3GPP TSG CN Plenary Meeting #21 **NP-030367**
17th - 19th September 2003. Frankfurt, Germany.

Source: TSG CN WG2

Title: CRs on Rel-5 Work Item CAMEL4

Agenda item: 8.3

Document for: APPROVAL

Introduction:

This document contains 3 CRs on **Rel-5 Work Item CAMEL4.** These CRs have been agreed by TSG CN WG2 and are forwarded to TSG CN Plenary meeting for approval.

WG_tdoc	Title	Spec	CR	Rev	Cat	Rel	C_Ver
N2-030336	Correction to PlayTone pre-conditions	29.078	326		F	Rel-5	5.4.0
N2-030347	Correction to PlayTone pre-conditions	23.078	605		F	Rel-5	5.4.0
N2-030472	Handling of concurrent tones	23.078	617	3	F	Rel-5	5.4.0

3GPP TSG CN WG2 Meeting #30 **N2-030336**
Sophia Antipolis, France, 25th – 29th August 2003

CHANGE REQUEST

⌘ **29.078** **CR** **326** ⌘**rev** ⌘ Current version: 5.4.0 ⌘

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

Title:	⌘	Correction to PlayTone pre-conditions
Source:	⌘	Ericsson
Work item code:	⌘	CAMEL4
Date:	⌘	18 July 2003
Category:	⌘	F (essential correction)
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: ⌘

Currently, the PlayTone operation in CAP V4 is allowed in the gsmSSF states Monitoring, Waiting for Instructions (WFI) and Waiting for End of Temporary Connection (WfEoTC). It is not allowed in the state Wait for End of User Interaction (WfEoUI).

This set of preconditions is unlogical and it complicates implementation of the PlayTone operation.

For CPH implementation, MSCs may use the same connection mechanism to the Call Segment for:

(a) User Interaction (UI);
(b) Temporary Connection (TC); and
(c) Tone Injection (PlayTone operation).

Hence, if UI or TC is ongoing for the Call Segment, it is not possible to play a tone for that Call Segment. Therefore, the current pre-conditions for the PlayTone operation can't be implemented.

Alternatively, TS 29.078 ***could*** specify that in the case that UI or TC is active, PlayTone may be used for an individual leg, but not for a Call Segment, However, such pre-condition would be unnecessarily complex.

Moreover, when User Interaction is ongoing, either through a temporary connection or by means of connection to an SRF, it should not be required to inject a tone.

The present CR proposes, therefore, that PlayTone is allowed only in the CS_gsmSSF FSM states WFI and Monitoring.

Summary of change:	⌘	Allow PlayTone only in the CS_gsmSSF FSM states WFI and Monitoring.
Consequences if not approved:	⌘	Unnecessarily complex gsmSSF implementation; certain PlayTone operations can not be executed by the gsmSSF; Service Logic may experience unexpected behaviour from gsmSSF.

Clauses affected:	⌘	11.24			
Other specs affected:	⌘	Y / N		⌘	
		X /	Other core specifications		TS 23.078-CR605
		/ X	Test specifications		
		/ X	O&M Specifications		
Other comments:	⌘				

****** First Modification ******

11.24 PlayTone procedure

11.24.1 General description

The gsmSCF uses this operation to instruct the gsmSSF to play tones to a leg or a Call Segment using the MSC's tone generator.

If a Call Segment is indicated, then the tones shall be played to all active legs in that Call Segment. If a leg is indicated, then the tones shall be played to that leg only.

11.24.1.1 Parameters

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

- bursts:
  This parameter indicates the variable sequence of tones to be played and consists of the following parameters:

  - numberOfBursts:
    This parameter indicates the number of bursts that form the burstlist.

  - burstInterval:
    This parameter indicates the time interval between successive bursts in a sequence of bursts.

  - numberOfTonesInBurst:
    This parameter indicates the number of tones to be played in each burst.

  - toneDuration:
    This parameter indicates the time durationof a single tone in a burst.

  - toneInterval:
    This parameter indicates the time interval between successive tones in a burst.

11.24.2 Responding entity (gsmSSF)

11.24.2.1 Normal procedure

gsmSSF preconditions:

The gsmSSF FSM is in one of the following states:

"Monitoring"; or
"Waiting_for_Instructions"~~,~~; ~~or~~
~~"Waiting_for_End_of_Temporary_Connection".~~

If a Call Segment is indicated, then at least one of the legs in that Call Segment is in the active phase.

gsmSSF postconditions:

(1) No gsmSSF FSM state transition.

11.24.2.2 Error handling

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

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

3GPP TSG CN WG2 Meeting #30 **N2-030347**
Sophia Antipolis, France, 25th – 29th August 2003

CHANGE REQUEST

⌘ **23.078** **CR** **605** ⌘**rev** ⌘ Current version: **5.4.0** ⌘

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

Title:	⌘	Correction to PlayTone pre-conditions
Source:	⌘	Ericsson
Work item code:	⌘	CAMEL4
Date:	⌘	18 July 2003
Category:	⌘	F (essential correction)
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: ⌘

Currently, the PlayTone operation in CAP V4 is allowed in the gsmSSF states Monitoring, Waiting for Instructions (WFI) and Waiting for End of Temporary Connection (WfEoTC). It is not allowed in the state Wait for End of User Interaction (WfEoUI).

