3GPP TSG_CN **Tdoc NP-000241**
Plenary Meeting #8, Dusseldorf, Germany
21st – 23rd June 2000.

Source: **TSG_N WG 2**

Title: **CRs to 3G Work Item CAMEL phase 2 - Stage 2 (2)**

Agenda item: **6.1.2**

Document for: **APPROVAL**

Introduction:

This document contains **3** CRs on **Work Item CAMEL phase 2 (C3),** that have been agreed by **TSG_N WG 2,** and are forwarded to **TSG_N Plenary** meeting #8 for approval.

Tdoc	Spec	CR	Rev	CAT	Rel.	Old Ver	New Ver	Subject
N2-000195	03.78	A155	2	F	R97	6.5.0	6.6.0	gsmSSF DP handling in CF
N2-000196	03.78	A156	2	A	R98	7.2.0	7.3.0	gsmSSF DP handling in CF
N2-000131	23.078	077	2	A	R99	3.4.0	3.5.0	gsmSSF DP handling in CF

3GPP N2 Meeting
Rotenburg, Germany, 22-26 May 2000

Document N2-000195
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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

03.78	CR	A155r2	Current Version:	6.5.0

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

For submission to:	CN#8	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

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

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

Source: N2 **Date:** 23 May 2000

Subject: gsmSSF DP handling in CF

Work item: CAMEL phase 2

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

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

Release:

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

Reason for change:

Due to the implicit disarming of DPs, the current process of gsmSSF may end in idle state even if the other leg should still be kept monitored in CF case. To avoid this problem, the followings are proposed.

1. If one of the DPs, Busy/No_answer/Route_select_failure, is armed in the notification mode or not armed at all, the gsmSSf should end up in the Idle state in any case.
2. In the above case, implicit disarming of DPs shall be done at the earlier stage followed by checking remaining armed EDPs or outstanding reports. Handle_FCI shall be done after all the checkings.

Clauses affected: 8 (Process gsmSSF)

Other specs affected:

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

Other comments: This CR shall be actively supported by all relevant manufacturing companies (C3)

(1) DP is **not** encountered due to Call Forwarding

Let's have a look at the branches, where the DP is armed in Notification Mode or is not armed at all:

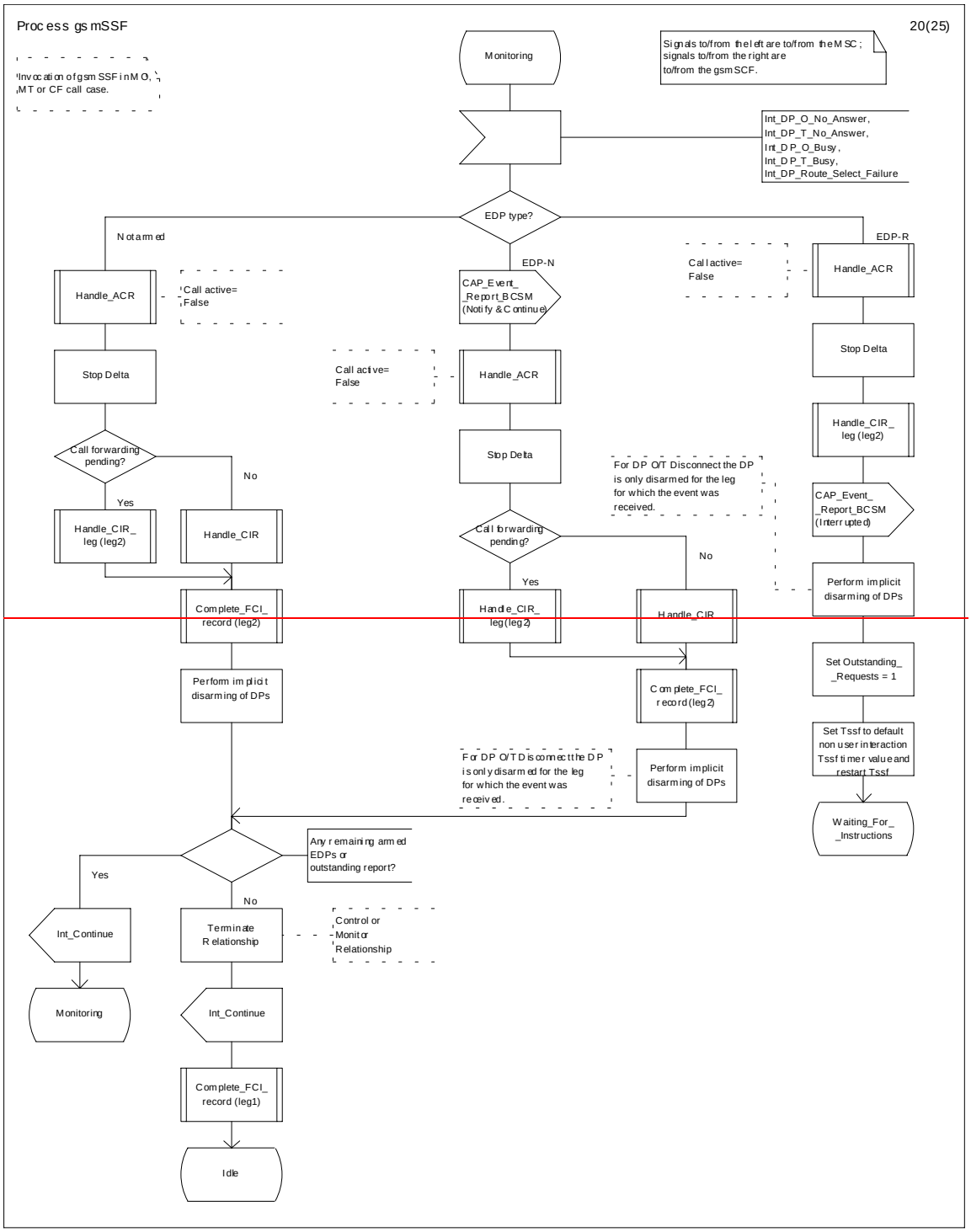
"Implicit disarming of DPs" is performed, which means in this case, that all DPs armed for leg 2 are disarmed implicitely. Afterwards, it is checked, whether there remain still armed DPs. If so, the gsmSSF moves to Monitoring, otherwise it moves to Idle. E.g. if DP Abandon is armed, the gsmSSF would move to Monitoring. However, this is not correct:
In any case, the gsmSSF sends an Int_Continue. This leads to continuation of call processing, which means in this case, that the call is released. Consequently no DP armed for leg 1 will be reached anymore!
Conclusion:
If the DP Busey/No_Answer/Route_Select_Failure is armed in Notification Mode or not armed at all, the gsmSSF should end up in the Idle state in any case.
This change would also match with the call of "Handle_CIR" in the above mentioned branches: Calling of this procedure means, that the SSF knows, that both legs will be released!

