌘	Removal of "Note that" so that this sentence becomes normative text.
Consequences if not approved: ⌘	Confusion over whether this sentence is normative or informative.

Clauses affected: ⌘	11.15.2.1, 11.23.2.1 and 11.33.2.1

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments: ⌘	

**** First Modified Section ****

11.15 DisconnectLeg procedure

11.15.1 General Description

The gsmSCF uses this operation to request the gsmSSF to release a specific leg associated with the call. Any other leg(s) not specified in the Disconnect Leg operation are retained.

11.15.1.1 Parameters

- legToBeReleased:
  This parameter indicates the call leg to be released.

- releaseCause:
  This parameter may be used by the MSC for generating specific tones to the party to be released or to fill in the "cause" parameter in the release message.

11.15.2 Responding entity (gsmSSF)

11.15.2.1 Normal procedure

gsmSSF preconditions:

1)   A control relationship exists between the gsmSCF and the gsmSSF.

gsmSSF postconditions:

1) The gsmSSF performs the call processing actions to release the indicated party.

2) Any armed EDPs on that leg shall be disarmed; any pending reports for that leg shall be sent to the gsmSCF.

3) If the released leg was the last leg within the Call Segment, then the CS_gsmSSF FSM for that Call Segment returns to the state "Idle".

4) If the leg was the last leg within the call, then the CSA_gsmSSF FSM returns to the state "Idle".

5) If the CS_gsmSSF FSM for the Call Segment concerned has not returned to the state "Idle", then it transits to the state "Waiting_for_Instructions". The remaining BCSM instances within the Call Segment shall transit to the O_Mid_Call DP or to the T_Mid_Call DP, unless already suspended at a DP. ~~Note that no~~ The Mid_Call EDP ~~will~~ shall not be reported for this case.

6) A Return Result shall be sent to the gsmSCF immediately after successful execution of this operation.

11.15.2.2 Error handling

Generic error handling for the operation related errors is describer in clause 10, and the TC services which are used for reporting operation errors are described in clause 14.

**** Next Modified Section ****

11.23 MoveLeg procedure

11.23.1 General Description

The gsmSCF uses this operation to request the gsmSSF to move the leg from its current Call Segment to the intial Call Segment (CS ID = 1).

11.23.1.1 Parameters

- legIDToMove:
  This parameter indicates the leg that shall be moved.

11.23.2 Responding entity (gsmSSF)

11.23.2.1 Normal procedure

gsmSSF preconditions:

1) A control relationship exists between the gsmSCF and the gsmSSF.

2) The corresponding BCSM is in the alerting, active or mid-call phase.

3) The CS_gsmSSF FSM for each Call Segment involved is in the state "Waiting_for_Instructions" or in the state "Monitoring".

gsmSSF postconditions:

1) The gsmSSF performs the appropriate call processing actions.

2) The CS_gsmSSF FSM for the initial Call Segment transits to the state "Waiting_for_Instructions". The BCSM instances within the initial Call Segment transit to the O_Mid_Call DP or to the T_Mid_Call DP, if not already suspended. ~~Note that no~~ The Mid_Call EDP shall not~~will~~ be reported for this case.

3) The CS_gsmSSF process for the source Call Segment is terminated.

4) A Return Result is sent to the gsmSCF immediately after successful execution of this operation.

11.23.2.2 Error handling

Generic error handling for the operation related errors is described in clause 10, and the TC services which are used for reporting operation errors are described in clause 14.

11.33 SplitLeg Procedure

11.33.1 General Description

The gsmSCF uses this operation to request the gsmSSF to separate one party from the source Call Segment and place it in a new target Call Segment.

11.33.1.1 Parameters

- legToBeSplit:
  This parameter indicates the party in the call to be split from the source Call Segment.

- newCallSegment:
  This parameter indicates the CallSegmentID to be assigned to the newly-created Call Segment.

11.33.2 Responding entity (gsmSSF)

11.33.2.1 Normal procedure

gsmSSF preconditions:

1) A control relationship exists between the gsmSCF and the gsmSSF.

2) The initial Call Segment is either the source Call Segment or the target Call Segment.

3) The BCSM for the leg to be split is in the state O_Active, T_Active, O_Mid_Call or T_Mid_Call.

gsmSSF postconditions:

1) The gsmSSF performs the necessary actions to separate the specified leg from its original Call Segment and place it in a new target Call Segment.

2) The CS_gsmSSF FSM for the new Call Segment transits to the state "Waiting_for_Instructions".

3) The CS_gsmSSF FSM for the source Call Segment transits to the state "Waiting_for_Instructions".

4) The remaining BCSM instances within the source Call Segment transit to the O_Mid_Call DP or to the T_Mid_Call DP, unless already suspended at a DP. ~~Note that no~~ The Mid_Call EDP shall not~~will~~ be reported for this case.

5) A Return Result shall be sent to the gsmSCF immediately after successful execution of this operation.

11.33.2.2 Error handling

Generic error handling for the operation related errors is described in clause 10, and the TC services which are used for reporting operation errors are described in clause 14.

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CHANGE REQUEST

⌘ **23.078 CR 429** ⌘ **rev** **-** ⌘ Current version: **5.0.0** ⌘

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

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

Title: ⌘	Wrong State Name in CSA_gsmSSF	
Source: ⌘	Vodafone	
Work item code: ⌘	CAMEL4	**Date:** ⌘ 15/07/2002
Category: ⌘	**F**	**Release:** ⌘ Rel-5

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

Use 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)*
Rel-6 *(Release 6)*

Reason for change: ⌘	The state name on page 19(21) of process CSA_gsmSSF should read 'Wait_For_Export_Ack_ML' as the handling of this state is currently unspecified. It currently reads 'Wait_For_Import_Leg_ack', however 'Int Export Leg ack' is received to exit this state.
Summary of change: ⌘	Change 'Wait_For_Import_Leg_Ack' to Wait_For_Export_Leg_Ack' .
Consequences if not approved: ⌘	The SDL modelling shows no handling from the state Wait_For_Export_Leg_Ack.
Clauses affected: ⌘	4.5.7.6. (CSA_gsmSSF)

		Y	N		
Other specs affected:	⌘		X	Other core specifications ⌘	
			X	Test specifications	
			X	O&M Specifications	

Other comments: ⌘	

**** First Modified Section ****

4.5.7.6 Process CSA_gsmSSF and procedures

The call gap information flow can only be received for an opened transaction between the CSA_gsmSSF and the gsmSCF.

…

Process CSA_gsmSSF 19(21)

/* A process in the gsmSSF to co-ordinate the Call Segments for a call. */

/* Signals to/from the left are to/from one or more instances of the process CS_gsmSSF; signals to/from the right are to/from the gsmSCF. */

Wait_For_ Export_ack_ML

From source CS ----> Int_Export_ Leg ack

Int_Release_ Call_Segment ----> To Source CS

Remove source CSID

Add leg to be moved to CSID1

CS := CS - 1

CSID1 contains LegID1?   No

Yes

LegID1_state = active?   Yes

No

Moved Leg status?   Alerting

Active

Update Leg_ID1_state to active

Update LegID1_state to alerting

CAP_Move_ Leg ack

CS = 1?   Yes

No

One_CS

Multiple_CS

Process CSA_gsmSSF   19(21)

/* A process in the gsmSSF to co-ordinate the Call Segments for a call. */

/* Signals to/from the left are to/from one or more instances of the process CS_gsmSSF; signals to/from the right are to/from the gsmSCF. */

Wait_For_
Import_ack_ML

From source CS ---- Int_Export_
Leg ack

Int_Release_
Call_Segment ---- To Source CS

Remove source
CSID

Add leg to be
moved to
CSID1

CS := CS - 1

CSID1 contains
LegID1? — No

Yes

LegID1_state
= active? — Yes

No

Moved Leg
status? — Alerting

Active

Update
Leg_ID1_state
to active

Update
LegID1_state
to alerting

CAP_Move_
Leg ack

Yes — CS = 1?

No

One_CS   Multiple_CS

Figure 4.112s: Process CSA_gsmSSF (sheet 19)

...

**** End of Document ****

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CHANGE REQUEST

| ⌘ | **23.078** CR **430** | ⌘**rev** | **-** | ⌘ | Current version: | **5.0.0** | ⌘ |

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

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

Title: ⌘	Change Int_Continue_Without_Leg2 to Int_Disconnect_Leg (Leg2)	
Source: ⌘	Vodafone	
Work item code: ⌘	CAMEL4	***Date:*** ⌘ 10/07/2002
Category: ⌘	**F**	***Release:*** ⌘ Rel-5

Use <u>one</u> of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can
be found in 3GPP TR 21.900.

Use <u>one</u> of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change: ⌘	The signal Int_Continue_Without_Leg2 has been removed from the SDL modelling and replaced with Int_Disconnect_Leg (for Leg 2). This change should be consistant with the text.
Summary of change: ⌘	Replace Int_Continue_Without_Leg2 with Int_Disconnect_Leg (Leg 2) wherever it occurs.
Consequences if not approved: ⌘	The same signal will have two names: one in the SDL diagrams and one in the text.
Clauses affected: ⌘	4.5.2.1.6, 4.5.3.1.13, 4.5.4.1.2 and 4.5.5.3

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments: ⌘	

**** First Modified Section ****

4.5.2.1.6 Actions of the MSC on receipt of ~~Int_Continue_Without_Leg2~~ Int_Disconnect_Leg (Leg 2)

If the MSC receives ~~Int_Continue_Without_Leg2~~ Int_Disconnect_Leg (Leg 2) signal from the gsmSSF, in response to an Initial DP information flow, the MSC will continue the handling of the calling party (Leg1) without routeing the call to a destination.

**** Next Modified Section ****

4.5.3.1.13 Action of the MSC on receipt of ~~Int_Continue_Without_Leg2~~ Int_Disconnect_Leg (Leg 2)

If the MSC receives Int_Disconnect_Leg (Leg 2)~~Int_Continue_Without_Leg2~~ signal from the gsmSSF, in response to an Initial DP information flow, the MSC will continue the handling of the calling party (Leg1) without routeing the call to a destination.

**** Next Modified Section ****

4.5.4.1.2 Action of MSC on receipt of Int_Disconnect_Leg (Leg 2)~~Int_Continue_Without_Leg2~~

If the MSC receives Int_Disconnect_Leg (Leg 2)~~Int_Continue_Without_Leg2~~ signal from the gsmSSF, in response to an Initial DP information flow, the MSC will continue the handling of the calling party (Leg1) without routeing the call to a destination.

**** Next Modified Section ****

4.5.5.3 Procedure CAMEL_CF_MSC_INIT: handling of Int_Disconnect_Leg (Leg 2)~~Int_Continue_Without_Leg2~~

If the MSC receives Int_Disconnect_Leg (Leg 2)~~Int_Continue_Without_Leg2~~ signal from the gsmSSF, in response to an Initial DP information flow, the MSC will continue the handling of the calling party (Leg1) without routeing the call to a destination.

**** End of Document ****

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CHANGE REQUEST

⌘   **23.078 CR 431**   ⌘ **rev   -** ⌘   Current version: **5.0.0** ⌘

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

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

Title: ⌘	Contents of CWA at MidCall DP	
Source: ⌘	Vodafone	
Work item code: ⌘	CAMEL4	***Date:*** ⌘ 09/07/02
Category: ⌘	**C**	***Release:*** ⌘ Rel-5

Use one of the following categories: ***F*** *(correction)* ***A*** *(corresponds to a correction in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use 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)* *Rel-6 (Release 6)*

Reason for change: ⌘	After 'Continue With Argument' is received by a leg at DP_O_Midcall/DP_T_Midcall, the SDL modelling states 'modify call parameters with received information'. However CWA cannot modify the call parameters at these DPs.
Summary of change: ⌘	Remove all instances of 'Modify Call Parameters' after CWA received
Consequences if not approved: ⌘	SDLs imply that CWA can send modified call parameters at DP_O_Midcall and DP_T_Midcall.

Clauses affected: ⌘	4.5.2, 4.5.3, 4.5.4, 4.5.5, 4.5.6. Processes Affected: 4.5.2 CAMEL_OCH_LEG1_MSC, CAMEL_OCH_LEG2_MSC. 4.5.3 CAMEL_MT_LEG1_GMSC, CAMEL_MT_LEG2_GMSC 4.5.4 CAMEL_ICH_LEG1_MSC, CAMEL_ICH_LEG2_MSC, CAMEL_ICH_LEG2_CF_MSC. 4.5.5 CAMEL_MT_CF_LEG1, CAMEL_MT_CF_LEG2 4.5.6 ICA_MSC

	Y	**N**	
Other specs affected: ⌘		X	Other core specifications ⌘
		X	Test specifications
		X	O&M Specifications

Other comments: ⌘	List of where CWA Information Flow can send modified called paramters is in 4.6.2.9.1, which is contained for information.

4.6.2.9 Continue With Argument

4.6.2.9.1 Description

This IF requests the gsmSSF to continue the call processing with modified information at the DP at which it previously suspended call processing to await gsmSCF instructions or to continue call processing after a Call Party Handling IF was received. The gsmSSF completes DP processing if necessary, 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.

The gsmSCF can send modified call information at DP Collected_Info and at DP Analysed_Info, as listed in the MO and MF columns in subclause 4.6.2.9.2.

The gsmSCF can send modified call information at DP Termination_Attempt_Authorised, as listed in the MT and VT columns in subclause 4.6.2.9.2.

The gsmSCF can send modified call information immediately after sending an Initiate Call Attempt IF, as listed in the NC and NP columns in subclause 4.6.2.9.2.

In all other cases, Continue With Argument shall contain only either the Leg ID or Call Segment ID IE.

**** First Modified Section ****

4.5.2 Handling of mobile originated calls

...

Procedure CAMEL_OCH_LEG1_MSC   1(9)

/* A procedure in the MSC to
handle leg 1 in a CPH configuration. */

/* Signals to/from the left are to/from the BSS
Signals to/from the right are to/from the gsmSSF
unless otherwise stated */
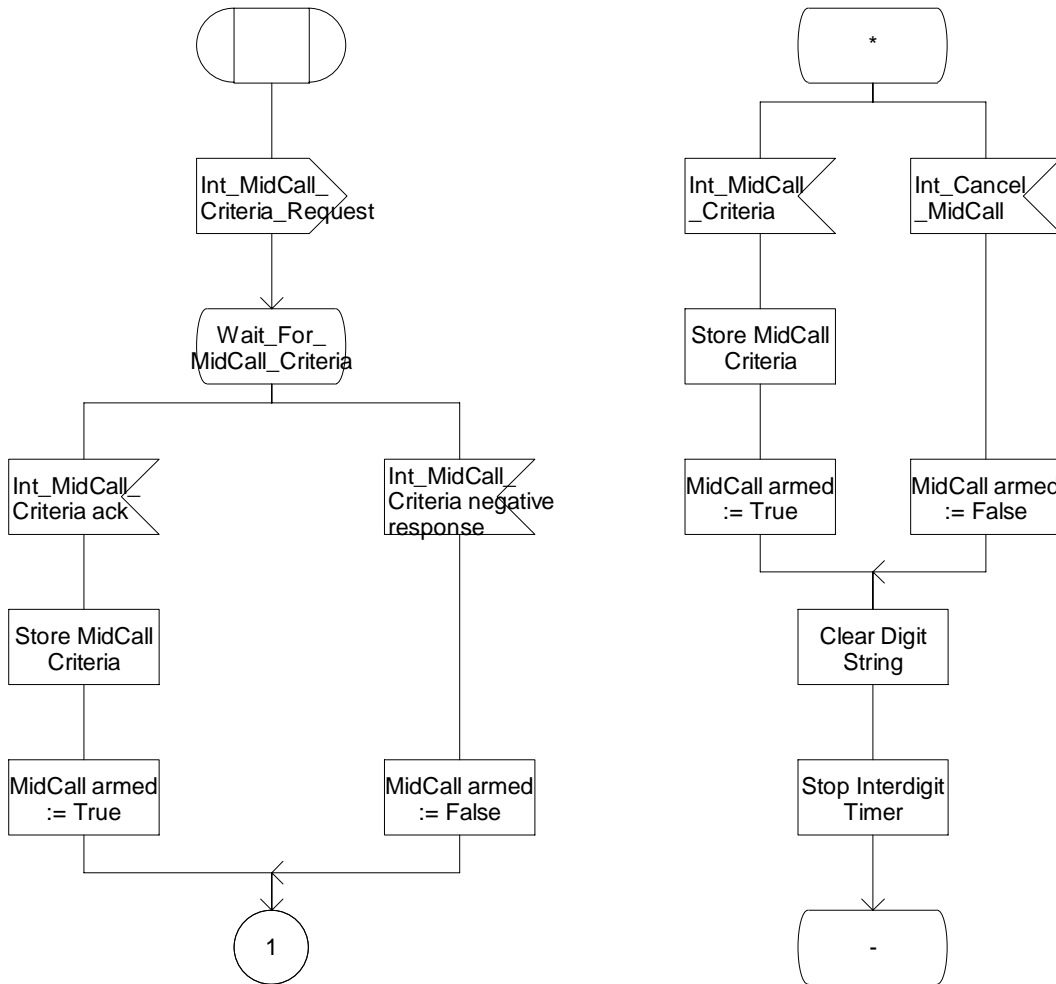
Figure 4.29a: Procedure CAMEL_OCH_LEG1_MSC (sheet 1)

Procedure CAMEL_OCH_LEG1_MSC   2(9)

/* A procedure in the MSC to
handle leg 1 in a CPH configuration. */

/* Signals to/from the left are to/from the BSS
Signals to/from the right are to/from the gsmSSF
unless otherwise stated */

(1)

Active ── Leg1_Status?

Set-up

Wait_For_
Clear

Abort ─────── To VLR

Wait_For_
ACM

Address
Complete

Connect

See 3GPP TS 23.018 ┈ Send_Alerting_
If_Required

(2)

Yes ── Result=
Fail?

No

Release
Transaction

Alerting in
Progress ┈ To Subs_FSM
See 3GPP TS 23.018

To Subs_FSM
See 3GPP TS 23.018 ┈ Call Setup
Failed

Wait_For_
Answer

⊗

Figure 4.29b: Procedure CAMEL_OCH_LEG1_MSC (sheet 2)

Procedure CAMEL_OCH_LEG1_MSC 3(9)

/* A procedure in the MSC to handle leg 1 in a CPH configuration. */

/* Signals to/from the left are to/from the BSS Signals to/from the right are to/from the gsmSSF unless otherwise stated */

Wait_For_Answer, DP_O_MidCall_Alerting

ECT Request

To Subs_FSM See 3GPP TS 23.018

ECT Request

-

Wait_For_ Answer

Answer

2

Handle_AoC _MO_MSC

See 3GPP TS 23.018

Send_Access Connect_If_ Required

See 3GPP TS 23.018

Result= Fail?

Yes

No

To Subs_FSM See 3GPP TS 23.018

Call Setup Failed

Result= Connect Sent?

No

⊗

Yes

Wait_For_ Connect_Ack

Connect Ack

From gsmSSF

Int_MidCall

MS connected := True

Store CW treatment indicator for this call if received in SII2

Call established

To Subs_FSM See 3GPP TS 23.018

Wait_For_ Clear

Figure 4.29c: Procedure CAMEL_OCH_LEG1_MSC (sheet 3)

Procedure CAMEL_OCH_LEG1_MSC   4(9)

/* A procedure in the MSC to
handle leg 1 in a CPH configuration. */

/* Signals to/from the left are to/from the BSS
Signals to/from the right are to/from the gsmSSF
unless otherwise stated */

Wait_For_ACM,
Wait_For_Answer,
Wait_For_Connect_Ack,
DP_O_MidCall_Alerting

Release transaction

Int_Disconnect Leg

Int_Release Call

CAMEL_OCH_ MSC_DISC4

Release transaction

Release transaction

Int_Disconnect Leg ack

To Subs_FSM
See 3GPP TS 23.018

Call Setup Failed

DP_O_MidCall _Alerting

Answer

From gsmSSF

Wait_For_Answer,
DP_O_MidCall_Alerting

Int_MidCall

DP_O_MidCall _Alerting

Figure 4.29d: Procedure CAMEL_OCH_LEG1_MSC (sheet 4)

Procedure CAMEL_OCH_LEG1_MSC   5(9)

/* A procedure in the MSC to
handle leg 1 in a CPH configuration. */

/* Signals to/from the left are to/from the BSS
Signals to/from the right are to/from the gsmSSF
unless otherwise stated */

Wait_For_Clear,
DP_O_MidCall_Active

Release transaction

Int_Release_Call

Int_Disconnect_Leg

Int_Export_Leg

Release transaction

Release transaction

CAMEL_EXPORT_LEG_MSC

3

Int_Disconnect_Leg ack

Result= Pass?

No

Yes

UUS_MSC_Check_UUS1_UUI

Int_gsmSSF_Instance

CAMEL_OCH_MSC_DISC1

DP_O_MidCall_Active

3

Call cleared

To Subs_FSM
See 3GPP TS 23.018

To Process
CAMEL_O_CHANGE_OF_POSITION_MSC

See 3GPP TS 23.087

Figure 4.29e: Procedure CAMEL_OCH_LEG1_MSC (sheet 5)

Procedure CAMEL_OCH_LEG1_MSC 6(9)

/* A procedure in the MSC to handle leg 1 in a CPH configuration. */

/* Signals to/from the left are to/from the BSS Signals to/from the right are to/from the Process Subs_FSM (See 3GPP TS 23.018). */

Wait_For_Clear, DP_O_MidCall_Active

Hold request

Retrieve request

ECT request

MPTY request

Hold supported?

Hold supported?

ECT request

MPTY request

No

Yes

Yes

No

Hold reject

Process_Hold _Request

Process_Retreive _Request

Retrieve reject

-

See 3GPP TS 23.083

Figure 4.29f: Procedure CAMEL_OCH_LEG1_MSC (sheet 6)

Procedure CAMEL_OCH_LEG1_MSC 7(9)

/* A procedure in the MSC to
handle leg 1 in a CPH configuration. */

/* Signals to/from the left are to/from the BSS
Signals to/from the right are to/from the gsmSSF
unless otherwise stated */

DP_O_MidCall
_Active

Int_Continue

Int_Continue
With Argument

Int_Error

Continue

Default Call
Handling

Wait_For_
Clear

Release

Release
transaction

DP_O_MidCall
_Alerting

Int_Continue

Int_Continue
With Argument

Int_Error

Continue

Default Call
Handling

Wait_For_
Answer

Release

Release
transaction

Procedure CAMEL_OCH_LEG1_MSC   7(9)

/* A procedure in the MSC to
handle leg 1 in a CPH configuration. */

/* Signals to/from the left are to/from the BSS
Signals to/from the right are to/from the gsmSSF
unless otherwise stated */

DP_O_MidCall
_Active

Int_Continue

Int_Continue
With Argument

Int_Error

Modify call
parameters with
received information'

Continue

Default Call
Handling

Release

Wait_For_
Clear

Release
transaction

⊗

DP_O_MidCall
_Alerting

Int_Continue

Int_Continue
With Argument

Int_Error

Modify call
parameters with
received information'

Continue

Default Call
Handling

Release

Wait_For_
Answer

Release
transaction

⊗

Figure 4.29g: Procedure CAMEL_OCH_LEG1_MSC (sheet 7)

Procedure CAMEL_OCH_LEG1_MSC 8(9)

/* A procedure in the MSC to handle leg 1 in a CPH configuration. */

/* Signals to/from the left are to/from the BSS Signals to/from the right are to/from the gsmSSF unless otherwise stated */
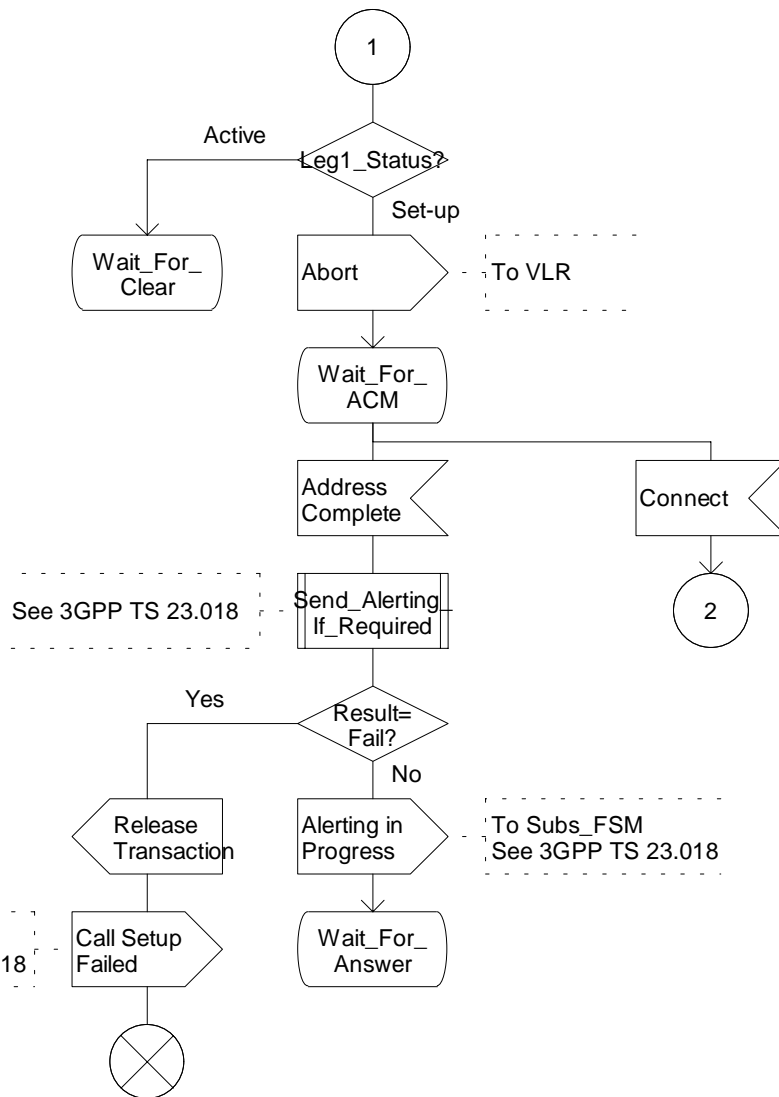
DP_O_MidCall_Active, Wait_For_Clear

Int_MidCall

From MSC process

Int_DTMF_ Digit_Received

MidCall armed? — False

True

Interdigit Timeout is specified in MidCall Criteria

Start Interdigit Timer

Add Digit to Digit String

CHECK_DIGIT_ STRING_MSC

Trigger — Result? — Continue

Abort

Stop Interdigit Timer

Stop Interdigit Timer

Int_DP_O_ MidCall

Clear Digit String

Clear Digit String

DP_O_ MidCall _Active

-

Figure 4.29h: Procedure CAMEL_OCH_LEG1_MSC (sheet 8)

Procedure CAMEL_OCH_LEG1_MSC 9(9)

/* A procedure in the MSC to
handle leg 1 in a CPH configuration. */

/* Signals to/from the left are to/from the BSS
Signals to/from the right are to/from the gsmSSF
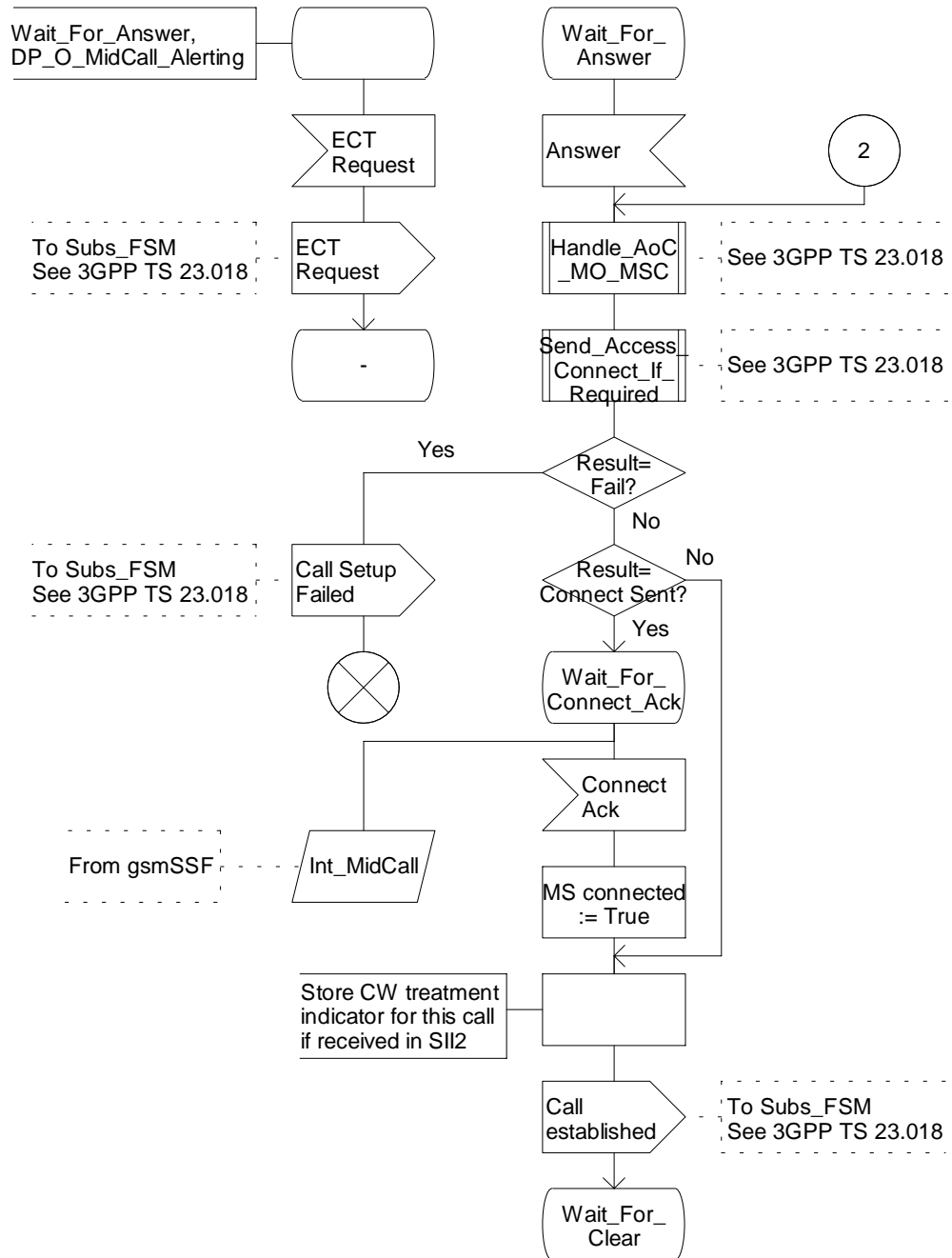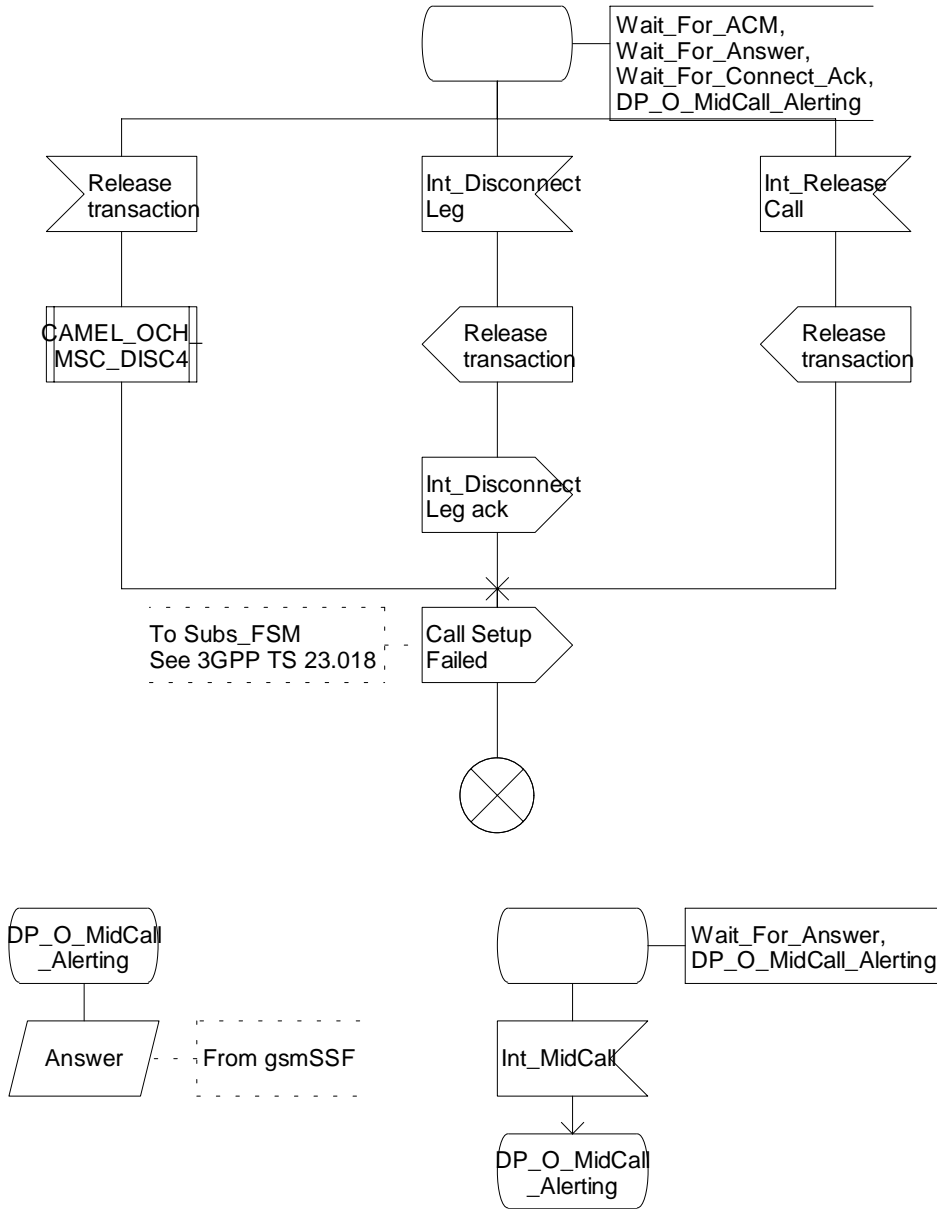unless otherwise stated */

DP_O_MidCall_Active,
Wait_For_Clear

Internal

Interdigit
Timer
expires

No   Start String
present in MidCall
trigger criteria?

Yes

Length of Digit String less
than length of Start String?   Yes

No

No   Length of Digit String less than
minimum number of digits?

Yes

Int_DP_O_
MidCall

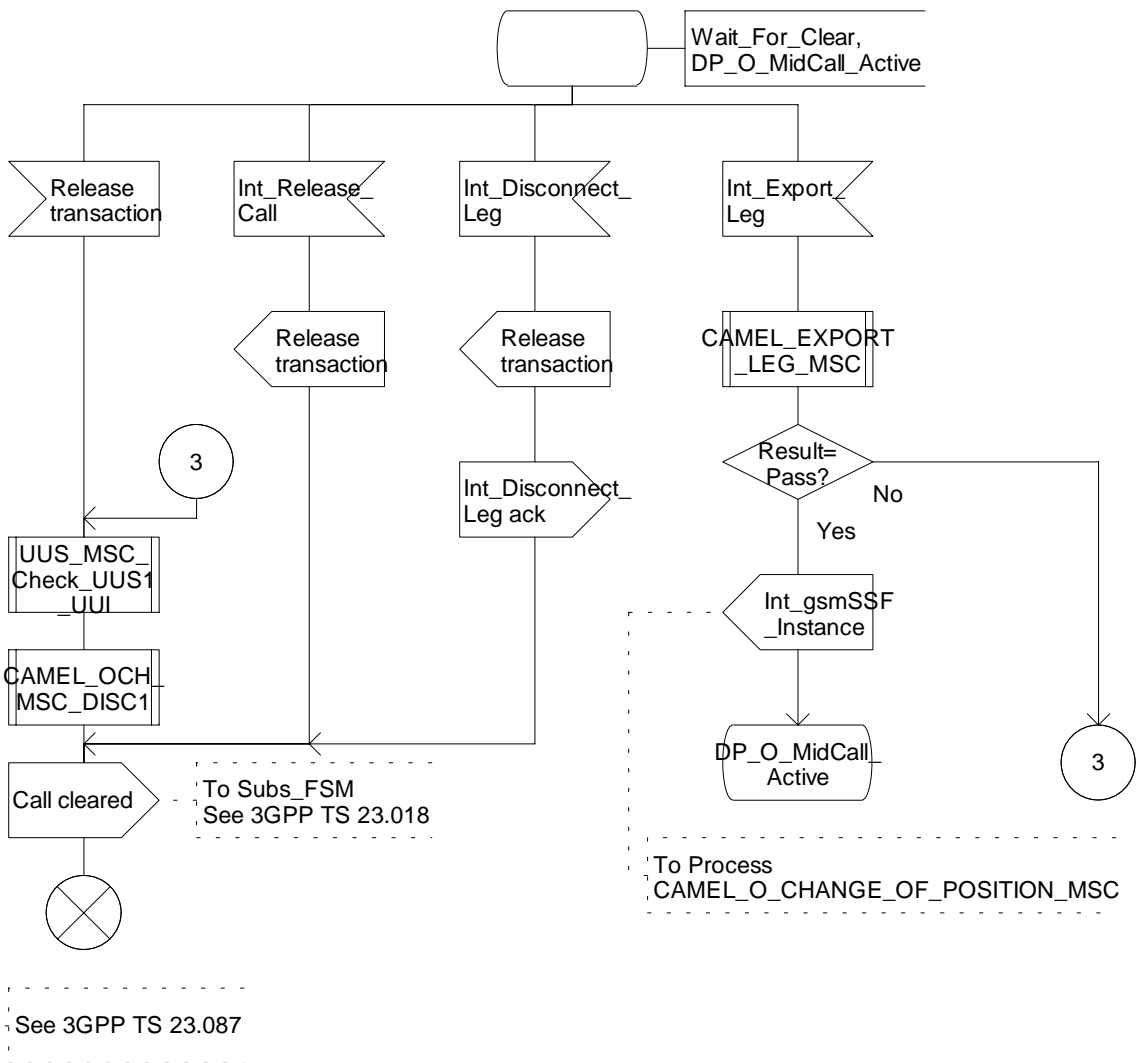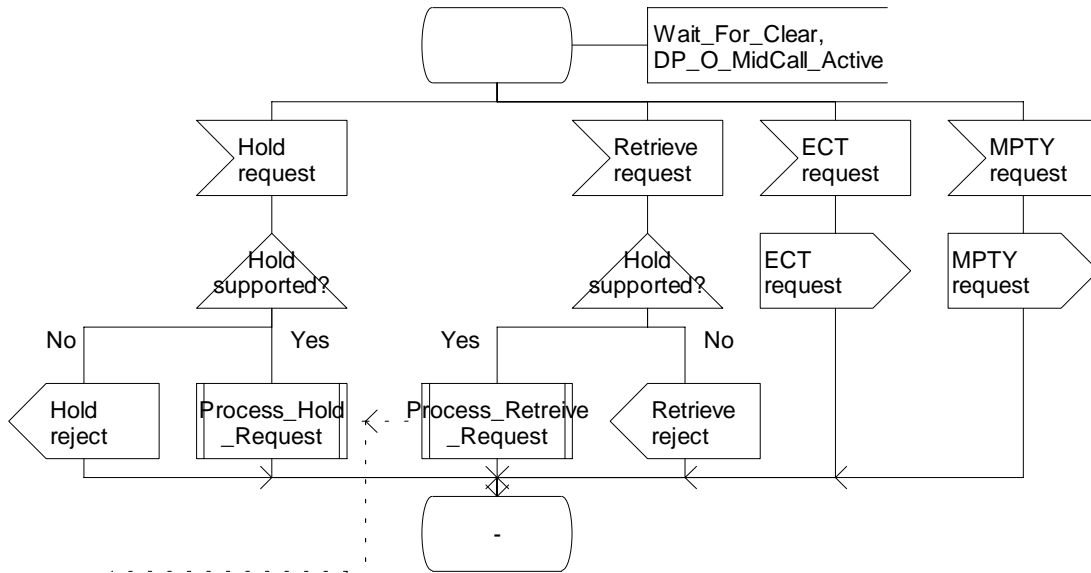Clear Digit
String

Clear Digit
String

DP_O_
MidCall
_Active

-

Figure 4.29i: Procedure CAMEL_OCH_LEG1_MSC (sheet 9)

Process CAMEL_OCH_LEG2_MSC 1(1)

/* A procedure in the MSC to handle leg 2 of an active call. */

/* Signals to/from the left are to/from the gsmSSF Signals to/from the right are to/from the destination exchange unless otherwise stated */

Store Leg2 Information

Wait_For _Clear

1

Wait_For_Clear, DP_O_MidCall_Active

Release

Int_Release Call

Int_Disconnect Leg

Int_Export Leg

Int_MidCall

UUS_MSC_ Check_UUS1 _UUI

Release

Release

CAMEL_EXPORT _LEG_MSC

CAMEL_OCH_ MSC_DISC2

Int_Disconnect_ Leg ack

Result= Pass?