This set of preconditions is unlogical and it complicates implementation of the PlayTone operation.

For CPH implementation, MSCs may use the same connection mechanism to the Call Segment for:

(a) User Interaction (UI);
(b) Temporary Connection (TC); and
(c) Tone Injection (PlayTone operation).

Hence, if UI or TC is ongoing for the Call Segment, it is not possible to play a tone for that Call Segment. Therefore, the current pre-conditions for the PlayTone operation can't be implemented.

Alternatively, TS 29.078 ***could*** specify that in the case that UI or TC is active, PlayTone may be used for an individual leg, but not for a Call Segment, However, such pre-condition would be unnecessarily complex.

Moreover, when User Interaction is ongoing, either through a temporary connection or by means of connection to an SRF, it should not be required to inject a tone.

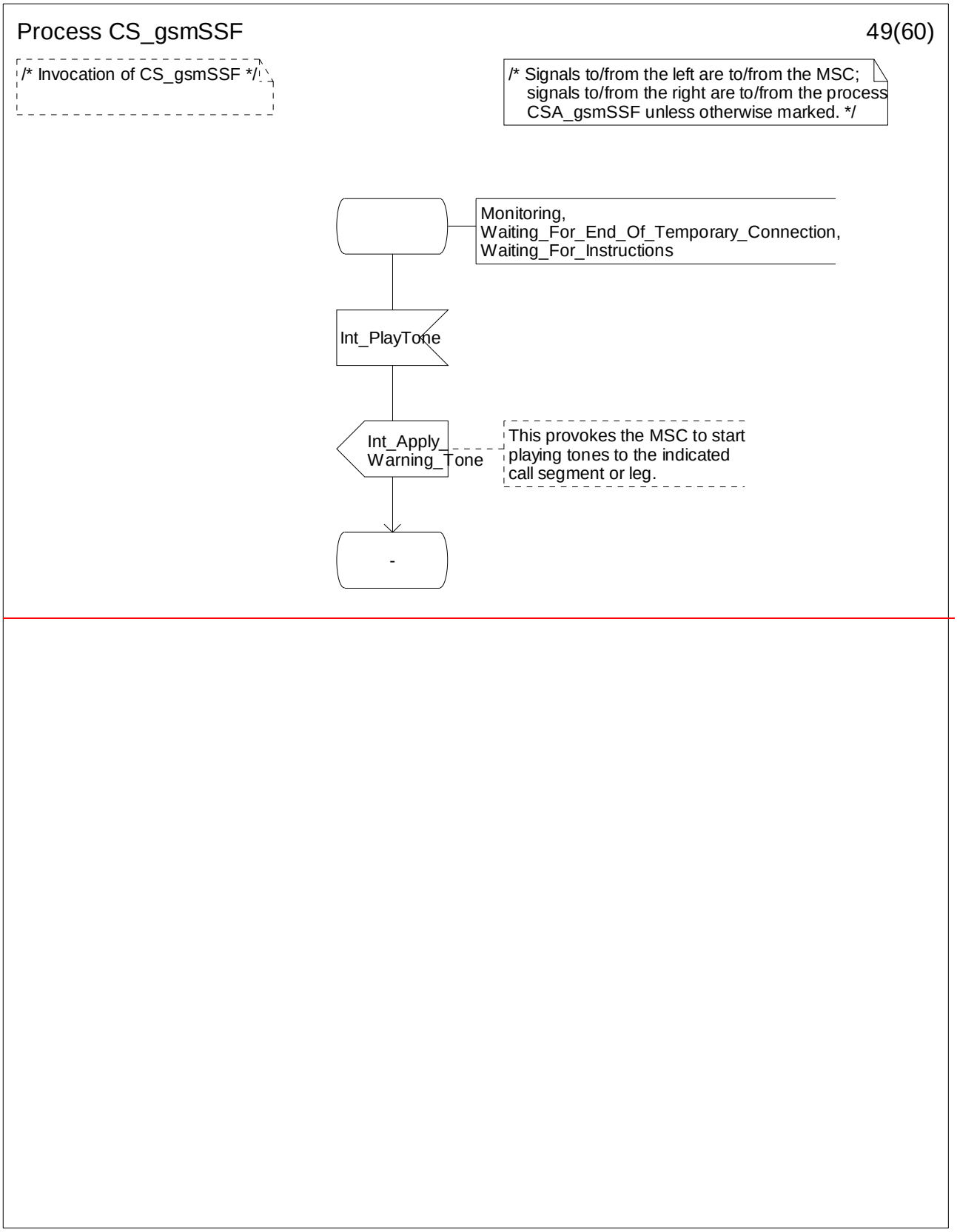
The present CR proposes, therefore, that PlayTone is allowed only in the CS_gsmSSF FSM states WFI and Monitoring.

