3GPP TSG CN Plenary Meeting #18 **NP-020528**
4th - 6th December 2002. New Orleans, USA.

Source: TSG CN WG2

Title: CRs on Rel-5 Work Item CAMEL4, CR Pack 3

Agenda item: 8.3

Document for: APPROVAL

Introduction:

This document contains 7 CRs on Rel-5 WI CAMEL4. These CRs have been agreed by TSG CN WG2 and are forwarded to TSG CN Plenary meeting #18 for approval.

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
23.078	495	1	N2-021074	Rel-5	Correction to ATI handling in HLR	F	5.1.0
23.078	484	1	N2-021075	Rel-5	Better SDL CSA_gsmSSF	D	5.1.0
29.078	288	1	N2-021076	Rel-5	Use of Continue With Argument operation for call resumption	F	5.1.0
29.078	289	1	N2-021077	Rel-5	Missing Call Segment ID in Continue With Argument operation	F	5.1.0
23.078	490	1	N2-021078	Rel-5	Handling of Apply Charging after gsmSCF terminates dialogue or sends 'Release Call'	F	5.1.0
23.078	499	1	N2-021079	Rel-5	MSC-number in MAP Location Information	F	5.1.0
29.078	295	2	N2-021086	Rel-5	Re-introduction of local definition of LocationInformationGPRS	F	5.1.0

3GPP TSG-CN WG2 Meeting #27 **N2-021074**
Bangkok, Thailand, 11th - 15th November 2002 (revision of N2-021007)

CHANGE REQUEST

⌘ **23.078** **CR** **495** ⌘ **rev** **1** ⌘ Current version: **5.1.0** ⌘

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

Title:	⌘	Correction to ATI handling in HLR
Source:	⌘	Ericsson
Work item code:	⌘	CAMEL4
Date:	⌘	14/11/2002
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)*

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: ⌘ There is a disalignment between Procedure CAMEL_Provide_Subscriber_Info (figure 4.115) and the preceding text. The disalignment stems, partly, from the introduction of Any Time Interrogation for the PS domain.

To remedy the error, the present CR proposes that the SDL in Ts 23.078 reflect accurately the HLR behaviour for the handling of ATI and that the preceding text be removed. The text does not provide any additional information in any case and has led to inconsistencies like the one the present CR is dealing with.

The following principles are applied by the present CR:

(1) When the HLR determines that the subscriber is not reachable and the subscriber state was requested by the calling process, then the HLR sets the state to “Network Determined Not Reachble”.
(2) When the HLR determines that the subscriber is not reachable and the location information was requested by the calling process, then the HLR returns the internally stored location information, if available.
(3) When the HLR has sent PSI and receives negative response and the subscriber state was requested by the calling process, then the HLR sets the state to “Not Provided from VLR” or “Not Provided from SGSN”.
(4) When the HLR has sent PSI and receives negative response and the Location Information was requested by the calling process, then the HLR returns the internally stored location information, if available.

The present CR requires also a CR to TS 29.002, to introduce the CHOICE element “netDetNotReachable” for PS-SubscriberState. This CHOICE element shall be defined as NotReachableReason, as already defined in TS 29.002.

In addition, subclause 4.5.9.1 refers to the mapping between Cell Id or Location

	Area to Location Number and/or Geographical Information. However, the current wording does not take into account that the information received from VLR may be Service Area Id and that the information received from SGSN may be Routeing Area Identity. That needs to be reflected in the text. In the Information Flows, the following corrections need to be made to description of subscriber state: - for CS subscriber state: specify that the value "NetworkDeterminedNotReachable" may be set by the HLR and the VLR; - for PS subscriber state: add the value "NetworkDeterminedNotReachable". This value may be set by the HLR only, not by the SGSN.
Summary of change: ⌘	- Remove subclauses 4.5.9.2 and 4.5.9.3; - Correct the text in subclause 4.5.9.1; - Move the text in subclause 4.5.9.1 up to the level of subclause 4.5.9 and remove subclause 4.5.9.1; - Split figure 4.115a up in two parts: (1) one figure for ATI for the CS domain; and (2) one figure for ATI for the PS domain; - The two figures shall have separate branches: (1) one branche for the handling of the case when the HLR has determined that the subscriber is Not Reachble; and (2) one branche for the handling of the case when the HLR receives a negative response. - Correct the Information Flows as described above.
Consequences if not approved: ⌘	Incorrect and inconsistent implementation of ATI in HLR.

Clauses affected:	⌘	4.5.9, 4.6.9, 11.3.4			
Other specs affected:	⌘	**Y** / **N** **X** / > > / **X** > / **X**	Other core specifications Test specifications O&M Specifications	⌘	29.002-CR522
Other comments:	⌘				

*** First Modification ***

4.5.9 Procedure CAMEL_Provide_Subscriber_Info

The procedure CAMEL_Provide_Subscriber_Info is called either during Retrieval of routeing information in the HLR or as a result of reception of the Any Time Interrogation information flow from the gsmSCF.

~~4.5.9.1 MS reachable~~

The HLR sends a Provide Subscriber Info information flow to the VLR or SGSN dependent on the setting of the parameter "requested domain" received from the calling process. ~~The HLR waits in state Wait_For_Information.~~

If the VLR or SGSN returns a Provide Subscriber Info ack information flow, then the HLR uses the received information to set the Subscriber Info to be returned to the calling process.

~~As a network option, the HLR may use the received Cell Id or Location Area to derive the location number and/or Geographical Info. The mapping from cell ID and location area to location number is network-specific and outside the scope of the present document.~~

As a network option, the HLR may use the information received from the VLR, such as Cell Id, Location Area Id or Service Area Id, to derive the Location Number and/or Geographical Information. The HLR may use the information received from the SGSN, such as Cell Id, Location Area Id, Service Area Id or Routeing Area Identity, to derive the Location Number and/or Geographical Information. This mapping is network-specific and outside the scope of the present document.

NOTE: The handling in the VLR of Provide Subscriber Info is defined in 3GPP TS 23.018 [**Error! Reference source not found.**]. The handling in the SGSN of Provide Subscriber Info is defined in clause **Error! Reference source not found.**.

~~4.5.9.2 MS not reachable in the requested domain~~

~~4.5.9.2.1 Location Information requested~~

~~If the VLR number or SGSN number is available in the HLR, then the Location Information is set to this parameter only.~~

~~If location information is not available in the HLR, then no location information is set.~~

~~4.5.9.2.2 Subscriber State requested~~

~~The Subscriber State is set to "Network determined not reachable".~~

~~4.5.9.3 Actions at state Wait_For_Information~~

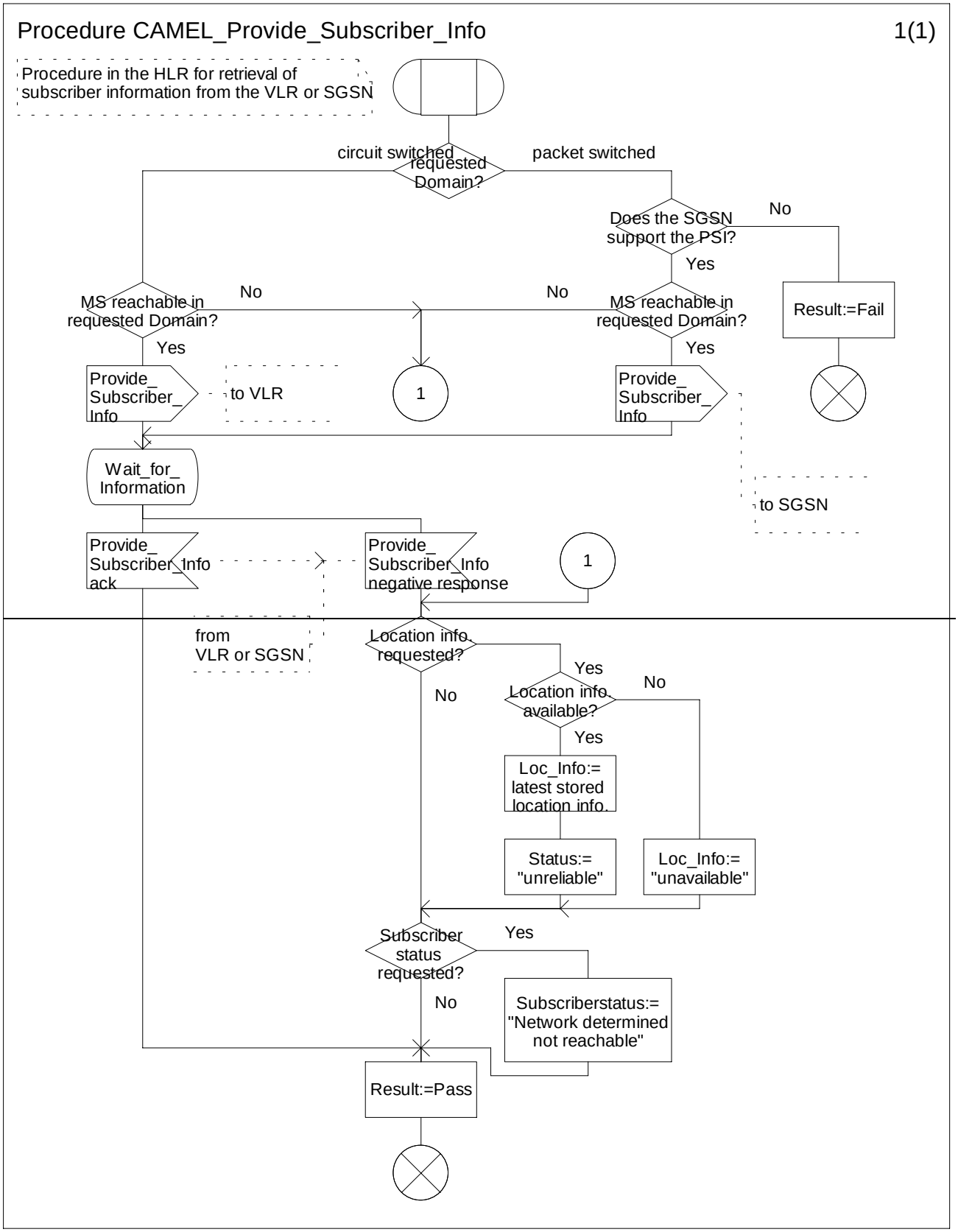
~~The following actions are possible in state Wait_For_Information depending on the result of the Provide_Subscriber_Info Request sent to VLR or SGSN.~~

~~4.5.9.3.1 Provide_Subscriber_Info ack~~

~~The Location Information or/and the Subscriber State are set to the received information.~~

~~4.5.9.3.2 Provide_Subscriber_Info Negative Response~~

~~If location information was requested, then the VLR number or SGSN number is provided as location information. If the subscriber state was requested, then the subscriber state is set to "not provided from VLR" or "not provided from SGSN".~~



~~Figure 4.115a: Procedure CAMEL_Provide_Subscriber_Info (sheet 1)~~

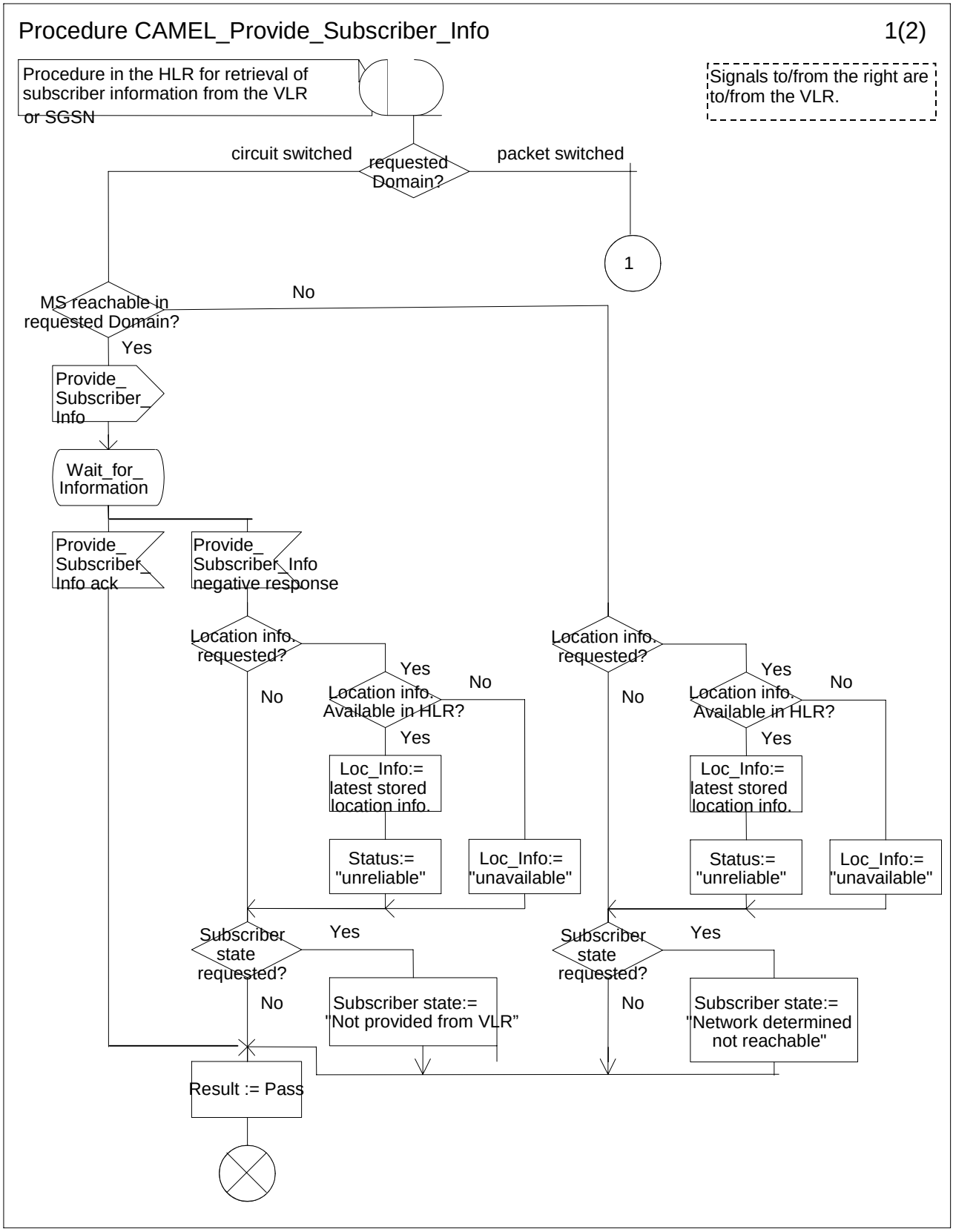


Figure 4.115a: Procedure CAMEL_Provide_Subscriber_Info (sheet 1)

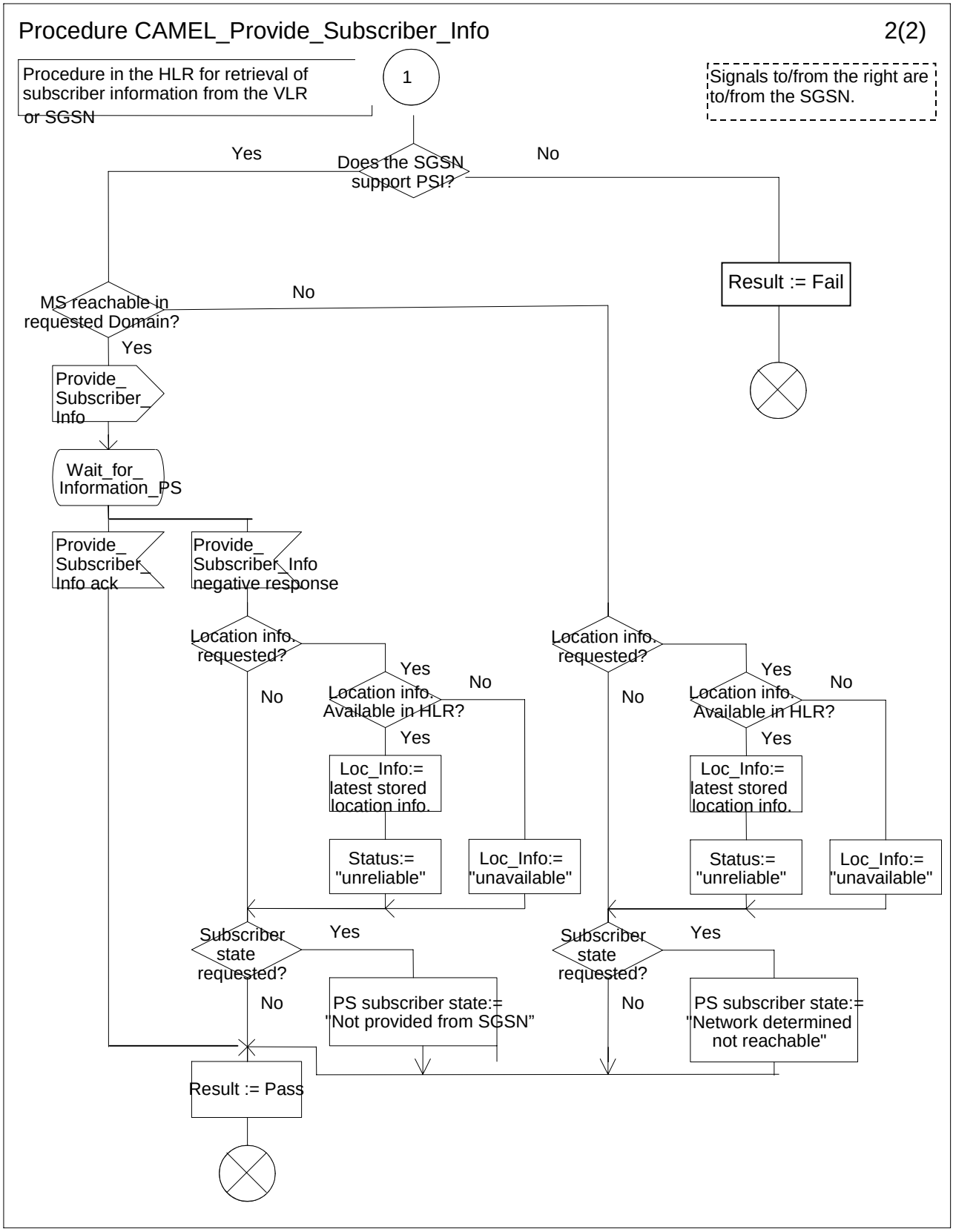


Figure 4.115b: Procedure CAMEL_Provide_Subscriber_Info (sheet 2)

***** *Next Modification* *****

4.6.9 HLR to GMSC information flows

4.6.9.1 Send Routeing Info ack

4.6.9.1.1 Description

This IF is specified in 3GPP TS 23.018 [**Error! Reference source not found.**]; it is used by the HLR to transfer the requested routeing information to the GMSC.

4.6.9.1.2 Information Elements

Send Routeing Info ack contains the following CAMEL specific information elements:

Information element name	Status	Description
Location Information	C	This IE indicates the location of the served subscriber.
O-CSI	S	O-CSI is defined in subclause **Error! Reference source not found.**. This IE identifies the subscriber as having originating CAMEL services. It shall be present if O-CSI is active, and CFU or CFNRc has been invoked, or if both O-CSI and T-CSI are active.
D-CSI	S	D-CSI is defined in subclause **Error! Reference source not found.**. This IE identifies the subscriber as having originating CAMEL dialled services. It shall be present if D-CSI is active, and CFU or CFNRc has been invoked, or if both D-CSI and T-CSI are active.
Subscriber State	C	This IE indicates the ~~status~~state of the MS. The possible values of the IE are: - CAMEL Busy: The VLR has indicated that the MS is engaged in a transaction for a mobile originating or terminated circuit-switched call. - Network Determined Not Reachable: The HLR or VLR has indicated that the network can determine from its internal data that the MS is not reachable. - Assumed Idle: The VLR has indicated that the state of the MS is neither "CAMEL Busy" nor "Network Determined Not Reachable". - Not Provided From VLR: The VLR did not provide any information on subscriber state even though it was requested.
T-CSI	S	This IE is described in a table below. This IE identifies the subscriber as having terminating CAMEL services. It shall be present if T-CSI is active and no Suppress T-CSI indicator is present in the Send Routeing Info IF.
Basic Service Code	C	This IE indicates the type of basic service i.e., teleservice or bearer service.
CUG Subscription Flag	S	This IE indicates if the called party has a CUG subscription. It shall be present only if the T-CSI is active and included in the Send Routing Information ack IF.
Supported CAMEL Phases In VMSC	S	This IE indicates the supported CAMEL phases of the VLR. It shall be present if known by the HLR, otherwise it shall be absent.
Offered CAMEL4 CSIs In VMSC	S	This IE indicates the CAMEL phase 4 CSIs offered in the VMSC. It shall be present if known by the HLR, otherwise it shall be absent.
VMSC Address	M	This IE indicates the E.164 address of the VMSC in whose area the B subscriber is currently registered.

Location Information is defined in 3GPP TS 23.018 [**Error! Reference source not found.**]. The following differences apply:

Information element name	Status	Description
Service area ID	C,E	See 3GPP TS 23.018 [**Error! Reference source not found.**].
Cell ID	C,E	See 3GPP TS 23.018 [**Error! Reference source not found.**].
Current Location Retrieved	-	Not applicable
Location area ID	C,E	See 3GPP TS 23.003 [**Error! Reference source not found.**].
Selected LSA Identity	S	This IE indicates the LSA identity associated with the current position of the MS. Shall be present if the LSA ID in the subscriber data matches the LSA ID of the current cell. If there are multiple matches the LSA ID with the highest priority shall be sent. See 3GPP TS 23.073 [**Error! Reference source not found.**].

T-CSI contains the following information elements:

Information element name	Status	Description
gsmSCF Address	M	This IE is described in subclause **Error! Reference source not found.**.
Service Key	M	This IE is described in subclause **Error! Reference source not found.**.
Default Call Handling	M	This IE is described in subclause **Error! Reference source not found.**.
TDP List	M	This IE is described in subclause **Error! Reference source not found.**.
CAMEL Capability Handling	C	This IE is described in subclause **Error! Reference source not found.**. If this IE is absent then this indicates that CAMEL phase 1 support is requested.

Offered CAMEL4 CSIs In VMSC contains the following information elements:

Information element name	Status	Description
O-CSI	S	This IE indicates the offer of CAMEL phase 4 O-CSI. It shall be present if known by the HLR, otherwise it shall be absent.
D-CSI	S	This IE indicates the offer of CAMEL phase 4 D-CSI. It shall be present if known by the HLR, otherwise it shall be absent.
VT-CSI	S	This IE indicates the offer of CAMEL phase 4 VT-CSI. It shall be present if known by the HLR, otherwise it shall be absent.
MT-SMS-CSI	S	This IE indicates the offer of CAMEL phase 4 MT-SMS-CSI. It shall be present if known by the HLR, otherwise it shall be absent.

****** Next Modification ******

11.3.4 HLR to gsmSCF information flows

11.3.4.1 Any Time Interrogation ack

11.3.4.1.1 Description

This IF is used by the HLR to provide the requested subscriber location and/or subscriber state information to the gsmSCF.

11.3.4.1.2 Information Elements

Information element name	Status	Description
Location Information	C, E1	This IE indicates the location of the served subscriber in the MSC/VLR. It shall be present only if requested by the gsmSCF.
Location Information For GPRS	C, E1	This IE indicates the location of the served subscriber in the SGSN. The content is defined in the subclause **Error! Reference source not found.**. It shall be present only if requested by the gsmSCF.
Subscriber State	S, E2	This IE indicates the state of the MS in the CS domain. It shall be present only if requested by the gsmSCF. The possible values of the IE are: - CAMELBusy: The VLR has indicated that the MS is engaged in a transaction for a mobile originating or terminated circuit-switched call. - NetworkDeterminedNotReachable: The HLR or VLR has indicated that the network can determine from its internal data that the MS is not reachable. - AssumedIdle: The VLR has indicated that the state of the MS is neither "CAMELBusy" nor "NetworkDeterminedNotReachable". - NotProvidedFromVLR: The VLR did not provide any information on subscriber state even though it was requested.
PS Domain Subscriber State	S, E2	This IE indicates the state of the MS in the PS Domain. It shall be present only if requested by the gsmSCF. The possible values of the IE are: - Detached (see subclause **Error! Reference source not found.**). - CAMEL attached, MS not reachable for paging (see subclause **Error! Reference source not found.**). - CAMEL attached, MS may be reachable for paging (see

Information element name	Status	Description
		subclause **Error! Reference source not found.**). - CAMEL PDP active, MS not reachable for paging (see subclause **Error! Reference source not found.**). - CAMEL PDP active, MS may be reachable for paging (see subclause **Error! Reference source not found.**). - Not provided from SGSN: The SGSN did not provide any information on subscriber state even though it was requested. - NetworkDeterminedNotReachable: The HLR has indicated that the network can determine from its internal data that the MS is not reachable.
PDP Context Information List	C	This IE indicates the PDP context information (see the table in subclause **Error! Reference source not found.**) for each PDP context which is active for the MS. It shall be present if the PS domain Subscriber State has the value "CAMEL PDP active, MS not reachable for paging" or "CAMEL PDP active, MS may be reachable for paging"; otherwise it shall be absent.
IMEI (with software version)	C	This IE contains the IMEISV (as defined in 3GPP TS 23.003 [**Error! Reference source not found.**]) of the ME in use by the served subscriber. It shall be present only if requested by the gsmSCF.
MS Classmark 2	C	This IE contains the MS classmark 2, which is returned by the MS when it responds to paging in the CS domain. It shall be present only if requested by the gsmSCF.
GPRS MS Class	C	This IE contains the MS network and radio access capabilities. It shall be present only if requested by the gsmSCF.

Location Information is defined in 3GPP TS 23.018 [**Error! Reference source not found.**]. The following differences apply:

Information element name	Status	Description
Service area ID	C,E	See 3GPP TS 23.018 [**Error! Reference source not found.**].
Cell ID	C,E	See 3GPP TS 23.018 [**Error! Reference source not found.**].
Location area ID	C,E	See 3GPP TS 23.003 [**Error! Reference source not found.**].
Selected LSA Identity	C	This IE indicates the LSA identity associated with the current position of the MS. It shall be present if the LSA ID in the subscriber data matches the LSA ID of the current cell. In the case of multiple matches the LSA Id with the highest priority it shall be present. See 3GPP TS 23.073 [**Error! Reference source not found.**].
Routeing area ID	C	See 3GPP TS 23.003 [**Error! Reference source not found.**].
SGSN number	C	See 3GPP TS 23.060 [**Error! Reference source not found.**].

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

3GPP TSG-CN WG2 Meeting #27
Bangkok, Thailand, 11th - 15th November 2002.

Tdoc ⌘N2-021075

CR-Form-v7

CHANGE REQUEST

⌘ **23.078** **CR** **484** ⌘ **rev** **1** ⌘ Current version: **5.1.0** ⌘

*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 ☒

Title:	⌘	Better SDL CSA_gsmSSF
Source:	⌘	Siemens AG
Work item code:	⌘	CAMEL4
Date:	⌘	14/11/2002
Category:	⌘	**D**
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:	⌘	Editorial improvement for better readability
Summary of change:	⌘	SDL: CSA_gsmSSF is proposed as follows; Sheet 1: Interchange the left and right branches, to match the states on the next sheet (2). Sheets rearranged in terms of the states, one CS only -> one and multiple CS multiple CS only -> others. In each state, receiving signals are arranged in the alphabetical order. The existing SDLs are proposed to be replaced by the attached SDLs.
Consequences if not approved:	⌘	One state appears on several sheets and various signals appear randomely. Such documentation would require the reader of unnecessary task to follow.

Clauses affected:	⌘	4

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

Other comments:	⌘	

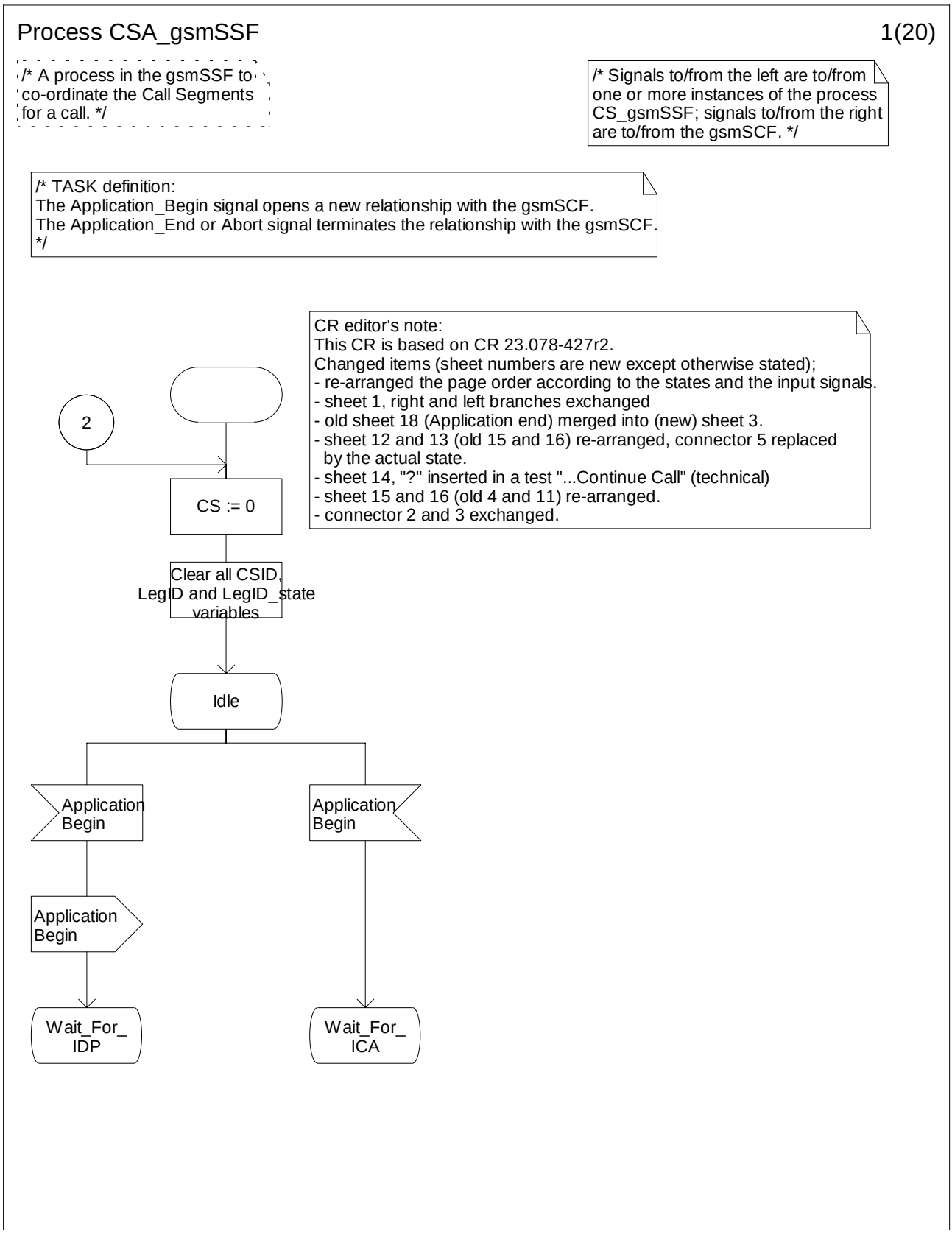


Figure 4.112a: Process CSA_gsmSSF (sheet 1)

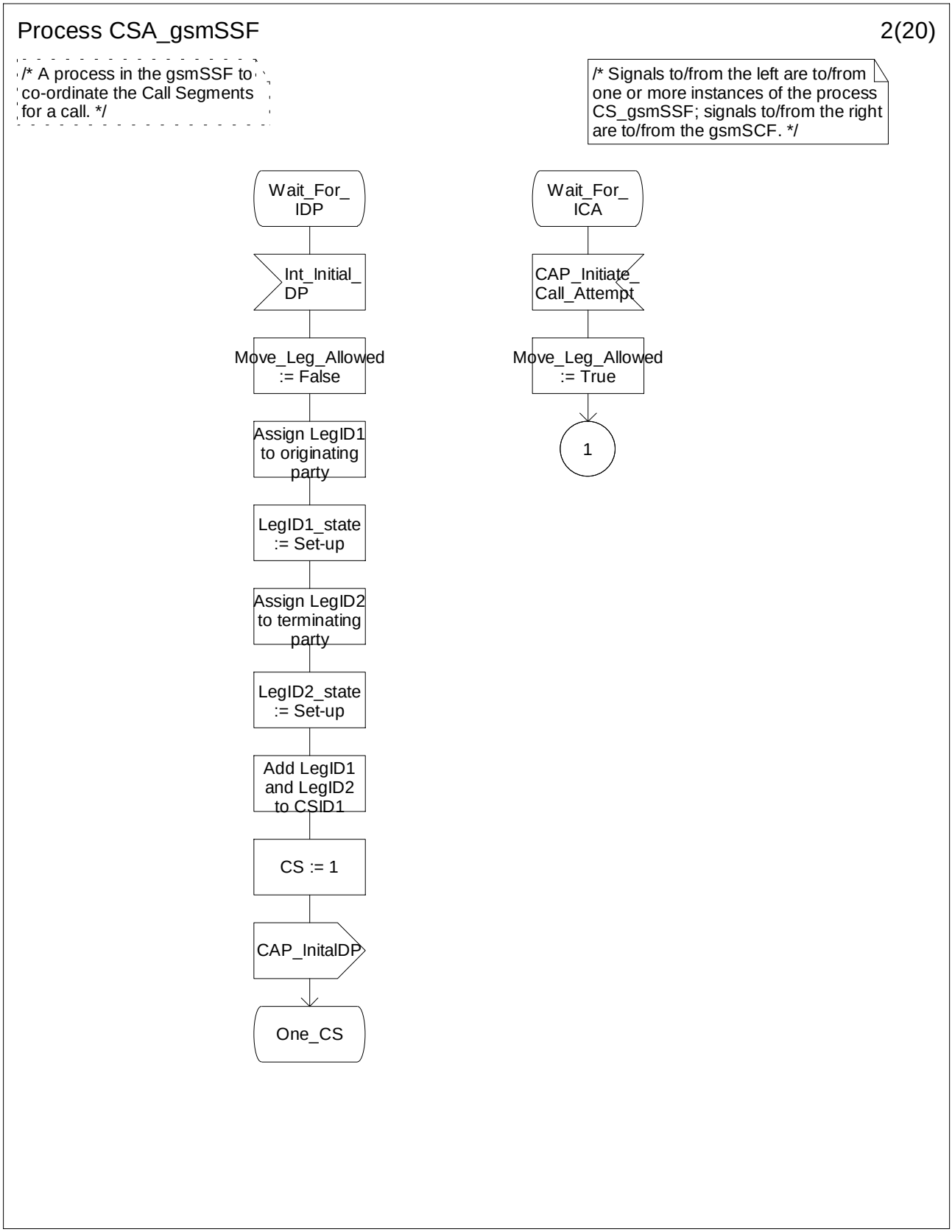


Figure 4.112b: Process CSA_gsmSSF (sheet 2)

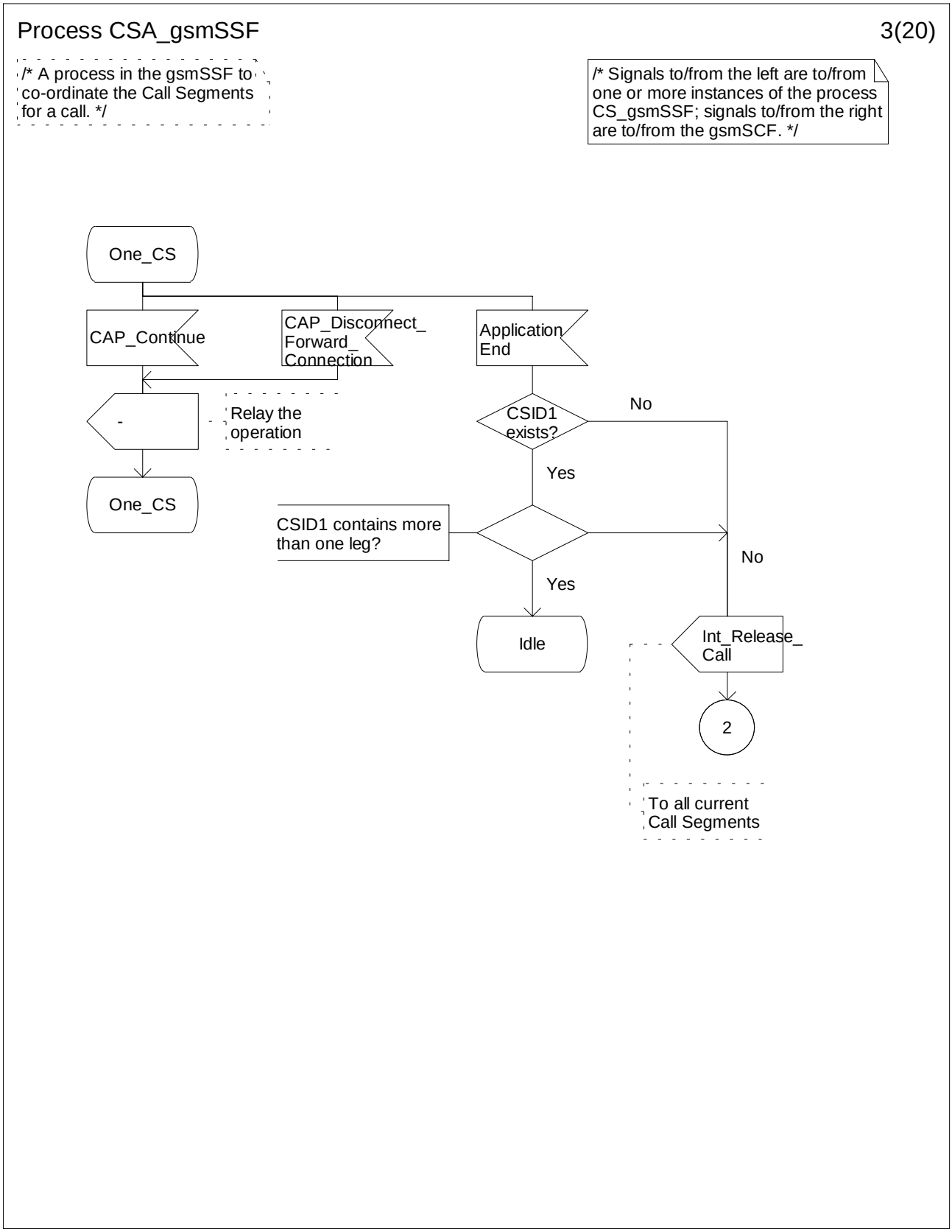


Figure 4.112c: Process CSA_gsmSSF (sheet 3)

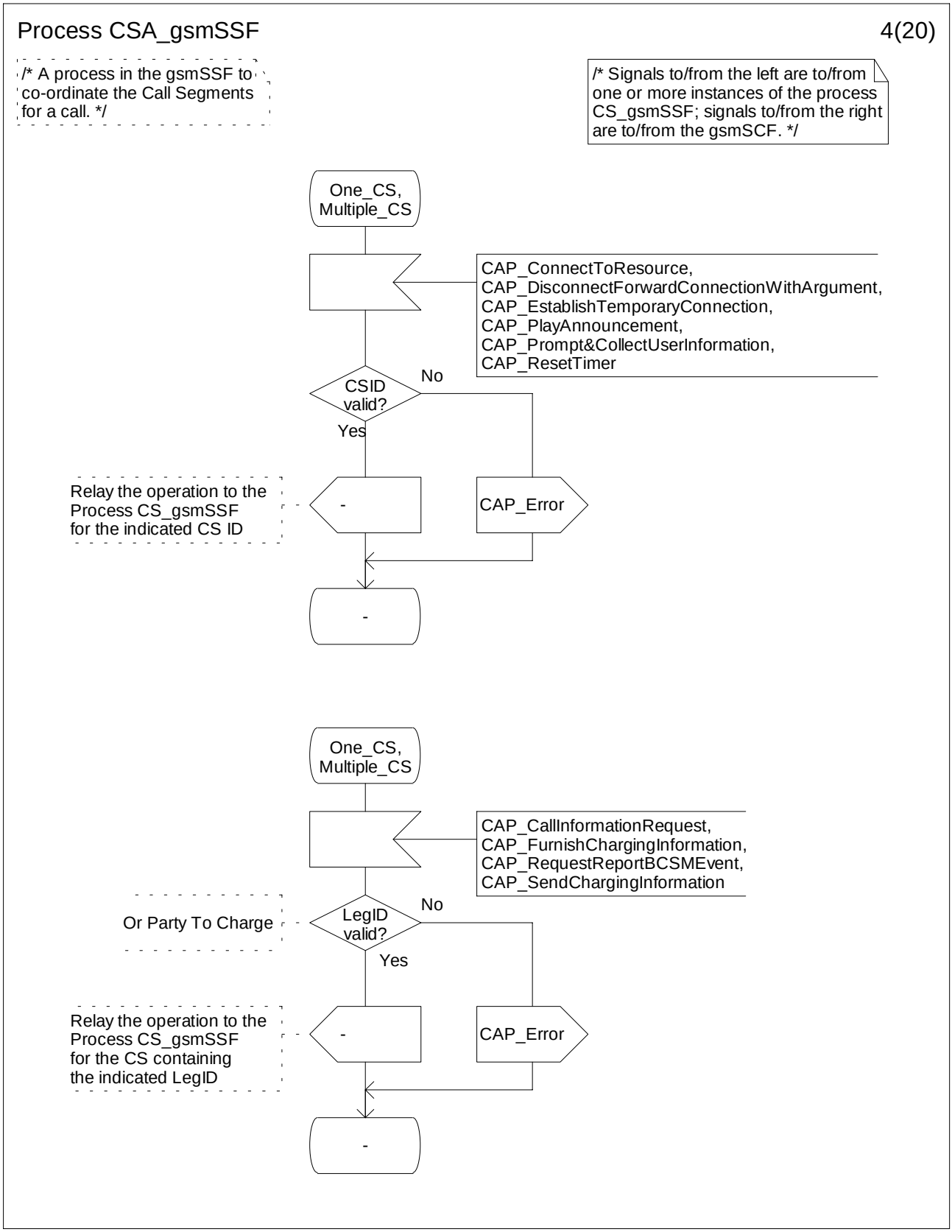


Figure 4.112d: Process CSA_gsmSSF (sheet 4)

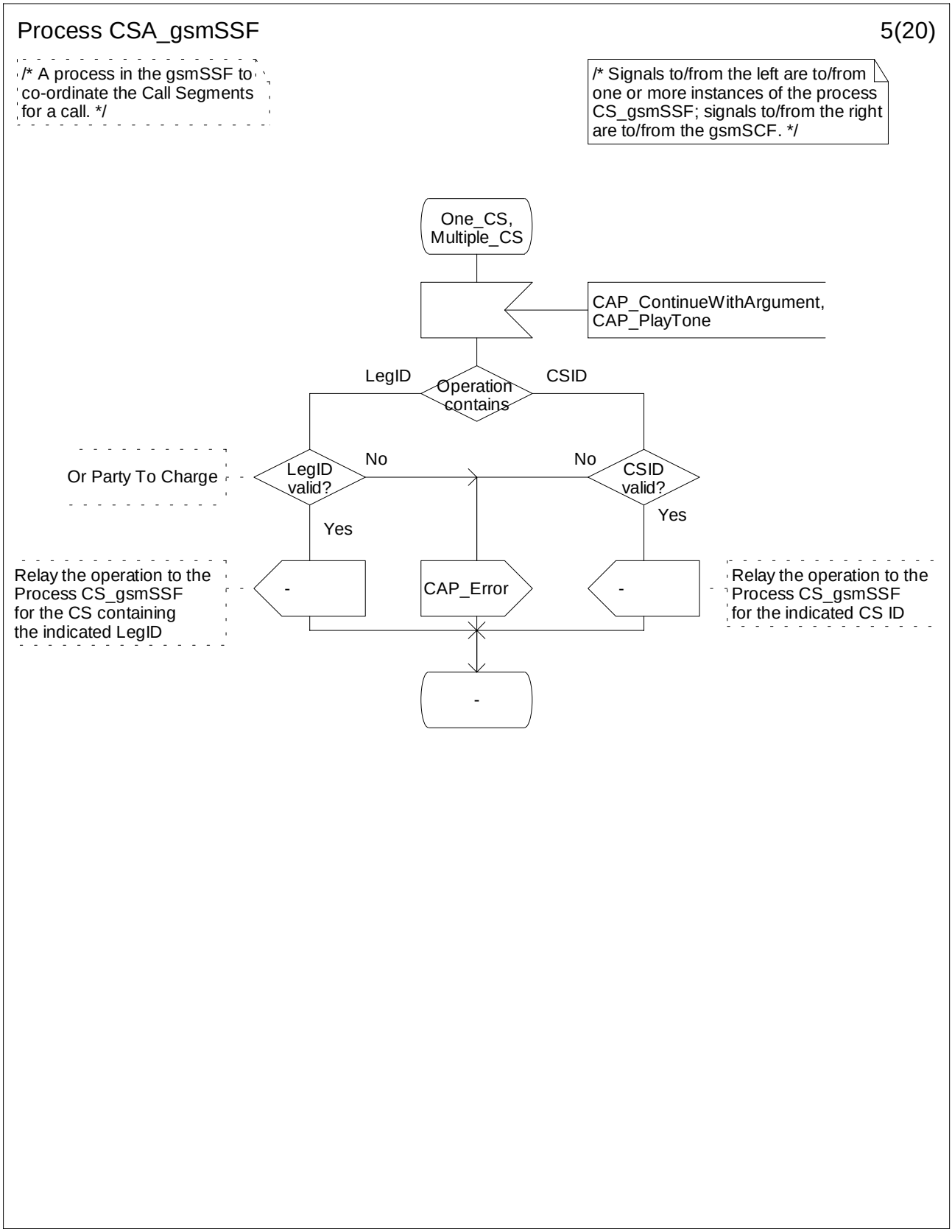


Figure 4.112e: Process CSA_gsmSSF (sheet 5)

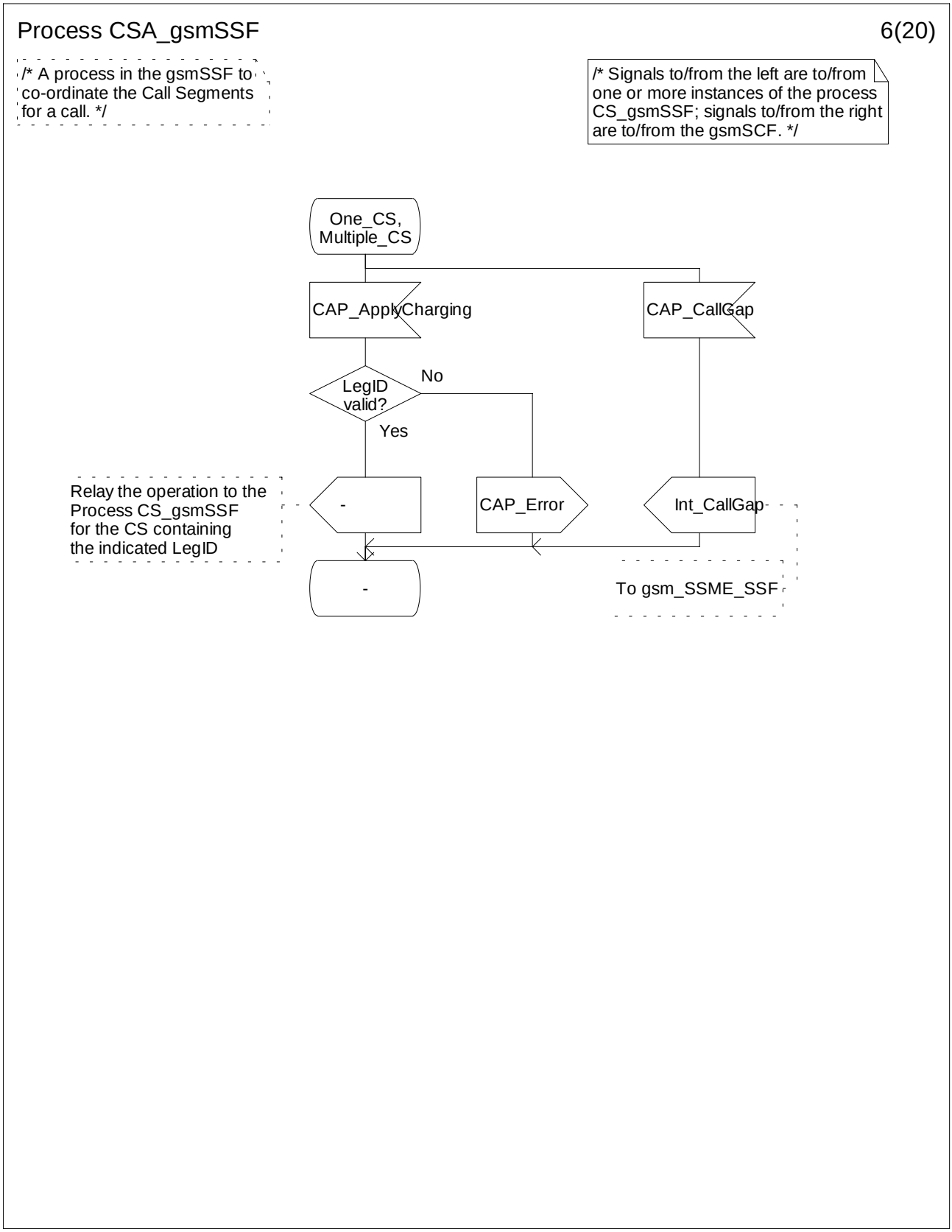


Figure 4.112f: Process CSA_gsmSSF (sheet 6)

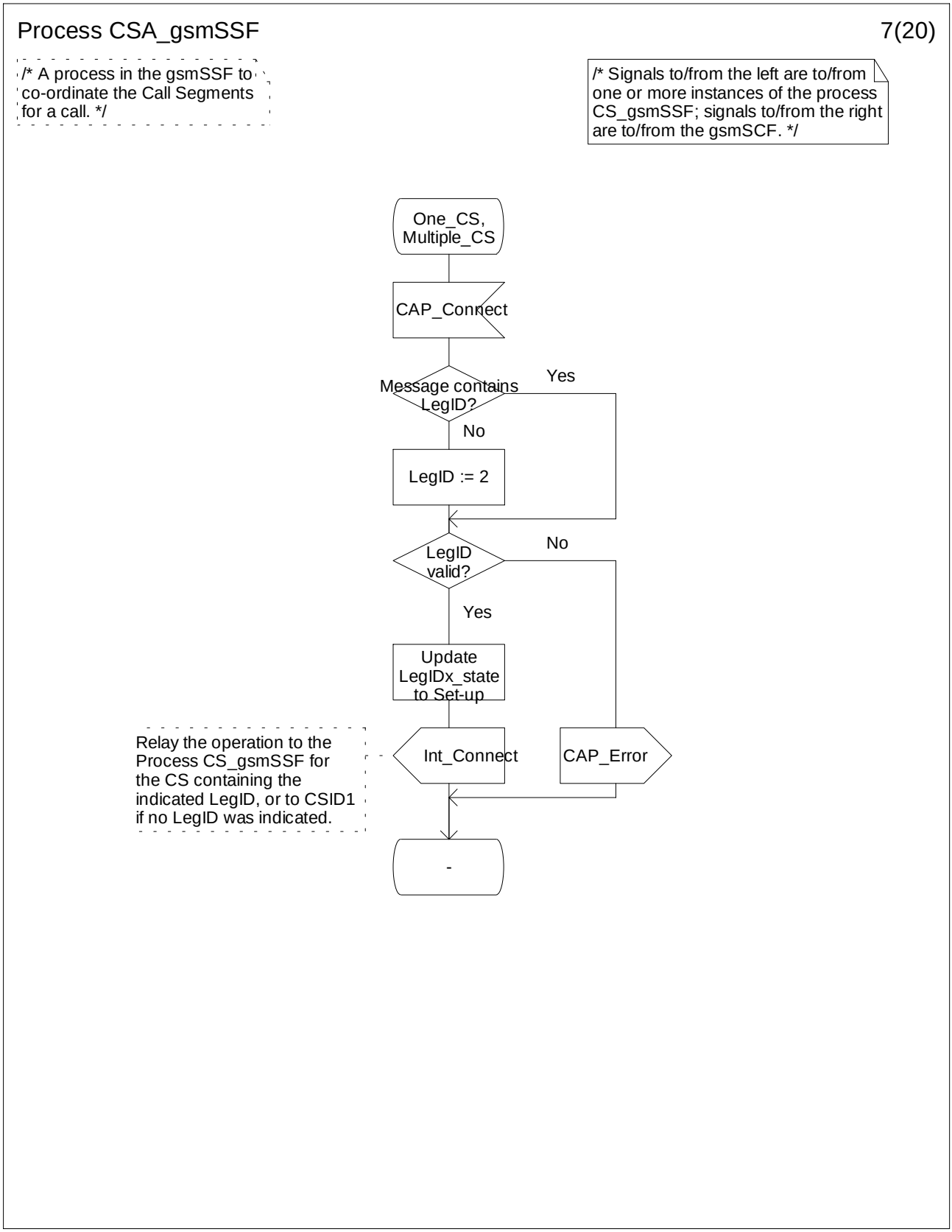


Figure 4.112g: Process CSA_gsmSSF (sheet 7)

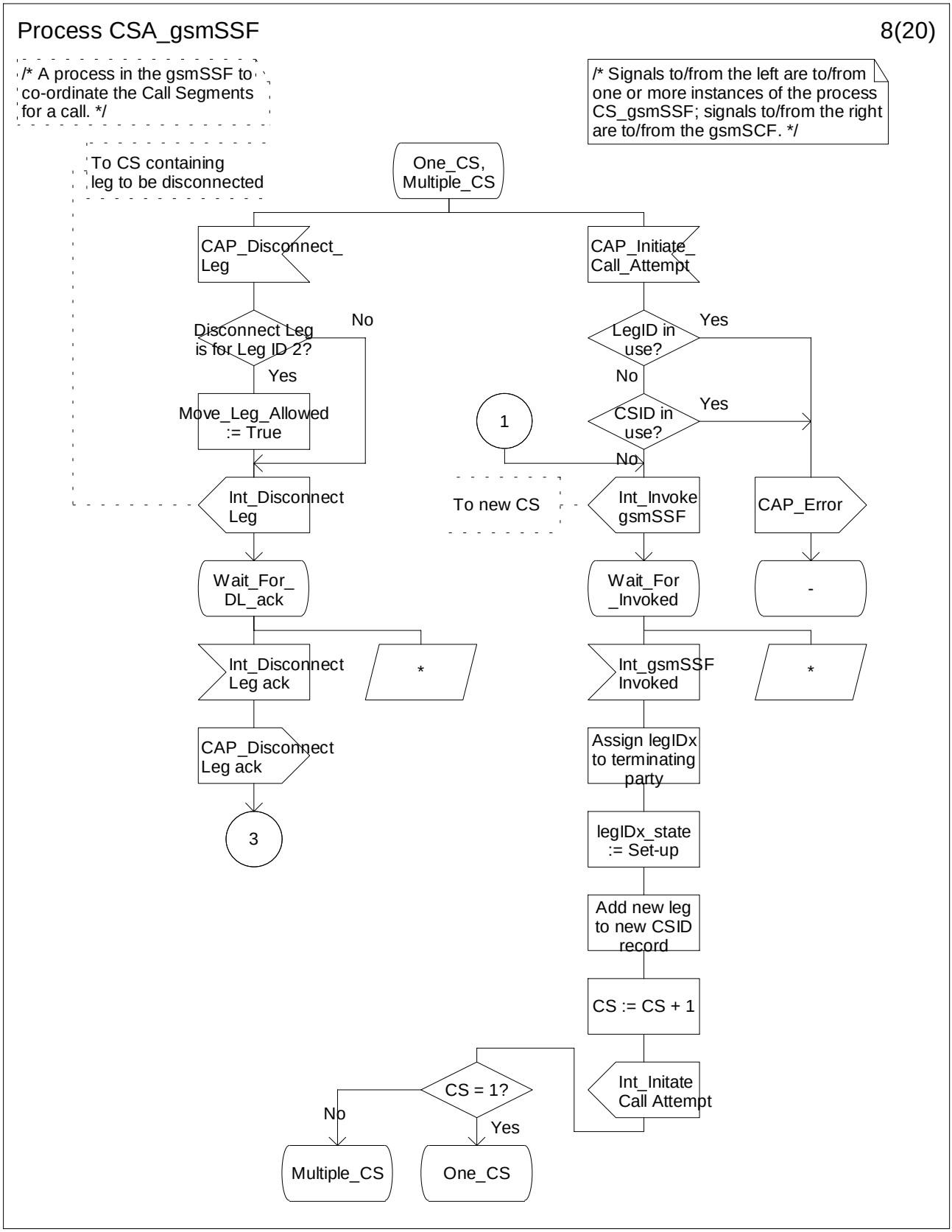


Figure 4.112h: Process CSA_gsmSSF (sheet 8)