No

Result= Reconnect?

Yes

2

1

No

DP_O_ MidCall_Active

Reconnect := True

See 3GPP TS 23.087

Int_Error

Int_Continue

Int_Continue With Argument

CAMEL_OCH_ RECONNECT _MSC

Default Call Handling

Continue

Reconnect Result?

Release

Pass

2

Wait_For _Clear

Fail

Release

Wait_For _Clear
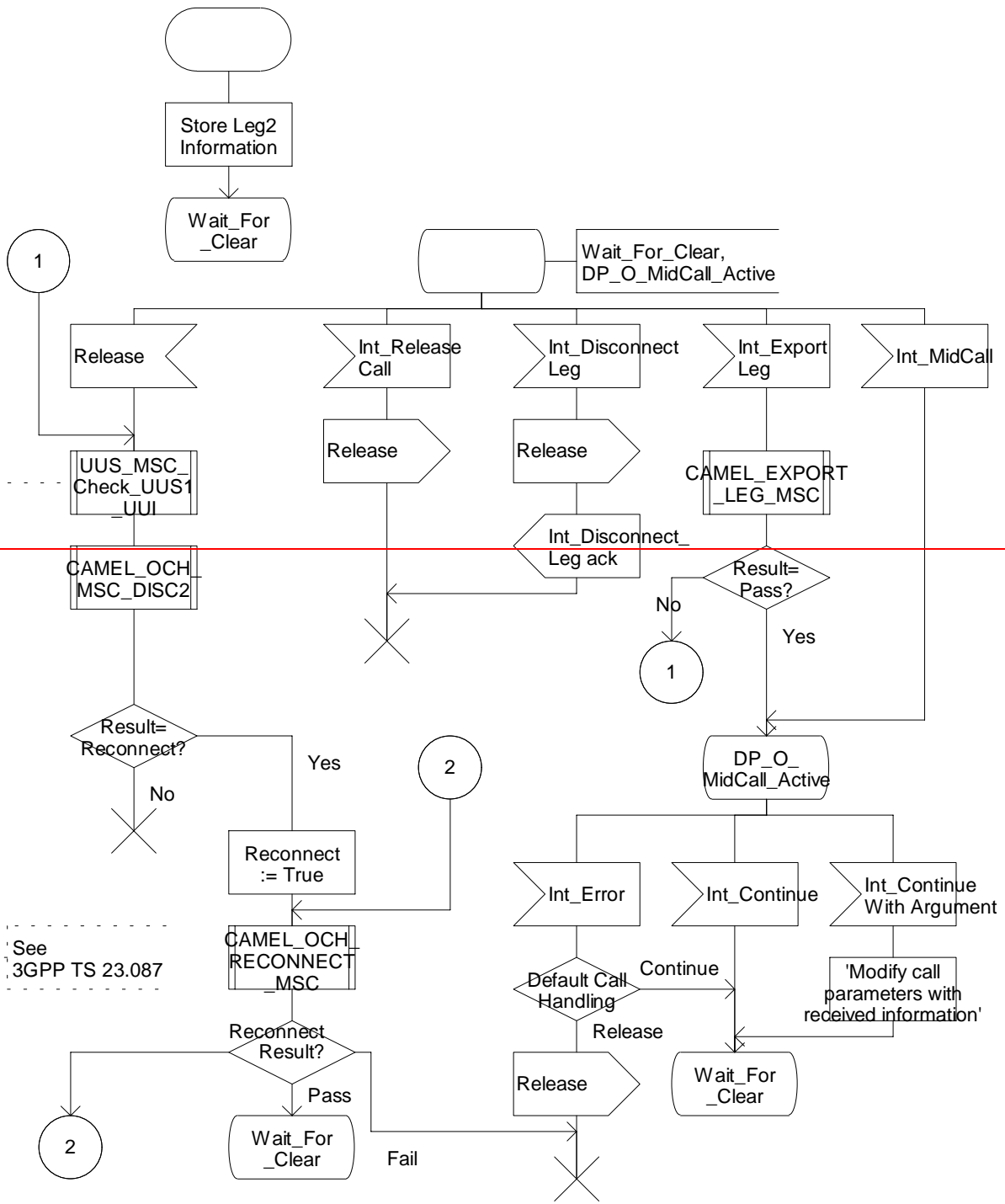
Figure 4.31a: Process CAMEL_OCH_LEG2_MSC (sheet 1)

**** Next Modified Section ****

4.5.3 Retrieval of routeing information

Procedure CAMEL_MT_LEG2_GMSC 1(1)

/* A procedure in the GMSC to handle leg 2 of an active call. */

/* Signals to/from the left are to from the gsmSSF; Signals to/from the right are to/from the destination exchange; unless otherwise stated. */

Wait_For_ Clear

Wait_For_Clear, DP_T_MidCall_Active

| 1 | Release | Int_Release Call | Int_Disconnect Leg | Int_Export Leg | Int_MidCall |

Release Release

CAMEL_MT_ GMSC_DISC2

CAMEL_EXPORT _LEG_MSC

Int_Disconnect_ Leg ack

2 Result = Reconnect? → No

Yes

No Result= Pass?

CAMEL_MT_ RECONNECT _GMSC

1 DP_T_MidCall _Active

Yes

Reconnect Fail

Result?

Pass

2 Wait_For_ Clear

| Int_Continue | Int_Continue With Argument | Int_Error |

Default Call Handling

Release

Continue Release

Wait_For_ Clear

3GPP
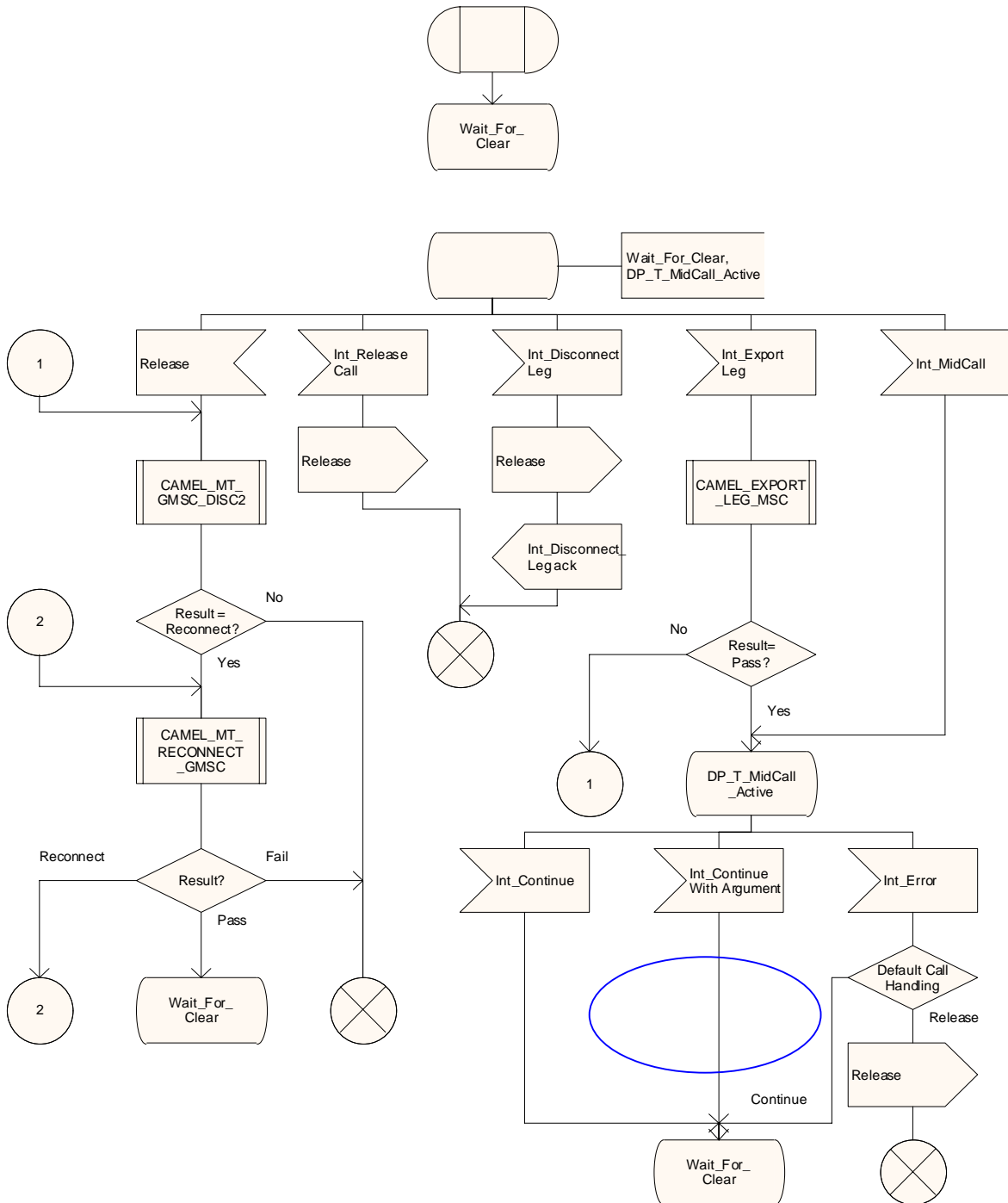
Procedure CAMEL_MT_LEG2_GMSC 1(1)

/* A procedure in the GMSC to handle leg 2 of an active call. */

/* Signals to/from the left are to from the gsmSSF; Signals to/from the right are to/from the destination exchange; unless otherwise stated. */
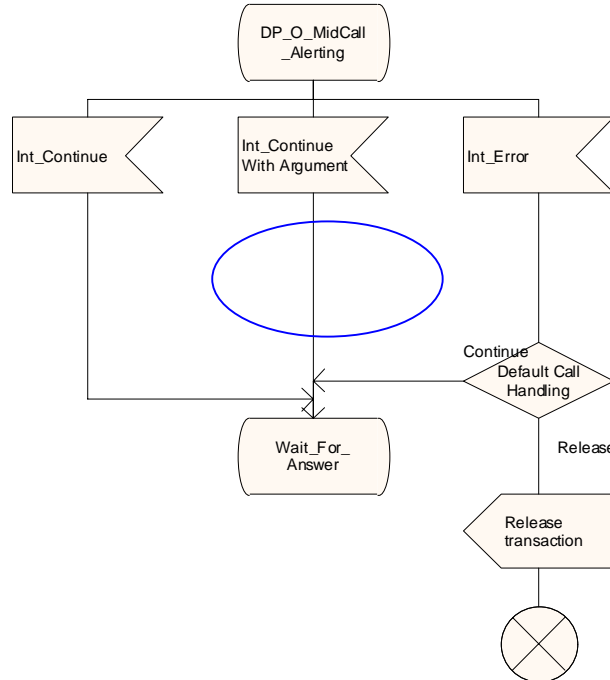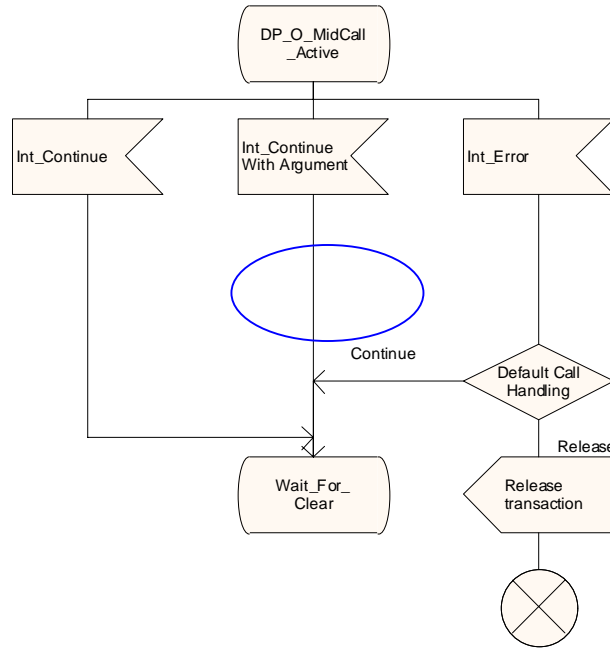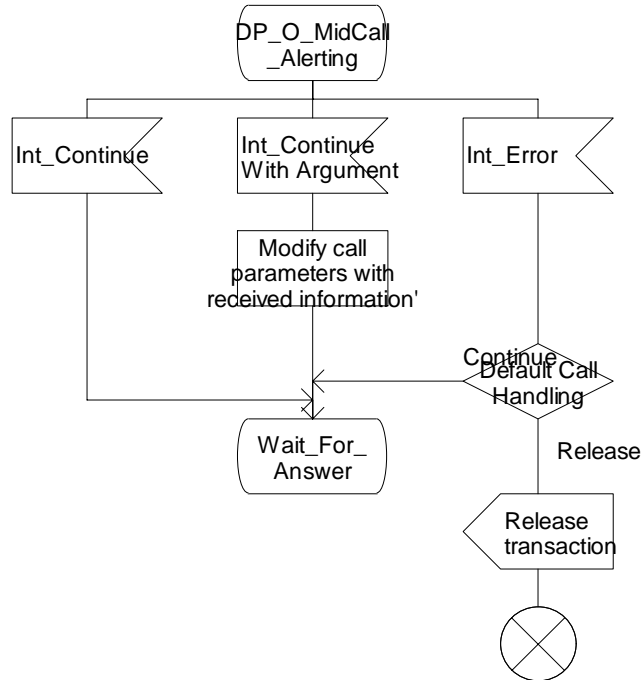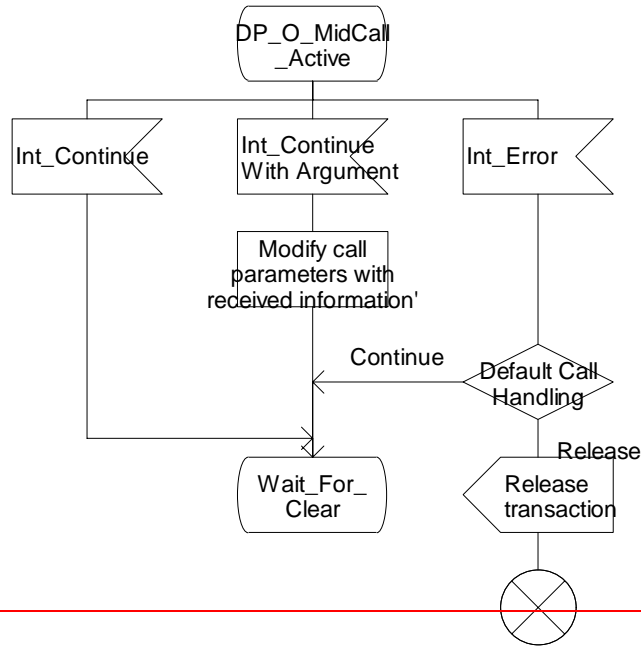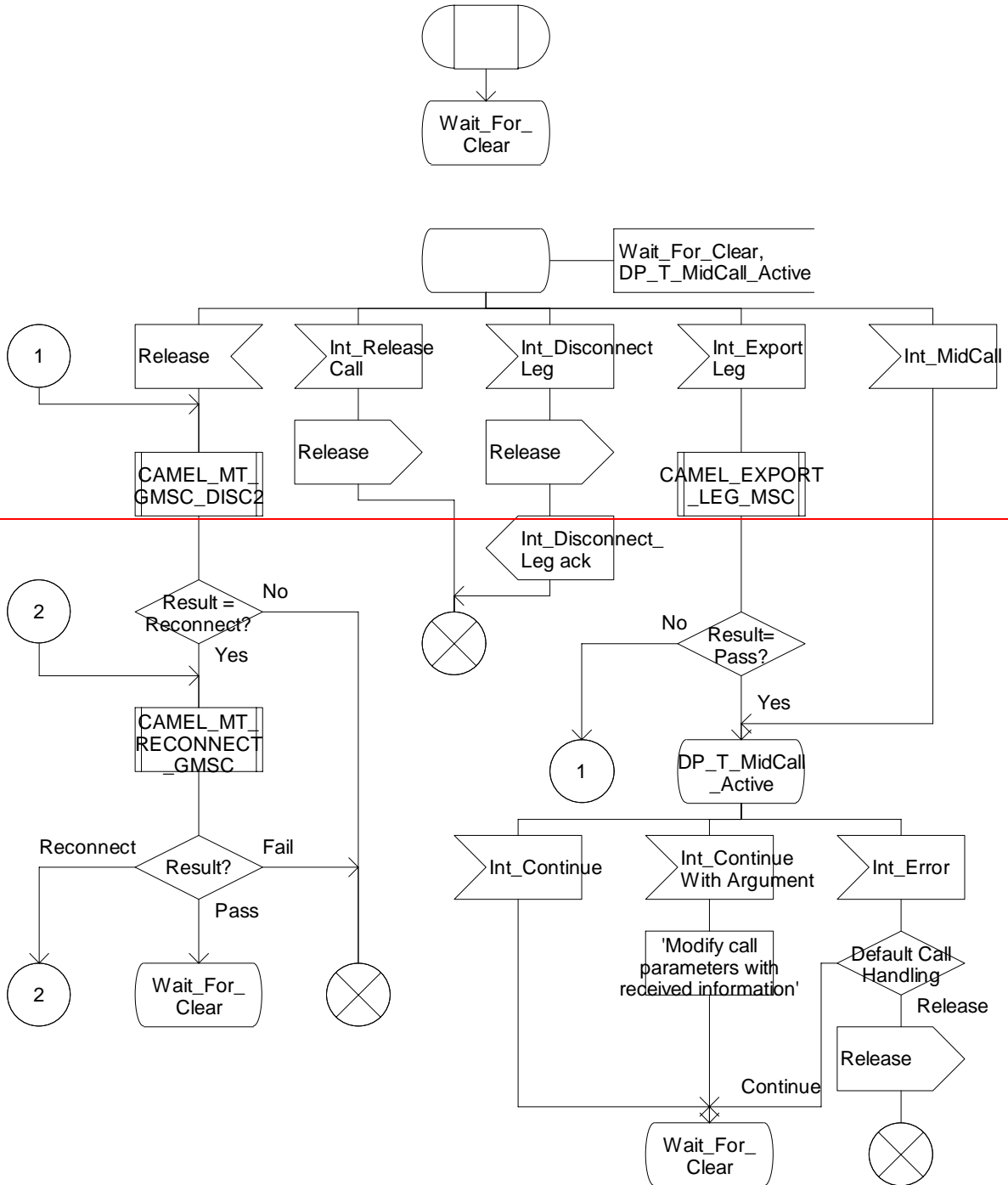

Figure 4.51a: Procedure CAMEL_MT_LEG2_GMSC (sheet 1)

Process CAMEL_MT_LEG1_GMSC 1(3)

/* A process in the GMSC to handle leg 1 in a CPH configuration. */

/* Signals to/from the left are to/from the originating exchange; Signals to/from the right are to/from the gsmSSF unless otherwise stated. */

Store Leg1 information

Leg1_status?

Active → Wait_For_ Clear

Set-up → Wait_For_ ACM

Address Complete

Connect

See 3GPP TS 23.018 — Send_ACM_ If_Required

Send_Network_ Connect_If_ Required — See 3GPP TS 23.018

Wait_For_ Answer

Wait_For_ Clear

Answer

See 3GPP TS 23.018 — Send_Answer_ If_Required

Wait_For_ Clear

Figure 4.52a: Process CAMEL_MT_LEG1_GMSC (sheet 1)

Process CAMEL_MT_LEG1_GMSC

2(3)

/* A process in the GMSC to
handle leg 1 in a CPH configuration. */

/* Signals to/from the left are to/from
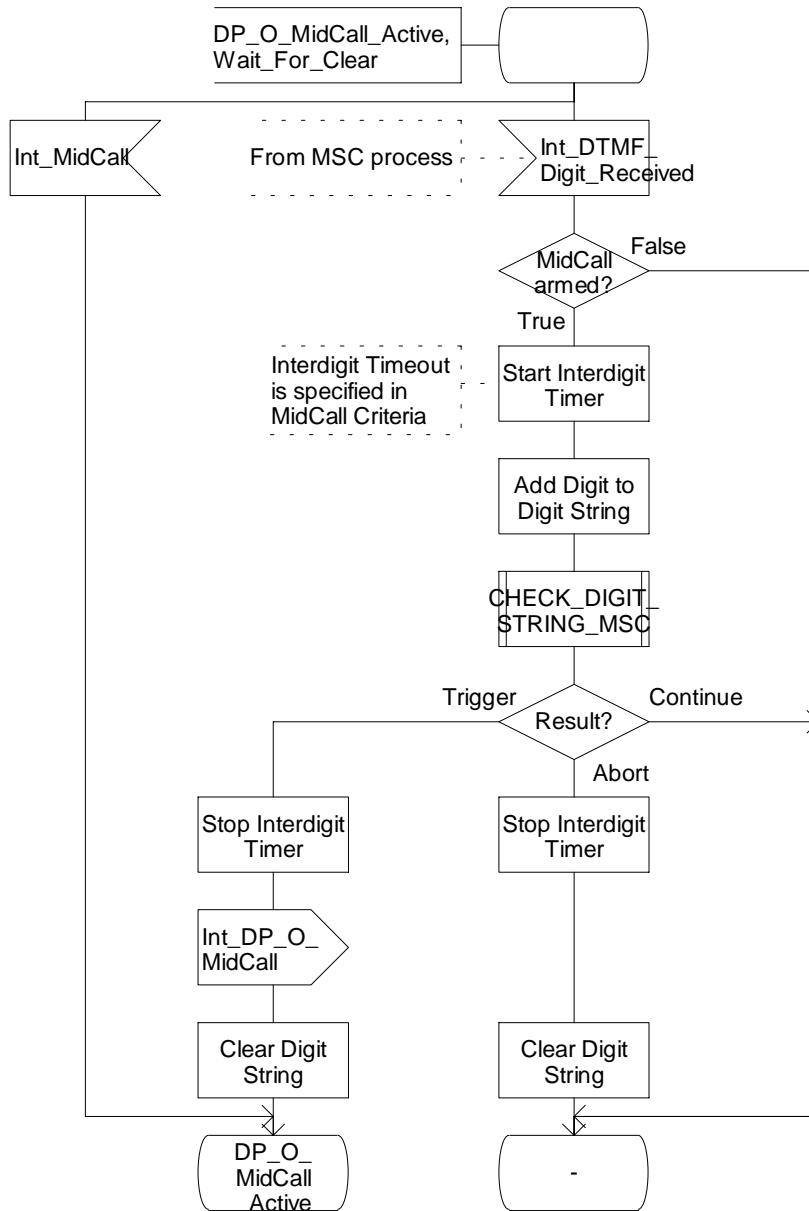the originating exchange; Signals to/from the right
are to/from the gsmSSF unless otherwise stated. */

Wait_For_ACM,
Wait_For_Answer,
DP_T_MidCall_Alerting

Release

Int_Disconnect_Leg

Int_Release_Call

CAMEL_MT_GMSC_DISC6

Release

Release

Int_Disconnect_Leg_ack

From gsmSSF

DP_T_MidCall_Alerting

Wait_For_Answer,
DP_T_MidCall_Alerting

Answer

Int_Error

Int_Continue

Int_Continue With Argument

Int_MidCall

Default Call Handling

Continue

Release

Release

Wait_For_Answer

DP_T_MidCall_Alerting

Process CAMEL_MT_LEG1_GMSC 2(3)

/* A process in the GMSC to handle leg 1 in a CPH configuration. */

/* Signals to/from the left are to/from the originating exchange; Signals to/from the right are to/from the gsmSSF unless otherwise stated. */
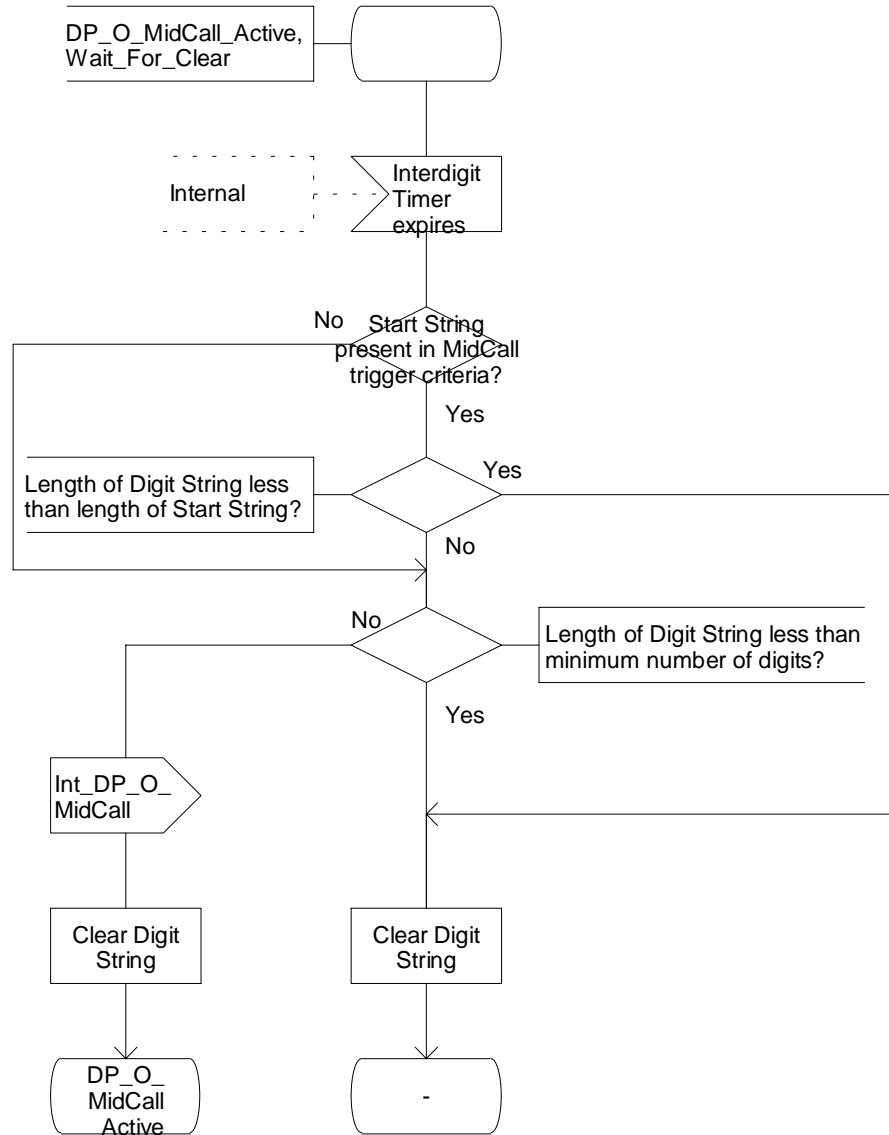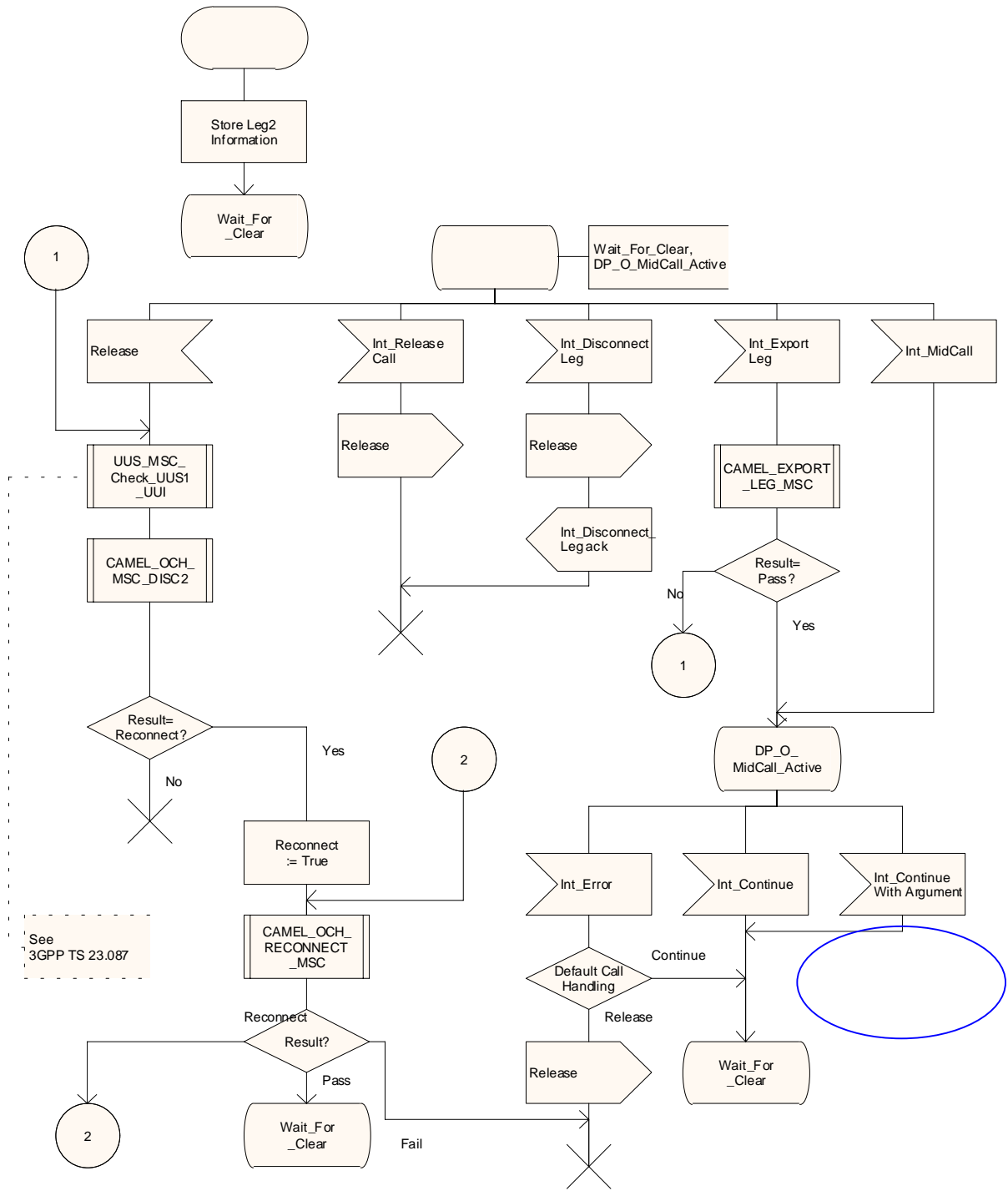
Wait_For_ACM,
Wait_For_Answer,
DP_T_MidCall_Alerting

Release

Int_Disconnect_Leg

Int_Release_Call

CAMEL_MT_GMSC_DISC6

Release

Release

Int_Disconnect_Leg_ack

From gsmSSF

DP_T_MidCall_Alerting

Wait_For_Answer,
DP_T_MidCall_Alerting

Answer

Int_Error

Int_Continue

Int_Continue With Argument

Int_MidCall

Default Call Handling

Continue

Release

'Modify call parameters with received information'

DP_T_MidCall_Alerting

Release

Wait_For_Answer

Figure 4.52b: Process CAMEL_MT_LEG1_GMSC (sheet 2)

Process CAMEL_MT_LEG1_GMSC 3(3)

/* A process in the GMSC to handle leg 1 in a CPH configuration. */

/* Signals to/from the left are to/from the originating exchange; Signals to/from the right are to/from the gsmSSF unless otherwise stated. */

Wait_For_Clear,
DP_T_MidCall_Active

1 → Release

CAMEL_MT_
GMSC_DISC1

Int_Release
Call

Release

Int_Disconnect
Leg

Release

Int_Disconnect_
Legack

Int_Export
Leg

CAMEL_EXPORT
_LEG_MSC

Result=
Pass?