Summary of change:	⌘	Allow PlayTone only in the CS_gsmSSF FSM states WFI and Monitoring.
Consequences if not approved:	⌘	Unnecessarily complex gsmSSF implementation; certain PlayTone operations can not be executed by the gsmSSF; Service Logic may experience unexpected behaviour from gsmSSF.

Clauses affected:	⌘	4.5.7.5			
Other specs affected:	⌘	Y / N	Other core specifications	⌘	TS 29.078 - CR326
		X /	Test specifications		
		X /	O&M Specifications		
Other comments:	⌘				

***** *First Modification* *****

4.5.7.5 Process CS_gsmSSF and procedures



~~**Figure 4.95-49: Process CS_gsmSSF (sheet 49)**~~

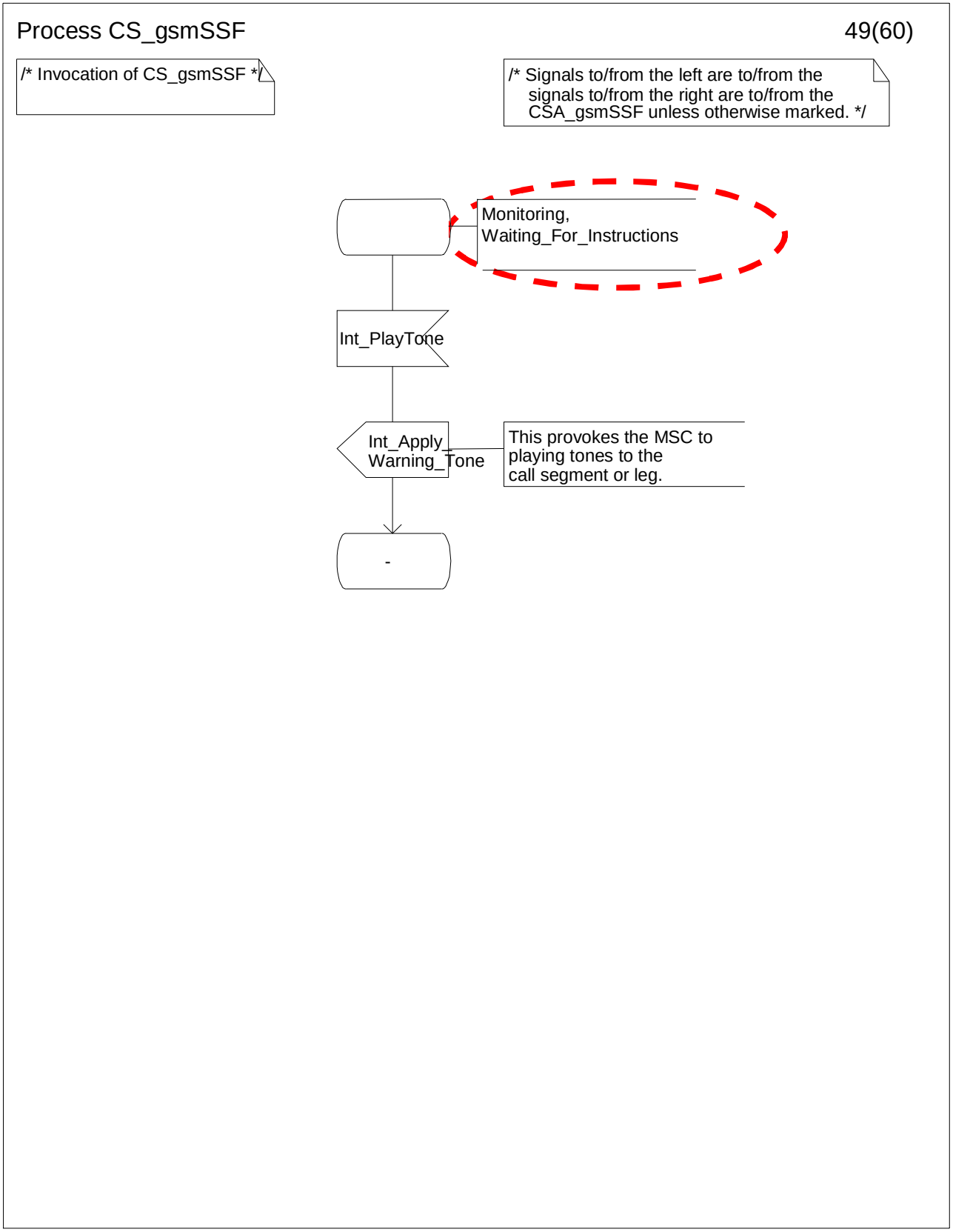


Figure Error! Reference source not found.**-2: Process CS_gsmSSF (sheet 2)**

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

3GPP TSG CN WG2 Meeting #30 **N2-030472**
Sophia Antipolis, France, 25th – 29th Aug 2003

CR-Form-v7

CHANGE REQUEST

⌘ **23.078** **CR** **617** ⌘**rev** **3** ⌘ Current version: **5.4.0** ⌘

*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 concurrent tones
Source:	⌘	Nokia
Work item code:	⌘	CAMEL4
Date:	⌘	28/08/2003
Category:	⌘	**F (essential correction)**
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 rules for concurrent tones are not documented yet in the spec. To ensure inter-operability, the rules shall be documented.
Summary of change:	⌘	1. In addition to AC(warningtone), also the PlayTone(legID) is an exception of rules in 4.5.1 section. In that case the entire CS will not hear that tone. 2. Concurrent tones are described in a separate clause in the text. SDL refers to the text. The proposed text follows the decisions made in CN#19 in San Diego.
Consequences if not approved:	⌘	Inter-operability problems with CAMEL (warning) tones when CPH is applied.