(2) DP is encountered due to Call Forwarding

Let's again have a look at the branches, where the DP is armed in Notification Mode or is not armed at all:

CIR is handled for leg 2. Furthermore the FCI_record for leg 2 is completed and the DPs for this leg are disarmed. Because leg 1 is not released in this case, the gsmSSF should remain in state Monitoring, if e.g. DP Abandon or Disconnect(leg1) is armed. But it is not obvious, what the further consequences are:
Does leg 2 no longer exist for the gsmSSF?
How should an FCI for leg 2 be handled? Rejected? Ignored?

The proposal in this CR clarifies the open items:
In the above case, implicit disarming of DPs shall be done at the earlier stage followed by checking remaining armed EDPs or outstanding reports. Handle_FCI shall be done after all the checkings.


Process gsmSSF
20(25)
Invocation of gsmSSF in MO, MT or CF call case.
Monitoring
Signals to/from the left are to/from the MSC; signals to/from the right are to/from the gsmSCF.
Int_DP_O_No_Answer,
Int_DP_T_No_Answer,
Int_DP_O_Busy,
Int_DP_T_Busy,
Int_DP_Route_Select_Failure
EDP type?
Not armed
EDP-N
EDP-R
Handle_ACR
Call active= False
CAP_Event_Report_BCSM (Notify & Continue)
Call active= False
Handle_ACR
Stop Delta
Handle_ACR
Stop Delta
Handle_CIR_leg (leg2)
Call forwarding pending?
No
Yes
Handle_CIR_leg (leg2)
Handle_CIR
Stop Delta
For DP O/T Disconnect the DP is only disarmed for the leg for which the event was received.
CAP_Event_Report_BCSM (Interrupted)
Call forwarding pending?
No
Yes
Perform implicit disarming of DPs
Complete_FCI_record (leg2)
Handle_CIR_leg (leg2)
Handle_CIR
Set Outstanding_Requests = 1
Perform implicit disarming of DPs
Complete_FCI_record (leg2)
Set Tssf to default non user interaction Tssf timer value and restart Tssf
For DP O/T Disconnect the DP is only disarmed for the leg for which the event was received.
Perform implicit disarming of DPs
Waiting_For_Instructions
Any remaining armed EDPs or outstanding report?
Yes
No
Int_Continue
Terminate Relationship
Control or Monitor Relationship
Monitoring
Int_Continue
Complete_FCI_record (leg1)
Idle

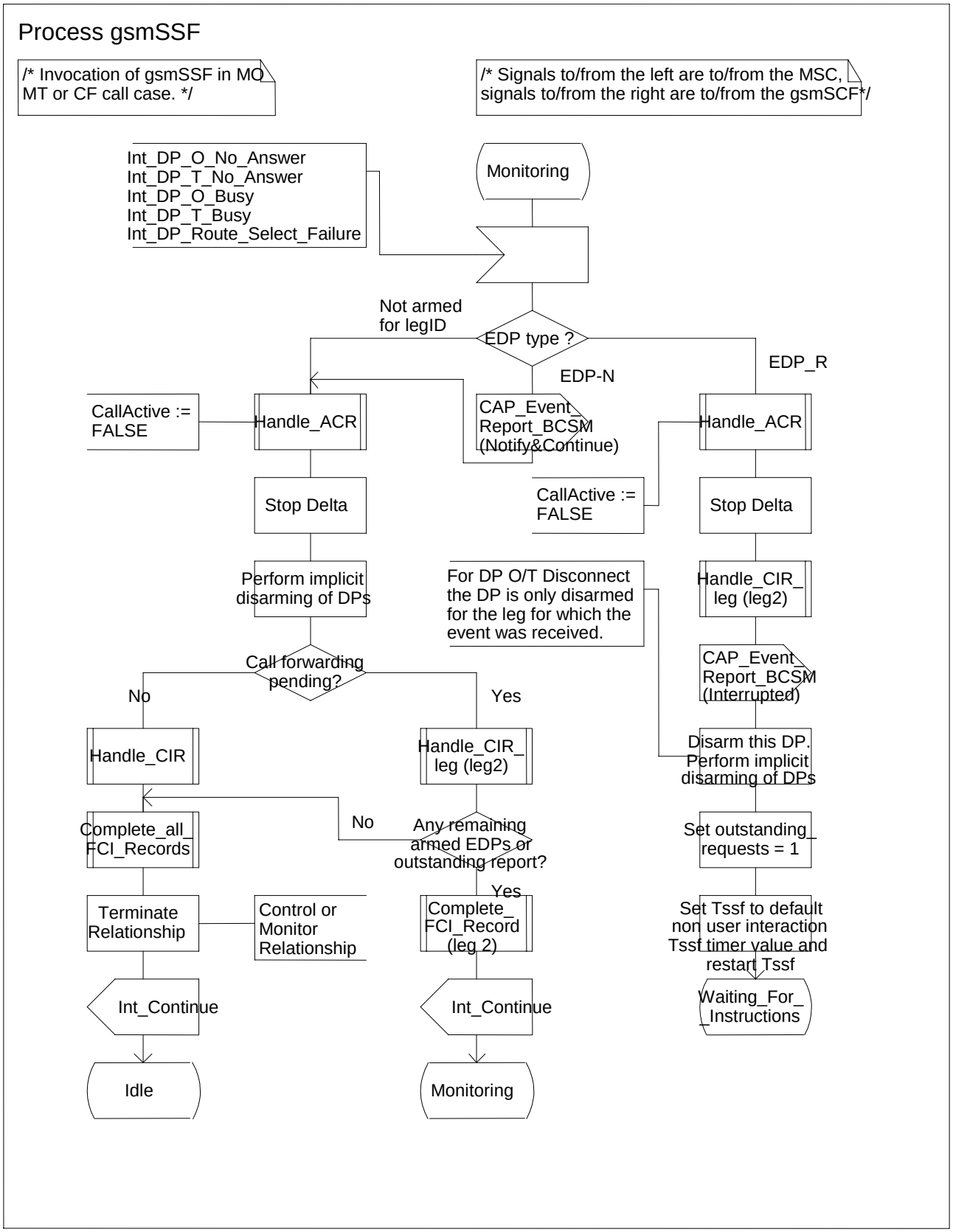


Figure 45r: Process gsmSSF (sheet 20)

3GPP N2 Meeting
Rotenburg, Germany, 22-26 May 2000

Document N2-000196
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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

03.78	CR	A156r2	Current Version:	7.2.0

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

For submission to: CN#8	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑	for information		non-strategic		

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

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

Source: N2 **Date:** 23 May 2000

Subject: gsmSSF DP handling in CF

Work item: CAMEL phase 2

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

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

Reason for change:

Due to the implicit disarming of DPs, the current process of gsmSSF may end in idle state even if the other leg should still be kept monitored in CF case. To avoid this problem, the followings are proposed.

1. If one of the DPs, Busy/No_answer/Route_select_failure, is armed in the notification mode or not armed at all, the gsmSSf should end up in the Idle state in any case.
2. In the above case, implicit disarming of DPs shall be done at the earlier stage followed by checking remaining armed EDPs or outstanding reports. Handle_FCI shall be done after all the checkings.