No → 1

Yes

DP_T_MidCall
_Active

Int_MidCall

DP_T_MidCall
_Active

Int_Error

Default Call
Handling

Continue →

Release

Release

Int_Continue

Int_Continue
With Argument

Wait_For
_Clear

Process CAMEL_MT_LEG1_GMSC 3(3)

/* A process in the GMSC to handle leg 1 in a CPH configuration. */

/* Signals to/from the left are to/from the originating exchange; Signals to/from the right are to/from the gsmSSF unless otherwise stated. */
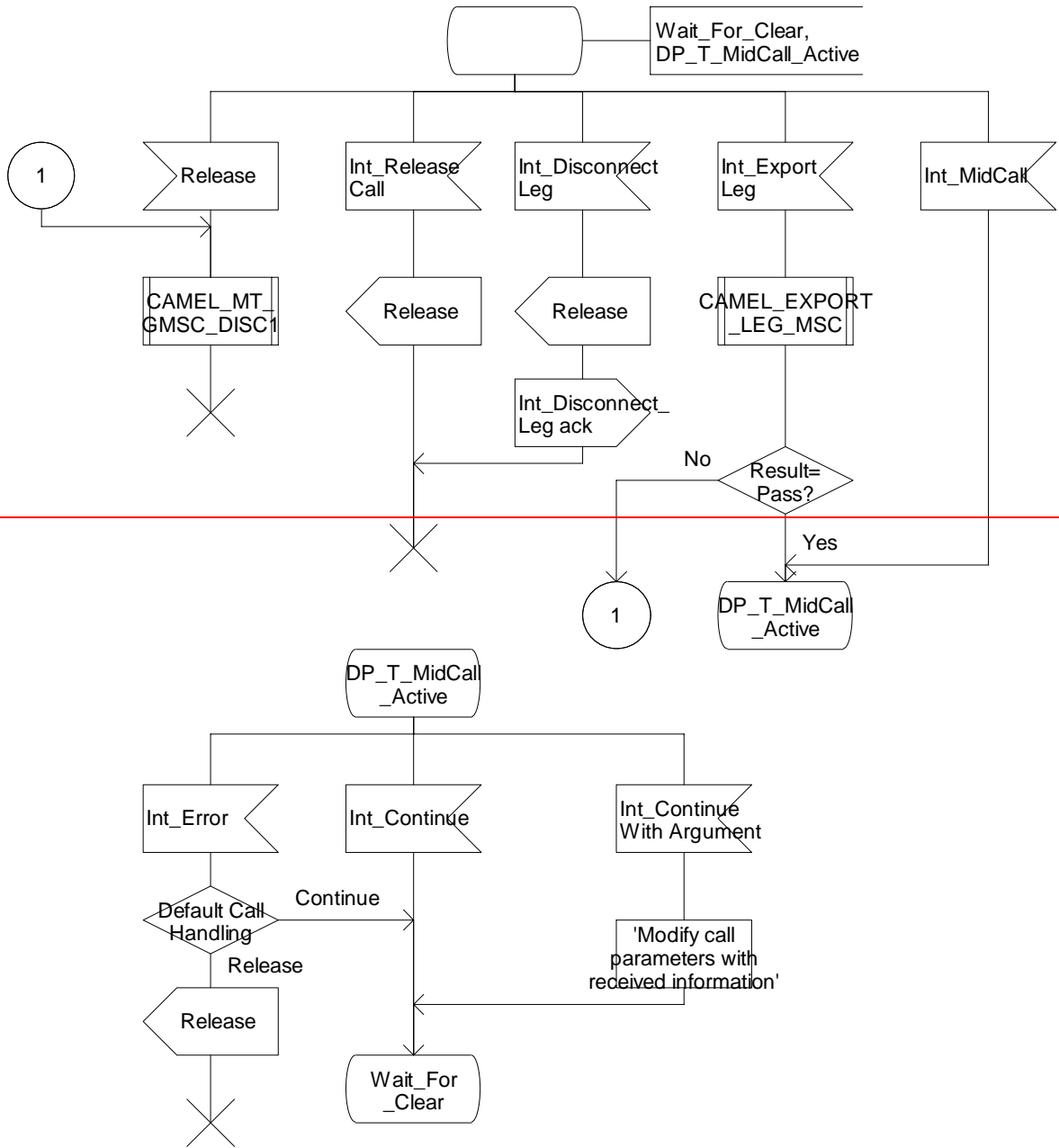
Figure 4.52c: Process CAMEL_MT_LEG1_GMSC (sheet 3)

4.5.4 Handling of mobile terminating calls

Procedure CAMEL_ICH_LEG2_MSC 1(6)

/* A procedure in the MSC to handle leg 2 of an active call. */

/* Signals to/from the left are to/from the gsmSSF; Signals to/from the right are to/from the BSS; unless otherwise stated. */

Int_MidCall_ Criteria_Request

Wait_For_ MidCall_Criteria

Int_MidCall_ Criteria ack

Int_MidCall_ Criteria negative response

Store MidCall Criteria

MidCall armed := True

MidCall armed := False

1

*

Int_MidCall _Criteria

Int_Cancel _MidCall

Store MidCall Criteria

MidCall armed := True

MidCall armed := False

Clear Digit String

Stop Interdigit Timer

-

Figure 4.67a: Procedure CAMEL_ICH_LEG2_MSC (sheet 1)

Procedure CAMEL_ICH_LEG2_MSC   2(6)

/* A procedure in the MSC to
handle leg 2 of an active call. */

/* Signals to/from the left are to/from the gsmSSF;
Signals to/from the right are to/from the BSS;
unless otherwise stated. */
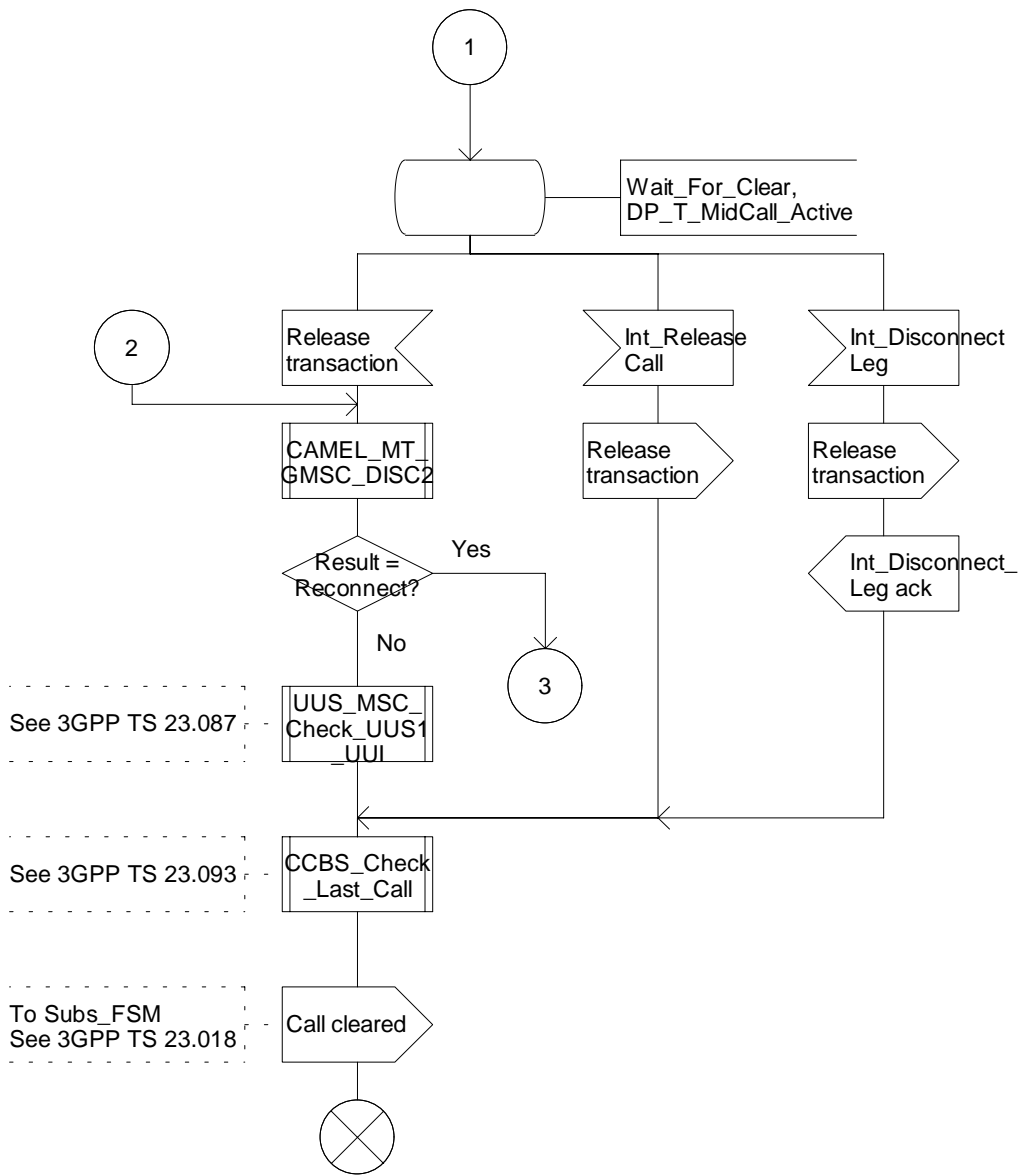
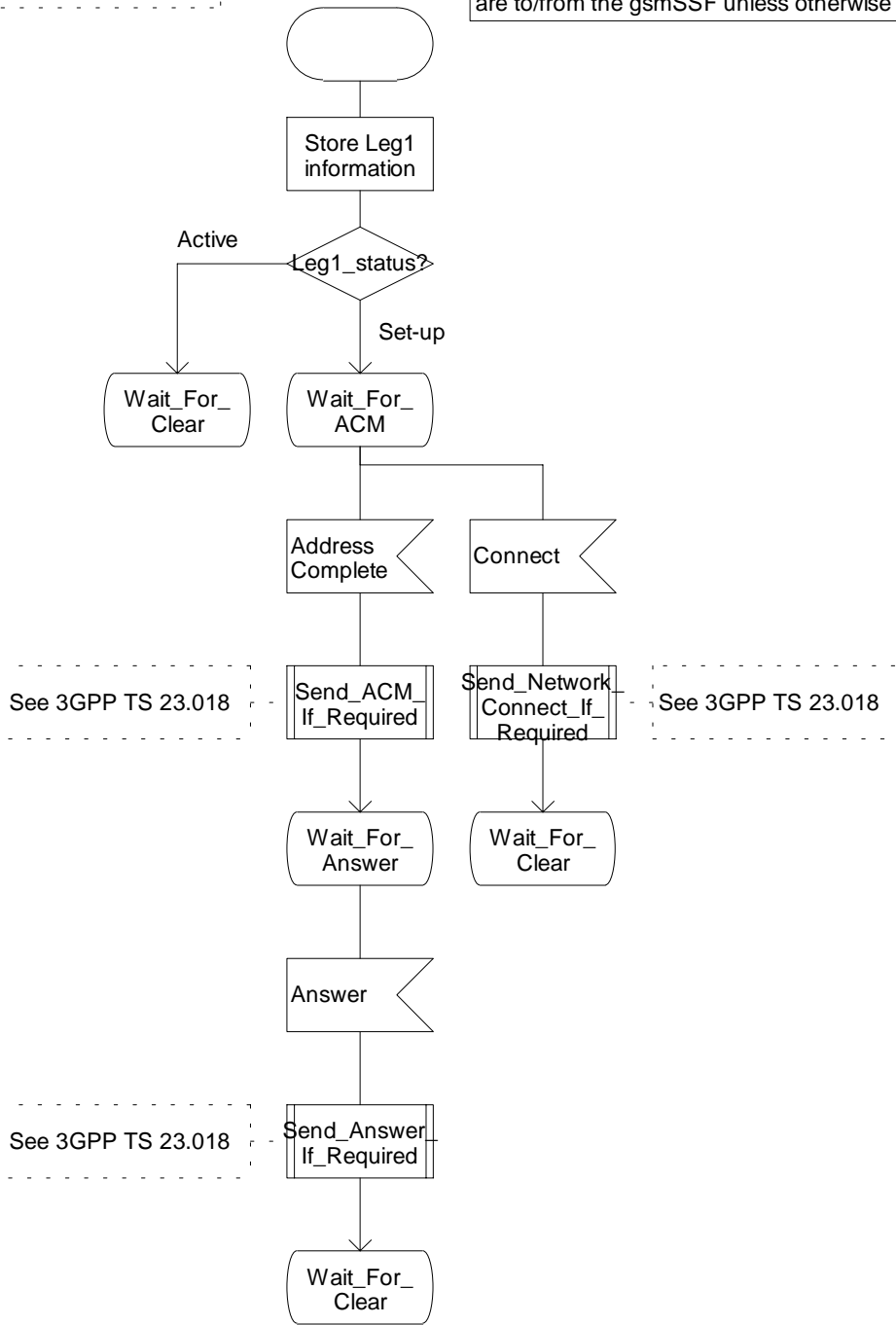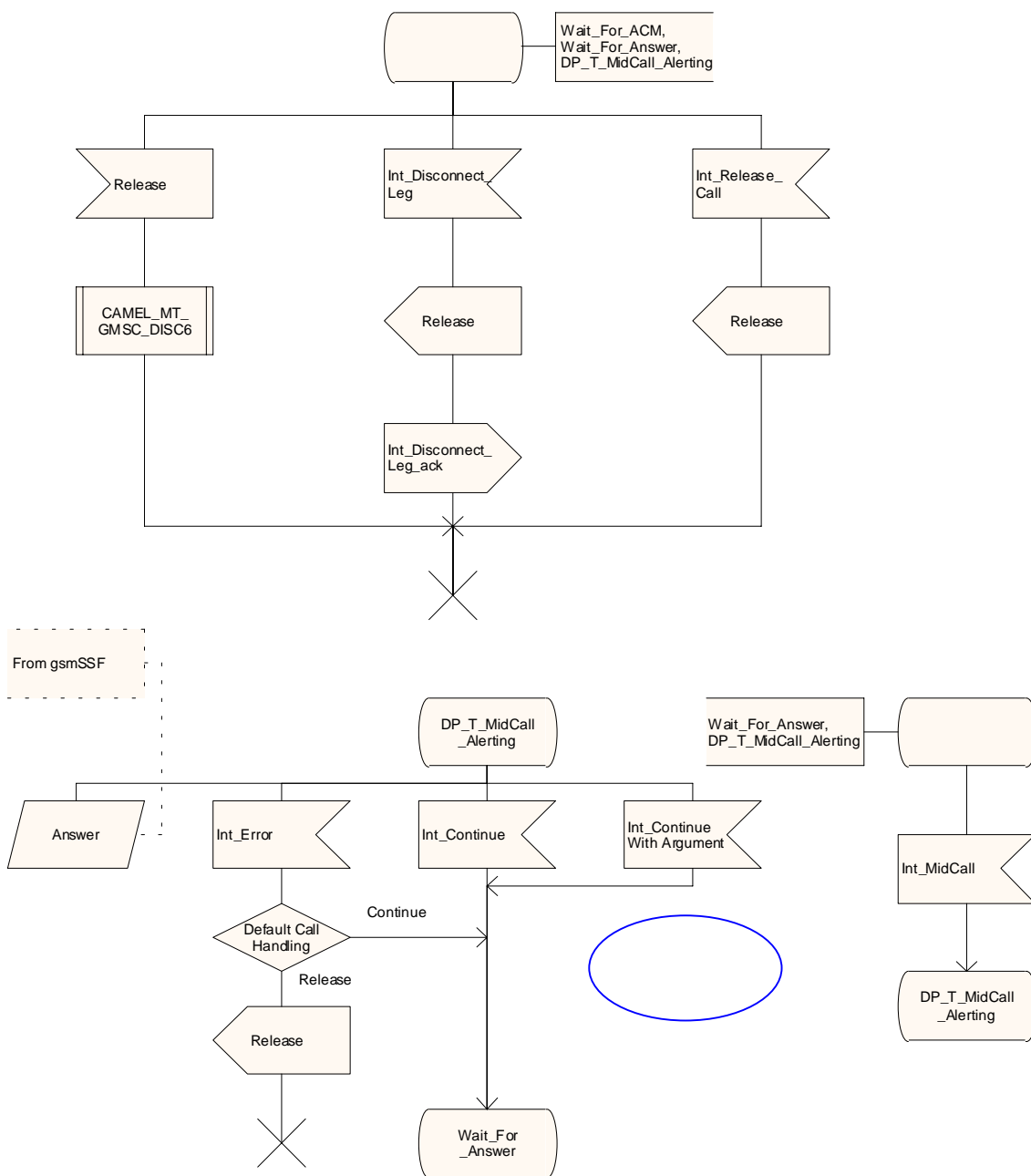**Figure 4.67b: Procedure CAMEL_ICH_LEG2_MSC (sheet 2)**

Procedure CAMEL_ICH_LEG2_MSC 3(6)

/* A procedure in the MSC to handle leg 2 of an active call. */

/* Signals to/from the left are to/from the Subs_FSM (See 3GPP TS 23.018); Signals to/from the right are to/from the BSS; unless otherwise stated. */

Wait_For_Clear, DP_T_MidCall_Active

Hold Request

Retrieve Request

ECT request

MPTY request

Hold supported?

Hold supported?

ECT request

MPTY request

No Yes Yes No

Hold reject

Process_Hold _Request

Process_Retreive _Request

Retrieve reject

-

See 3GPP TS 23.083

Figure 4.67c: Procedure CAMEL_ICH_LEG2_MSC (sheet 3)

Procedure CAMEL_ICH_LEG2_MSC 4(6)

/* A procedure in the MSC to handle leg 2 of an active call. */

/* Signals to/from the left are to/from the gsmSSF; Signals to/from the right are to/from BSS; unless otherwise stated. */

Wait_For_Clear, DP_T_MidCall_Active

Int_Export Leg

Int_MidCall

CAMEL_EXPORT _LEG_MSC

No

Result= Pass

Yes

2

Int_gsmSSF _Instance

DP_T_MidCall_ Active

To Process CAMEL_T_CHANGE_OF_POSITION_MSC

DP_T_MidCall _Active

Int_Continue

Int_Continue With Argument

Int_Error

Default Call Handling

Release

Release transaction

Continue

Wait_For _Clear

3

CAMEL_ICH_ RECONNECT _MSC

Reconnect

Result?

Fail

Pass

3

Wait_For _Clear

Procedure CAMEL_ICH_LEG2_MSC 4(6)

/* A procedure in the MSC to handle leg 2 of an active call. */

/* Signals to/from the left are to/from the gsmSSF; Signals to/from the right are to/from BSS; unless otherwise stated. */
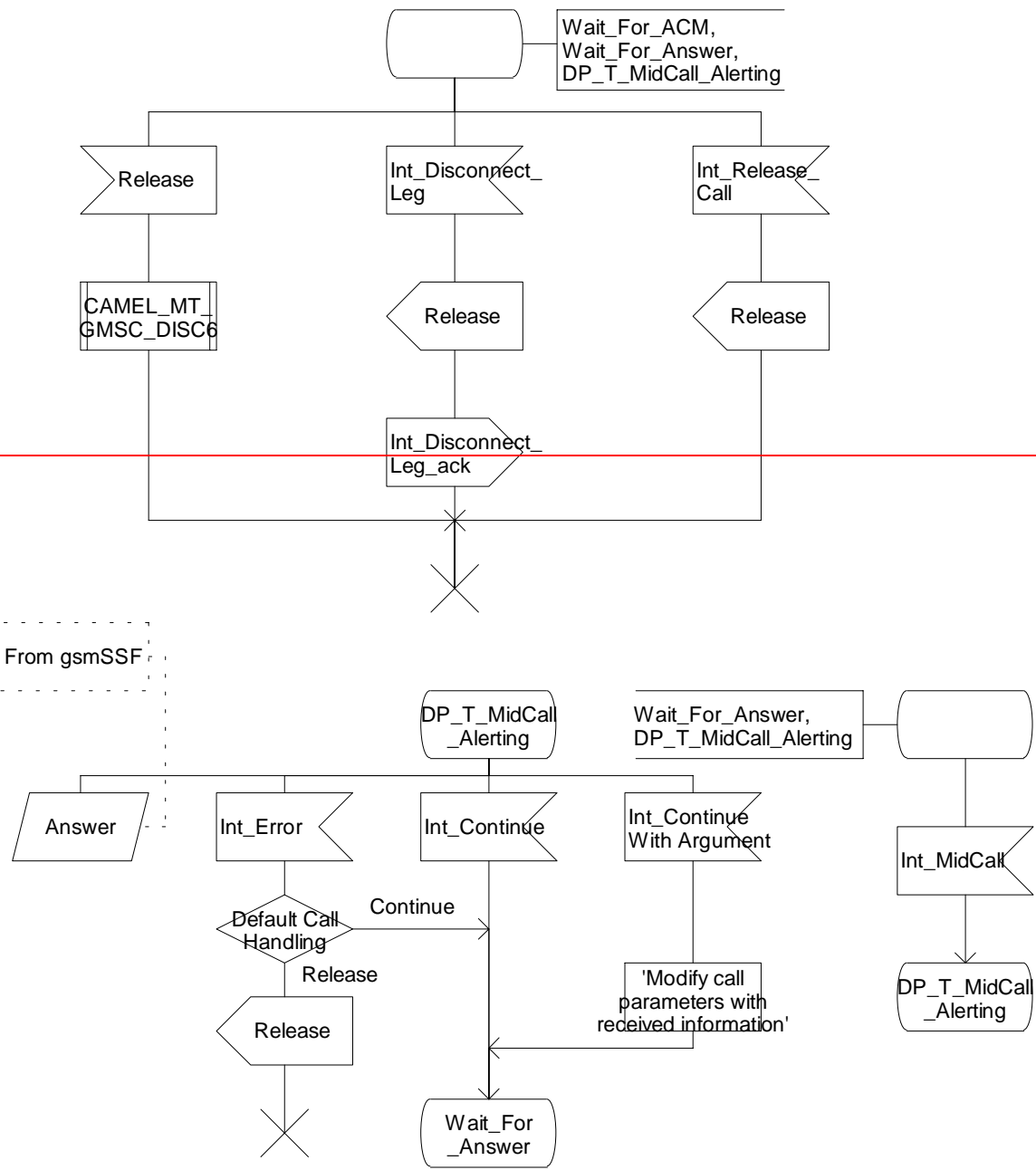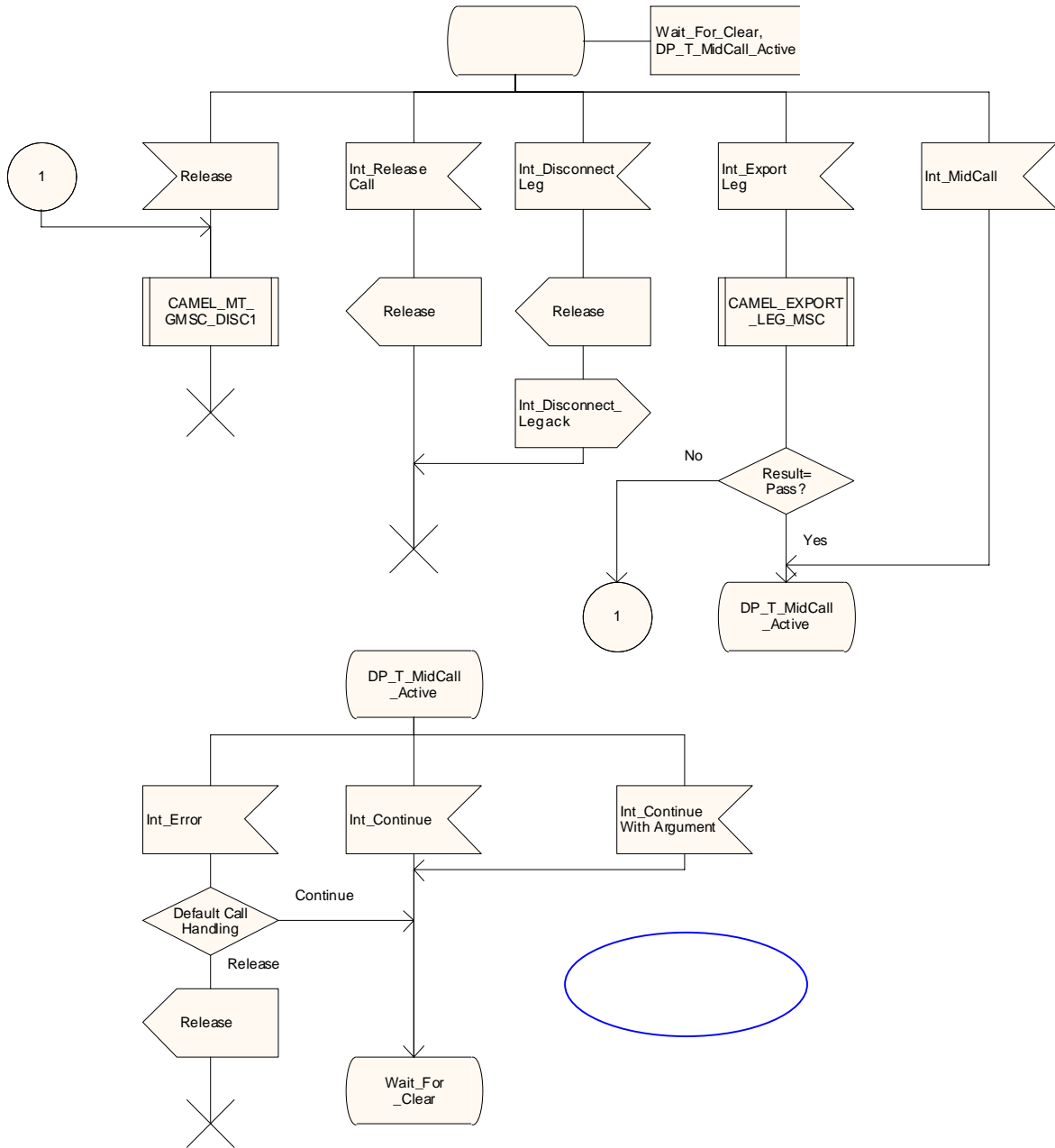

Figure 4.67d: Procedure CAMEL_ICH_LEG2_MSC (sheet 4)

Procedure CAMEL_ICH_LEG2_MSC 5(6)

/* A procedure in the MSC to handle leg 2 of an active call. */

/* Signals to/from the left are to/from the gsmSSF; Signals to/from the right are to/from BSS; unless otherwise stated. */

DP_T_MidCall_Active, Wait_For_Clear

From MSC process

Int_DTMF_Digit_Received

MidCall armed?

False

True

Interdigit Timeout is specified in MidCall Criteria

Start Interdigit Timer

Add Digit to Digit String

CHECK_DIGIT_STRING_MSC

Result?

Trigger

Continue

Abort

Stop Interdigit Timer

Stop Interdigit Timer

Int_DP_T_MidCall

Clear Digit String

Clear Digit String

DP_T_MidCall_Active

-

Figure 4.67e: Procedure CAMEL_ICH_LEG2_MSC (sheet 5)

Procedure CAMEL_ICH_LEG2_MSC 6(6)

/* A procedure in the MSC to handle leg 2 of an active call. */

/* Signals to/from the left are to/from the gsmSSF; Signals to/from the right are to/from BSS; unless otherwise stated. */

DP_T_MidCall_Active, Wait_For_Clear
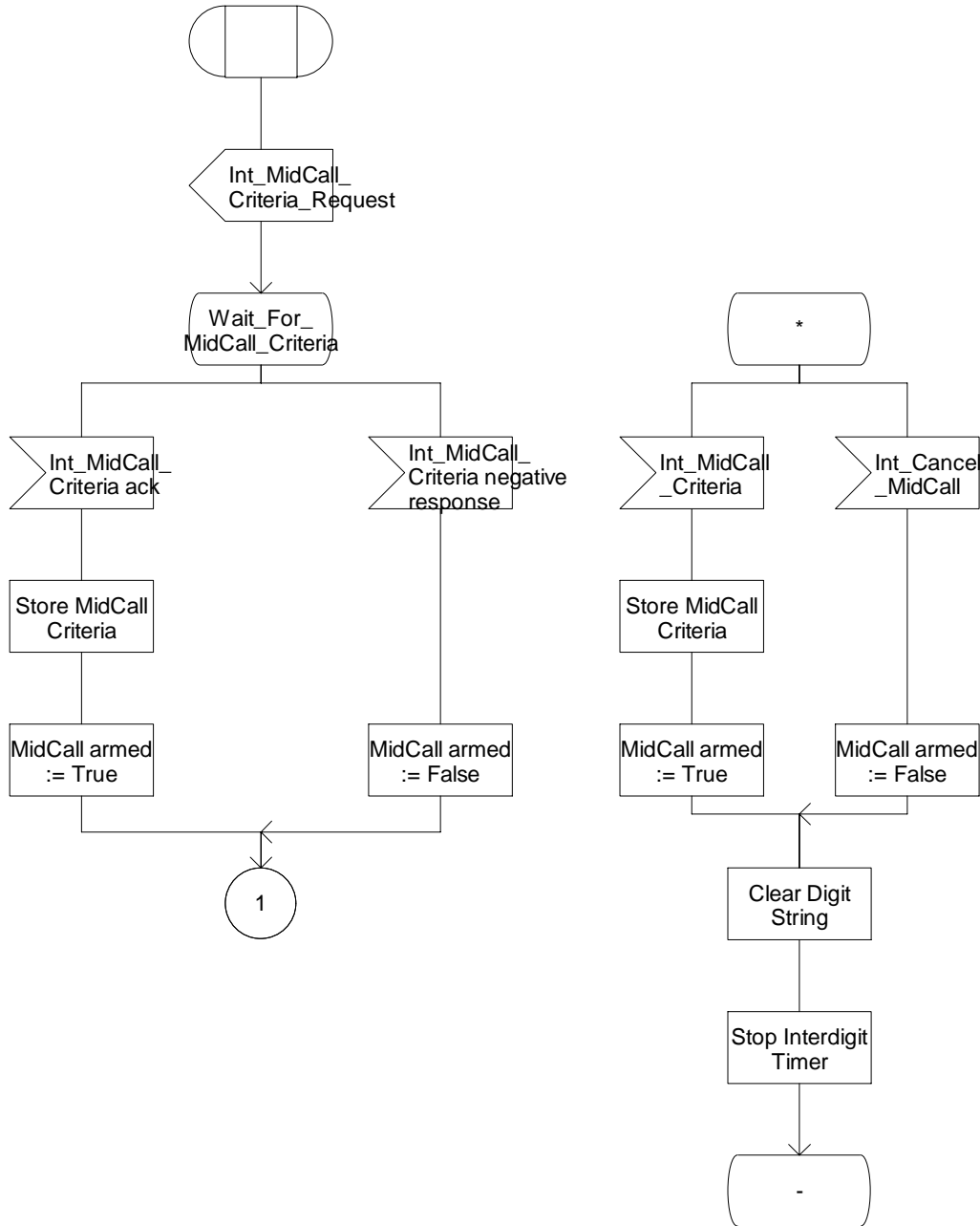
Internal

Interdigit Timer expires

Start String present in MidCall trigger criteria? No

Yes

Length of Digit String less than length of Start String? Yes

No

Length of Digit String less than minimum number of digits? No

Yes

Int_DP_T_ MidCall

Clear Digit String

Clear Digit String

DP_T_ MidCall _Active

-

Figure 4.67f: Procedure CAMEL_ICH_LEG2_MSC (sheet 6)

Procedure CAMEL_ICH_LEG2_CF_MSC 1(1)

/* A procedure in the MSC to handle a forwarded leg 2 of an active call. */

/* Signals to/from the left are to/from the gsmSSF; Signals to/from the right are to/from MT_CF_MSC, unless otherwise stated. */
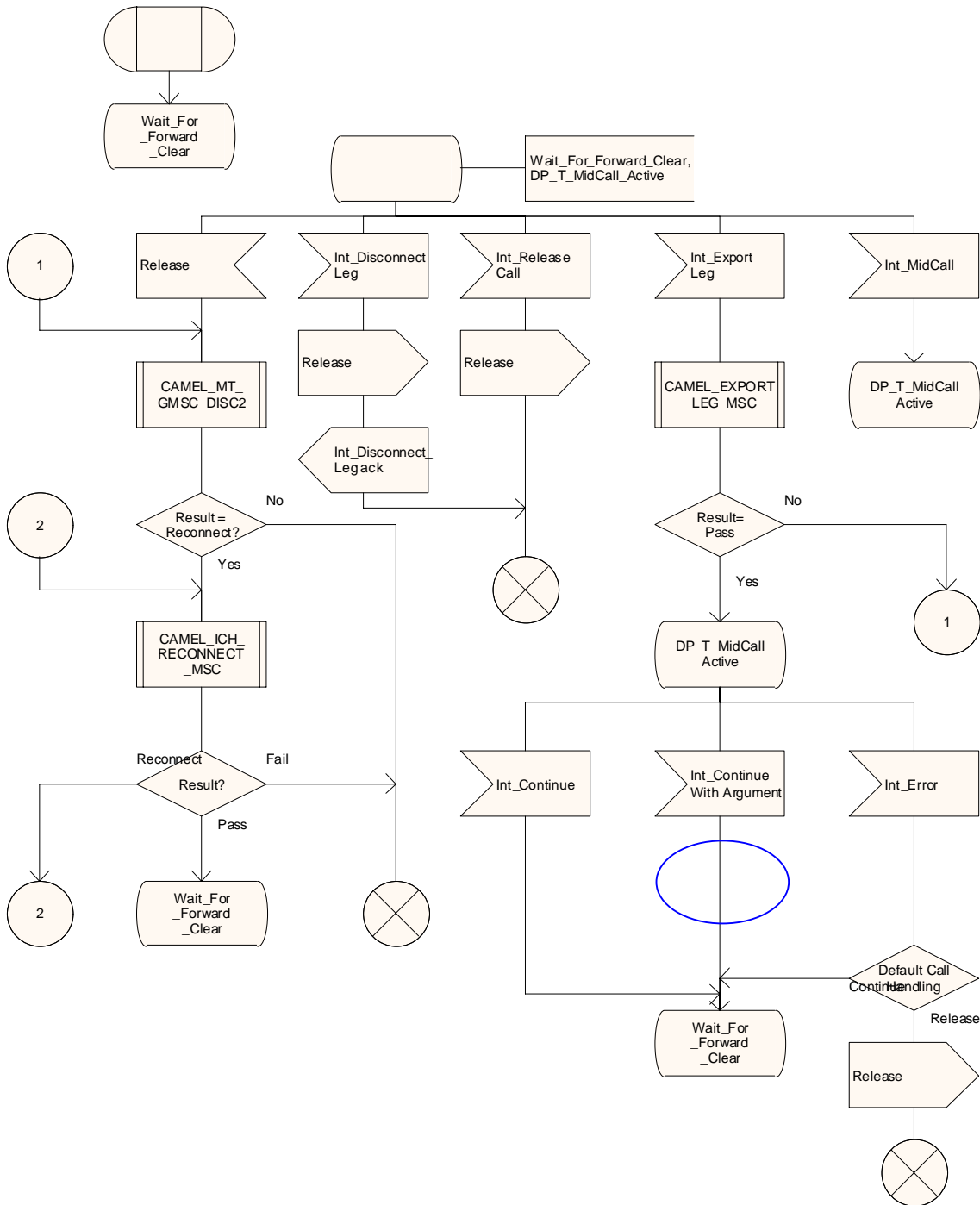
Procedure CAMEL_ICH_LEG2_CF_MSC   1(1)

/* A procedure in the MSC to handle a forwarded leg 2 of an active call. */

/* Signals to/from the left are to/from the gsmSSF; Signals to/from the right are to/from MT_CF_MSC; unless otherwise stated. */
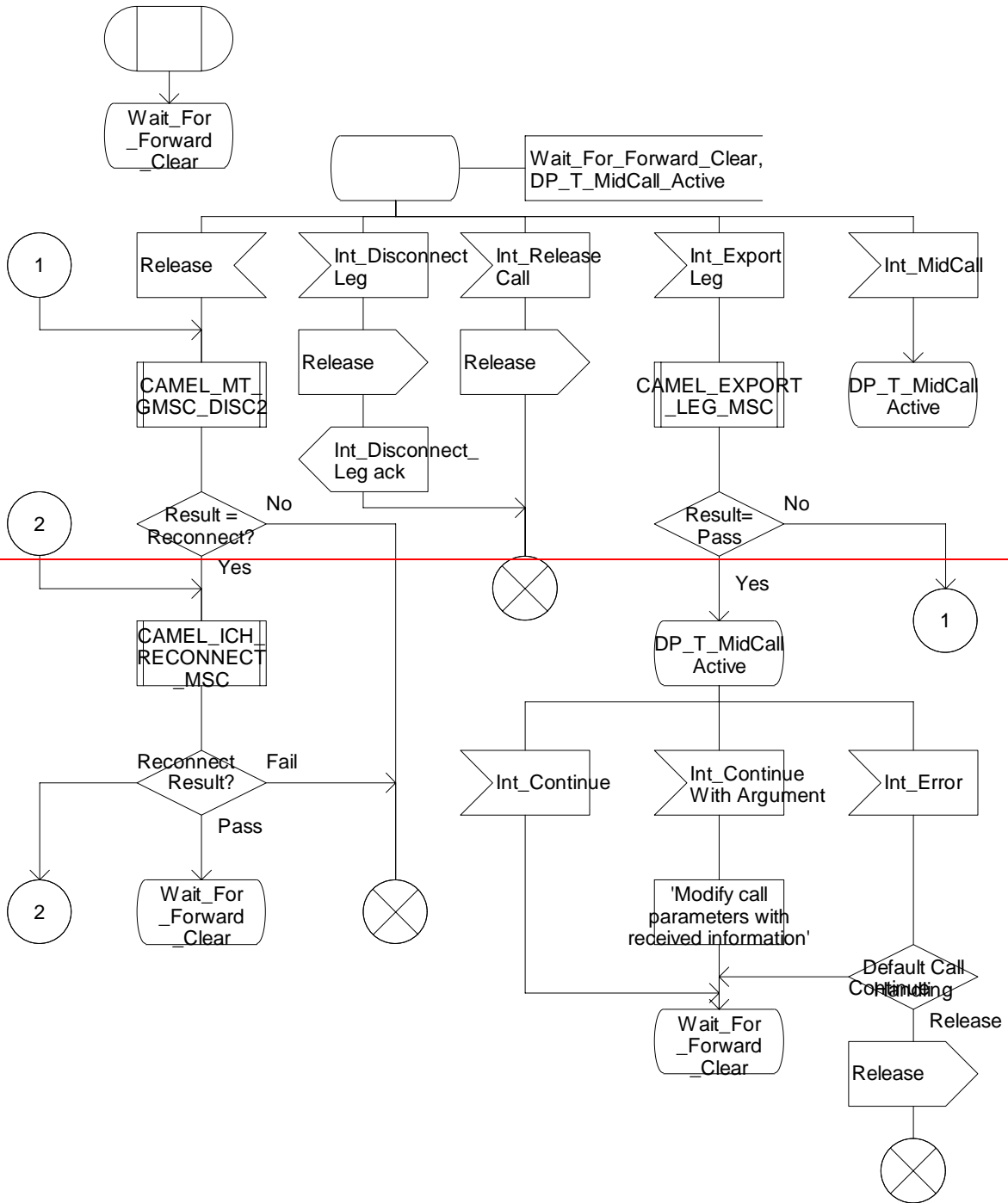

Figure 4.68a: Process CAMEL_ICH_LEG2_CF_MSC (sheet 1)

Process CAMEL_ICH_LEG1_MSC 1(3)

/* A process in the MSC to handle leg 1 of a CPH configuration. */

/*Signals to/from the left are to/from the GMSC; Signals to/from the right are to/from the gsmSSF; unless otherwise stated. */
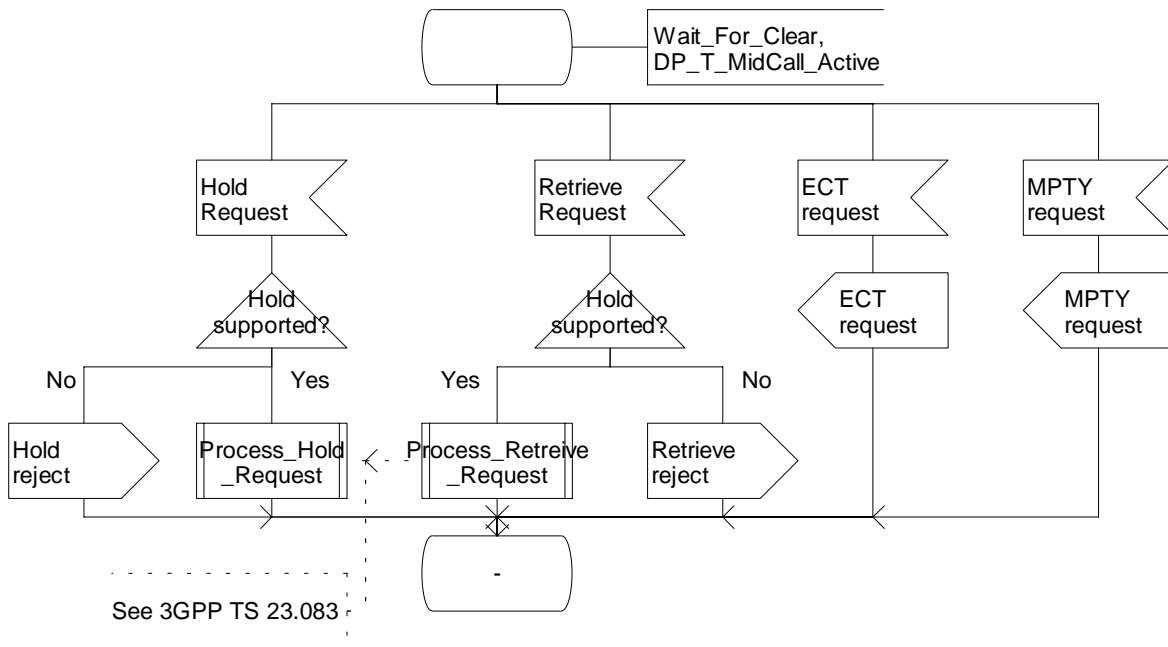
Store Leg1 information

Leg1_status?