Clauses affected:	⌘	

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

Other comments:	⌘	

--- First modification ---

4.5 Procedures for CAMEL

. . .

4.5.1 Overall SDL architecture

The following mapping from the SDL procedures to the Intelligent Network concepts apply:

SDL process	Description	SDL process specification
CSA_gsmSSF	Call Segment Association (CSA). The CSA SDL process distributes the CAP operations to the appropriate Call Segment(s).	3GPP TS 23.078
CS_gsmSSF	Call Segment (CS). Controls one or more BCSMs.	3GPP TS 23.078
OCH_MSC	O-BCSM in VMSC for Mobile Originating call controlling both Leg 1 and Leg 2. If CAP Disconnect Leg (leg 2) is received at the initial detection point (Collected_Info), then the call is not routed to the destination and the process calls the procedure CAMEL_OCH_LEG1_MSC to control Leg 1. If Answer is received, the process spawns the child process CAMEL_OCH_LEG2_MSC to control Leg 2 and calls the procedure CAMEL_OCH_LEG1_MSC to control Leg 1. The handling of the legs after answer is completely separate.	3GPP TS 23.018
MT_GMSC	T-BCSM in the GMSC controlling both Leg 1 and Leg 2. If CAP Disconnect Leg (leg 2) is received at the initial detection point (Terminating_Attempt_Authorised), then the call is not routed to the destination and the process spawns the child process CAMEL_MT_LEG1_MSC to control Leg 1. The process MT_GMSC terminates. If Answer is received, the process spawns the child process CAMEL_MT_LEG1_MSC to control Leg 1 and calls the procedure CAMEL_MT_LEG2_MSC to control Leg 2. The handling of the legs after answer is completely separate.	3GPP TS 23.018
MT_CF_MSC	O-BCSM in the redirecting MSC for Call Forwarding supplementary service, or Call Deflection supplementary service, or for CAMEL-based call forwarding. This process controls both Leg 1 and Leg 2. If CAP Disconnect Leg (leg 2) is received at the initial detection point (Collected_Info), then the call is not routed to the destination and the process calls the procedure CAMEL_MT_CF_LEG1_MSC to control Leg 1. If Answer is received, the process spawns the child process CAMEL_MT_CF_LEG2_MSC to control Leg 2 and calls the procedure CAMEL_MT_CF_LEG1_MSC to control Leg 1. The handling of the legs after answer is completely separate.	3GPP TS 23.018
ICH_MSC	T-BCSM in the VMSC controlling both Leg 1 and Leg 2. If CAP Disconnect Leg (leg 2) is received at the initial detection point (Terminating_Attempt_Authorised), then the call is not routed to the destination and the process spawns the child process CAMEL_ICH_LEG1_MSC to control Leg 1. The process ICH_MSC terminates. If Answer is received, the process spawns the child process CAMEL_ICH_LEG1_MSC to control Leg 1 and calls the procedure CAMEL_ICH_LEG2_MSC to control Leg 2. The handling of the legs after answer is completely separate.	3GPP TS 23.018
Assisting_MSC	The process in the MSC to handle an assist request.	3GPP TS 23.078
CAMEL_ICA_MSC	O-BCSM for gsmSCF initiated new call, or for new party set-up. This process controls the new leg.	3GPP TS 23.078

The following general rules apply:

1 There is only one CSA per CAP dialogue.

2 The CSA controls one or more Call Segments.

3 A Call Segment controls one or more BCSMs. Due to Call Party Handling, legs may be moved from one Call Segment to another and new Call Segments may be created. When legs are moved they take their properties with them, i.e. armed EDPs and pending reports.

4 Legs are not moved between BCSMs.

5 The active legs in the same Call Segment have a voice connection. They hear each other and the same in-band tone and announcements. ~~The only exception is Apply Charging warning tone in which the party is explicitly indicated by the gsmSCF~~. The following exceptions exist:

- Apply Charging IF: the warning tone associated with the Apply Charging IF is played to a single call party in the Call Segment.

- Play Tone IF: the flexible tone from the Play Tone IF may be played to a single call party in the Call Segment.

The following diagrams shows the overall architecture for the SDL diagrams.

. . .

--- *Next modified section* ---

4.5.2 Handling of mobile originated calls

4.5.2.1 Handling of mobile originated calls in the originating MSC

. . .

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

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

4.5.2.1.6A Actions of the MSC on receipt of Int_Apply_Warning_Tone

This section applies to all call cases. The MSC will play a tone to the indicated leg or call segment.