Clauses affected: 8 (Process gsmSSF)

Other specs affected:

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

Other comments: This CR shall be actively supported by all relevant manufacturing companies (C3)

(1) DP is **not** encountered due to Call Forwarding

Let's have a look at the branches, where the DP is armed in Notification Mode or is not armed at all:

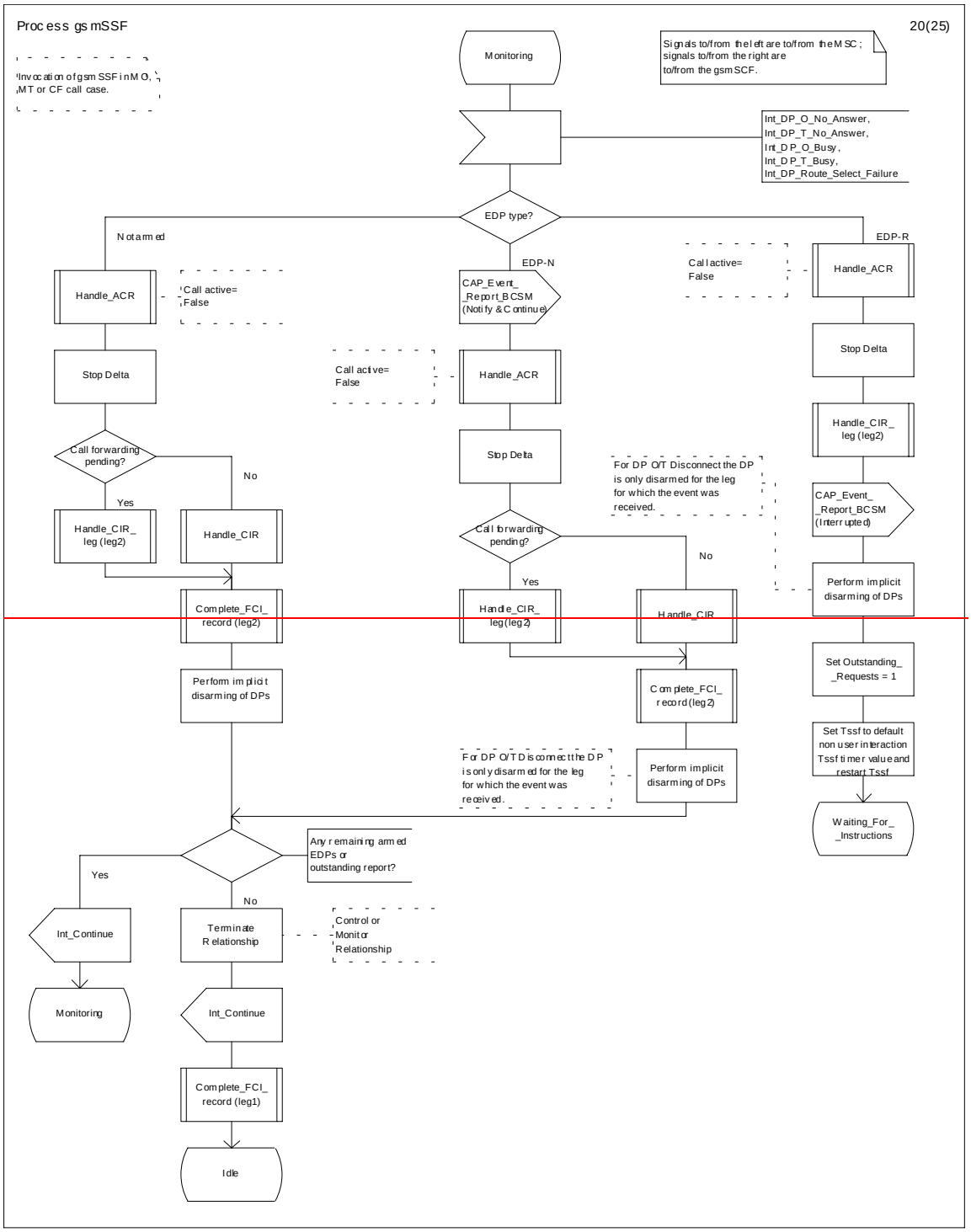
"Implicit disarming of DPs" is performed, which means in this case, that all DPs armed for leg 2 are disarmed implicitely. Afterwards, it is checked, whether there remain still armed DPs. If so, the gsmSSF moves to Monitoring, otherwise it moves to Idle. E.g. if DP Abandon is armed, the gsmSSF would move to Monitoring. However, this is not correct:
In any case, the gsmSSF sends an Int_Continue. This leads to continuation of call processing, which means in this case, that the call is released. Consequently no DP armed for leg 1 will be reached anymore!
Conclusion:
If the DP Busey/No_Answer/Route_Select_Failure is armed in Notification Mode or not armed at all, the gsmSSF should end up in the Idle state in any case.
This change would also match with the call of "Handle_CIR" in the above mentioned branches: Calling of this procedure means, that the SSF knows, that both legs will be released!

(2) DP is encountered due to Call Forwarding

Let's again have a look at the branches, where the DP is armed in Notification Mode or is not armed at all:

CIR is handled for leg 2. Furthermore the FCI_record for leg 2 is completed and the DPs for this leg are disarmed. Because leg 1 is not released in this case, the gsmSSF should remain in state Monitoring, if e.g. DP Abandon or Disconnect(leg1) is armed. But it is not obvious, what the further consequences are:
Does leg 2 no longer exist for the gsmSSF?
How should an FCI for leg 2 be handled? Rejected? Ignored?

The proposal in this CR clarifies the open items:
In the above case, implicit disarming of DPs shall be done at the earlier stage followed by checking remaining armed EDPs or outstanding reports. Handle_FCI shall be done after all the checkings.


Process gsmSSF
20(25)
Invocation of gsmSSF in MO, MT or CF call case.
Monitoring
Signals to/from the left are to/from the MSC; signals to/from the right are to/from the gsmSCF.
Int_DP_O_No_Answer,
Int_DP_T_No_Answer,
Int_DP_O_Busy,
Int_DP_T_Busy,
Int_DP_Route_Select_Failure
EDP type?
Not armed
EDP-N
EDP-R
Handle_ACR
Call active= False
CAP_Event_Report_BCSM (Notify & Continue)
Call active= False
Handle_ACR
Stop Delta
Handle_ACR
Stop Delta
Handle_CIR_leg (leg2)
Call forwarding pending?
No
Yes
Handle_CIR_leg (leg2)
Handle_CIR
Stop Delta
For DP O/T Disconnect the DP is only disarmed for the leg for which the event was received.
CAP_Event_Report_BCSM (Interrupted)
Call forwarding pending?
No
Yes
Perform implicit disarming of DPs
Complete_FCI_record (leg2)
Handle_CIR_leg (leg2)
Handle_CIR
Set Outstanding_Requests = 1
Perform implicit disarming of DPs
Complete_FCI_record (leg2)
Set Tssf to default non user interaction Tssf timer value and restart Tssf
For DP O/T Disconnect the DP is only disarmed for the leg for which the event was received.
Perform implicit disarming of DPs
Waiting_For_Instructions
Any remaining armed EDPs or outstanding report?
Yes
No
Int_Continue
Terminate Relationship
Control or Monitor Relationship
Monitoring
Int_Continue
Complete_FCI_record (leg1)
Idle