Active → Wait_For_Clear

Set-up

Abort → To VLR

Wait_For_Alerting

Alerting

Connect

See 3GPP TS 23.018 — Send_ACM_If_Required

Send_Network_Connect_If_Required — See 3GPP TS 23.018

Wait_For_Answer

Wait_For_Clear

Answer

See 3GPP TS 23.018 — Send_Answer_If_Required

Wait_For_Clear

Figure 4.69a: Process CAMEL_ICH_LEG1_MSC (sheet 1)

Process CAMEL_ICH_LEG1_MSC 2(3)

/* A process in the MSC to
handle leg 1 of a CPH configuration. */

/*Signals to/from the left are to/from the GMSC;
Signals to/from the right are to/from the gsmSSF;
unless otherwise stated. */

Wait_For_Alerting,
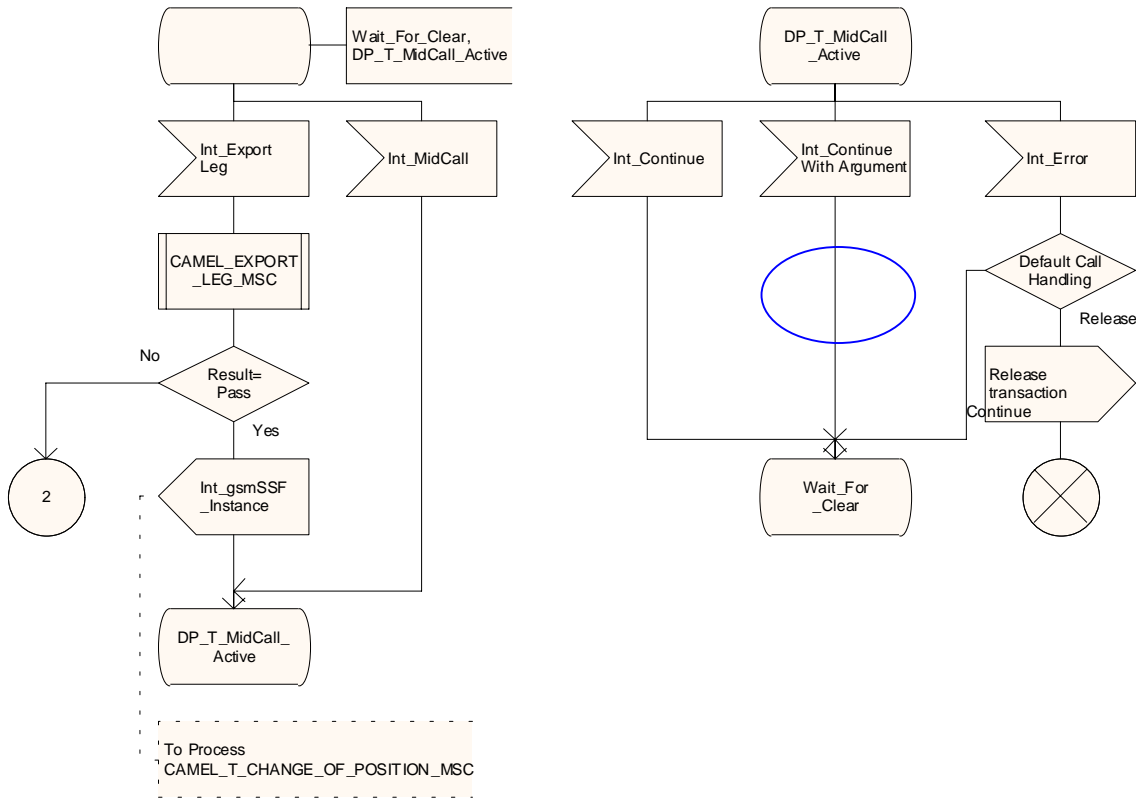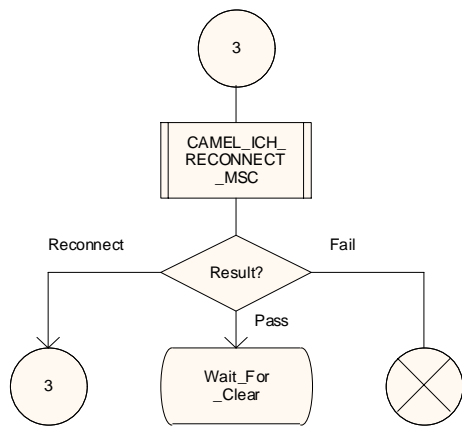Wait_For_Answer,
DP_T_MidCall_Alerting

Release

Int_Disconnect_
Leg

Int_Release_
Call

CAMEL_MT_
GMSC_DISC6

Release

Release

Int_Disconnect_
Leg_ack

From gsmSSF

DP_T_MidCall
_Alerting

Wait_For_Answer,
DP_T_MidCall_Alerting

Answer

Int_Continue

Int_Continue
With Argument

Int_MidCall

DP_T_MidCall
_Alerting

Wait_For_
Answer

Process CAMEL_ICH_LEG1_MSC 2(3)

/* A process in the MSC to
handle leg 1 of a CPH configuration. */

/*Signals to/from the left are to/from the GMSC;
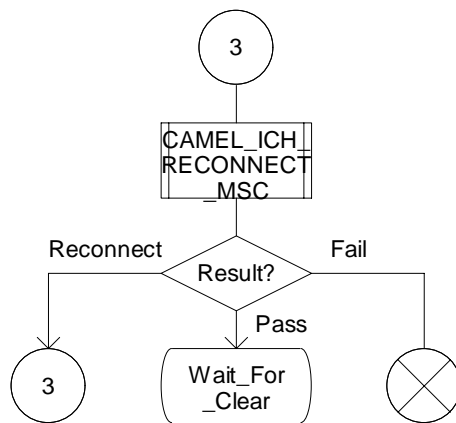Signals to/from the right are to/from the gsmSSF;
unless otherwise stated. */

Wait_For_Alerting,
Wait_For_Answer,
DP_T_MidCall_Alerting

Release

Int_Disconnect_
Leg

Int_Release_
Call

CAMEL_MT_
GMSC_DISC6

Release

Release

Int_Disconnect_
Leg_ack

From gsmSSF

DP_T_MidCall
_Alerting

Wait_For_Answer,
DP_T_MidCall_Alerting

Answer

Int_Continue

Int_Continue
With Argument

Int_MidCall

Modify call
parameters with
received information'

DP_T_MidCall
_Alerting

Wait_For_
Answer

Figure 4.69b: Process CAMEL_ICH_LEG1_MSC (sheet 2)

Process CAMEL_ICH_LEG1_MSC 3(3)

/* A process in the MSC to handle leg 1 of a CPH configuration. */

/*Signals to/from the left are to/from the GMSC; Signals to/from the right are to/from the gsmSSF; unless otherwise stated. */
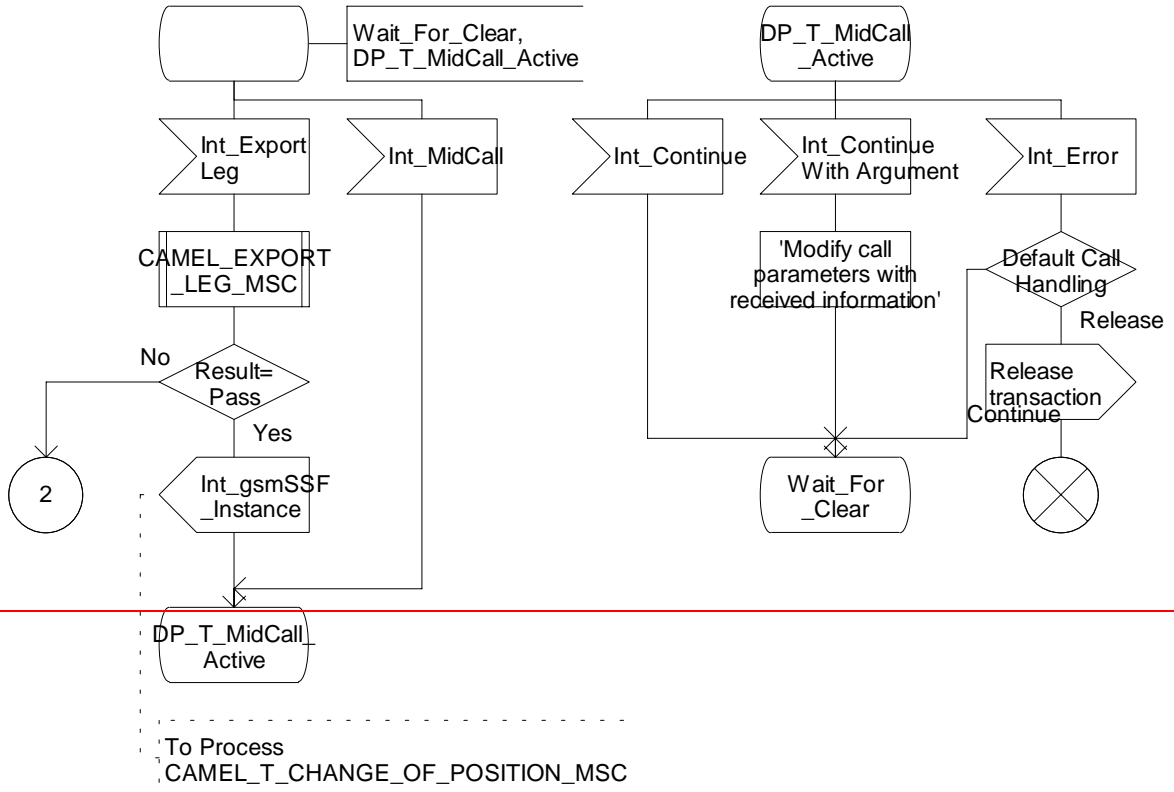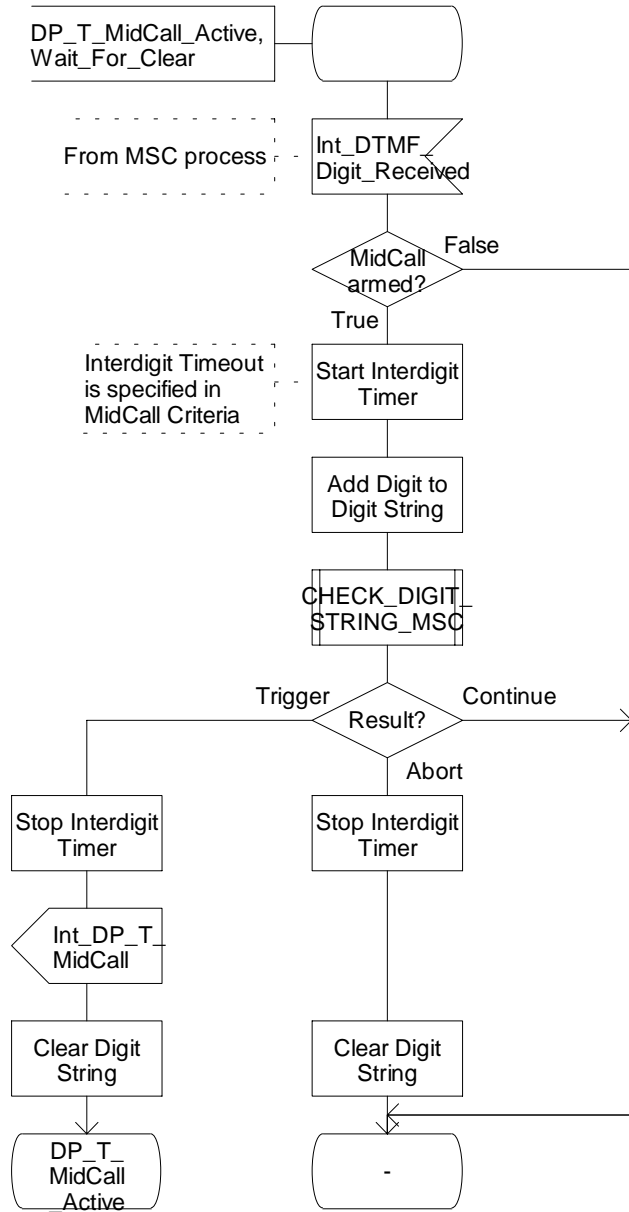
Wait_For_Clear, DP_T_MidCall_Active

Release

Int_Export Leg

CAMEL_EXPORT _LEG_MSC

Result= Pass?

No

Yes

CAMEL_MT_ GMSC_DISC1

Int_MidCall

DP_T_MidCall_ Active

Int_Release Call

Release

Int_Disconnect Leg

Release

Int_Disconnect_ Legack

DP_T_MidCall _Active

Int_Continue

Int_Continue With Argument

Int_Error

Default Call Handling

Release

Release

Continue

Wait_For_ Clear

DP_T_MidCall _Alerting

Int_Error

Continue

Default Call Handling

Release

Wait_For_ Answer

Release

Process CAMEL_ICH_LEG1_MSC 3(3)

/* A process in the MSC to handle leg 1 of a CPH configuration. */

/*Signals to/from the left are to/from the GMSC; Signals to/from the right are to/from the gsmSSF; unless otherwise stated. */
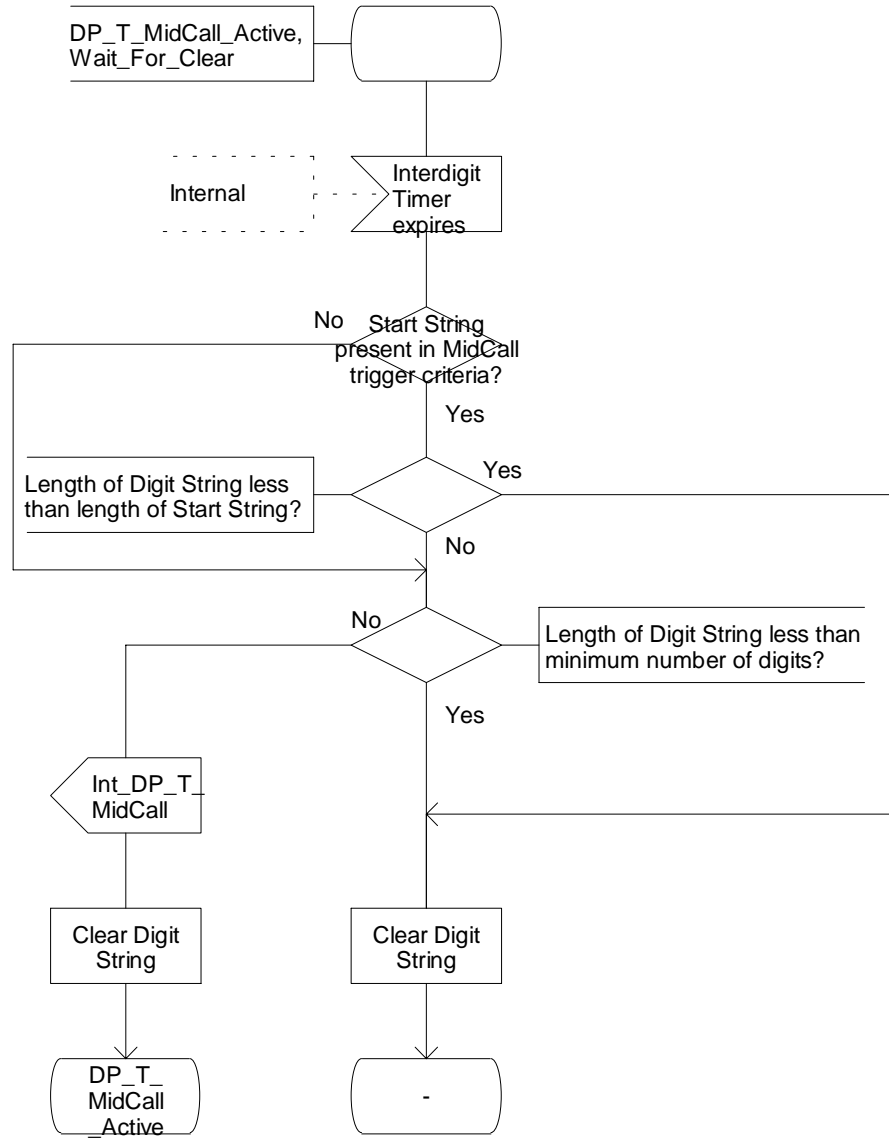
Wait_For_Clear, DP_T_MidCall_Active

Release

Int_Export Leg

CAMEL_EXPORT _LEG_MSC

Result= Pass?

No

Yes

CAMEL_MT_ GMSC_DISC1

Int_MidCall

DP_T_MidCall_ Active

Int_Release Call

Release

Int_Disconnect Leg

Release

Int_Disconnect_ Leg ack

DP_T_MidCall _Active

Int_Continue

Int_Continue With Argument

Modify call parameters with received information'

Continue

Wait_For_ Clear

Int_Error

Default Call Handling

Release

Release

DP_T_MidCall _Alerting

Int_Error

Continue

Default Call Handling

Release

Wait_For_ Answer

Release

Figure 4.69c: Process CAMEL_ICH_LEG1_MSC (sheet 3)

**** Next Modified Section ****

4.5.5 Handling of forwarded calls

Procedure CAMEL_MT_CF_LEG1_MSC 1(4)

/* A procedure in the MSC to handle leg 1 of a forwarded call. */

/* Signals to/from the left are to/from the parent process; Signals to/from the right are to from the gsmSSF; unless otherwise stated. */

Leg1_status?

Active

Set-up

Wait_For _Clear

Perform call forwarding ack

Mandatory parameter is FTN FFS

Wait_For_ IAM

Initial Address

CF cancelled

Wait_For_ ACM

CAMEL_OCH_ MSC_DISC4

⊗

Figure 4.82a: Procedure CAMEL_MT_CF_LEG1_MSC (sheet 1)

Procedure CAMEL_MT_CF_LEG1_MSC 2(4)

/* A procedure in the MSC to handle leg 1 of a forwarded call. */

/* Signals to/from the left are to/from the parent process; Signals to/from the right are to from the gsmSSF; unless otherwise stated. */

Wait_For_ ACM

Address Complete

Connect

Address Complete

Connect

Wait_For_ Answer

Wait_For_ Clear

Answer

Answer

Wait_For_ Clear

Figure 4.82b: Procedure CAMEL_MT_CF_LEG1_MSC (sheet 2)

Procedure CAMEL_MT_CF_LEG1_MSC 3(4)

/* A procedure in the MSC to
handle leg 1 of a forwarded call. */

/* Signals to/from the left are to/from
the parent process; Signals to/from
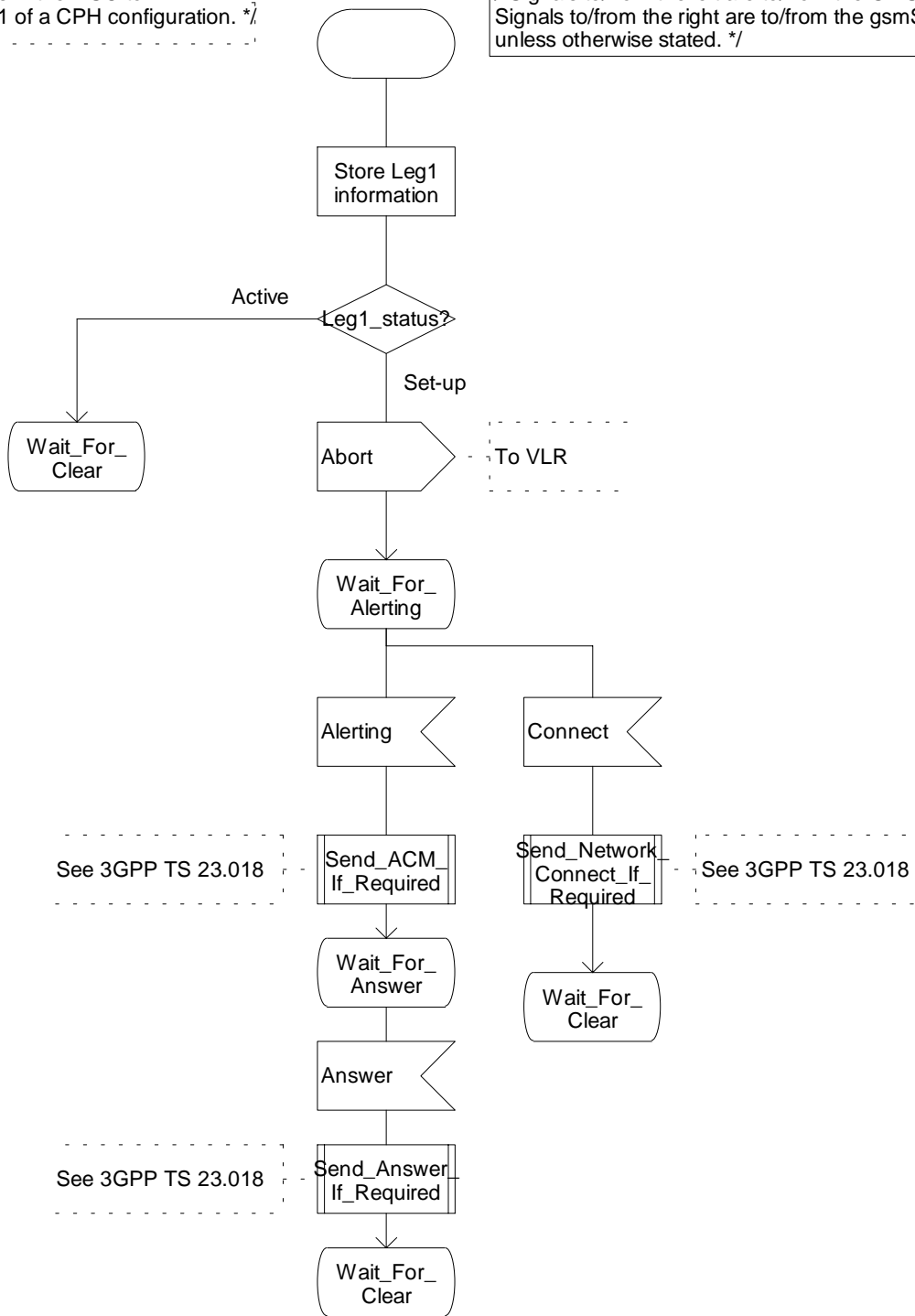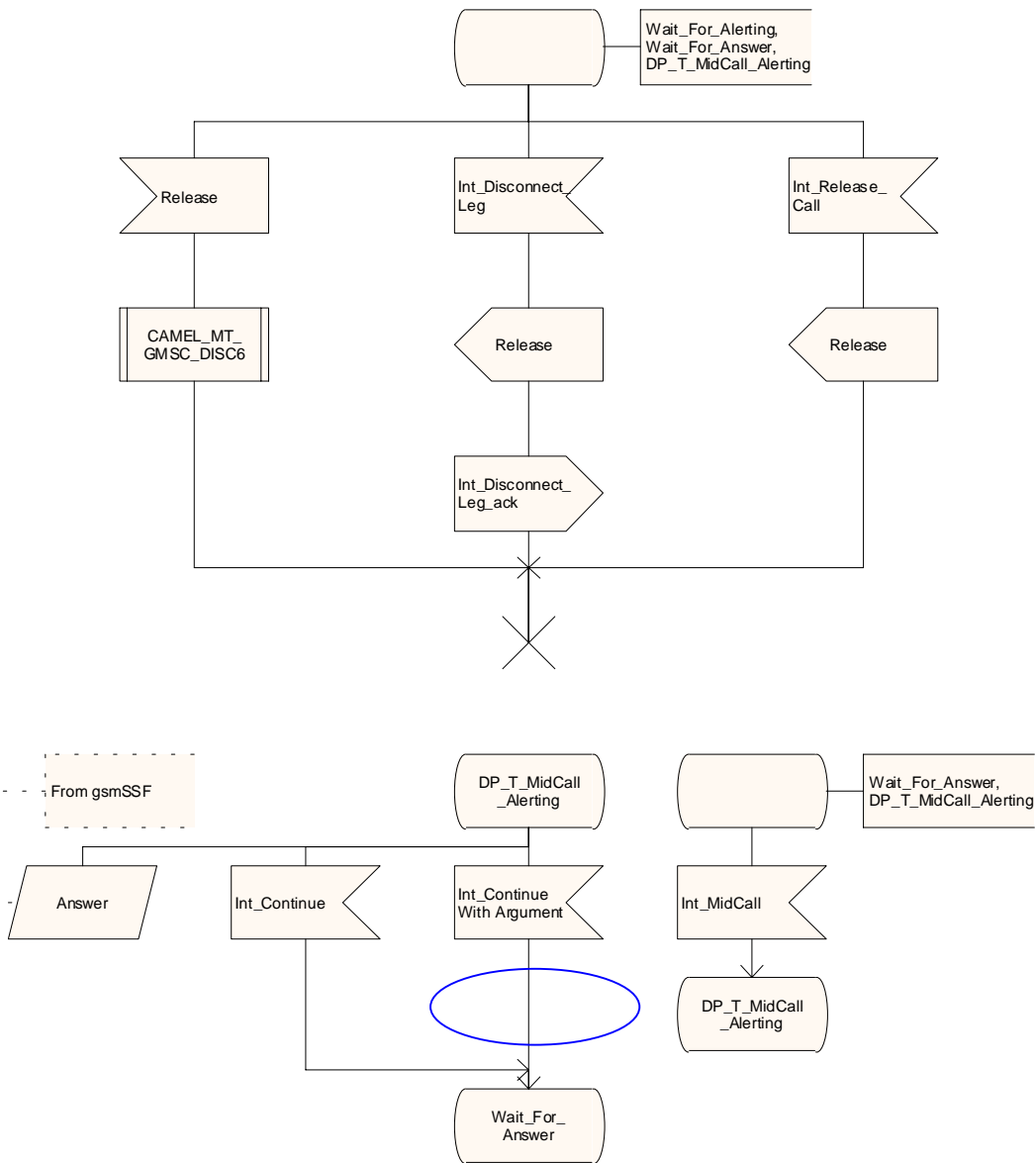the right are to from the gsmSSF;
unless otherwise stated. */

Wait_For_ACM,
Wait_For_Answer,
DP_O_MidCall_Alerting

Release

CAMEL_OCH_
MSC_DISC4

Int_Disconnect_
Leg

Release

Int_Disconnect_
Leg_ack

Int_Release_
Call

Release

DP_O_MidCall
_Alerting

Int_Continue

Int_Continue
With Argument

Int_Error

Default Call
Handling

Release

Continue

Release

Wait_For_
Answer

Wait_For_Answer,
DP_O_MidCall_Alerting

Int_MidCall

DP_O_MidCall
_Alerting

3GPP

Procedure CAMEL_MT_CF_LEG1_MSC 3(4)

/* A procedure in the MSC to handle leg 1 of a forwarded call. */

/* Signals to/from the left are to/from the parent process; Signals to/from the right are to from the gsmSSF; unless otherwise stated. */
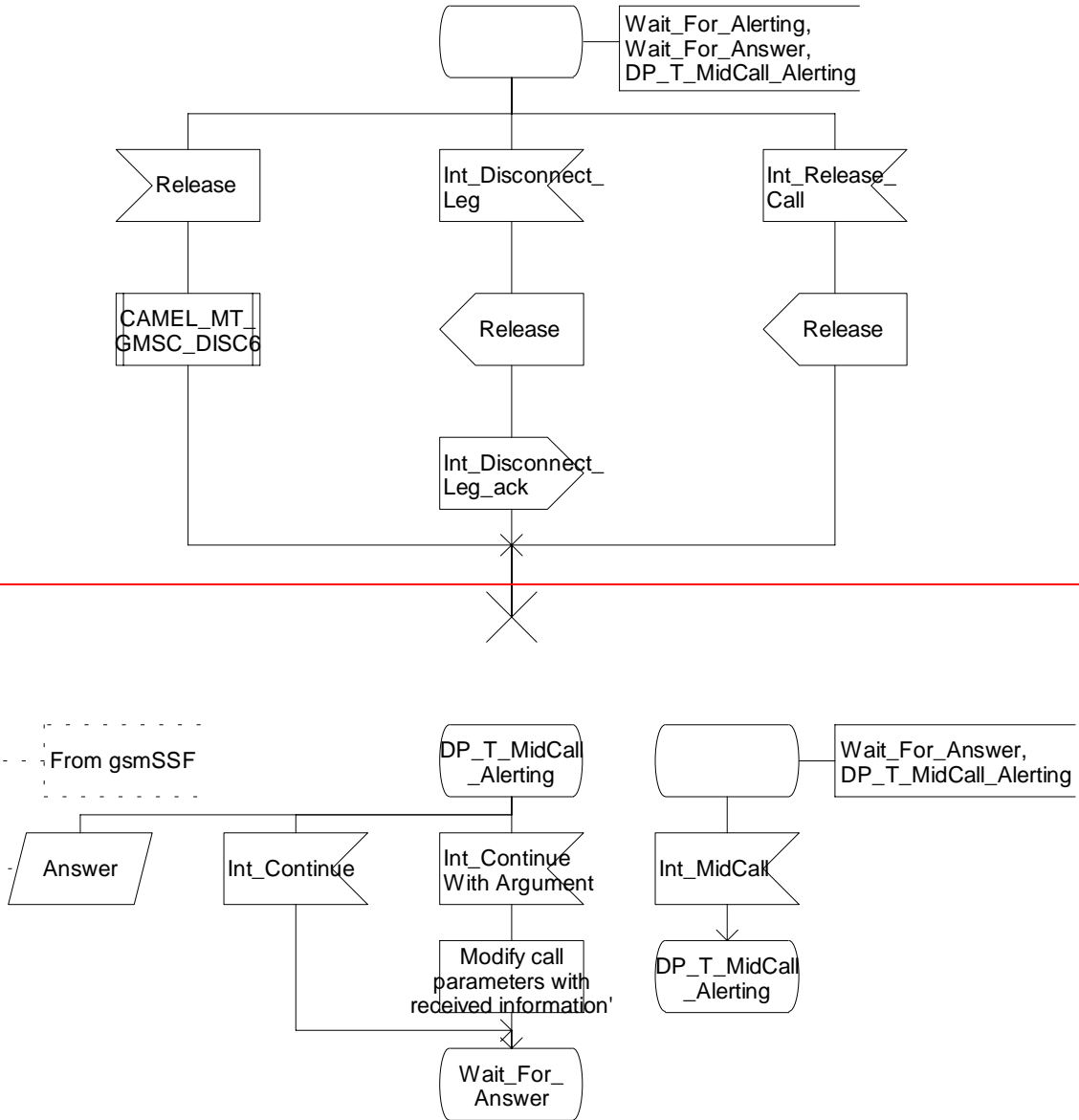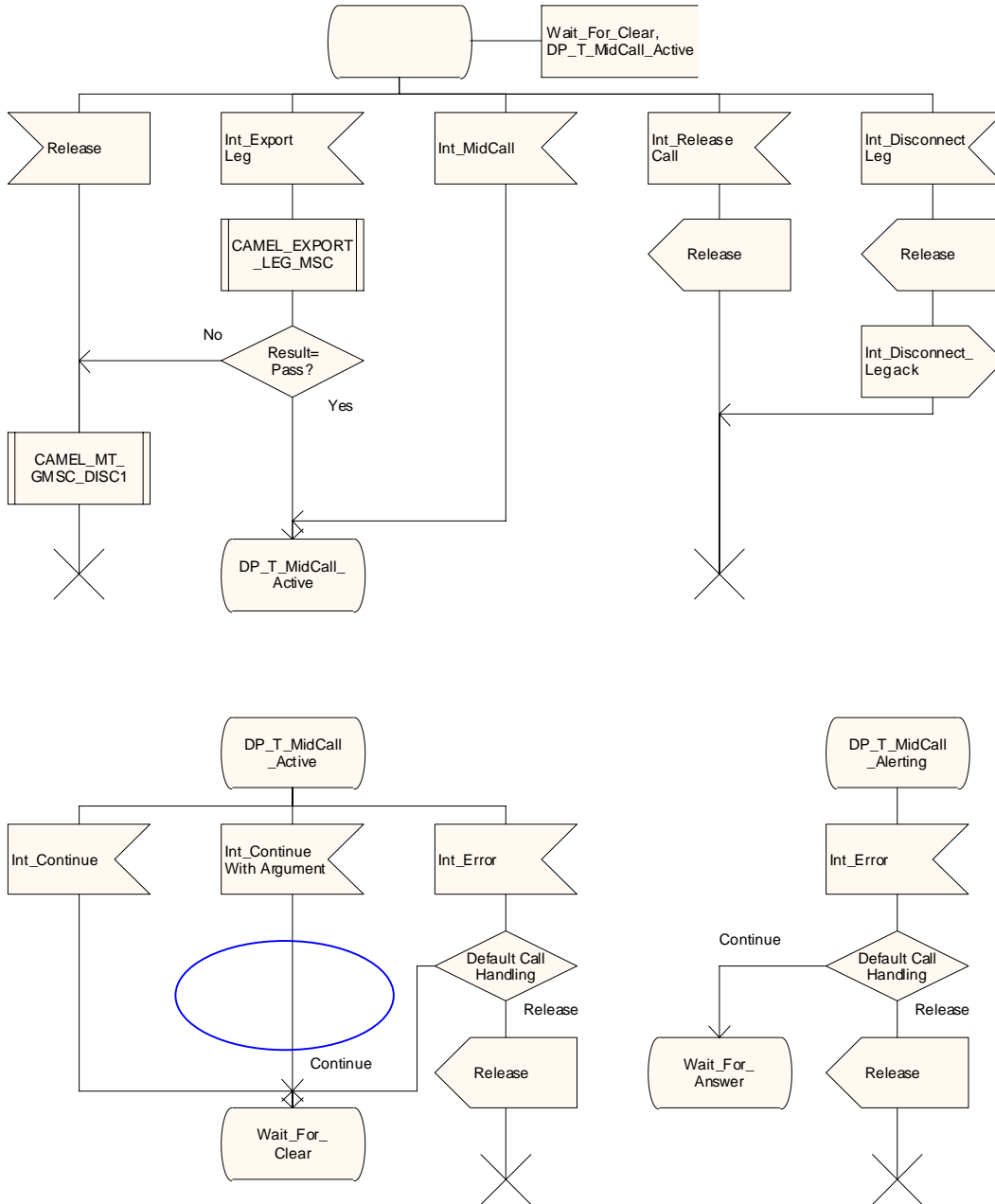
Wait_For_ACM,
Wait_For_Answer,
DP_O_MidCall_Alerting

Release

CAMEL_OCH_
MSC_DISC4

Int_Disconnect_
Leg

Release

Int_Disconnect_
Leg_ack

Int_Release_
Call

Release

DP_O_MidCall
_Alerting

Int_Continue

Int_Continue
With Argument

Modify call
parameters with
received information'

Continue

Wait_For_
Answer

Int_Error

Default Call
Handling

Release

Release

Wait_For_Answer,
DP_O_MidCall_Alerting

Int_MidCall

DP_O_MidCall
_Alerting

Figure 4.82c: Procedure CAMEL_MT_CF_LEG1_MSC (sheet 3)

Procedure CAMEL_MT_CF_LEG1_MSC 4(4)

/* A procedure in the MSC to
handle leg 1 of a forwarded call. */

/* Signals to/from the left are to/from
the parent process; Signals to/from
the right are to from the gsmSSF;
unless otherwise stated. */

Wait_For_Clear,
DP_O_MidCall_Active

1

Release

Int_Release
Call

Int_Disconnect
Leg

Int_Export
Leg

Int_MidCall

CAMEL_OCH_
MSC_DISC1

Release

Release

CAMEL_EXPORT
_LEG_MSC

Int_Disconnect
Leg ack

Result=
Pass?