The following special cases exist when there is already an existing tone to a leg or call segment:

1. If the MSC is playing a tone to a leg and the Int_Apply_Warning_Tone instructs the MSC to play a tone for another leg (in the same or a different call segment) then the tones will be played independently;~~.~~
2. The tones for different call segments are independent;~~.~~
3. If the MSC is playing a tone to a leg and the Int_Apply_Warning_Tone instructs the MSC to play another tone for that leg then the MSC will stop the existing tone and the latter tone will be played for that leg.
4. If the MSC is playing a tone to a call segment and the Int_Apply_Warning_Tone instructs the MSC to play another tone for that call segment then the MSC will stop the existing tone and the latter tone will be played for that call segment.
5. If the MSC is playing a tone for the call segment and the Int_Apply_Warning_Tone instructs the MSC to play another tone for a leg in that call segment then the particular leg shall ~~either~~ hear (as an MSC option) either:
   a. ~~I~~The latter tone only, or
   b. Two tones. As an MSC option, the two tones may be played in parallel or in a sequence.

   The other leg(s) shall keep hearing the (old) call segment tone.
6. If the MSC is playing a tone for a leg and the Int_Apply_Warning_Tone instructs the MSC to play another tone for that call segment then the particular leg shall either hear (as an MSC option):
   a. ~~I~~The latter tone only, or
   b. Two tones. As an MSC option, the two tones may be played in parallel or in a sequence.

   The other leg(s) shall start hearing the new call segment tone.

4.5.2.1.7 Action of the MSC in procedure CAMEL_OCH_MSC_ANSWER

CR editor's note: renumber all sections after this one if needed. The SDL has 4.5.2.1.X.

--- *Next modified section* ---

4.5.7.4 Process CS_gsmSSF and procedures

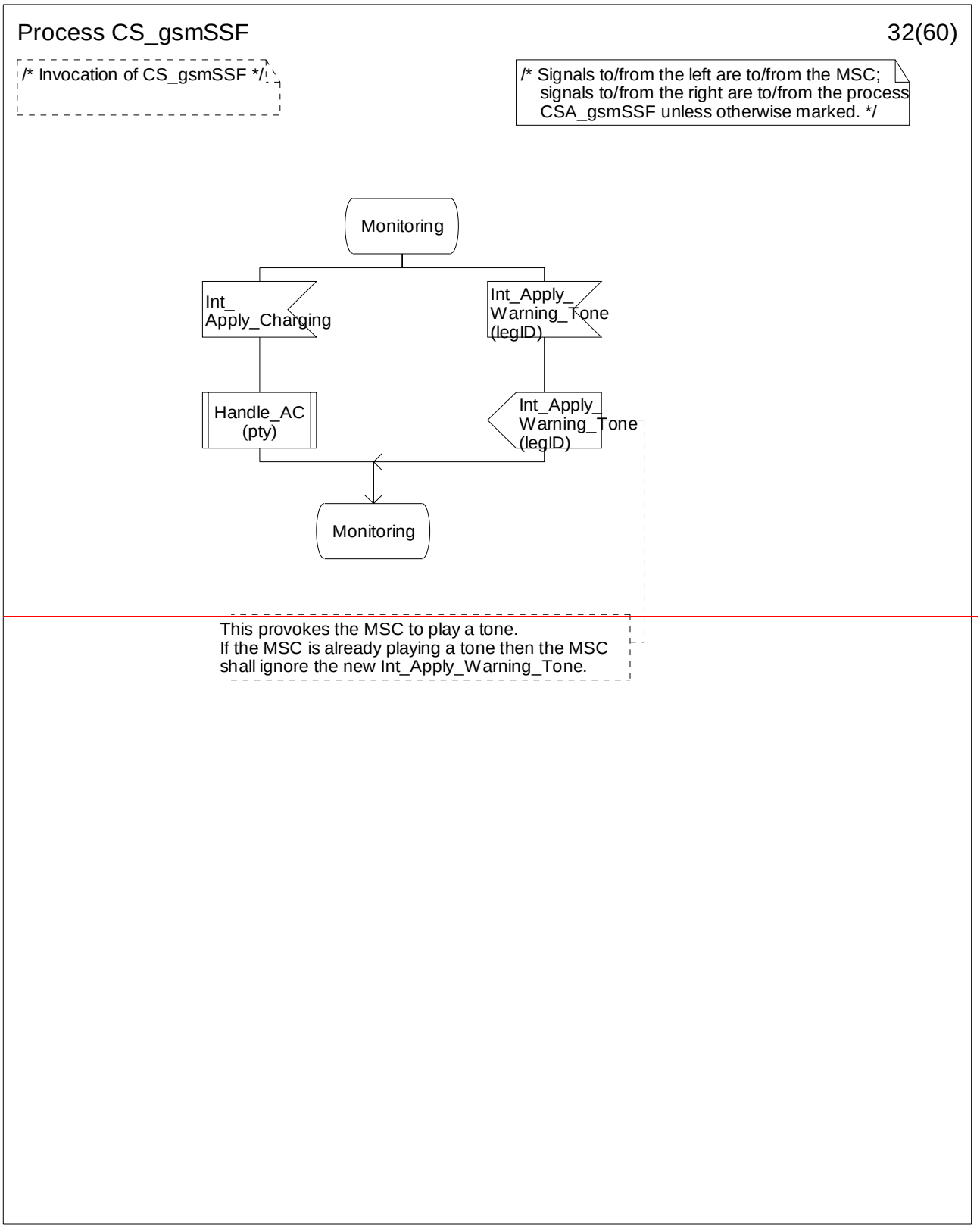
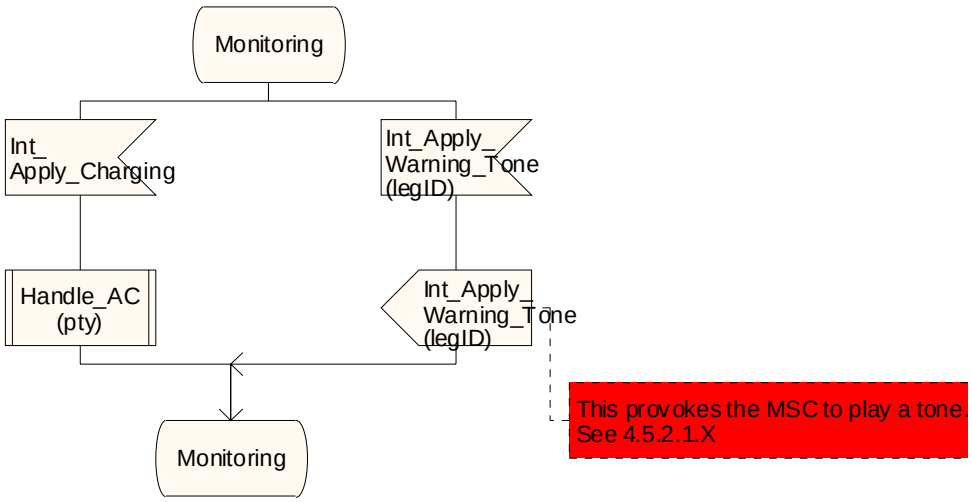