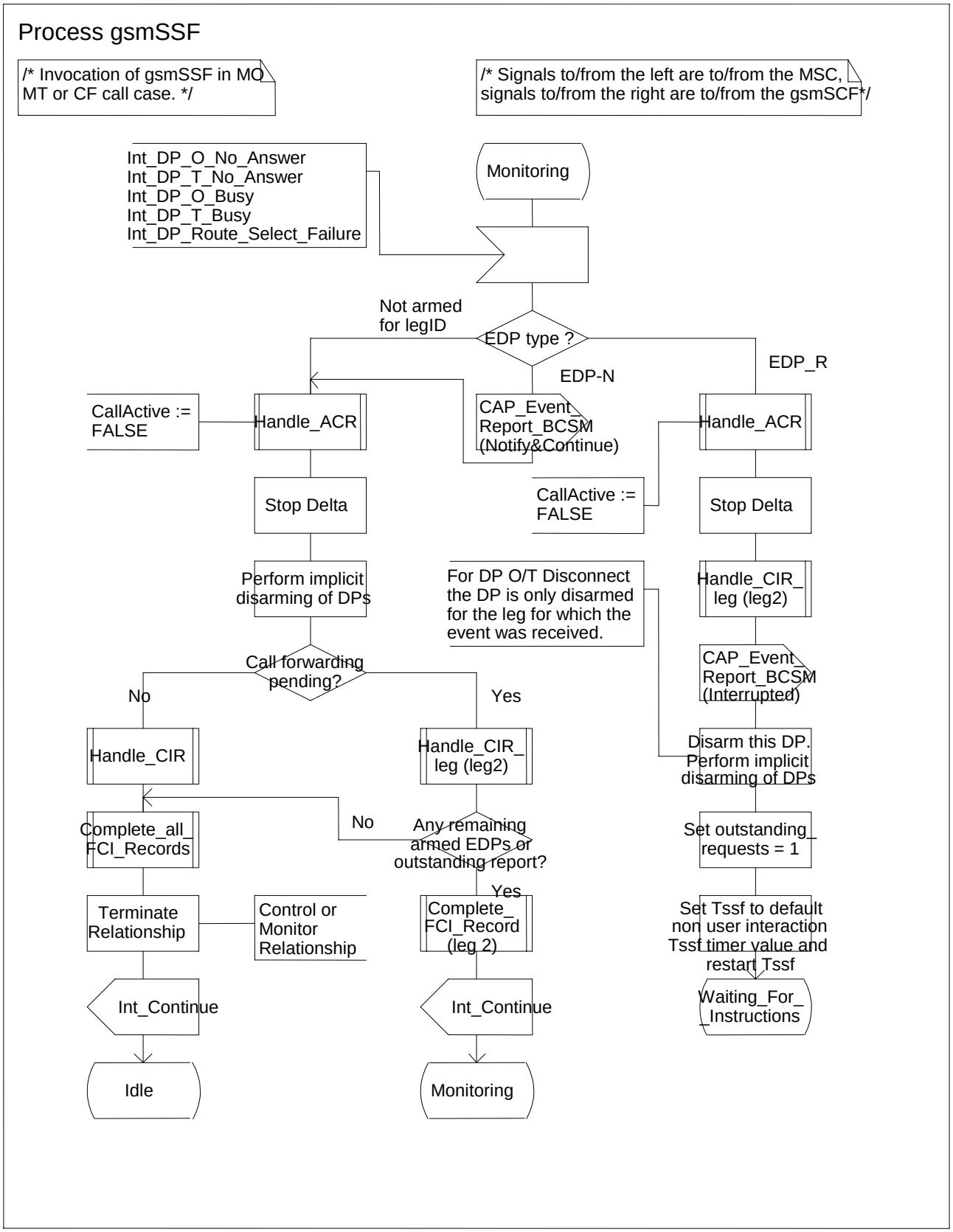


Figure 45r: Process gsmSSF (sheet 20)

3GPP N2 Meeting
Rotenburg, Germany, 22-26 May 2000

Document N2-000131
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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

23.078	CR	077r2	Current Version:	3.4.0

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

For submission to:	CN#8	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑		for information		non-strategic		

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

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

Source: N2 **Date:** 15 May 2000

Subject: gsmSSF DP handling in CF

Work item: CAMEL Phase 2

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

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

Reason for change:

Due to the implicit disarming of DPs, the current process of gsmSSF may end in idle state even if the other leg should still be kept monitored in CF case. To avoid this problem, the followings are proposed.

1. If one of the DPs, Busy/No_answer/Route_select_failure, is armed in the notification mode or not armed at all, the gsmSSf should end up in the Idle state in any case.
2. In the above case, implicit disarming of DPs shall be done at the earlier stage followed by checking remaining armed EDPs or outstanding reports. Handle_FCI shall be done after all the checkings.

Clauses affected: 4 (Process gsmSSF)

Other specs affected:

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

Other comments: This CR shall be actively supported by all relevant manufacturing companies (C3)

(1) DP is **not** encountered due to Call Forwarding

Let's have a look at the branches, where the DP is armed in Notification Mode or is not armed at all:

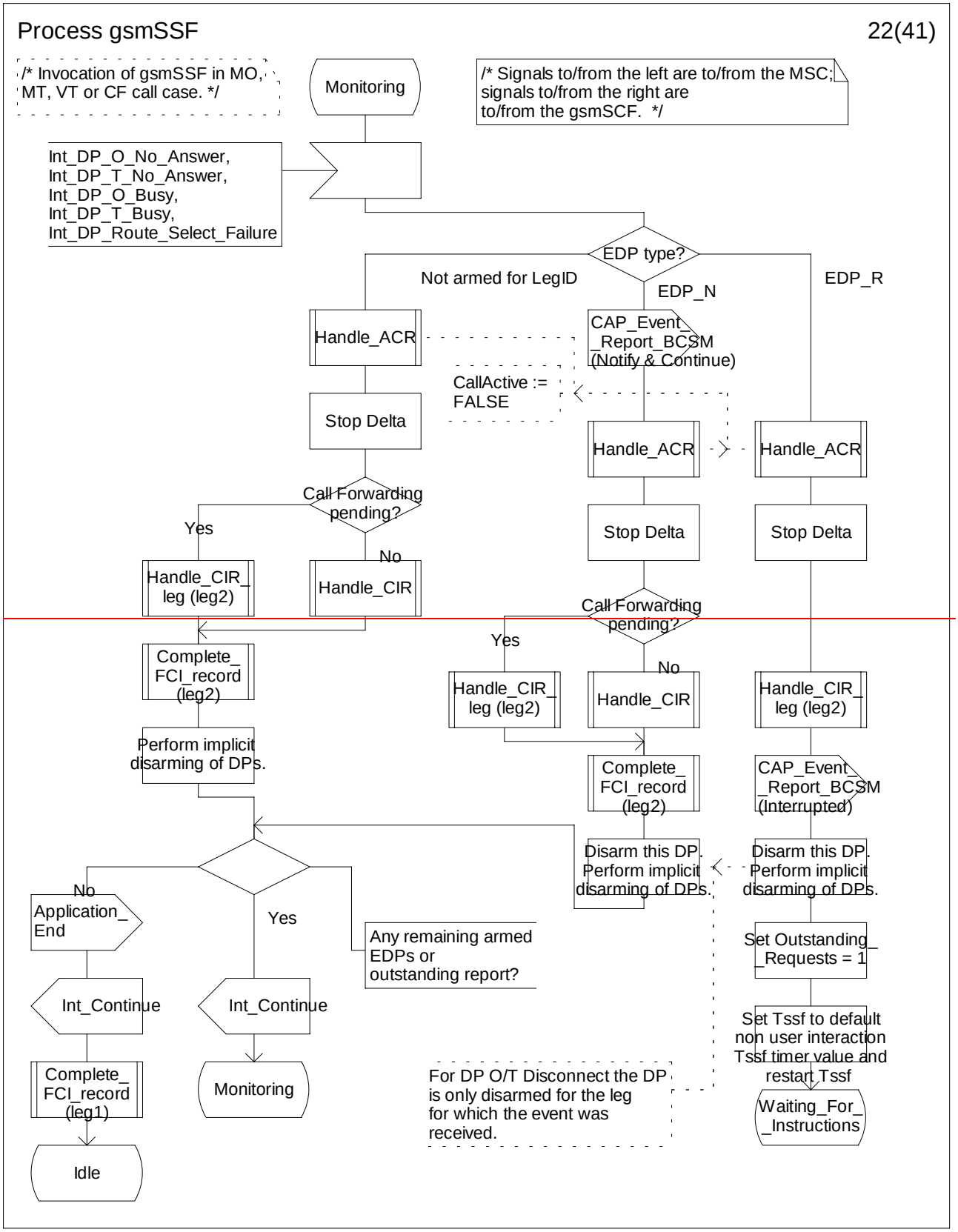
"Implicit disarming of DPs" is performed, which means in this case, that all DPs armed for leg 2 are disarmed implicitely. Afterwards, it is checked, whether there remain still armed DPs. If so, the gsmSSF moves to Monitoring, otherwise it moves to Idle. E.g. if DP Abandon is armed, the gsmSSF would move to Monitoring. However, this is not correct:
In any case, the gsmSSF sends an Int_Continue. This leads to continuation of call processing, which means in this case, that the call is released. Consequently no DP armed for leg 1 will be reached anymore!
Conclusion:
If the DP Busey/No_Answer/Route_Select_Failure is armed in Notification Mode or not armed at all, the gsmSSF should end up in the Idle state in any case.
This change would also match with the call of "Handle_CIR" in the above mentioned branches: Calling of this procedure means, that the SSF knows, that both legs will be released!

(2) DP is encountered due to Call Forwarding

Let's again have a look at the branches, where the DP is armed in Notification Mode or is not armed at all:

CIR is handled for leg 2. Furthermore the FCI_record for leg 2 is completed and the DPs for this leg are disarmed. Because leg 1 is not released in this case, the gsmSSF should remain in state Monitoring, if e.g. DP Abandon or Disconnect(leg1) is armed. But it is not obvious, what the further consequences are:
Does leg 2 no longer exist for the gsmSSF?
How should an FCI for leg 2 be handled? Rejected? Ignored?

The proposal in this CR clarifies the open items:
In the above case, implicit disarming of DPs shall be done at the earlier stage followed by checking remaining armed EDPs or outstanding reports. Handle_FCI shall be done after all the checkings.


Process gsmSSF
22(41)
/* Invocation of gsmSSF in MO, MT, VT or CF call case. */
Monitoring
/* Signals to/from the left are to/from the MSC; signals to/from the right are to/from the gsmSCF. */
Int_DP_O_No_Answer,
Int_DP_T_No_Answer,
Int_DP_O_Busy,
Int_DP_T_Busy,
Int_DP_Route_Select_Failure
EDP type?
Not armed for LegID
EDP_N
EDP_R
Handle_ACR
CAP_Event_
_Report_BCSM
(Notify & Continue)
CallActive :=
FALSE
Stop Delta
Handle_ACR
Handle_ACR
Call Forwarding pending?
Yes
No
Stop Delta
Stop Delta
Handle_CIR_
leg (leg2)
Handle_CIR
Call Forwarding pending?
Yes
No
Complete_
FCI_record
(leg2)
Handle_CIR_
leg (leg2)
Handle_CIR
Handle_CIR_
leg (leg2)
Perform implicit
disarming of DPs.
Complete_
FCI_record
(leg2)
CAP_Event_
_Report_BCSM
(Interrupted)
Disarm this DP.
Perform implicit
disarming of DPs.
Disarm this DP.
Perform implicit
disarming of DPs.
No
Application_
End
Yes
Any remaining armed
EDPs or
outstanding report?
Set Outstanding_
_Requests = 1
Int_Continue
Int_Continue
Set Tssf to default
non user interaction
Tssf timer value and
restart Tssf
Complete_
FCI_record
(leg1)
Monitoring
For DP O/T Disconnect the DP
is only disarmed for the leg
for which the event was
received.
Waiting_For_
_Instructions
Idle