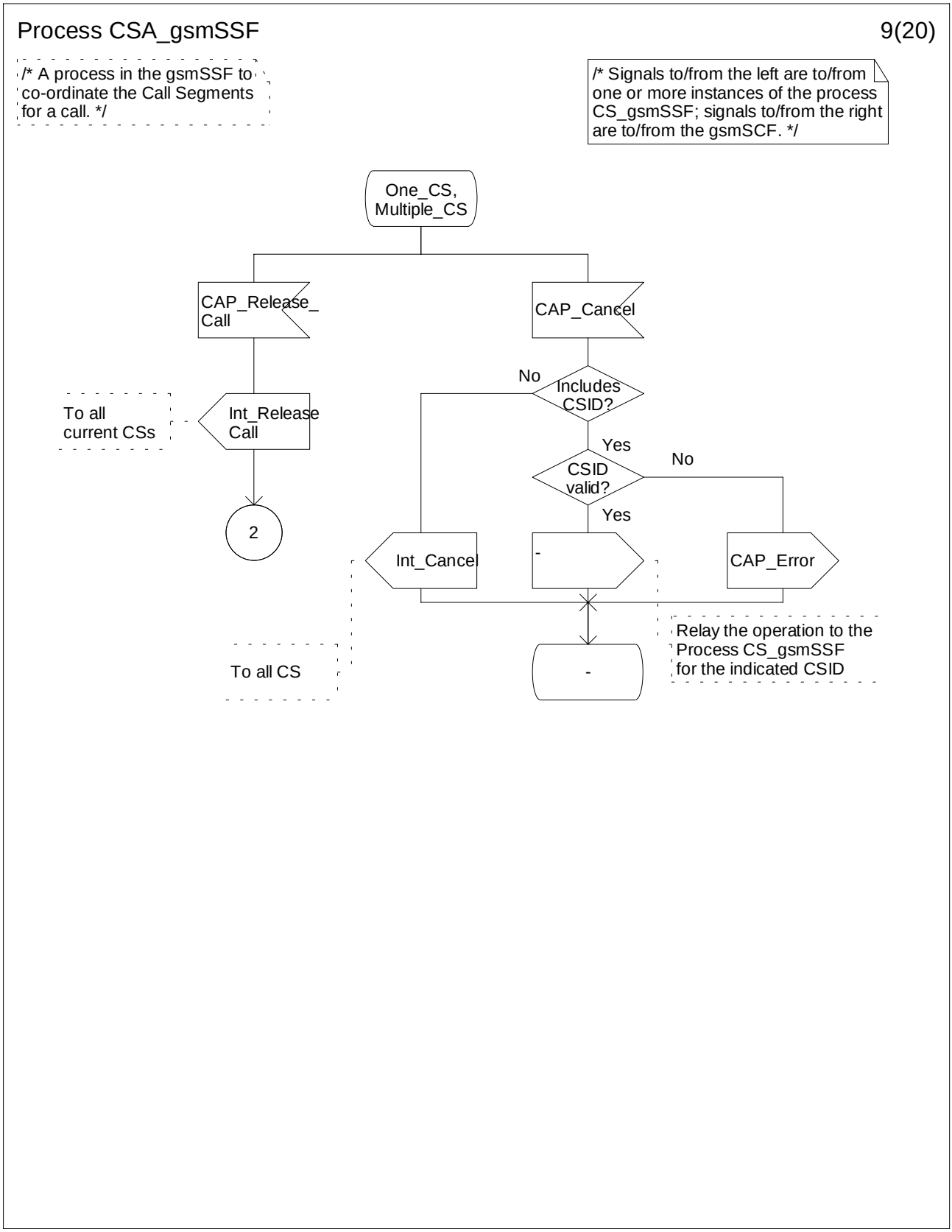


Figure 4.112i: Process CSA_gsmSSF (sheet 9)

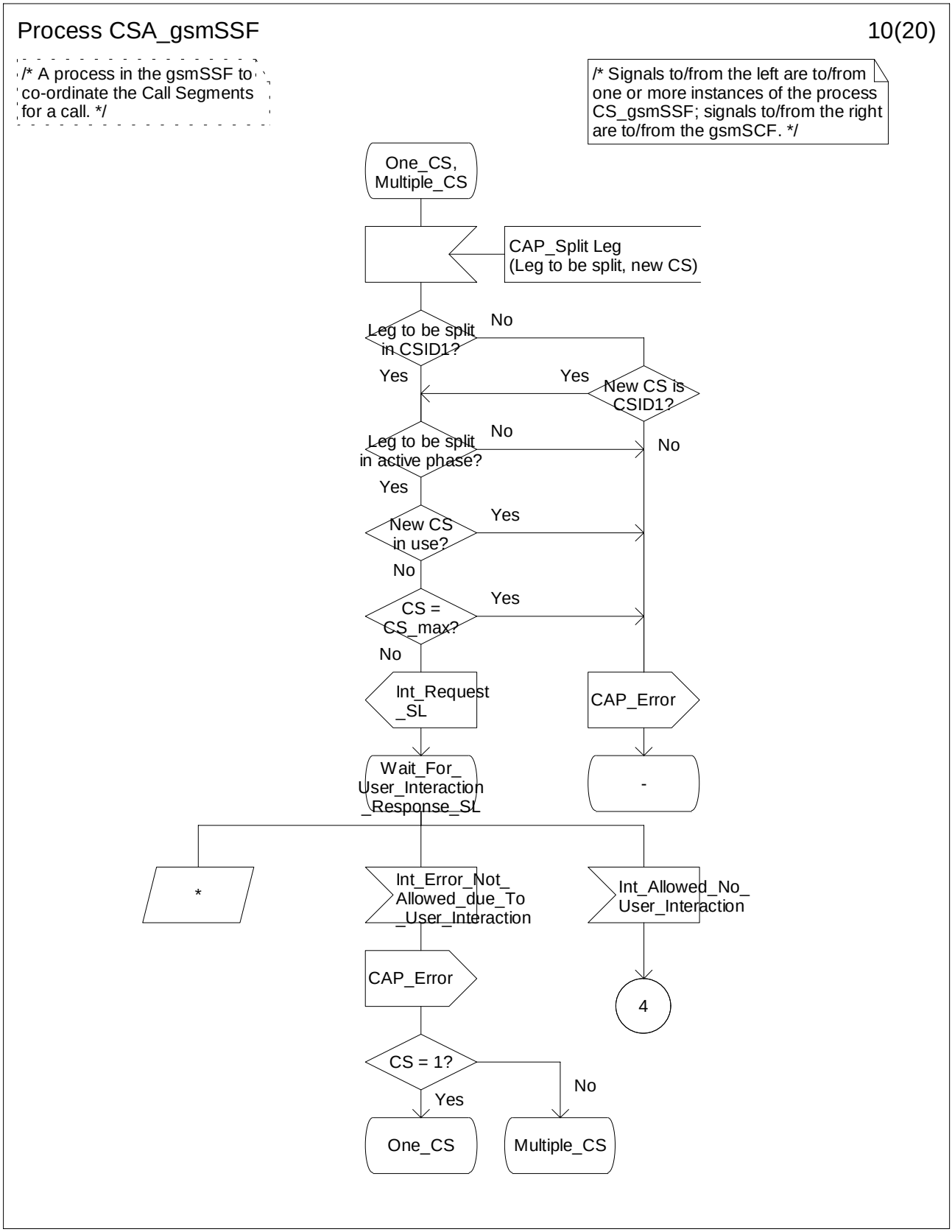


Figure 4.112j: Process CSA_gsmSSF (sheet 10)

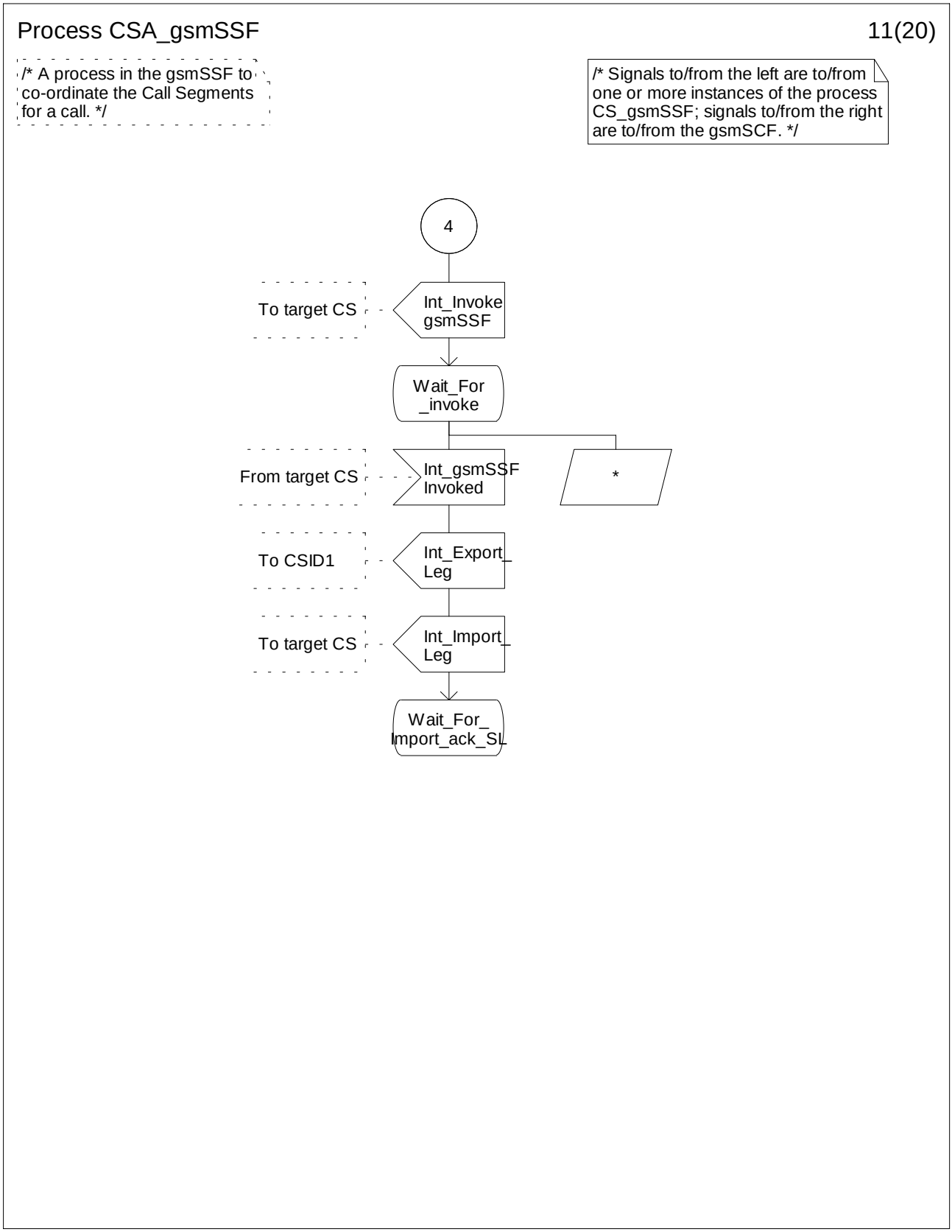


Figure 4.112k: Process CSA_gsmSSF (sheet 11)

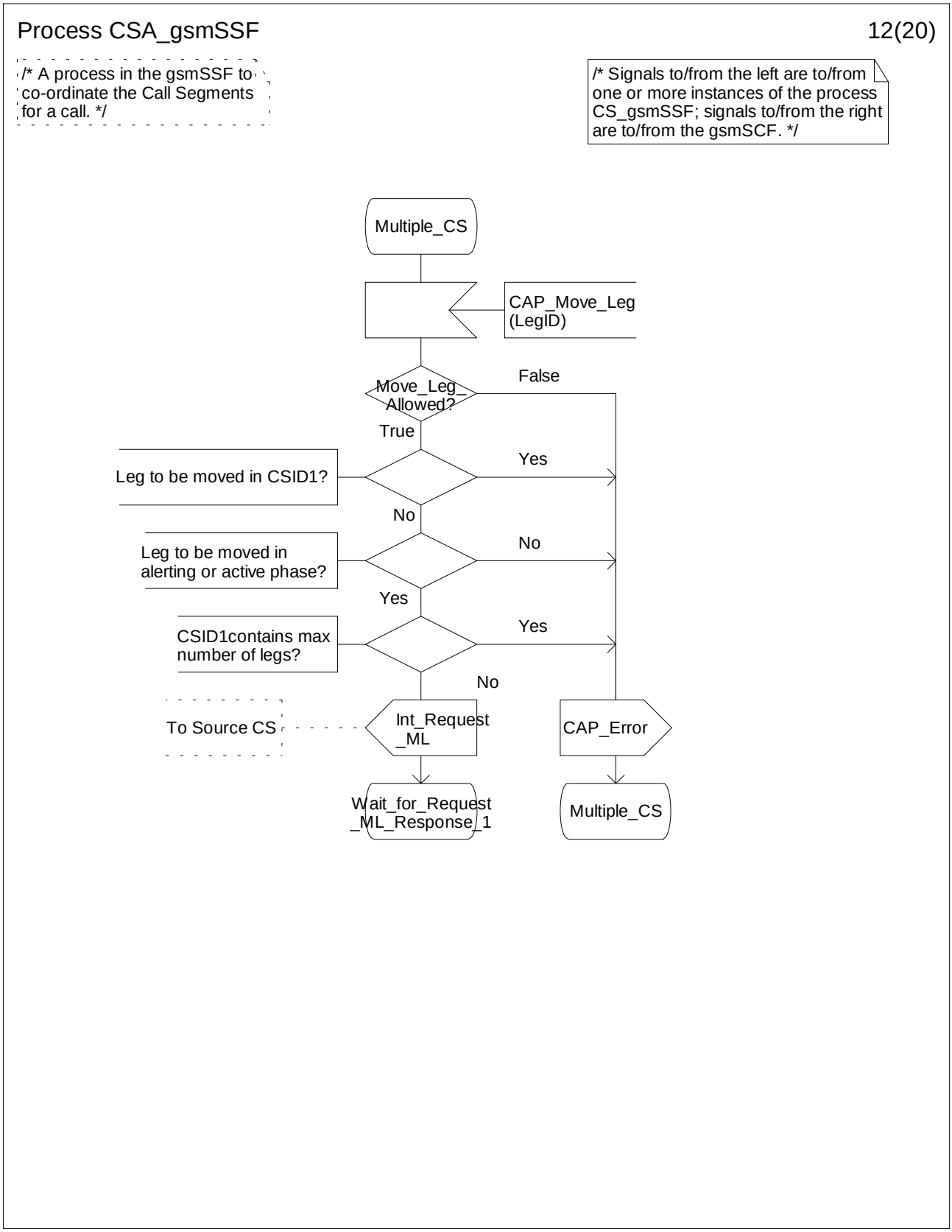


Figure 4.112l: Process CSA_gsmSSF (sheet 12)

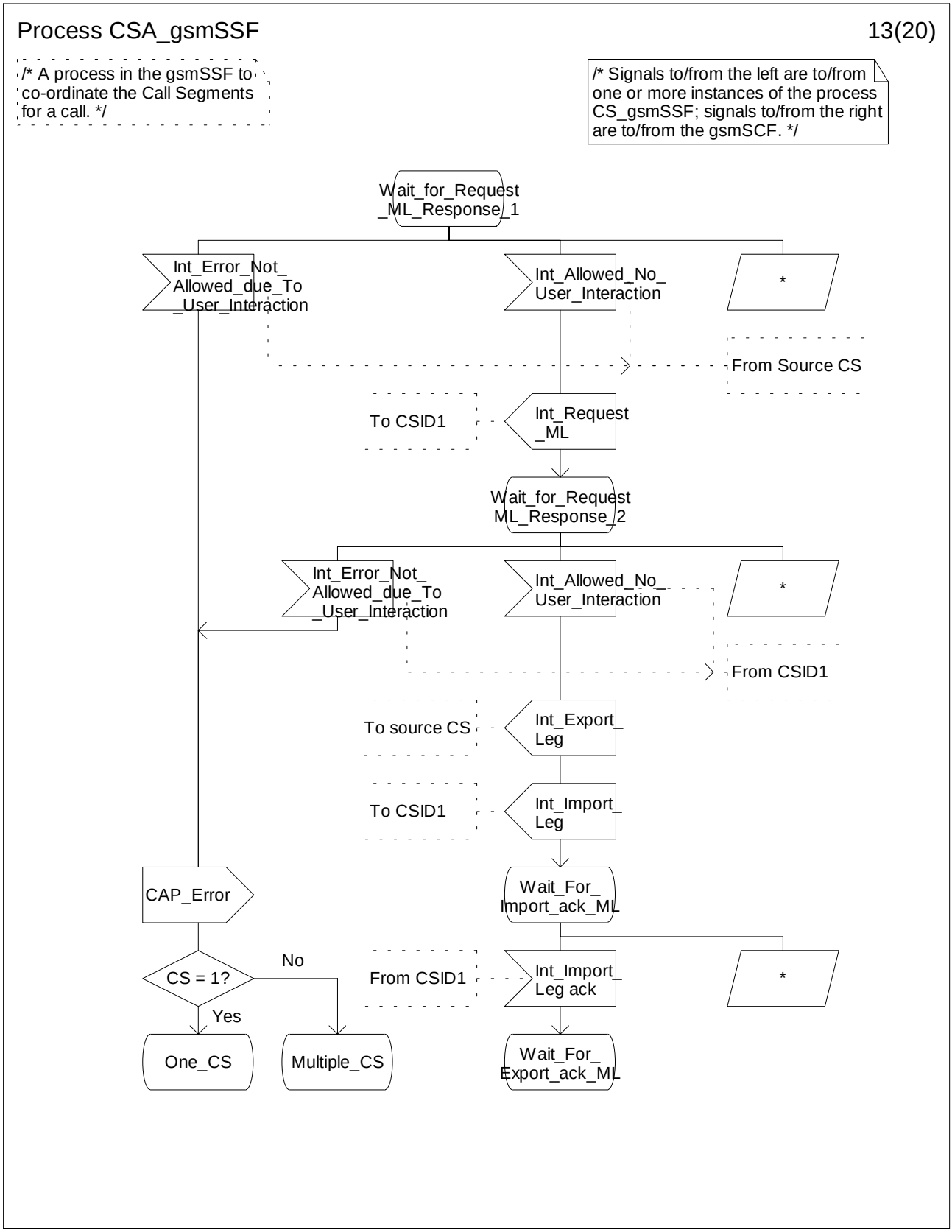


Figure 4.112m: Process CSA_gsmSSF (sheet 13)

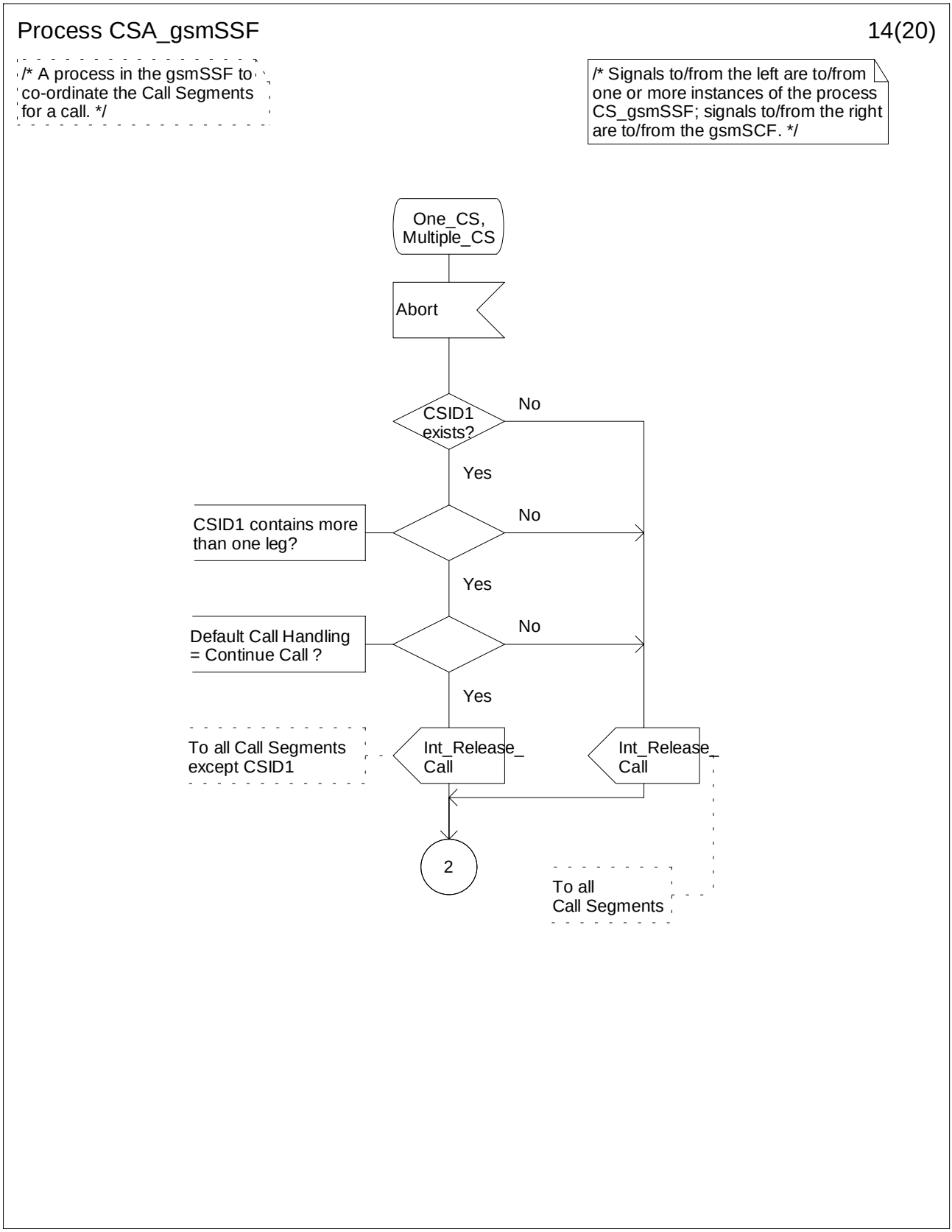


Figure 4.112n: Process CSA_gsmSSF (sheet 14)

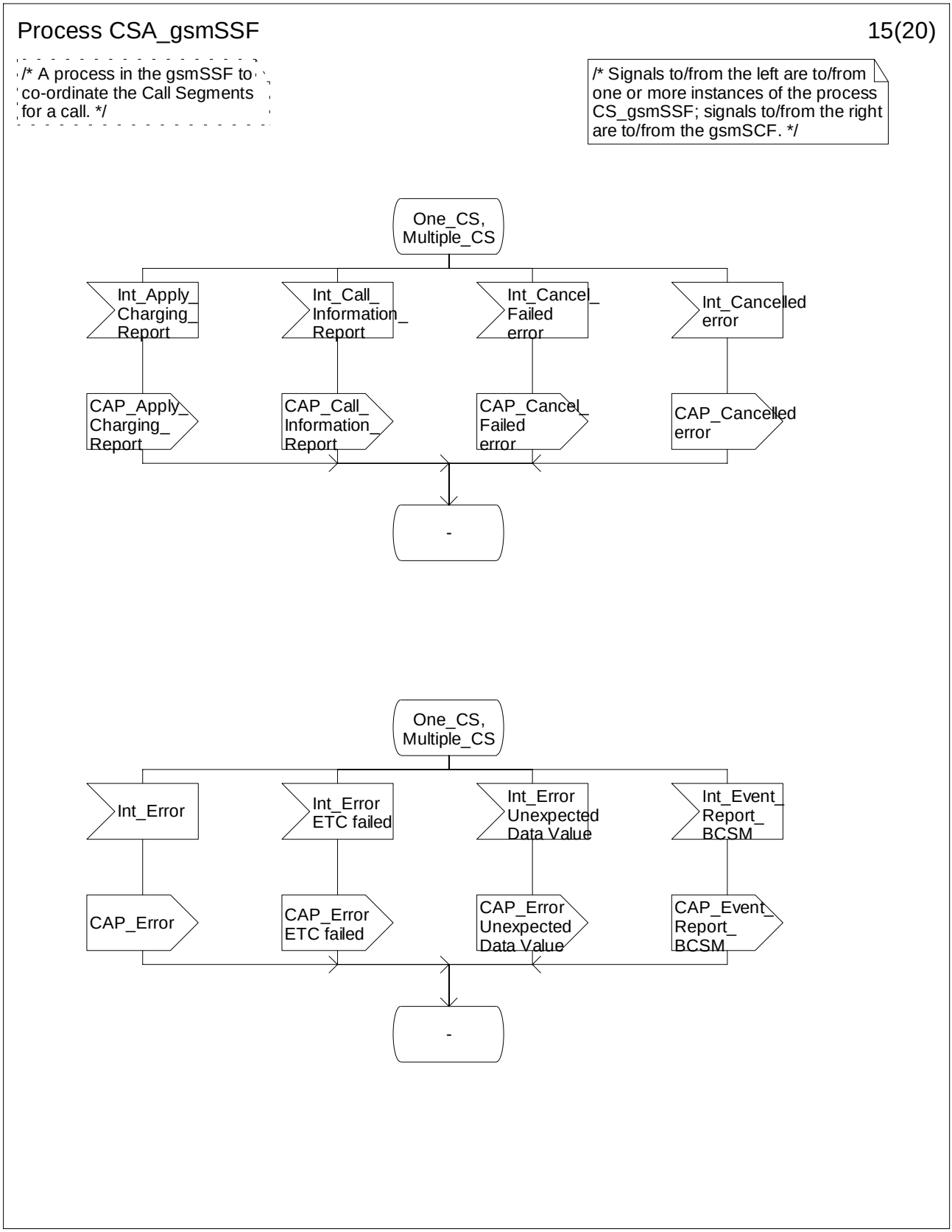


Figure 4.112o: Process CSA_gsmSSF (sheet 15)

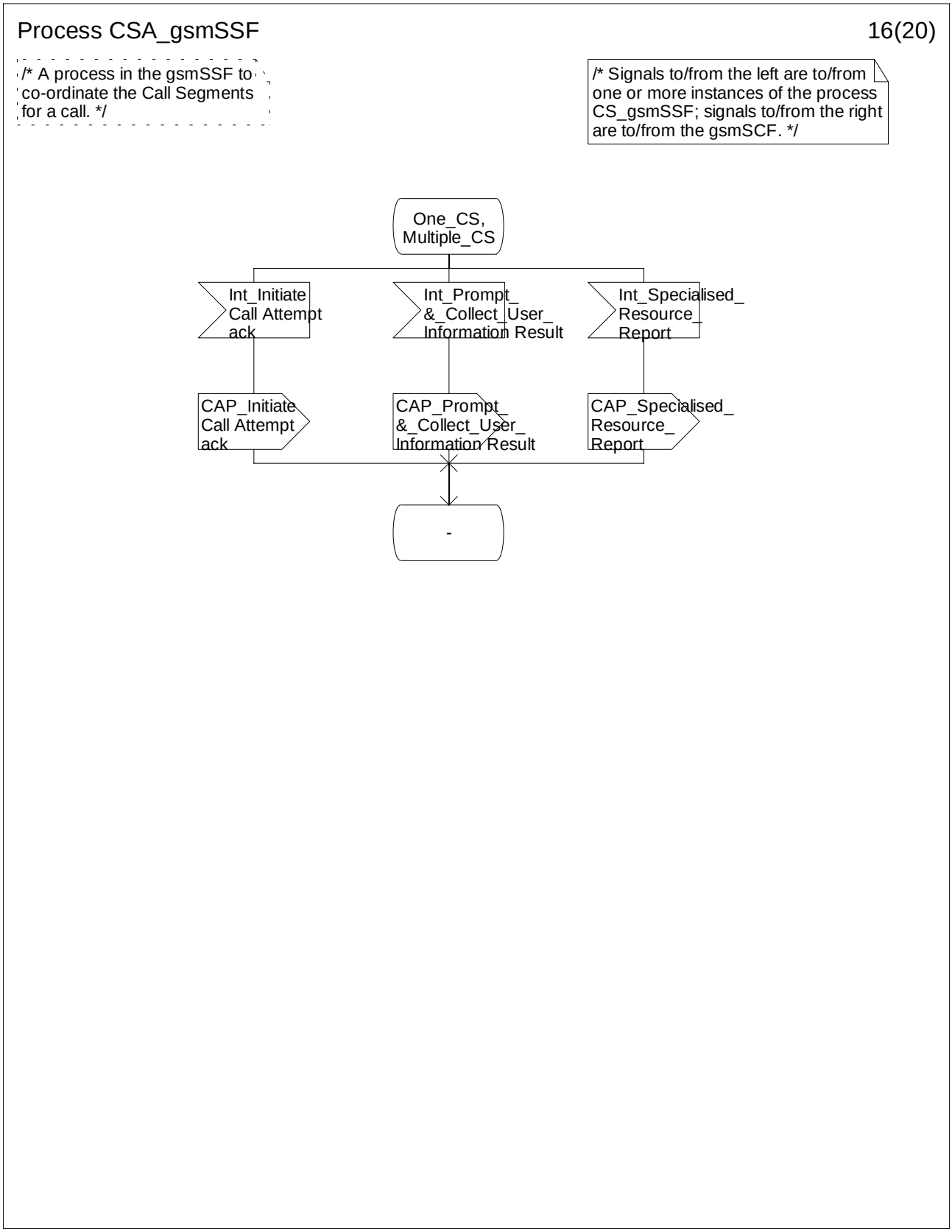


Figure 4.112p: Process CSA_gsmSSF (sheet 16)

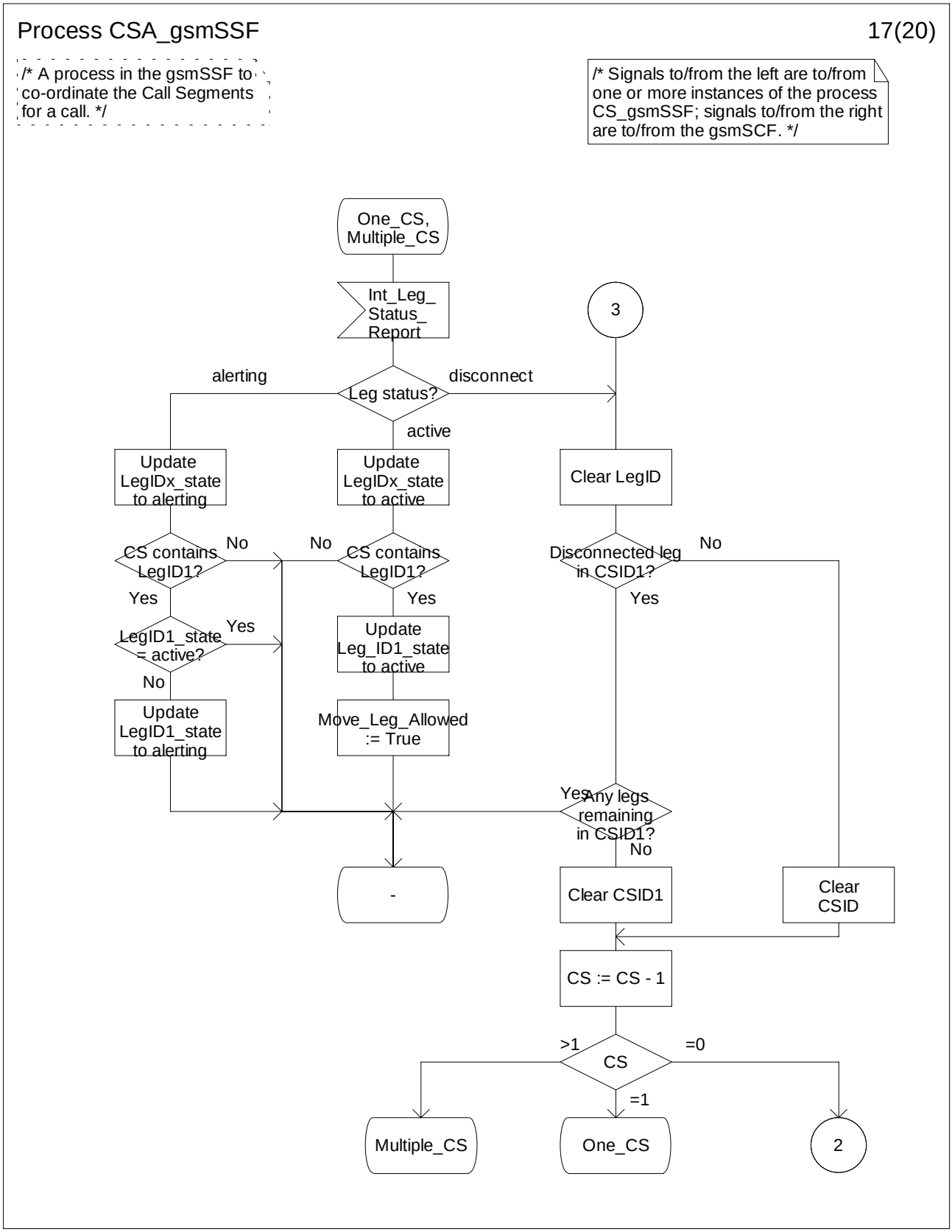


Figure 4.112q: Process CSA_gsmSSF (sheet 17)

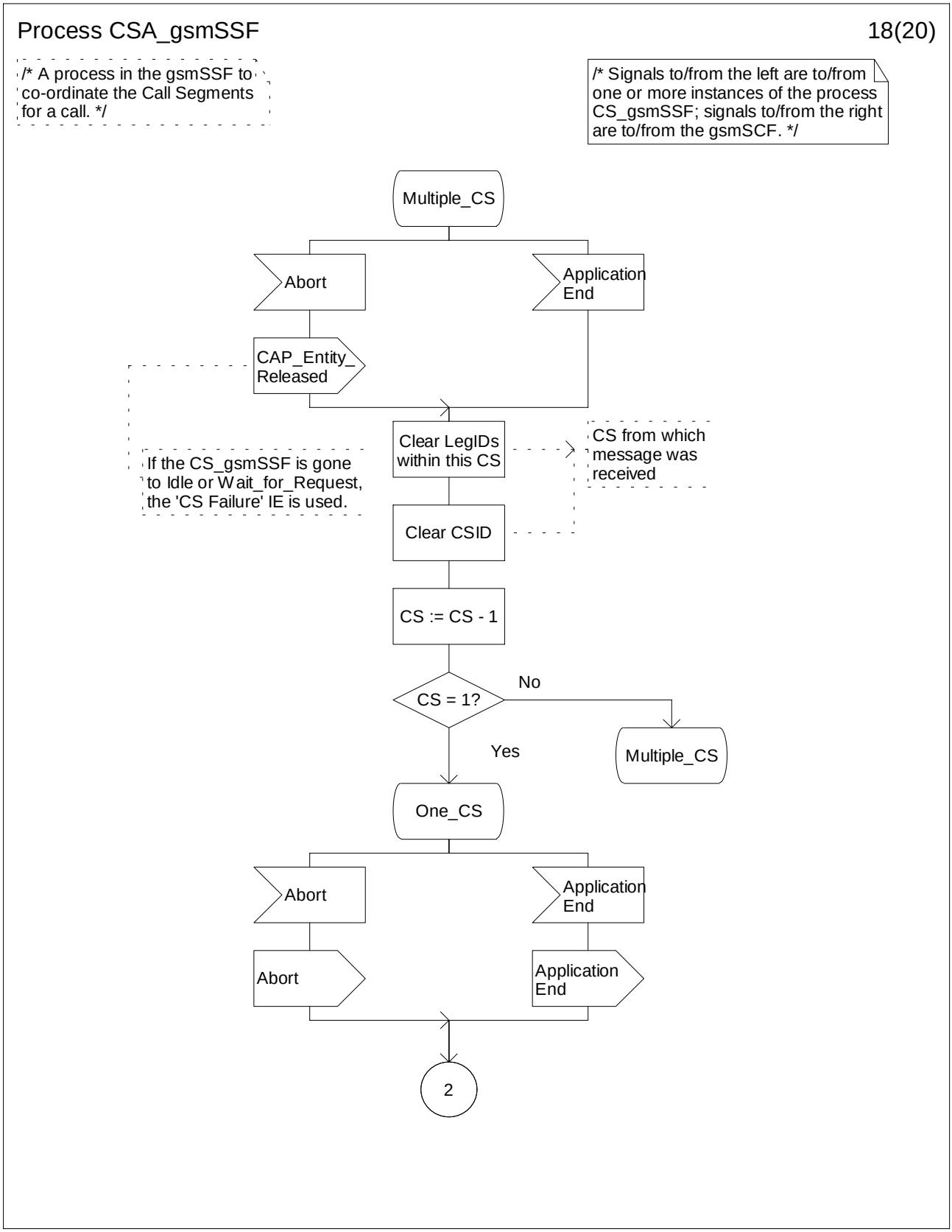


Figure 4.112r: Process CSA_gsmSSF (sheet 18)

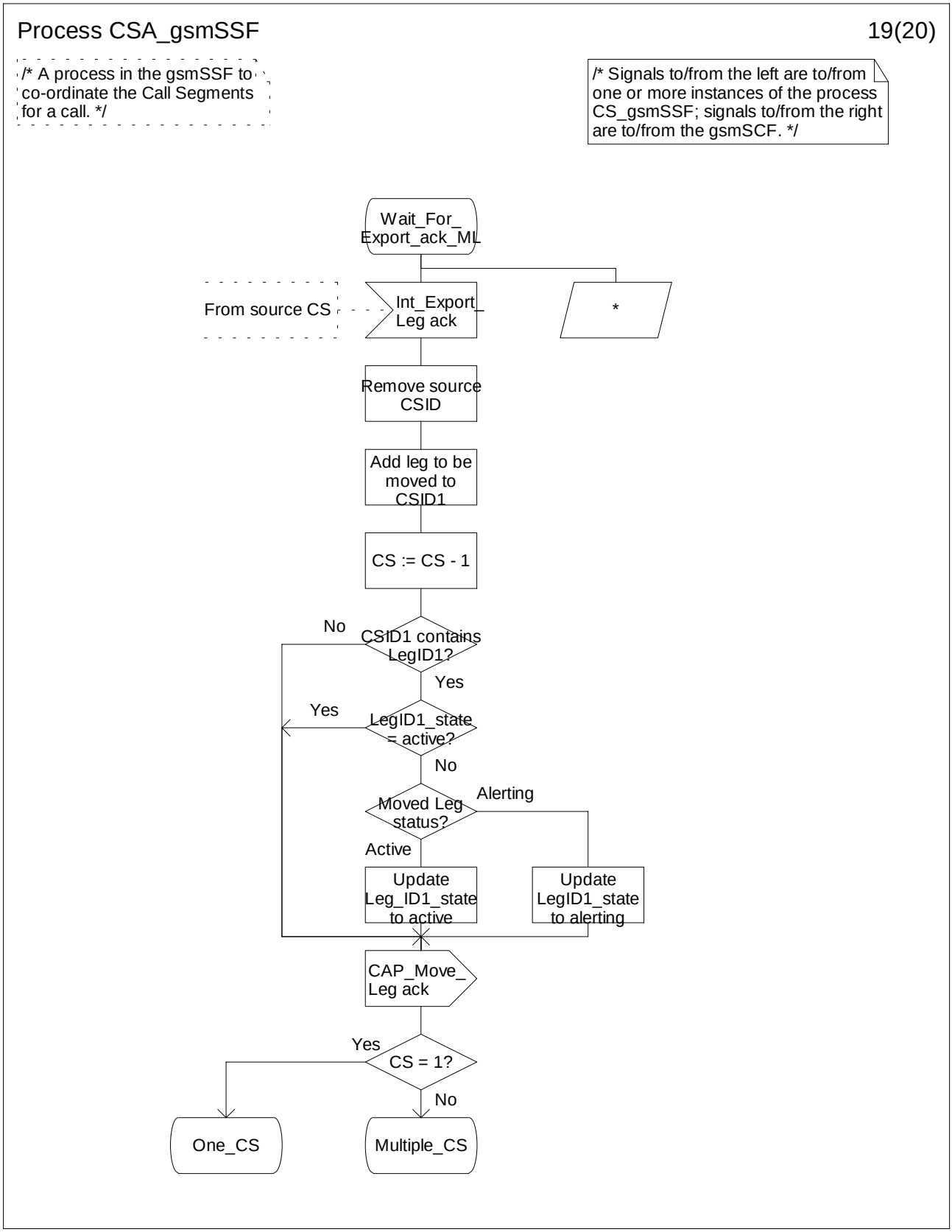


Figure 4.112s: Process CSA_gsmSSF (sheet 19)

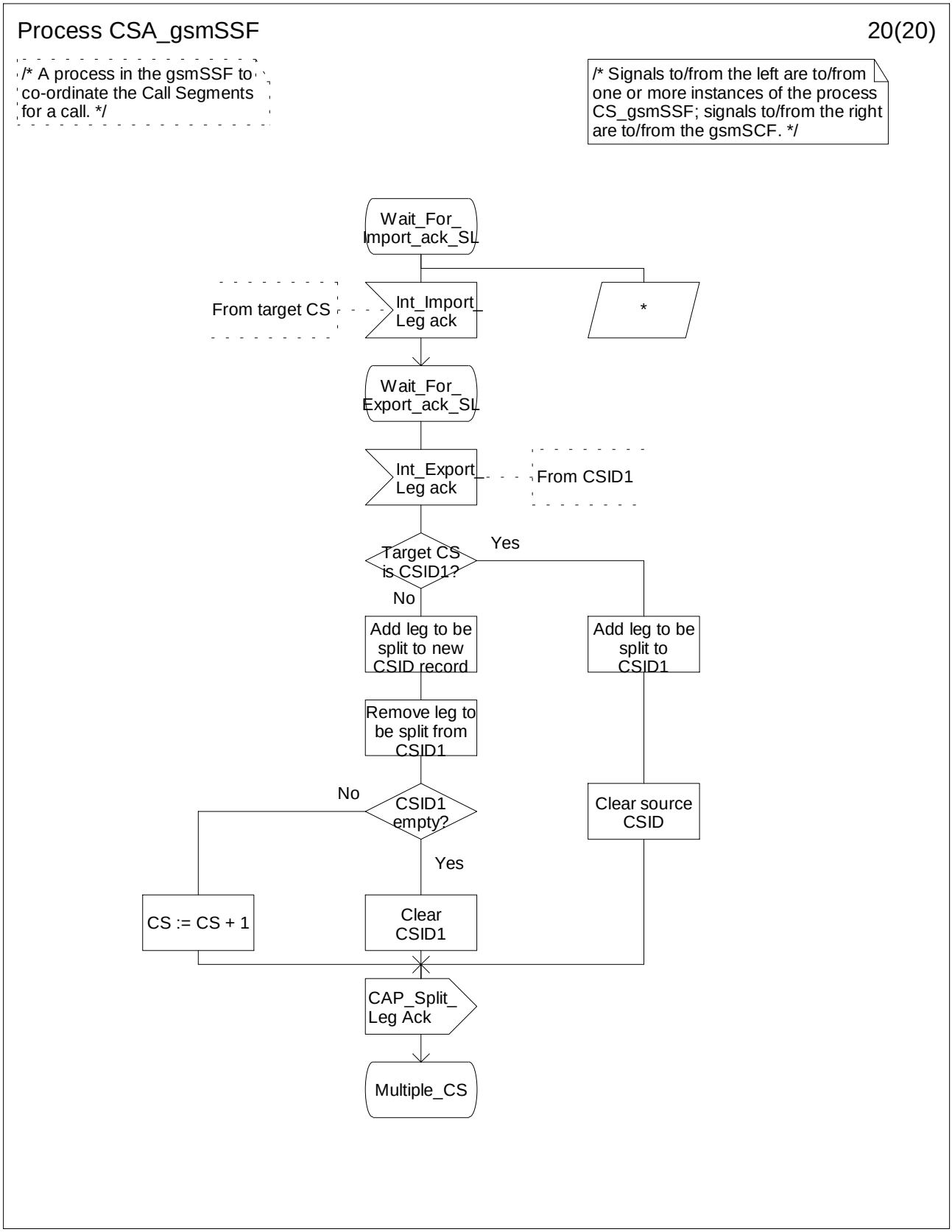


Figure 4.112t: Process CSA_gsmSSF (sheet 20)

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Tdoc ⌘N2-021076
rev N2-020981

CR-Form-v7

CHANGE REQUEST

⌘ **29.078** **CR** **288** ⌘ **rev** **1** ⌘ Current version: **5.1.0** ⌘

*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 ☒

Title:	⌘	Use of Continue With Argument operation for call resumption
Source:	⌘	Alcatel
Work item code:	⌘	CAMEL4
Date:	⌘	14/11/2002
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 current operation description for the ContinueWithArgument operation does not yet take into account the resumption of the various call configuration offered due to Call Party Handling.
Summary of change:	⌘	Update the description such that the CPH configurations together with the outstanding requests due to TDP-R and EDP-R are considered in determining whether or not to continue the call. The proposed changes are similar to the current text of "11.11 Continue procedure". Furthermore, it is proposed for both subclauses to distinguish (editorially) more the two cases of whether or not "all resumptions have been received".
Consequences if not approved:	⌘	The call resumption does not work for the various CPH configurations. Misalignment to 23.078.

Clauses affected:	⌘	11.11.2.1 (Continue procedure), 11.12.2.1 (ContinueWithArgument Procedure)

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

Other comments: ⌘

— First modified section —

11.11 Continue procedure

11.11.1 General description

The gsmSCF uses this operation to request the gsmSSF to proceed with call processing at the DP at which it previously suspended call processing to await gsmSCF instructions. The gsmSSF continues call processing without substituting new data from the gsmSCF.

11.11.1.1 Parameters

None.

11.11.2 Responding entity (gsmSSF)

11.11.2.1 Normal procedure

gsmSSF preconditions:

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

(2) Basic call processing has been suspended at any DP.

(3) The gsmSSF FSM is in the state "Waiting_for_Instructions".

gsmSSF postconditions:

(1) BCSM: If the Call Segment has received all the required resumptions ~~If all required resumptions have been received,~~ then basic call processing continues~~; otherwise, the only action is to decrement the resumption counter. For details refer to 3GPP TS 23.078 [7]~~.

(2) The gsmSSF FSM remains in the same state unless all resumptions have been received.~~If all resumptions have not been received, then the gsmSSF FSM remains in the same state; or~~

If all resumptions have been received, then:

- If there are armed EDPs or pending reports ~~If at least one EDP was armed, or a "CallInformationReport" or "ApplyChargingReport" was requested~~ and no user interaction is ongoing, then the gsmSSF transits to the state "Monitoring"~~,~~; or

- If there are no armed EDPs neither pending reports~~If no EDPs were armed and neither the "CallInformationReport" nor the "ApplyChargingReport" was requested~~, then the gsmSSF transits to the state "Idle".

11.11.2.2 Error handling

Operation related error handling is not applicable, due to class 4 operation.

— Next modified section —

11.12 ContinueWithArgument Procedure

11.12.1 General description

The gsmSCF uses this operation to request the gsmSSF to proceed with call processing at the DP at which it previously suspended call processing to await gsmSCF instructions. It is also used to provide additional service related information to a User (Called Party or Calling Party) whilst the call processing proceeds.

In general all parameters which are provided in a ContinueWithArgument operation to the gsmSSF shall replace the corresponding signalling parameter in the CCF, in accordance with ETSI ES 201 296 [21]; shall be used for subsequent call processing. Parameters which are not provided by the ContinueWithArgument operation shall retain their value (if already assigned) in the CCF for subsequent call processing.

11.12.1.1 Parameters

- alertingPattern:
  This parameter indicates the type of alerting to be applied. It is defined in 3GPP TS 29.002 [11].

- serviceInteractionIndicatorsTwo:
  This parameter contains indicators that are used to resolve interactions between CAMEL based services and network based services.

- callingPartysCategory:
  This parameter indicates the type of calling party (e.g., operator, pay phone, ordinary subscriber).

- genericNumbers:
  This parameter allows the gsmSCF to set the Generic Number parameter used in the network. It is used for transfer of Additional Calling Party Number.

- suppressionOfAnnouncement:
  This parameter indicates that announcements and tones which are played in the exchange at non-successful call set-up attempts shall be suppressed.

- carrier:
  This parameter indicates carrier information. It consists of the carrier selection field followed by the Carrier ID information to be used by gsmSSF for routeing a call to a carrier.

  It contains the following embedded parameter:

  - carrierSelectionField:
    This parameter indicates how the selected carrier is provided (e.g. pre-subscribed).

  - carrierID:
    This parameter indicates the carrier to use for the call. It contains the digits of the carrier identification code.

- naOliInfo:
  This parameter contains originating line information which identifies the charged party number type to the carrier.

- chargeNumber:
  This parameter contains the number that identifies the entity to be charged for the call. It identifies the chargeable number for the usage of a carrier (applicable on a call sent into a North American long distance carrier). For a definition of this parameter refer to ANSI T1.113-1995 [92].

- cug-Interlock:
  This parameter uniquely identifies a CUG within a network.

- cug-OutgoingAccess:
  This parameter indicates if the calling user has subscribed to the outgoing access inter-CUG accessibility subscription option.

- bor-InterrogationRequested:
  This parameter indicates that Basic Optimal Routeing is requested for the call.

- suppress-O-CSI:
  This parameter indicates that O-CSI shall be suppressed for the forwarding leg or deflecting leg.

- legID:
  This parameter indicates the leg to which the ContinueWithArgument shall apply.

- suppress-D-CSI:
  This parameter indicates that D-CSI shall be suppressed for the leg.

- suppress-N-CSI:
  This parameter indicates that N-CSI shall be suppressed for the leg.

- suppressOutgoingCallBarring:
  This parameter indicates that outgoing call barrings shall be suppressed for the leg.

11.12.2 Responding entity (gsmSSF)

11.12.2.1 Normal procedure

gsmSSF preconditions:

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

(2) Basic call processing has been suspended at a DP.

(3) The gsmSSF FSM is in the state "Waiting_for_Instructions".

gsmSSF postconditions:

(1) BCSM: If the Call Segment has received all the required resumptions then ~~B~~basic call processing continues with modified information~~.~~;

(2) ~~If there are armed EDPs or pending reports, then the gsmSSF FSM transits to the state "Monitoring"; otherwise the gsmSSF FSM transits to the state "Idle".~~ The gsmSSF FSM remains in the same state unless all resumptions have been received.

If all resumptions have been received, then:

- If there are armed EDPs or pending reports and no user interaction is ongoing, then the gsmSSF transits to the state "Monitoring"; or

- If there are no armed EDPs neither pending reports, then the gsmSSF transits to the state "Idle".

11.12.2.2 Error handling

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

— END —

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rev N2-020982

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CHANGE REQUEST

⌘ **29.078** **CR** **289** ⌘ **rev** **1** ⌘ Current version: **5.1.0** ⌘

*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:	⌘	Missing Call Segment ID in Continue With Argument operation
Source:	⌘	Alcatel
Work item code:	⌘	CAMEL4
Date:	⌘	14/11/2002
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 Call Segment ID is included and used in the 23.078 Continue With Argument information flow. However this parameter is missing in the corresponding 29.078 ContinueWithArgument operation.
Summary of change:	⌘	Include the missing parameter.
Consequences if not approved:	⌘	Non working CAMEL protocol, especially CPH. Misalignment to 23.078.

Clauses affected:	⌘	6.1.1 Operations and arguments, 11.12.1.1 (ContinueWithArgument Procedure)

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

Other comments:	⌘	Due to the use of CWA in CAMEL 3 (without legID nor CSID) the legOrCallSegment parameter in CAMEL 4 shall be OPTIONAL rather than to have a DEFAULT value.

— First modified section —

6 Circuit Switched Call Control

6.1 gsmSSF/CCF - gsmSCF Interface

6.1.1 Operations and arguments

```
CAP-gsmSSF-gsmSCF-ops-args {itu-t(0) identified-organization(4) etsi(0) mobileDomain(0)
umts-network(1) modules(3) cap-gsmSSF-gsmSCF-ops-args(101) version4(3)}

DEFINITIONS IMPLICIT TAGS ::= BEGIN

...


continueWithArgument {PARAMETERS-BOUND : bound} OPERATION ::= {
    ARGUMENT        ContinueWithArgumentArg {bound}
    RETURN RESULT   FALSE
    ERRORS          {missingParameter |
                     parameterOutOfRange |
                     unexpectedComponentSequence |
                     unexpectedDataValue |
                     unexpectedParameter |
                     unknownLegID}
    CODE            opcode-continueWithArgument}
-- Direction: gsmSCF -> gsmSSF, Timer: Tcwa
-- This operation is used to request the gsmSSF to proceed with call processing at the
-- DP at which it previously suspended call processing to await gsmSCF instructions
-- (i.e. proceed to the next point in call in the BCSM). The gsmSSF continues call
-- processing with the modified call setup information as received from the gsmSCF.

ContinueWithArgumentArg {PARAMETERS-BOUND : bound} ::= SEQUENCE {
    ~~legID~~legOrCallSegment               [0] ~~LegID~~LegOrCallSegment {bound}          OPTIONAL,
    alertingPattern                     [1] AlertingPattern                         OPTIONAL,
    extensions                          [6] Extensions {bound}                      OPTIONAL,
    serviceInteractionIndicatorsTwo     [7] ServiceInteractionIndicatorsTwo         OPTIONAL,
    callingPartysCategory               [12] CallingPartysCategory                  OPTIONAL,
    genericNumbers                      [16] GenericNumbers {bound}                 OPTIONAL,
    cug-Interlock                       [17] CUG-Interlock                          OPTIONAL,
    cug-OutgoingAccess                  [18] NULL                                   OPTIONAL,
    chargeNumber                        [50] ChargeNumber {bound}                   OPTIONAL,
    carrier                             [52] Carrier {bound}                        OPTIONAL,
    suppressionOfAnnouncement           [55] SuppressionOfAnnouncement              OPTIONAL,
    naOliInfo                           [56] NAOliInfo                              OPTIONAL,
    bor-InterrogationRequested          [57] NULL                                   OPTIONAL,
    suppress-O-CSI                      [58] NULL                                   OPTIONAL,
    continueWithArgumentArgExtension    [59] ContinueWithArgumentArgExtension       OPTIONAL,
    ...
    }

ContinueWithArgumentArgExtension ::= SEQUENCE {
    suppress-D-CSI                      [0] NULL                                    OPTIONAL,
    suppress-N-CSI                      [1] NULL                                    OPTIONAL,
    suppressOutgoingCallBarring         [2] NULL                                    OPTIONAL,
    ...
    }

...


END
```

— Next modified section —

11.12 ContinueWithArgument Procedure

11.12.1 General description

The gsmSCF uses this operation to request the gsmSSF to proceed with call processing at the DP at which it previously suspended call processing to await gsmSCF instructions. It is also used to provide additional service related information to a User (Called Party or Calling Party) whilst the call processing proceeds.

In general all parameters which are provided in a ContinueWithArgument operation to the gsmSSF shall replace the corresponding signalling parameter in the CCF, in accordance with ETSI ES 201 296 [21]~~;~~, and shall be used for subsequent call processing. Parameters which are not provided by the ContinueWithArgument operation shall retain their value (if already assigned) in the CCF for subsequent call processing.

11.12.1.1 Parameters

- legOrCallSegment:
  This parameter indicates the leg or Call Segment to which the ContinueWithArgument operation shall apply.