Figure 4.95-32: Process CS_gsmSSF (sheet 32)

Process CS_gsmSSF 32(60)

/* 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. */



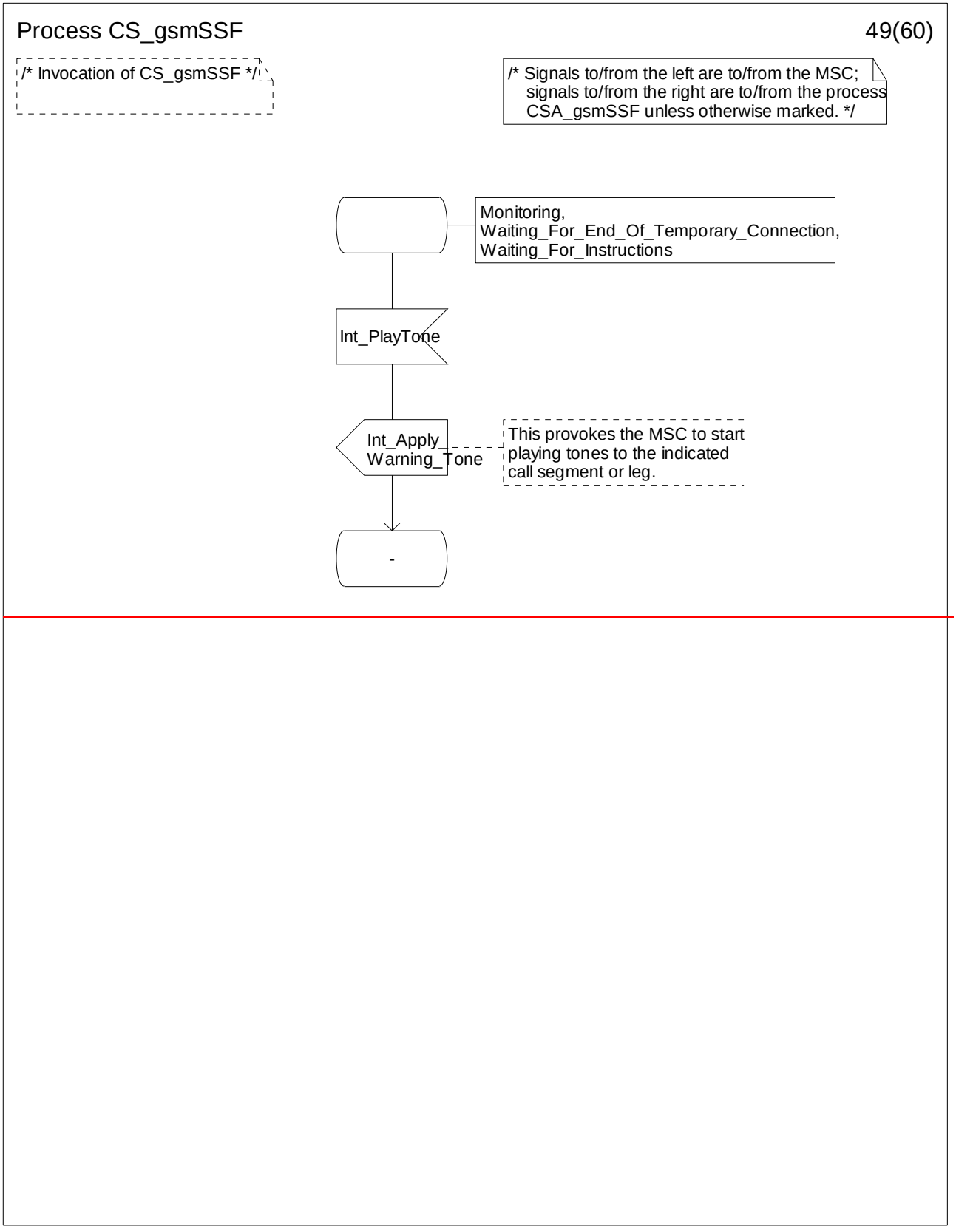
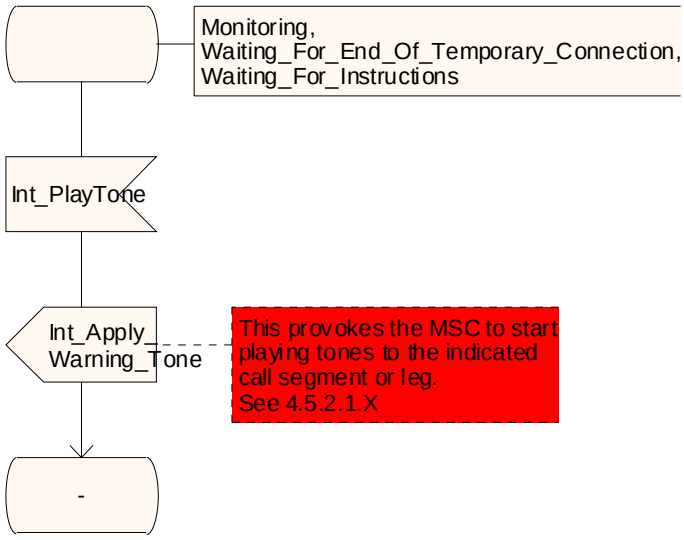


