3GPP TSG_CN#6 **NP-99462**
ETSI SMG3 Plenary Meeting #6,
Nice, France
13th – 15th December 1999

Agenda item: **5.4.3**

Source: **TSG_N SS ad hoc**

Title: **CRs Work Item MSP phase 1**

Introduction:

This document contains **2** CRs agreed by **TSG_N SS ad hoc** and forwarded to **TSG_N Plenary** meeting #6 for approval.

Tdoc	Spec	CR	Rev	CAT	Rel.	Old Ver	New Ver	Subject
NSS-99152	03.97	A006		F		7.1.1	7.2.0	Interaction between MSP Call Forwarding & GSM Call Forwarding
NSS-99159	23.097	003		A		3.0.1	3.1.0	Interaction between MSP Call Forwarding & GSM Call Forwarding

3GPP TSG-N SS ad hoc meeting #4 *Tdoc 3GPP N_SS-99 152*
Henley-on-Thames, UK
30th November – 2nd December 1999

3G CHANGE REQUEST

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03.97 **CR** **A006** Current Version: 7.1.1

3G specification number ↑ *↑ CR number as allocated by 3G support team*

For submision to TSG CN#6 *list TSG meeting no. here ↑*

for approval [X]
for information [ ]

(only one box should be marked with an X)

Form: 3G CR cover sheet, version 1.0 *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/3GCRF-xx.rtf*

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

Source: N SS ad-hoc **Date:** 01/12/1999

Subject: Interaction between MSP Call Forwarding & GSM Call Forwarding

3G Work item: MSP Phase 1

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

F	Correction	X
A	Corresponds to a correction in a 2G specification	
B	Addition of feature	
C	Functional modification of feature	
D	Editorial modification	

Release:

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

Reason for change:

This CR includes 2 changes :

1. In order to avoid any interaction between MSP Call Forwarding & GSM Call Forwarding, a subscriber should not be provisioned with MSP Call Forwarding and with GSM Call Forwarding supplementary services.

   Rationale of this modification : The editorial CR 03.97-A005 (approved at the 3GPP TSG-N-SS ad hoc meeting #2 –Bonn-) adds in the section 'Interaction with Call Forwarding' the following sentence :

   'If the Call Forwarding Supplementary Services are provisioned per subscriber, then Call Forwarding will function as specified in 03.82 & will not distinguish between MSP & non-MSP subscribers.'

   The analysis of the SDLs of MSP phase 1, Camel phase 2 & Basic Call Handling leads to the conclusion that this sentence does not seem to be a right synthesis of how the system behaves.

2. The O-CSI apply parameter is useless in the Connect message since this Connect message does not include any modified DRA (to be considered as an editorial modification).

Clauses affected:

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other 2G 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 is approved according to category C3.

help.doc

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

7.4 Call Handling for an MSP subscriber

The procedure for handling MSP calls can be divided into two areas: mobile originating call handling and mobile terminating call handling.

7.4.1 Mobile Originating (MO) call handling

…

7.4.2 Mobile Terminating (MT) call handling

The profile used for an MT call to the served subscriber is determined by the called MSISDN.

The information flow for an MT call is shown in figure 11.

When the gsmSCF receives an Initial_DP message from the gsmSSF, containing MT call parameters, the process MT_MSP_Call_gsmSCF will be invoked, see figure 7. All other call handling is described in GSM 03.18 and GSM 03.78.

~~NOTE: If the call is to be forwarded, the gsmSCF does not include the "O-CSI applicable" parameter in the Connect message so that the second contact with the gsmSSF., is suppressed.~~

7.5 Functions and Information Flows

7.5.1 Functions

The following functions have been added for MSP:

MO_MSP_Call_gsmSCF

Sets the parameters for an MO call

See figures 5-6.

Location: gsmSCF

MT_MSP_Call_gsmSCF

Sets the parameters for an MT call and forwards the call if appropriate

See figures 7-9.