- alertingPattern:
  This parameter indicates the type of alerting to be applied. It is defined in 3GPP TS 29.002 [11].

- serviceInteractionIndicatorsTwo:
  This parameter contains indicators that are used to resolve interactions between CAMEL based services and network based services.

- callingPartysCategory:
  This parameter indicates the type of calling party (e.g., operator, pay phone, ordinary subscriber).

- genericNumbers:
  This parameter allows the gsmSCF to set the Generic Number parameter used in the network. It is used for transfer of Additional Calling Party Number.

- suppressionOfAnnouncement:
  This parameter indicates that announcements and tones which are played in the exchange at non-successful call set-up attempts shall be suppressed.

- carrier:
  This parameter indicates carrier information. It consists of the carrier selection field followed by the Carrier ID information to be used by gsmSSF for routeing a call to a carrier.

  It contains the following embedded parameter:

  - carrierSelectionField:
    This parameter indicates how the selected carrier is provided (e.g. pre-subscribed).

  - carrierID:
    This parameter indicates the carrier to use for the call. It contains the digits of the carrier identification code.

- naOliInfo:
  This parameter contains originating line information which identifies the charged party number type to the carrier.

- chargeNumber:
  This parameter contains the number that identifies the entity to be charged for the call. It identifies the chargeable number for the usage of a carrier (applicable on a call sent into a North American long distance carrier). For a definition of this parameter refer to ANSI T1.113-1995 [92].

- cug-Interlock:
  This parameter uniquely identifies a CUG within a network.

- cug-OutgoingAccess:
  This parameter indicates if the calling user has subscribed to the outgoing access inter-CUG accessibility subscription option.

- bor-InterrogationRequested:
  This parameter indicates that Basic Optimal Routeing is requested for the call.

- suppress-O-CSI:
  This parameter indicates that O-CSI shall be suppressed for the forwarding leg or deflecting leg.

- legID:
  This parameter indicates the leg to which the ContinueWithArgument shall apply.

- suppress-D-CSI:
  This parameter indicates that D-CSI shall be suppressed for the leg.

- suppress-N-CSI:
  This parameter indicates that N-CSI shall be suppressed for the leg.

- suppressOutgoingCallBarring:
  This parameter indicates that outgoing call barrings shall be suppressed for the leg.

11.12.2 Responding entity (gsmSSF)

11.12.2.1 Normal procedure

gsmSSF preconditions:

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

(2) Basic call processing has been suspended at a DP.

(3) The gsmSSF FSM is in the state "Waiting_for_Instructions".

gsmSSF postconditions:

(1) BCSM: Basic call processing continues with modified information.

(2) If there are armed EDPs or pending reports, then the gsmSSF FSM transits to the state "Monitoring"; otherwise the gsmSSF FSM transits to the state "Idle".

11.12.2.2 Error handling

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

— END —

3GPP TSG-CN WG2 Meeting #27 **⌘N2-021078**
Bangkok, Thailand, 11th - 15th November 2002.

CR-Form-v7

CHANGE REQUEST

⌘ **23.078** **CR** **490** ⌘ **rev** **1** ⌘ Current version: **5.1.0** ⌘

*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:	⌘	Handling of Apply Charging after gsmSCF terminates dialogue or sends 'Release Call'
Source:	⌘	Vodafone
Work item code:	⌘	CAMEL4
Date:	⌘	24/10/02
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: ⌘ When the gsmSCF sends Application End, CAP_Release_Call or Abort to the gsmSSF, the CSA_gsmSSF transits to state 'idle'.

Receipt of 'Release Call' should not cause the CSA_gsmSSF to transit to the 'idle' state, as the CAP dialogue remains open. It should relay release call to the individual CSs and cancel each one as they send 'application end'.

When 'Abort' or 'Application End' are received, 'Apply Charging' can be returned from the CS to the CSA afterwards. As CSA_gsmSSF is in state 'idle', and no CAP dialogue exists, any signals that are returned to CSA_gsmSSF will be discarded. Therefore service designers should note that apply charging will not be returned to the gsmSCF after it has terminated the dialogue.

Summary of change: ⌘ CS_gsmSSF 29(56):

Note added that apply charging will not reach the gsmSCF if the gsmSCF has terminated the dialogue. This termination is already handled in CSA_gsmSSF sheet 20 and 21. Signals from Call Information Report procedures will not reach the gsmSCF either.

CSA_gsmSSF 10(21)

Release Call: After receiving this the CSA should return to the previous state so that 'application end' can be received from the CS as it terminates, this also allows for the reception of ACR and signals from other Call Segments. It does not interrupt the CS-gsmSCF CAP dialogue.

Changes introduced by this CR are in RED. Changes from Cn2#26 are included in Blue.

Consequences if not approved: ⌘ a) 'CAP_Release_Call' sent to all call segments will terminate the CSA_gsmSSF, and Apply Charging Reports will not be returned to the gsmSCF.

	b) Service Designers may think it possible to return charging information in ACR after a CS receives Release Call, but when gsmSCF has ended the dialogue.

Clauses affected:	⌘	4.5.7.4, 4.5.7.6			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Changes from document N2-020943 are included. The adjacent SDL files contain both changes from 943 and this document.			

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

4.5.7.4 Process CS_gsmSSF and procedures

Process CS_gsmSSF 1(56)