Figure 4.95-49: Process CS_gsmSSF (sheet 49)

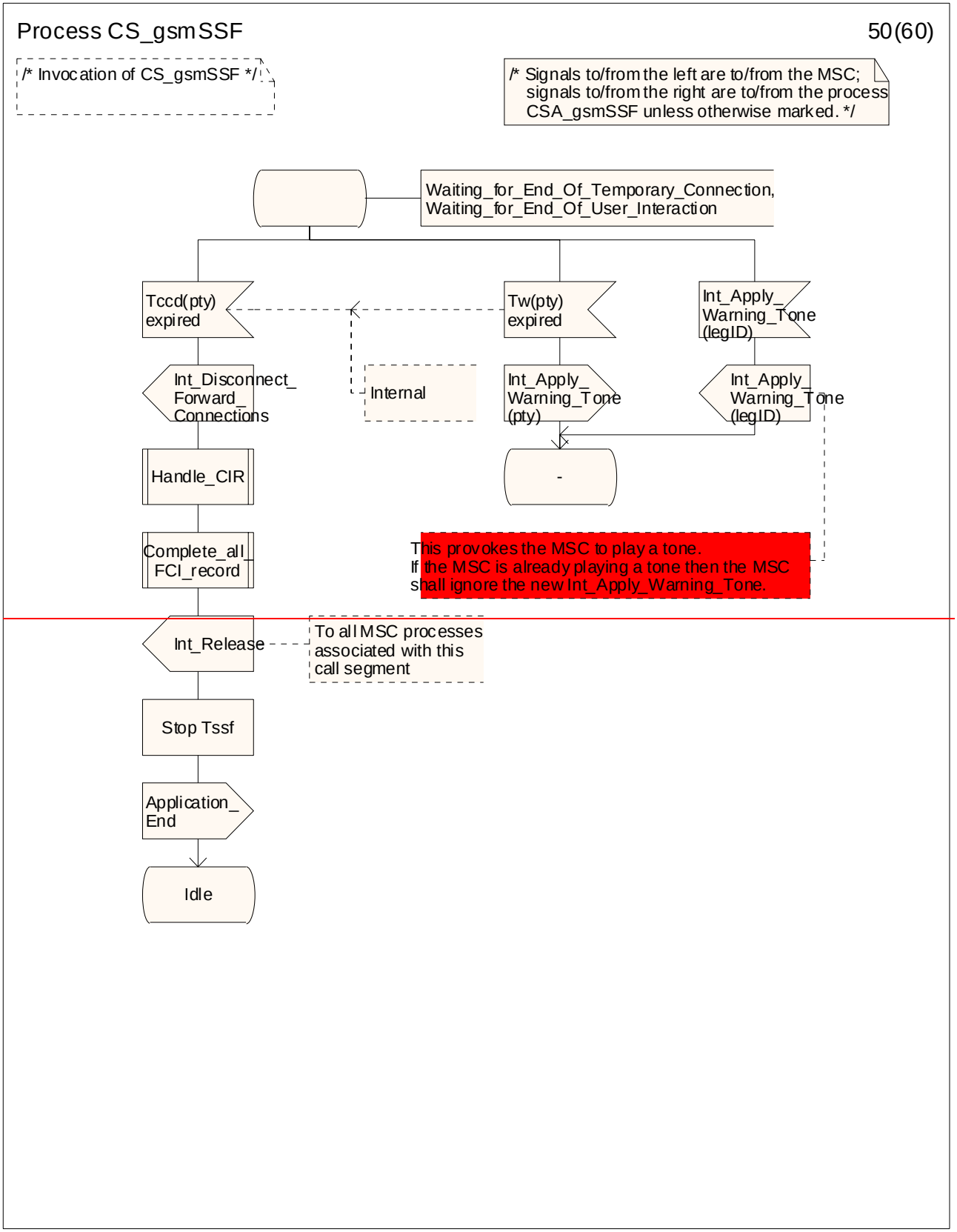
Process CS_gsmSSF 49(60)