Location: gsmSCF

As far as Call Forwarding is concerned, these functions are based on the assumption that the subscriber is not provided with GSM Call Forwarding supplementary services.

…

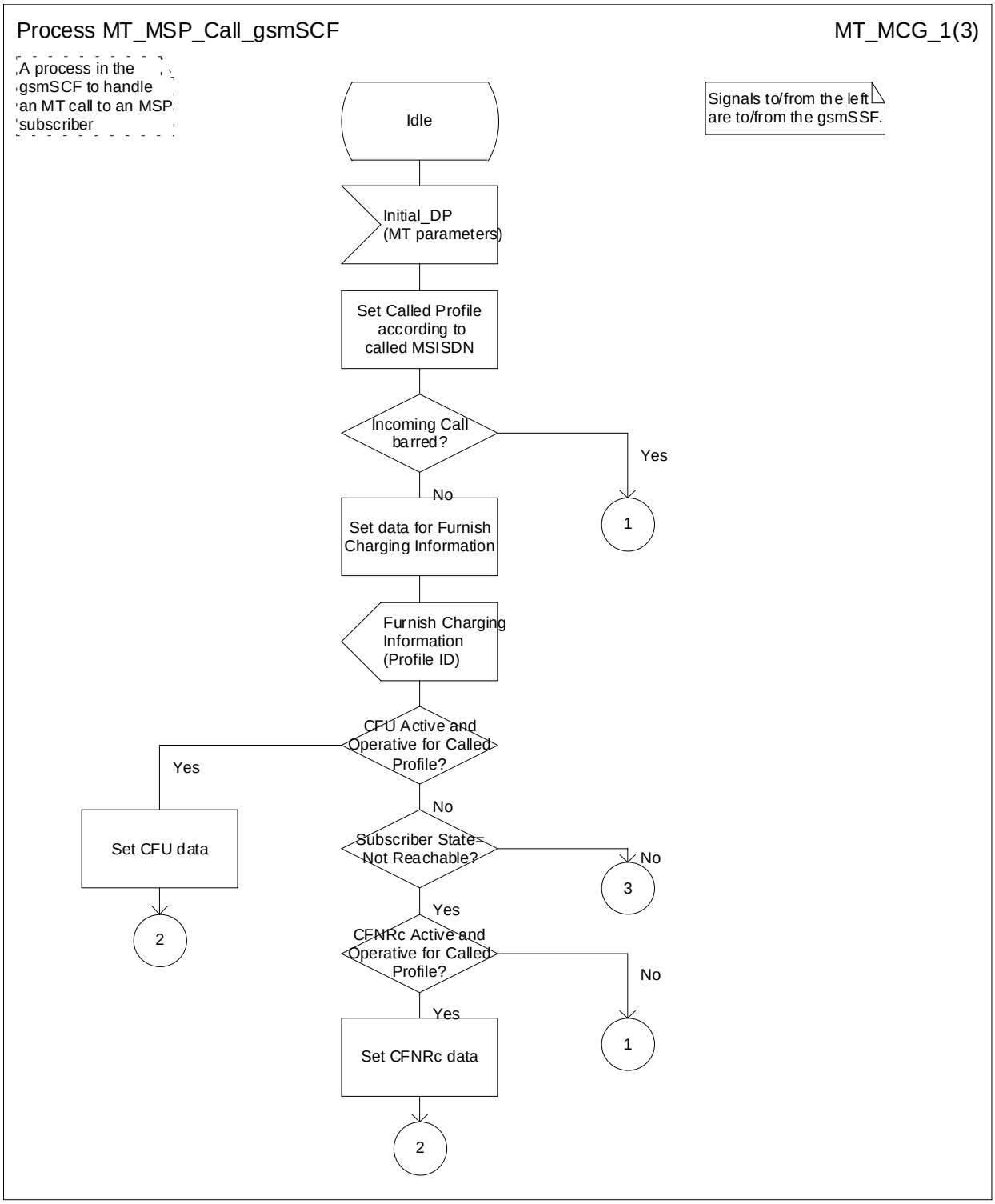


Figure 7: Process MT_MSP_Call_gsmSCF (sheet 1)