/* Invocation of CS_gsmSSF */

```
/* Timers used in the CS_gsmSSF process:

Tssf: Application timer in the ssf.

The following timers ar applicable for call legs as well as for the connected SRF (srf ID).
That is 'pty' may be a leg ID or an srf ID.
Tcp(pty): Timer for call period.
  This timer measures the duration of a call period.
Tsw(pty): Timer for tariff switch.
  At the expiration of this timer, a new tariff shall be started.
Tw(pty): Warning timer.
  At the expiration of this timer, a warning tone shall be played to the calling party.
DELTA(pty): time, measured in the CS_gsmSSF, elapsed between the time an
  ApplyChargingReport operation is send to the gsmSCF and an
  ApplyCharging operation is received from the gsmSCF for that pty.
Tccd(pty): Control of call duration timer.
  This timer supervises if after sending of ACR a new AC is received for that pty.
  Tccd has a value range of 1 to 20 seconds.

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

Figure 4.95a: Process CS_gsmSSF (sheet 1)

Process CS_gsmSSF 2(56)

/* Invocation of CS_gsmSSF */

/* Decision box definition (1)

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

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

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

'gsmSSF invoked?'
Is the CS_gsmSSF process in any state other than Idle?
*/

/*
Note to the task box "Perform implicit disarming of DPs";

If DP O_Change_Of_Position and/or DP T_Change_Of_Position are disarmed by this task,
the CS_gsmSSF sends
Int_Invoke_O_Change_Of_Position_MSC to the CAMEL_O_CHANGE_OF_POSITION_MSC and/or
Int_Invoke_T_Change_Of_Position_MSC to the CAMEL_T_CHANGE_OF_POSITION_MSC
with the parameter "Transparent, respectively.
*/

Figure 4.95b: Process CS_gsmSSF (sheet 2)

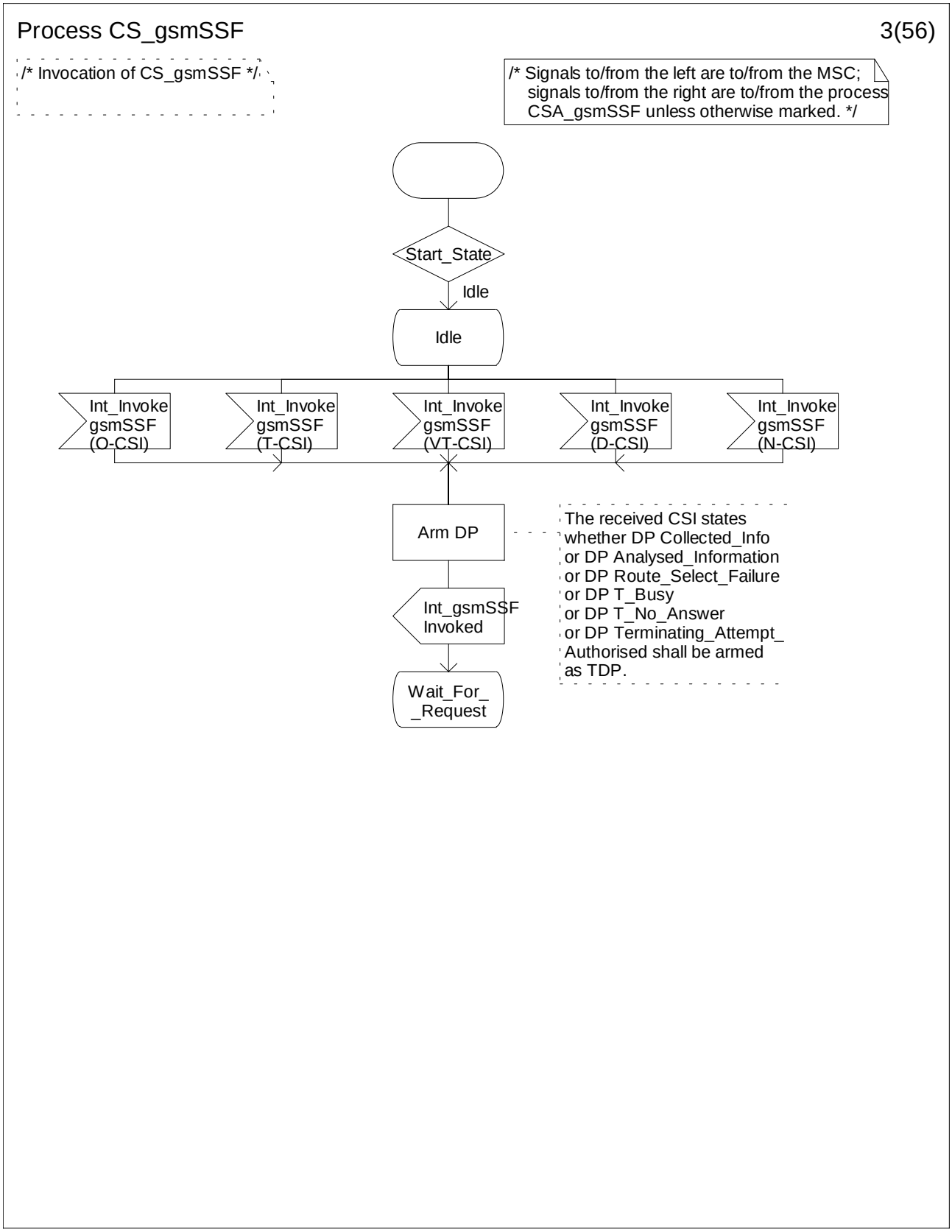


Figure 4.95c: Process CS_gsmSSF (sheet 3)

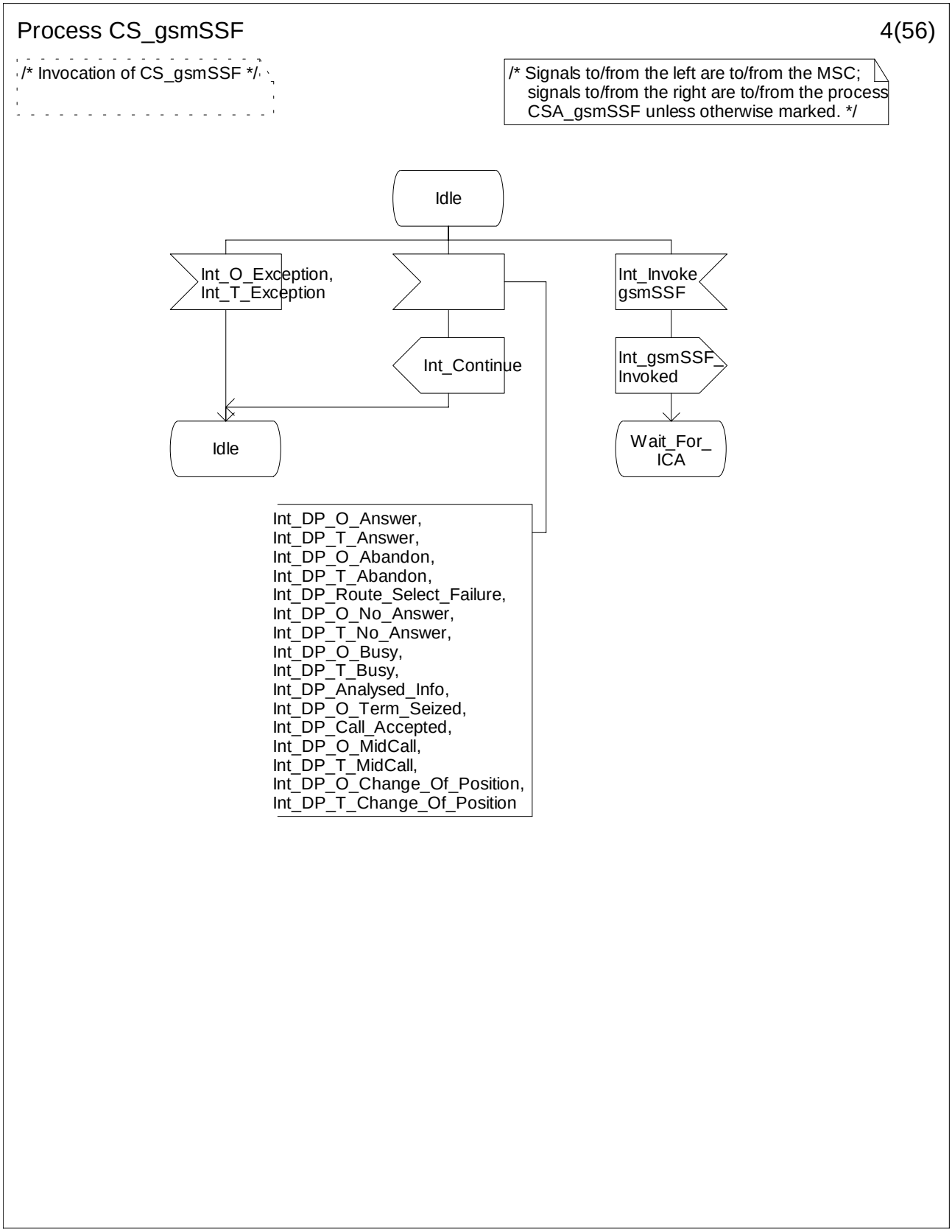


Figure 4.95d: Process CS_gsmSSF (sheet 4)

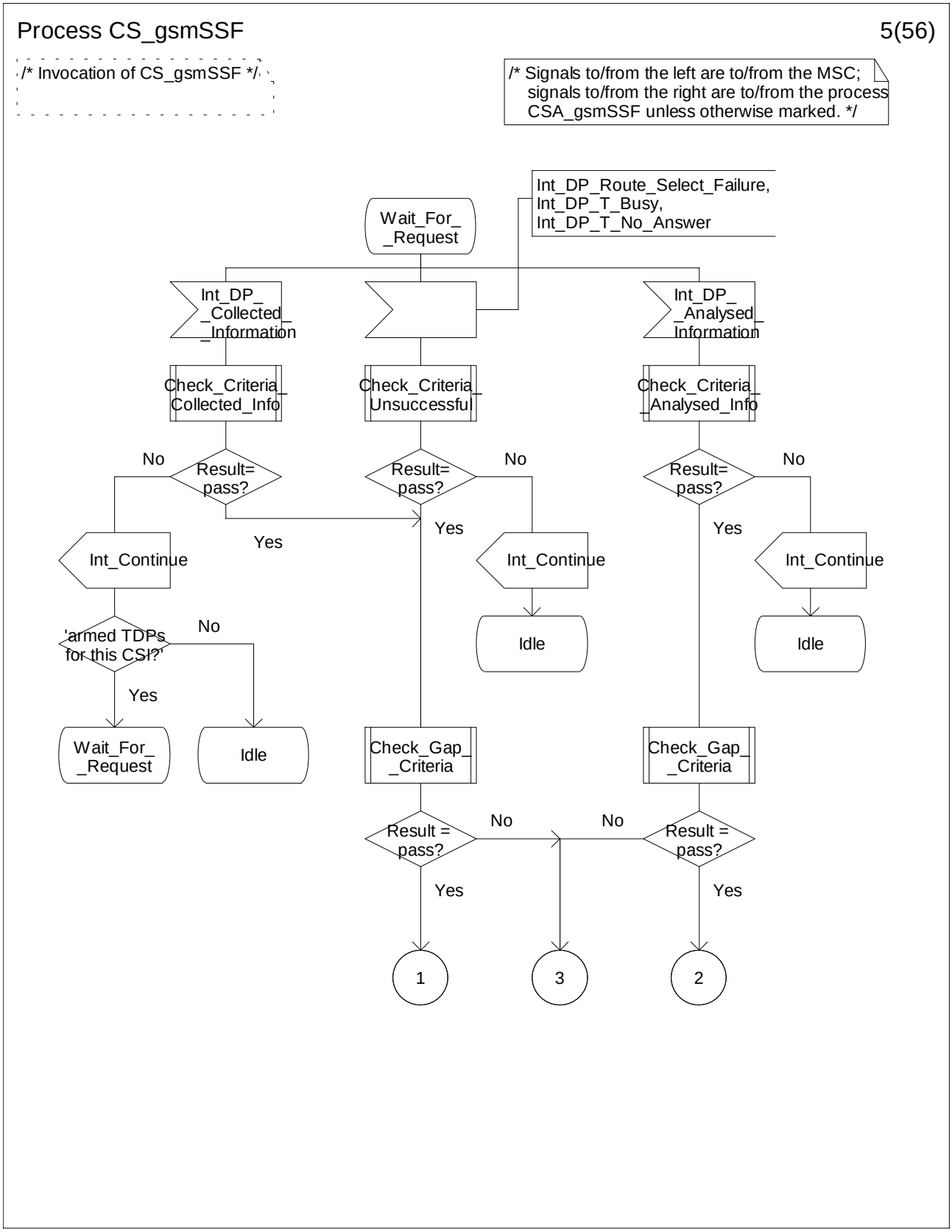


Figure 4.95e: Process CS_gsmSSF (sheet 5)

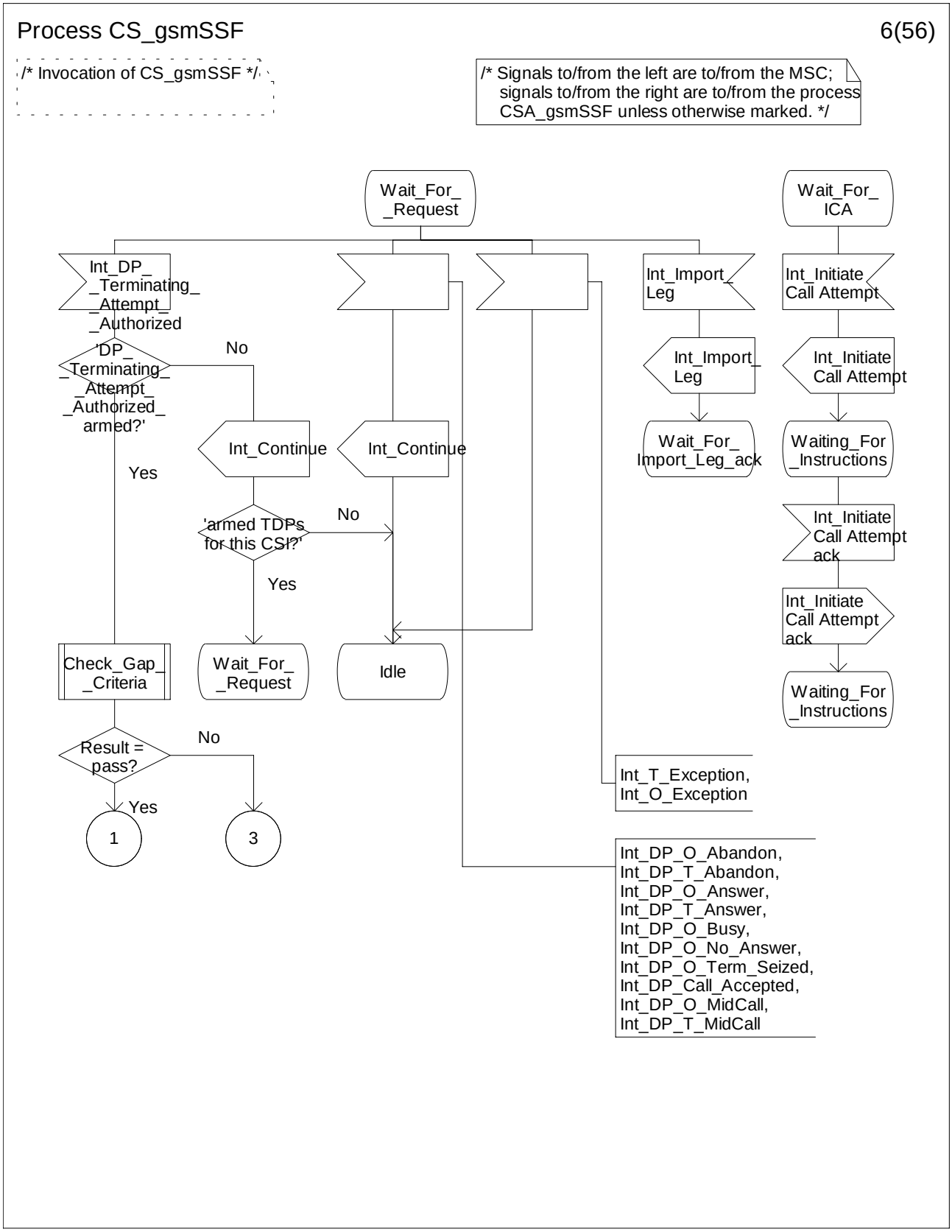


Figure 4.95f: Process CS_gsmSSF (sheet 6)

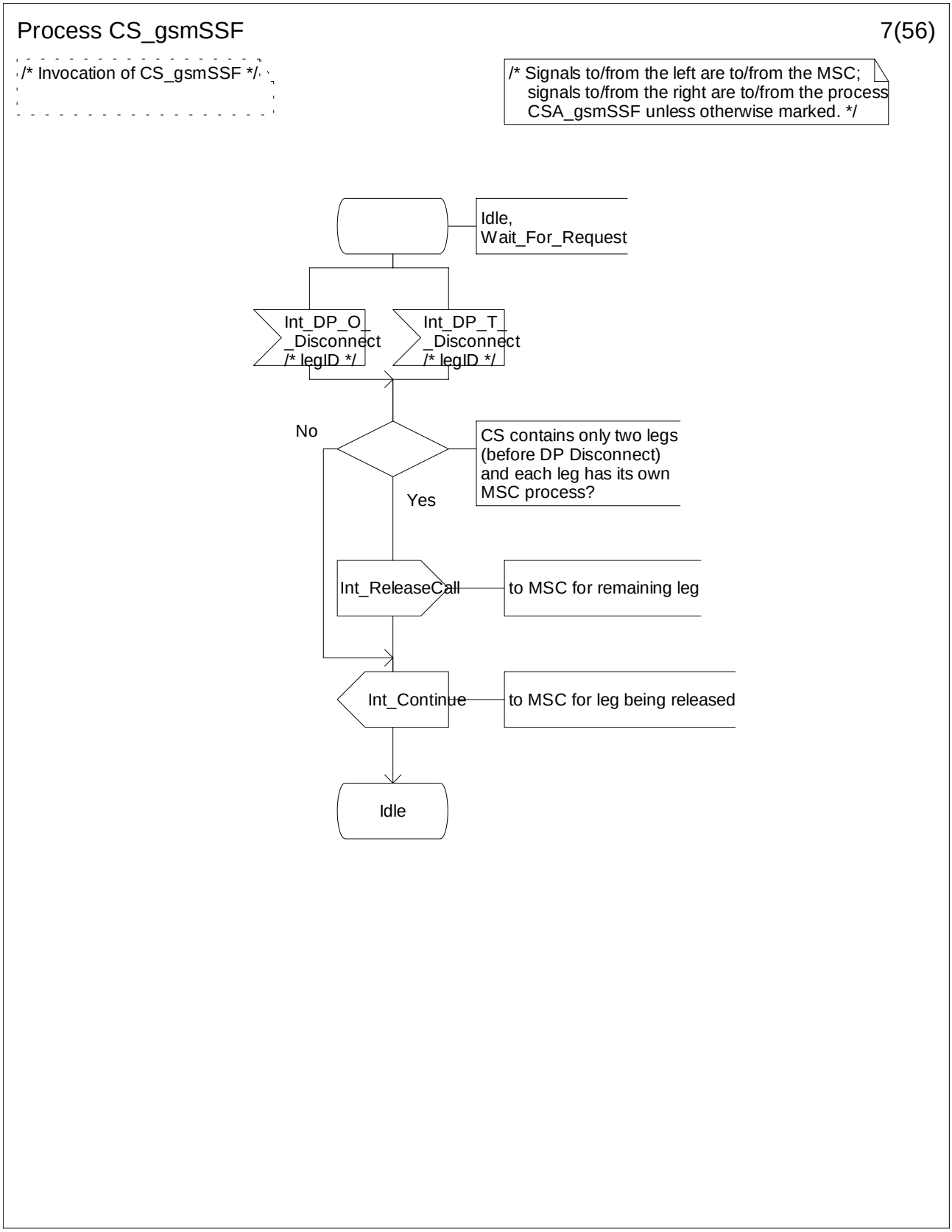


Figure 4.95g: Process CS_gsmSSF (sheet 7)

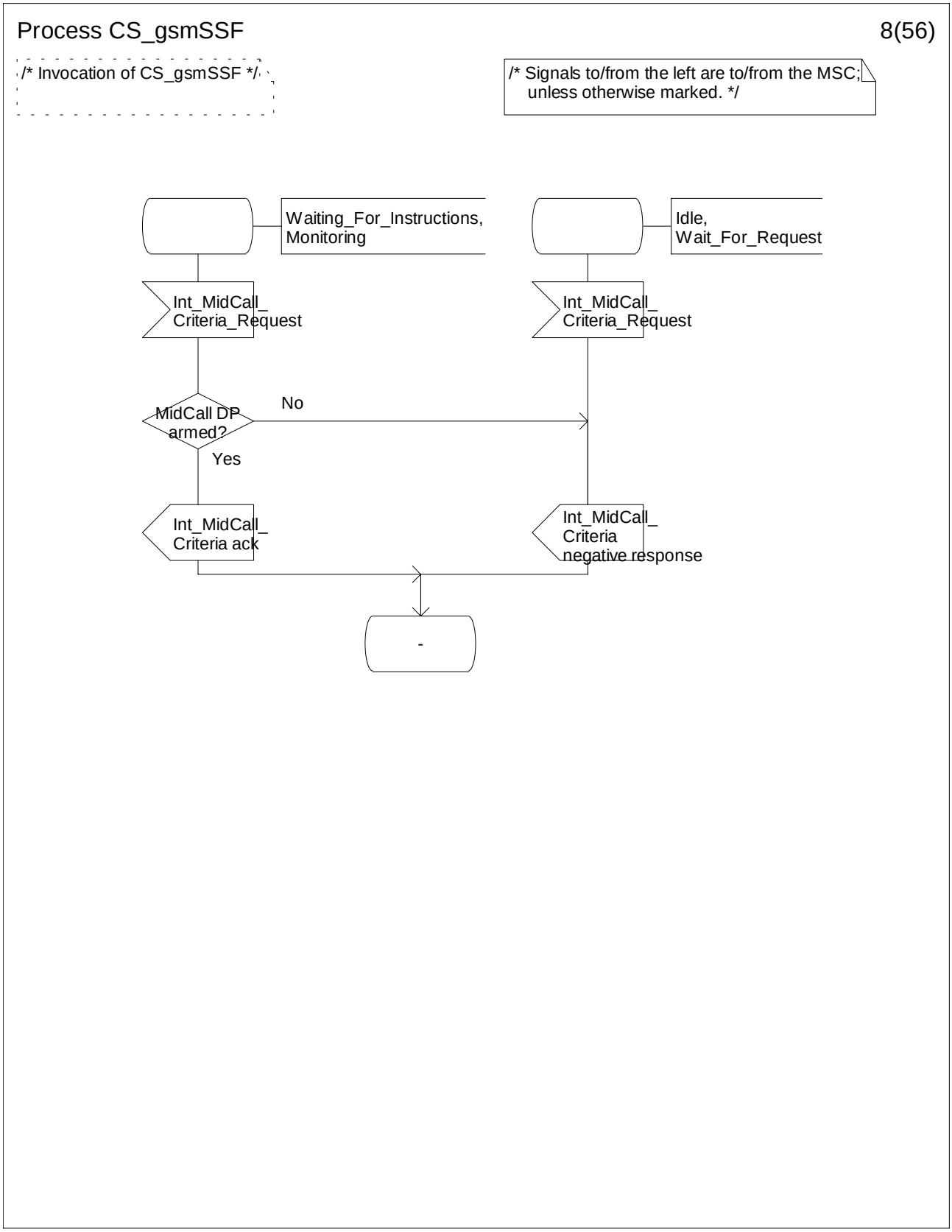


Figure 4.95h: Process CS_gsmSSF (sheet 8)

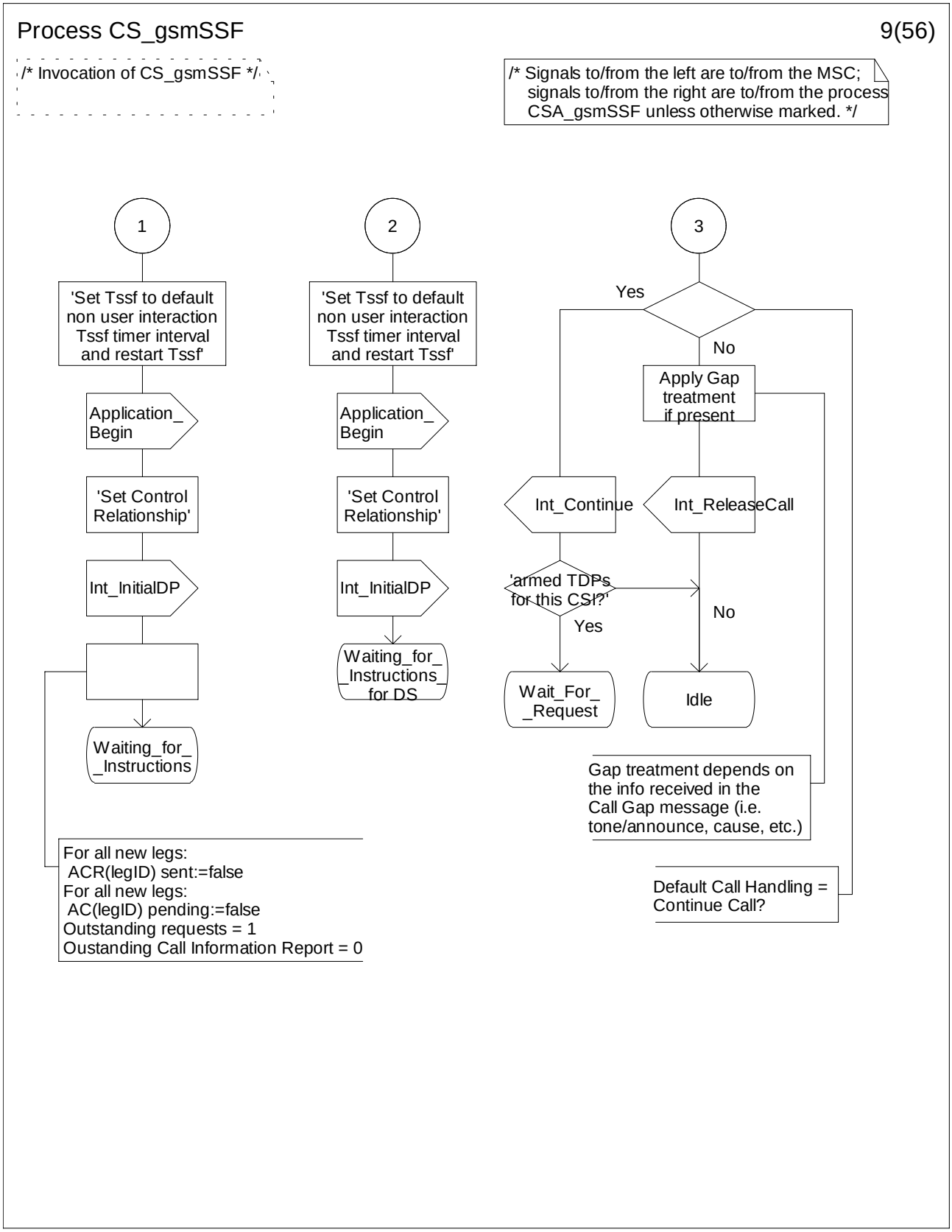


Figure 4.95i: Process CS_gsmSSF (sheet 9)

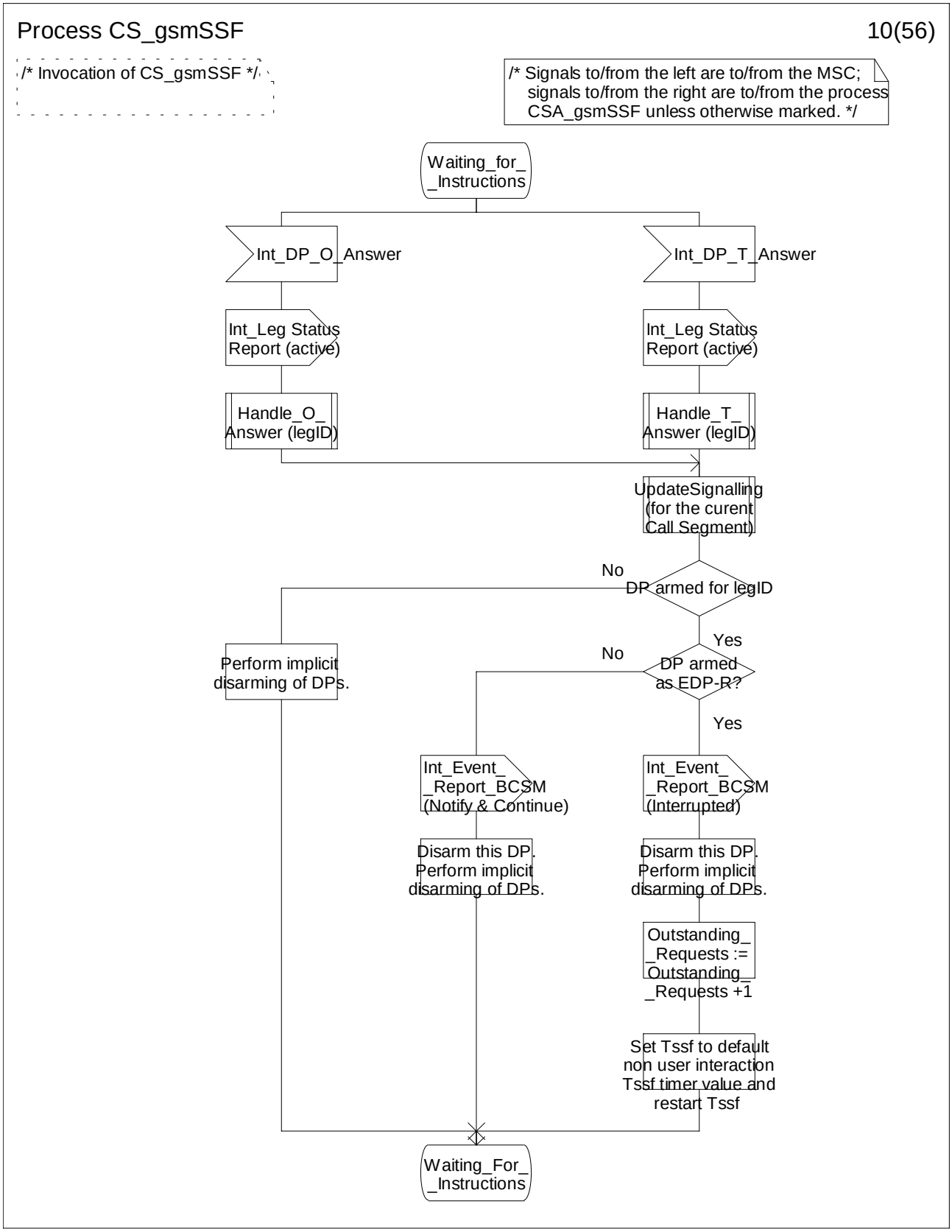


Figure 4.95j: Process CS_gsmSSF (sheet 10)

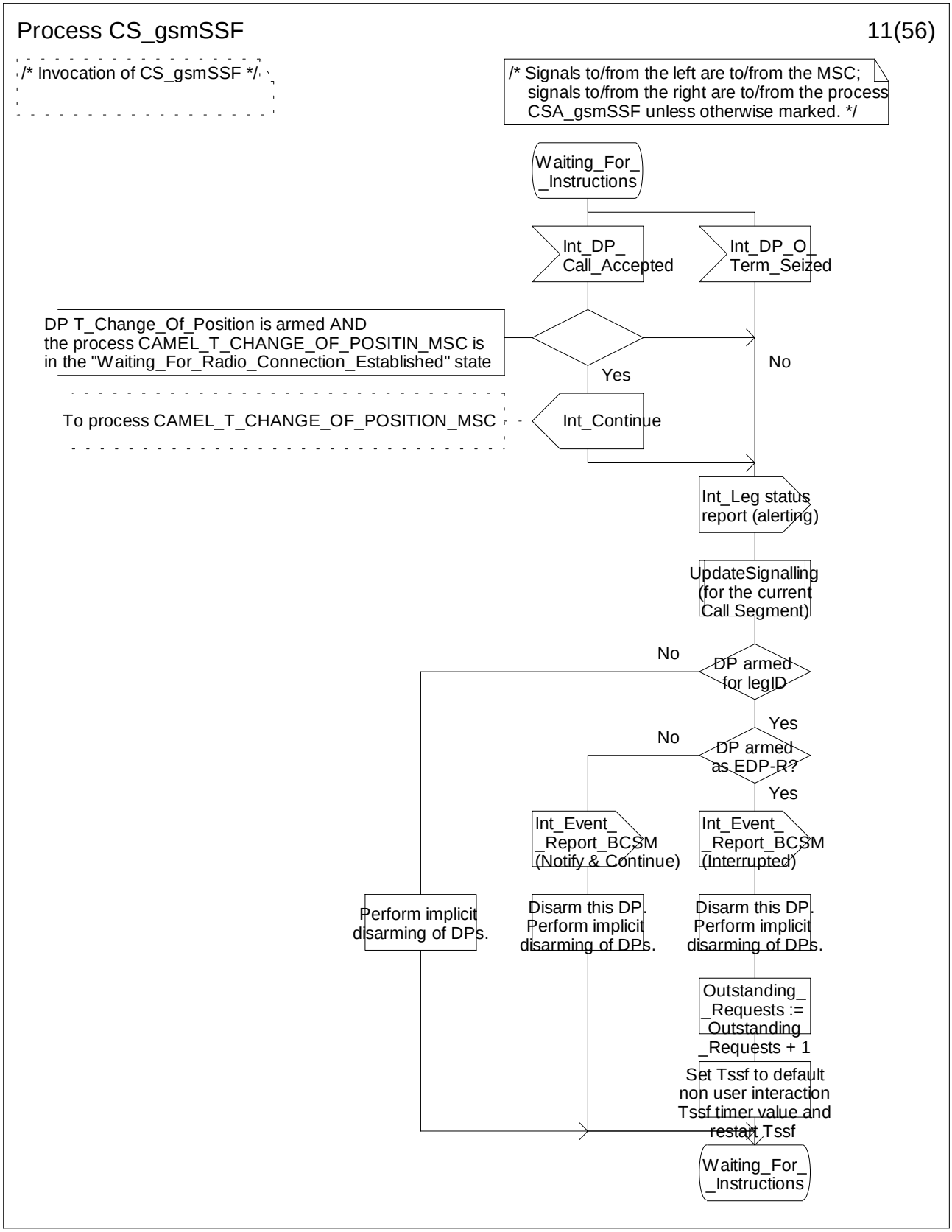


Figure 4.95k: Process CS_gsmSSF (sheet 11)

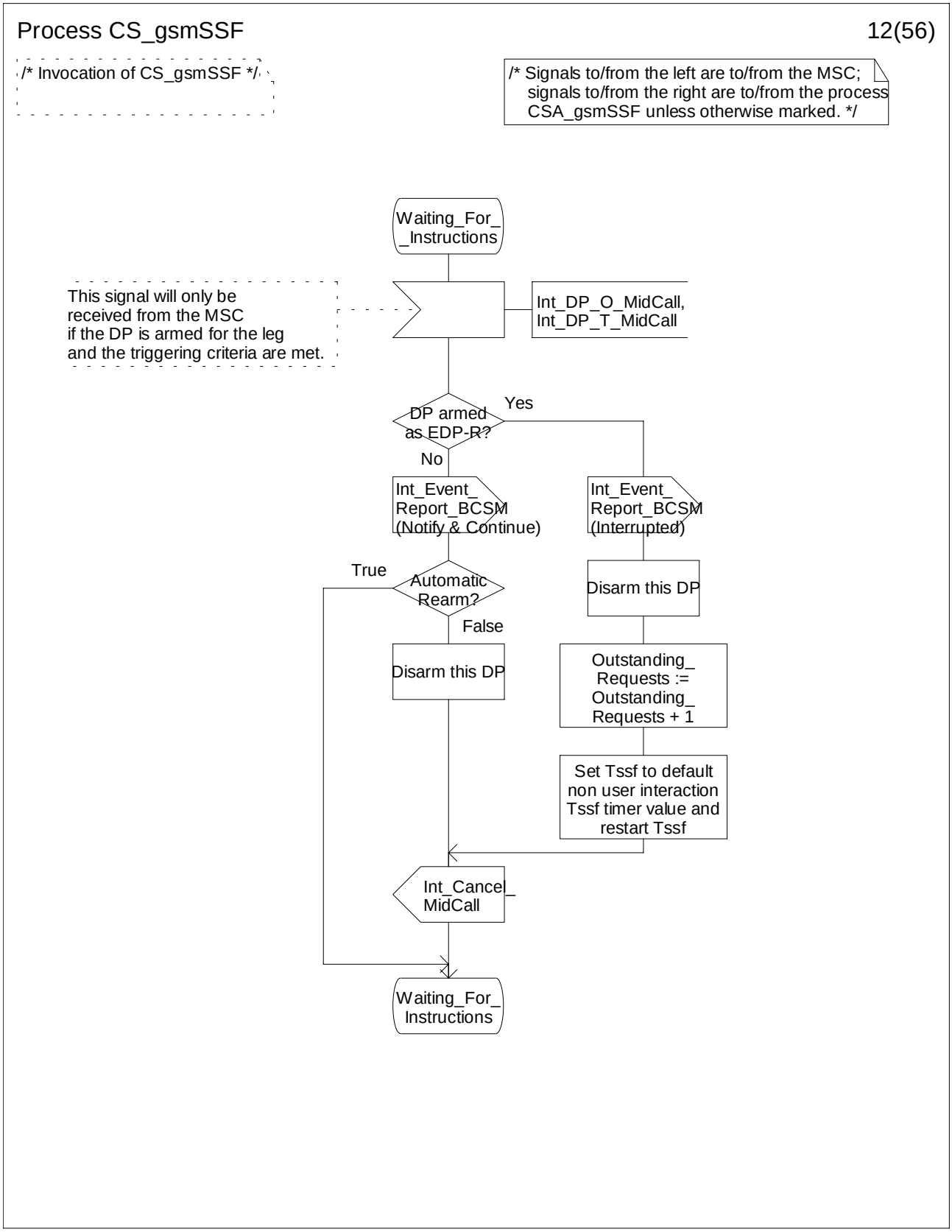


Figure 4.95l: Process CS_gsmSSF (sheet 12)

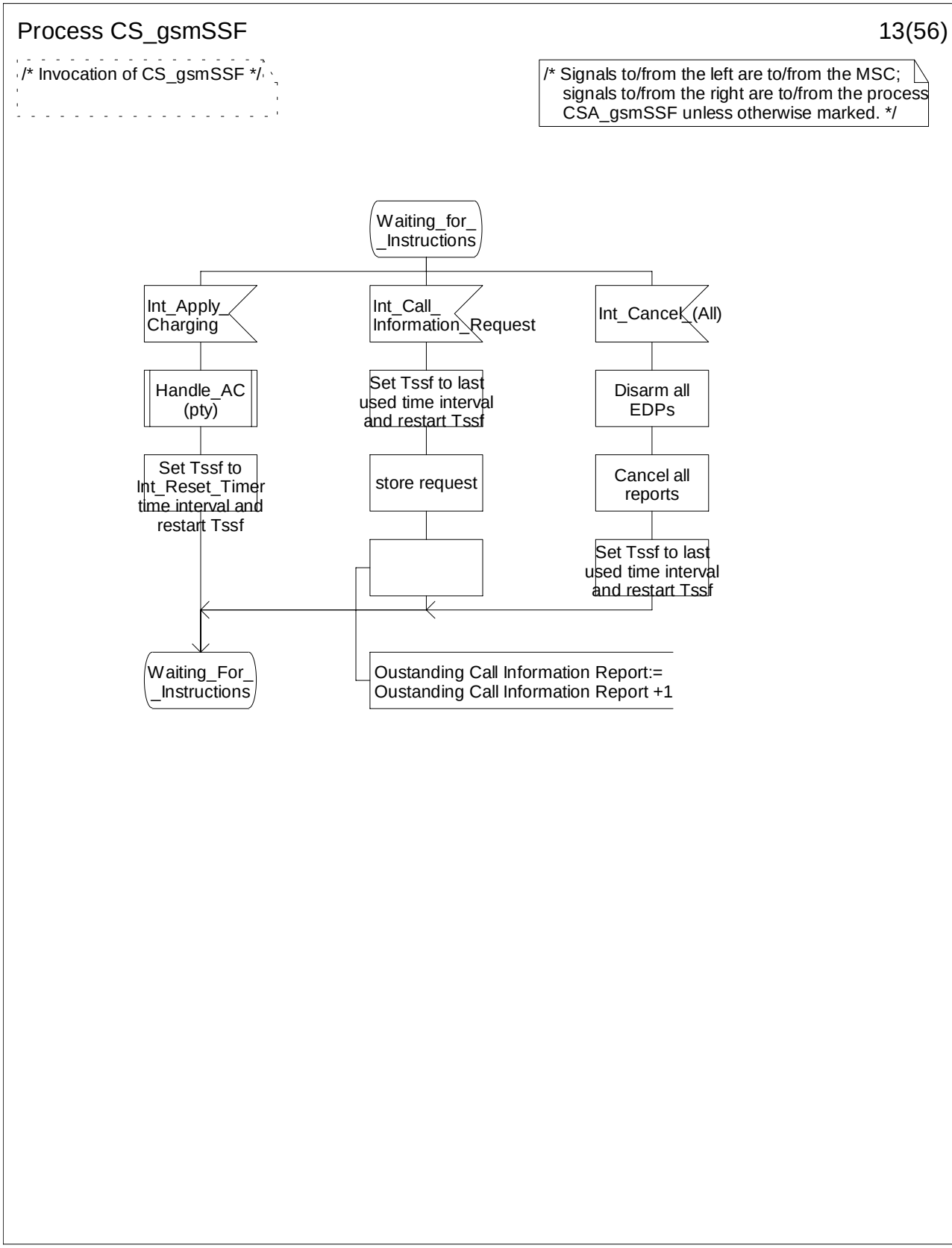


Figure 4.95m: Process CS_gsmSSF (sheet 13)

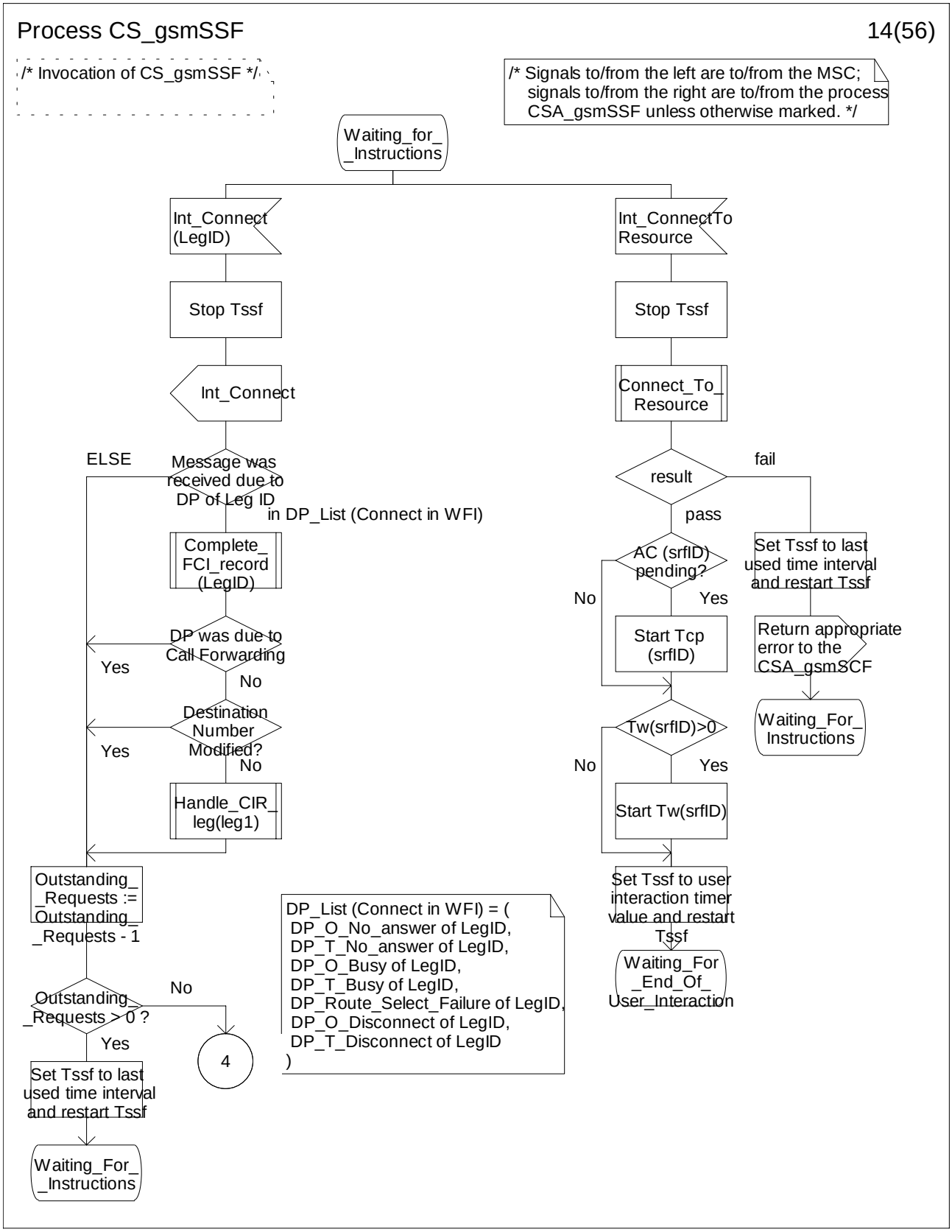


Figure 4.95n: Process CS_gsmSSF (sheet 14)

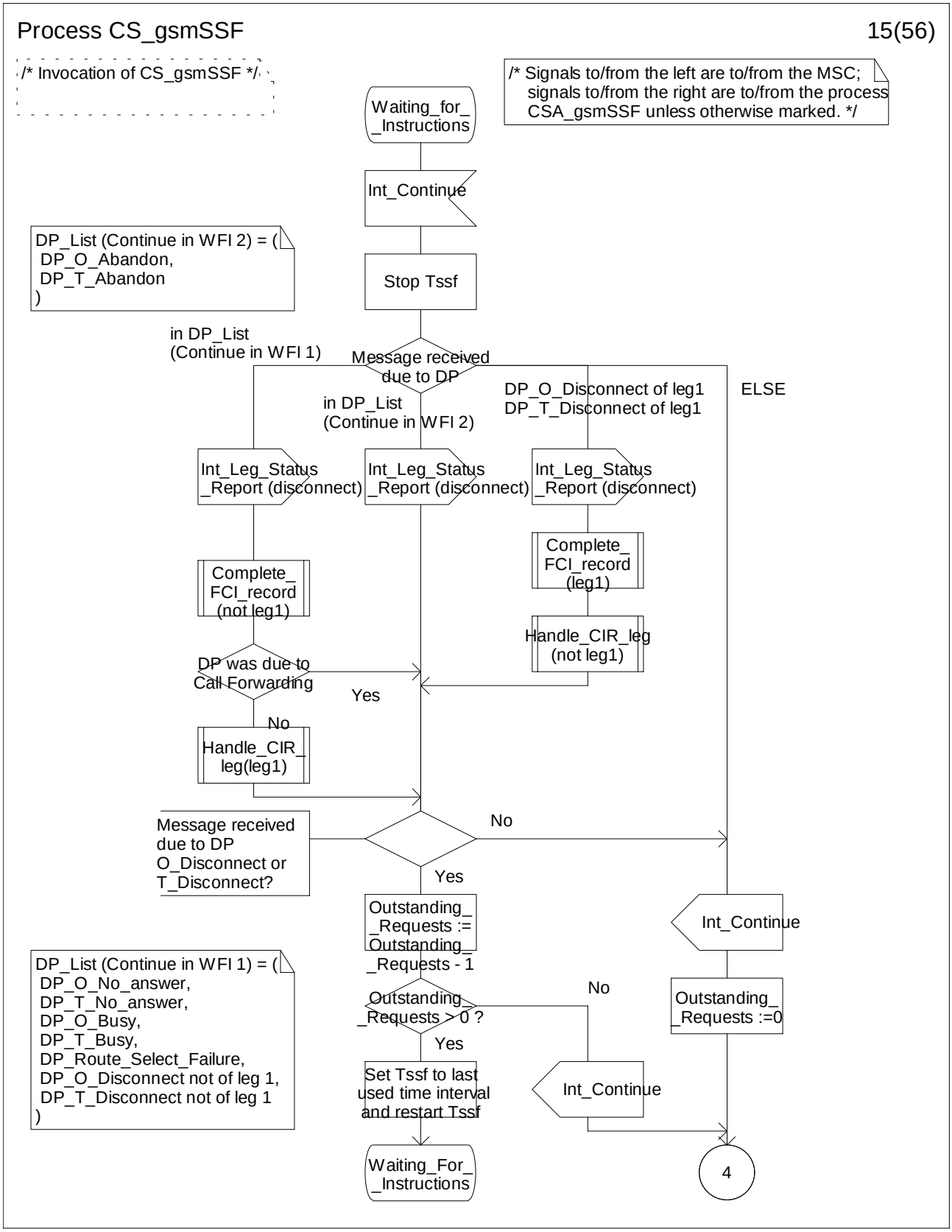


Figure 4.95o: Process CS_gsmSSF (sheet 15)

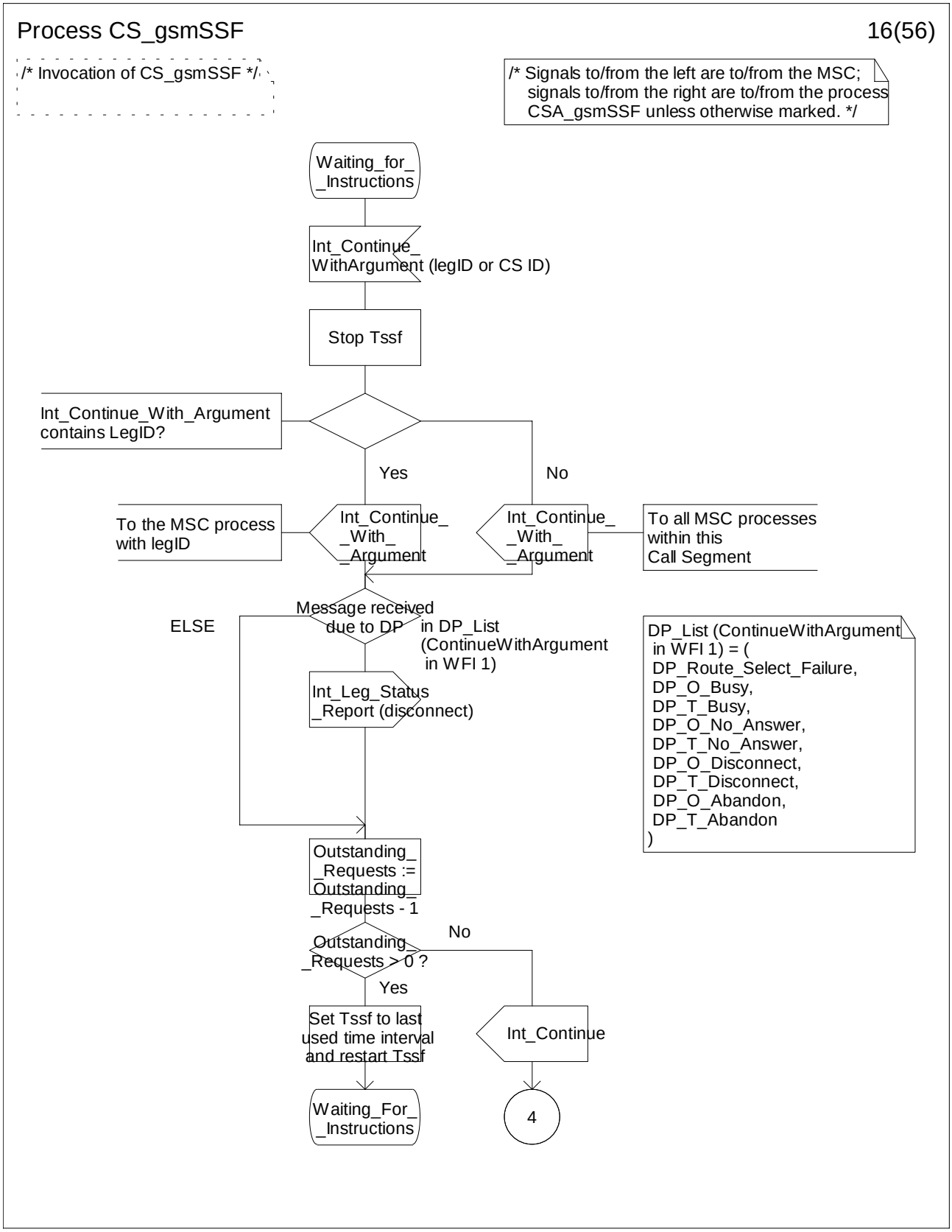


Figure 4.95p: Process CS_gsmSSF (sheet 16)

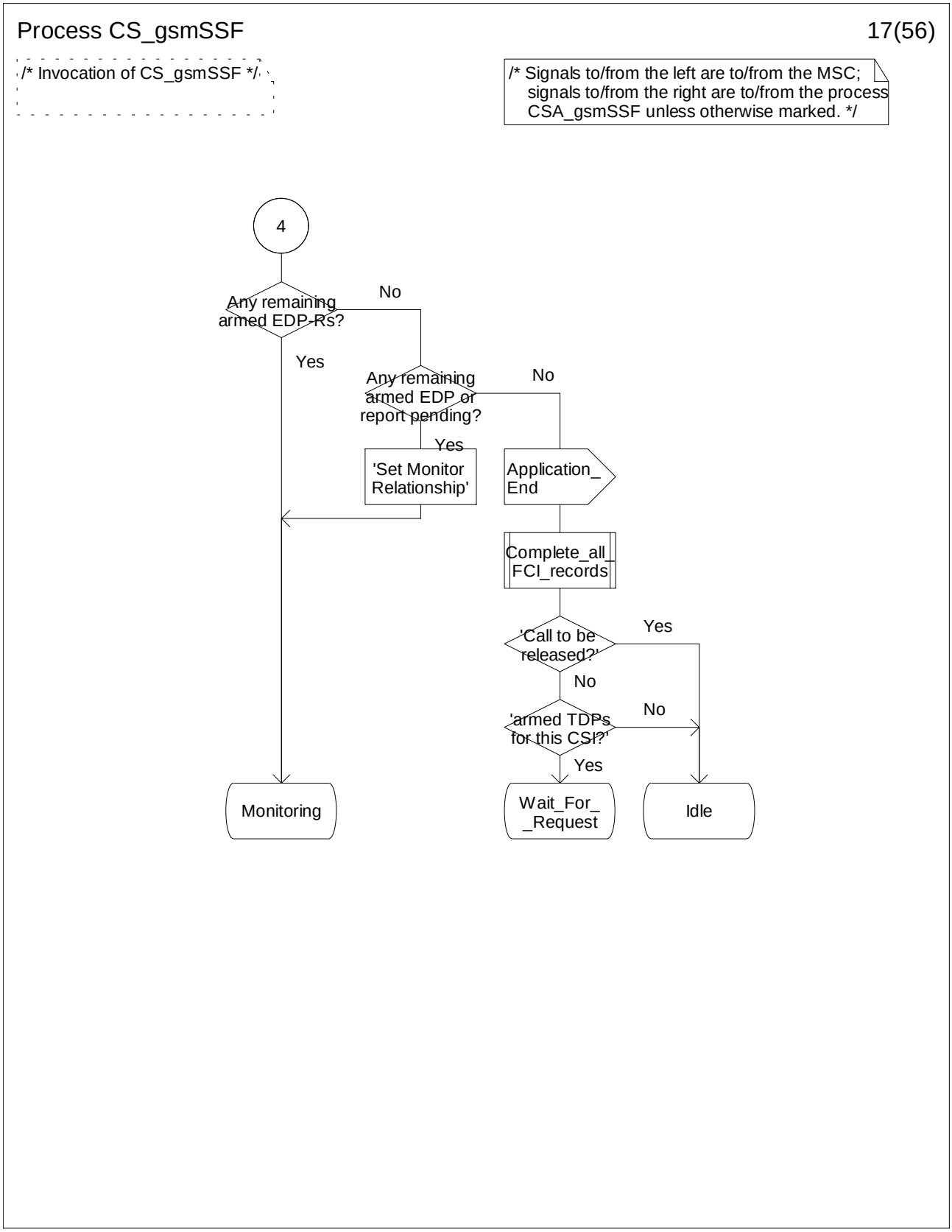


Figure 4.95q: Process CS_gsmSSF (sheet 17)

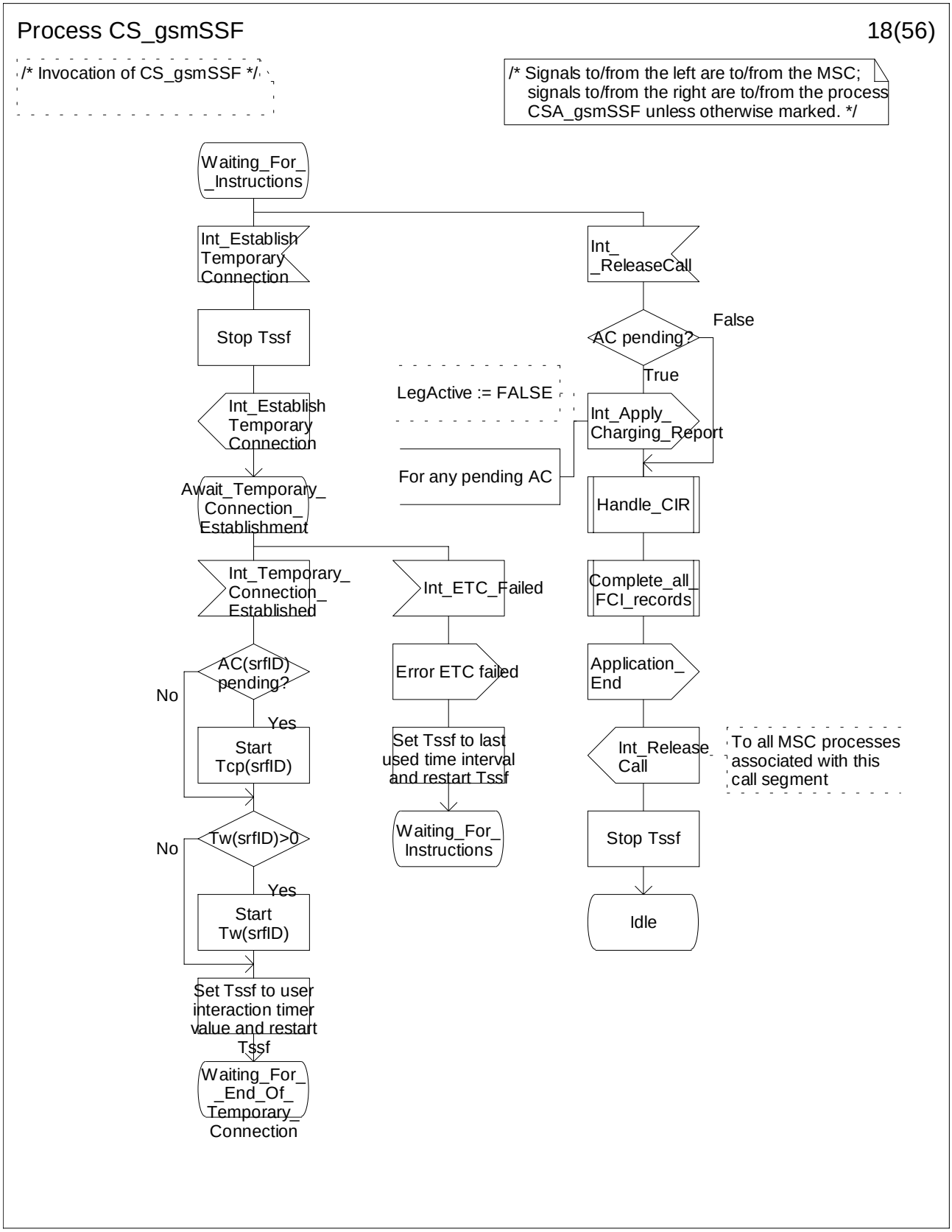


Figure 4.95r: Process CS_gsmSSF (sheet 18)

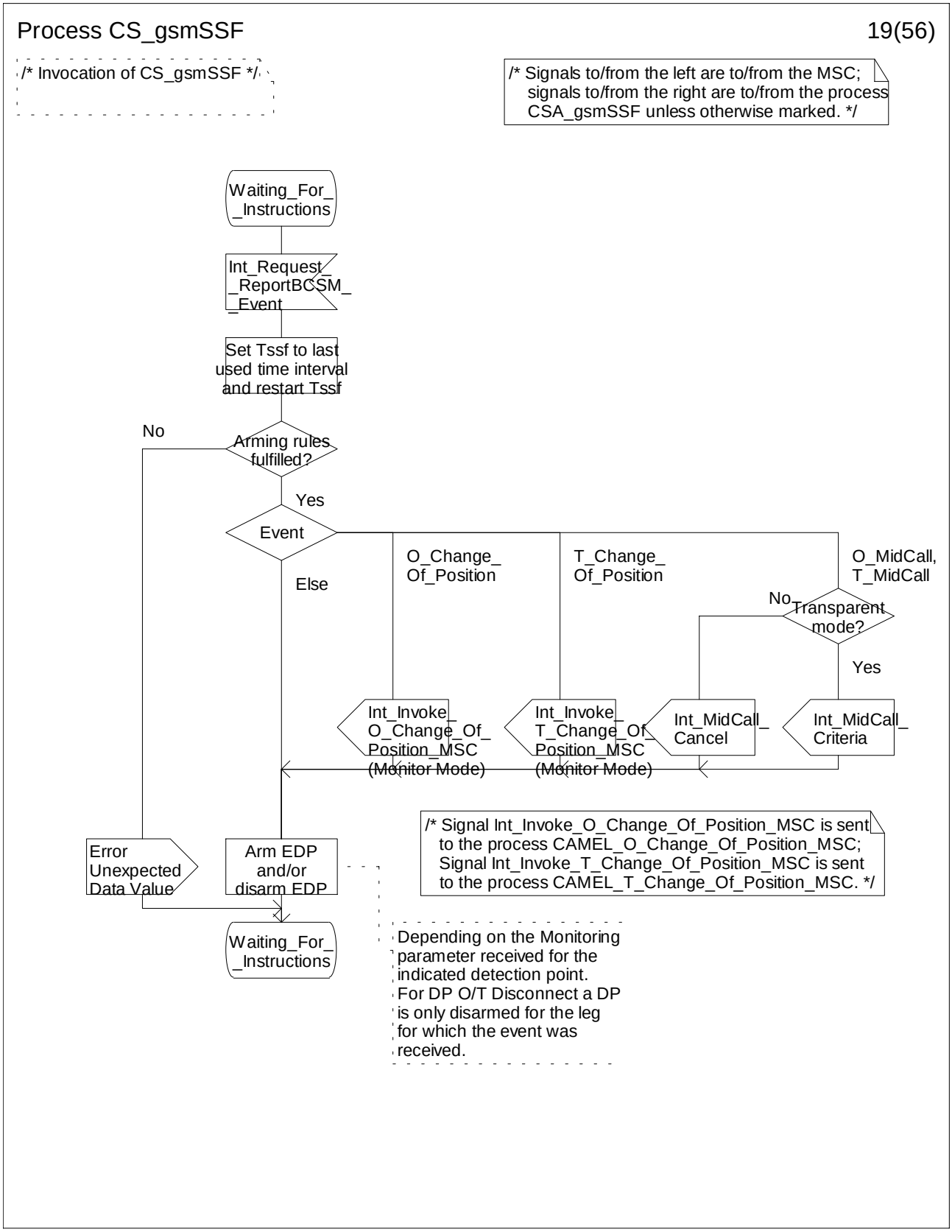


Figure 4.95s: Process CS_gsmSSF (sheet 19)

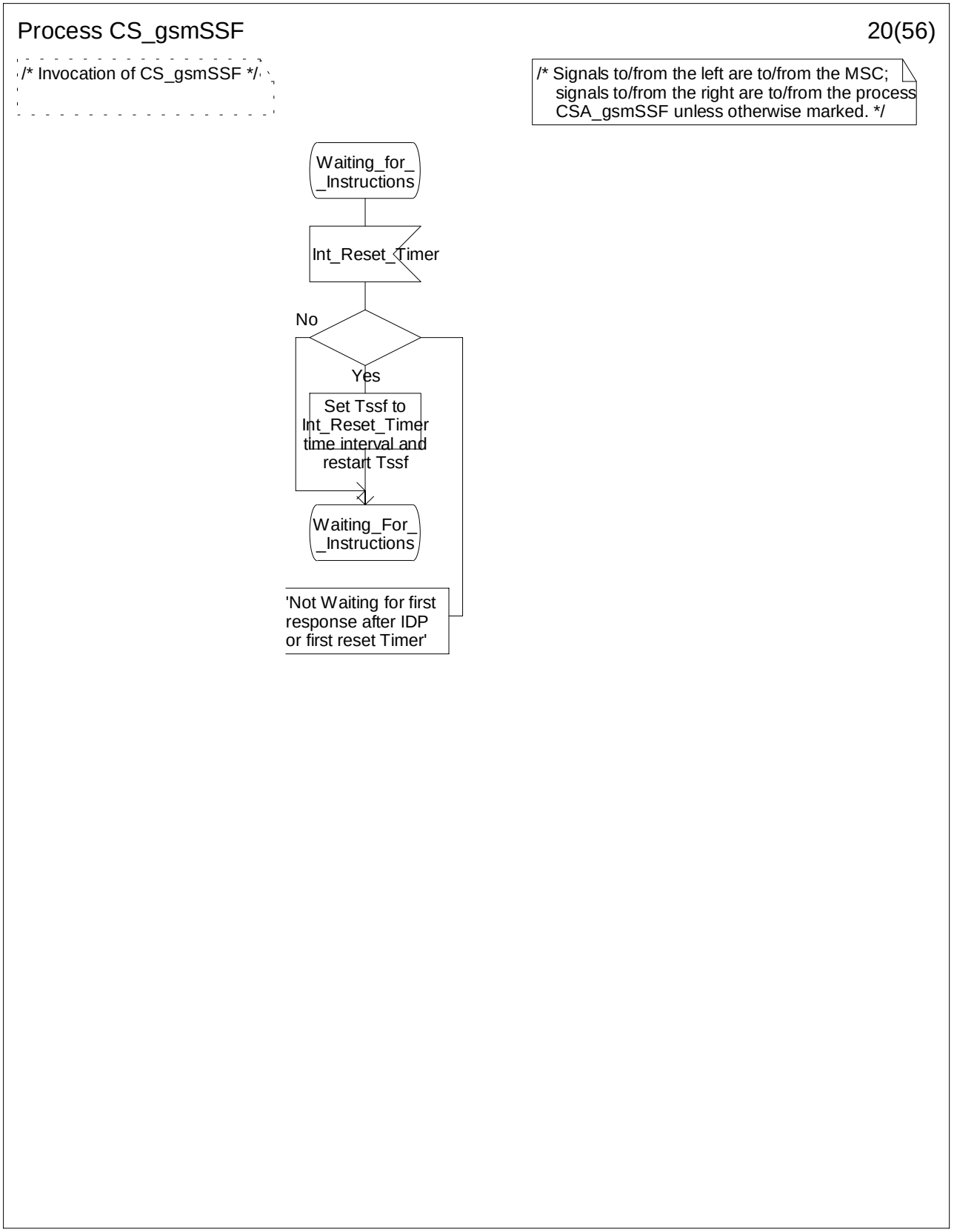


Figure 4.95t: Process CS_gsmSSF (sheet 20)

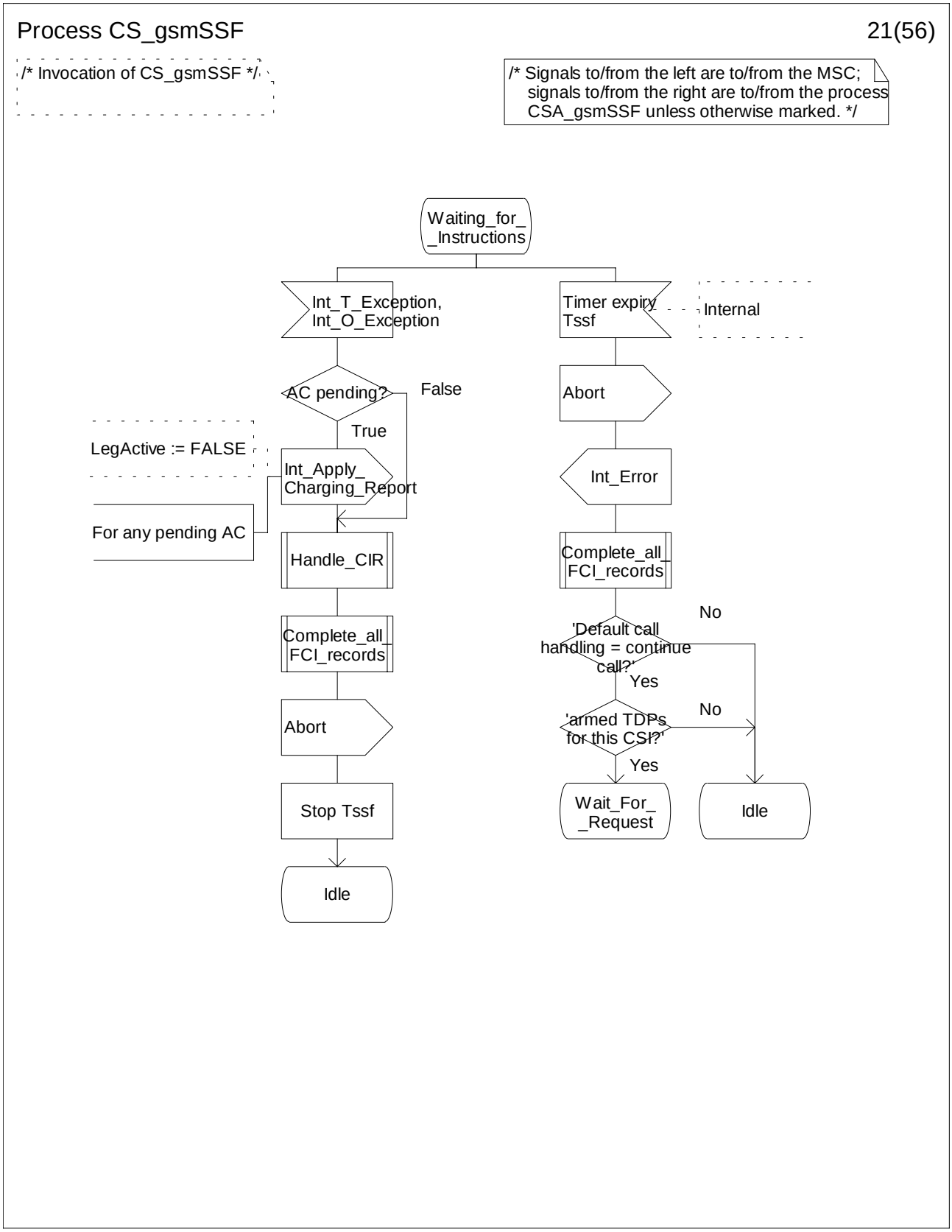


Figure 4.95u: Process CS_gsmSSF (sheet 21)

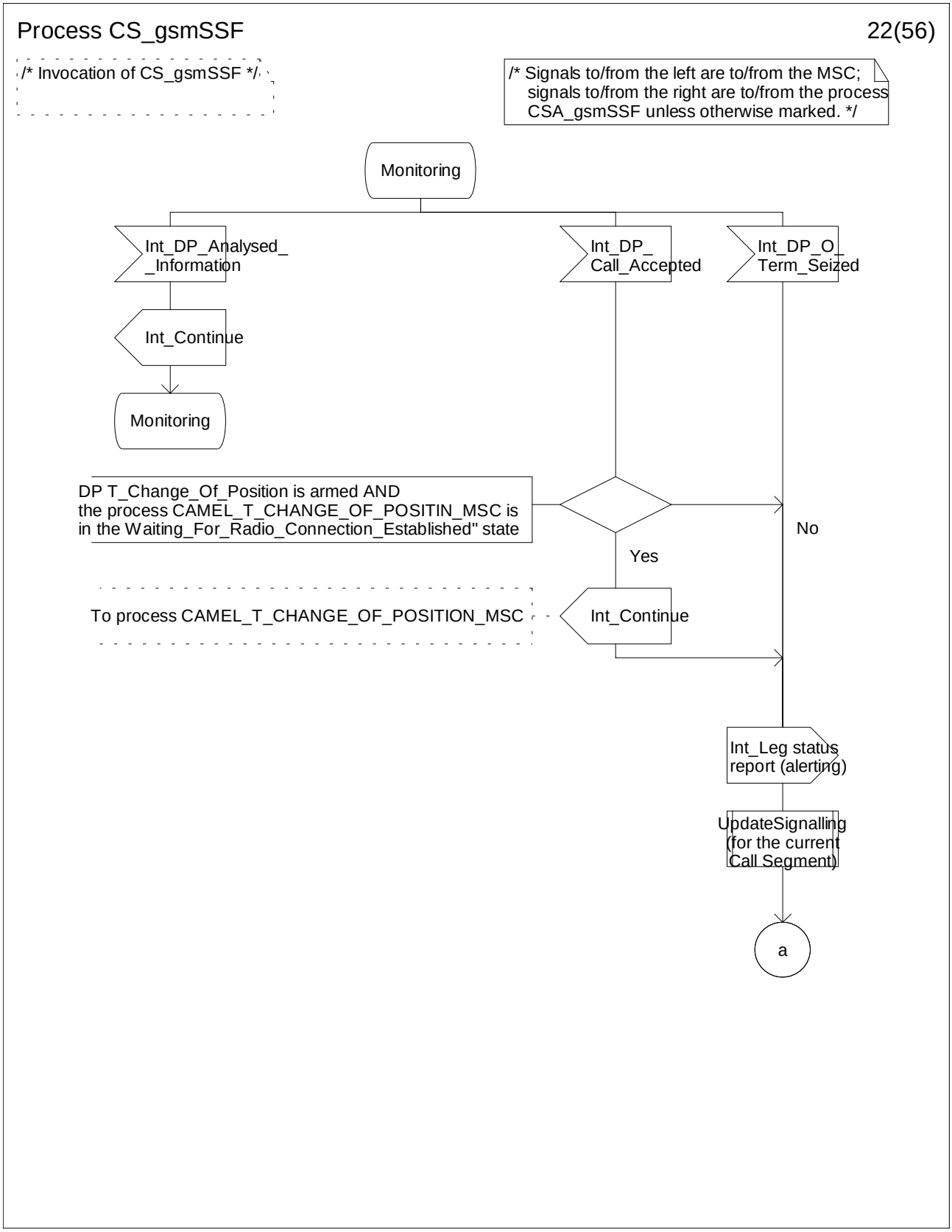


Figure 4.95v: Process CS_gsmSSF (sheet 22)

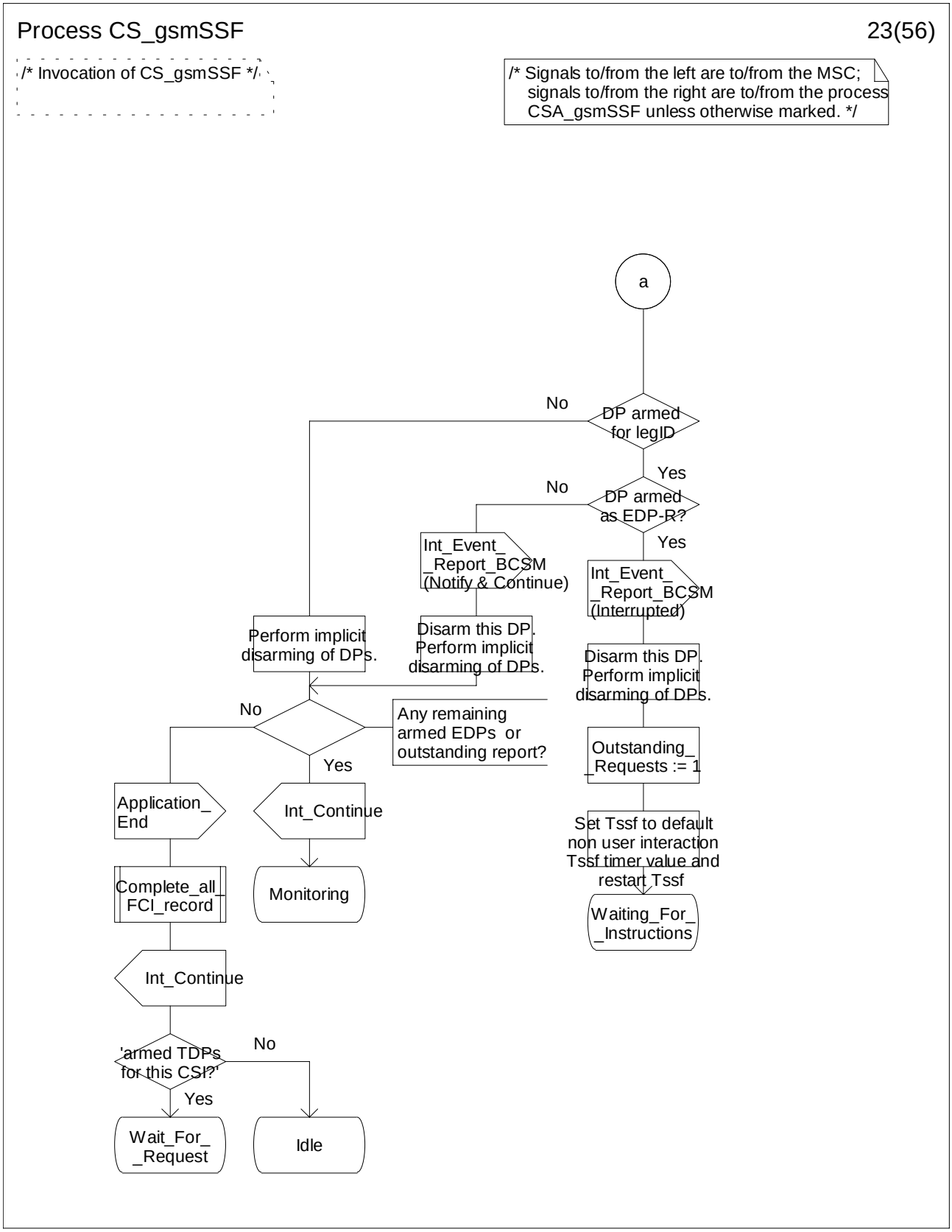


Figure 4.95w: Process CS_gsmSSF (sheet 23)

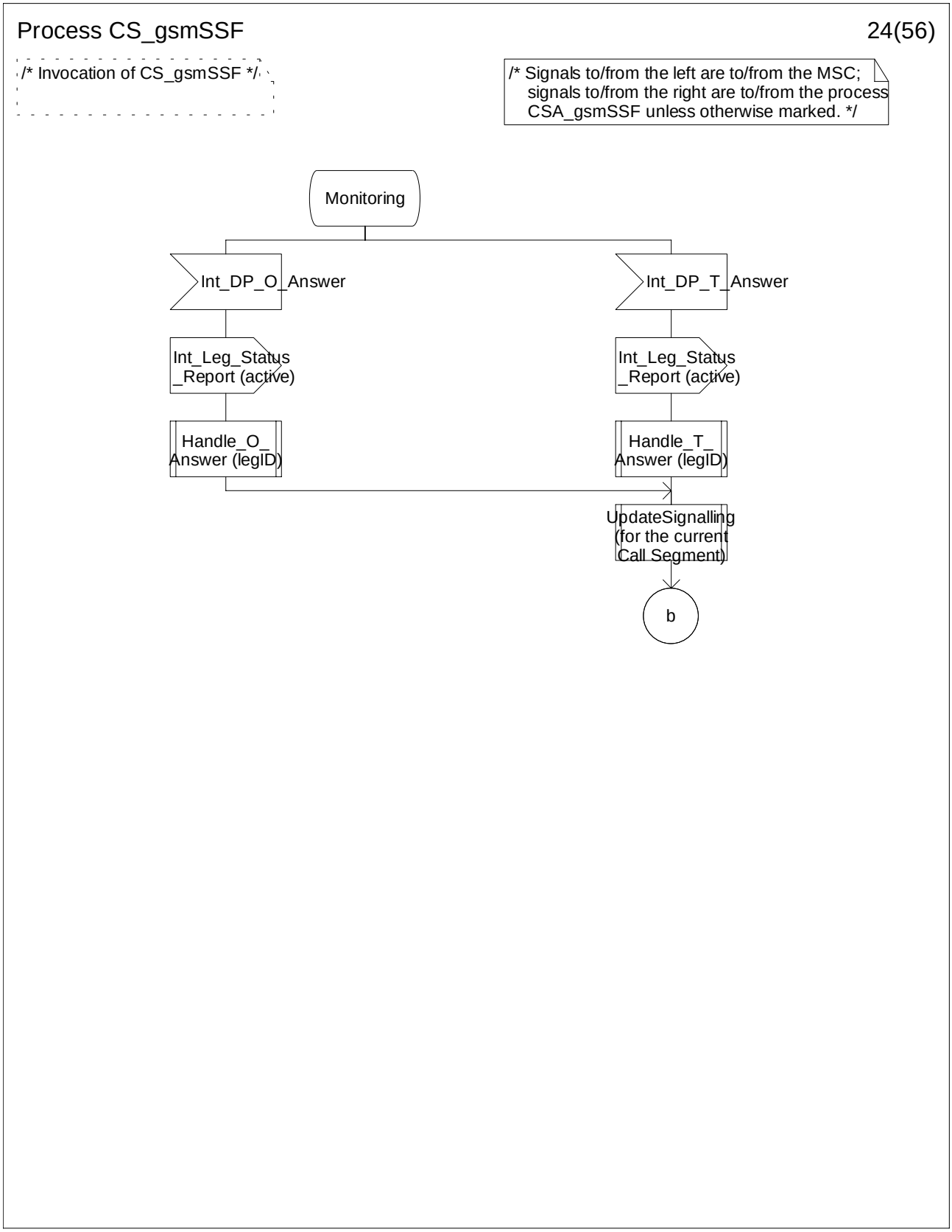


Figure 4.95x: Process CS_gsmSSF (sheet 24)

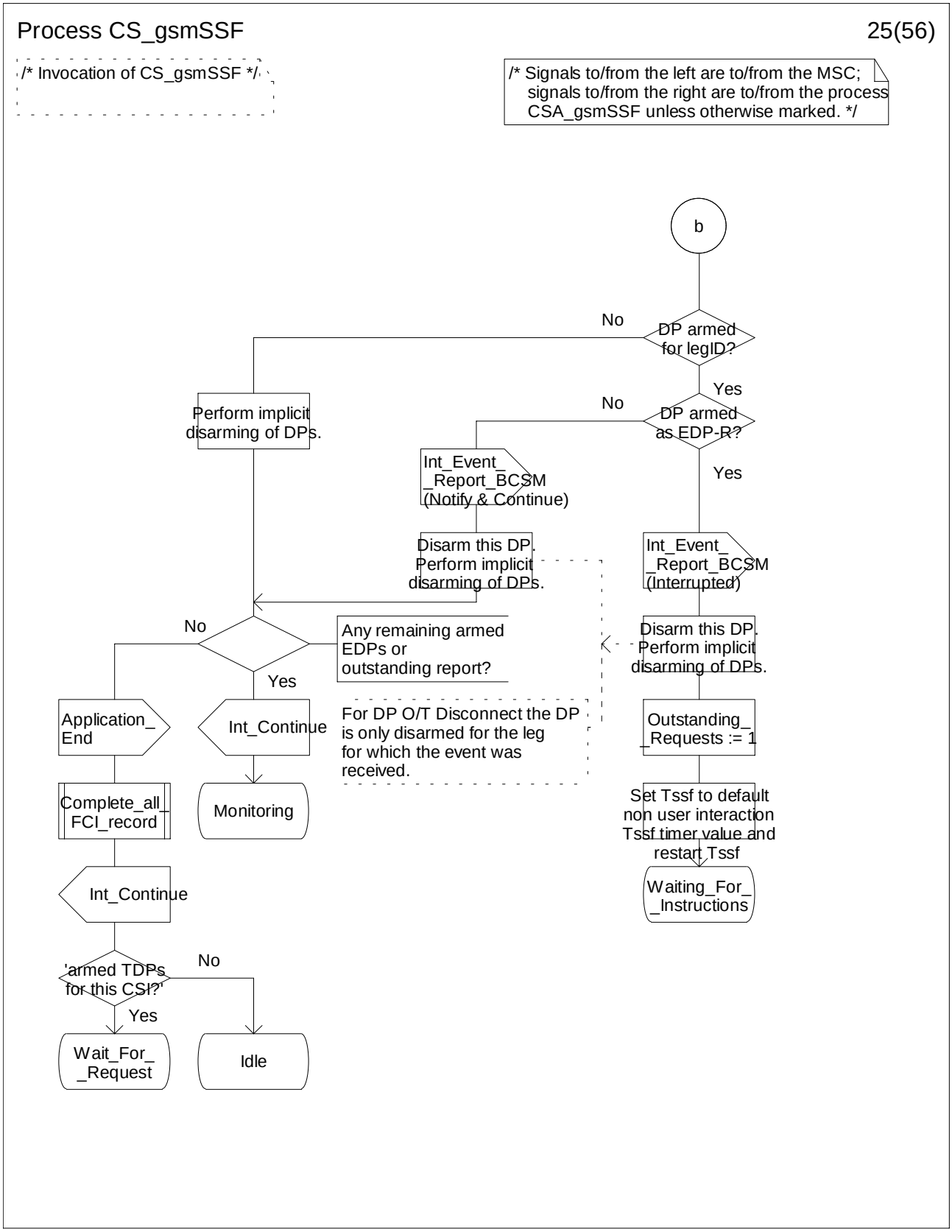


Figure 4.95y: Process CS_gsmSSF (sheet 25)

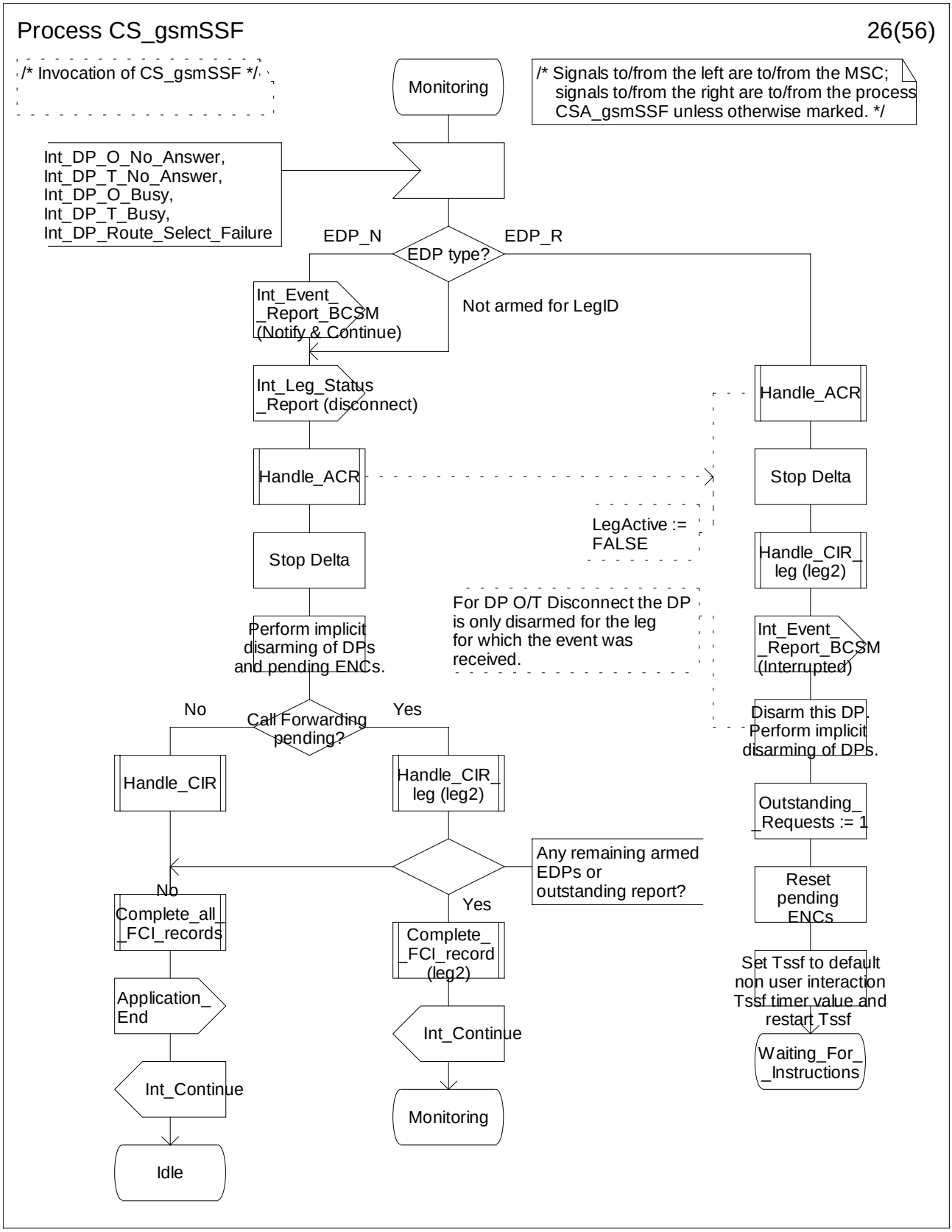


Figure 4.95z: Process CS_gsmSSF (sheet 26)

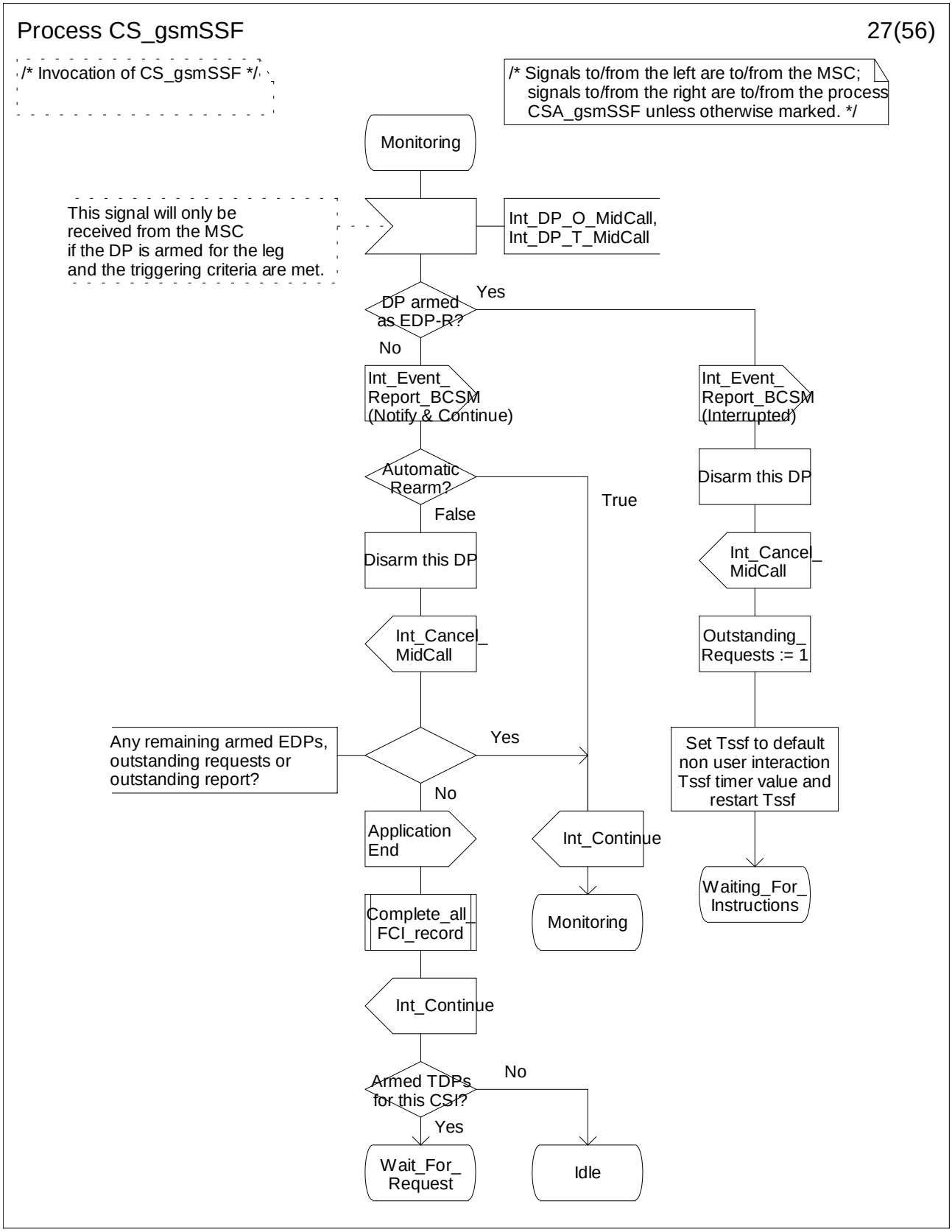


Figure 4.95aa: Process CS_gsmSSF (sheet 27)

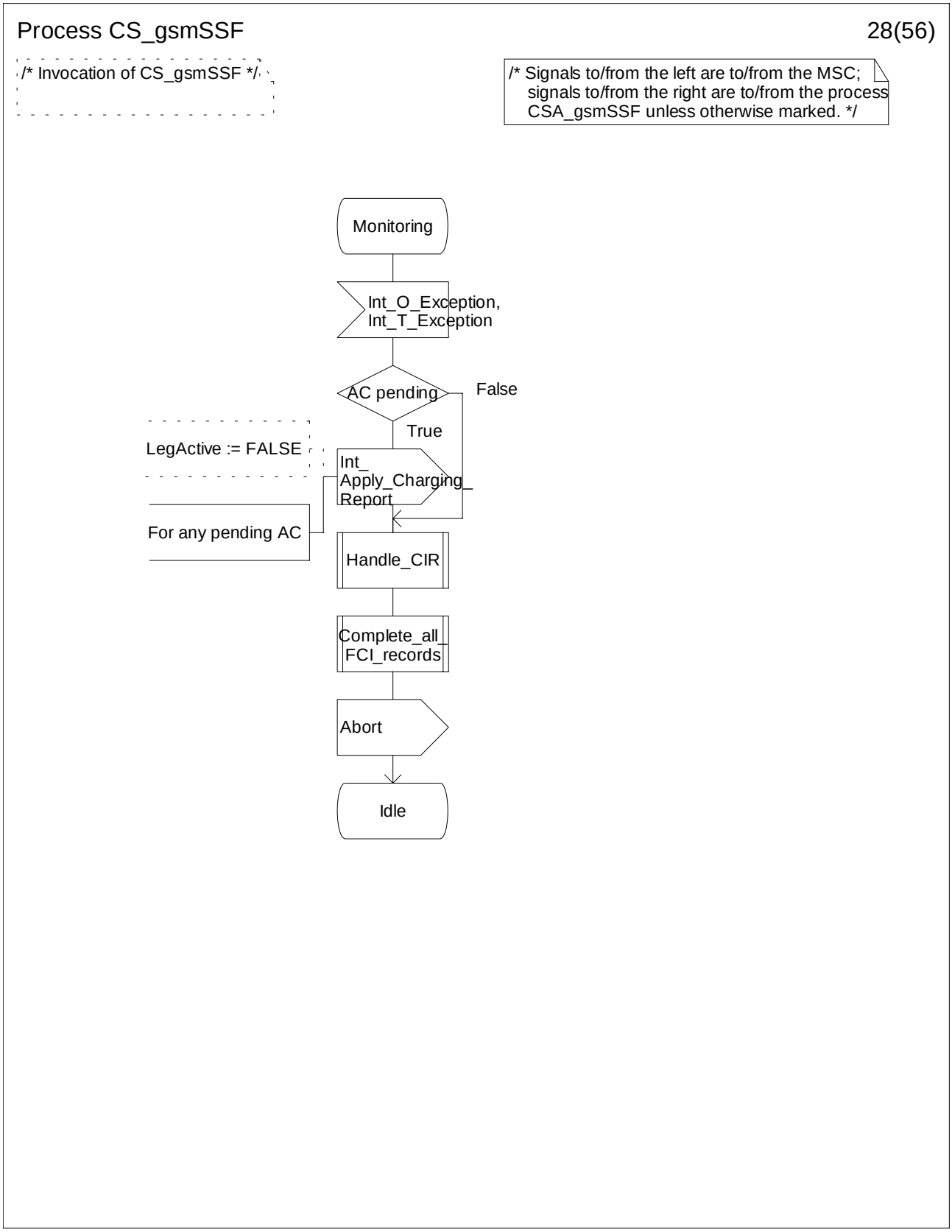
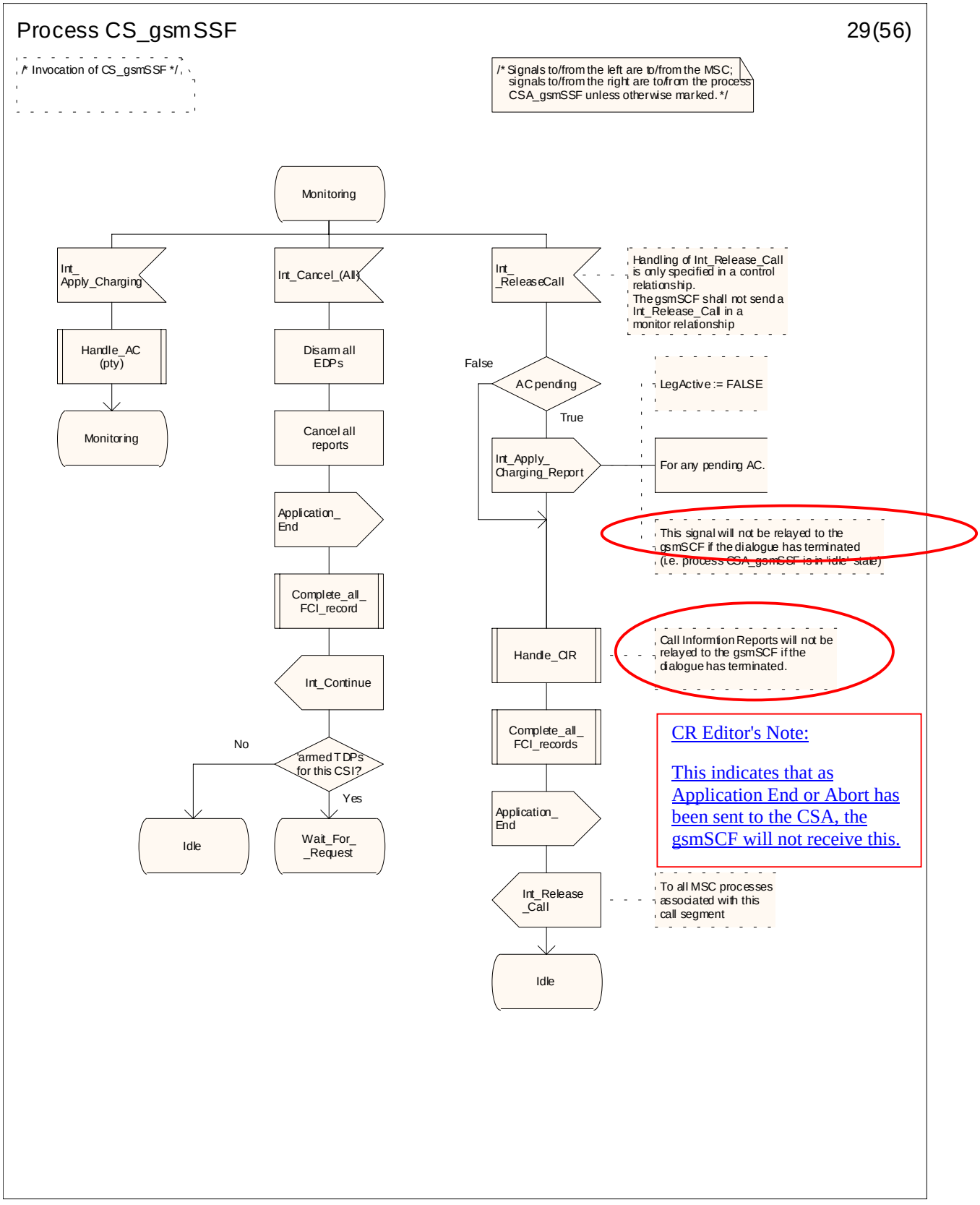


Figure 4.95bb: Process CS_gsmSSF (sheet 28)


Process CS_gsmSSF
29(56)
/* Invocation of CS_gsmSSF */
/* Signals to/from the left are to/from the MSC; signals to/from the right are to/from the process CSA_gsmSSF unless otherwise marked. */
Monitoring
Int_ Apply_Charging
Handle_AC (pty)
Monitoring
Int_Cancel_(All)
Disarm all EDPs
Cancel all reports
Application_ End
Complete_all_ FCI_record
Int_Continue
No
armed TDPs for this CSI?
Yes
Idle
Wait_For_ _Request
Int_ _ReleaseCall
Handling of Int_Release_Call is only specified in a control relationship.
The gsmSCF shall not send a Int_Release_Call in a monitor relationship
False
AC pending
LegActive := FALSE
True
Int_Apply_ Charging_Report
For any pending AC.