/* 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. */



Process CS_gsmSSF 50(60)



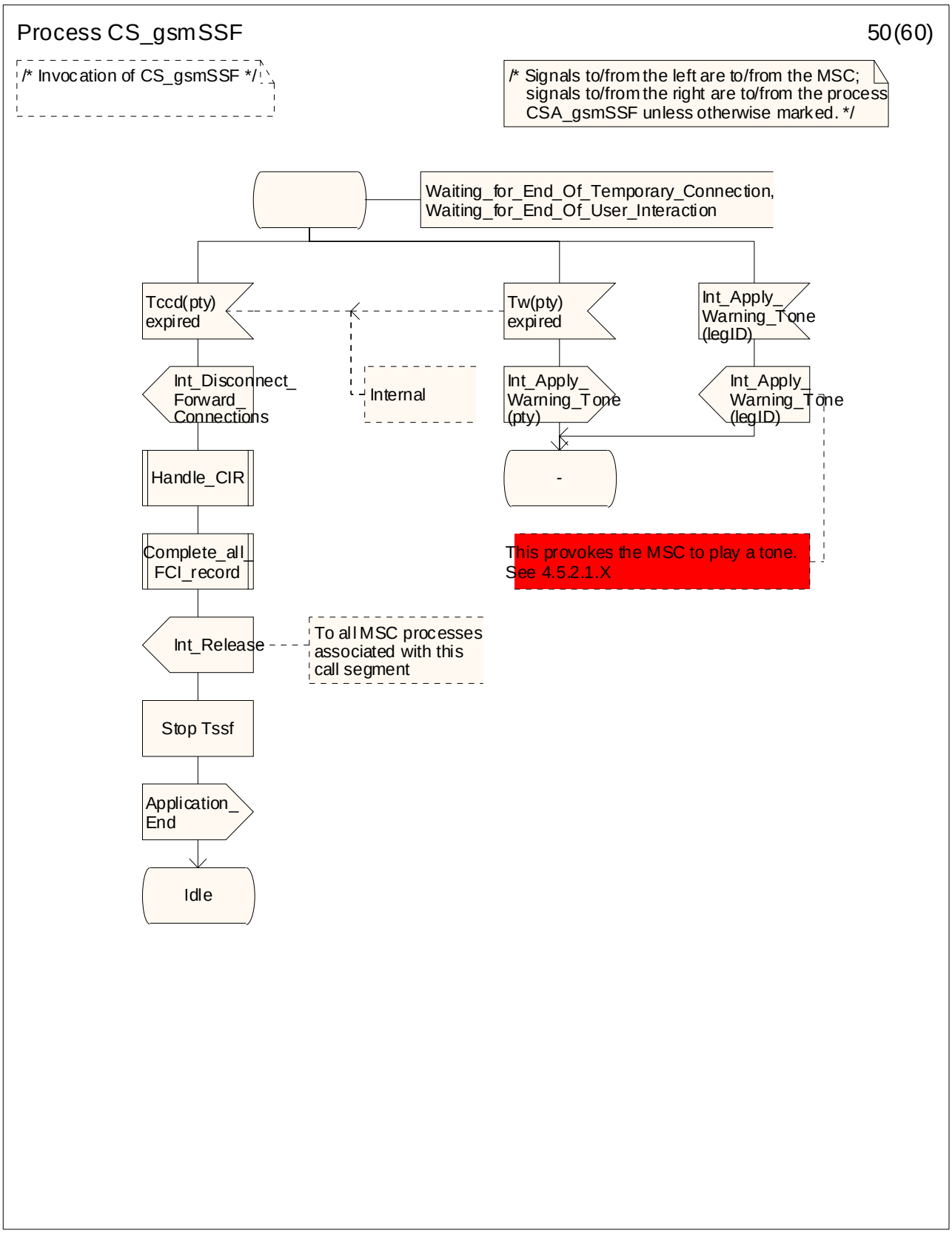


Figure 4.95-50: Process CS_gsmSSF (sheet 50)

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