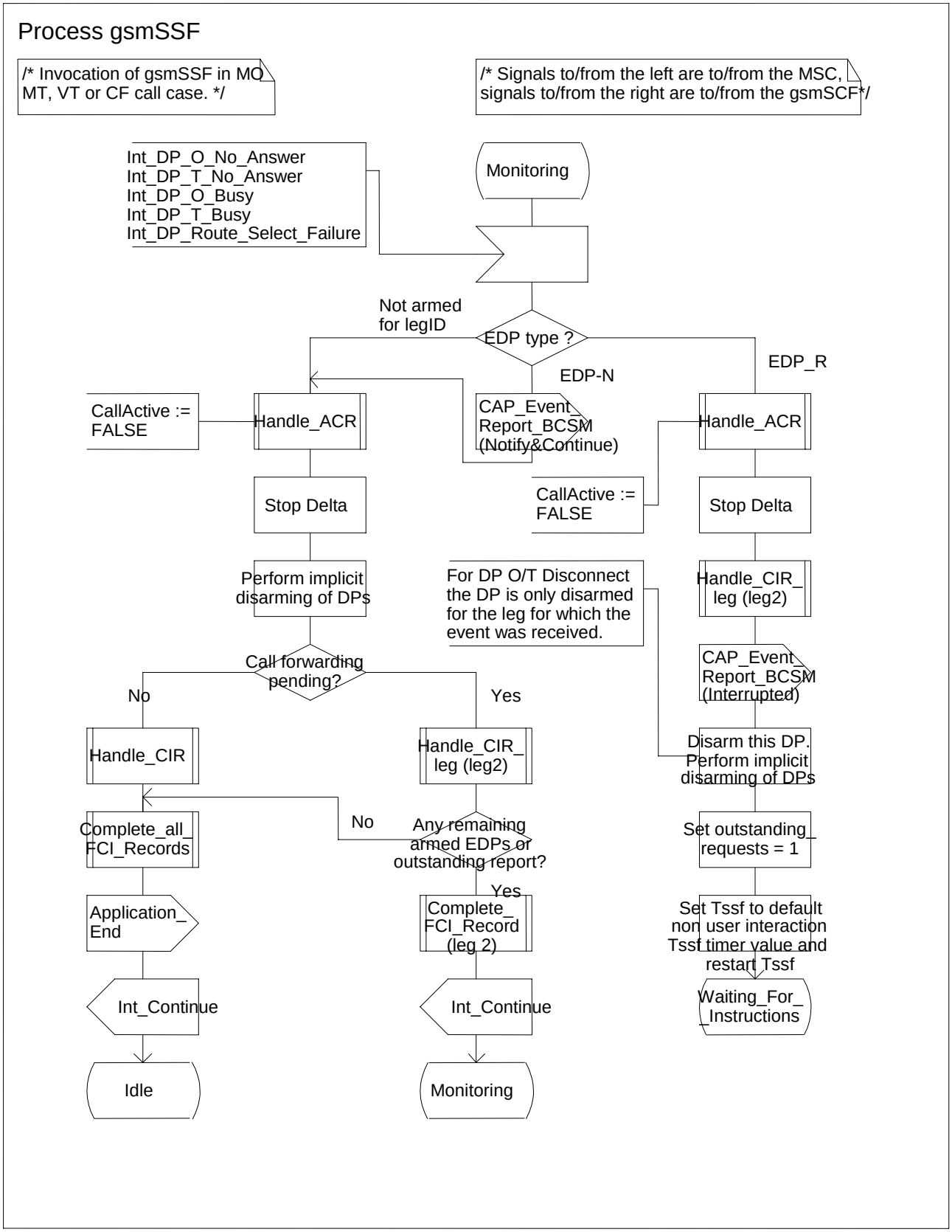
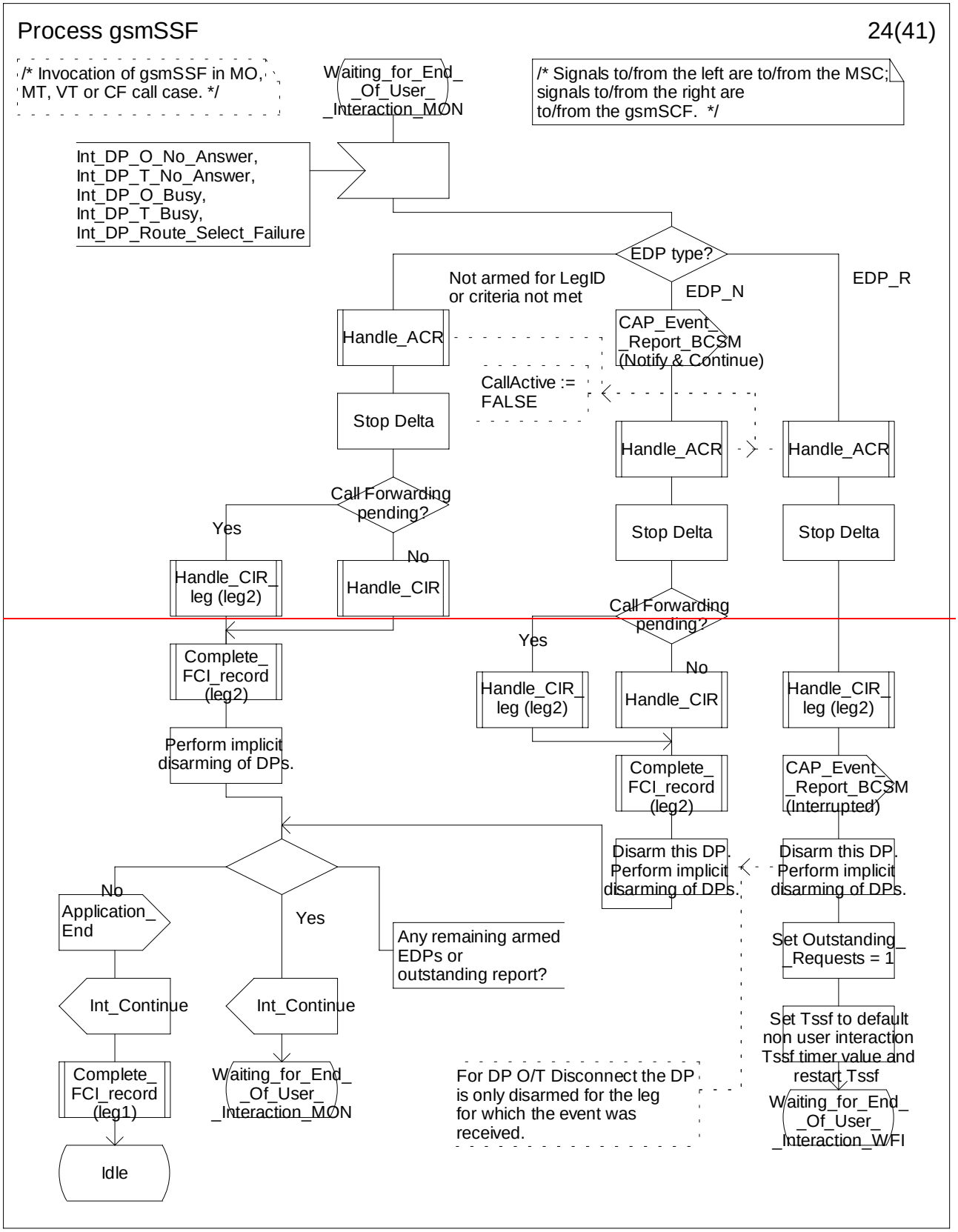


Figure 4.61v: Process gsmSSF (sheet 22)


Process gsmSSF
24(41)
/* Invocation of gsmSSF in MO, MT, VT or CF call case. */
Waiting_for_End_ _Of_User_ _Interaction_MON
/* Signals to/from the left are to/from the MSC; signals to/from the right are to/from the gsmSCF. */
Int_DP_O_No_Answer, Int_DP_T_No_Answer, Int_DP_O_Busy, Int_DP_T_Busy, Int_DP_Route_Select_Failure
EDP type?
Not armed for LegID or criteria not met
EDP_N
EDP_R
Handle_ACR
CAP_Event_ _Report_BCSM (Notify & Continue)
CallActive := FALSE
Stop Delta
Handle_ACR
Handle_ACR
Call Forwarding pending?
Yes
No
Handle_CIR_ leg (leg2)
Handle_CIR
Stop Delta
Stop Delta
Call Forwarding pending?
Yes
No
Complete_ FCI_record (leg2)
Handle_CIR_ leg (leg2)
Handle_CIR
Handle_CIR_ leg (leg2)
Perform implicit disarming of DPs.
Complete_ FCI_record (leg2)
CAP_Event_ _Report_BCSM (Interrupted)
Disarm this DP. Perform implicit disarming of DPs.
Disarm this DP. Perform implicit disarming of DPs.
No
Application_ End
Yes
Any remaining armed EDPs or outstanding report?
Set Outstanding_ _Requests = 1
Int_Continue
Int_Continue
Set Tssf to default non user interaction Tssf timer value and restart Tssf
Complete_ FCI_record (leg1)
Waiting_for_End_ _Of_User_ _Interaction_MON
For DP O/T Disconnect the DP is only disarmed for the leg for which the event was received.
Waiting_for_End_ _Of_User_ _Interaction_WFI
Idle