This signal will not be relayed to the gsmSCF if the dialogue has terminated (i.e. process CSA_gsmSSF is in 'idle' state)
Handle_CIR
Call Information Reports will not be relayed to the gsmSCF if the dialogue has terminated.
Complete_all_ FCI_records
Application_ End
Int_Release _Call
To all MSC processes associated with this call segment
Idle
CR Editor's Note:
This indicates that as Application End or Abort has been sent to the CSA, the gsmSCF will not receive this.

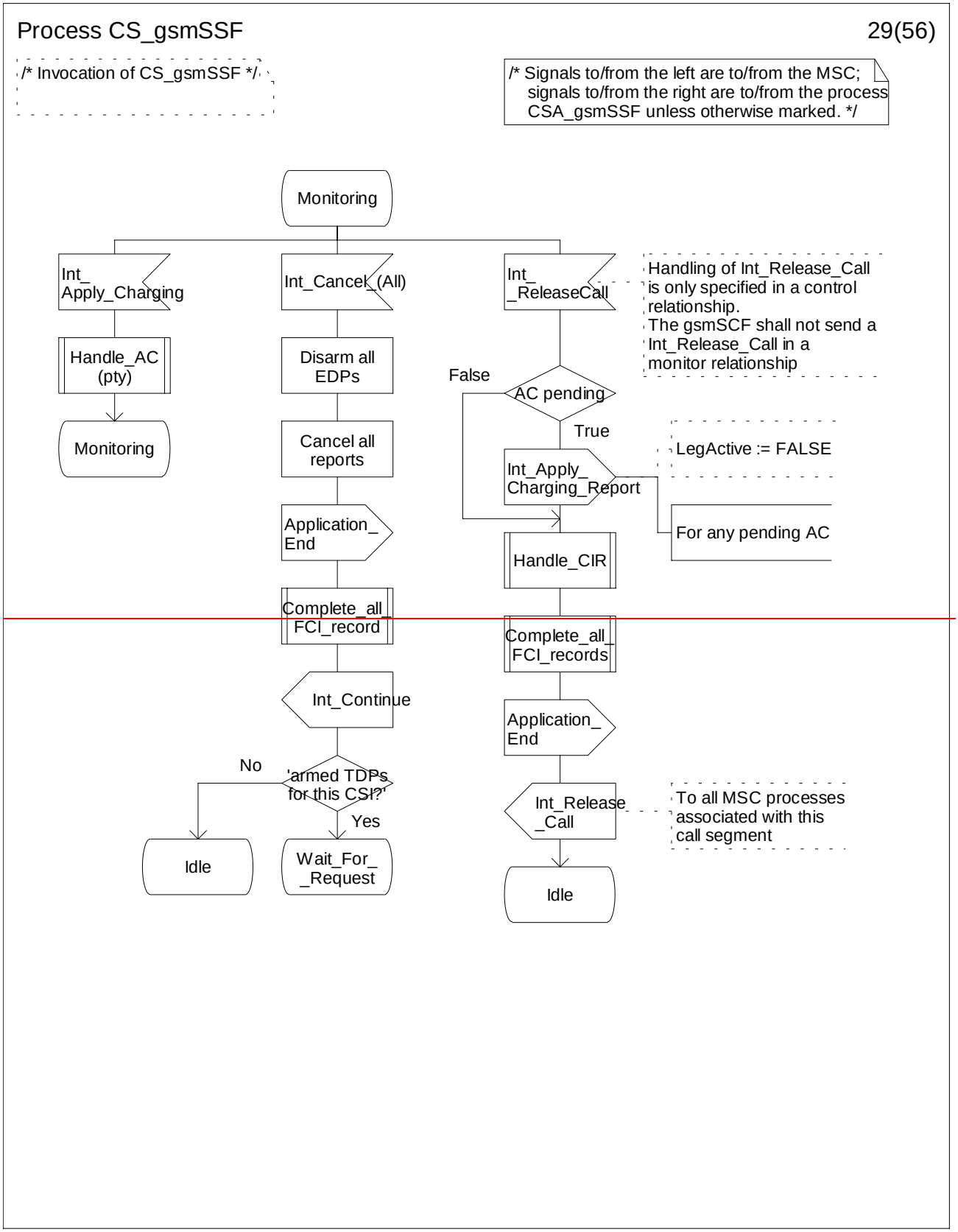


Figure 4.95cc: Process CS_gsmSSF (sheet 29)

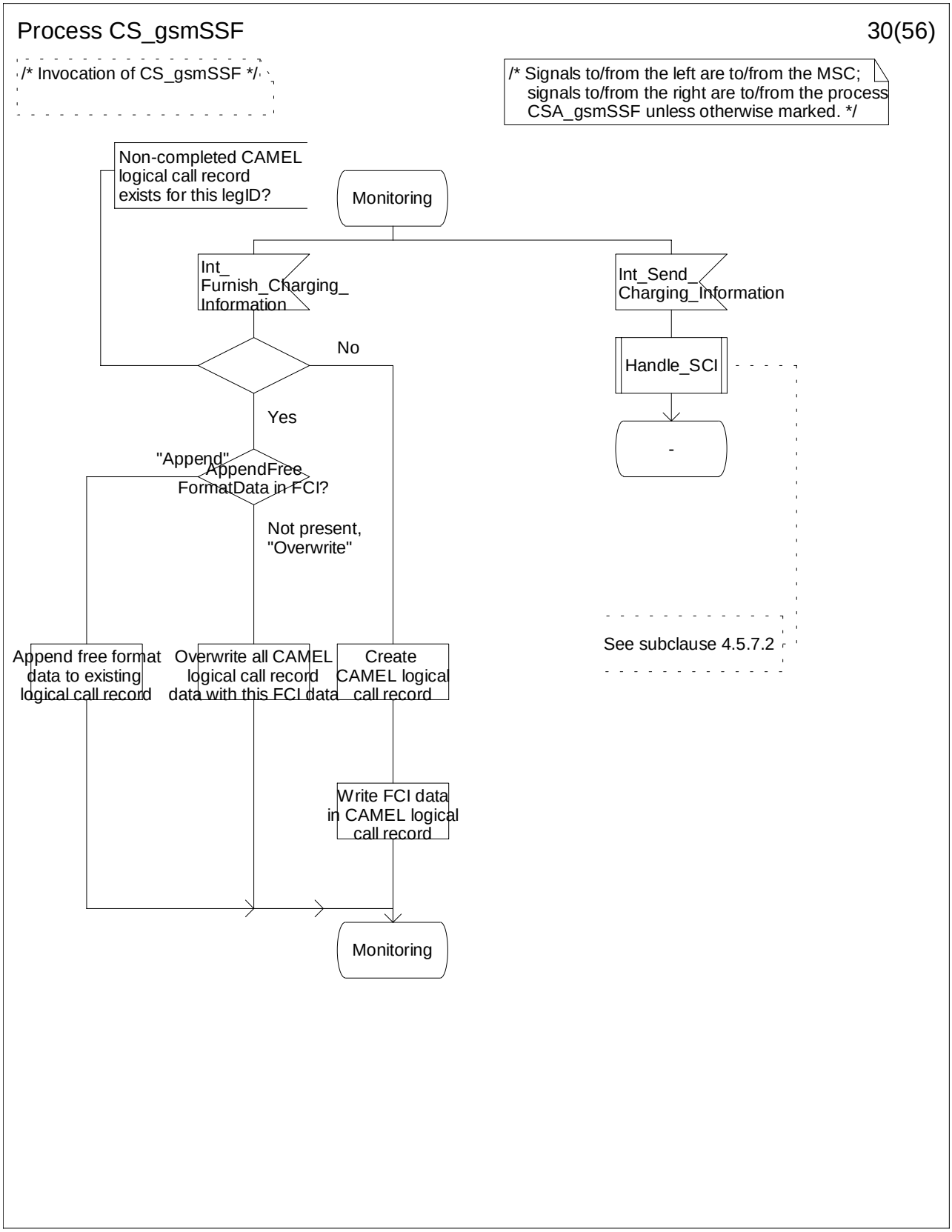


Figure 4.95dd: Process CS_gsmSSF (sheet 30)

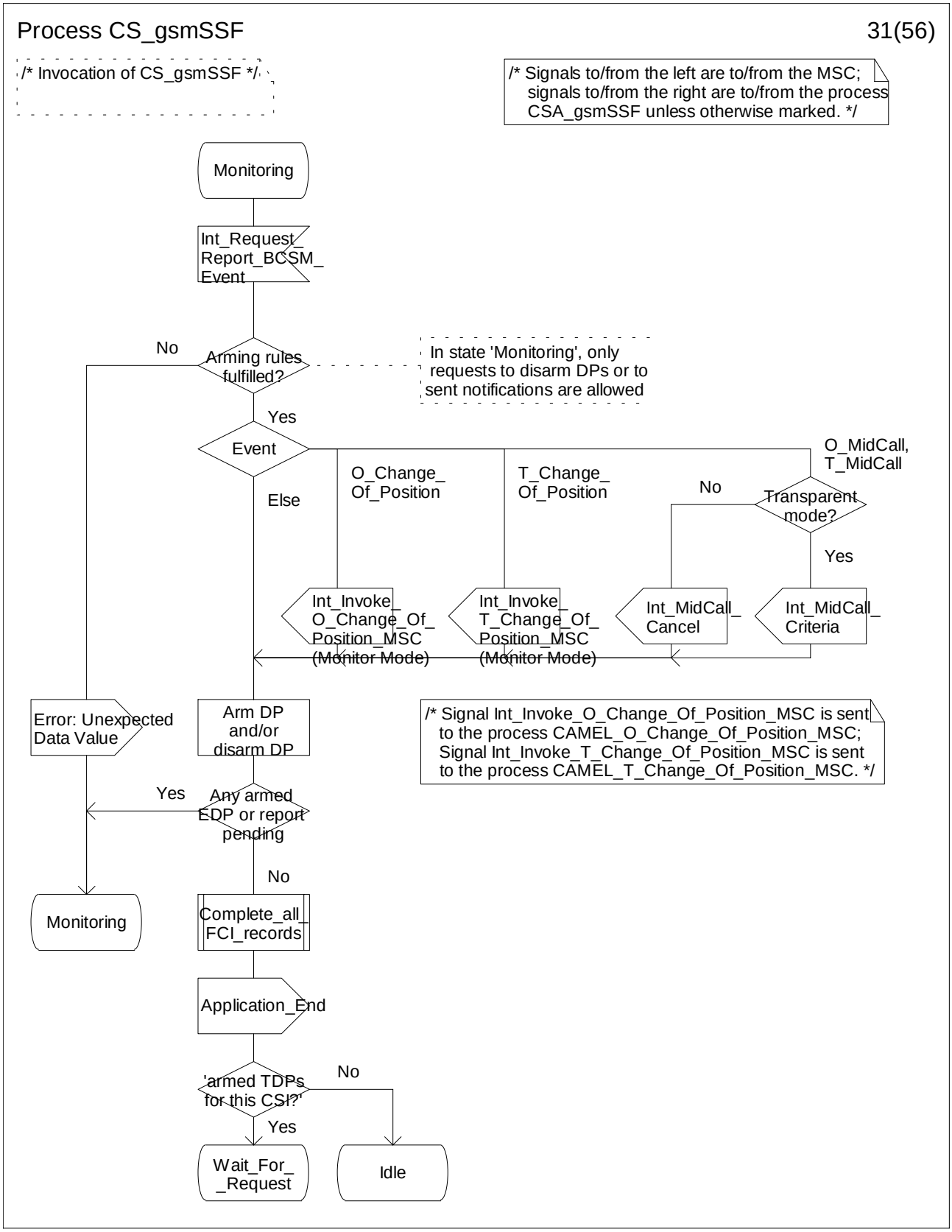


Figure 4.95ee: Process CS_gsmSSF (sheet 31)

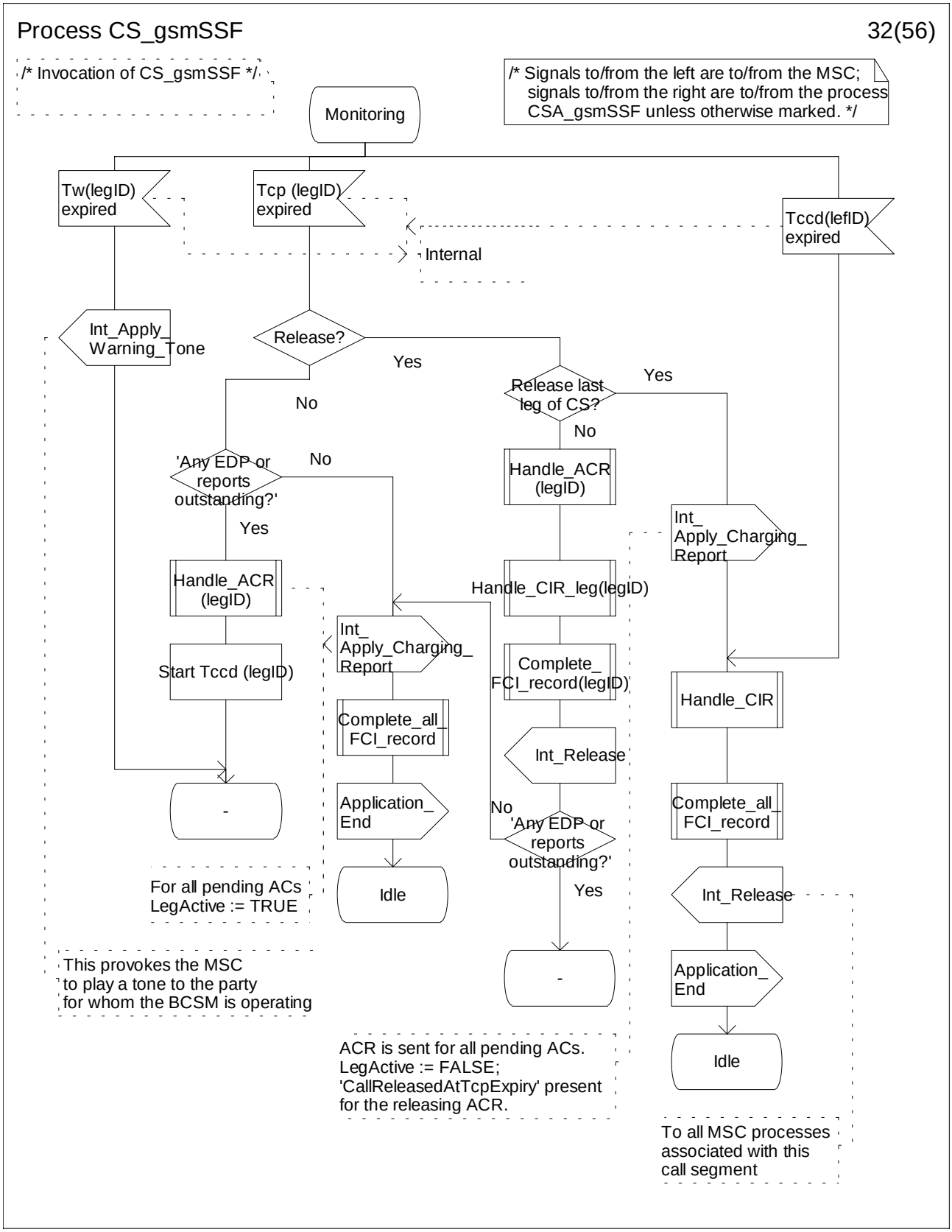


Figure 4.95ff: Process CS_gsmSSF (sheet 32)

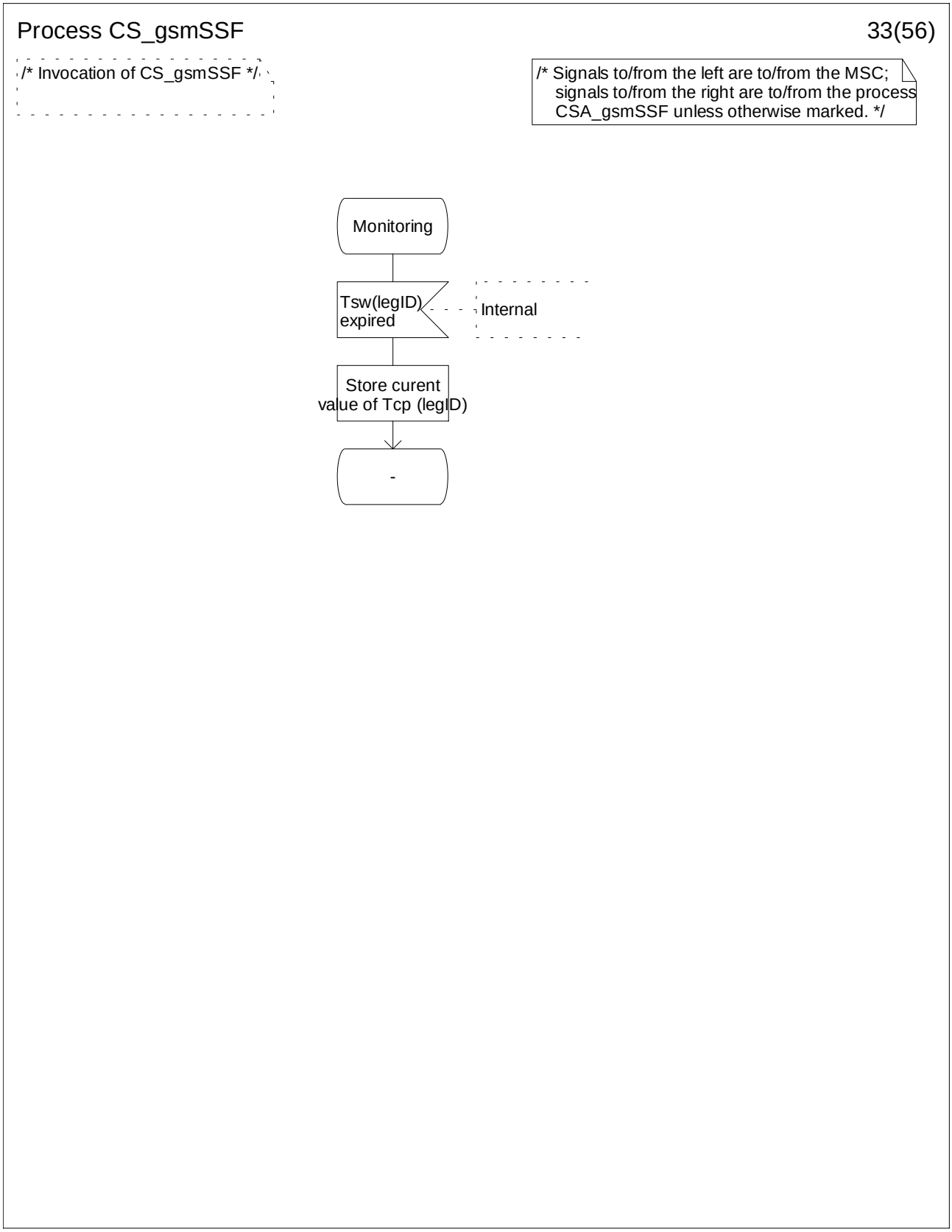


Figure 4.95gg: Process CS_gsmSSF (sheet 33)

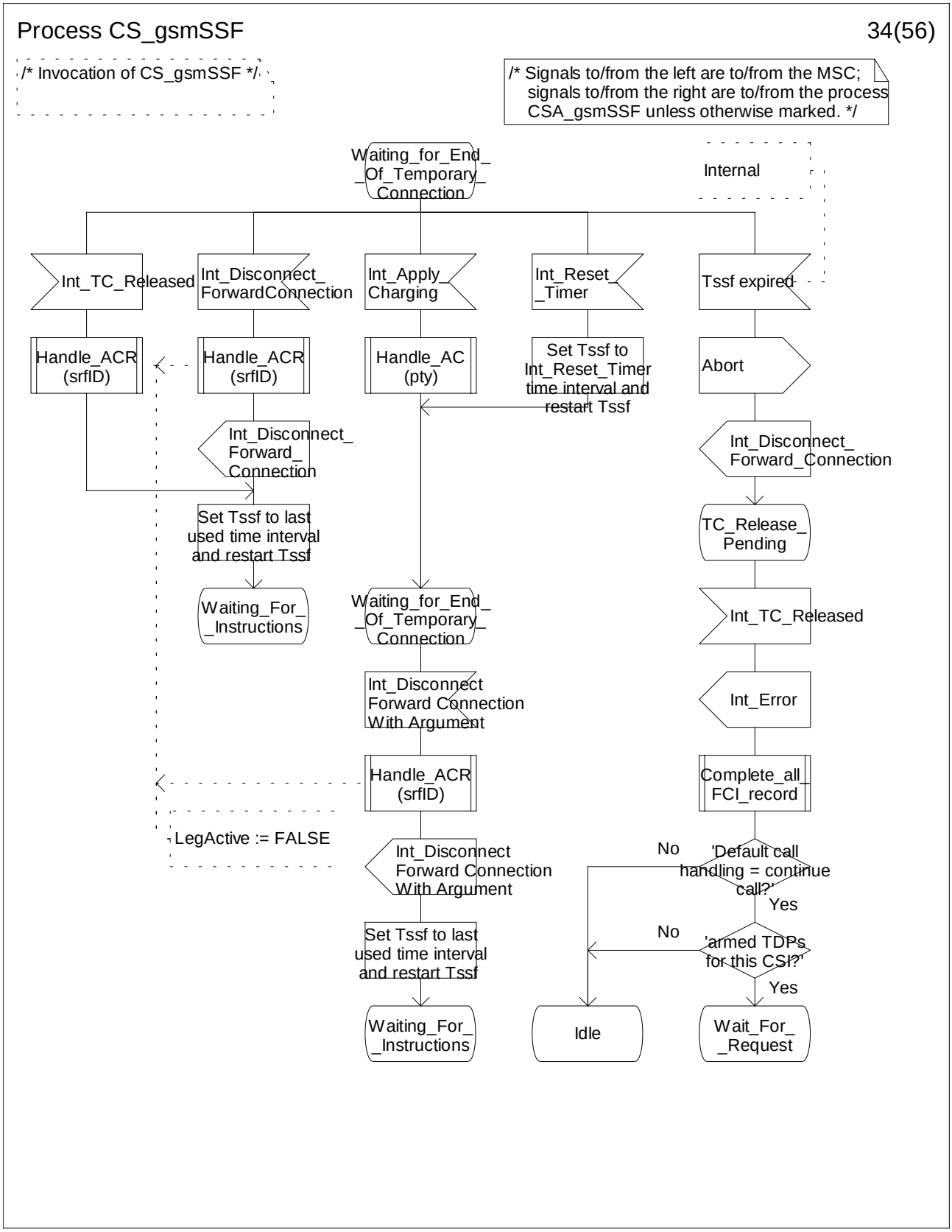


Figure 4.95hh: Process CS_gsmSSF (sheet 34)

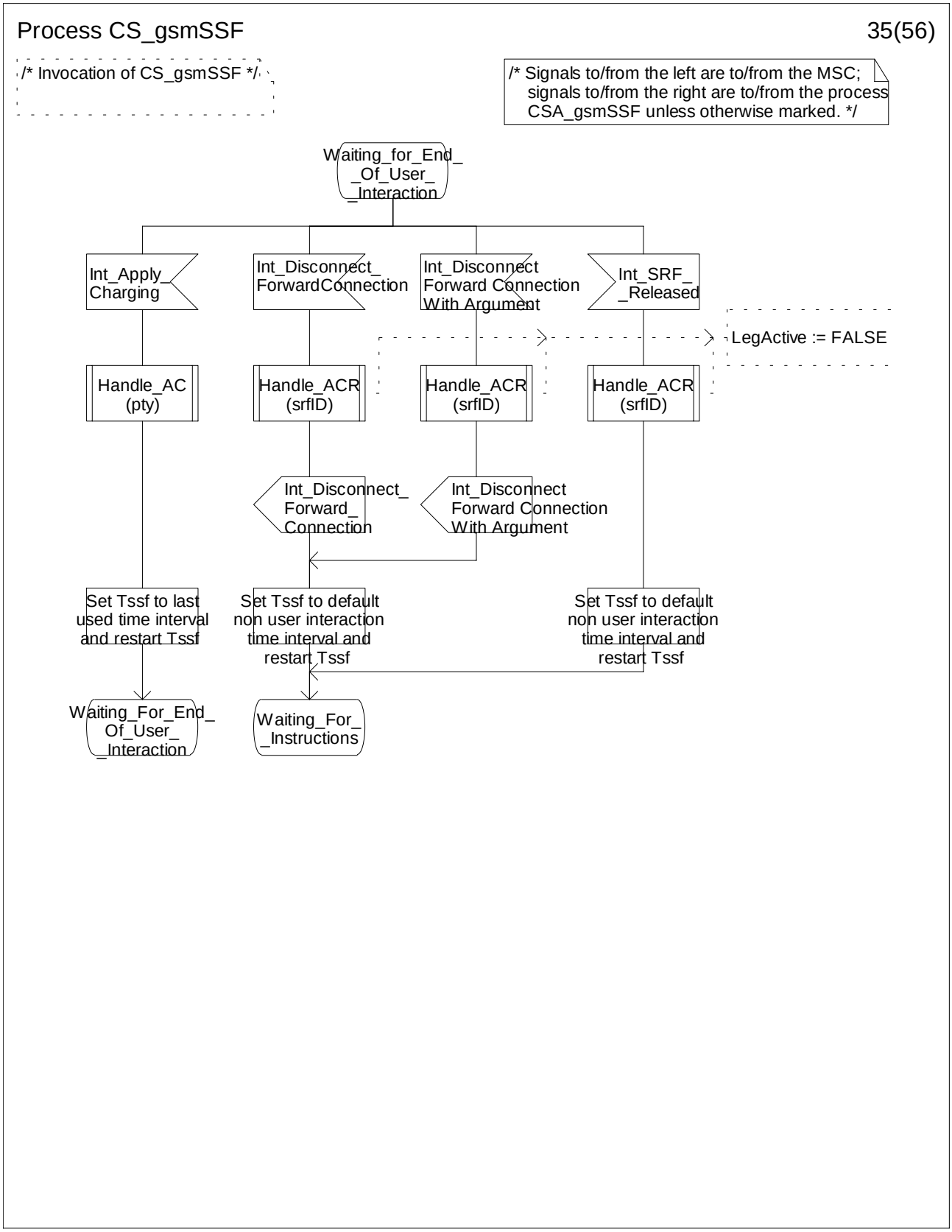


Figure 4.95ii: Process CS_gsmSSF (sheet 35)

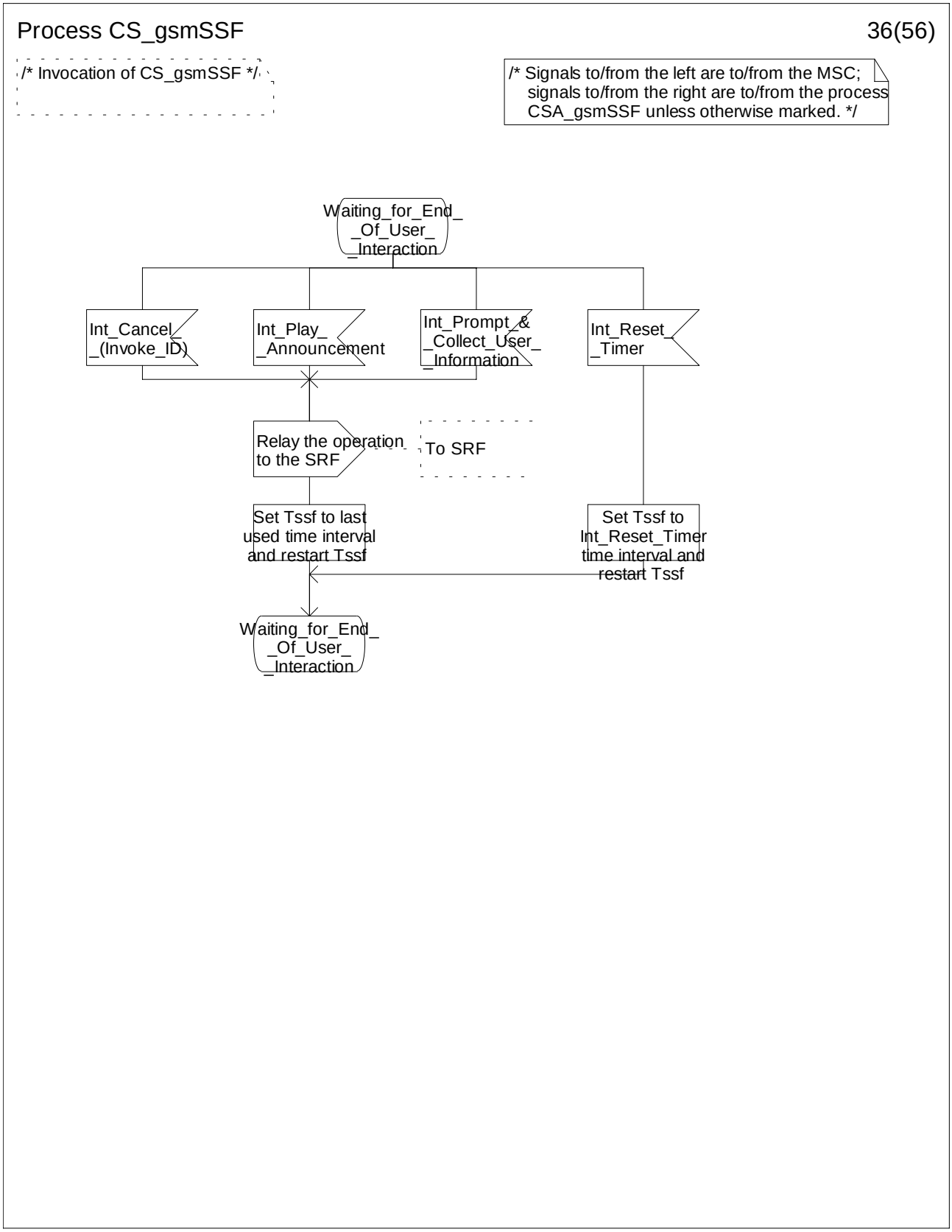


Figure 4.95jj: Process CS_gsmSSF (sheet 36)

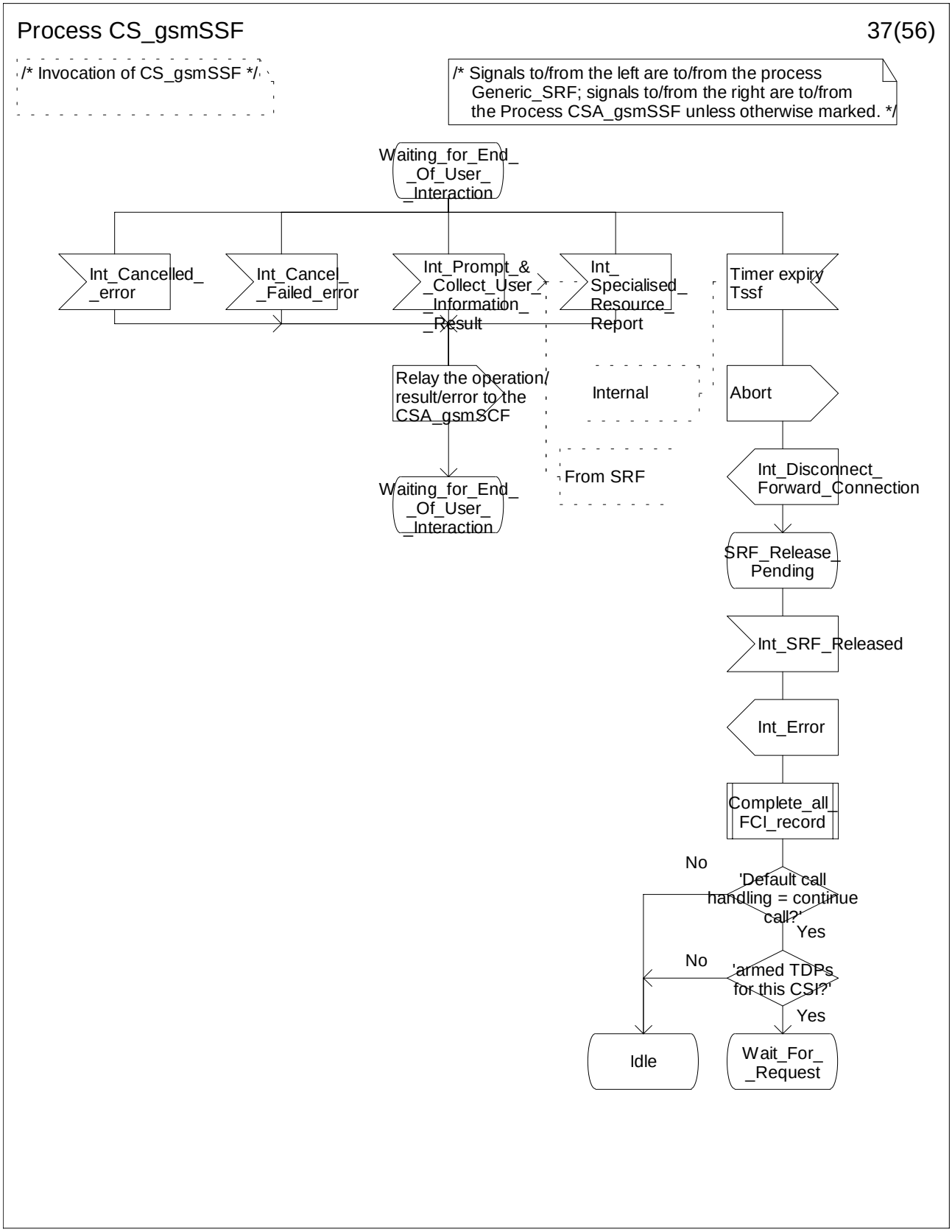
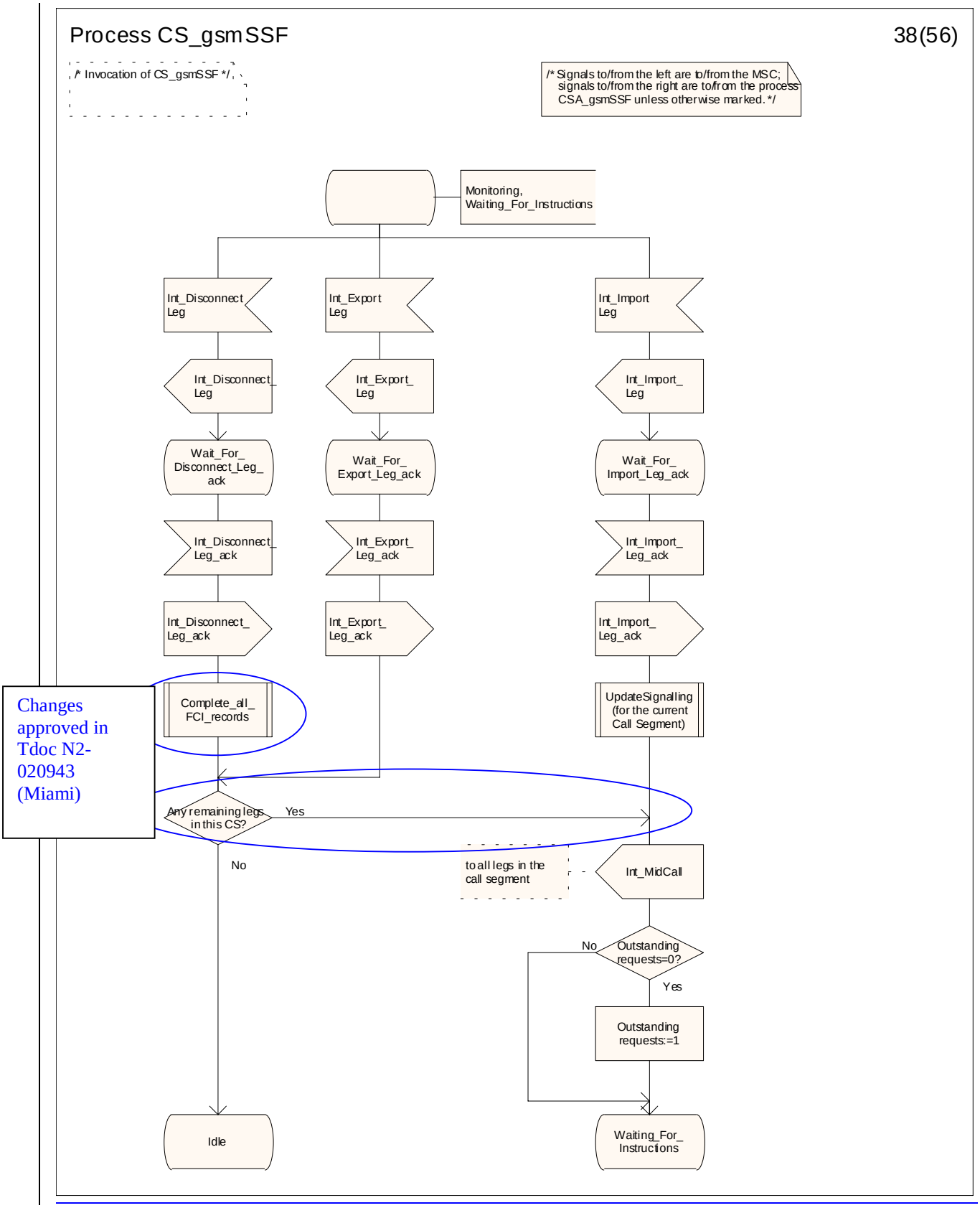


Figure 4.95kk: Process CS_gsmSSF (sheet 37)


Process CS_gsmSSF
38(56)
/* Invocation of CS_gsmSSF */
/* Signals to/from the left are to/from the MSC; signals to/from the right are to/from the process CSA_gsmSSF unless otherwise marked. */
Monitoring, Waiting_For_Instructions
Int_Disconnect Leg
Int_Export Leg
Int_Import Leg
Int_Disconnect_ Leg
Int_Export_ Leg
Int_Import_ Leg
Wait_For_ Disconnect_Leg_ ack
Wait_For_ Export_Leg_ack
Wait_For_ Import_Leg_ack
Int_Disconnect_ Leg_ack
Int_Export_ Leg_ack
Int_Import_ Leg_ack
Int_Disconnect_ Leg_ack
Int_Export_ Leg_ack
Int_Import_ Leg_ack
Complete_all_ FCI_records
UpdateSignalling (for the current Call Segment)
Changes approved in Tdoc N2-020943 (Miami)
Any remaining legs in this CS?
Yes
No
to all legs in the call segment
Int_MidCall
No
Outstanding requests=0?
Yes
Outstanding requests:=1
Idle
Waiting_For_ Instructions

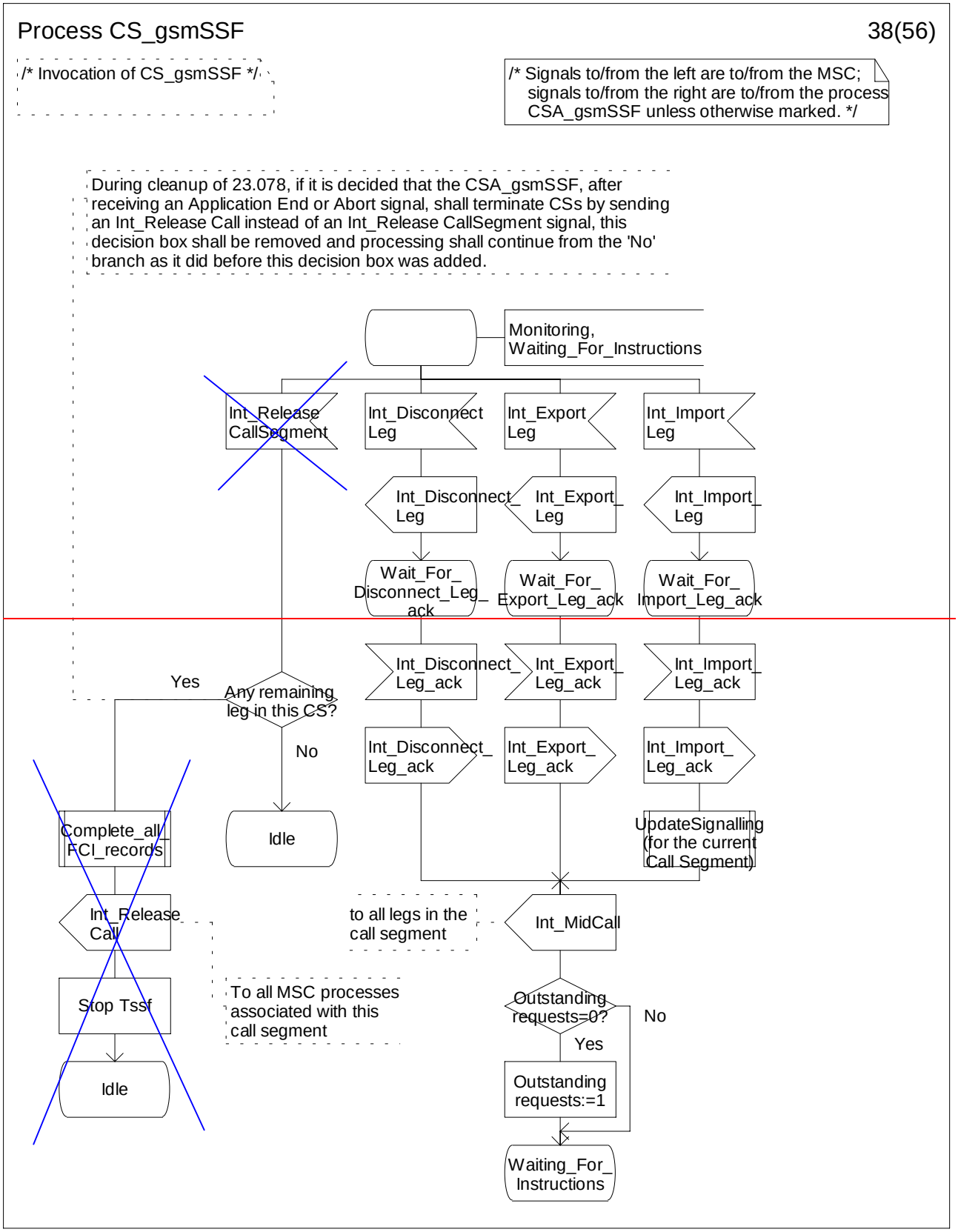


Figure 4.95ll: Process CS_gsmSSF (sheet 38)

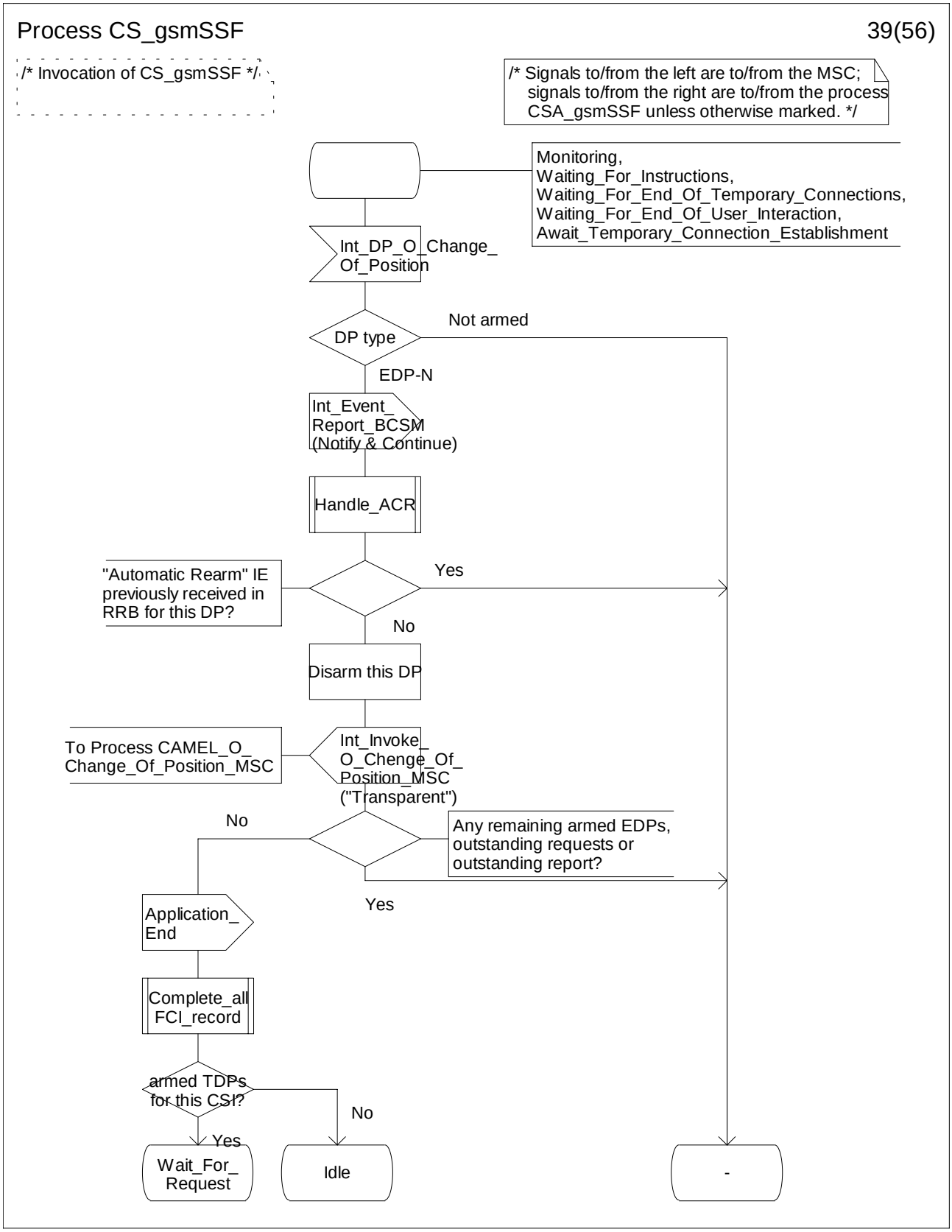


Figure 4.95mm: Process CS_gsmSSF (sheet 39)

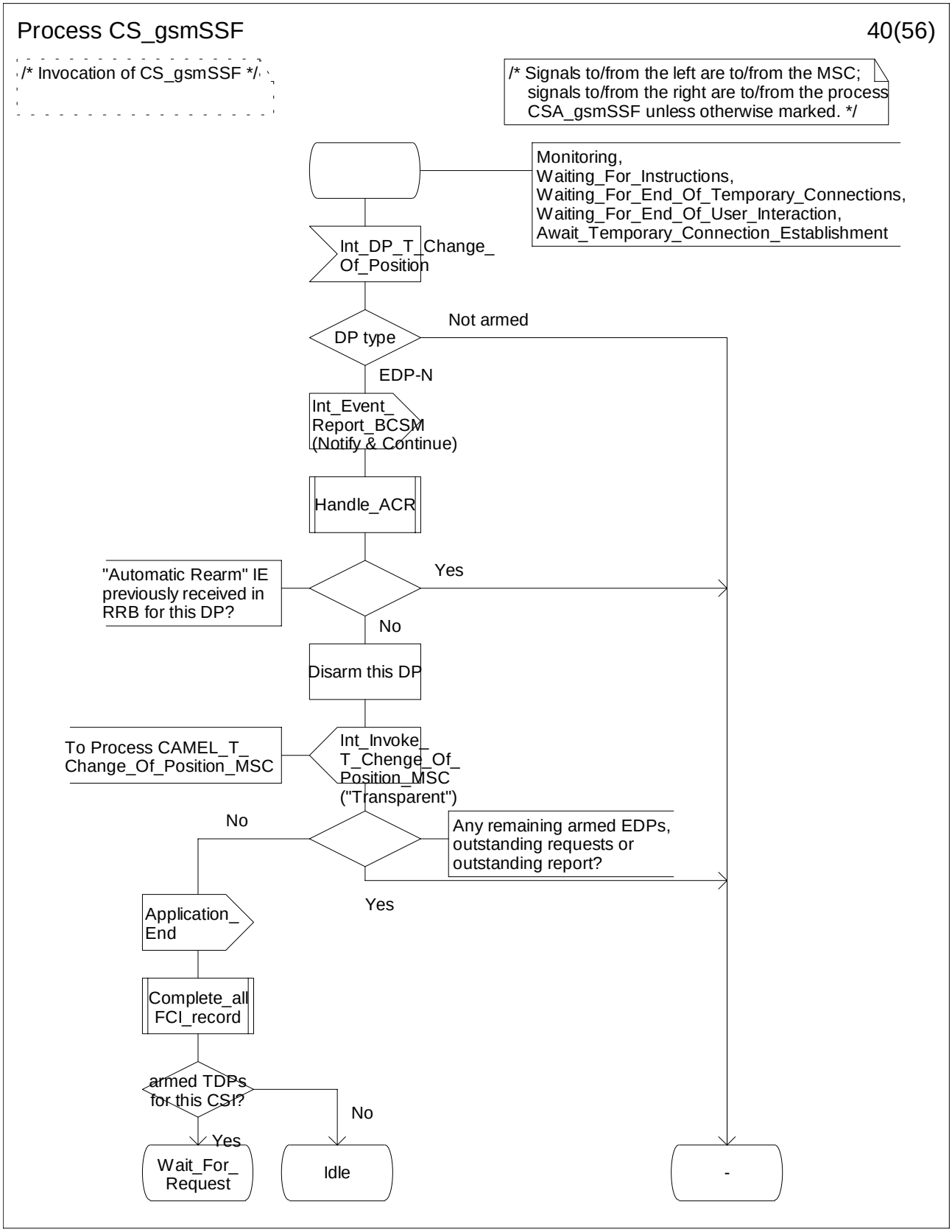


Figure 4.95nn: Process CS_gsmSSF (sheet 40)

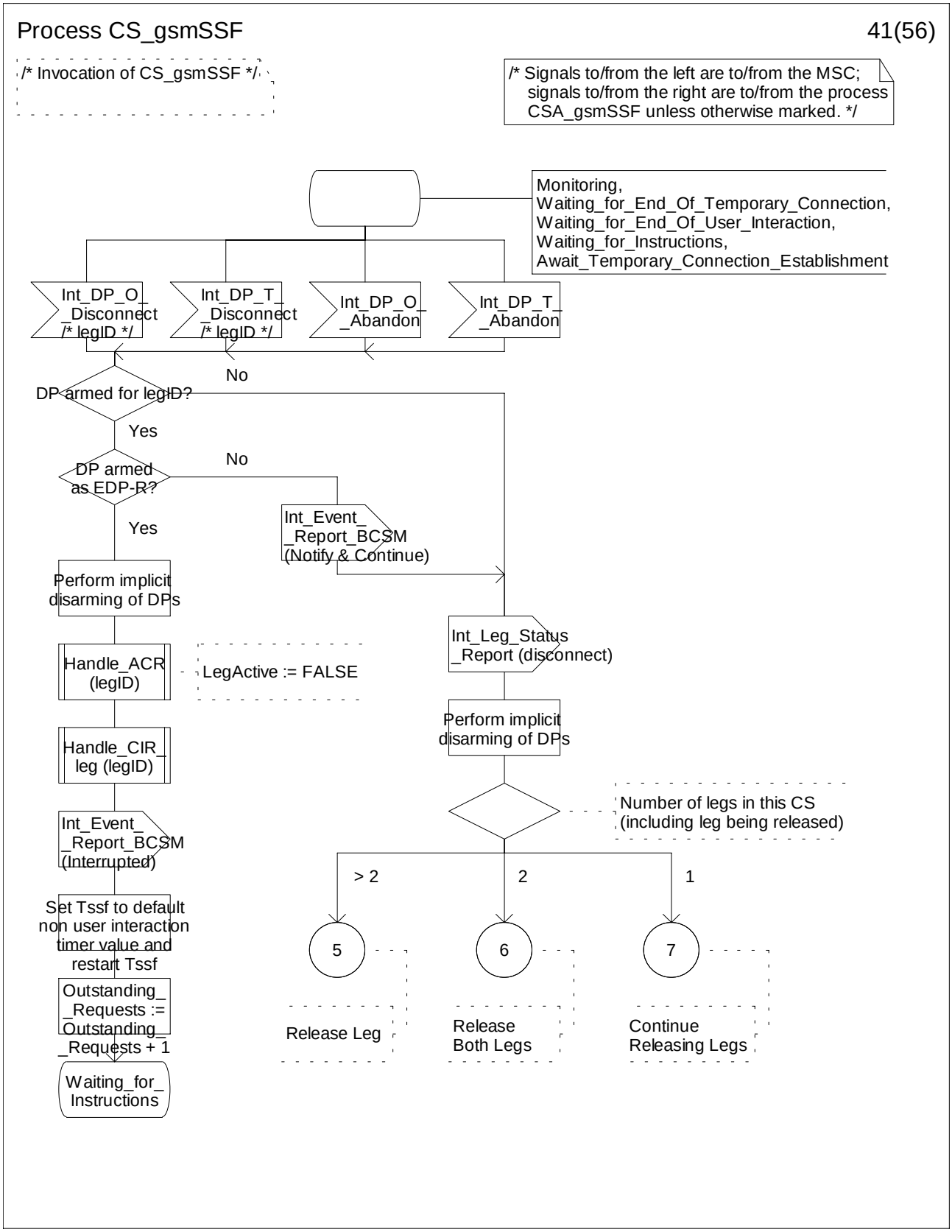


Figure 4.95oo: Process CS_gsmSSF (sheet 41)

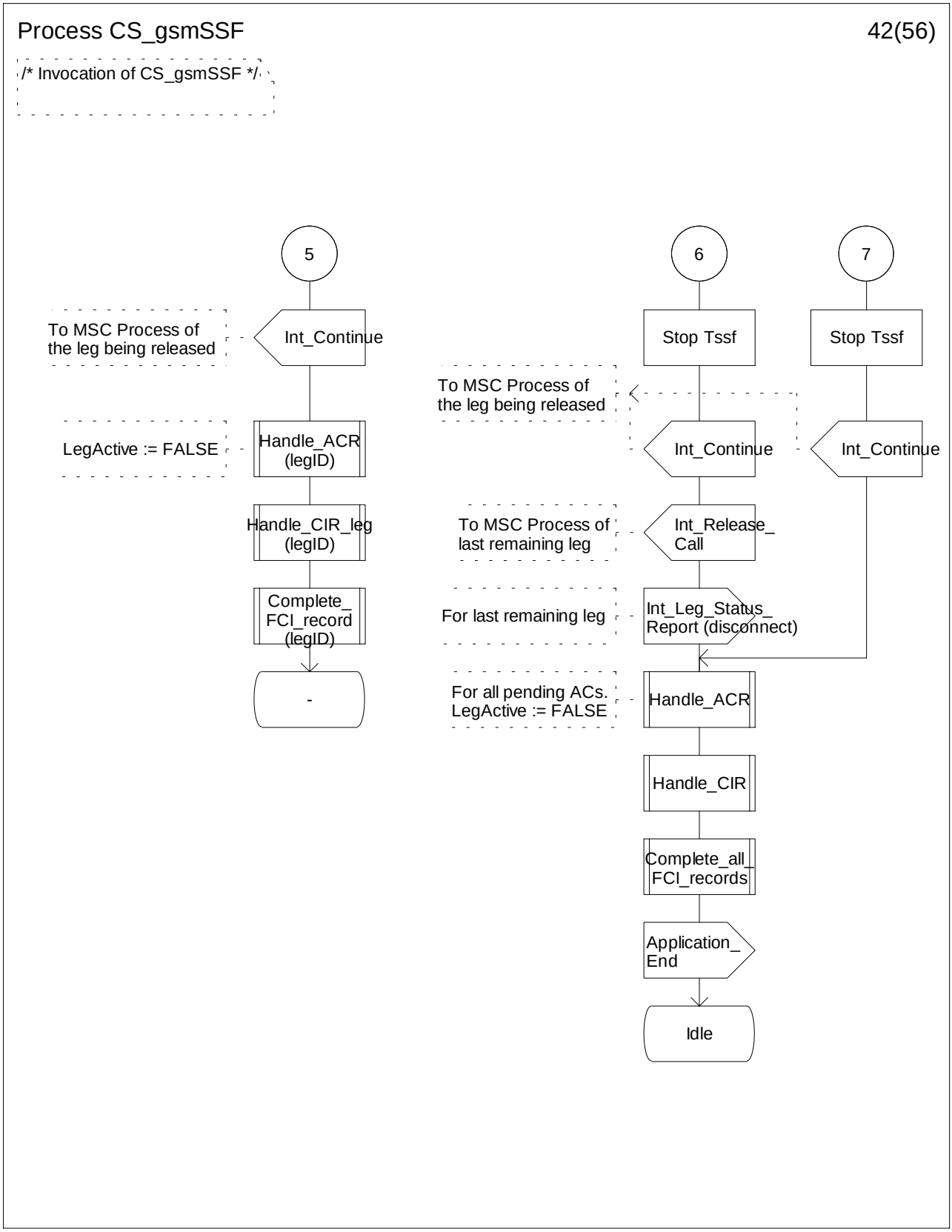


Figure 4.95pp: Process CS_gsmSSF (sheet 42)

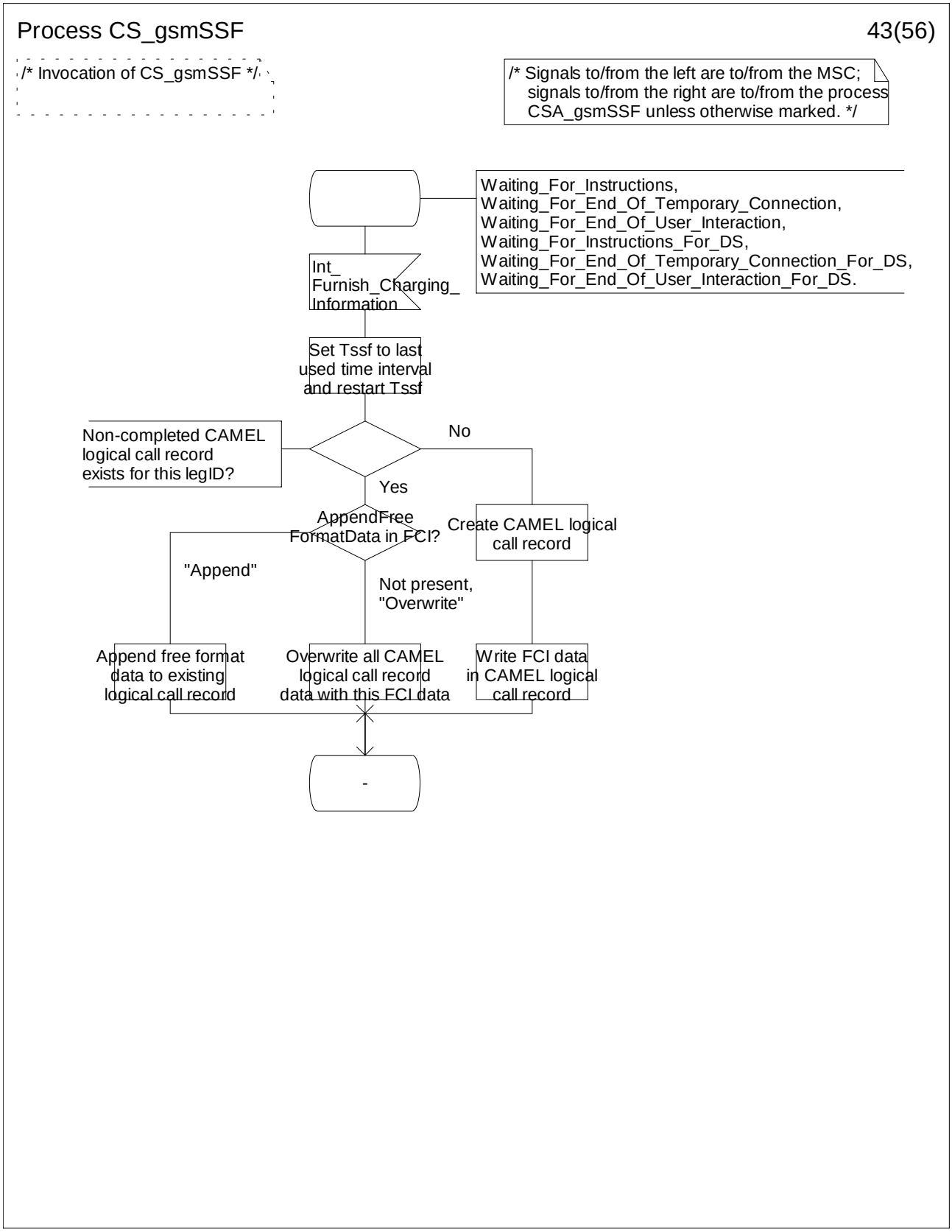


Figure 4.95qq: Process CS_gsmSSF (sheet 43)

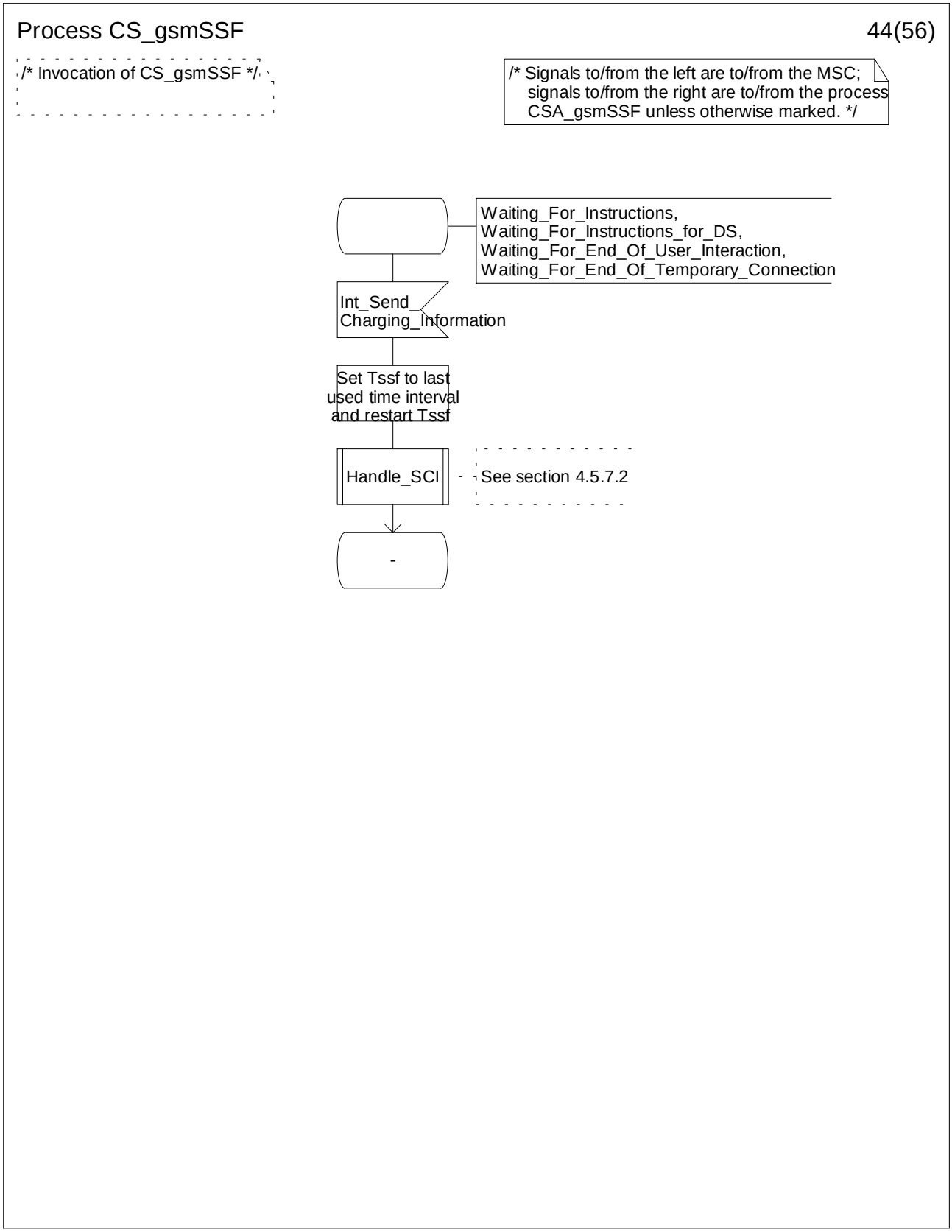


Figure 4.95rr: Process CS_gsmSSF (sheet 44)

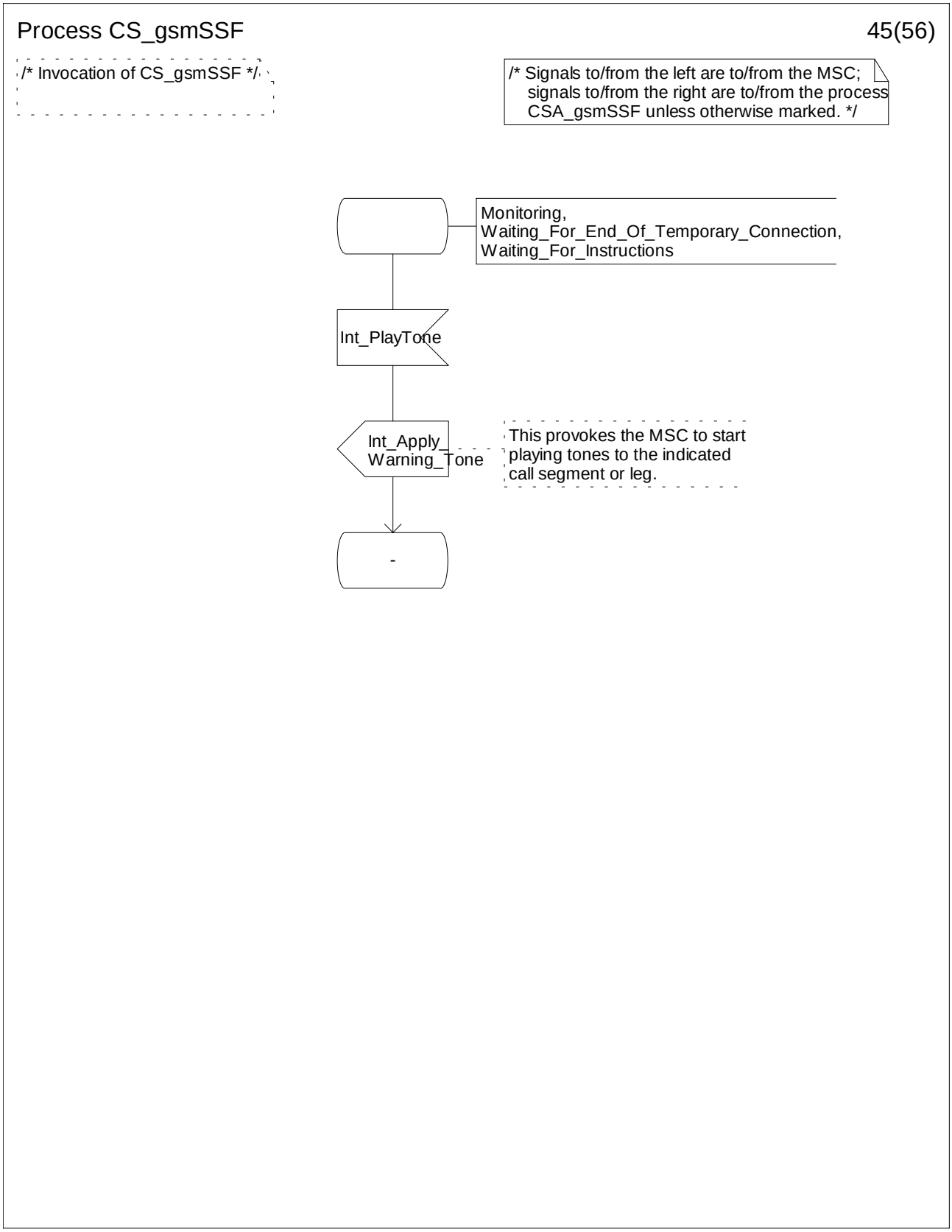


Figure 4.95ss: Process CS_gsmSSF (sheet 45)

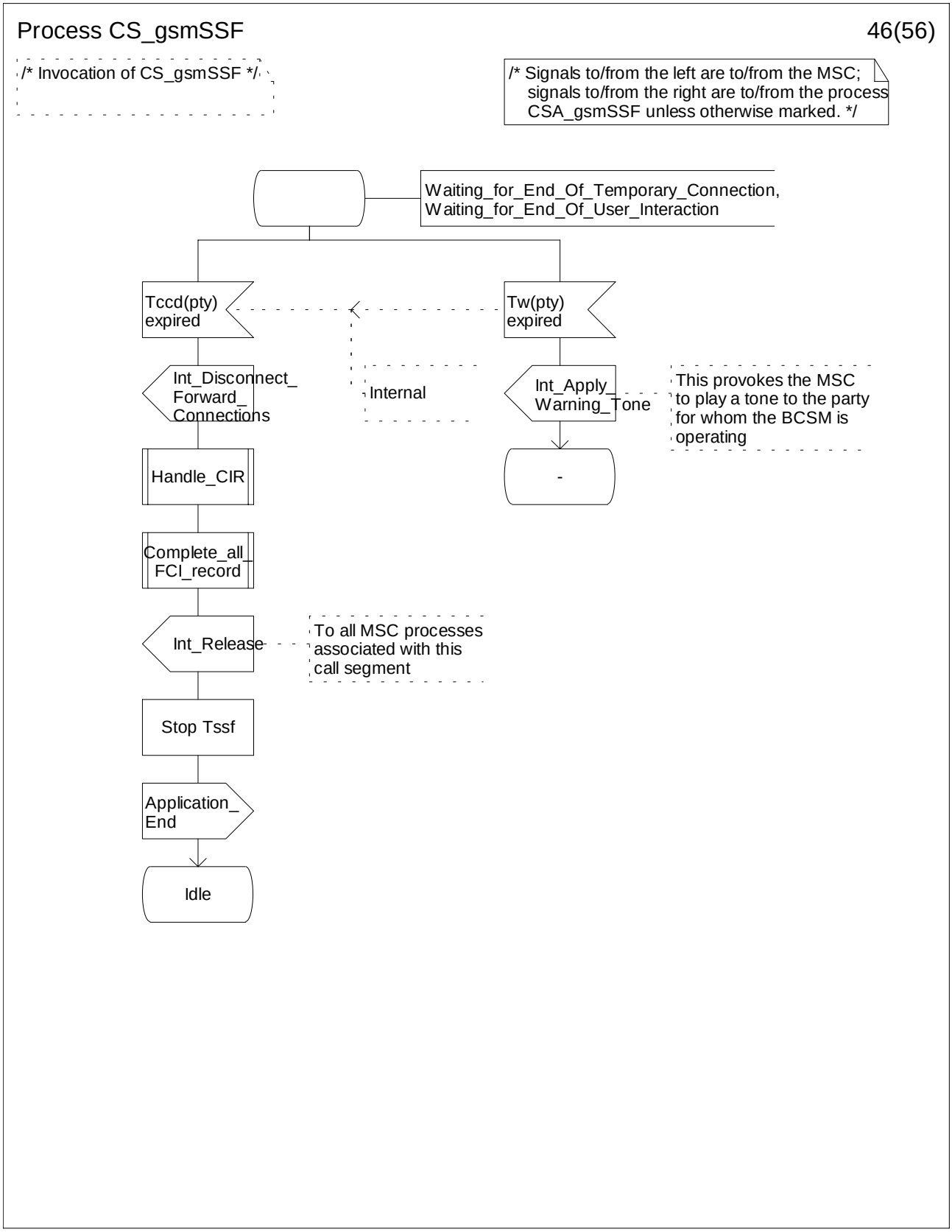


Figure 4.95tt: Process CS_gsmSSF (sheet 46)

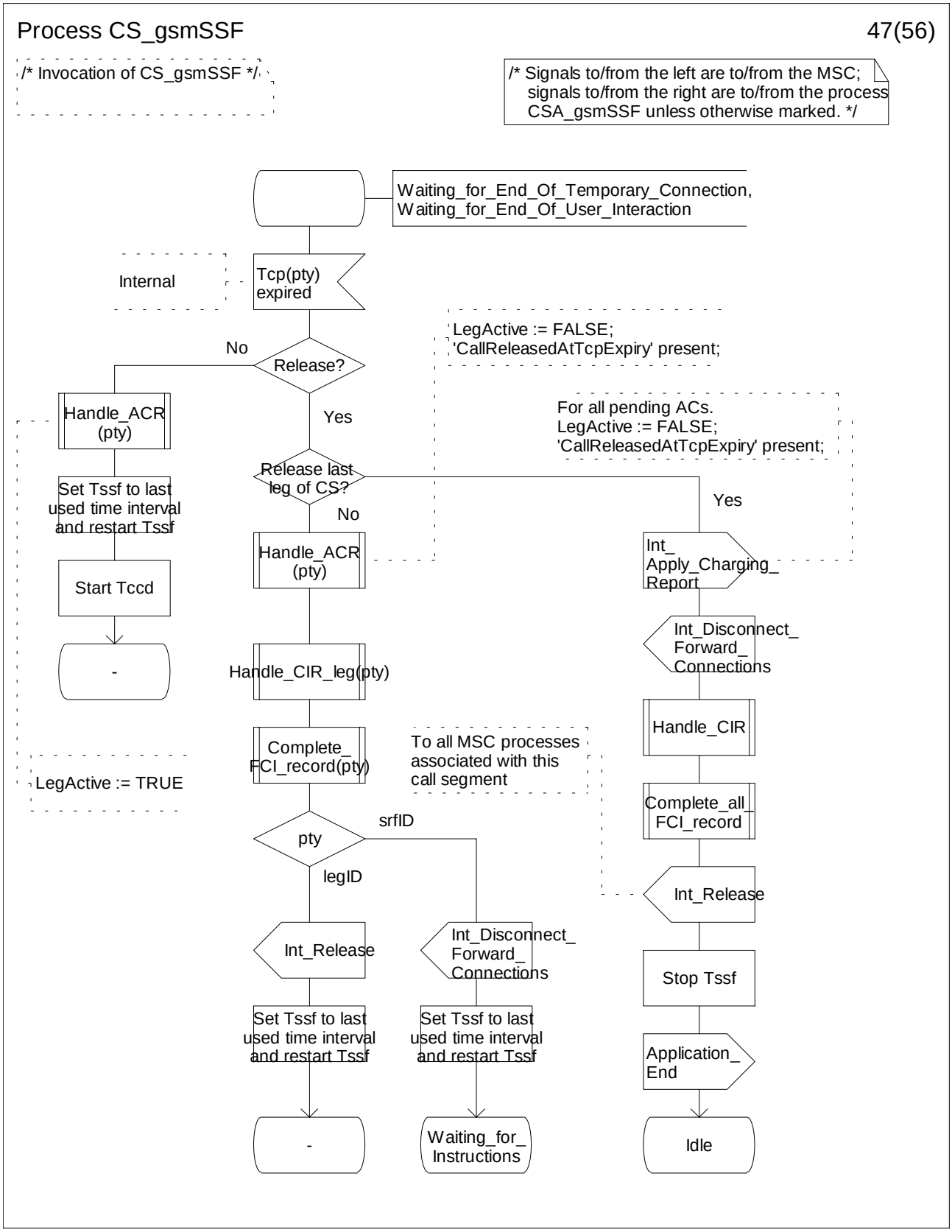


Figure 4.95uu: Process CS_gsmSSF (sheet 47)

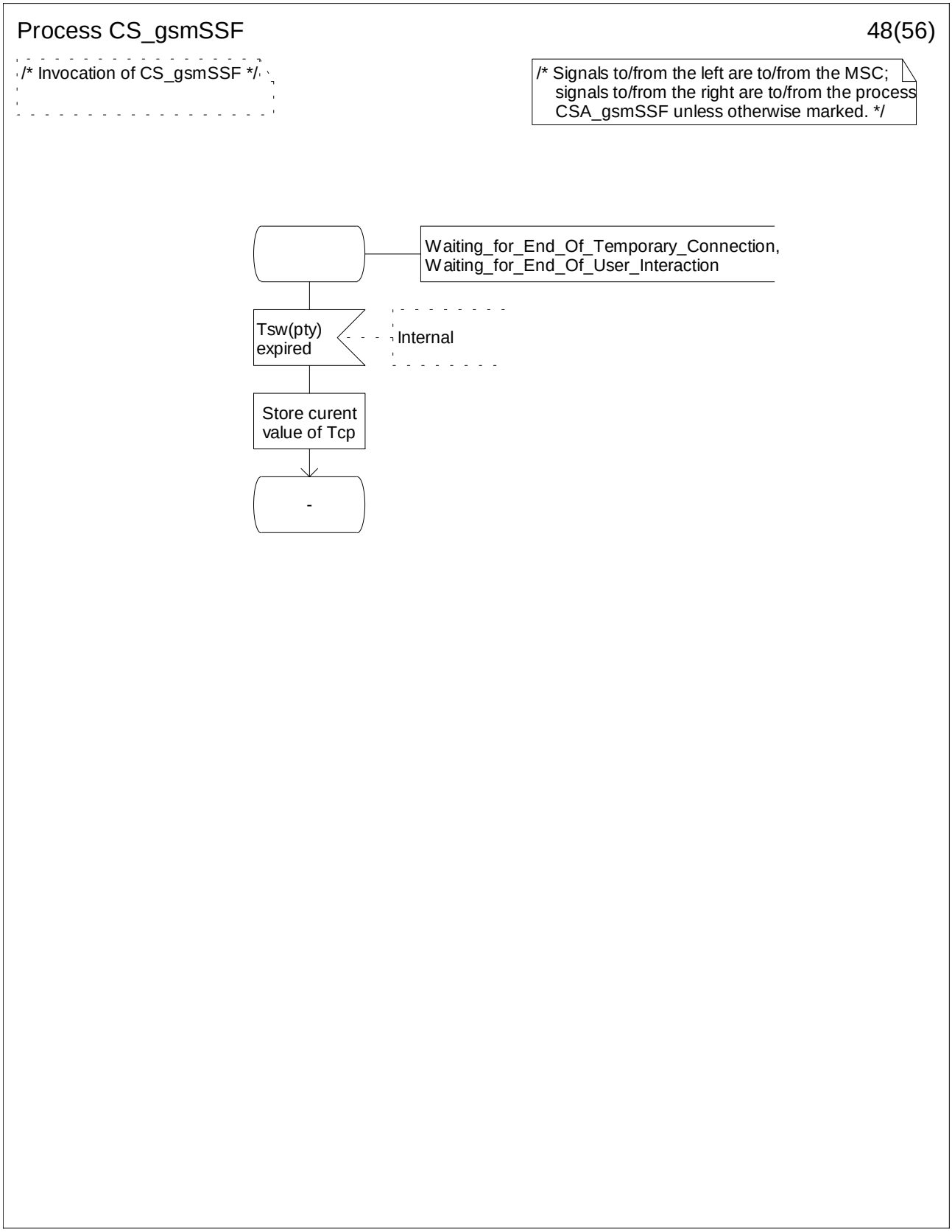


Figure 4.95vv: Process CS_gsmSSF (sheet 48)

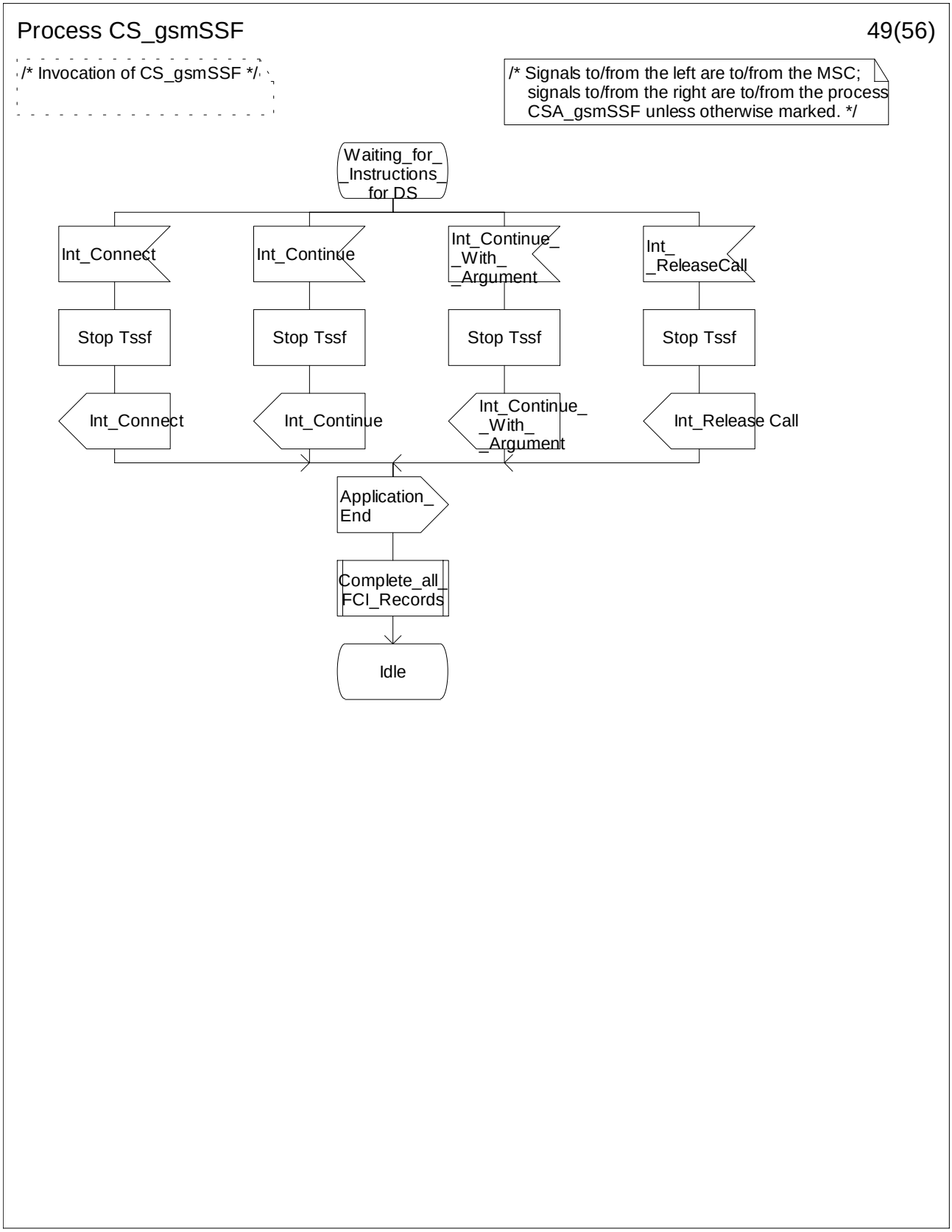


Figure 4.95ww: Process CS_gsmSSF (sheet 49)

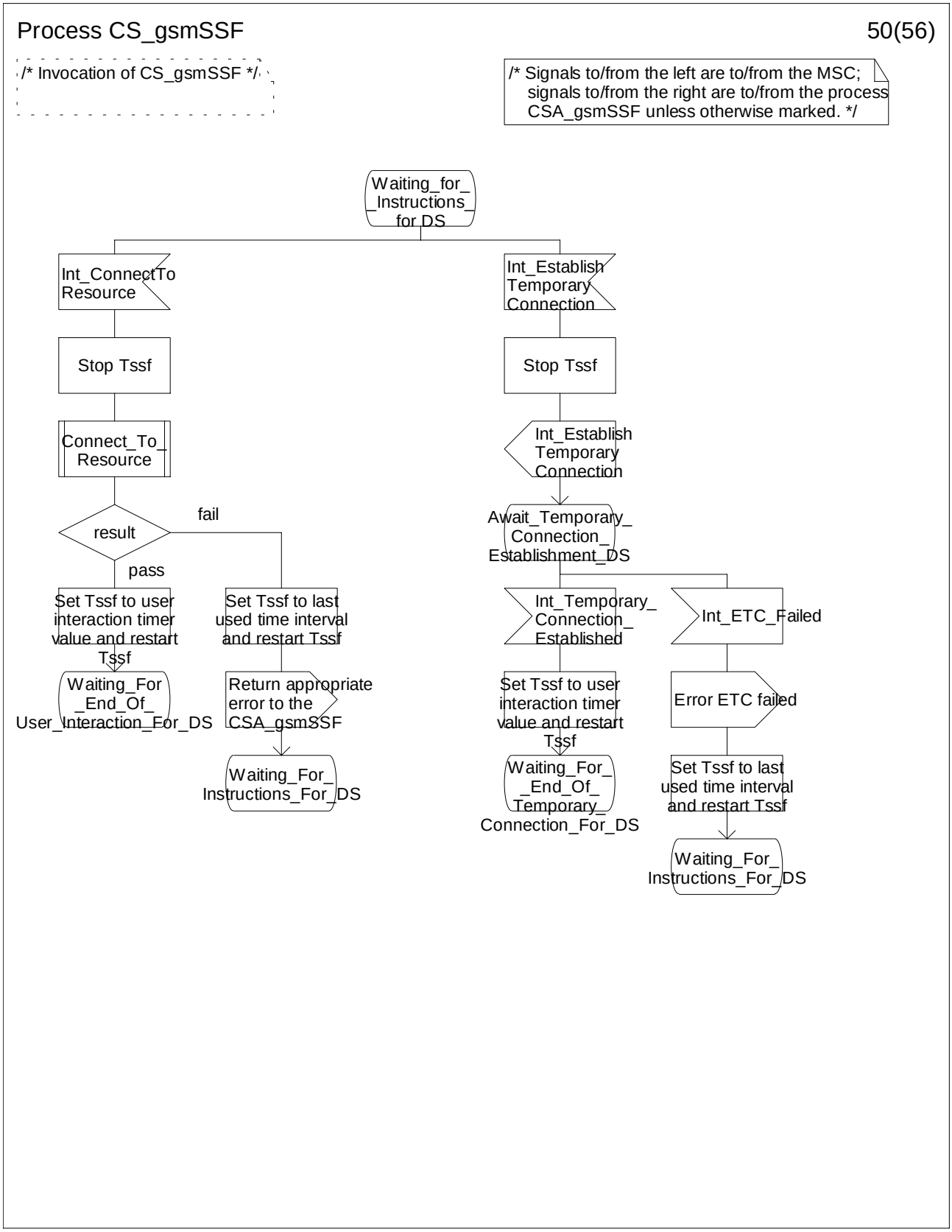


Figure 4.95xx: Process CS_gsmSSF (sheet 50)

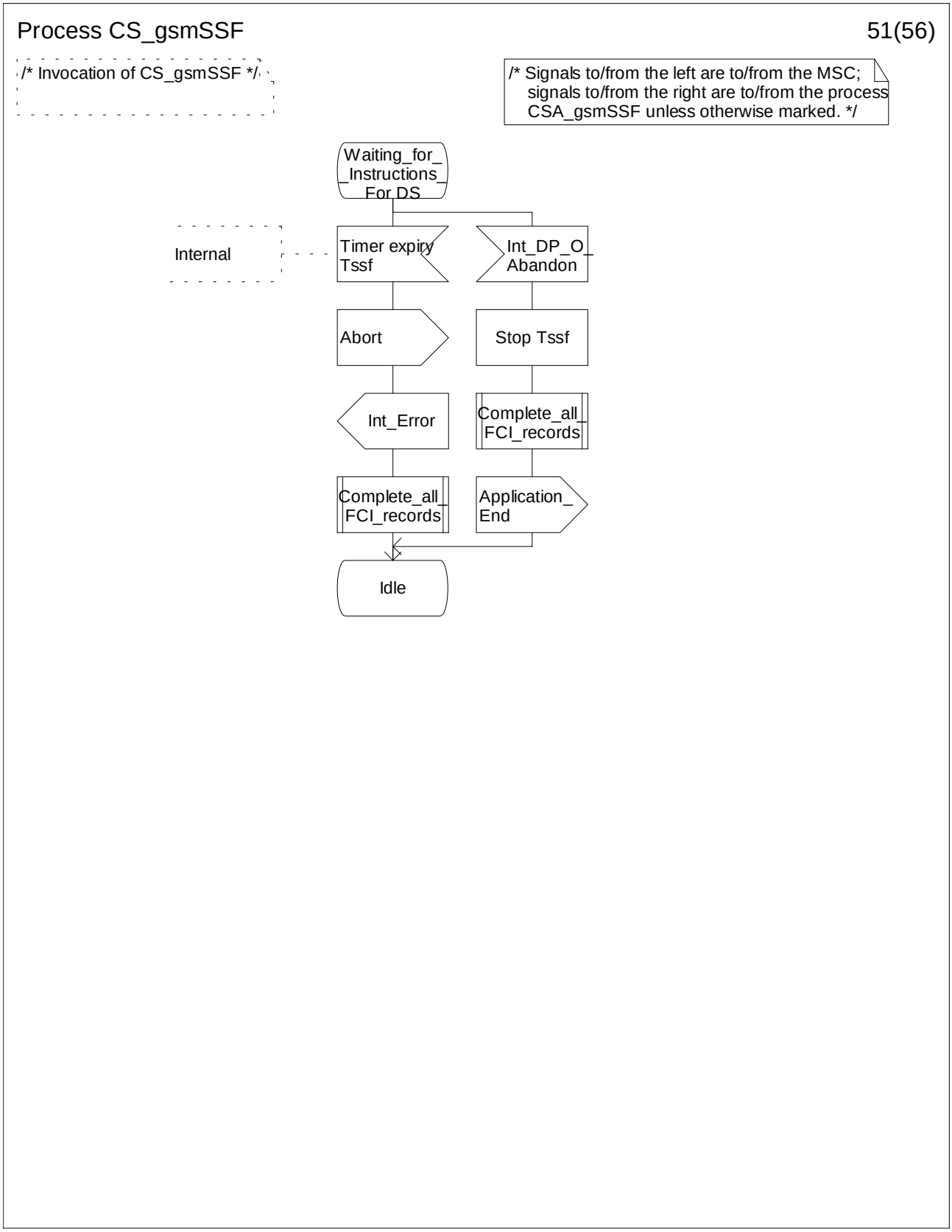


Figure 4.95yy: Process CS_gsmSSF (sheet 51)

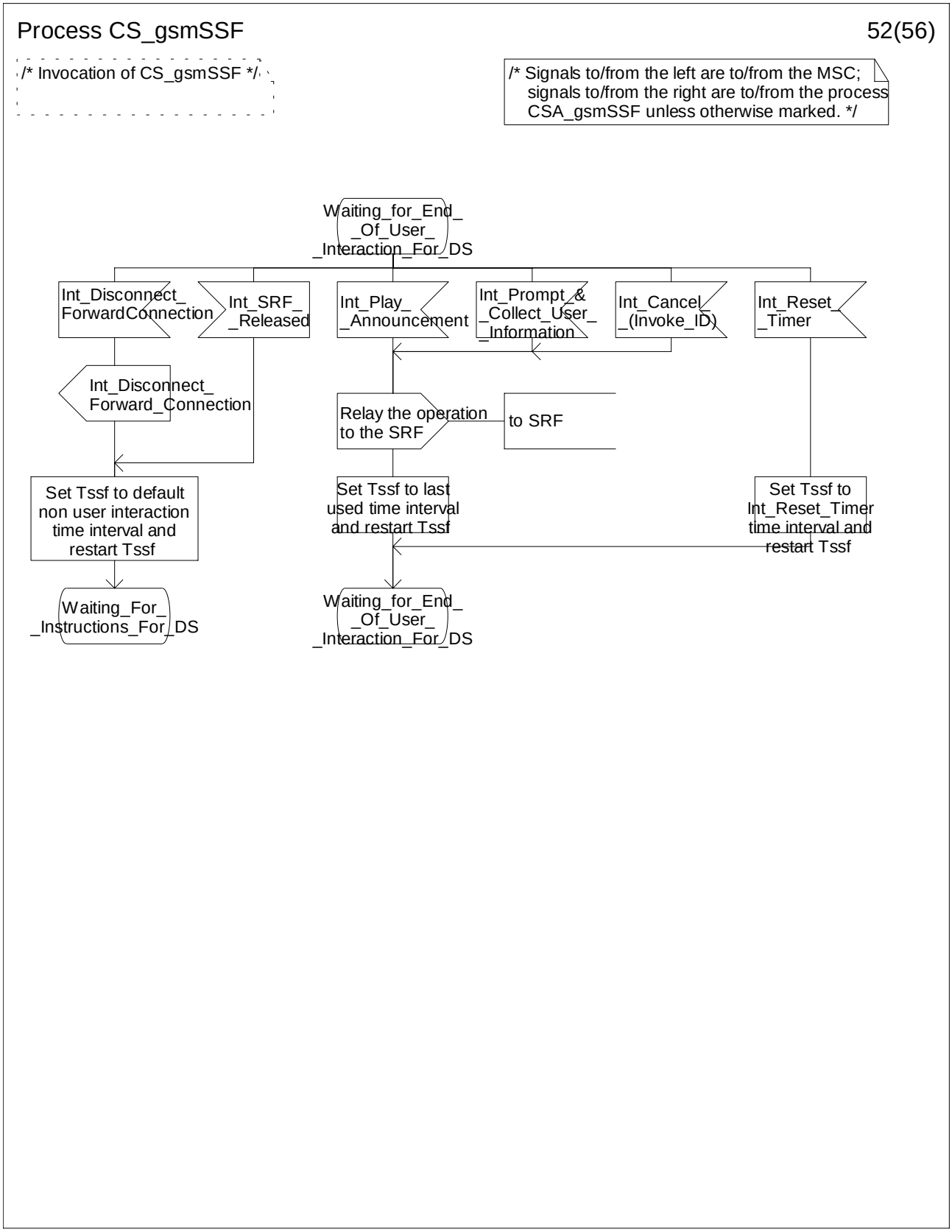


Figure 4.95zz: Process CS_gsmSSF (sheet 52)

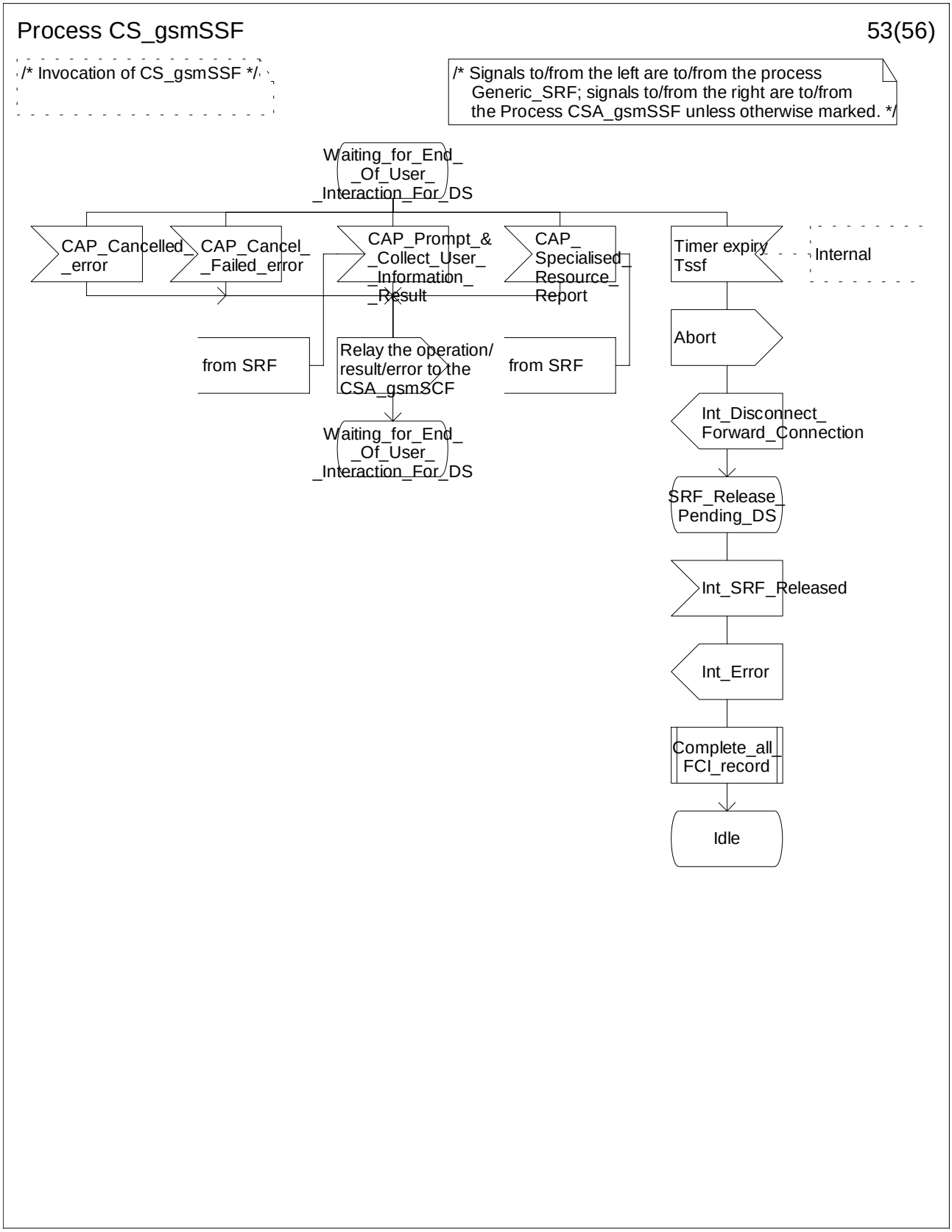


Figure 4.95aaa: Process CS_gsmSSF (sheet 53)

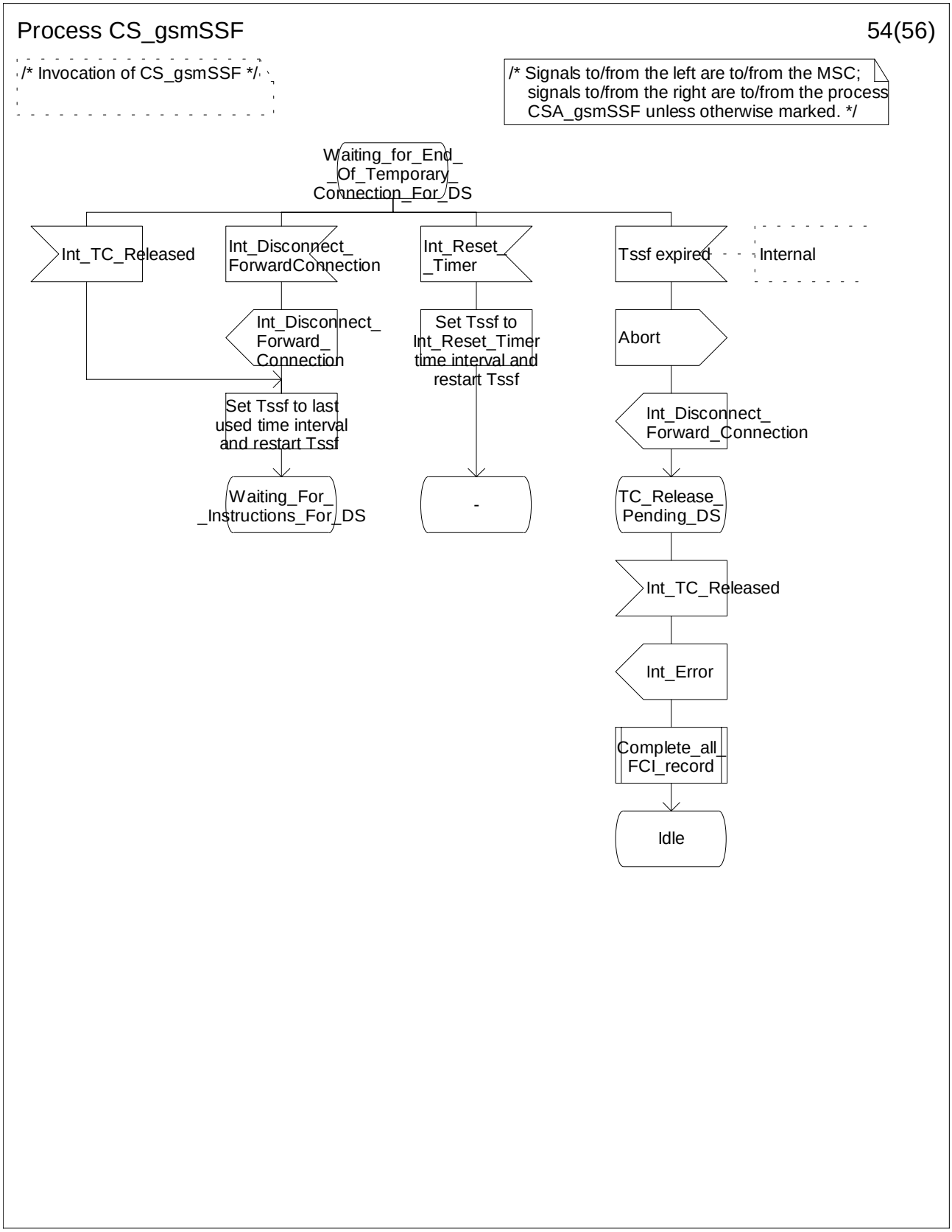


Figure 4.95bbb: Process CS_gsmSSF (sheet 54)

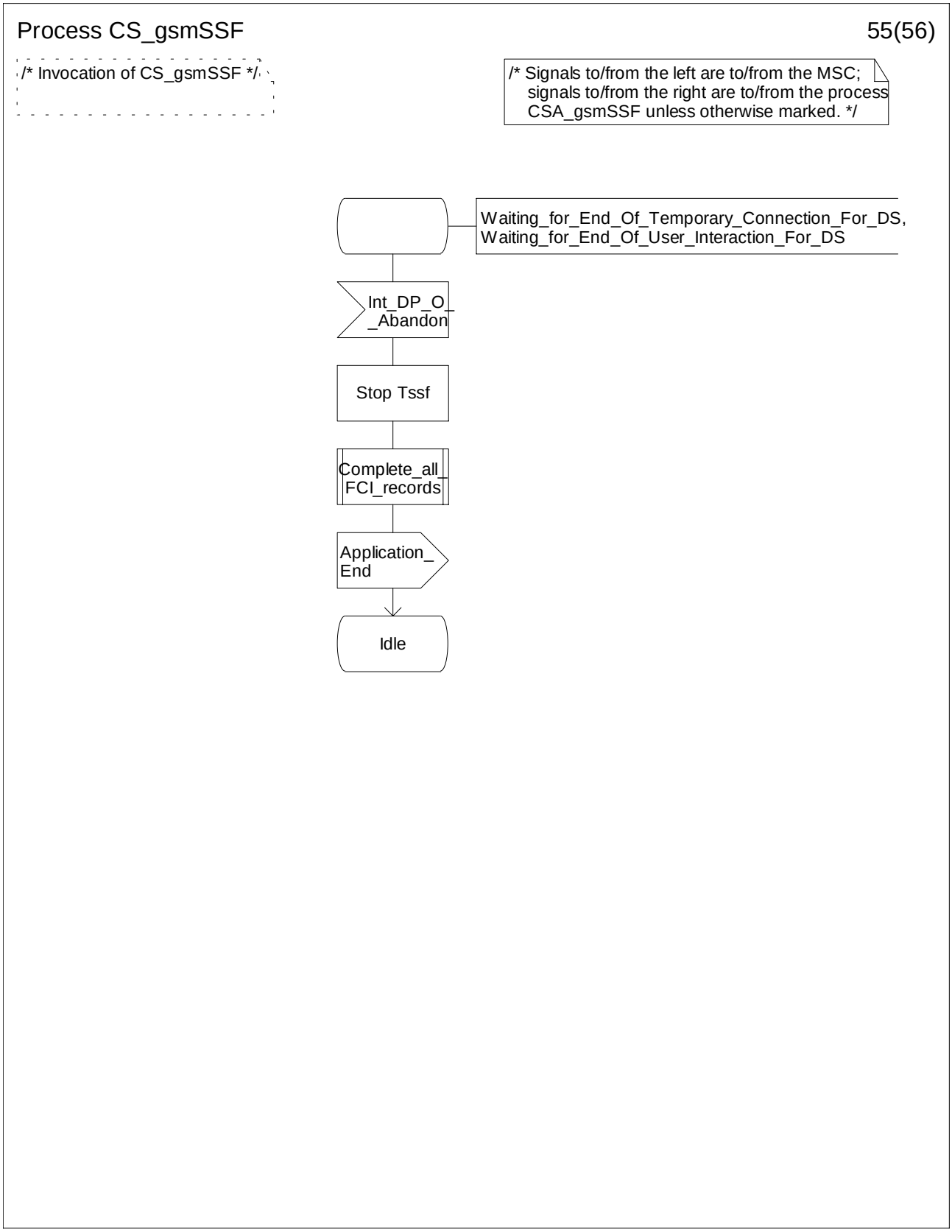


Figure 4.95ccc: Process CS_gsmSSF (sheet 55)

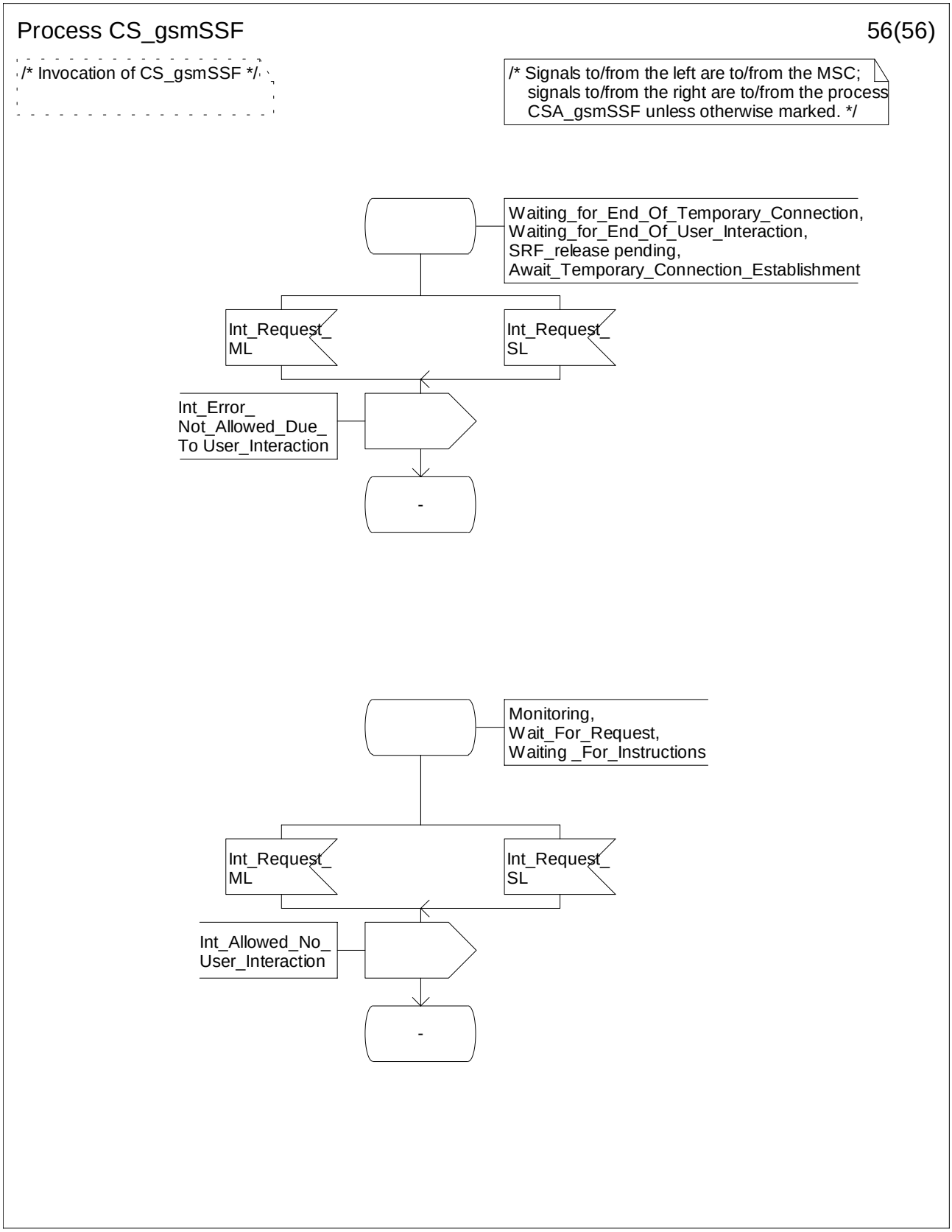


Figure 4.95ddd: Process CS_gsmSSF (sheet 56)

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****** Next 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.

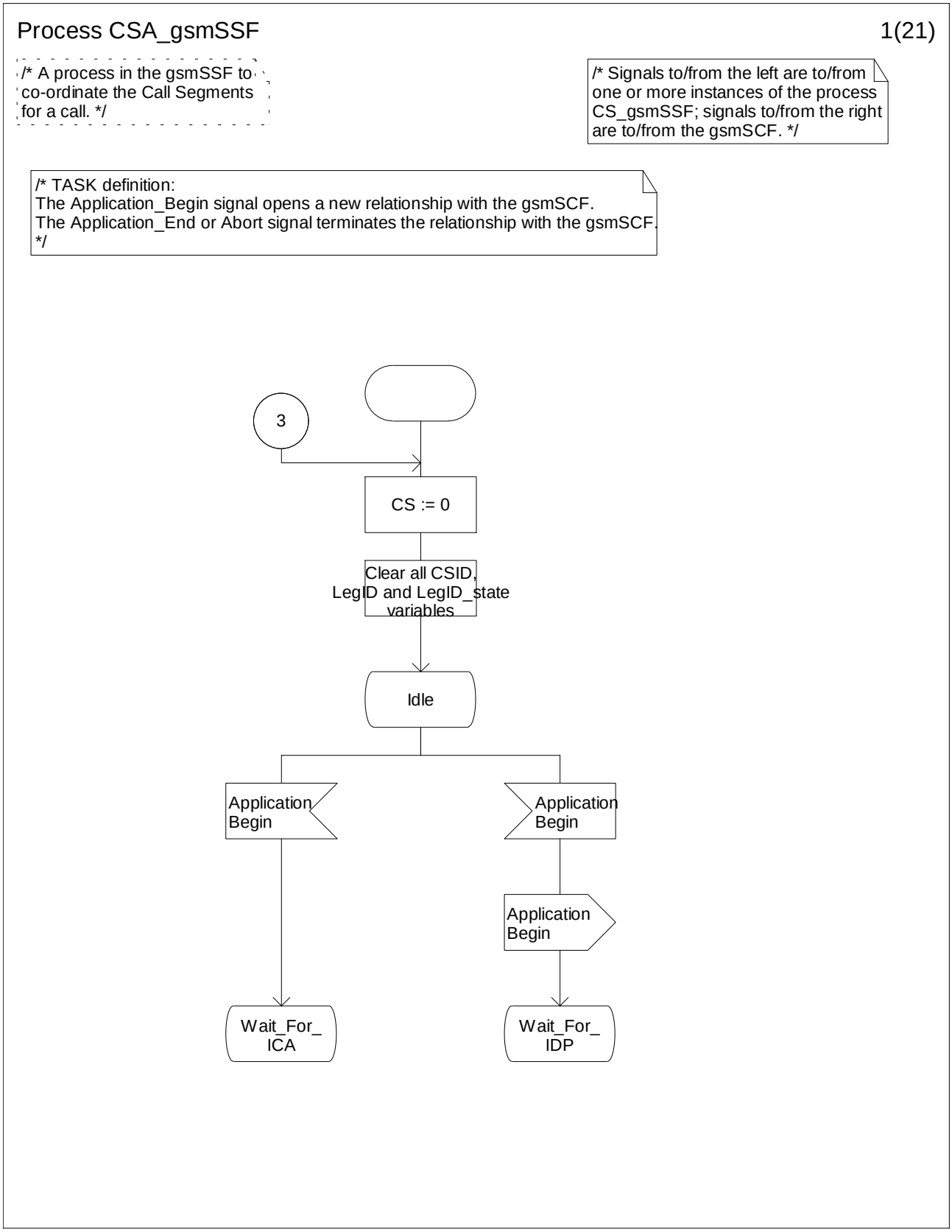


Figure 4.112a: Process CSA_gsmSSF (sheet 1)

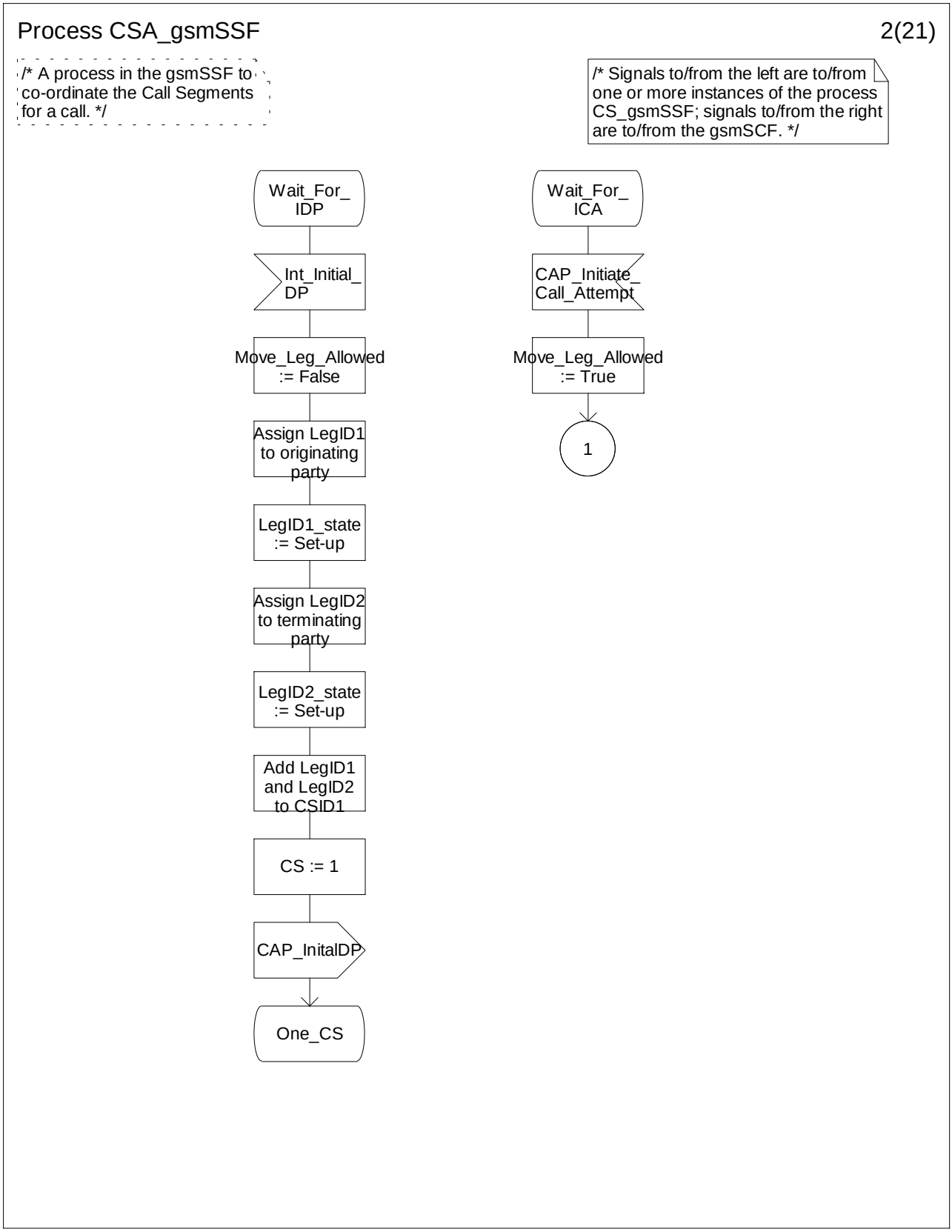


Figure 4.112b: Process CSA_gsmSSF (sheet 2)

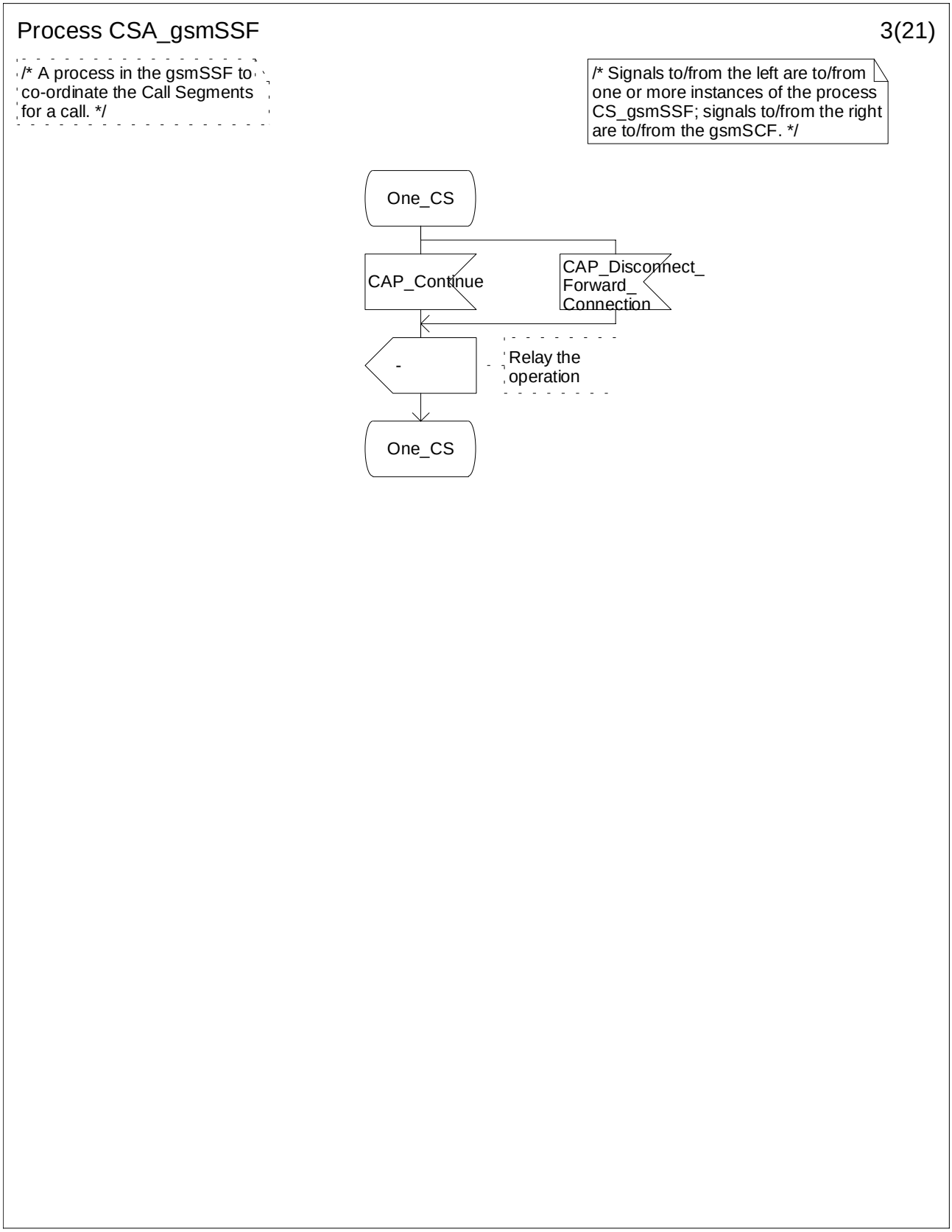


Figure 4.112c: Process CSA_gsmSSF (sheet 3)

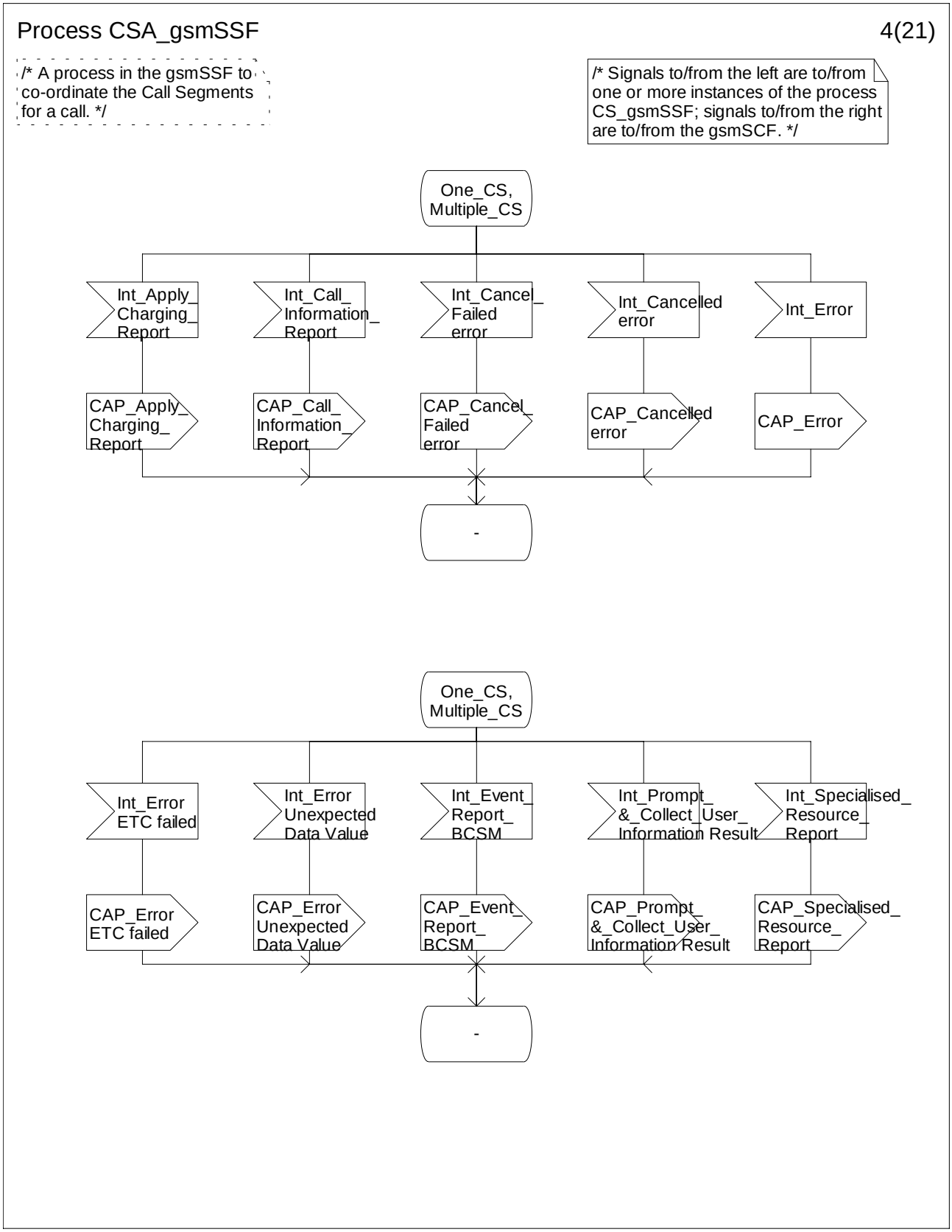


Figure 4.112d: Process CSA_gsmSSF (sheet 4)

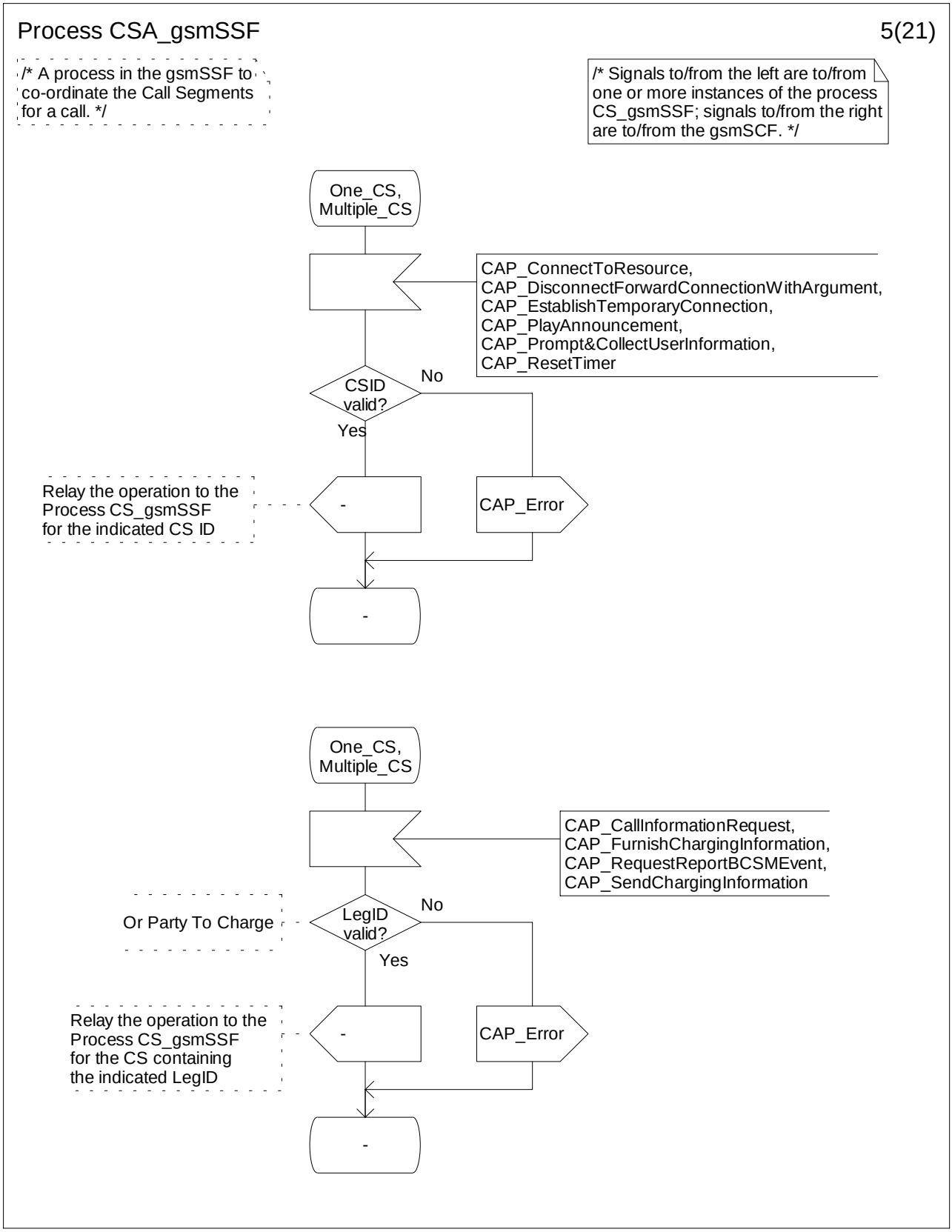


Figure 4.112e: Process CSA_gsmSSF (sheet 5)

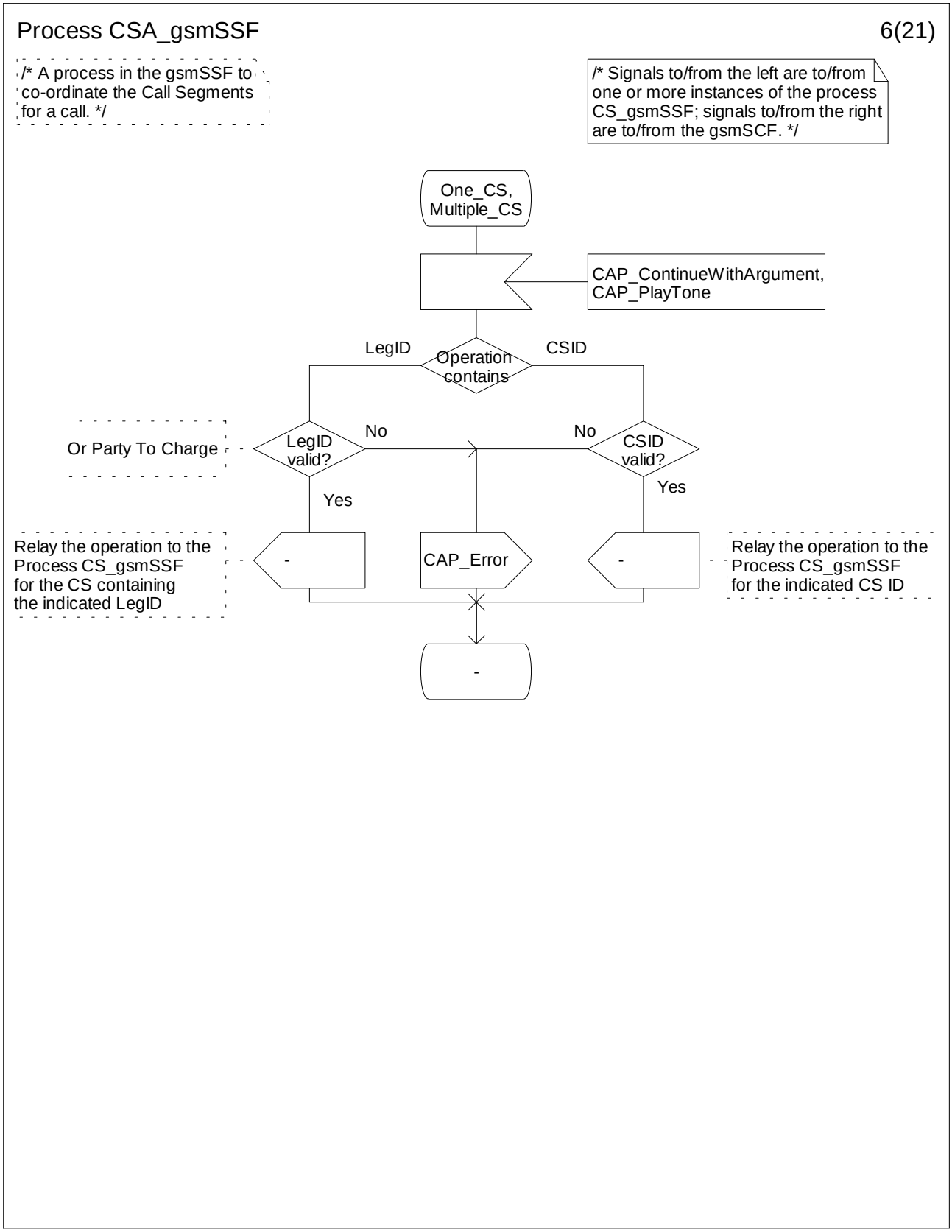


Figure 4.112f: Process CSA_gsmSSF (sheet 6)

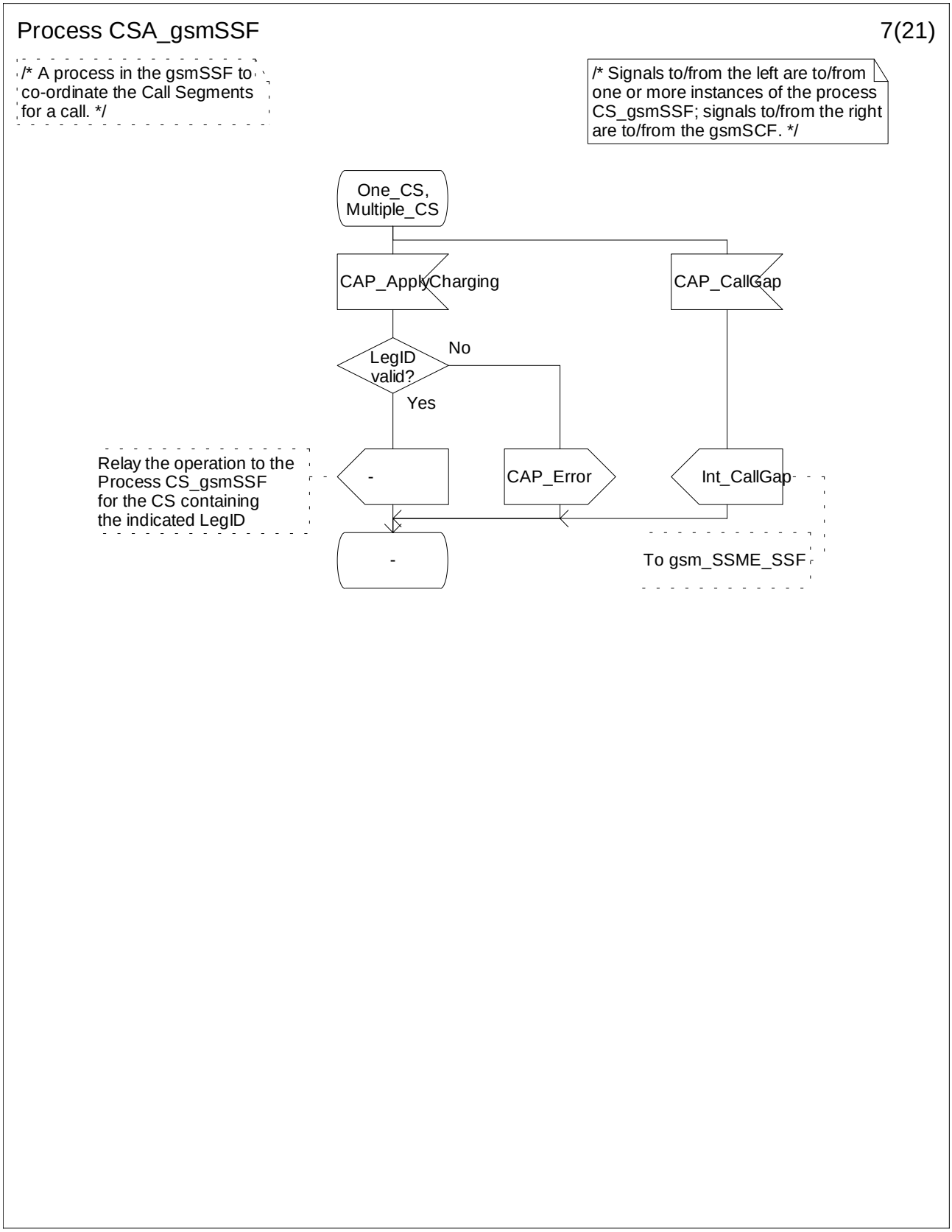


Figure 4.112g: Process CSA_gsmSSF (sheet 7)

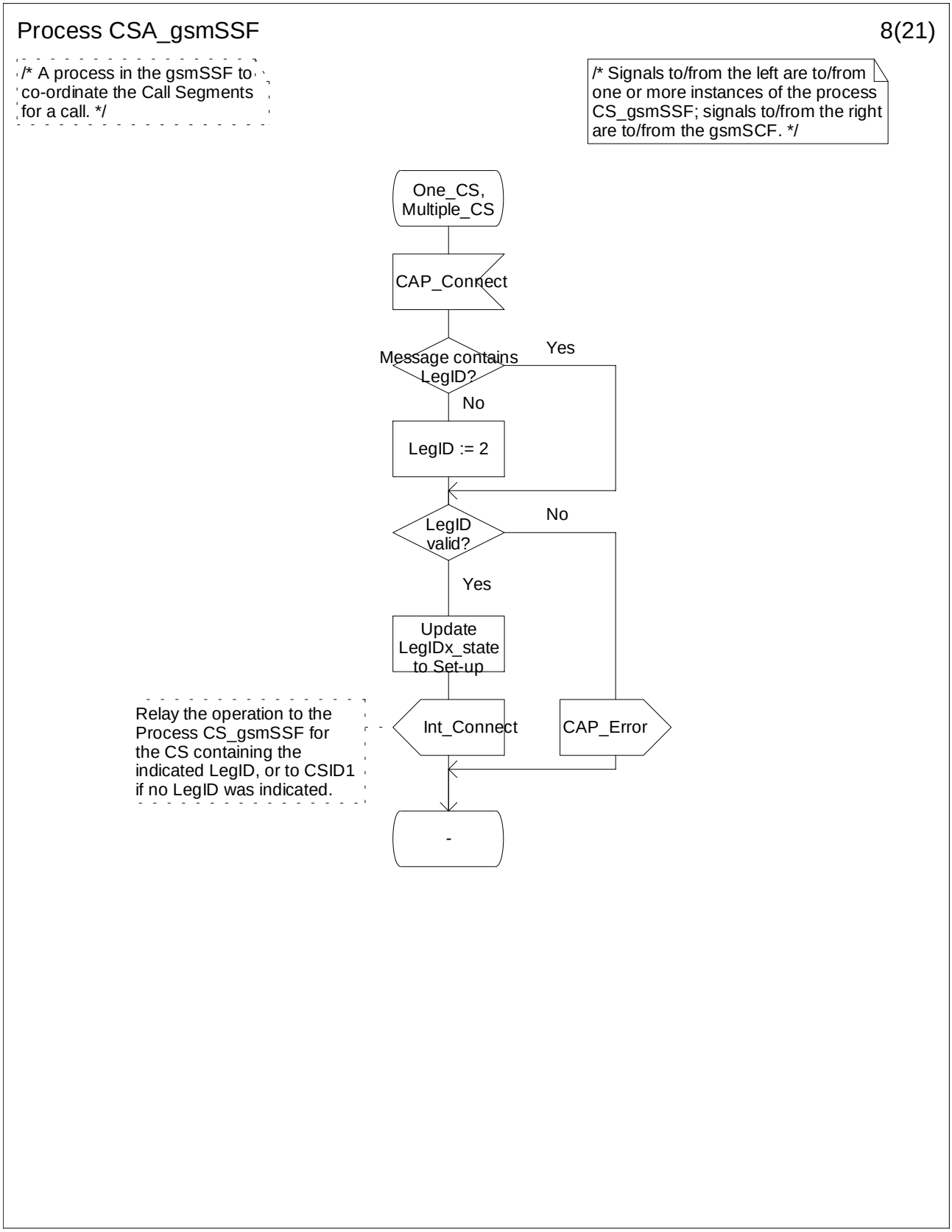


Figure 4.112h: Process CSA_gsmSSF (sheet 8)

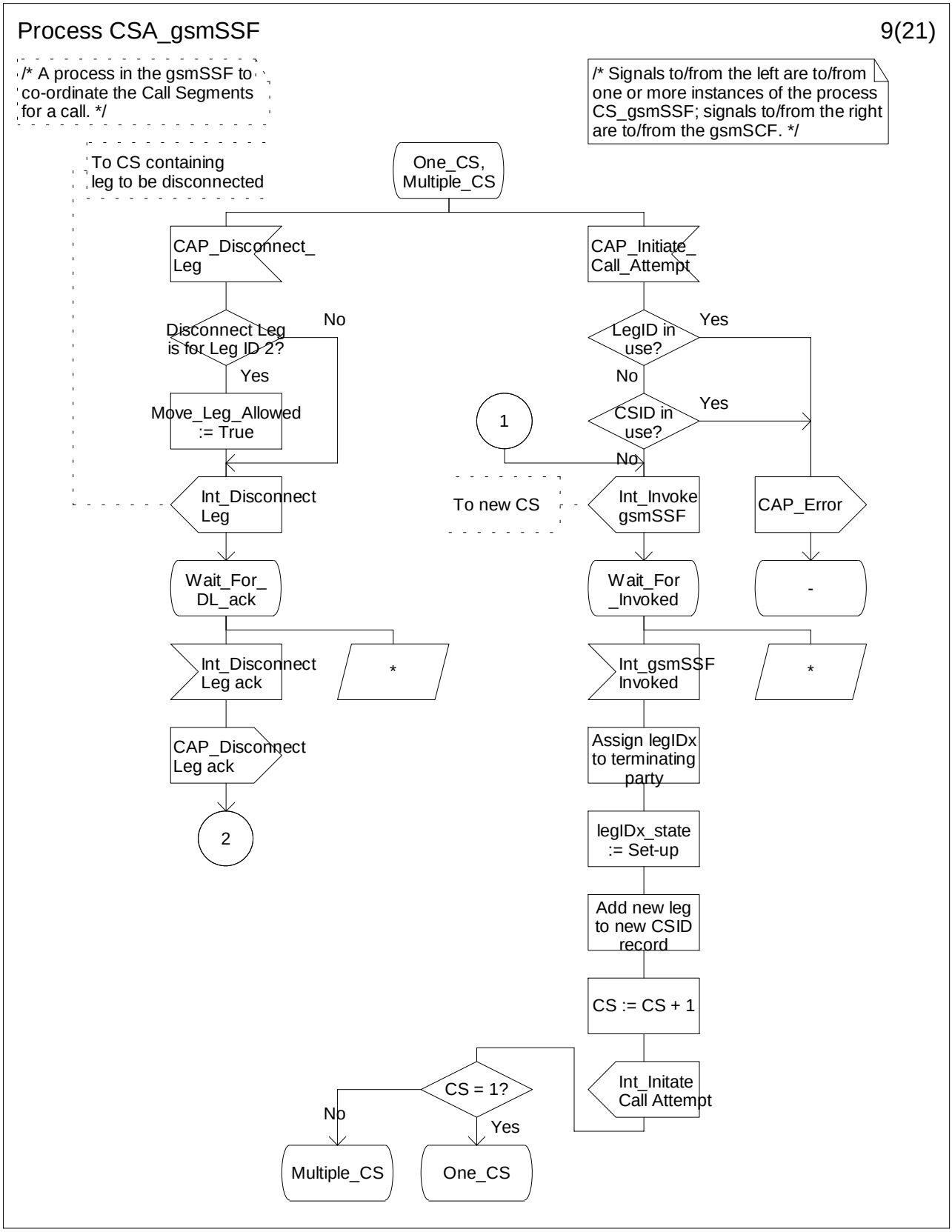
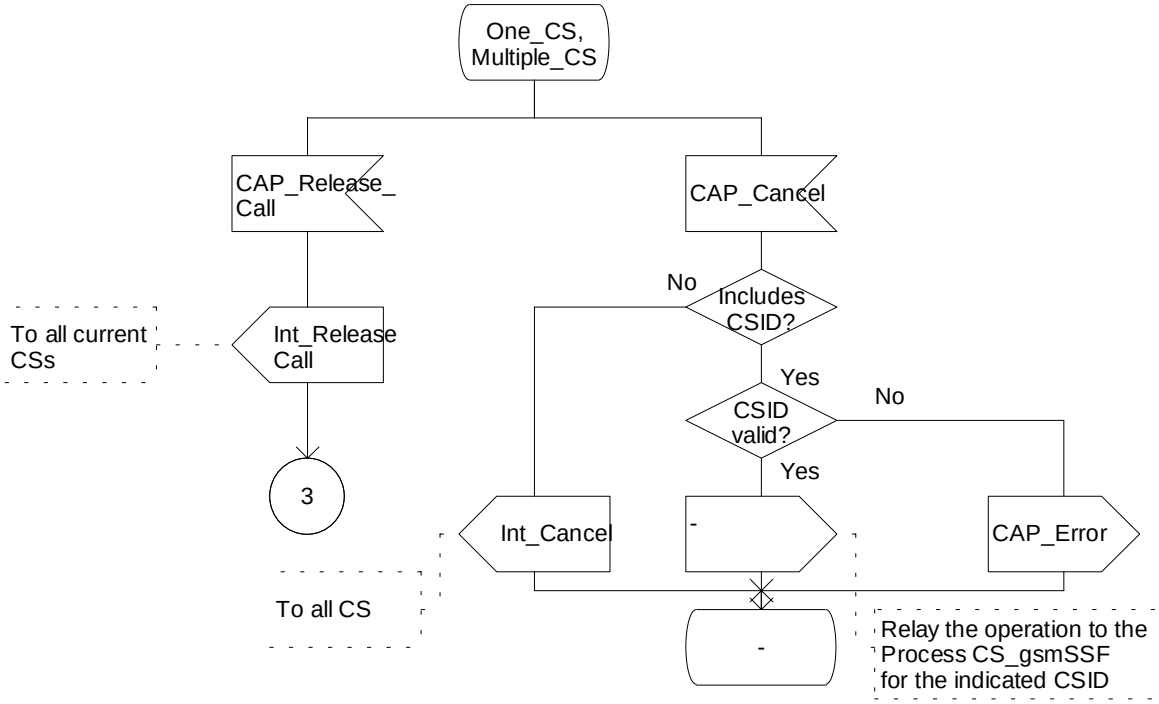


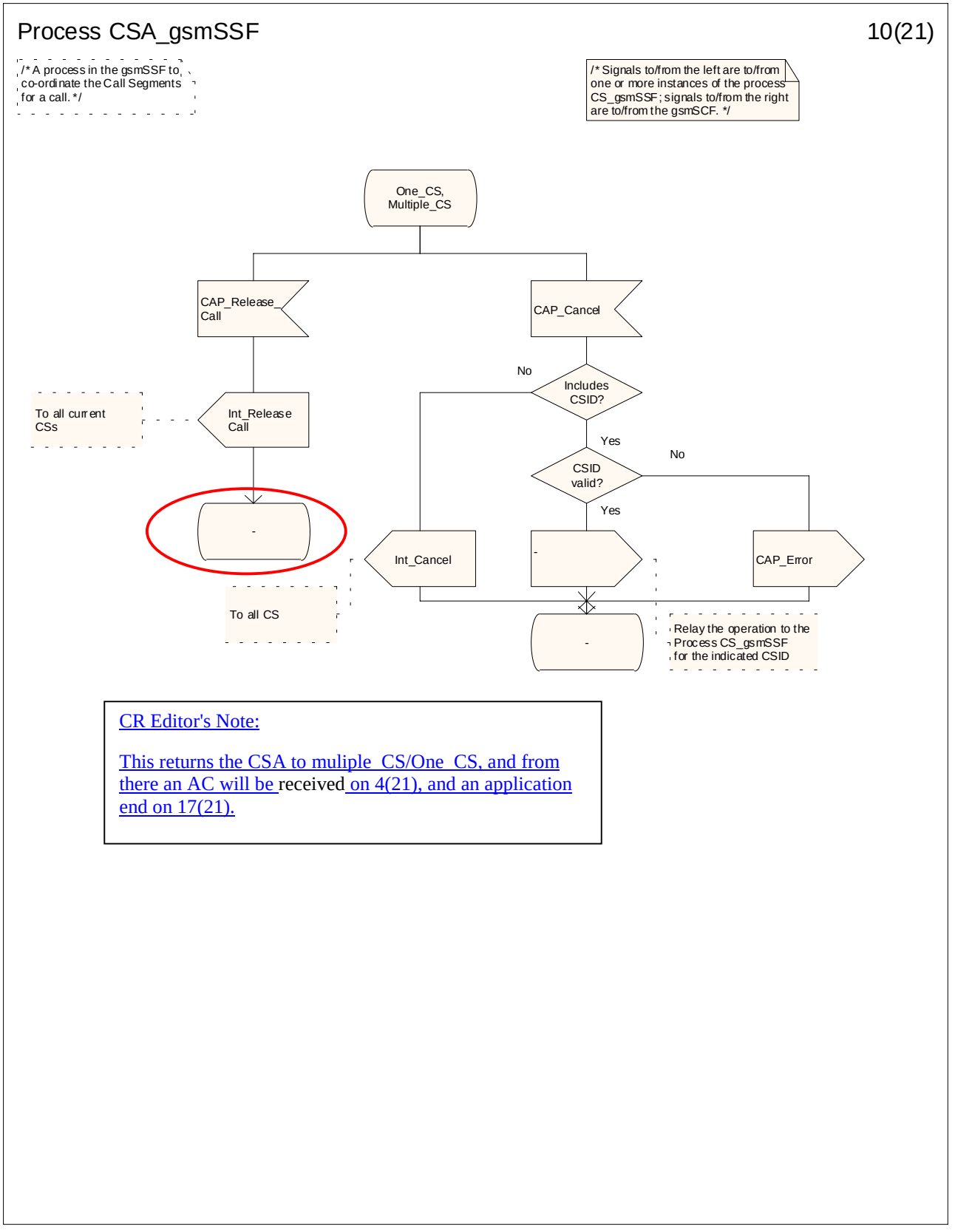
Figure 4.112i: Process CSA_gsmSSF (sheet 9)