No

Yes

1

DP_O_MidCall
_Active

DP_O_MidCall
_Active

Int_Continue

Int_Continue
With Argument

Int_Error

Default Call
Handling

Release

Continue

Release

Wait_For_
Clear

Procedure CAMEL_MT_CF_LEG1_MSC 4(4)

/* A procedure in the MSC to handle leg 1 of a forwarded call. */

/* Signals to/from the left are to/from the parent process; Signals to/from the right are to from the gsmSSF; unless otherwise stated. */
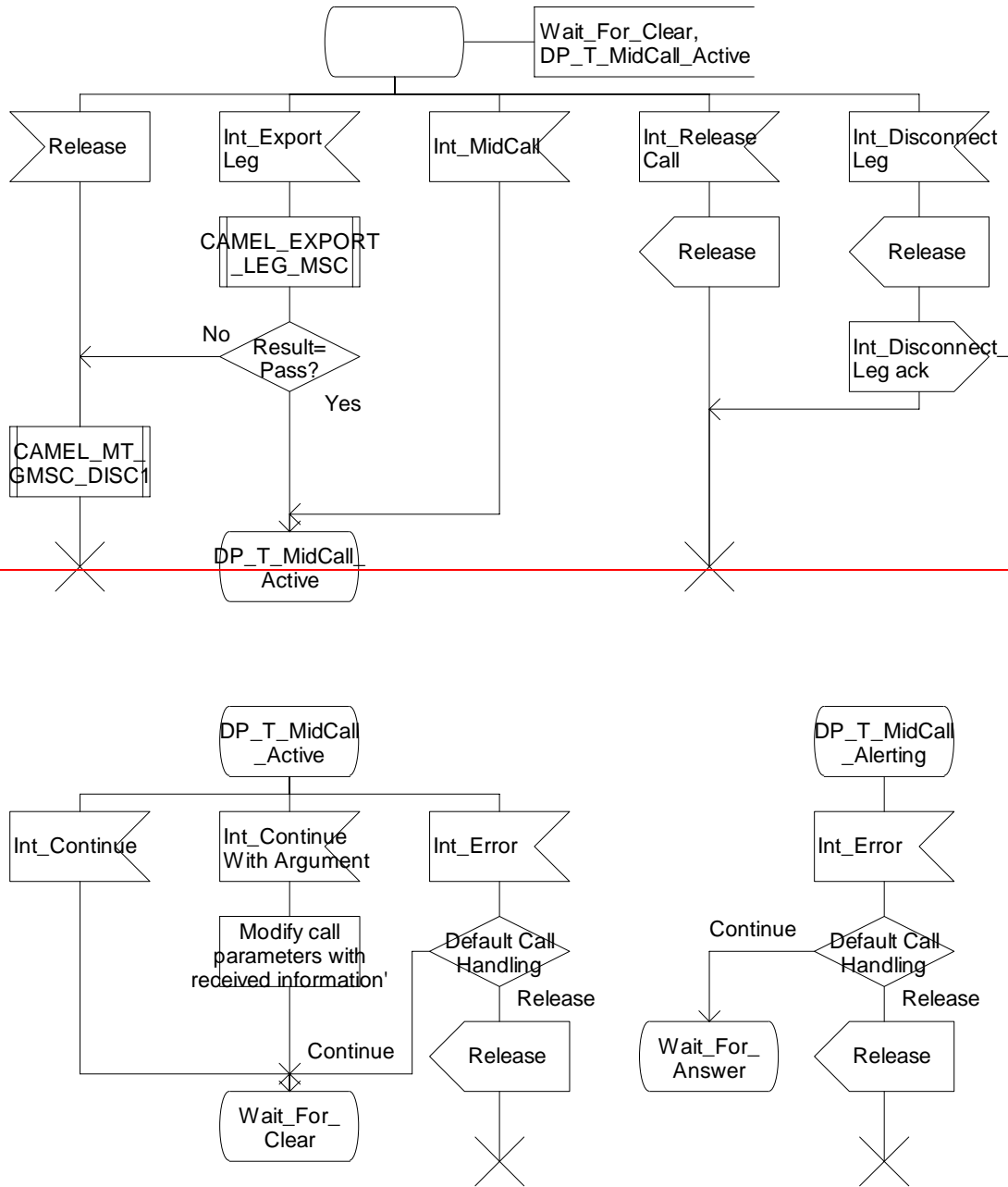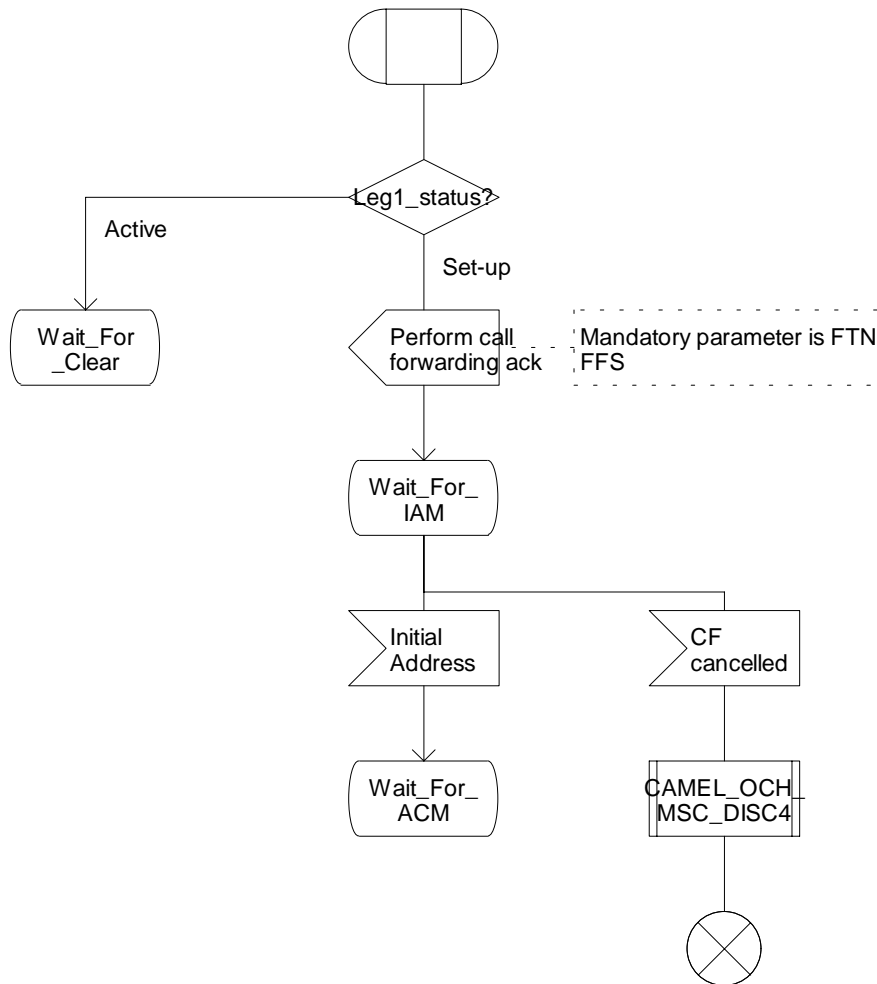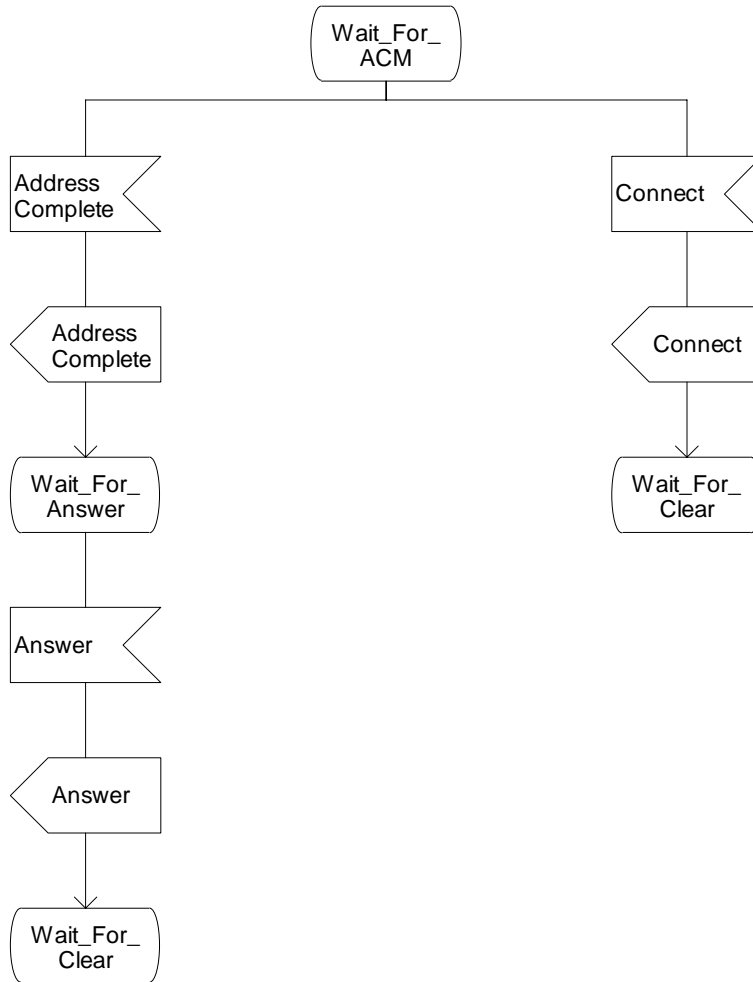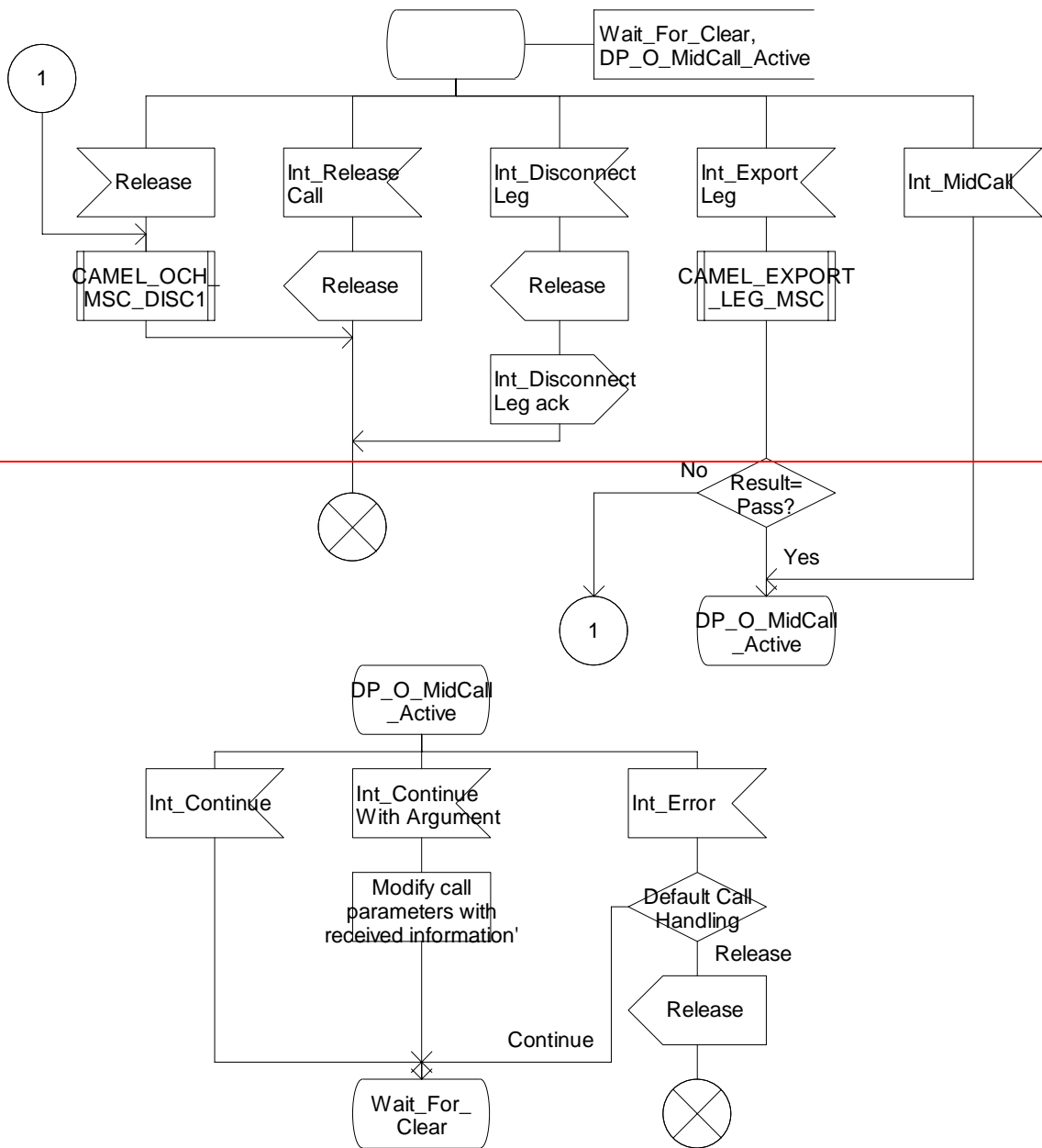

Figure 4.82d: Procedure CAMEL_MT_CF_LEG1_MSC (sheet 4)

Process CAMEL_MT_CF_LEG2_MSC 1(1)

/* A process in the MSC to handle leg 2 of a forwarded call. */

/* Signals to/from the left are to/from the gsmSSF; Signals to/from the right are to/from the destination exchange; unless otherwise stated. */

Store Leg2 information

Wait_For _Clear

Wait_For_Clear, DP_O_MidCall_Active

1 → Release

Int_Release Call

Int_Disconnect Leg

Int_Export Leg

Int_MidCall

CAMEL_OCH_ MSC_DISC2

Release

Release

CAMEL_EXPORT _LEG_MSC

Int_Disconnect Leg ack

2 → Result = Reconnect? — No

Yes

Result= Pass? — No

CAMEL_MF_ RECONNECT _MSC

1

DP_O_MidCall _Active

Reconnect — Result? — Fail

Pass

Yes

2

Wait_For _Clear

Int_Continue

Int_Continue With Argument

Int_Error

Default Call Handling

Release

Continue

Release

Wait_For _Clear

3GPP
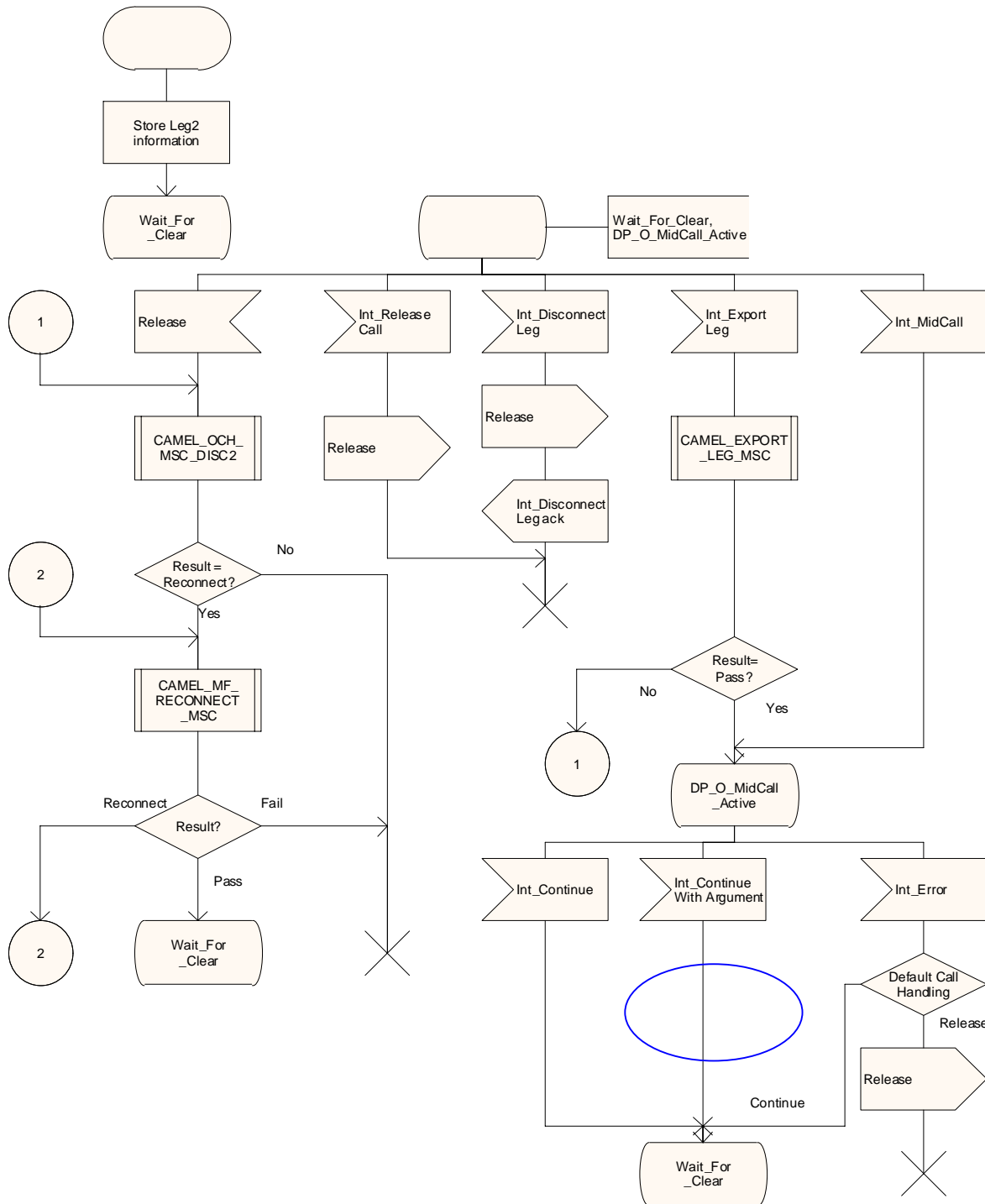
Process CAMEL_MT_CF_LEG2_MSC 1(1)

/* A process in the MSC to handle leg 2 of a forwarded call. */

/* Signals to/from the left are to/from the gsmSSF; Signals to/from the right are to/from the destination exchange; unless otherwise stated. */
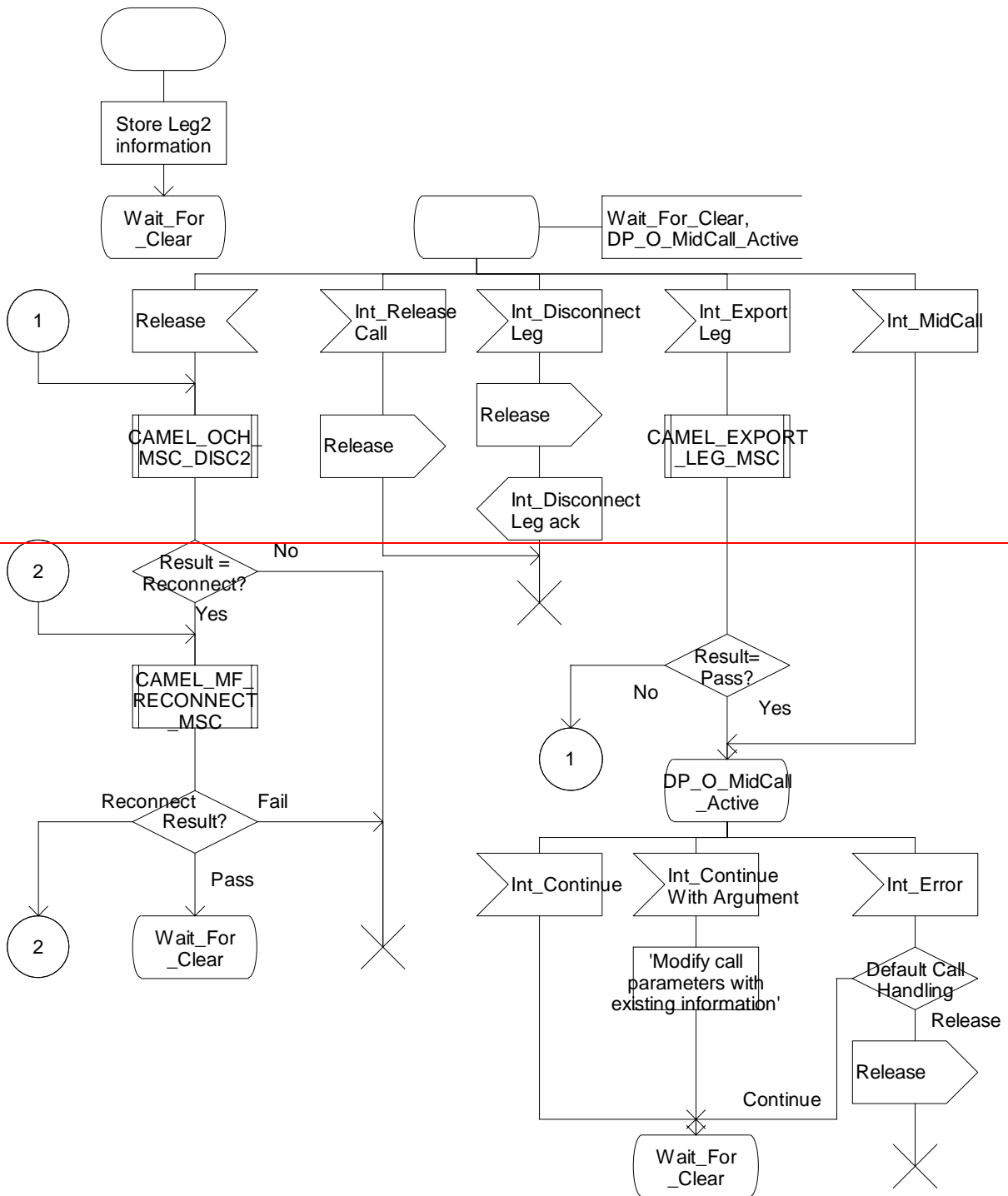
Figure 4.83a: Process CAMEL_MT_CF_LEG2_MSC (sheet 1)

**** Next Modified Section ****

4.5.6 Handling of gsmSCF initiated calls

...

Process CAMEL_ICA_MSC 1(7)

/* A process in the MSC to handle a gsmSCF initiated new call or new party set-up. */

/* Signals to/from the right are to/from the destination exchange; Signals to/from the left are to/from the gsmSSF; unless otherwise stated. */

/* The ICA Default Call Handling indicates whether the call shall be released or continued as requested. */

Idle

Int_Initiate Call Attempt

Is ICA creating a new party in an existing call? — No

Yes

Store call reference number and gsmSCF Address

Was original call created using ICA? — Yes

No

Default Call Handling of CSI initiating CAP dialogue — Release Call

Continue Call

ICA Default Call Handling := Release Call

ICA Default Call Handling := Continue Call

Int_Initiate Call Attempt ack

DP_ Collected_ Info

Figure 4.85a: Process CAMEL_ICA_MSC (sheet 1)

Process CAMEL_ICA_MSC 2(7)

/* A process in the MSC to handle a gsmSCF initiated new call or new party set-up. */

/* Signals to/from the right are to/from the destination exchange; Signals to/from the left are to/from the gsmSSF; unless otherwise stated. */

DP_ Collected_ _Info

Int_Continue With Argument

Int_Continue

Int_Error

Idle

CAMEL_ _Modify_ _CUG_Info

'Modify call parameters with received information'

N-CSI provisioned?

No

Yes

Set N-CSI available parameter (for SIFICA)

Is ICA creating a new party in an existing call in the VMSC of the served subscriber?

No

Yes

Send Info For ICA

To VLR

Wait_For ICA_Call_ Result

From VLR

Complete Call

Send Info For ICA Negative Response

Int_Release Call

Int_O_Exception

Abort

To VLR

1

Idle

Figure 4.85b: Process CAMEL_ICA_MSC (sheet 2)

Process CAMEL_ICA_MSC 3(7)

/* A process in the MSC to handle a gsmSCF initiated new call or new party set-up. */

/* Signals to/from the right are to/from the destination exchange; Signals to/from the left are to/from the gsmSSF; unless otherwise stated. */

(1)

No ◄— ◇ D-CSI and/or N-CSI is available?

Yes

CAMEL_ICA_ Dialled_ Services

(6)

Reconnect:= True

◇ Result — Fail

Pass

No ◄— ◇ Is ICA creating a new party in an existing call in the VMSC of the served subscriber?

Yes

'Set D-CSI suppression'

To VLR ⌐ Send Info For ICA

From VLR ⌐ Wait_For ICA_Call_ Result2

Complete Call

Send Info For ICA Negative Response

Int_Release Call

'Destination address := Called Party Number'

Int_O_Exception

Abort ⤑ To VLR

CAMEL_Store Destination_Address (False, False)

Idle

IAM

Wait_For_ACM

Figure 4.85c: Process CAMEL_ICA_MSC (sheet 3)

Process CAMEL_ICA_MSC 4(7)

/* A process in the MSC to handle a gsmSCF initiated new call or new party set-up. */

/* Signals to/from the right are to/from the destination exchange; Signals to/from the left are to/from the gsmSSF; unless otherwise stated. */

Wait_For _ACM

Address Complete

Connect

CAMEL_Start _TNRy

CAMEL_ICA_ MSC_ALERTING

Result

Answer

Fail

Reconnect

Pass

Idle

CAMEL_Stop _TNRy

Wait_For_ Answer

Answer

2

CAMEL_Stop _TNRy

CAMEL_ICA_ MSC_ANSWER

Reconnect

Result

Pass

Fail

6

Idle

Wait_For _Clear

Figure 4.85d: Process CAMEL_ICA_MSC (sheet 4)

Process CAMEL_ICA_MSC 5(7)

/* A process in the MSC to handle a gsmSCF initiated new call or new party set-up. */

/* Signals to/from the right are to/from the destination exchange; Signals to/from the left are to/from the gsmSSF; unless otherwise stated. */

Wait_For_Answer, DP_O_MidCall_Alerting

Int_MidCall

DP_O_MidCall_Alerting

Int_Export Leg

CAMEL_EXPORT_LEG_MSC

TNRy expired ⟵ Internal

Release

Result?

Answer / Pass / Fail

2

DP_O_MidCall_Alerting

3

4

Wait_For_Answer, DP_O_MidCall_Alctive

Int_MidCall

Int_Export Leg

Release

CAMEL_EXPORT_LEG_MSC

Result= Pass?

No

Yes
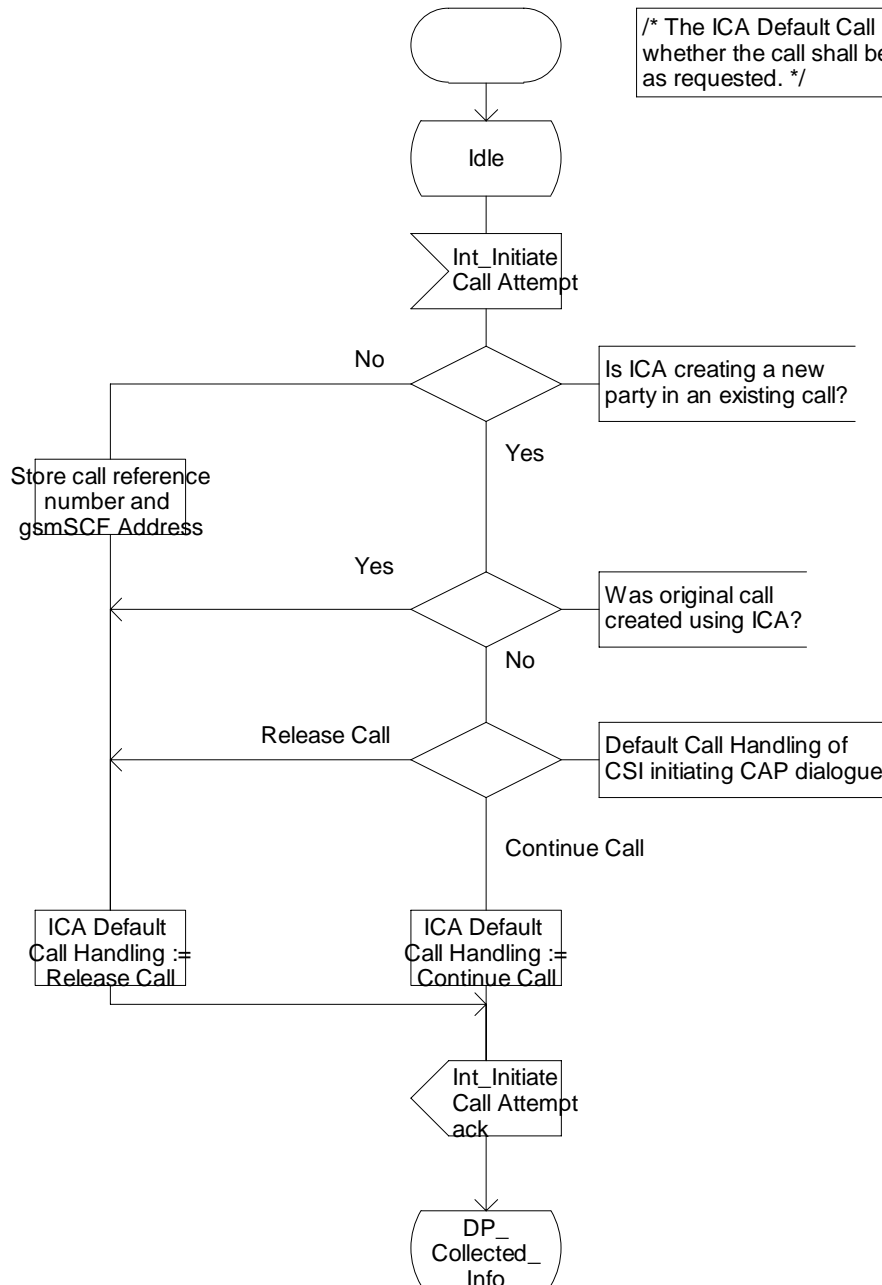
DP_O_MidCall_Active

CAMEL_OCH_MSC_DISC2

5

Figure 4.85e: Process CAMEL_ICA_MSC (sheet 5)

Process CAMEL_ICA_MSC 6(7)

/* A process in the MSC to handle a gsmSCF initiated new call or new party set-up. */

/* Signals to/from the right are to/from the destination exchange; Signals to/from the left are to/from the gsmSSF; unless otherwise stated. */
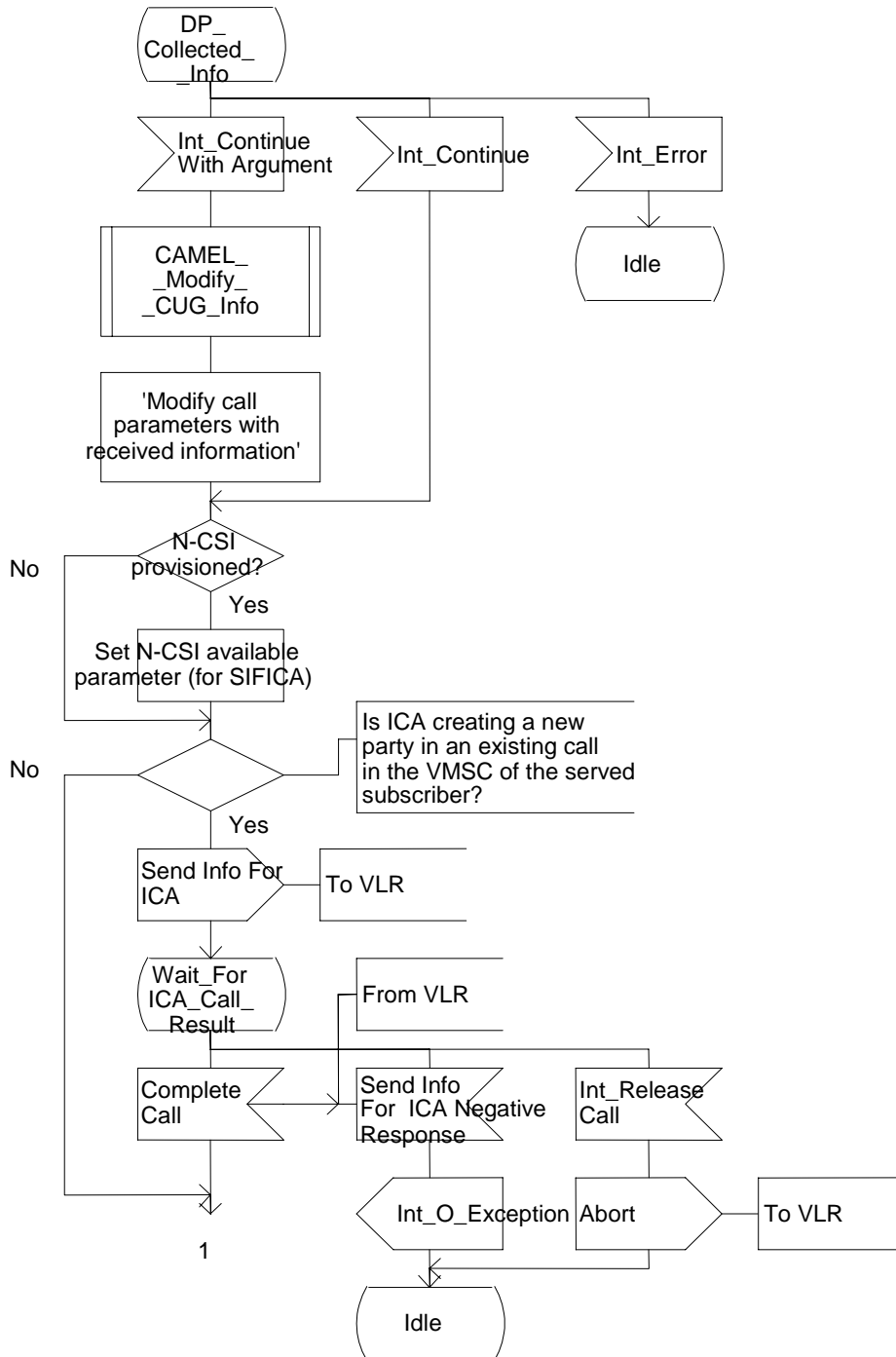
Wait_For_ACM,
Wait_For_Answer,
DP_O_MidCall_Alerting

Release 3

Yes ← Release cause = No answer from user?

No

4

CAMEL_ICA_MSC1   CAMEL_ICA_MSC2   5

Result= Reconnect?

No → Idle   Yes → 6

Wait_For_ACM,
Wait_For_Answer,
Wait_For_Clear,
DP_O_MidCall_Alerting,
DP_O_MidCall_Active

Int_Release Call

Release

Idle

DP_O_MidCall_Alerting

Int_Error

Default Call Handling

Release → Release

Continue → Wait_For_Answer

Release → Idle

DP_O_MidCall_Active

Int_Error

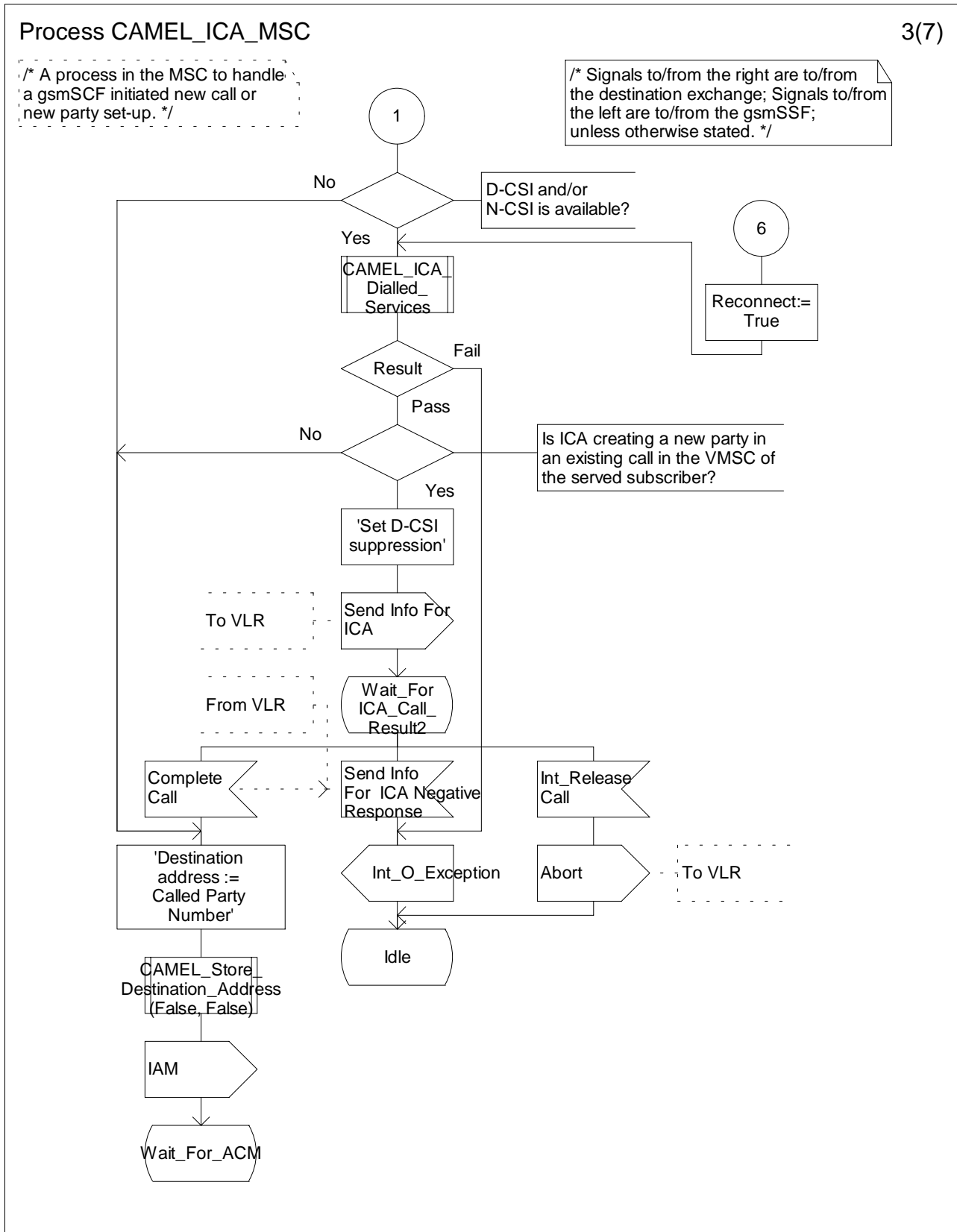Default Call Handling

Continue → Wait_For_Clear
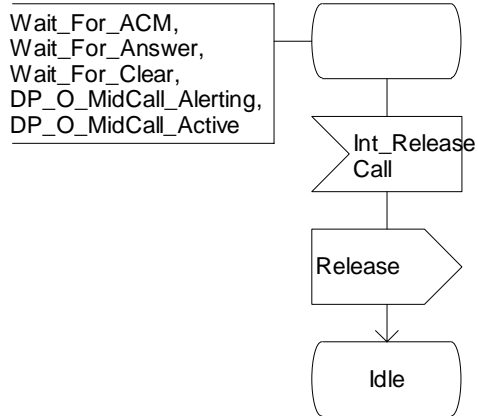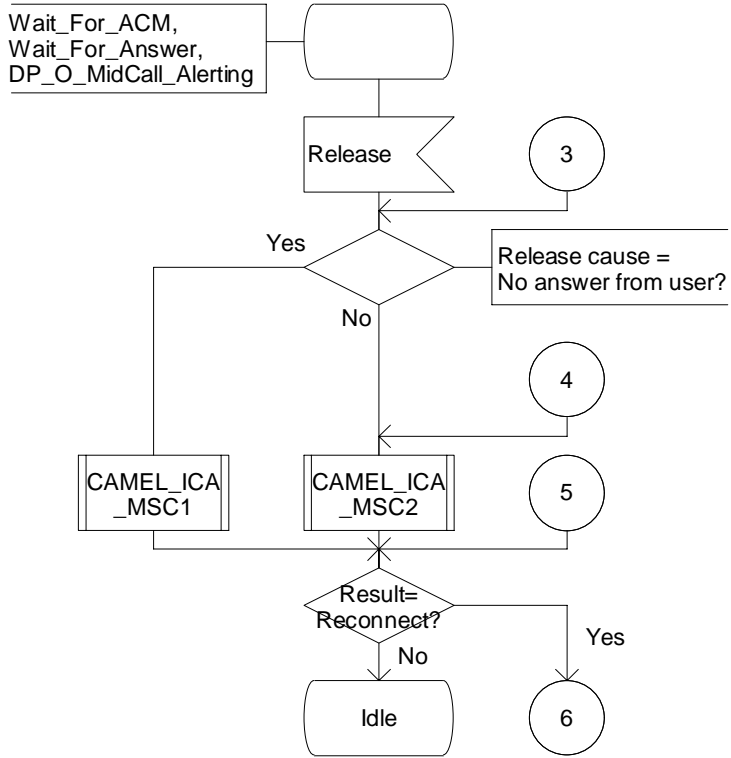
Figure 4.85f: Process CAMEL_ICA_MSC (sheet 6)

Process CAMEL_ICA_MSC 7(7)

/* A process in the MSC to handle a gsmSCF initiated new call or new party set-up. */