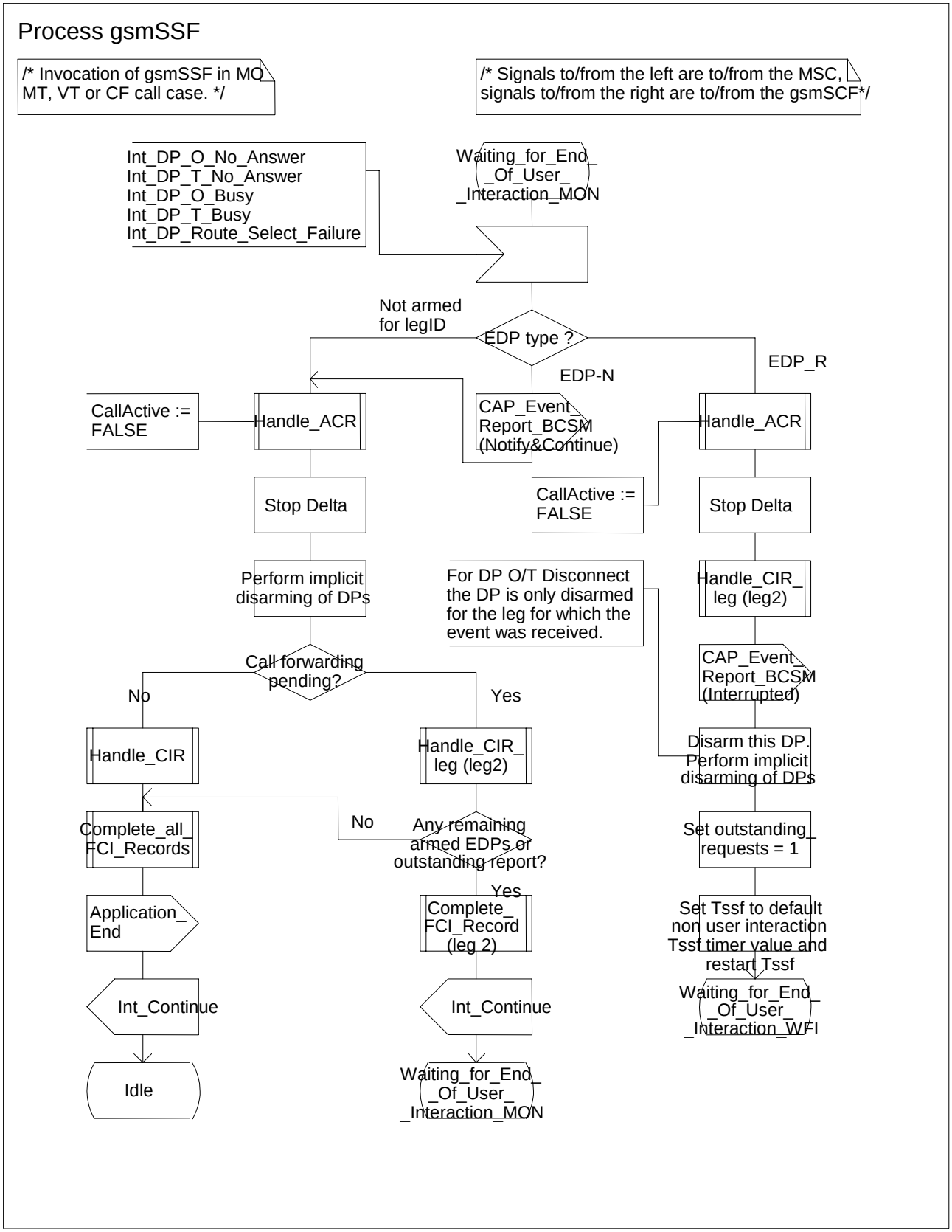
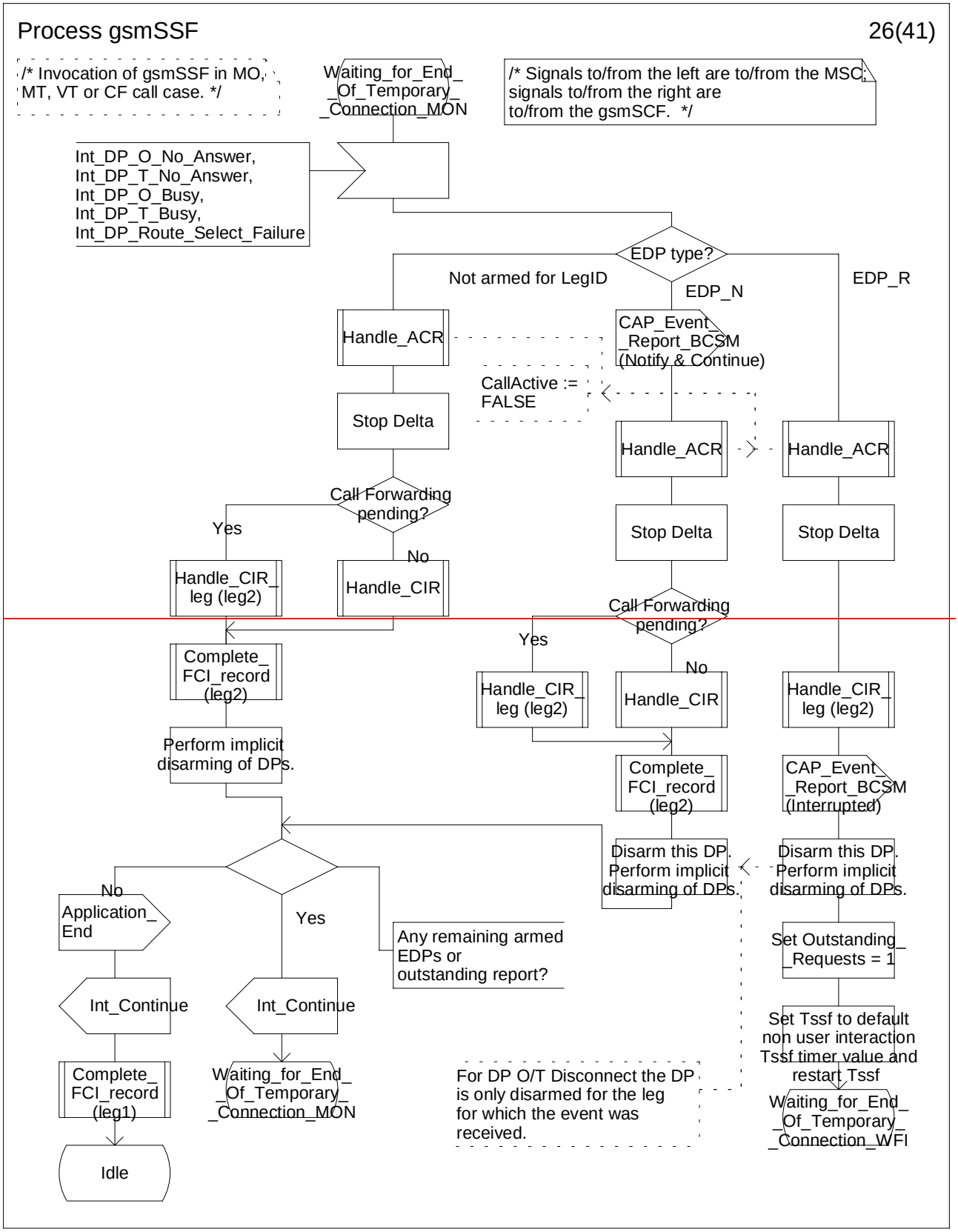