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. */





CR Editor's Note:

This returns the CSA to muliple_CS/One_CS, and from there an AC will be received on 4(21), and an application end on 17(21).

Figure 4.112j: Process CSA_gsmSSF (sheet 10)

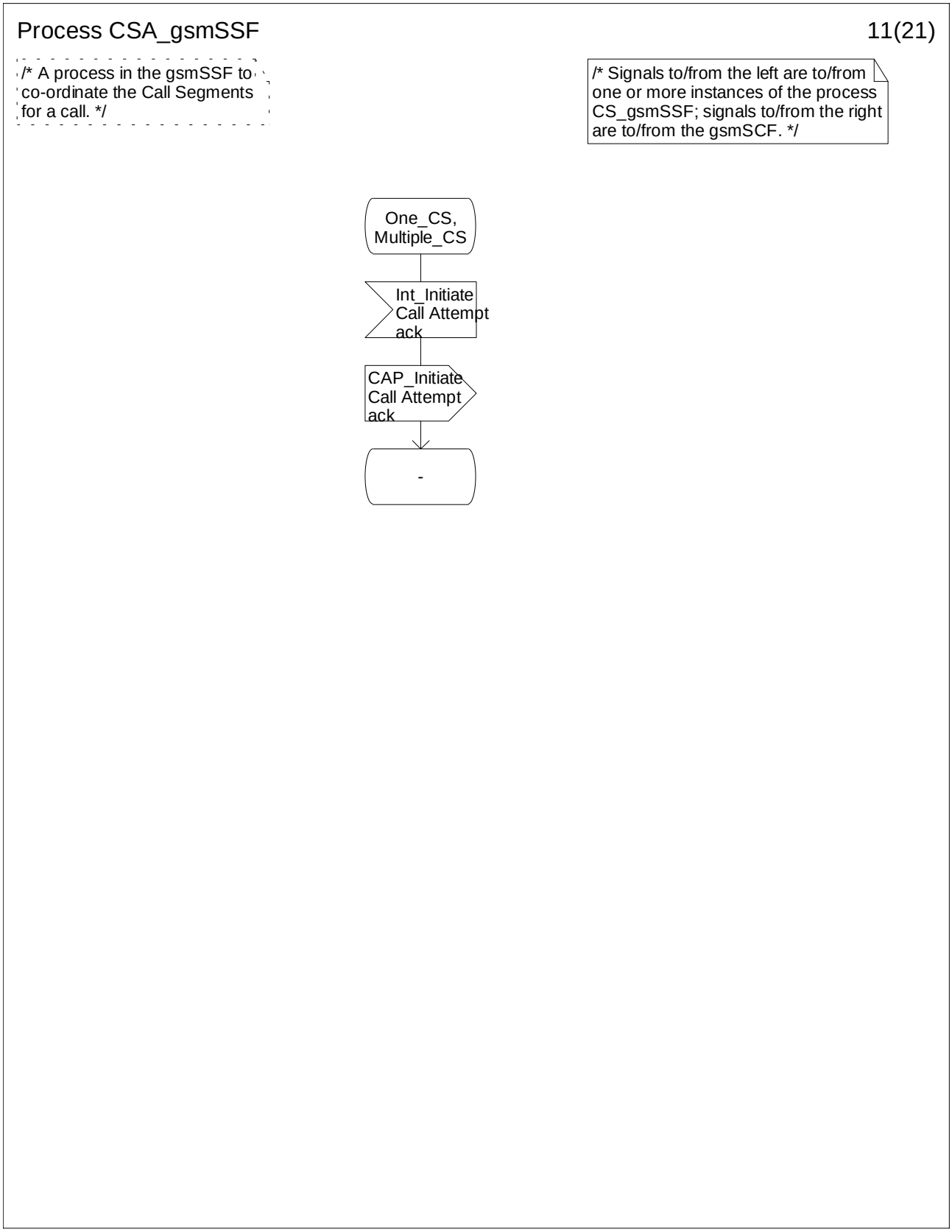
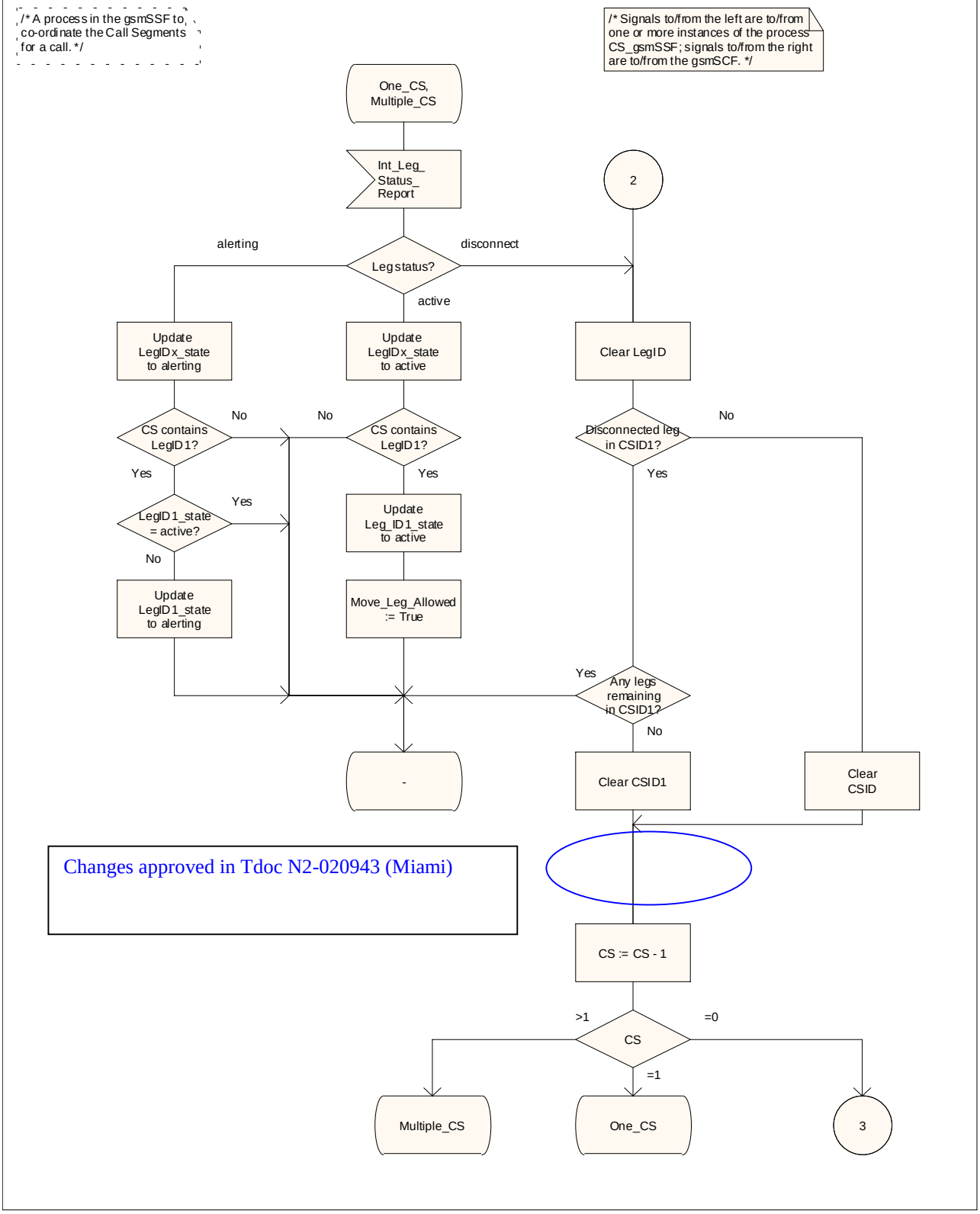


Figure 4.112k: Process CSA_gsmSSF (sheet 11)

Process CSA_gsmSSF 12(21)



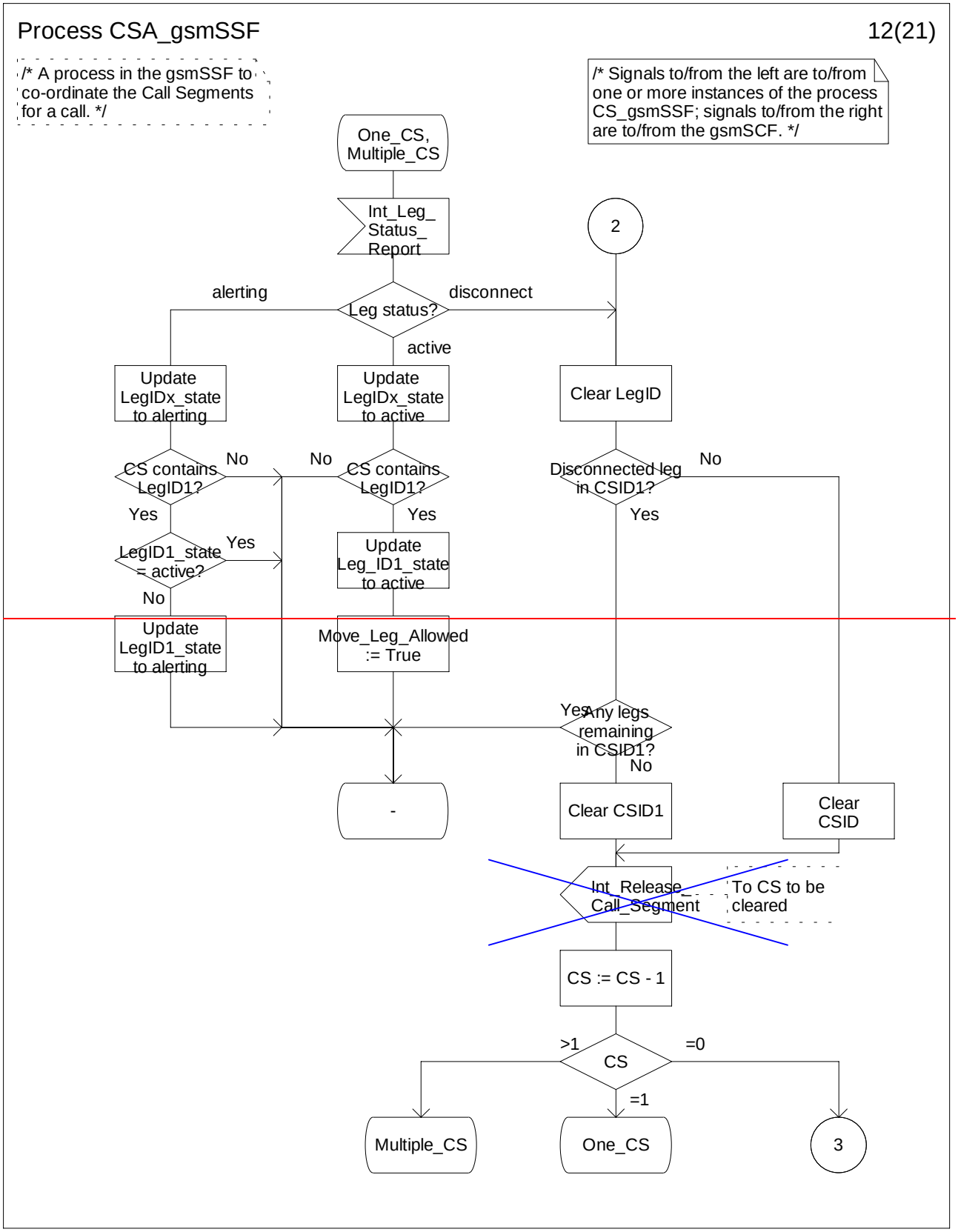


Figure 4.112l: Process CSA_gsmSSF (sheet 12)

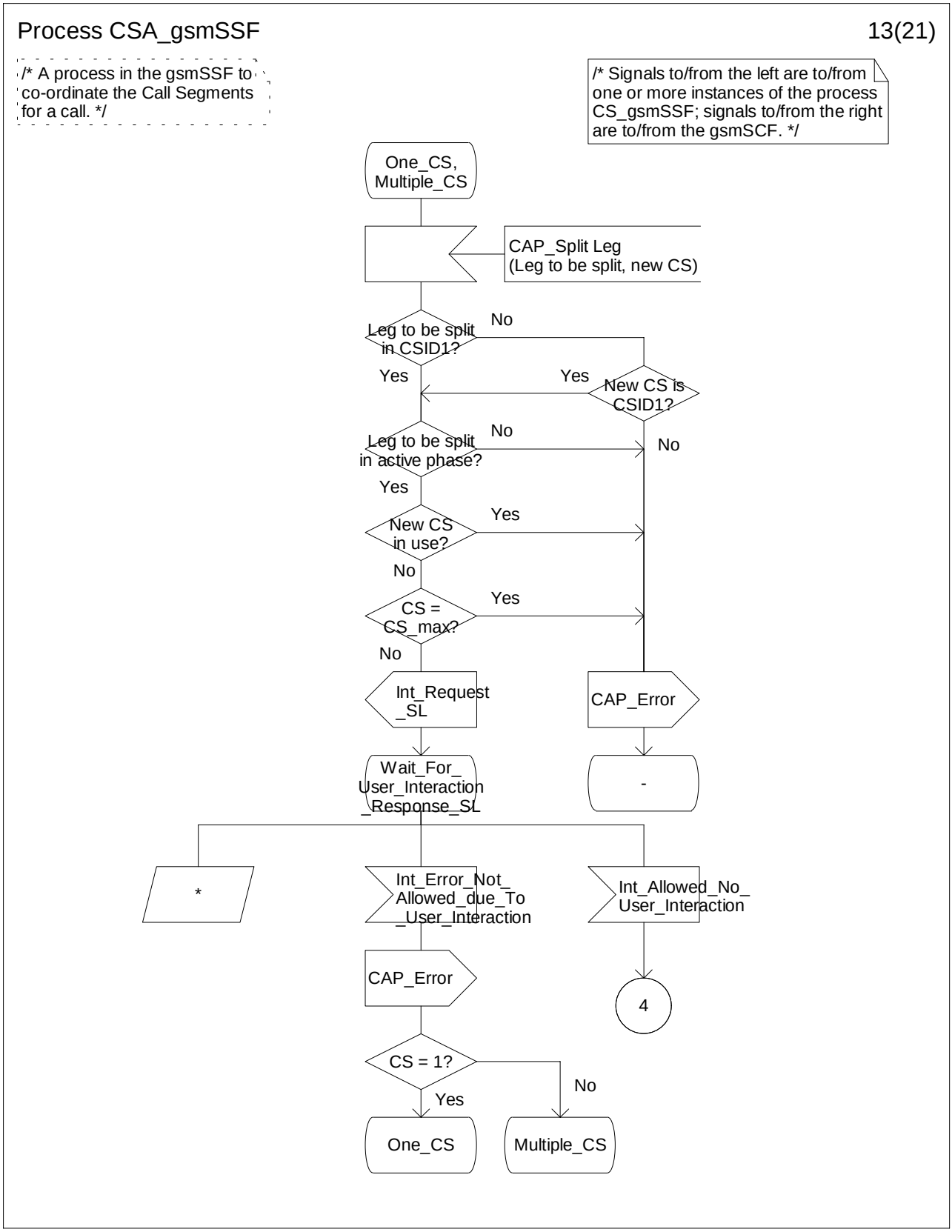


Figure 4.112m: Process CSA_gsmSSF (sheet 13)

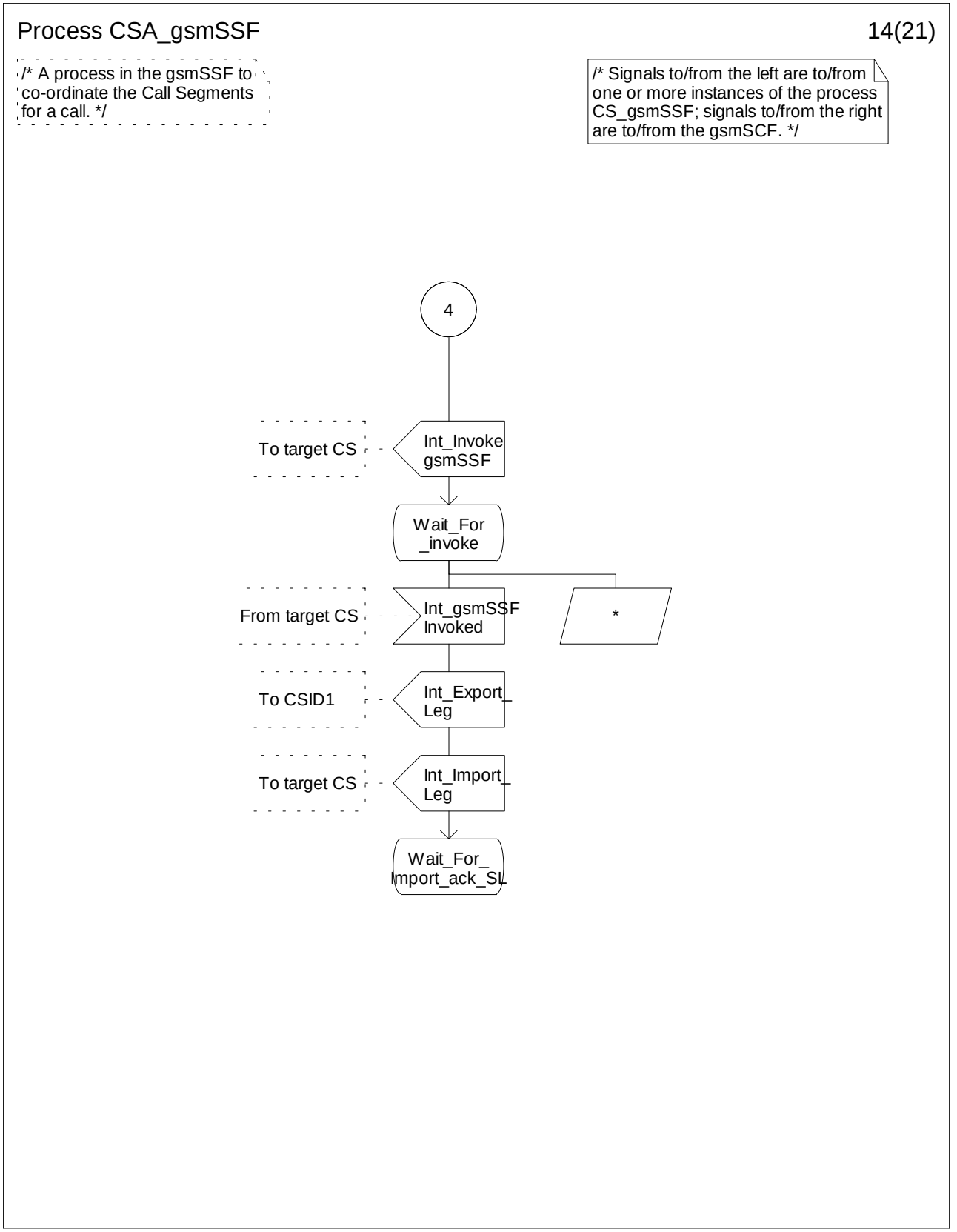


Figure 4.112n: Process CSA_gsmSSF (sheet 14)

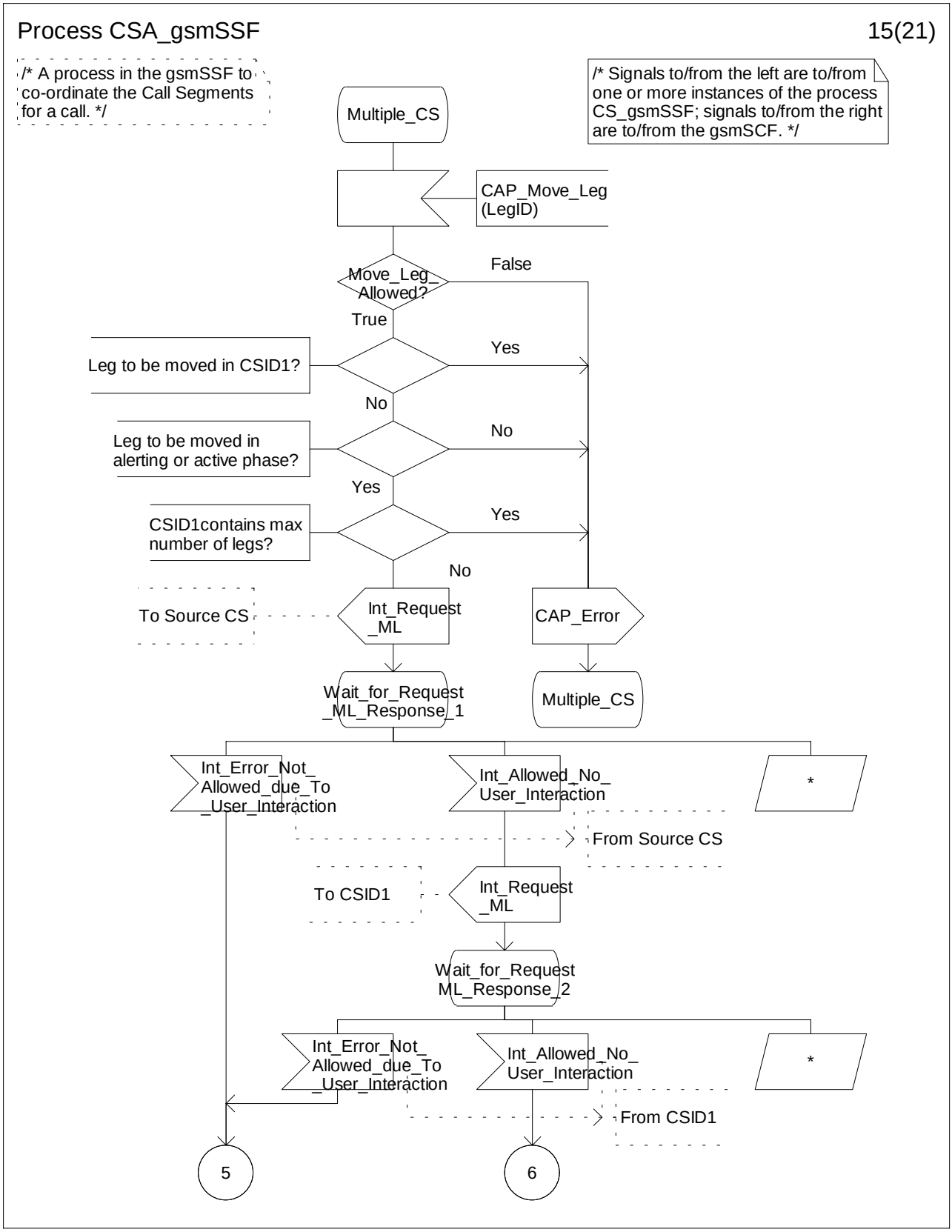


Figure 4.112o: Process CSA_gsmSSF (sheet 15)

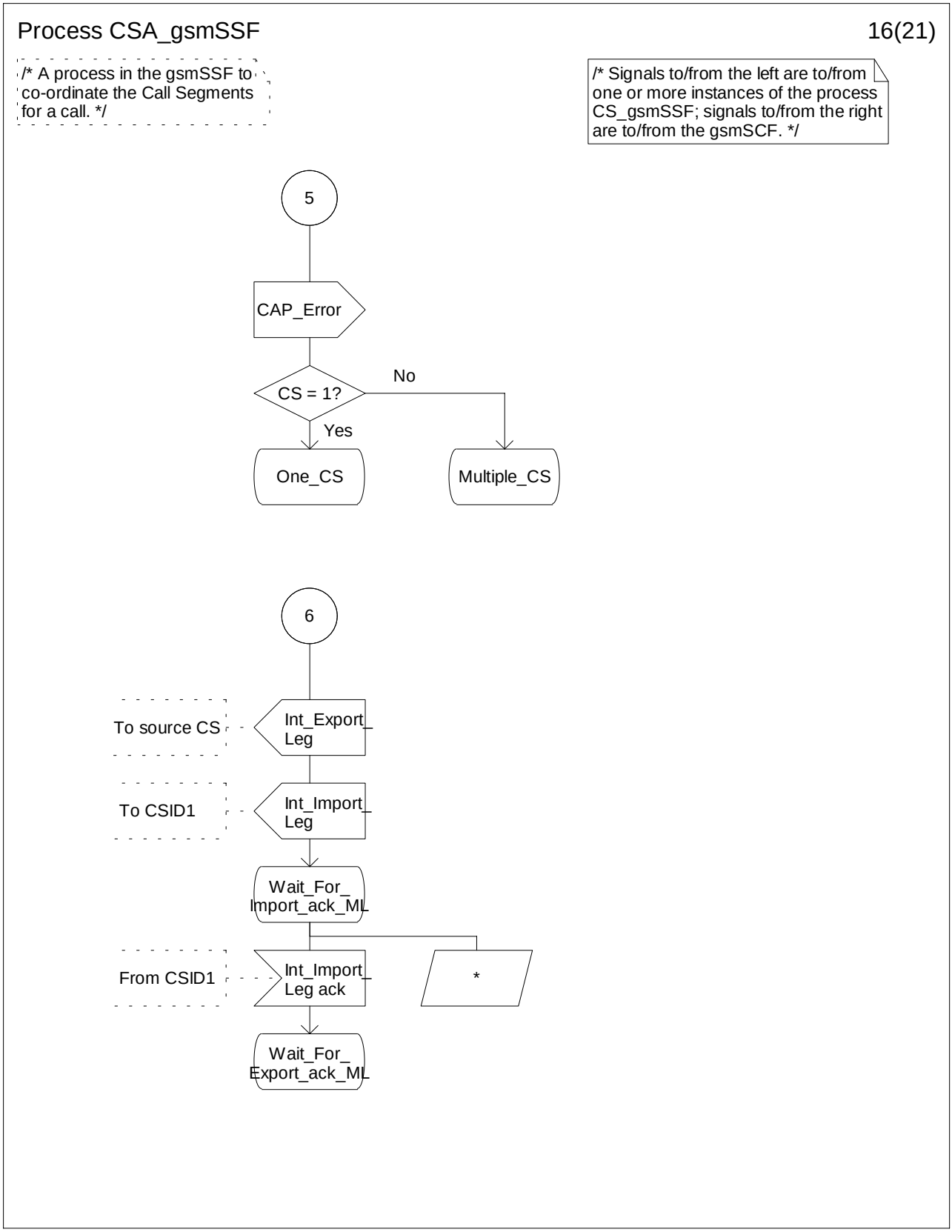


Figure 4.112p: Process CSA_gsmSSF (sheet 16)

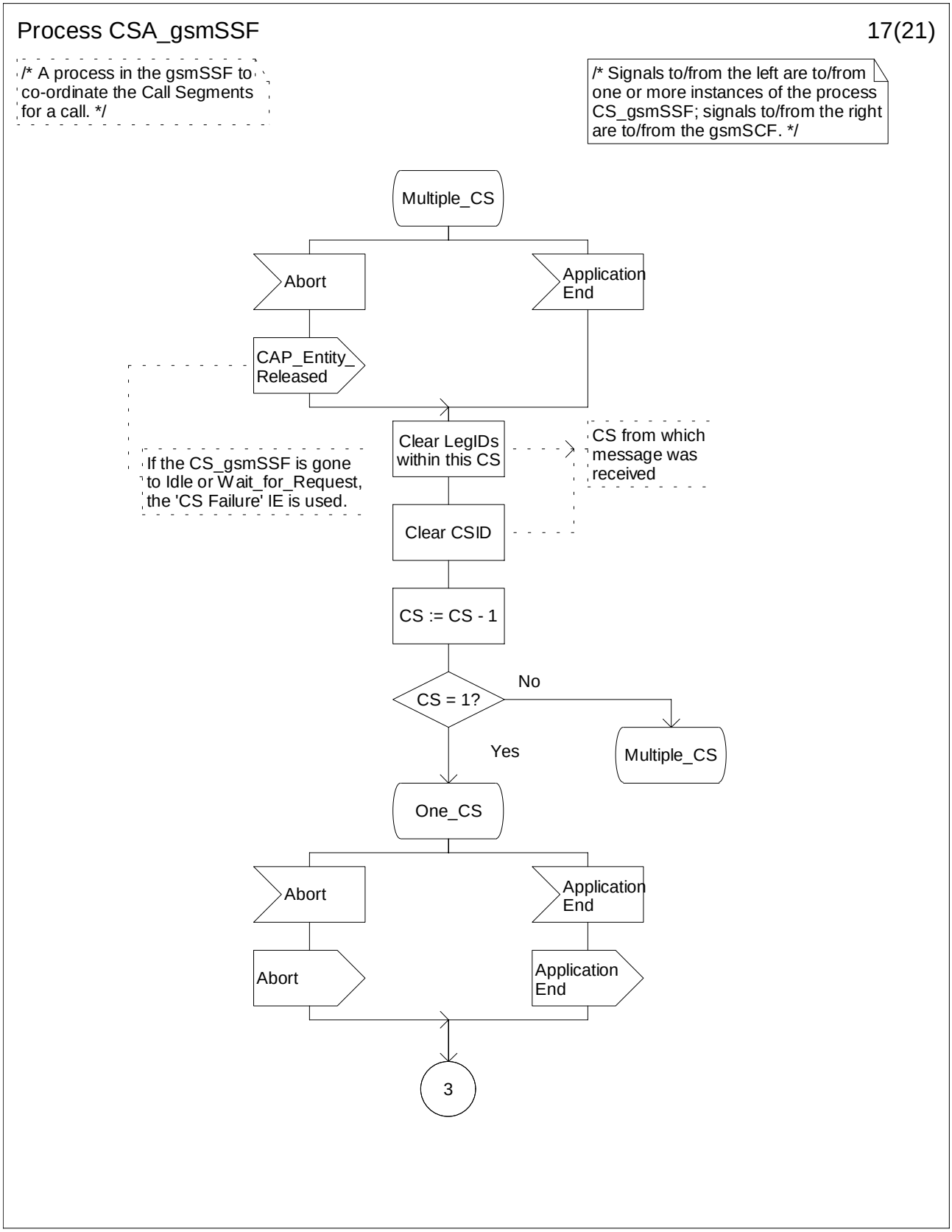
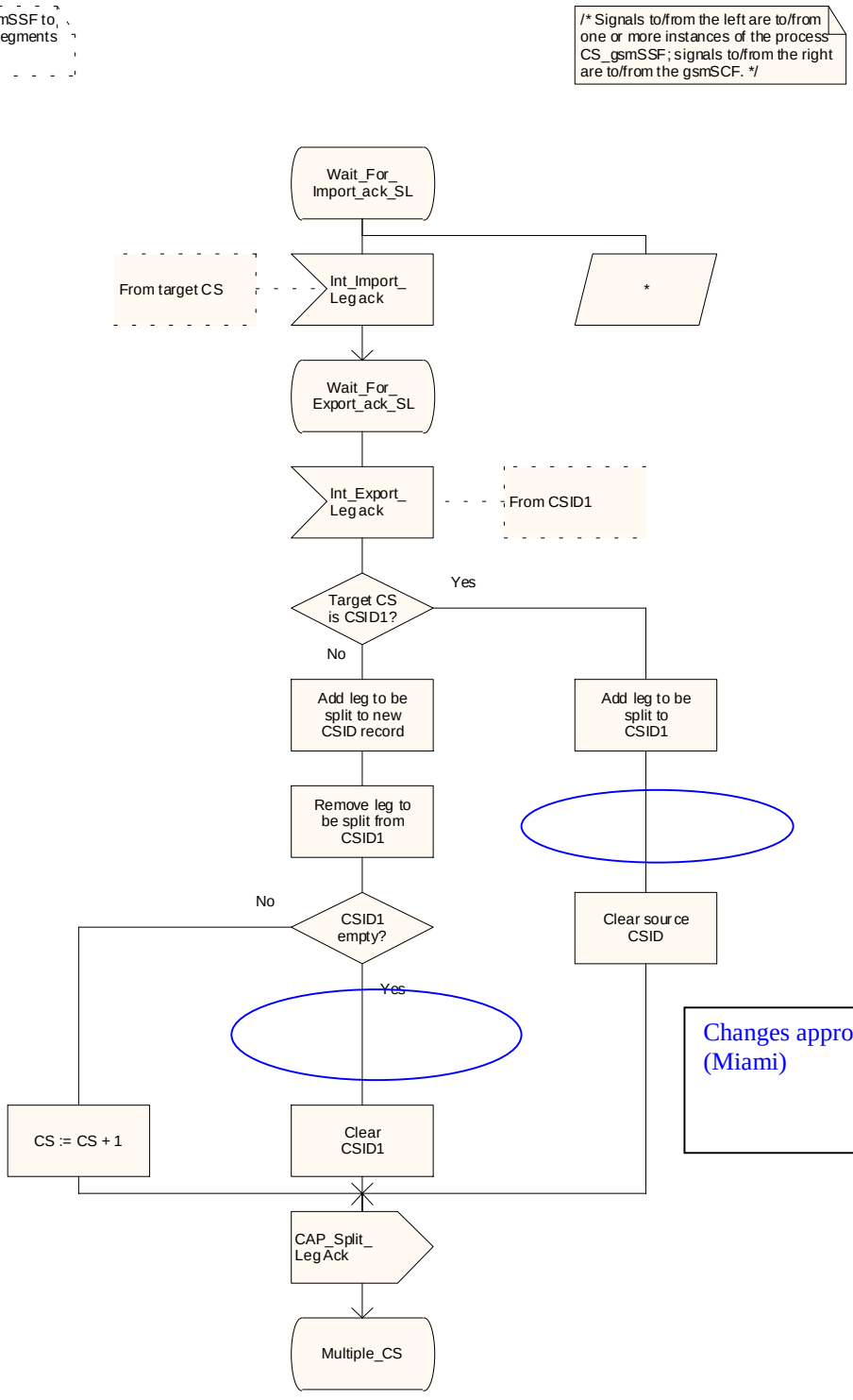


Figure 4.112q: Process CSA_gsmSSF (sheet 17)

Process CSA_gsmSSF 18(21)



Changes approved in Tdoc N2-020943 (Miami)

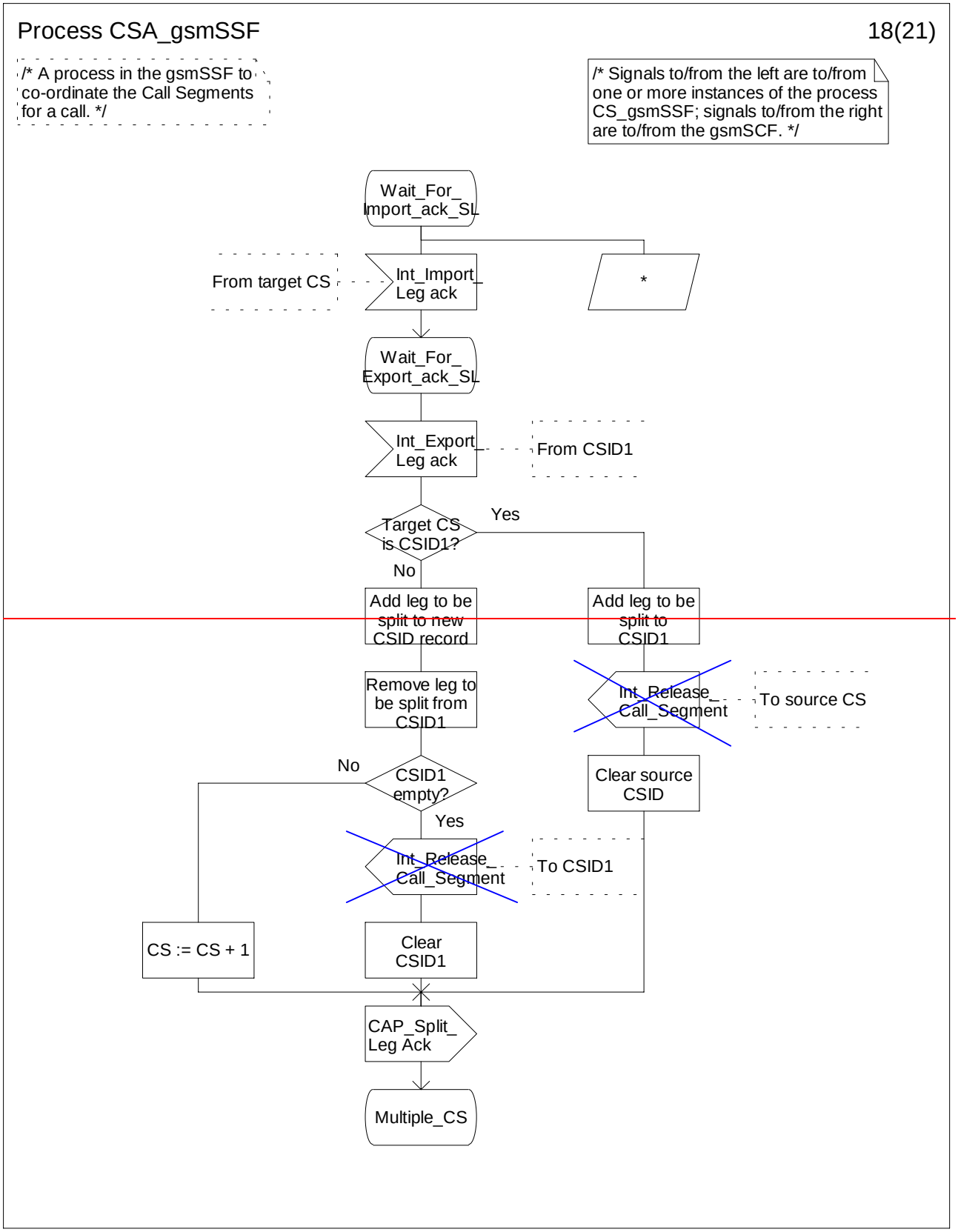
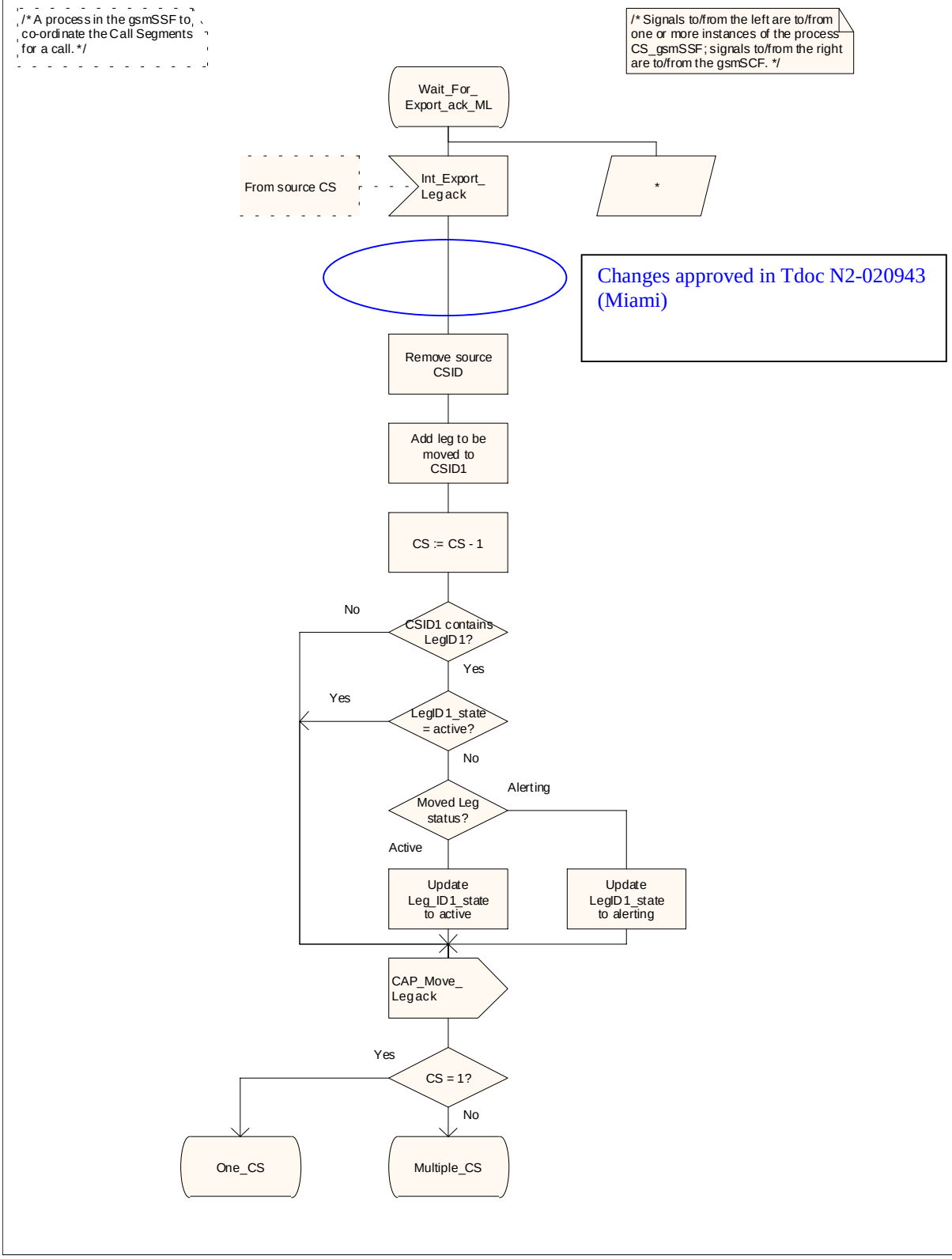


Figure 4.112r: Process CSA_gsmSSF (sheet 18)

Process CSA_gsmSSF 19(21)



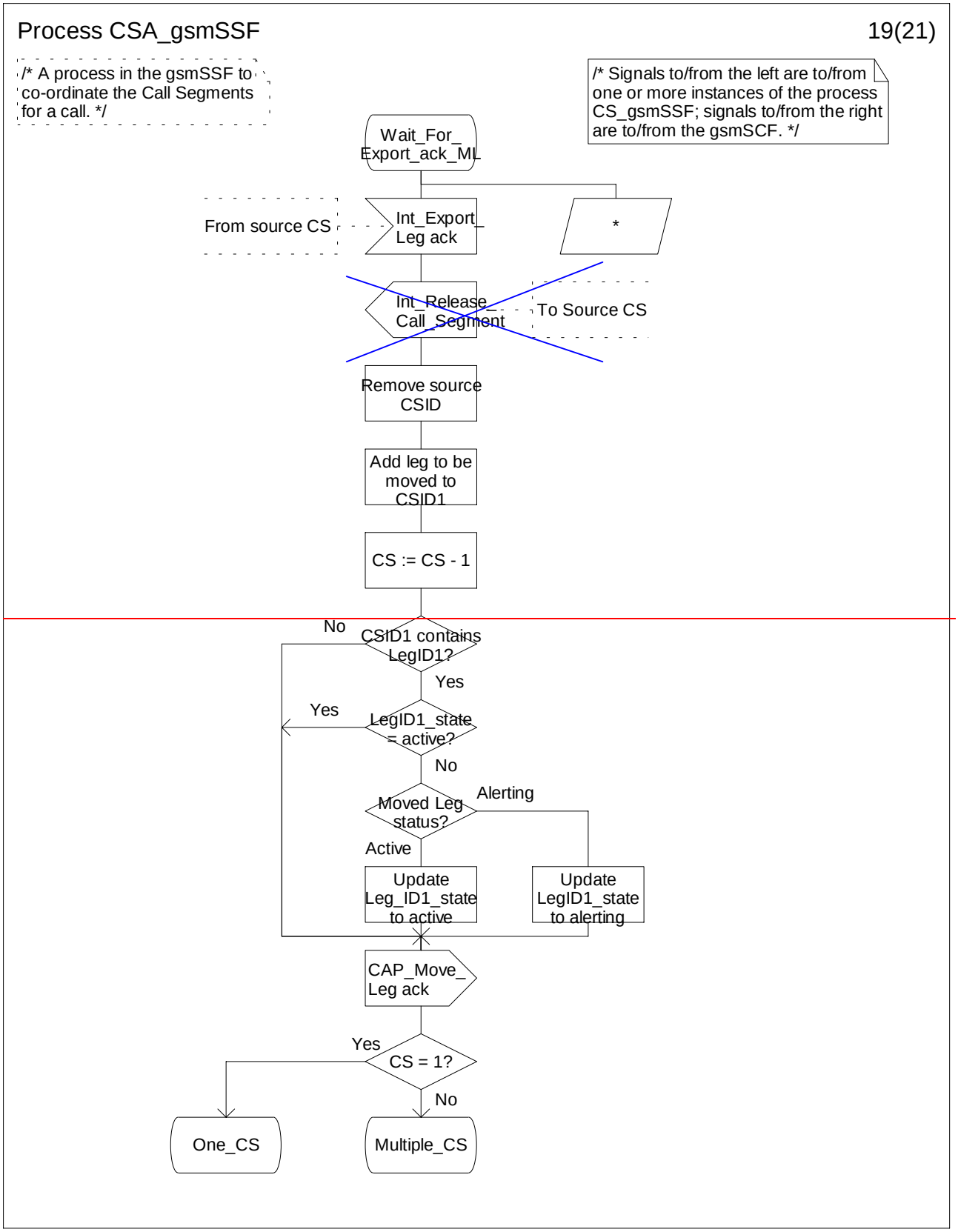
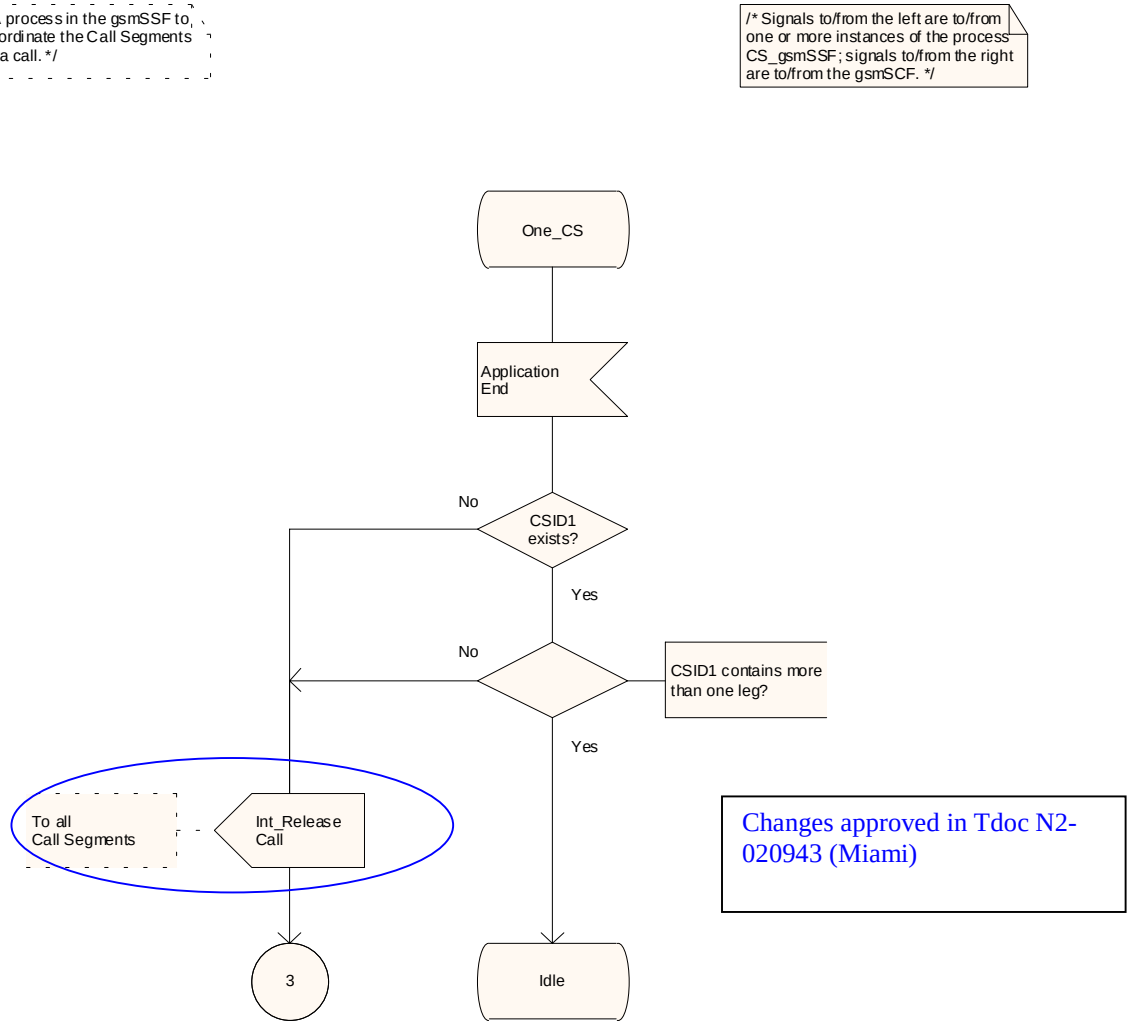


Figure 4.112s: Process CSA_gsmSSF (sheet 19)

Process CSA_gsmSSF 20(21)



Changes approved in Tdoc N2-020943 (Miami)

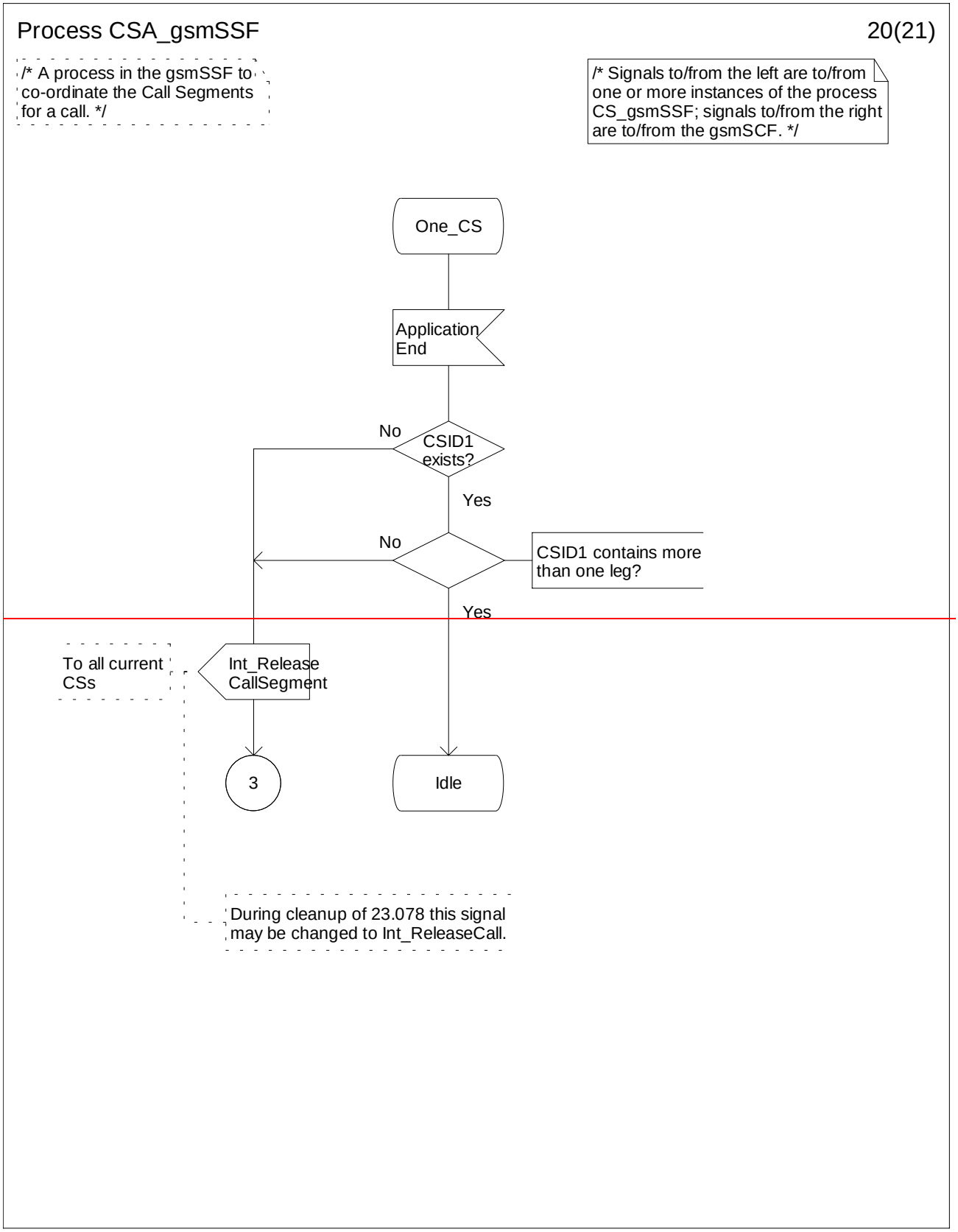
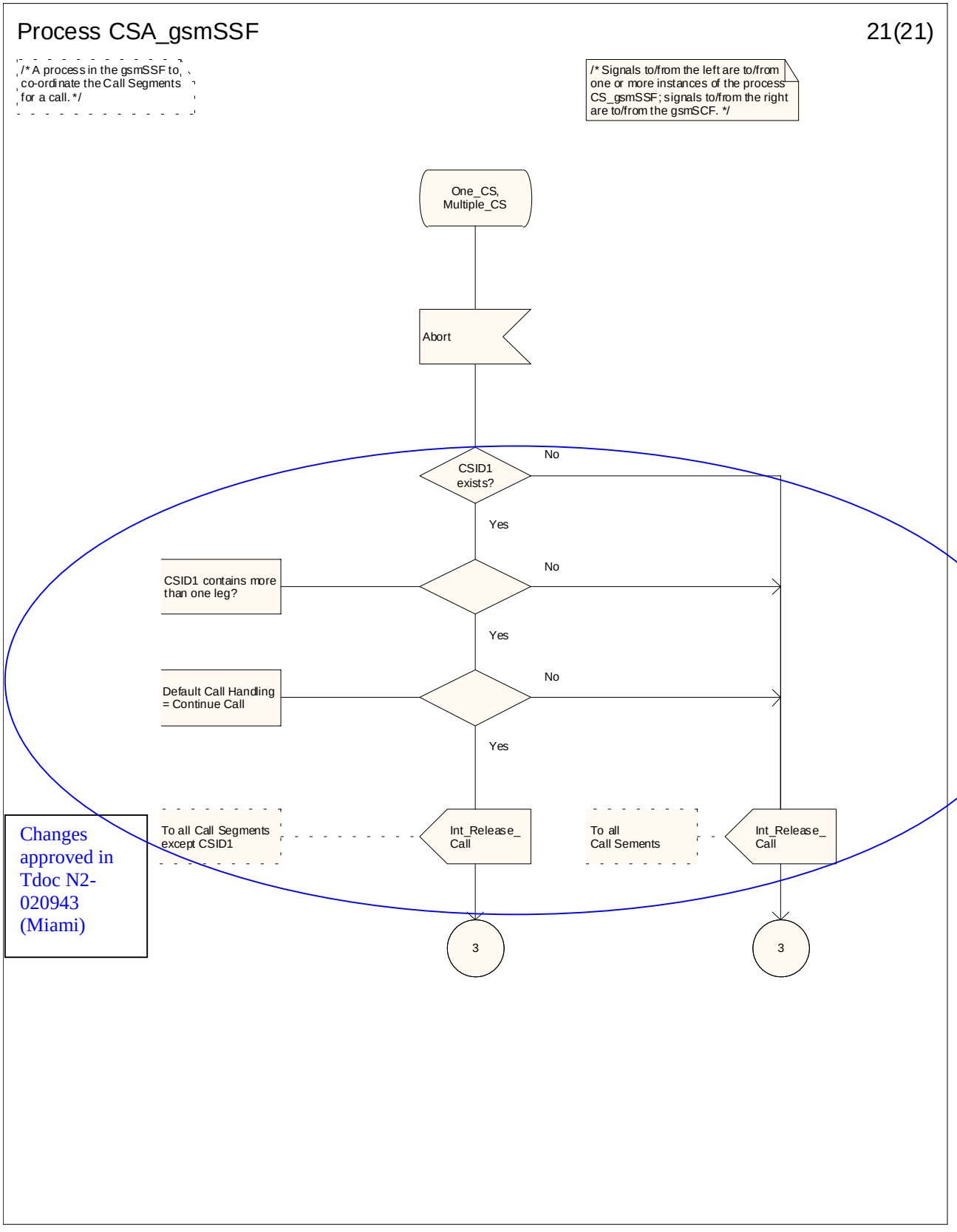


Figure 4.112t: Process CSA_gsmSSF (sheet 20)


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
CSID1 exists?
No
Yes
CSID1 contains more than one leg?
No
Yes
Default Call Handling = Continue Call
No
Yes
To all Call Segments except CSID1
Int_Release_ Call
To all Call Sements
Int_Release_ Call
3
3
Changes approved in Tdoc N2-020943 (Miami)

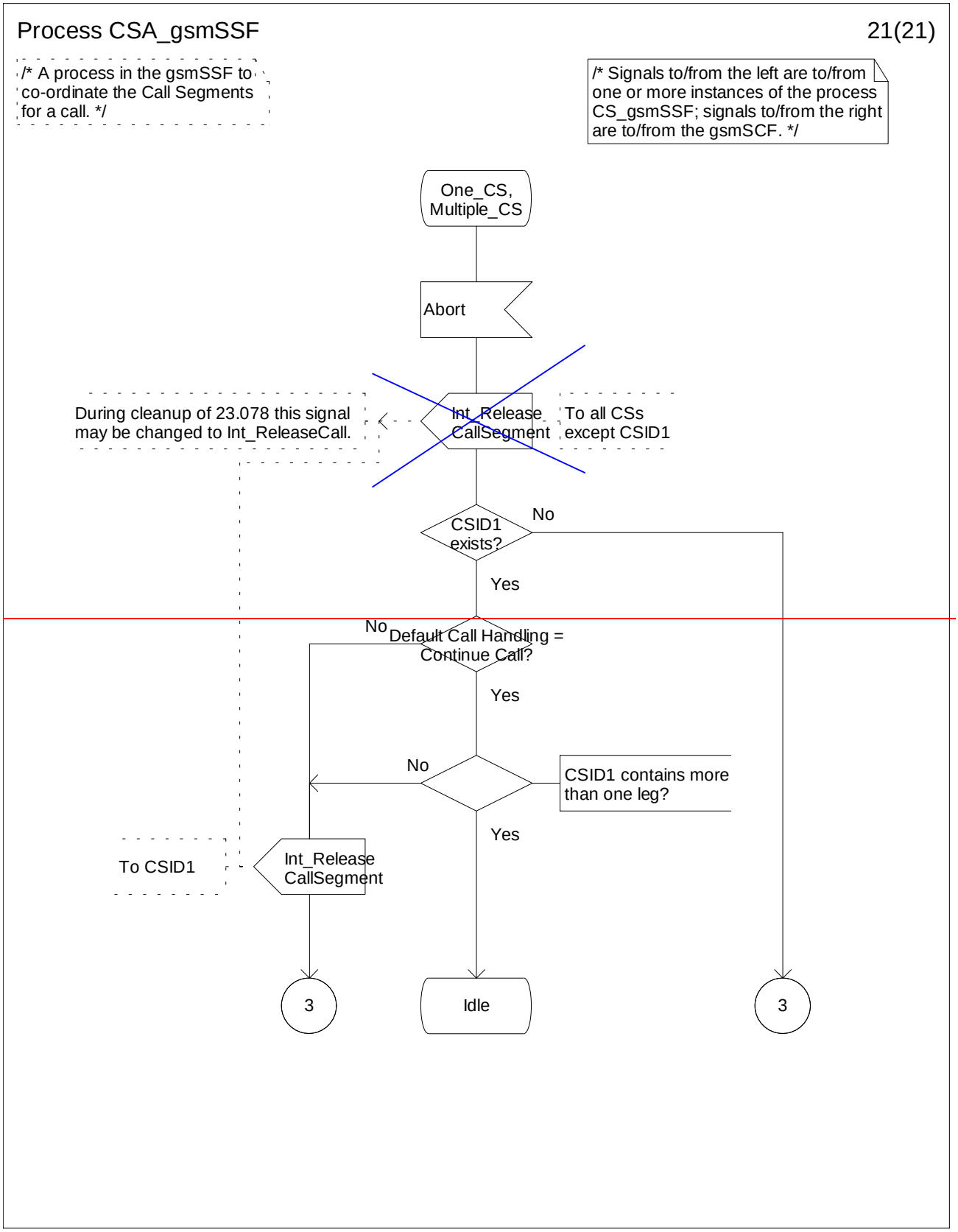


Figure 4.112u: Process CSA_gsmSSF (sheet 21)

…

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

3GPP TSG CN WG2 Meeting #26 ***N2-021079***
Bankok, Thailand, 11th – 15th November 2002

CR-Form-v7

CHANGE REQUEST

⌘ **23.078** **CR** **499** ⌘ **rev** **1** ⌘ Current version: **5.1.0** ⌘

*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:	⌘	MSC-number in MAP Location Information
Source:	⌘	Nokia
Work item code:	⌘	CAMEL4
Date:	⌘	14/11/2002
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 SCP/gsmSCF does not receive MSC-number parameter in MAP-AnyTimeInterrogation-Ack (ATI-ack). Therefore, it is not possible for the SCP to send CAP-InitiateCallAttempt (ICA) to VMSC of the served party with MSISDN. The ICA may be sent containing the MSISDN or Mobile Station Roaming number (MSRN). In the latter (MSRN) case the SCP interrogates the MSRN with MAP-SendRoutingInfo (SRI). The VMSC-number is already in SRI-ack. The VMSC address would be the Global Title (GT) in SCCP layer addressing the receiving network element, whereas the MSISDN or MSRN is the CAP layer parameter *Destination Routeing Address* addressing the party to receive the call. Another option would be using the VLR address as GT. However, depending on the configuration and implementation, the MSC may not accept ICA if the gsmSCF uses VLR address. Usage of VMSC addres as GT is more reliable. Note that N2-021045 makes VLR address conditional (shall be present if available).
Summary of change:	⌘	The HLR shall return the stored MSC-number in SRI-ack (already is) and ATI-ack, if available. The MSC/VLR provided MSC-number shall be ignored, if received. (This is identical handling as for the VLR-number).
Consequences if not approved:	⌘	SCP is not able to send ICA(MSISDN) to VMSC of the served subscriber using the (V)MSC address as SCCP Global Title. This would then complicate the SCP service logic, and cause some inefficiency in transmission costs (ISUP trunk may be required between GMSC and VMSC without this change). Also, it would be more complicated to share the MSC load due to ICAs evenly in the network. ICA(MSISDN) may be useful instead of ICA(MSRN) because GMSCs have a lot of existing functionality. Interesting features are Number Portability, trace, etc.

Clauses affected:	⌘				
Other specs affected:	⌘	**Y**	**N**		⌘
			X	Other core specifications	
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	Currently 23.018 does *not require* MSC-number. MSC-number is after ellipsis in ASN therefore recipient shall ignore the parameter if not recognized. If recipient rejects the operation then this network element does not comply with 29.002 compability rules, and it is not possible to add any new parameters in future (to any MAP-operation). The TS 23.278 subclause 7.3.2.1.1 refers to TS 23.078, therefore no change is needed in the TS 23.278.			

— For information —

Extract from 29.002:

```
LocationInformation ::= SEQUENCE {
     ageOfLocationInformation            AgeOfLocationInformation          OPTIONAL,
     geographicalInformation             [0] GeographicalInformation       OPTIONAL,
     vlr-number                          [1] ISDN-AddressString            OPTIONAL,
     locationNumber                      [2] LocationNumber                OPTIONAL,
     cellGlobalIdOrServiceAreaIdOrLAI    [3] CellGlobalIdOrServiceAreaIdOrLAI   OPTIONAL,
     extensionContainer                  [4] ExtensionContainer            OPTIONAL,
     ... ,
     selectedLSA-Id                      [5] LSAIdentity                   OPTIONAL,
     msc-Number                          [6] ISDN-AddressString            OPTIONAL,
     geodeticInformation                 [7] GeodeticInformation           OPTIONAL,
     currentLocationRetrieved            [8] NULL                          OPTIONAL,
     sai-Present                         [9] NULL                          OPTIONAL }
-- sai-Present indicates that the cellGlobalIdOrServiceAreaIdOrLAI parameter contains
-- a Service Area Identity.
-- currentLocationRetrieved shall be present
-- if the location information were retrieved after a successfull paging.
```

Extract from 23.018 Location Information:

8.3.5.1 Location information

The compound information element Location information consists of the following subordinate information elements:

Information element name	Required	Description
Location number	C	For a definition of this information element, see ITU-T Recommendation Q.763 [35]. Shall be present if the VLR can derive it from the stored service area identity (for UMTS) or cell global identity (for GSM) or location area identity; otherwise shall be absent. The mapping from service area identity or cell ID and location area to location number is network-specific and outside the scope of the UMTS and GSM standards.
Service area ID	C	Service area identity of the cell in which the MS is currently in radio contact or in which the MS was last in radio contact. Shall be present if the MS uses UMTS radio access and the subscriber record is marked as confirmed by radio contact; otherwise shall be absent.
Cell ID	C	Cell global identity of the cell in which the MS is currently in radio contact or in which the MS was last in radio contact. Shall be present if the MS uses GSM radio access and the subscriber record is marked as confirmed by radio contact; otherwise shall be absent.
Geographical information	C	For a definition of this information element, see 3GPP TS 23.032 [7] . Shall be present if the VLR can derive it from the stored service area identity, cell global identity or location area identity; otherwise shall be absent.
Geodetic information	C	This information element corresponds to the Calling Geodetic Location defined in ITU-T Recommendation Q.763 [35]. Shall be present if the VLR can derive it from the stored service area identity, cell global identity or location area identity; otherwise shall be absent.
VLR number	O	E.164 number which identifies the VLR (see 3GPP TS 23.003 [5]). If the HLR receives it from the VLR it shall ignore it.
Age of location information	C	Measured in minutes. Shall be present if available in the MSC/VLR; otherwise shall be absent.
Current Location Retrieved	C	Shall be present when location information was obtained after a successful paging procedure for Active Location Retrieval.

— For information —

4.6.9 HLR to GMSC information flows

4.6.9.1 Send Routeing Info ack

4.6.9.1.1 Description

This IF is specified in 3GPP TS 23.018 [**Error! Reference source not found.**]; it is used by the HLR to transfer the requested routeing information to the GMSC.

4.6.9.1.2 Information Elements

Send Routeing Info ack contains the following CAMEL specific information elements:

Information element name	Status	Description
Location Information	C	This IE indicates the location of the served subscriber.
O—CSI	S	O-CSI is defined in subclause **Error! Reference source not found.**. This IE identifies the subscriber as having originating CAMEL services. It shall be present if O-CSI is active, and CFU or CFNRc has been invoked, or if both O-CSI and T-CSI are active.
D—CSI	S	D-CSI is defined in subclause **Error! Reference source not found.**. This IE identifies the subscriber as having originating CAMEL dialled services. It shall be present if D-CSI is active, and CFU or CFNRc has been invoked, or if both D-CSI and T-CSI are active.
Subscriber State	C	This IE indicates the status of the MS. The possible values of the IE are: - CAMEL Busy: The VLR has indicated that the MS is engaged in a transaction for a mobile originating or terminated circuit-switched call. - Network Determined Not Reachable: The VLR has indicated that the network can determine from its internal data that the MS is not reachable. - Assumed Idle: The VLR has indicated that the state of the MS is neither "CAMEL Busy" nor "Network Determined Not Reachable". - Not Provided From VLR: The VLR did not provide any information on subscriber state even though it was requested.
T—CSI	S	This IE is described in a table below. This IE identifies the subscriber as having terminating CAMEL services. It shall be present if T-CSI is active and no Suppress T-CSI indicator is present in the Send Routeing Info IF.
Basic Service Code	C	This IE indicates the type of basic service i.e., teleservice or bearer service.
CUG Subscription Flag	S	This IE indicates if the called party has a CUG subscription. It shall be present only if the T-CSI is active and included in the Send Routing Information ack IF.
Supported CAMEL Phases In VMSC	S	This IE indicates the supported CAMEL phases of the VLR. It shall be present if known by the HLR, otherwise it shall be absent.
Offered CAMEL4 CSIs In VMSC	S	This IE indicates the CAMEL phase 4 CSIs offered in the VMSC. It shall be present if known by the HLR, otherwise it shall be absent.
VMSC Address	M	This IE indicates the E.164 address of the VMSC in whose area the B subscriber is currently registered.

— For information —

4.6.16 HLR to gsmSCF information flows

4.6.16.1 Send Routeing Info ack

4.6.16.1.1 Description

This IF is described in subclause 4.6.9.1; it is used by the HLR to transfer the requested routeing information to the gsmSCF.

— For information —

11.3.2 GMLC to gsmSCF information flows

11.3.2.1 Any Time Interrogation ack

11.3.2.1.1 Description

This IF is used by the GMLC to provide the requested information to the gsmSCF.

11.3.2.1.2 Information Elements

Information element name	Status	Description
Location Information	C	This IE indicates the location of the Mobile Station.

Location Information is defined in 3GPP TS 23.018 [**Error! Reference source not found.**]. The following differences apply:

Information element name	Status	Description
Location number	-	Not applicable
Service area ID	-	Not applicable
Cell ID	-	Not applicable
Geographical information	C	See 3GPP TS 23.032 [**Error! Reference source not found.**]. The GMLC receives Extended Geographical Information from the MSC. The Extended Geographical Information shall be converted to the Geographical Information by the GMLC.
VLR number	-	Not applicable
Current Location Retrieved	-	Not applicable
MSC number	C	The GMLC receives the MSC number from the HLR in the SendRoutingInfoForLCS MAP message.
SGSN number	C	The GMLC receives the SGSN number from the HLR in the SendRoutingInfoForLCS MAP message.

—First modified section —

11.3.4 HLR to gsmSCF information flows

11.3.4.1 Any Time Interrogation ack

11.3.4.1.1 Description

This IF is used by the HLR to provide the requested subscriber location and/or subscriber state information to the gsmSCF.

11.3.4.1.2 Information Elements

Information element name	Status	Description
Location Information	C, E1	This IE indicates the location of the served subscriber in the MSC/VLR. It shall be present only if requested by the gsmSCF.
Location Information For GPRS	C, E1	This IE indicates the location of the served subscriber in the SGSN. The content is defined in the subclause **Error! Reference source not found.**. It shall be present only if requested by the gsmSCF.
Subscriber State	S, E2	This IE indicates the state of the MS in the CS domain. It shall be present only if requested by the gsmSCF. The possible values of the IE are: - CAMELBusy: The VLR has indicated that the MS is engaged in a transaction for a mobile originating or terminated circuit-switched call. - NetworkDeterminedNotReachable: The VLR has indicated that the network can determine from its internal data that the MS is not reachable. - AssumedIdle: The VLR has indicated that the state of the MS is neither "CAMELBusy" nor "NetworkDeterminedNotReachable". - NotProvidedFromVLR: The VLR did not provide any information on subscriber state even though it was requested.
PS Domain Subscriber State	S, E2	This IE indicates the state of the MS in the PS Domain. It shall be present only if requested by the gsmSCF. The possible values of the IE are: - Detached (see subclause **Error! Reference source not found.**). - CAMEL attached, MS not reachable for paging (see subclause **Error! Reference source not found.**). - CAMEL attached, MS may be reachable for paging (see subclause **Error! Reference source not found.**). - CAMEL PDP active, MS not reachable for paging (see subclause **Error! Reference source not found.**). - CAMEL PDP active, MS may be reachable for paging (see subclause **Error! Reference source not found.**). - Not provided from SGSN: The SGSN did not provide any information on subscriber state even though it was requested.
PDP Context Information List	C	This IE indicates the PDP context information (see the table in subclause **Error! Reference source not found.**) for each PDP context which is active for the MS. It shall be present if the PS domain Subscriber State has the value "CAMEL PDP active, MS not reachable for paging" or "CAMEL PDP active, MS may be reachable for paging"; otherwise it shall be absent.
IMEI (with software version)	C	This IE contains the IMEISV (as defined in 3GPP TS 23.003 [**Error! Reference source not found.**]) of the ME in use by the served subscriber. It shall be present only if requested by the gsmSCF.
MS Classmark 2	C	This IE contains the MS classmark 2, which is returned by the MS when it responds to paging in the CS domain. It shall be present only if requested by the gsmSCF.
GPRS MS Class	C	This IE contains the MS network and radio access capabilities. It shall be present only if requested by the gsmSCF.

Location Information is defined in 3GPP TS 23.018 [**Error! Reference source not found.**]. The following differences apply:

Information element name	Status	Description
Service area ID	C,E	See 3GPP TS 23.018 [**Error! Reference source not found.**].

Information element name	Status	Description
Cell ID	C,E	See 3GPP TS 23.018 [**Error! Reference source not found.**].
Location area ID	C,E	See 3GPP TS 23.003 [**Error! Reference source not found.**].
Selected LSA Identity	C	This IE indicates the LSA identity associated with the current position of the MS. It shall be present if the LSA ID in the subscriber data matches the LSA ID of the current cell. In the case of multiple matches the LSA Id with the highest priority it shall be present. See 3GPP TS 23.073 [**Error! Reference source not found.**].
Routeing area ID	C	See 3GPP TS 23.003 [**Error! Reference source not found.**].
MSC number	C	E.164 number which identifies the VMSC in whose area the subscriber is currently registered. See 3GPP TS 23.003 [**Error! Reference source not found.**]. If the HLR receives the *MSC number* from the VLR in the *Provide Subscriber Info ack* IF then the HLR shall ignore the *MSC number*.
SGSN number	C	See 3GPP TS 23.060 [**Error! Reference source not found.**].

3GPP TSG-CN WG2 Meeting #27 **Tdoc ⌘N2-021086**
Bangkok, Thailand, 11th - 15th November 2002.

CR-Form-v7

CHANGE REQUEST

⌘ **29.078** **CR** **295** ⌘ **rev** **2** ⌘ Current version: **5.1.0** ⌘

*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 ☒

Title:	⌘	Re-introduction of local definition of LocationInformationGPRS
Source:	⌘	Nortel Networks
Work item code:	⌘	CAMEL4
Date:	⌘	13/11/2002
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 imported LocationInformationGPRS parameter definition for Release 5 is incompatible with the local definitions that are maintained in the Release 99 and Release specifications. This came about as a result of moving from a local definition of LocationInformationGPRS in CAP in R99 and R4 to importing the MAP definition of 29.002
Summary of change:	⌘	The local definition of LocationInformationGPRS is reintroduced to 29.078
Consequences if not approved:	⌘	There will be incompatibility between the R99/R4 specification and the R5 specification.

Clauses affected:	⌘	5.1, 8.1

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

⌘

Other comments: ⌘

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

5.1 Data types