/* Signals to/from the right are to/from the destination exchange; Signals to/from the left are to/from the gsmSSF; unless otherwise stated. */
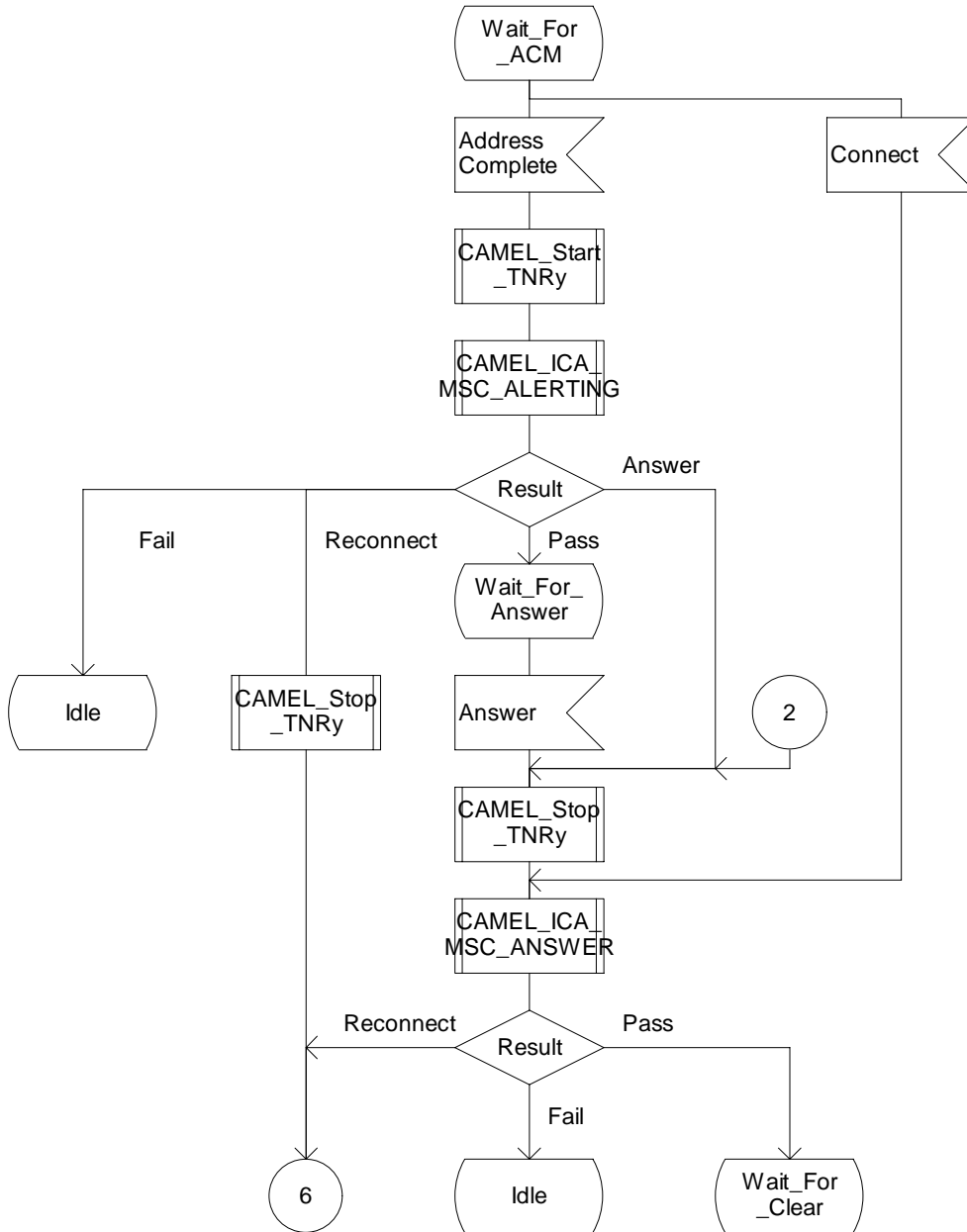
Wait_For_ACM,
Wait_For_Answer,
Wait_For_Clear,
DP_O_MidCall_Alerting,
DP_O_MidCall_Active

Int_Disconnect Leg

Release

Int_Disconnect Leg ack

Idle

Wait_For_ICA_Call_Result,
Wait_For_ICA_Call_Result2

Int_Disconnect Leg

Abort → To VLR

From gsmSSF

DP_O_MidCall _Alerting

Answer   Int_Continue   Int_Continue With Argument

Wait_For_ Answer

DP_O_MidCall _Active

Int_Continue   Int_Continue With Argument

Wait_For_ Clear

Process CAMEL_ICA_MSC 7(7)

/* A process in the MSC to handle a gsmSCF initiated new call or new party set-up. */

/* Signals to/from the right are to/from the destination exchange; Signals to/from the left are to/from the gsmSSF; unless otherwise stated. */
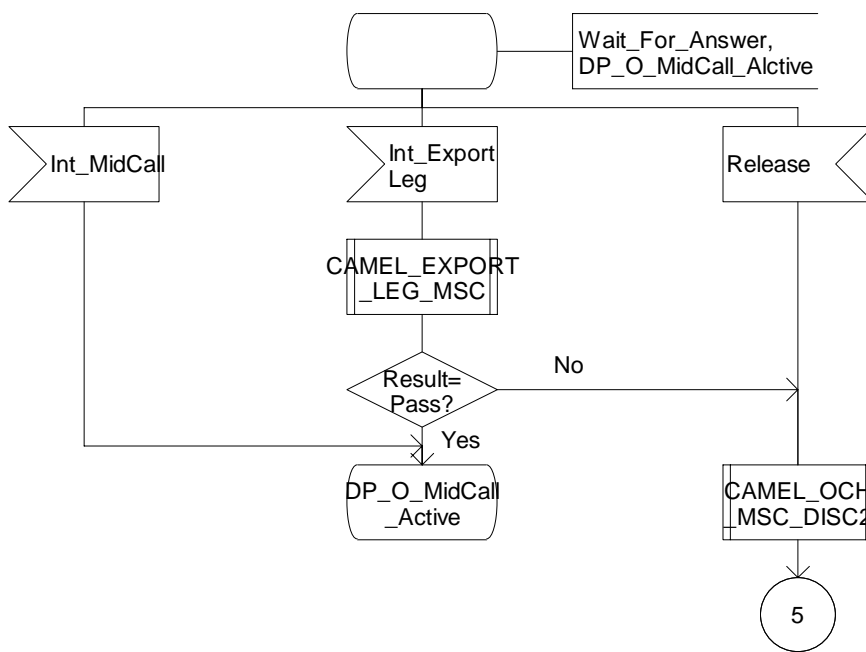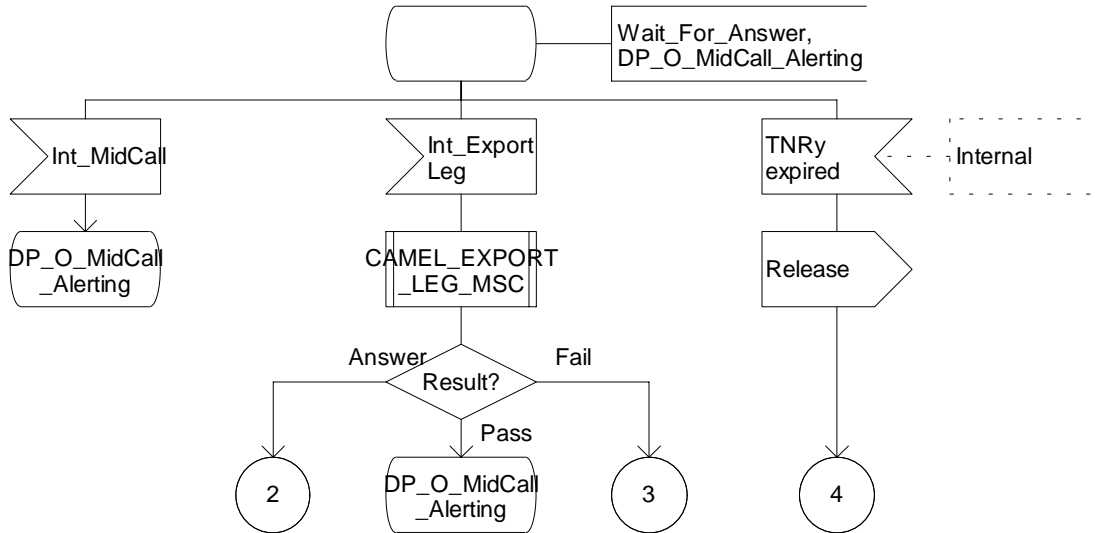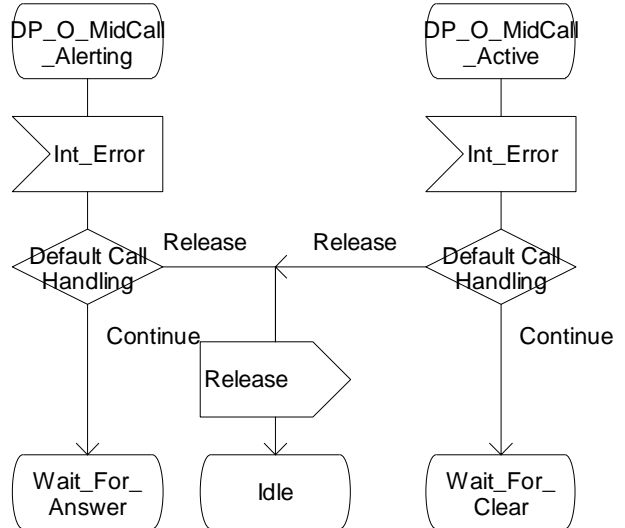
Wait_For_ACM,
Wait_For_Answer,
Wait_For_Clear,
DP_O_MidCall_Alerting,
DP_O_MidCall_Active

Int_Disconnect Leg

Release

Int_Disconnect Leg ack

Idle

Wait_For_ICA_Call_Result,
Wait_For_ICA_Call_Result2

Int_Disconnect Leg

Abort

To VLR

From gsmSSF

DP_O_MidCall_Alerting

Answer

Int_Continue

Int_Continue With Argument

'Modify call parameters with received information'

Wait_For_ Answer

DP_O_MidCall_Active

Int_Continue

Int_Continue With Argument

'Modify call parameters with received information'

Wait_For_ Clear

Figure 4.85g: Process CAMEL_ICA_MSC (sheet 7)

…

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**** End of Document ****

**** End of Document ****

CR-Form-v7

CHANGE REQUEST

⌘   **23.078** CR **426**   ⌘ **rev** **1** ⌘   Current version: **5.0.0** ⌘

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

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

Title: ⌘	CSA_gsmSSF: Handling signals in states such as Wait_for_DL_ack	
Source: ⌘	Vodafone	
Work item code: ⌘	CAMEL4	***Date:*** ⌘ 15/07/02

Category: ⌘ **F**	***Release:*** ⌘ Rel-5

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

Use 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)
Rel-6   (Release 6)

Reason for change: ⌘	In the Process CSA_gsmSSF, in states such as Wait_For_DL_ack, a signal such as Move_Leg could be received from the gsmSCF. The SDL modelling does not accept any signal except for the response to the previous request.
Summary of change: ⌘	Introduce a save 'All Other Signals' in states where other signals could be received, so that these are handled later.
Consequences if not approved: ⌘	Certain instructions received in the states (list below) will not be actioned.

Clauses affected: ⌘	4.5.7.6

Other specs affected: ⌘	Y	N	
		X	Other core specifications ⌘
		X	Test specifications
		X	O&M Specifications

Other comments: ⌘	process CSA_gsmSSF: States where SDL has been altered: Wait_For_DL_ack, Wait_For_Invoked, Wait_For_User_Interaction_Response_SL, Wait_For_Import_Ack_SL, Wait_For_ML_Response_1, Wait_For_ML_Response_2, Wait_Import_Ack_ML, Wait_For_Export_Ack_ML*
	* Error in SDL on Page 19(21) where this state is incorrectly named 'Wait_For_Import_ack_ML' is addressed in a separate Tdoc (N2-020688)

**** First Modified Section ****

4.5.7.6 Process CSA_gsmSSF and procedures

The call gap information flow can only be received for an opened transaction between the CSA_gsmSSF and the gsmSCF.

Process CSA_gsmSSF 1(21)

/* A process in the gsmSSF to co-ordinate the Call Segments for a call. */

/* Signals to/from the left are to/from one or more instances of the process CS_gsmSSF; signals to/from the right are to/from the gsmSCF. */

/* TASK definition:
The Application_Begin signal opens a new relationship with the gsmSCF.
The Application_End or Abort signal terminates the relationship with the gsmSCF.
*/

3

CS := 0

Clear all CSID, LegID and LegID_state variables

Idle

Application Begin

Application Begin

Application Begin

Wait_For_ ICA

Wait_For_ IDP

Figure 4.112a: Process CSA_gsmSSF (sheet 1)

Process CSA_gsmSSF 2(21)

/* A process in the gsmSSF to co-ordinate the Call Segments for a call. */

/* Signals to/from the left are to/from one or more instances of the process CS_gsmSSF; signals to/from the right are to/from the gsmSCF. */

Wait_For_
IDP

Int_Initial_
DP

Assign LegID1
to originating
party

LegID1_state
:= Set-up

Assign LegID2
to terminating
party

LegID2_state
:= Set-up

Add LegID1
and LegID2
to CSID1

CS := 1

CAP_InitalDP

One_CS

Wait_For_
ICA

CAP_Initiate_
Call_Attempt

1

Figure 4.112b: Process CSA_gsmSSF (sheet 2)

Process CSA_gsmSSF 3(21)

/* A process in the gsmSSF to co-ordinate the Call Segments for a call. */

/* Signals to/from the left are to/from one or more instances of the process CS_gsmSSF; signals to/from the right are to/from the gsmSCF. */

One_CS

CAP_Continue   CAP_Disconnect_ Forward_ Connection

-    Relay the operation

One_CS
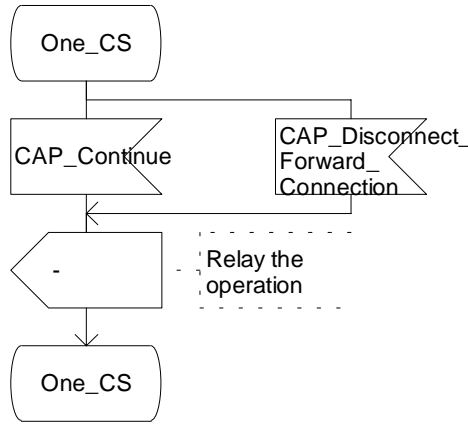
Figure 4.112c: Process CSA_gsmSSF (sheet 3)

Process CSA_gsmSSF 4(21)

/* A process in the gsmSSF to co-ordinate the Call Segments for a call. */

/* Signals to/from the left are to/from one or more instances of the process CS_gsmSSF; signals to/from the right are to/from the gsmSCF. */

One_CS, Multiple_CS

| Int_Apply_ Charging_ Report | Int_Call_ Information_ Report | Int_Cancel_ Failed error | Int_Cancelled error | Int_Error |
| CAP_Apply_ Charging_ Report | CAP_Call_ Information_ Report | CAP_Cancel_ Failed error | CAP_Cancelled error | CAP_Error |

-

One_CS, Multiple_CS

| Int_Error ETC failed | Int_Error Unexpected Data Value | Int_Event_ Notification_ Charging | Int_Event_ Report_ BCSM | Int_Prompt_ &_Collect_User_ Information ResultReport | Int_Specialised_ Resource_ |
| CAP_Error ETC failed | CAP_Error Unexpected Data Value | CAP_Event_ Notification_ Charging | CAP_Event_ Report_ BCSM | CAP_Prompt_ &_Collect_User_ Information Result | CAP_Specialised_ Resource_ Report |

-

Figure 4.112d: Process CSA_gsmSSF (sheet 4)

Process CSA_gsmSSF   5(21)

/* A process in the gsmSSF to
co-ordinate the Call Segments
for a call. */

/* Signals to/from the left are to/from
one or more instances of the process
CS_gsmSSF; signals to/from the right
are to/from the gsmSCF. */

One_CS,
Multiple_CS

CAP_ConnectToResource,
CAP_DisconnectForwardConnectionWithArgument,
CAP_EstablishTemporaryConnection,
CAP_PlayAnnouncement,
CAP_Prompt&CollectUserInformation,
CAP_ResetTimer

CSID
valid?   No

Yes

Relay the operation to the
Process CS_gsmSSF
for the indicated CS ID   -   CAP_Error

-

One_CS,
Multiple_CS

CAP_CallInformationRequest,
CAP_FurnishChargingInformation,
CAP_RequestNotificationCharging,
CAP_RequestReportBCSMEvent,
CAP_SendChargingInformation

Or Party To Charge   LegID
valid?   No

Yes

Relay the operation to the
Process CS_gsmSSF
for the CS containing
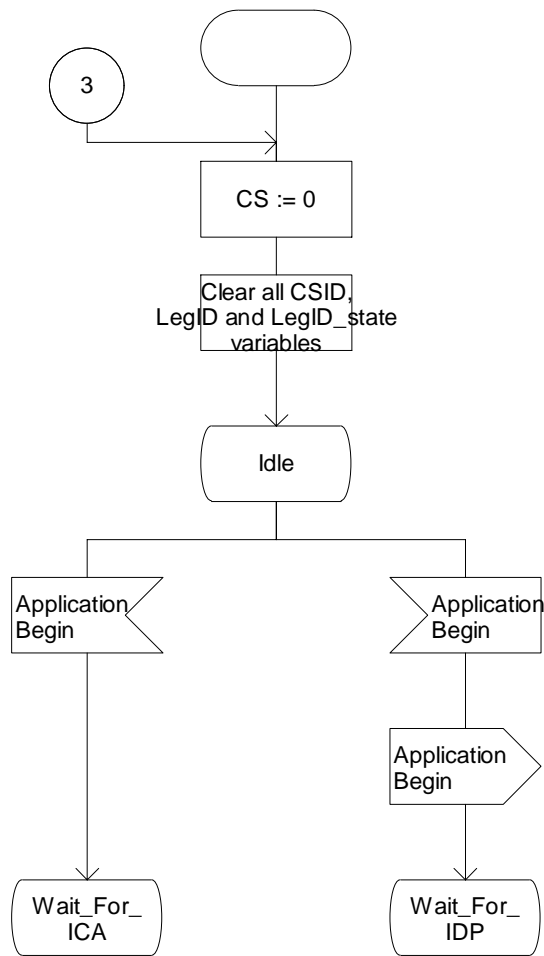the indicated LegID   -   CAP_Error

-

Figure 4.112e: Process CSA_gsmSSF (sheet 5)

Process CSA_gsmSSF 6(21)

/* A process in the gsmSSF to co-ordinate the Call Segments for a call. */

/* Signals to/from the left are to/from one or more instances of the process CS_gsmSSF; signals to/from the right are to/from the gsmSCF. */
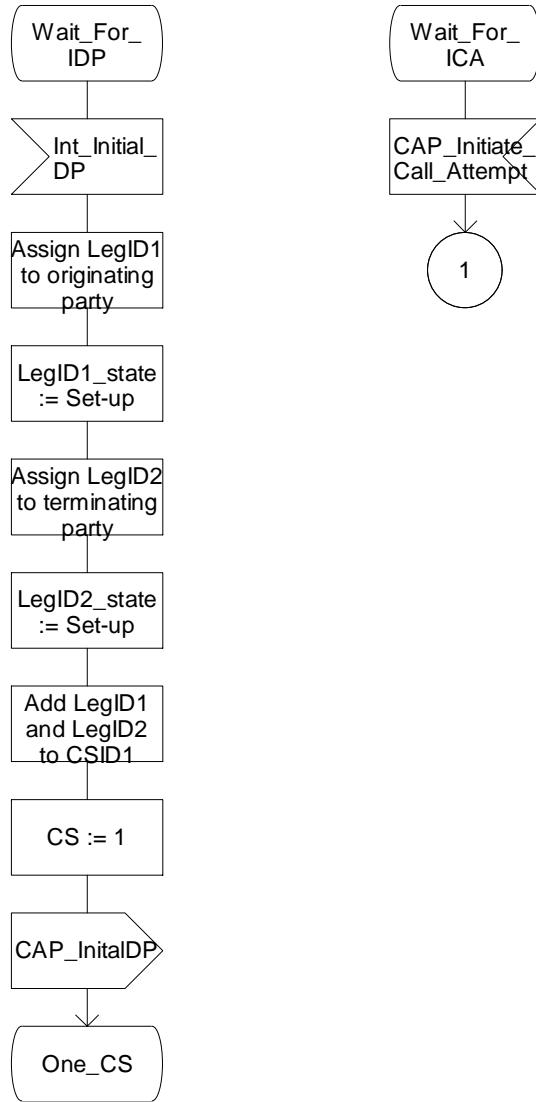
One_CS, Multiple_CS

CAP_ContinueWithArgument, CAP_PlayTone

Operation contains

LegID
CSID

LegID valid?
No
No
CSID valid?

Or Party To Charge

Yes
Yes

Relay the operation to the Process CS_gsmSSF for the CS containing the indicated LegID

-
CAP_Error
-

Relay the operation to the Process CS_gsmSSF for the indicated CS ID

-

Figure 4.112f: Process CSA_gsmSSF (sheet 6)

Process CSA_gsmSSF 7(21)

/* A process in the gsmSSF to co-ordinate the Call Segments for a call. */

/* Signals to/from the left are to/from one or more instances of the process CS_gsmSSF; signals to/from the right are to/from the gsmSCF. */

One_CS, Multiple_CS

CAP_ApplyCharging

CAP_CallGap

LegID valid?

No

Yes

Relay the operation to the Process CS_gsmSSF for the CS containing the indicated LegID

-

CAP_Error

Int_CallGap

-

To gsm_SSME_SSF

Figure 4.112g: Process CSA_gsmSSF (sheet 7)

Process CSA_gsmSSF 8(21)

/* A process in the gsmSSF to co-ordinate the Call Segments for a call. */

/* Signals to/from the left are to/from one or more instances of the process CS_gsmSSF; signals to/from the right are to/from the gsmSCF. */
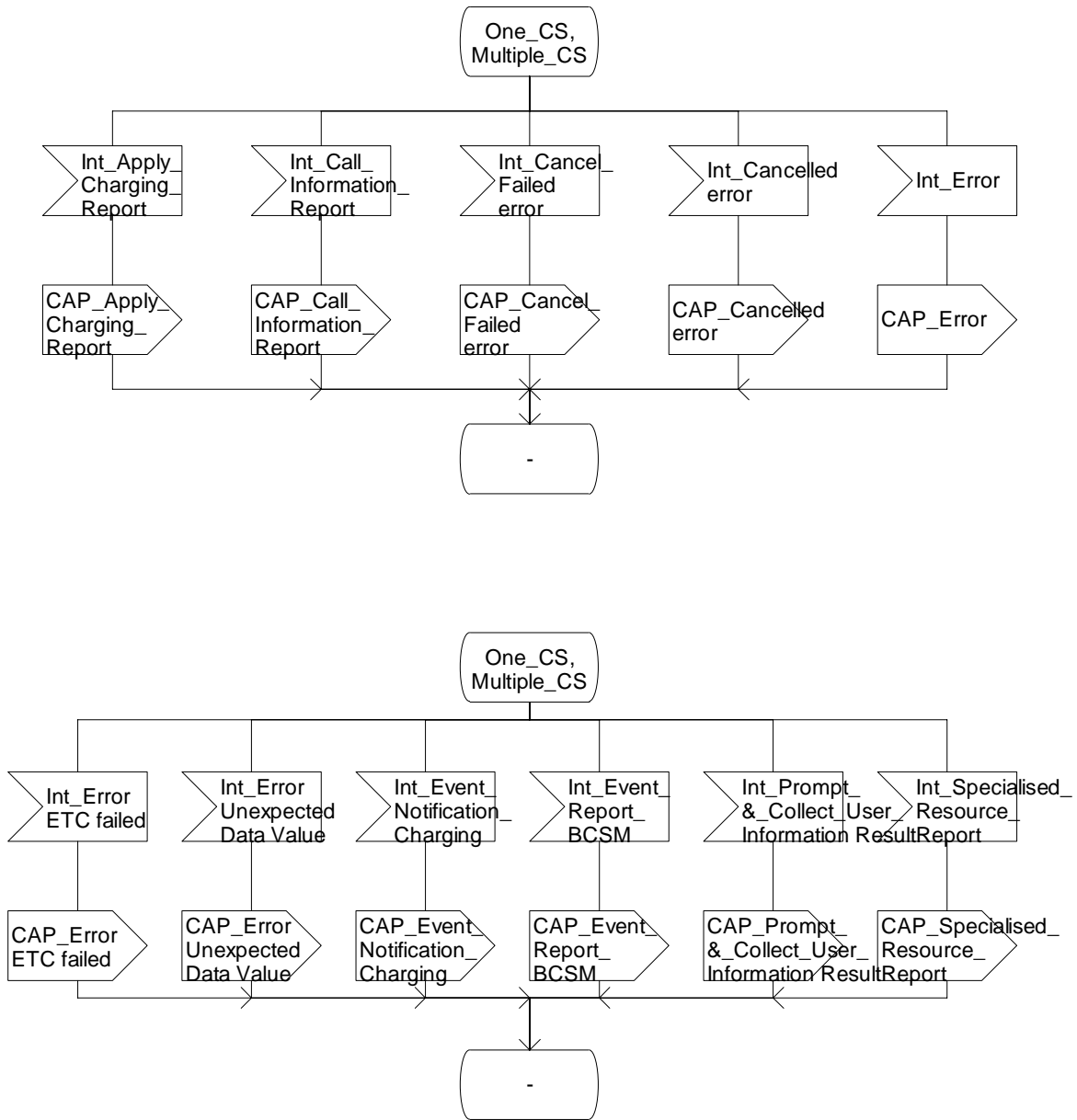
One_CS, Multiple_CS

CAP_Connect

Message contains LegID? — Yes

No

LegID := 2

LegID valid? — No

Yes

Update LegIDx_state to Set-up

Relay the operation to the Process CS_gsmSSF for the CS containing the indicated LegID, or to CSID1 if no LegID was indicated.

Int_Connect

CAP_Error

-

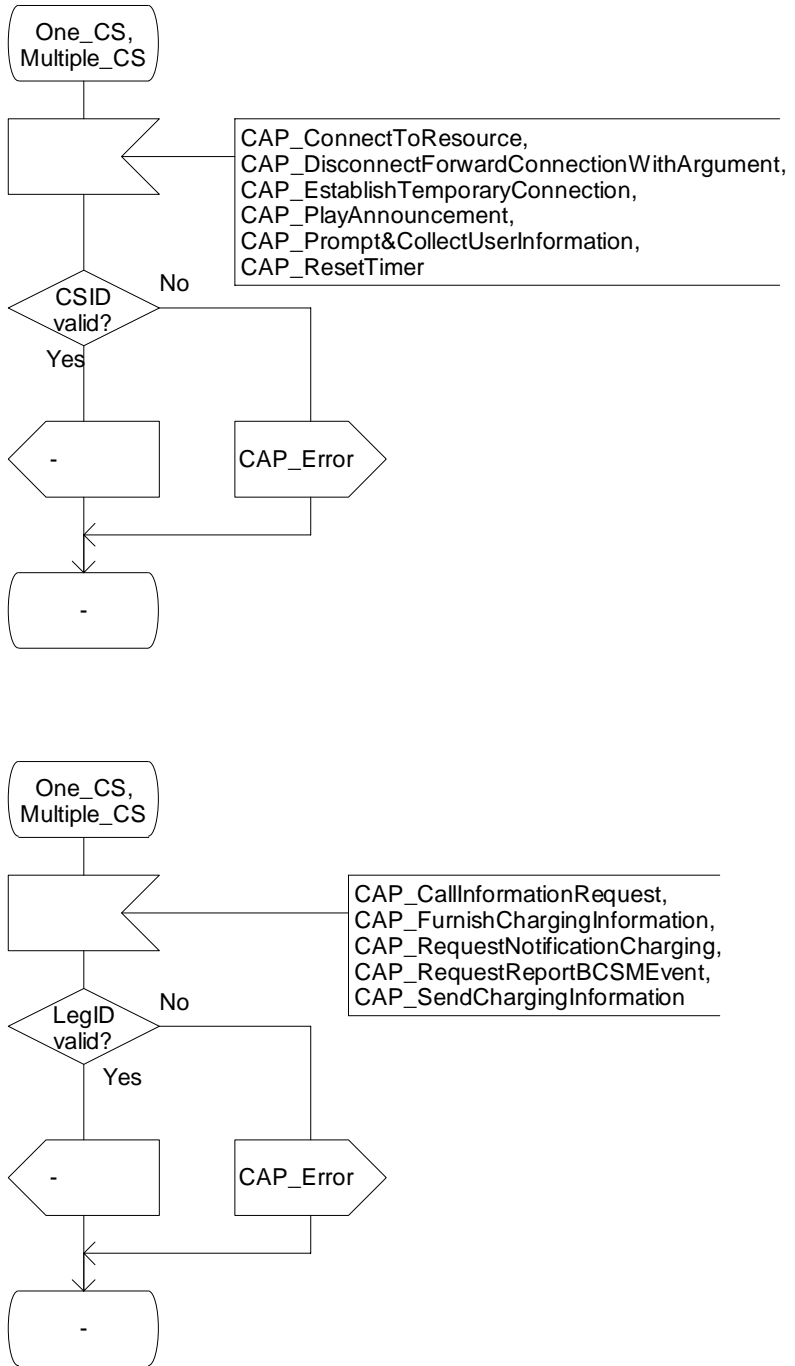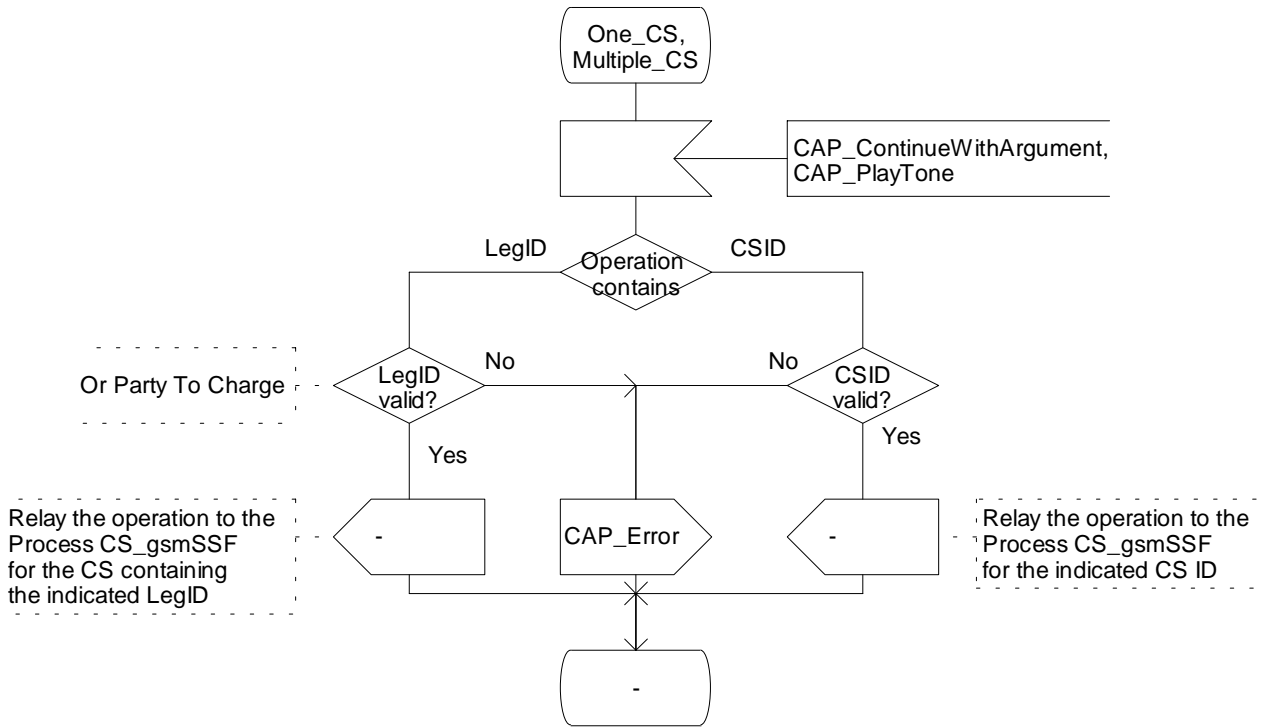**Figure 4.112h: Process CSA_gsmSSF (sheet 8)**

Process CSA_gsmSSF   9(21)

/* A process in the gsmSSF to, co-ordinate the Call Segments for a call. */

/* Signals to/from the left are to/from one or more instances of the process CS_gsmSSF; signals to/from the right are to/from the gsmSCF. */

To CS containing leg to be disconnected

One_CS, Multiple_CS

CAP_Disconnect_Leg

CAP_Initiate_Call_Attempt

Int_Disconnect Leg

LegID in use? — Yes

No

Wait_For_DL_ack

1

CSID in use? — Yes

No

*

Int_Disconnect Leg ack

Int_Invoke gsmSSF

CAP_Error

CAP_Disconnect Leg ack

Wait_For_Invoked

-

2

Int_gsmSSF Invoked

*

To new CS

Assign legIDx to terminating party

legIDx_state := Set-up

Add new leg to new CSID record

CS := CS + 1

Int_Initate Call Attempt

CS = 1? — Yes

No

Multiple_CS

One_CS

3GPP

Process CSA_gsmSSF 9(21)

/* A process in the gsmSSF to co-ordinate the Call Segments for a call. */

/* Signals to/from the left are to/from one or more instances of the process CS_gsmSSF; signals to/from the right are to/from the gsmSCF. */

To CS containing leg to be disconnected

One_CS, Multiple_CS

CAP_Disconnect_Leg

CAP_Initiate_Call_Attempt

Int_Disconnect Leg

LegID in use? — Yes

No

Wait_For_DL_ack

1

CSID in use? — Yes

No

Int_Disconnect Leg ack

Int_Invoke gsmSSF

CAP_Error

CAP_Disconnect Leg ack

Wait_For _Invoked

-

2

Int_gsmSSF Invoked

To new CS

Assign legIDx to terminating party

legIDx_state := Set-up

Add new leg to new CSID record

CS := CS + 1

Int_Initate Call Attempt

CS = 1? — Yes

No

Multiple_CS

One_CS

Figure 4.112i: Process CSA_gsmSSF (sheet 9)

Process CSA_gsmSSF 10(21)

/* A process in the gsmSSF to co-ordinate the Call Segments for a call. */

/* Signals to/from the left are to/from one or more instances of the process CS_gsmSSF; signals to/from the right are to/from the gsmSCF. */
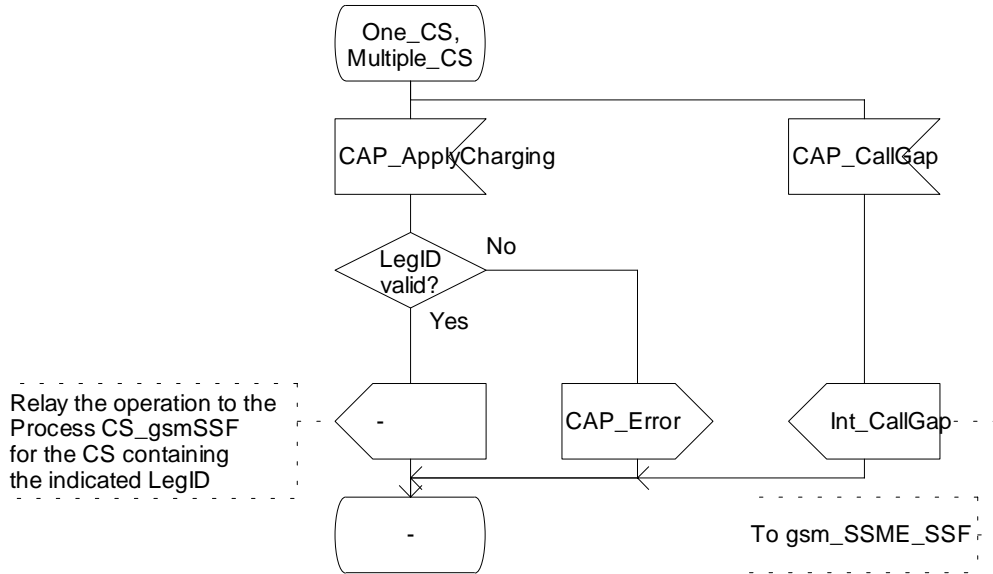
One_CS, Multiple_CS

CAP_Release_Call

CAP_Cancel

No

Includes CSID?

Yes

CSID valid?