Figure 4.61x: Process gsmSSF (sheet 24)


Process gsmSSF
26(41)
/* Invocation of gsmSSF in MO, MT, VT or CF call case. */
Waiting_for_End_ _Of_Temporary_ _Connection_MON
/* Signals to/from the left are to/from the MSC, signals to/from the right are to/from the gsmSCF. */
Int_DP_O_No_Answer, Int_DP_T_No_Answer, Int_DP_O_Busy, Int_DP_T_Busy, Int_DP_Route_Select_Failure
EDP type?
Not armed for LegID
EDP_N
EDP_R
Handle_ACR
CAP_Event_ _Report_BCSM (Notify & Continue)
CallActive := FALSE
Stop Delta
Handle_ACR
Handle_ACR
Call Forwarding pending?
Yes
No
Stop Delta
Stop Delta
Handle_CIR_ leg (leg2)
Handle_CIR
Call Forwarding pending?
Yes
No
Complete_ FCI_record (leg2)
Handle_CIR_ leg (leg2)
Handle_CIR
Handle_CIR_ leg (leg2)
Perform implicit disarming of DPs.
Complete_ FCI_record (leg2)
CAP_Event_ _Report_BCSM (Interrupted)
Disarm this DP. Perform implicit disarming of DPs.
Disarm this DP. Perform implicit disarming of DPs.
No
Yes
Application_ End
Any remaining armed EDPs or outstanding report?
Set Outstanding_ _Requests = 1
Int_Continue
Int_Continue
Set Tssf to default non user interaction Tssf timer value and restart Tssf
Complete_ FCI_record (leg1)
Waiting_for_End_ _Of_Temporary_ _Connection_MON
For DP O/T Disconnect the DP is only disarmed for the leg for which the event was received.
Waiting_for_End_ _Of_Temporary_ _Connection_WFI
Idle

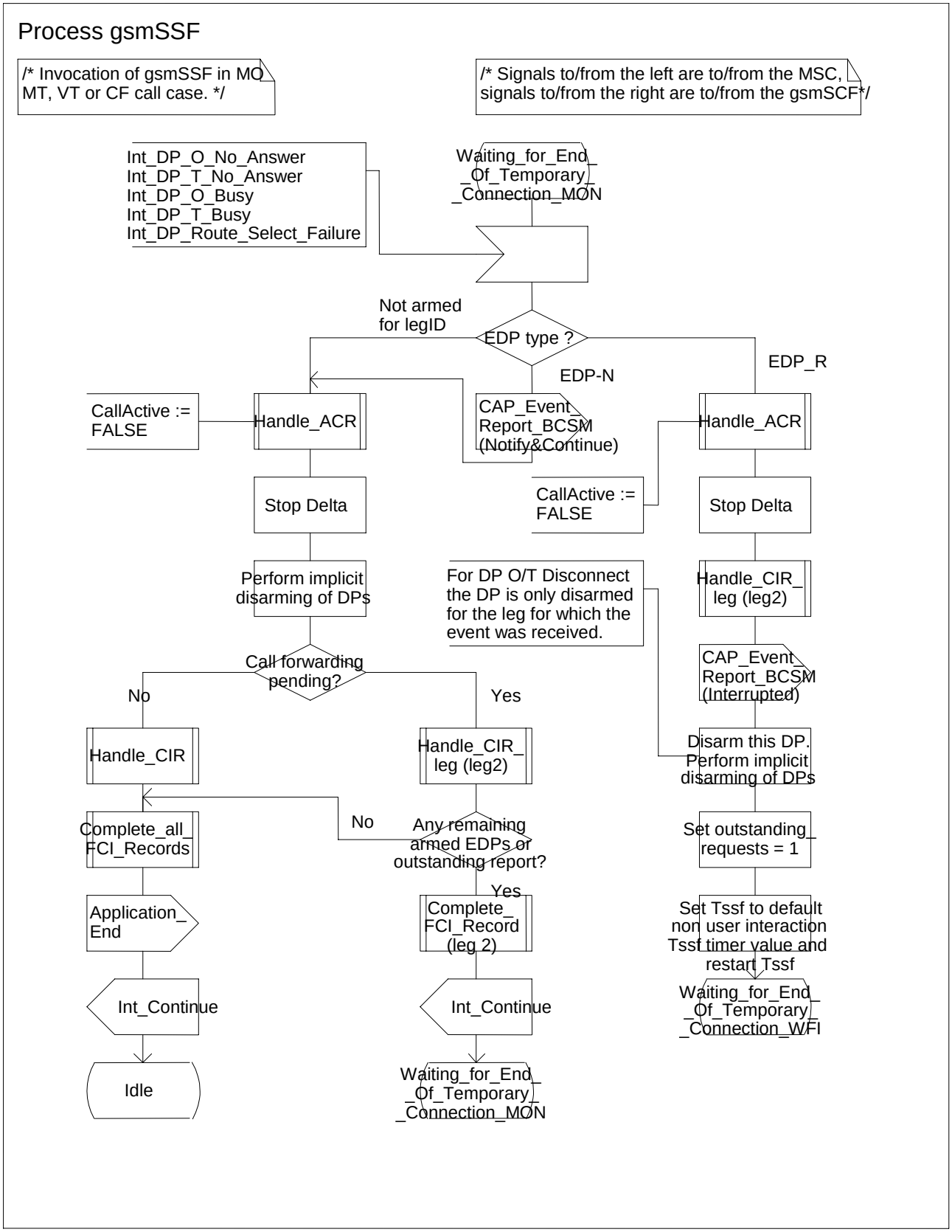


Figure 4.61z: Process gsmSSF (sheet 26)