```
CAP-datatypes {itu-t(0) identified-organization(4) etsi(0) mobileDomain(0) umts-network(1)
modules(3) cap-datatypes(52) version4(3)}

DEFINITIONS IMPLICIT TAGS ::= BEGIN

IMPORTS

    Duration,
    Integer4,
    Interval,
    LegID,
    ServiceKey
FROM CS1-DataTypes {itu-t(0) identified-organization(4) etsi(0) inDomain(1) in-network(1)
modules(0) cs1-datatypes(2) version1(0)}

    BothwayThroughConnectionInd,
    CriticalityType,
    MiscCallInfo
FROM CS2-datatypes {itu-t(0) identified-organization(4) etsi(0) inDomain(1) in-network(1)
cs2(20) modules(0) in-cs2-datatypes(0) version1(0)}

    IMSI,
    ISDN-AddressString,
    Ext-BasicServiceCode,
    NAEA-CIC
FROM MAP-CommonDataTypes {itu-t(0) identified-organization(4) etsi(0) mobileDomain(0)
gsm-Network(1) modules(3) map-CommonDataTypes(18) version8(8)}

    Ext-QoS-Subscribed,
    GeographicalInformation,
    GSN-Address,
    LocationInformation,
    LSAIdentity,
    QoS-Subscribed,
    SubscriberState,
    GPRSChargingID,
    LocationInformationGPRS
FROM MAP-MS-DataTypes {itu-t(0) identified-organization(4) etsi(0) mobileDomain(0)
gsm-Network(1) modules(3) map-MS-DataTypes(11) version8(8)}

    CallReferenceNumber,
    SuppressionOfAnnouncement
FROM MAP-CH-DataTypes {itu-t(0) identified-organization(4) etsi(0) mobileDomain(0)
gsm-Network(1) modules(3) map-CH-DataTypes(13) version8(8)}

    tc-Messages,
    classes
FROM CAP-object-identifiers {itu-t(0) identified-organization(4) etsi(0) mobileDomain(0)
umts-network(1) modules(3) cap-object-identifiers(100) version4(3)}

    TCInvokeIdSet
FROM TCAPMessages tc-Messages

    EXTENSION,
    PARAMETERS-BOUND,
    SupportedExtensions
FROM CAP-classes classes

    ExtensionContainer
FROM MAP-ExtensionDataTypes {itu-t(0) identified-organization(4) etsi(0) mobileDomain(0)
gsm-Network(1) modules(3) map-ExtensionDataTypes(21) version8(8)}

;
```

****** *Text Removed for brevity* ******

```
LocationInformationGPRS     ::= SEQUENCE {
    cellGlobalIdOrServiceAreaIdOrLAI    [0] OCTET STRING (SIZE(5..7))    OPTIONAL,
    routeingAreaIdentity                [1] RAIdentity                   OPTIONAL,
    geographicalInformation             [2] GeographicalInformation      OPTIONAL,
    sgsn-Number                         [3] ISDN-AddressString           OPTIONAL,
    selectedLSAIdentity                 [4] LSAIdentity                  OPTIONAL,
    extensionContainer                  [5] ExtensionContainer           OPTIONAL,
    ...,
    sai-Present                         [6] NULL                         OPTIONAL
}
-- cellGlobalIdOrServiceAreaIdOrLAI shall contain only the value part of the
-- CellGlobalIdOrServiceAreaIdFixedLengthorLAI type or the LAIFixedLength type (i.e. excluding tags
-- and lengths) as defined in 3GPP TS 29.002 [13].  I.e. the 3GPP 29.002
-- CellGlobalIdOrServiceAreaIdorLAI CHOICE type tag and length shall not be included.
-- LSAIdentity is coded in accordance with 3GPP TS 29.002 [13].
-- sai-Present indicates that the cellGlobalIdOrServiceAreaIdOrLAI parameter contains
```

-- a Service Area Identity.

****** *Next Change* ******

8 GPRS Control

8.1 gsmSCF/gprsSSF operations and arguments

```
CAP-gprsSSF-gsmSCF-ops-args {itu-t(0) identified-organization(4) etsi(0) mobileDomain(0)
umts-network(1) modules(3) cap-GPRS-ops-args(107) version4(3)}

DEFINITIONS IMPLICIT TAGS ::= BEGIN

-- This module contains the operations and operation arguments used for the
-- gprsSSF – gsmSCF interface, for the control of GPRS.

-- The table in subclause 2.1 lists the specifications that contain the modules
-- that are used by CAP.

IMPORTS

    errortypes,
    datatypes,
    operationcodes,
    classes,
    ros-InformationObjects
FROM CAP-object-identifiers {itu-t(0) identified-organization(4) etsi(0) mobileDomain(0)
umts-network(1) modules(3) cap-object-identifiers(100) version4(3)}

    OPERATION
FROM Remote-Operations-Information-Objects ros-InformationObjects

    ServiceKey
FROM CS1-DataTypes {itu-t(0) identified-organization(4) etsi(0) inDomain(1) in-network(1)
modules(0) cs1-datatypes(2) version1(0)}

    MiscCallInfo
FROM CS2-datatypes {itu-t(0) identified-organization(4) etsi(0) inDomain(1) in-network(1)
cs2(20) modules(0) in-cs2-datatypes (0) version1(0)}

    IMEI,
    IMSI,
    ISDN-AddressString
FROM MAP-CommonDataTypes {itu-t(0) identified-organization(4) etsi(0) mobileDomain(0)
gsm-Network(1) modules(3) map-CommonDataTypes(18) version8(8)}

    GPRSChargingID,
    GPRSMSClass,
    GSN-Address,
    ~~LocationInformationGPRS,~~
    RAIdentity
FROM MAP-MS-DataTypes {itu-t(0) identified-organization(4) etsi(0) mobileDomain(0)
gsm-Network(1) modules(3) map-MS-DataTypes(11) version8(8)}

    PARAMETERS-BOUND
FROM CAP-classes classes

    opcode-activityTestGPRS,
    opcode-applyChargingGPRS,
    opcode-applyChargingReportGPRS,
    opcode-cancelGPRS,
    opcode-connectGPRS,
    opcode-continueGPRS,
    opcode-entityReleasedGPRS,
    opcode-eventReportGPRS,
    opcode-furnishChargingInformationGPRS,
    opcode-initialDPGPRS,
    opcode-releaseGPRS,
    opcode-requestReportGPRSEvent,
    opcode-resetTimerGPRS,
    opcode-sendChargingInformationGPRS
```

```
FROM CAP-operationcodes operationcodes

    AccessPointName {},
    GPRSCause {},
    ChargingCharacteristics,
    ChargingResult,
    ChargingRollOver,
    EndUserAddress,
    Extensions,
    FCIGPRSBillingChargingCharacteristics,
    GPRSEventSpecificInformation {},
    GPRSEvent,
    GPRSEventType,
    LocationInformationGPRS,
    PDPID,
    PDPInitiationType,
    QualityOfService,
    SCIGPRSBillingChargingCharacteristics {},
    SGSNCapabilities,
    TimeAndTimezone {},
    TimerID,
    TimerValue
FROM CAP-datatypes datatypes

    missingCustomerRecord,
    missingParameter,
    parameterOutOfRange,
    systemFailure,
    taskRefused,
    unexpectedComponentSequence,
    unexpectedDataValue,
    unexpectedParameter,
    unknownPDPID
FROM CAP-errortypes errortypes

;
```