No

Yes

To all current CSs

Int_Release Call

3

Int_Cancel

-

CAP_Error

To all CS

-

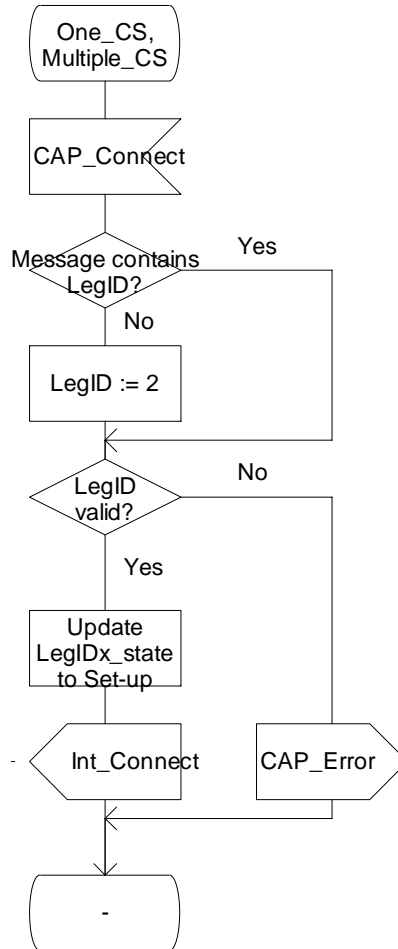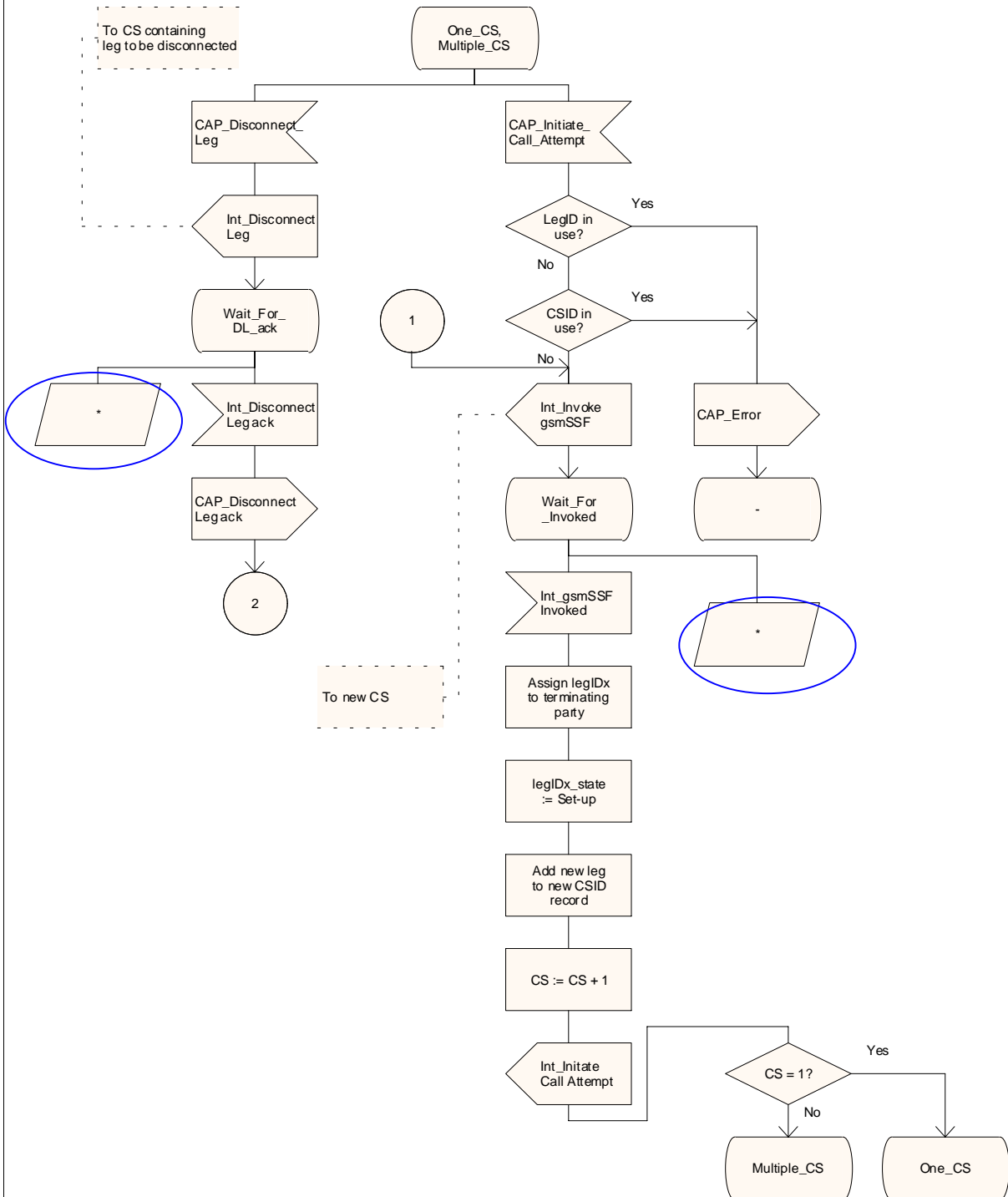Relay the operation to the Process CS_gsmSSF for the indicated CSID

Figure 4.112j: Process CSA_gsmSSF (sheet 10)

Process CSA_gsmSSF 11(21)

/* A process in the gsmSSF to co-ordinate the Call Segments for a call. */

/* Signals to/from the left are to/from one or more instances of the process CS_gsmSSF; signals to/from the right are to/from the gsmSCF. */

One_CS,
Multiple_CS

Int_Initiate
Call Attempt
ack

CAP_Initiate
Call Attempt
ack

-
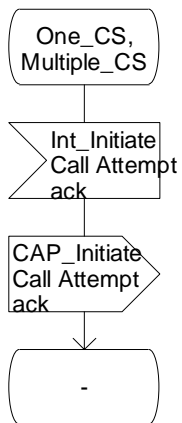
Figure 4.112k: Process CSA_gsmSSF (sheet 11)

Process CSA_gsmSSF   12(21)

/* A process in the gsmSSF to
co-ordinate the Call Segments
for a call. */

/* Signals to/from the left are to/from
one or more instances of the process
CS_gsmSSF; signals to/from the right
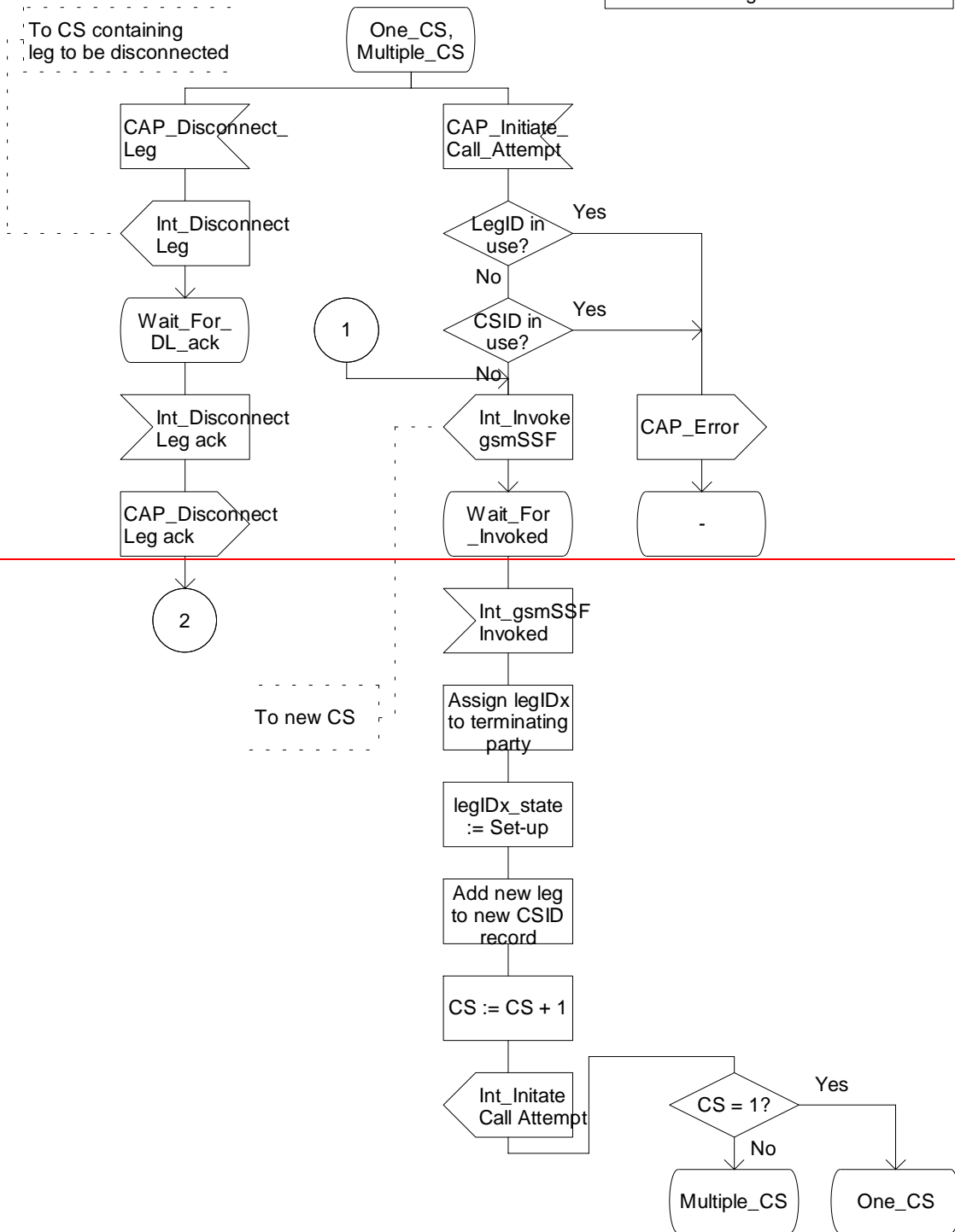are to/from the gsmSCF. */

One_CS,
Multiple_CS

Int_Leg_
Status_
Report

2

alerting   Leg status?   disconnect

active

Update   Update   Clear LegID
LegIDx_state   LegIDx_state
to alerting   to active

CS contains   No   No   CS contains   Disconnected leg   No
LegID1?   LegID1?   in CSID1?

Yes   Yes   Yes

LegID1_state   Yes
= active?

No

Update   Update
LegID1_state   Leg_ID1_state
to alerting   to active

Yes Any legs
remaining
in CSID1?

No

-                       Clear CSID1   Clear
                                                 CSID

Int_Release_   To CS to be
Call_Segment   cleared

CS := CS - 1

>1   CS   =0

=1

Multiple_CS   One_CS   3

Figure 4.112I: Process CSA_gsmSSF (sheet 12)

Process CSA_gsmSSF 13(21)

/* A process in the gsmSSF to co-ordinate the Call Segments for a call. */

/* Signals to/from the left are to/from one or more instances of the process CS_gsmSSF; signals to/from the right are to/from the gsmSCF. */
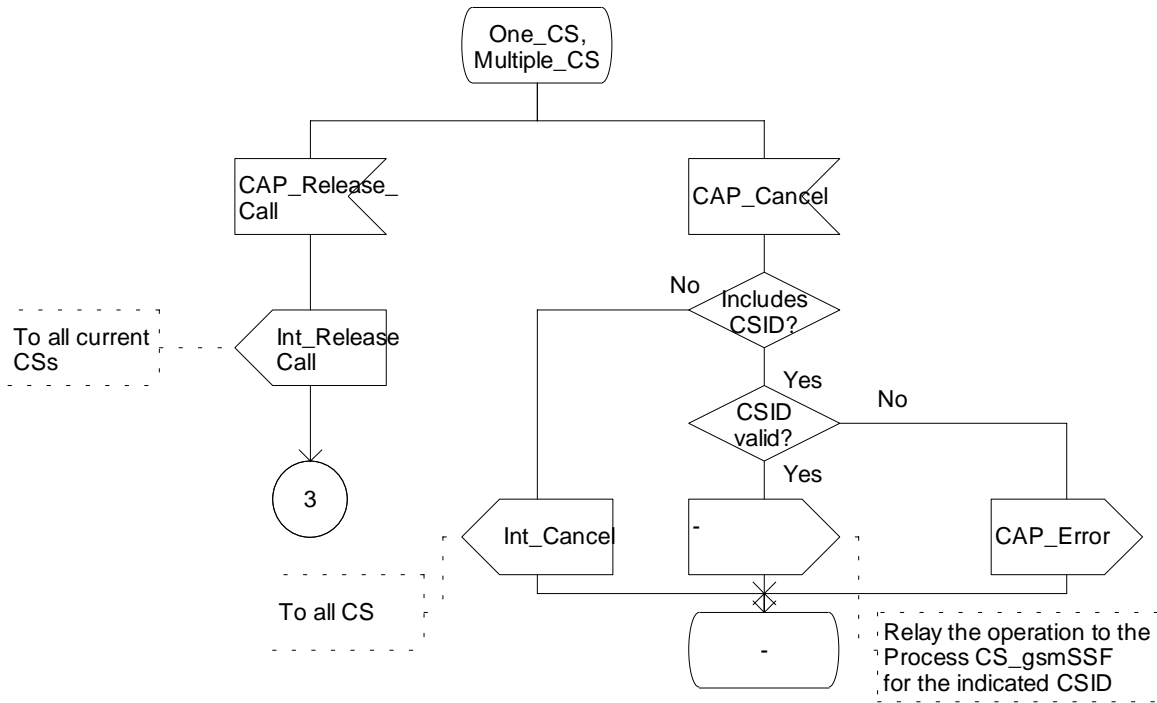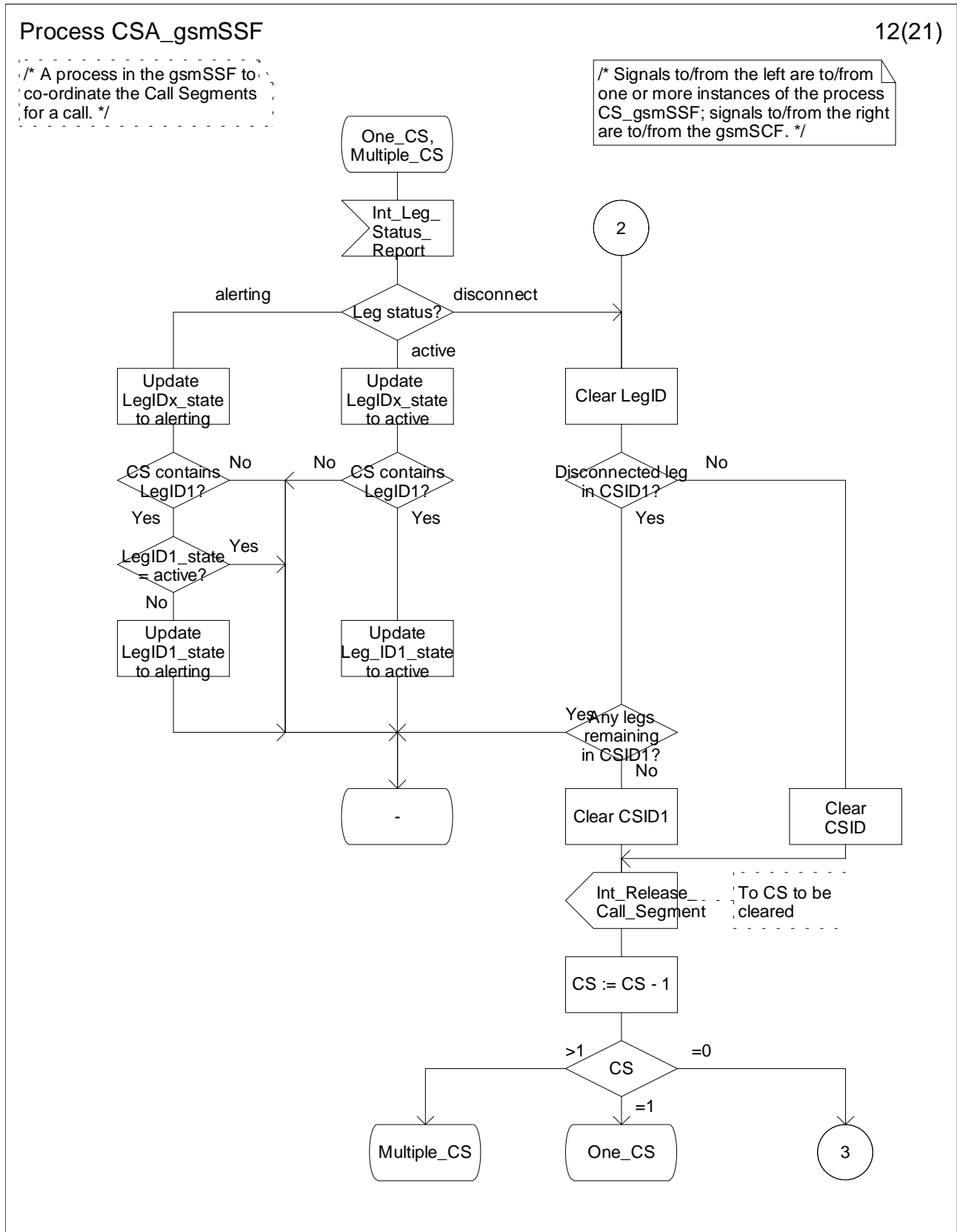
One_CS, Multiple_CS

CAP_Split Leg (Leg to be split, new CS)

Leg to be split in CSID1? — No → New CS is CSID1? — No → No

Yes ↓   Yes ←

Leg to be split in active phase? — No → No

Yes ↓

New CS in use? — Yes → No

No ↓

CS = CS_max? — Yes → No

No ↓

Int_Request _SL

CAP_Error

Wait_For_ User_Interaction _Response_SL

-

*

Int_Error_Not_ Allowed_due_To _User_Interaction

Int_Allowed_No_ User_Interaction

CAP_Error

4

CS = 1? — No → Multiple_CS

Yes ↓

One_CS

Multiple_CS

3GPP

Process CSA_gsmSSF 13(21)

/* A process in the gsmSSF to co-ordinate the Call Segments for a call. */

/* Signals to/from the left are to/from one or more instances of the process CS_gsmSSF; signals to/from the right are to/from the gsmSCF. */

One_CS, Multiple_CS

CAP_Split Leg (Leg to be split, new CS)

Leg to be split in CSID1? — No

New CS is CSID1? — Yes → Yes

No

Yes

Leg to be split in active phase? — No → No

Yes

New CS in use? — Yes →

No

CS = CS_max? — Yes →

No

Int_Request _SL

CAP_Error

Wait_For_ User_Interaction _Response_SL

-

Int_Error_Not_ Allowed_due_To _User_Interaction

Int_Allowed_No_ User_Interaction

CAP_Error

4

CS = 1?

No

Yes

One_CS

Multiple_CS
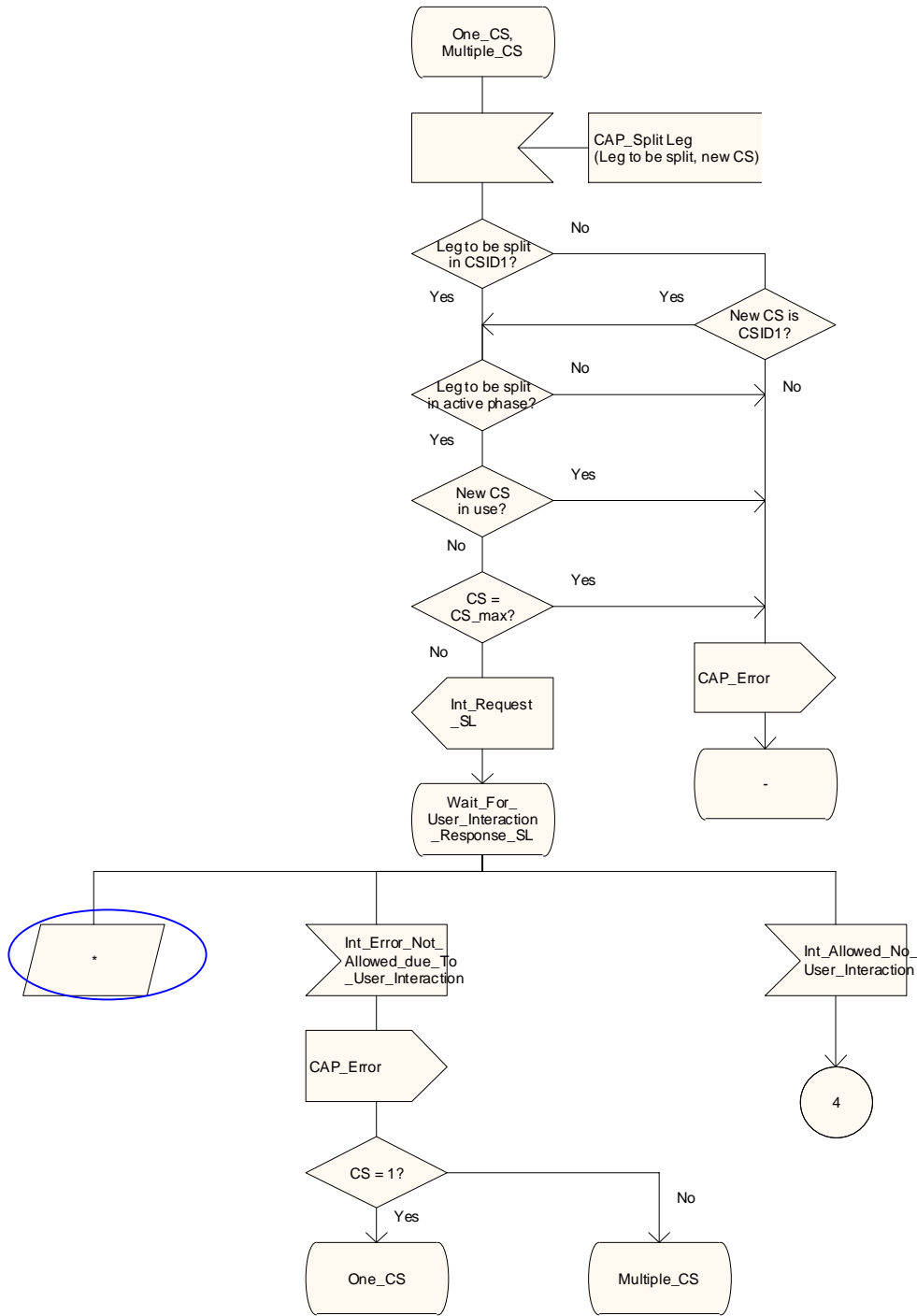
Figure 4.112m: Process CSA_gsmSSF (sheet 13)

Process CSA_gsmSSF   14(21)

/* A process in the gsmSSF to,
co-ordinate the Call Segments
for a call. */

/* Signals to/from the left are to/from
one or more instances of the process
CS_gsmSSF; signals to/from the right
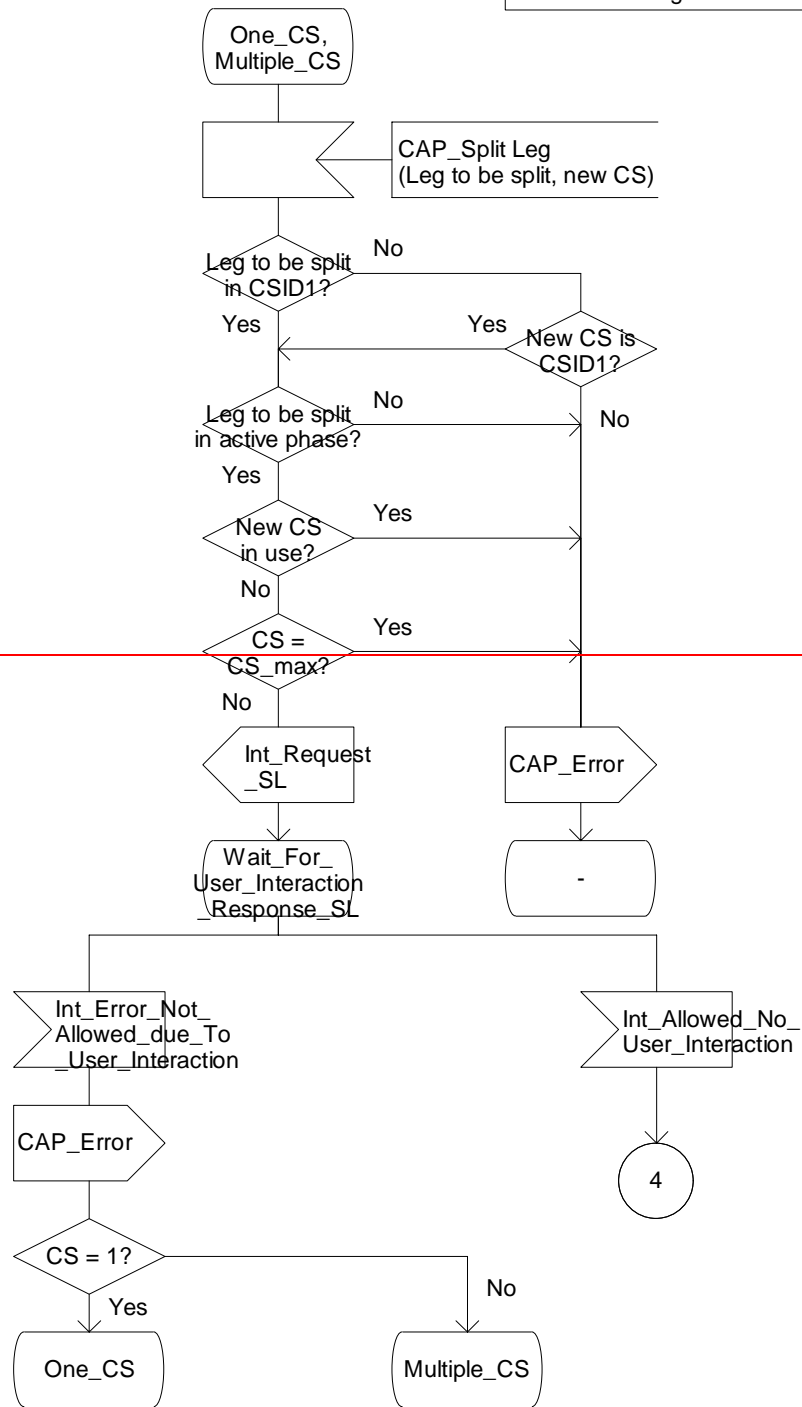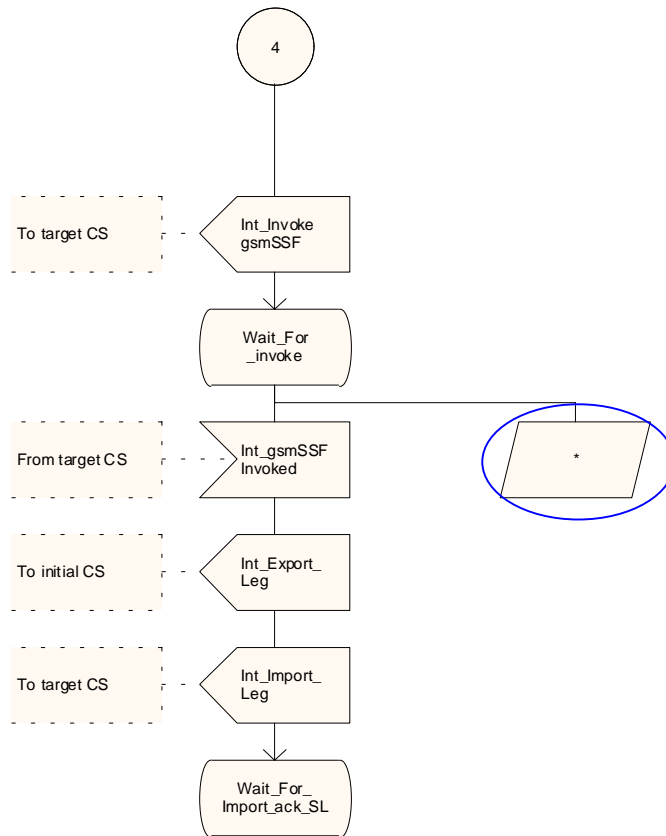are to/from the gsmSCF. */

(4)

To target CS — Int_Invoke
                 gsmSSF

                 Wait_For
                 _invoke

From target CS - - - Int_gsmSSF   *
                       Invoked

To initial CS — Int_Export_
                  Leg

To target CS — Int_Import_
                 Leg

                 Wait_For_
                 Import_ack_SL

Process CSA_gsmSSF   14(21)

/* A process in the gsmSSF to co-ordinate the Call Segments for a call. */

/* Signals to/from the left are to/from one or more instances of the process CS_gsmSSF; signals to/from the right are to/from the gsmSCF. */

(4)

To target CS ⊲ Int_Invoke gsmSSF

Wait_For _invoke

From target CS ▷ Int_gsmSSF Invoked

To initial CS ⊲ Int_Export_ Leg

To target CS ⊲ Int_Import_ Leg

Wait_For_ Import_ack_SL

Figure 4.112n: Process CSA_gsmSSF (sheet 14)

Process CSA_gsmSSF   15(21)

/* A process in the gsmSSF to,
co-ordinate the Call Segments
for a call. */

/* Signals to/from the left are to/from
one or more instances of the process
CS_gsmSSF; signals to/from the right
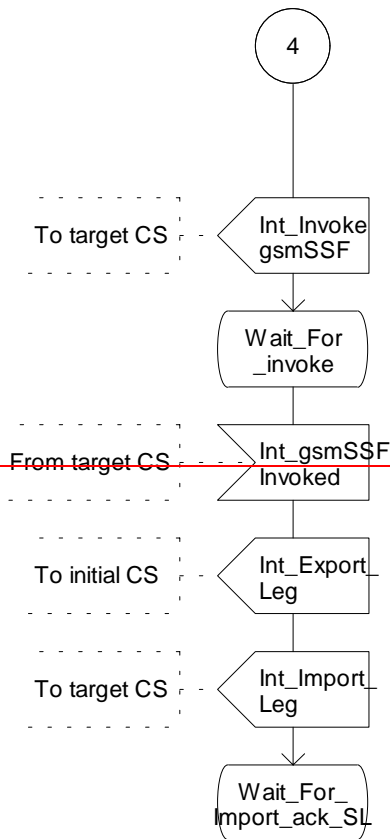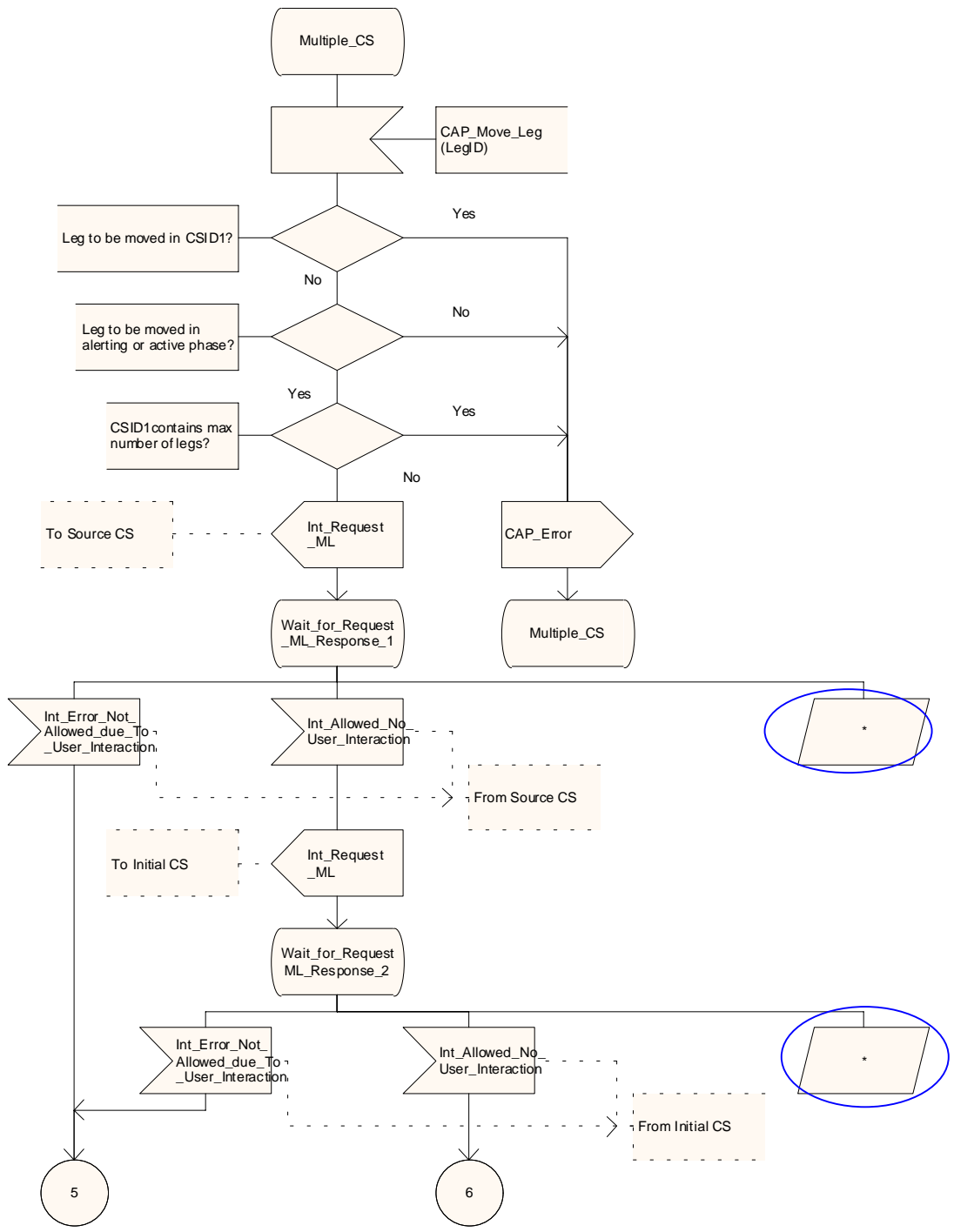are to/from the gsmSCF. */

Multiple_CS

CAP_Move_Leg
(LegID)

Leg to be moved in CSID1? ──── No ──── Yes

Leg to be moved in
alerting or active phase? ──── No

CSID1 contains max
number of legs? ──── Yes

To Source CS ⸱⸱⸱⸱ Int_Request
_ML

No

CAP_Error

Wait_for_Request
_ML_Response_1

Multiple_CS

Int_Error_Not_
Allowed_due_To
_User_Interaction

Int_Allowed_No_
User_Interaction

*

From Source CS

To Initial CS ⸱⸱⸱⸱ Int_Request
_ML

Wait_for_Request
ML_Response_2

Int_Error_Not_
Allowed_due_To
_User_Interaction

Int_Allowed_No_
User_Interaction

*

From Initial CS

5

6

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Process CSA_gsmSSF 15(21)

/* A process in the gsmSSF to
co-ordinate the Call Segments
for a call. */

/* Signals to/from the left are to/from
one or more instances of the process
CS_gsmSSF; signals to/from the right
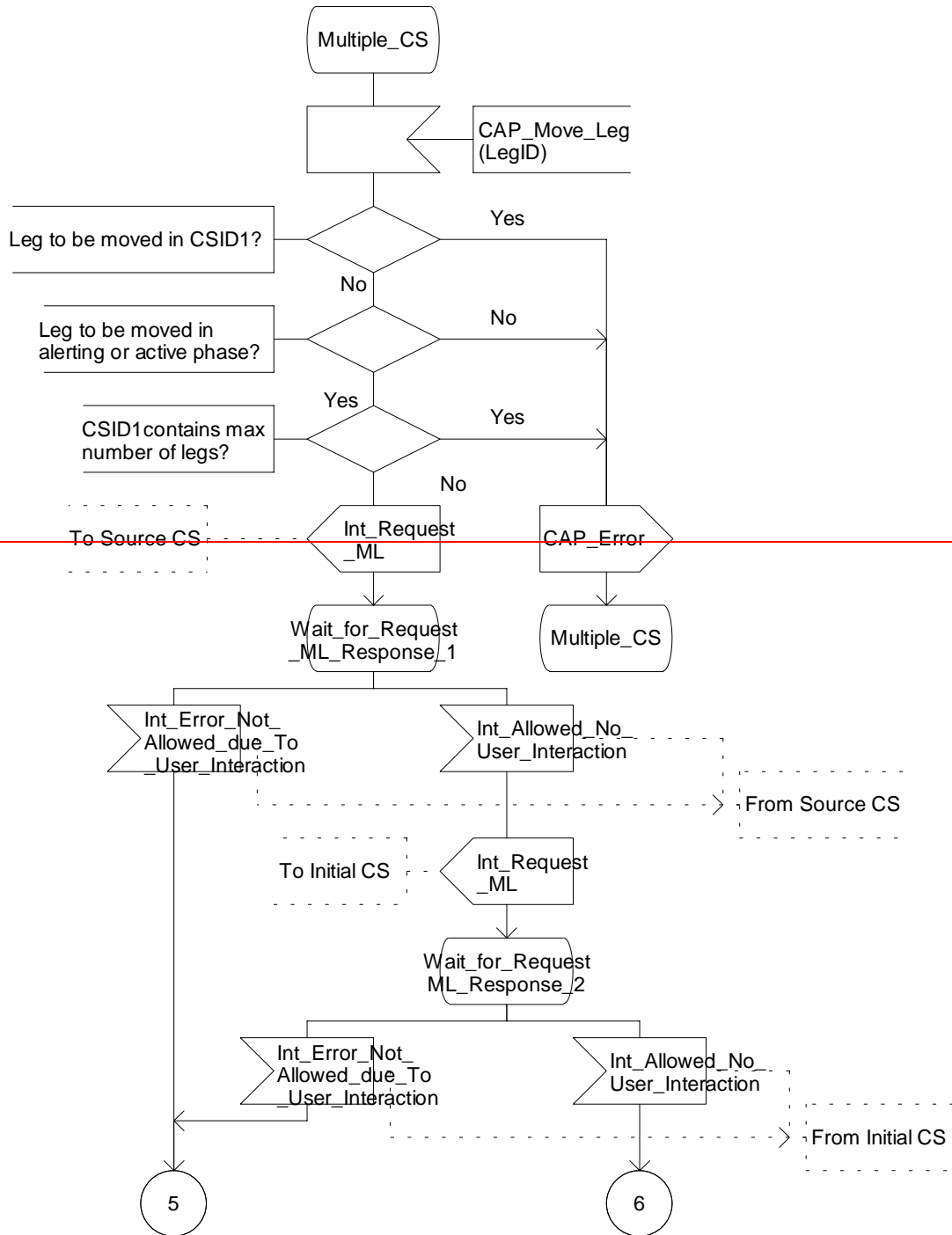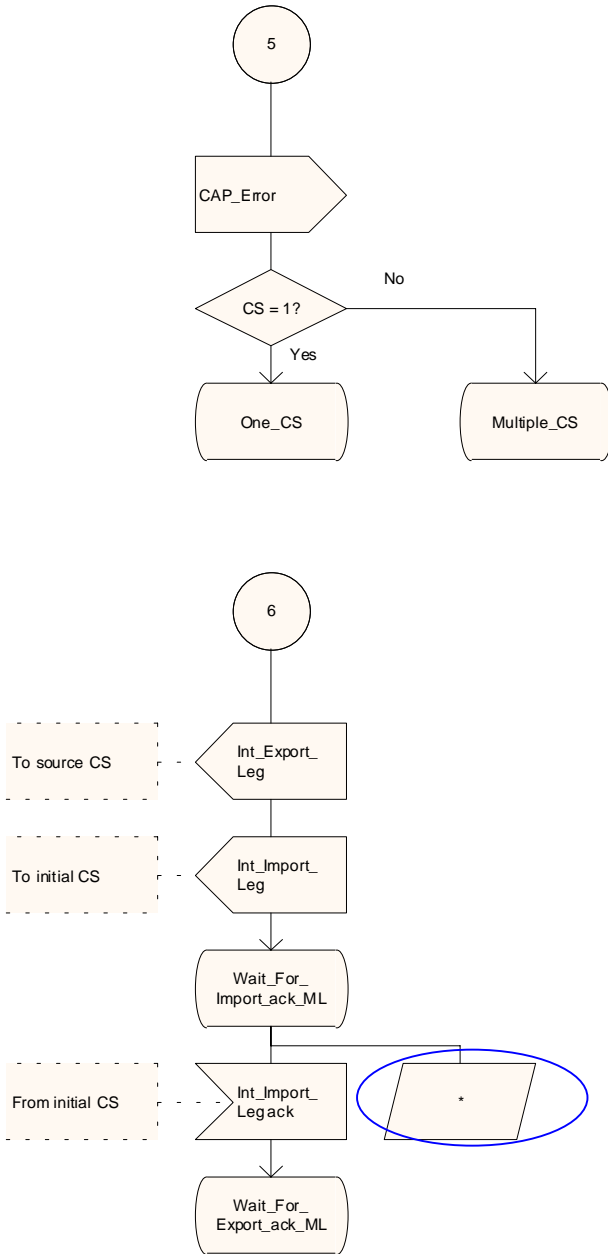are to/from the gsmSCF. */

Multiple_CS

CAP_Move_Leg
(LegID)

Leg to be moved in CSID1?   Yes

No

Leg to be moved in
alerting or active phase?   No

Yes

CSID1 contains max
number of legs?   Yes

No

To Source CS   Int_Request
_ML

CAP_Error

Wait_for_Request
_ML_Response_1

Multiple_CS

Int_Error_Not_
Allowed_due_To
_User_Interaction

Int_Allowed_No_
User_Interaction

From Source CS

To Initial CS   Int_Request
_ML

Wait_for_Request
_ML_Response_2

Int_Error_Not_
Allowed_due_To
_User_Interaction

Int_Allowed_No_
User_Interaction

From Initial CS

5

6

Figure 4.112o: Process CSA_gsmSSF (sheet 15)

Process CSA_gsmSSF

16(21)

/* A process in the gsmSSF to co-ordinate the Call Segments for a call. */

/* Signals to/from the left are to/from one or more instances of the process CS_gsmSSF; signals to/from the right are to/from the gsmSCF. */

(5)

CAP_Error

CS = 1?

No →

Yes ↓

One_CS   Multiple_CS

(6)

To source CS --- Int_Export_Leg

To initial CS --- Int_Import_Leg

Wait_For_Import_ack_ML

From initial CS --- Int_Import_Leg ack   *

Wait_For_Export_ack_ML

Process CSA_gsmSSF   16(21)

/* A process in the gsmSSF to co-ordinate the Call Segments for a call. */

/* Signals to/from the left are to/from one or more instances of the process CS_gsmSSF; signals to/from the right are to/from the gsmSCF. */
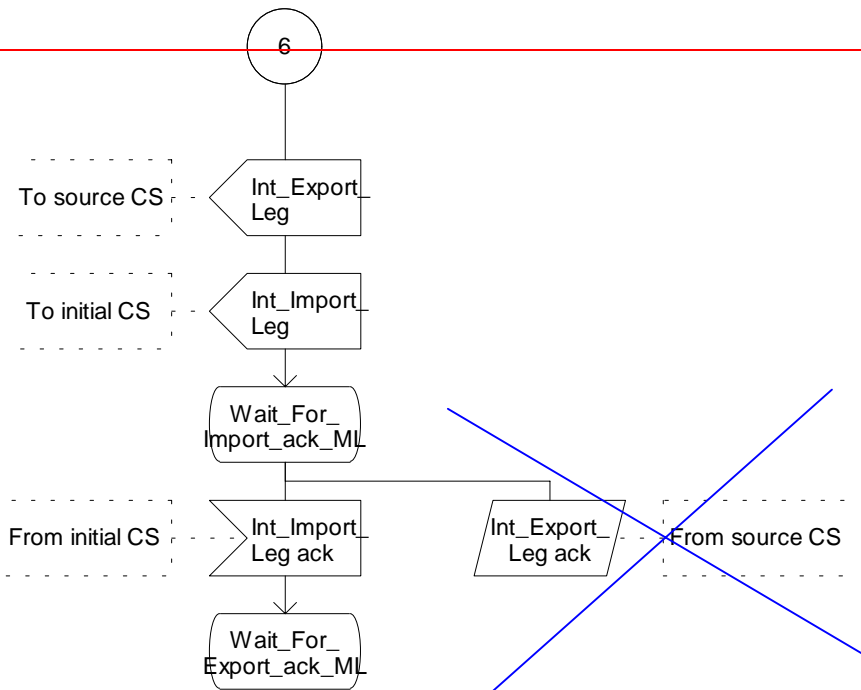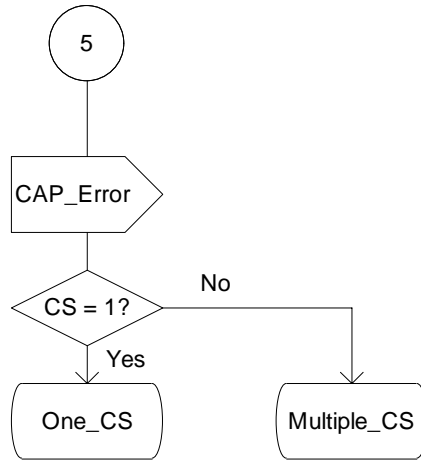
5

CAP_Error

CS = 1? ── No

Yes

One_CS   Multiple_CS

6

To source CS ─ Int_Export_ Leg

To initial CS ─ Int_Import_ Leg

Wait_For_ Import_ack_ML

From initial CS ─ Int_Import_ Leg ack   Int_Export_ Leg ack   From source CS

Wait_For_ Export_ack_ML

Figure 4.112p: Process CSA_gsmSSF (sheet 16)

3GPP

Process CSA_gsmSSF   17(21)

/* A process in the gsmSSF to co-ordinate the Call Segments for a call. */

/* Signals to/from the left are to/from one or more instances of the process CS_gsmSSF; signals to/from the right are to/from the gsmSCF. */
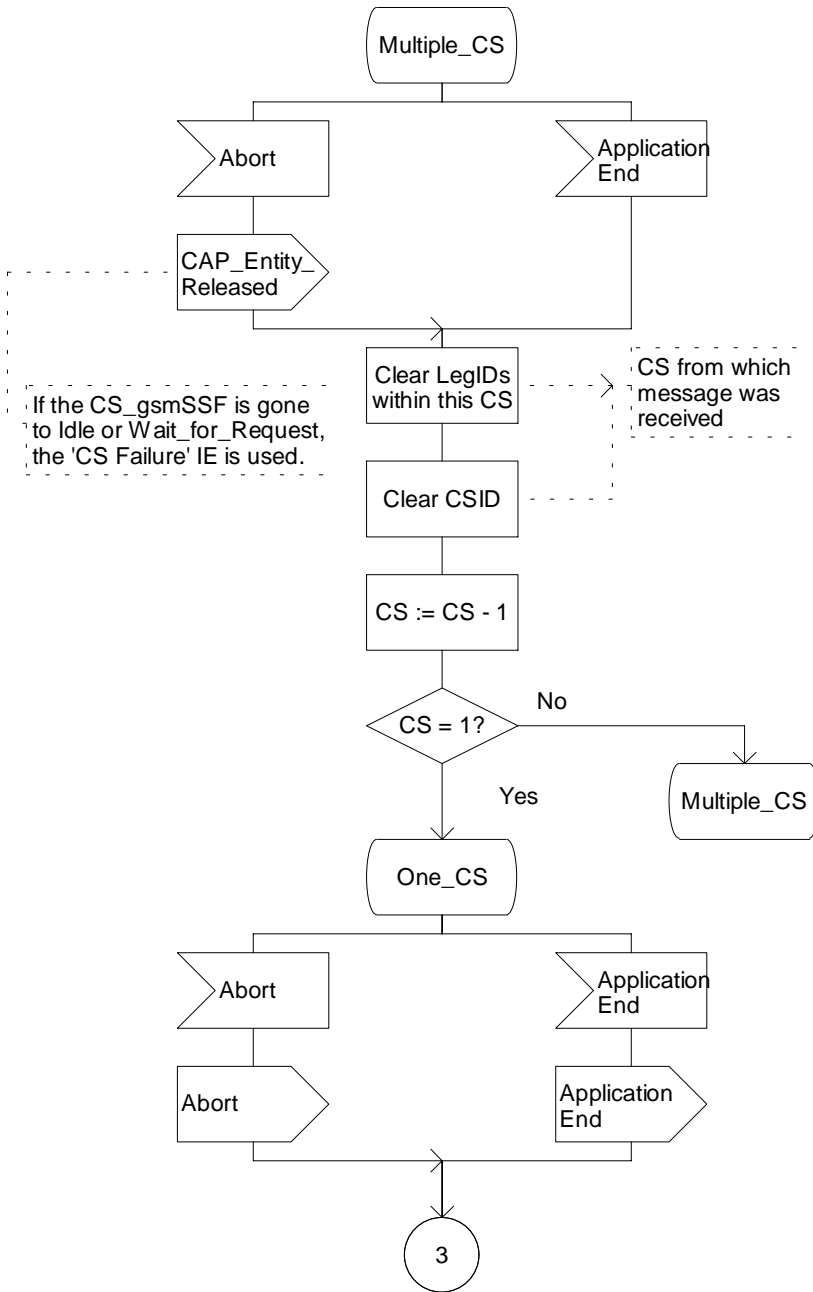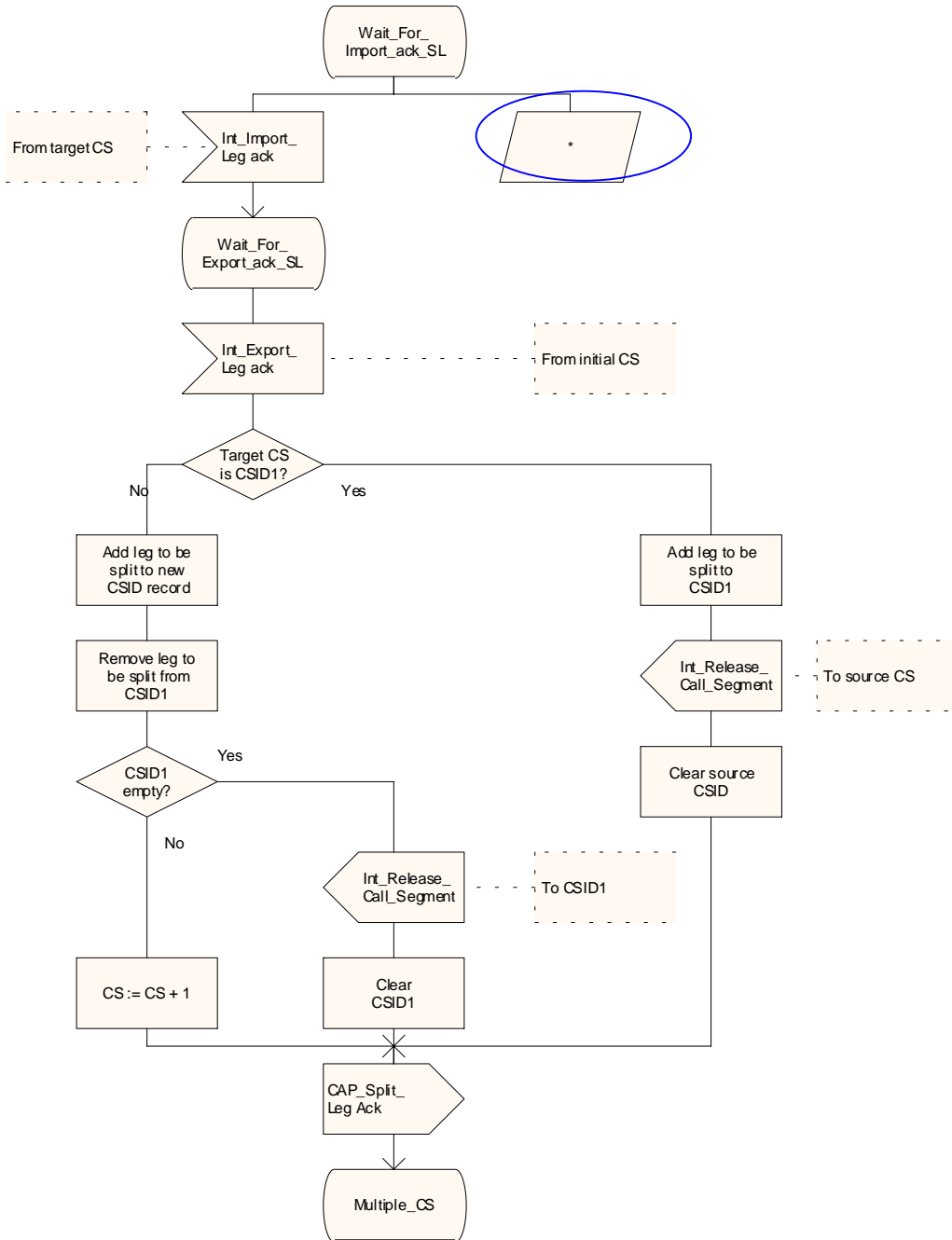
Multiple_CS

Abort

Application End

CAP_Entity_ Released

Clear LegIDs within this CS

CS from which message was received

If the CS_gsmSSF is gone to Idle or Wait_for_Request, the 'CS Failure' IE is used.

Clear CSID

CS := CS - 1

CS = 1?   No

Multiple_CS

Yes

One_CS

Abort

Application End

Abort

Application End

3

Figure 4.112q: Process CSA_gsmSSF (sheet 17)

Process CSA_gsmSSF   18(21)

/* A process in the gsmSSF to
co-ordinate the Call Segments
for a call. */

/* Signals to/from the left are to/from
one or more instances of the process
CS_gsmSSF; signals to/from the right
are to/from the gsmSCF. */

Process CSA_gsmSSF 18(21)

/* A process in the gsmSSF to co-ordinate the Call Segments for a call. */

/* Signals to/from the left are to/from one or more instances of the process CS_gsmSSF; signals to/from the right are to/from the gsmSCF. */
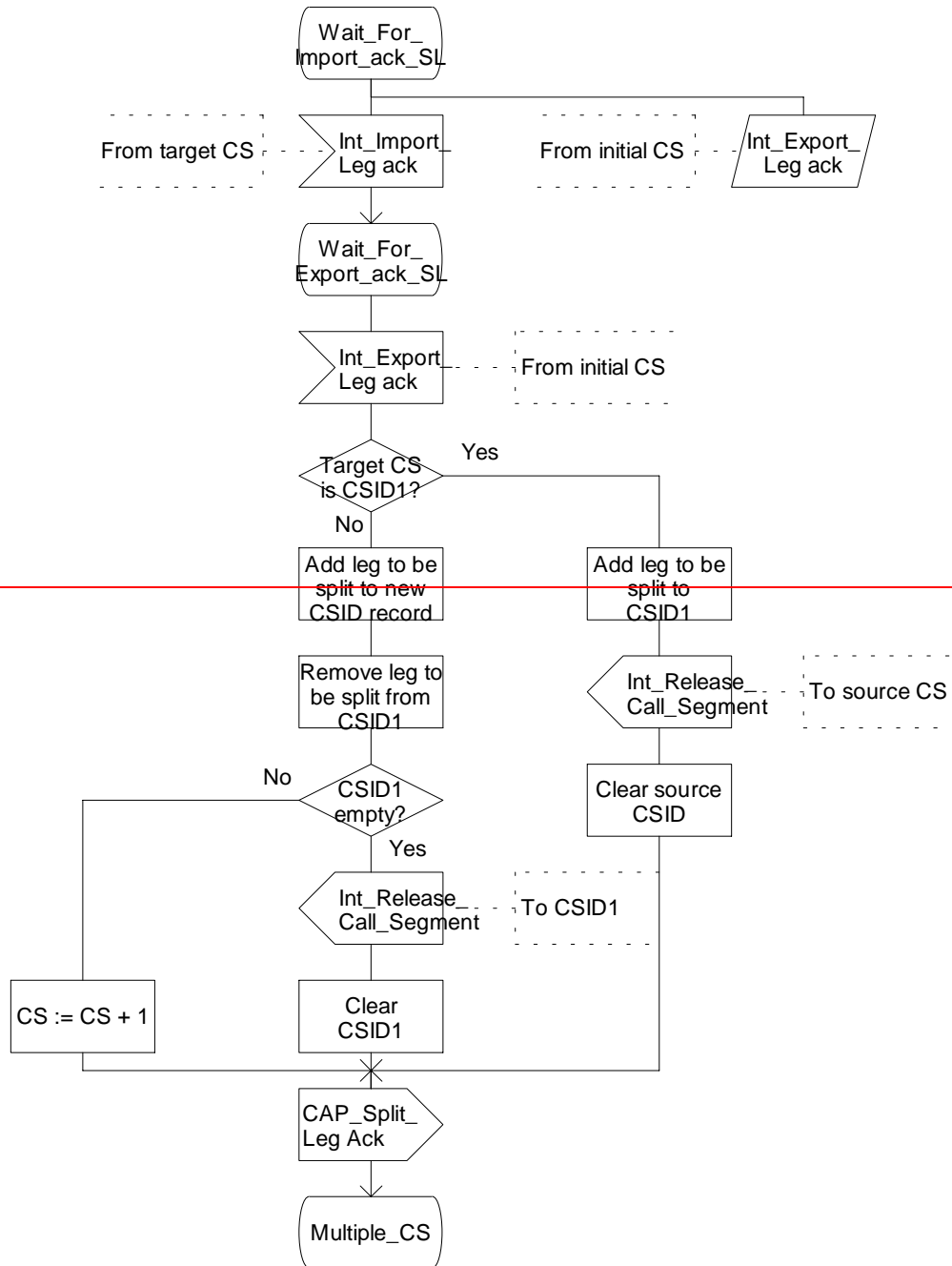
Wait_For_Import_ack_SL

From target CS → Int_Import_Leg ack

From initial CS → Int_Export_Leg ack

Wait_For_Export_ack_SL

Int_Export_Leg ack ─ From initial CS

Target CS is CSID1? — Yes

No

Add leg to be split to new CSID record

Add leg to be split to CSID1

Remove leg to be split from CSID1

Int_Release_Call_Segment ─ To source CS

CSID1 empty? — No → CS := CS + 1

Clear source CSID

Yes

Int_Release_Call_Segment ─ To CSID1

Clear CSID1

CAP_Split_Leg Ack

Multiple_CS

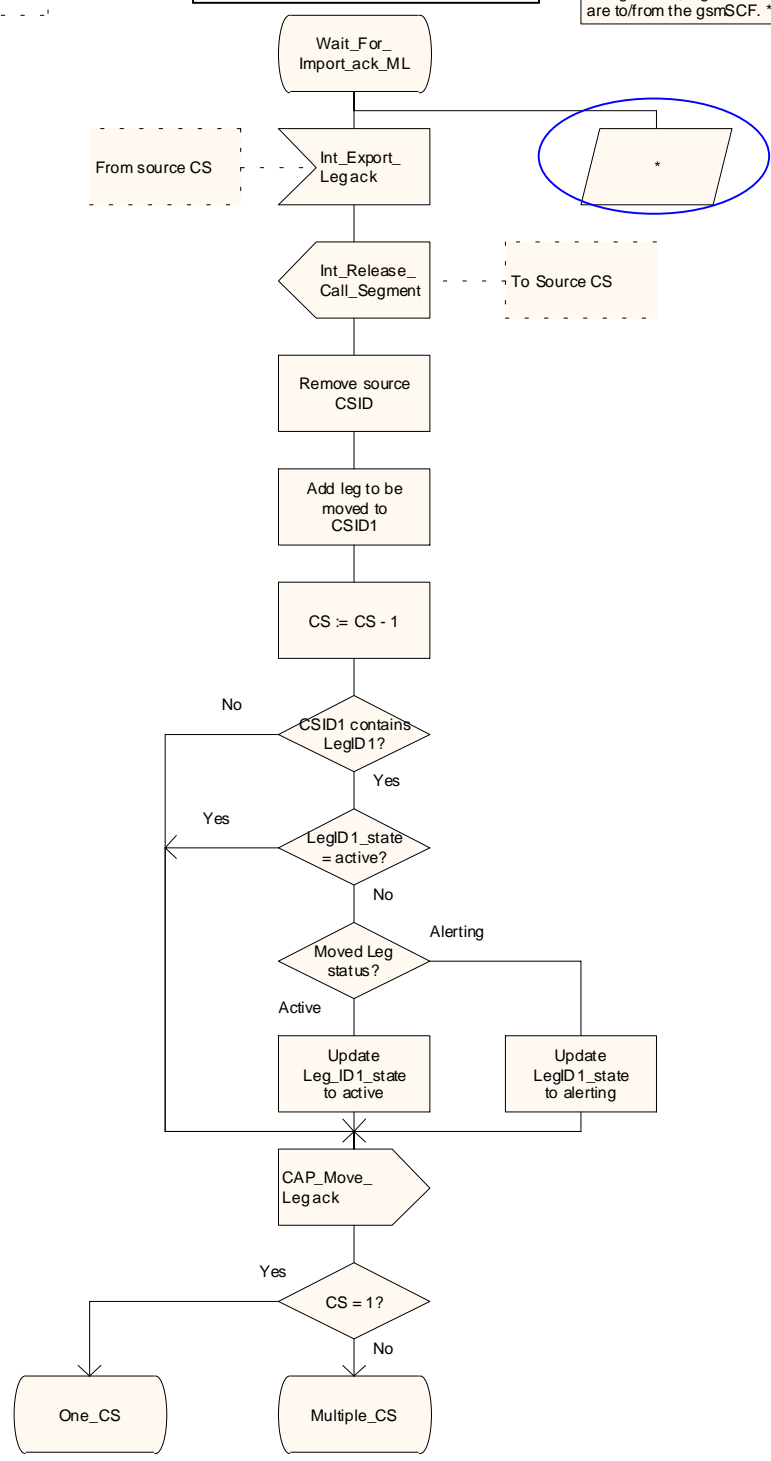**Figure 4.112r: Process CSA_gsmSSF (sheet 18)**

Process CSA_gsmSSF 19(21)

/* A process in the gsmSSF to,
co-ordinate the Call Segments
for a call. */

Note: This state should read
'Wait_For_Export_ack_ML'

This will be rectified in a
separate CR (N2-020688).

/* Signals to/from the left are to/from
one or more instances of the process
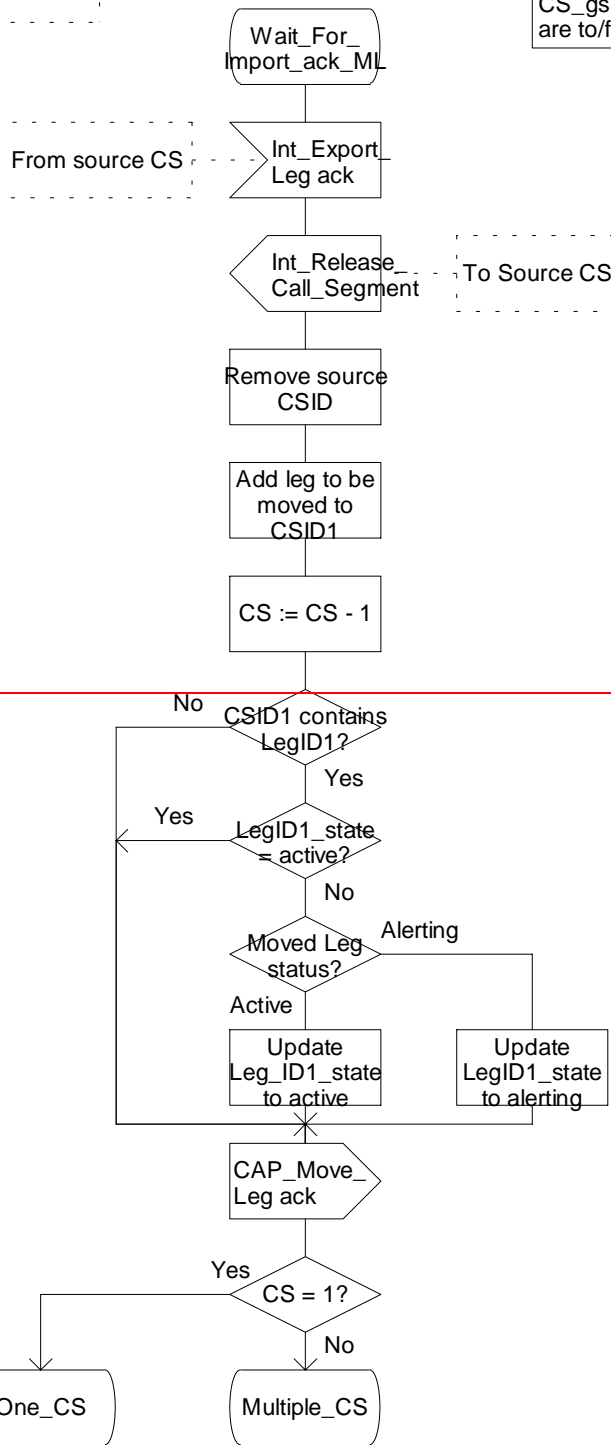CS_gsmSSF; signals to/from the right
are to/from the gsmSCF. */

Wait_For_
Import_ack_ML

From source CS → Int_Export_
Legack

*

Int_Release_
Call_Segment → To Source CS

Remove source
CSID

Add leg to be
moved to
CSID1

CS := CS - 1

No ← CSID1 contains
LegID1?

Yes

Yes ← LegID1_state
= active?

No

Moved Leg
status? → Alerting

Active

Update
Leg_ID1_state
to active

Update
LegID1_state
to alerting

CAP_Move_
Legack

Yes ← CS = 1?

No

One_CS

Multiple_CS

Process CSA_gsmSSF 19(21)

/* A process in the gsmSSF to co-ordinate the Call Segments for a call. */

/* Signals to/from the left are to/from one or more instances of the process CS_gsmSSF; signals to/from the right are to/from the gsmSCF. */
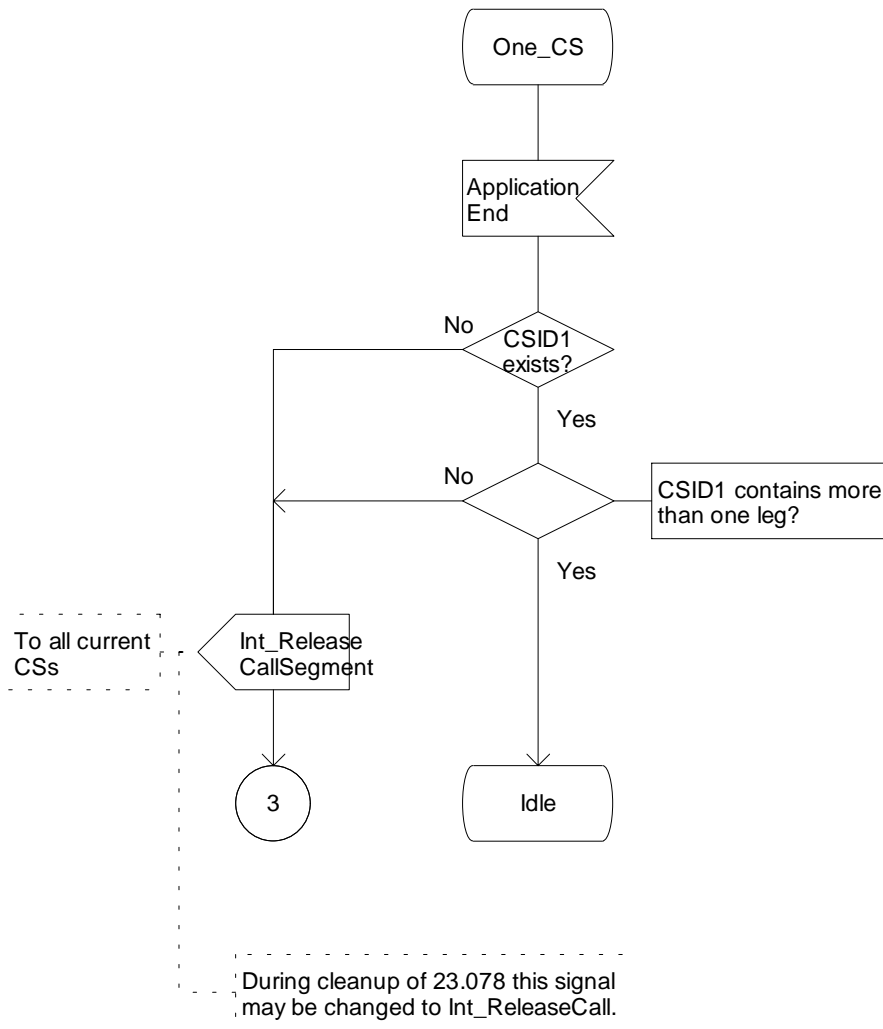
Wait_For_
Import_ack_ML

From source CS ---- Int_Export_
Leg ack

Int_Release_
Call_Segment ---- To Source CS

Remove source
CSID

Add leg to be
moved to
CSID1

CS := CS - 1

CSID1 contains
LegID1? — No

Yes

LegID1_state
= active? — Yes

No

Moved Leg
status? — Alerting

Active

Update
Leg_ID1_state
to active

Update
LegID1_state
to alerting

CAP_Move_
Leg ack

CS = 1? — Yes

No

One_CS

Multiple_CS

Figure 4.112s: Process CSA_gsmSSF (sheet 19)

Process CSA_gsmSSF 20(21)

/* A process in the gsmSSF to co-ordinate the Call Segments for a call. */

/* Signals to/from the left are to/from one or more instances of the process CS_gsmSSF; signals to/from the right are to/from the gsmSCF. */
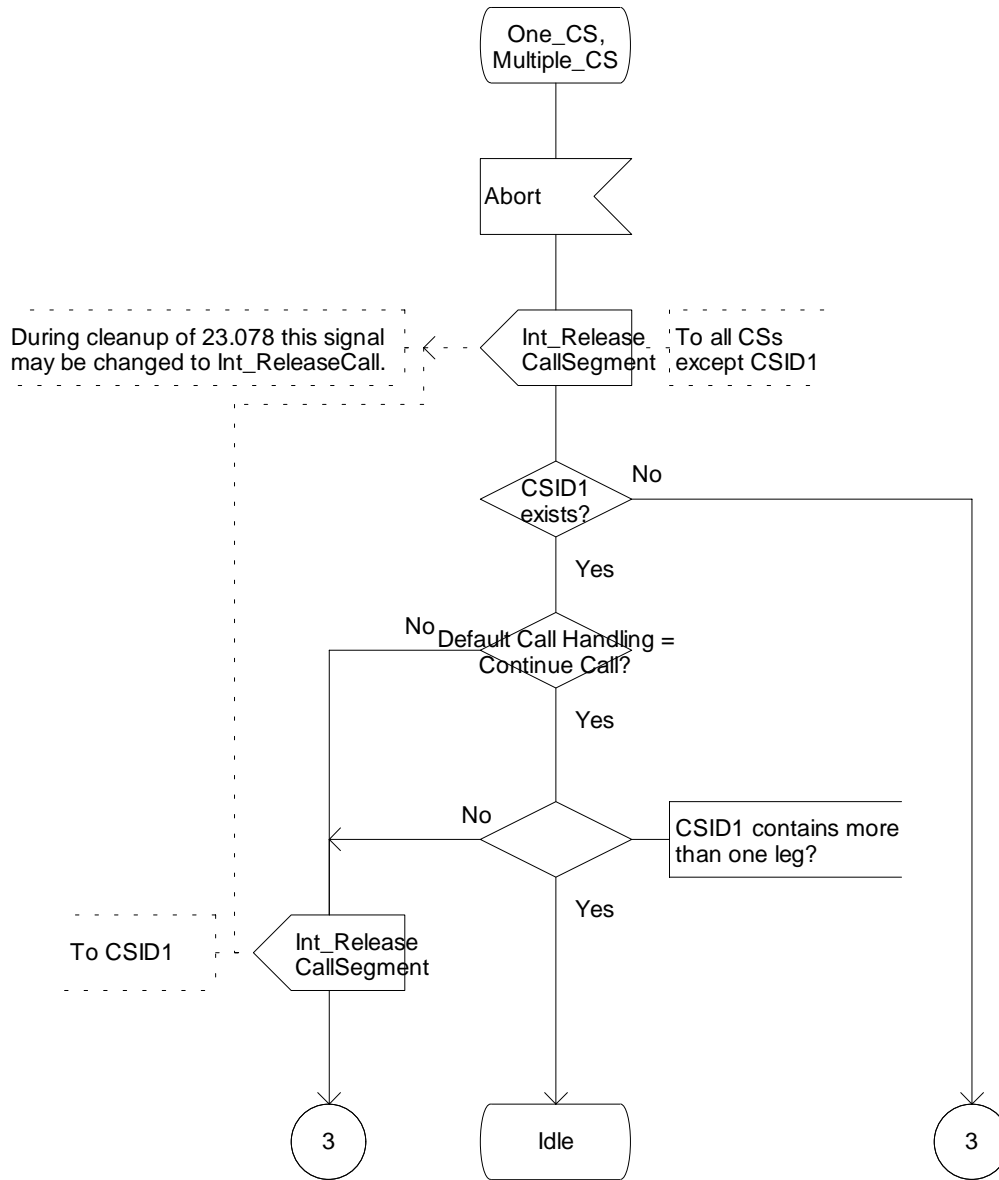
One_CS

Application End

No ← CSID1 exists?

Yes

No ← CSID1 contains more than one leg?

Yes

To all current CSs

Int_Release CallSegment

3

Idle

During cleanup of 23.078 this signal may be changed to Int_ReleaseCall.

Figure 4.112t: Process CSA_gsmSSF (sheet 20)

Process CSA_gsmSSF   21(21)

/* A process in the gsmSSF to co-ordinate the Call Segments for a call. */

/* Signals to/from the left are to/from one or more instances of the process CS_gsmSSF; signals to/from the right are to/from the gsmSCF. */

One_CS,
Multiple_CS

Abort

During cleanup of 23.078 this signal may be changed to Int_ReleaseCall.

Int_Release
CallSegment

To all CSs
except CSID1

CSID1
exists?   No

Yes

No   Default Call Handling =
Continue Call?

Yes

No   CSID1 contains more
than one leg?

Yes

To CSID1

Int_Release
CallSegment

(3)   (Idle)   (3)

Figure 4.112u: Process CSA_gsmSSF (sheet 21)

**** End of Document ****

CR-Form-v7

CHANGE REQUEST

	⌘	**29.078** CR **267**	⌘**rev**	**1**	⌘	Current version:	**5.0.0**	⌘

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

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

Title: ⌘	Move Leg and Split Leg Error - Task Refused	
Source: ⌘	Vodafone	
Work item code: ⌘	CAMEL4	***Date:*** ⌘ 09/07/2002
Category: ⌘	**F**	***Release:*** ⌘ Rel-5

Use one of the following categories: ***F** (correction)* ***A** (corresponds to a correction in an earlier release)* ***B** (addition of feature),* ***C** (functional modification of feature)* ***D** (editorial modification)* Detailed explanations of the above categories can be found in 3GPP TR 21.900.	*Use 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)* *Rel-6 (Release 6)*

Reason for change: ⌘	23.078 (process CSA_gsmSSF) Returns CAP_Error (task refused) to the gsm_SCF when it requests a MoveLeg or SplitLeg operation whilst user interaction is taking place. Error handling for this event is not specified in 29.078
Summary of change: ⌘	Add the scenario 'task refused due to user interaction' to the error handling sections of the Move Leg and Split Leg sections in operation procedures for circuit switched call control.
Consequences if not approved: ⌘	The specification will not align with the stage 2, as this error case will remain unspecified.
Clauses affected: ⌘	10.1.10.1.1, 11.23.2 and 11.33.2

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

Other comments: ⌘	Related to N2-020624 (CN2#24), where this error was created in 23.078. The stage 3 error descriptions below follow the approved stage 2 CR.

<div style="border:2px solid black; padding:4px;">

**** First Modified Section ****

</div>

11.23 MoveLeg procedure

11.23.1 General Description

The gsmSCF uses this operation to request the gsmSSF to move the leg from its current Call Segment to the intial Call Segment (CS ID = 1).

11.23.1.1 Parameters

- legIDToMove:
  This parameter indicates the leg that shall be moved.

11.23.2 Responding entity (gsmSSF)

11.23.2.1 Normal procedure

gsmSSF preconditions:

1) A control relationship exists between the gsmSCF and the gsmSSF.

2) The corresponding BCSM is in the alerting, active or mid-call phase.

3) The CS_gsmSSF FSM for each Call Segment involved is in the state "Waiting_for_Instructions" or in the state "Monitoring".

4) User Interaction is not in progress in either Call Segment.

gsmSSF postconditions:

1) The gsmSSF performs the appropriate call processing actions.

2) The CS_gsmSSF FSM for the initial Call Segment transits to the state "Waiting_for_Instructions". The BCSM instances within the initial Call Segment transit to the O_Mid_Call DP or to the T_Mid_Call DP, if not already suspended. Note that no Mid_Call EDP will be reported for this case.

3) The CS_gsmSSF process for the source Call Segment is terminated.

4) A Return Result is sent to the gsmSCF immediately after successful execution of this operation.

11.23.2.2 Error handling

Generic error handling for the operation related errors is described in clause 10, and the TC services which are used for reporting operation errors are described in clause 14.

**** Next Modified Section ****

11.33 SplitLeg Procedure

11.33.1 General Description

The gsmSCF uses this operation to request the gsmSSF to separate one party from the source Call Segment and place it in a new target Call Segment.

11.33.1.1 Parameters

- legToBeSplit:
  This parameter indicates the party in the call to be split from the source Call Segment.

- newCallSegment:
  This parameter indicates the CallSegmentID to be assigned to the newly-created Call Segment.

11.33.2 Responding entity (gsmSSF)

11.33.2.1 Normal procedure

gsmSSF preconditions:

1) A control relationship exists between the gsmSCF and the gsmSSF.

2) The initial Call Segment is either the source Call Segment or the target Call Segment.

3) The BCSM for the leg to be split is in the state O_Active, T_Active, O_Mid_Call or T_Mid_Call.

4) User interaction is not in progress in the source Call Segment.

gsmSSF postconditions:

1) The gsmSSF performs the necessary actions to separate the specified leg from its original Call Segment and place it in a new target Call Segment.

2) The CS_gsmSSF FSM for the new Call Segment transits to the state "Waiting_for_Instructions".

3) The CS_gsmSSF FSM for the source Call Segment transits to the state "Waiting_for_Instructions".

4) The remaining BCSM instances within the source Call Segment transit to the O_Mid_Call DP or to the T_Mid_Call DP, unless already suspended at a DP. Note that no Mid_Call EDP will be reported for this case.

5) A Return Result shall be sent to the gsmSCF immediately after successful execution of this operation.

11.33.2.2 Error handling

Generic error handling for the operation related errors is described in clause 10, and the TC services which are used for reporting operation errors are described in clause 14.

**** Next Modified Section ****

10.1.10 TaskRefused

10.1.10.1 General description

10.1.10.1.1 Error description

The gsmSCF, gsmSSF, gsmSRF, smsSSF or gprsSSF uses this Error to indicate that it is not able to execute a specific task as requested by a CAP Operation, and recovery is expected to be completed within the current call instance.

If the gsmSSF requests MoveLeg or SplitLeg operations in the gsmSSF while user interaction is in progress in an affected Call Sement then CAP Error (task refused) is returned.

**** End of Document ****