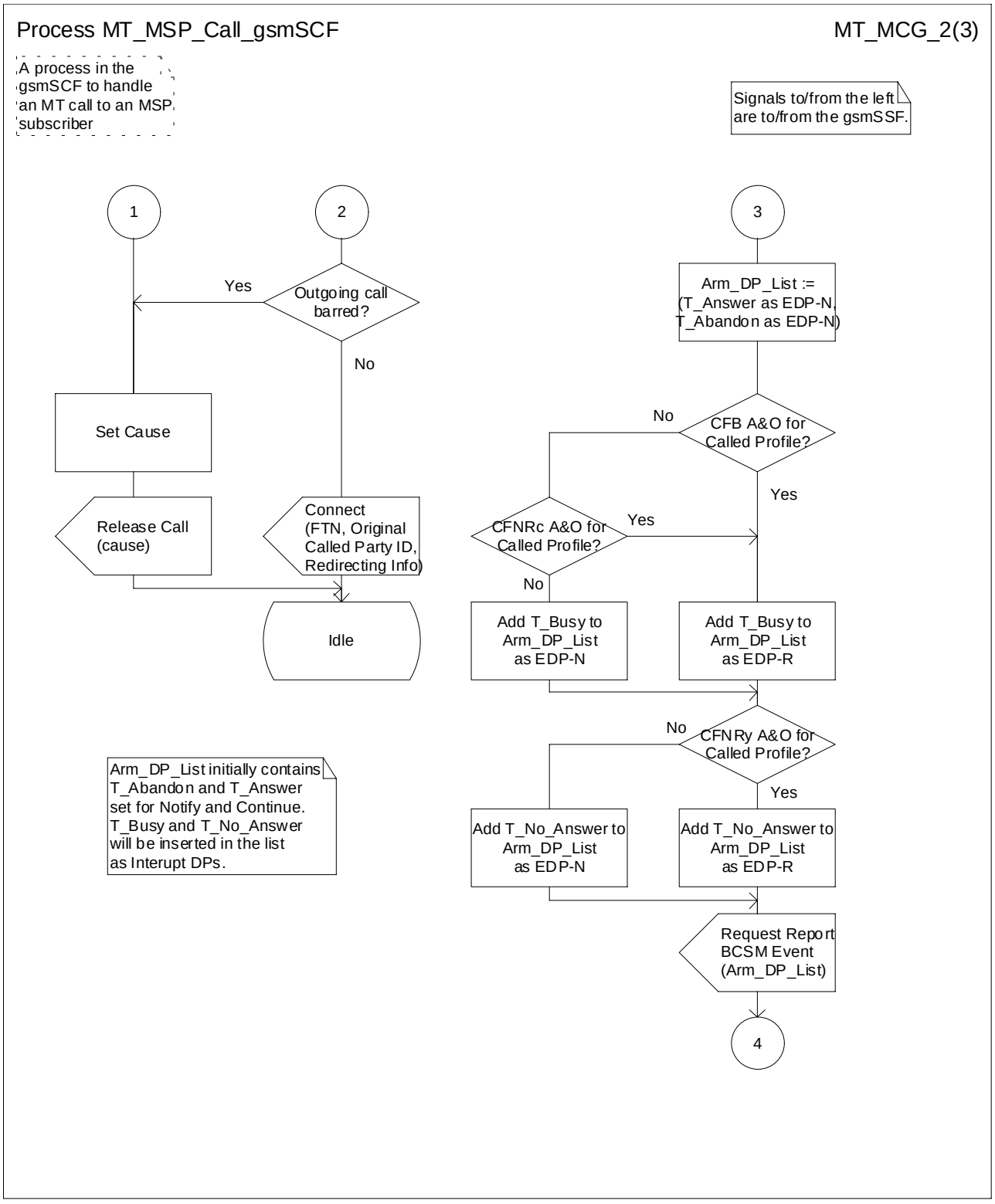
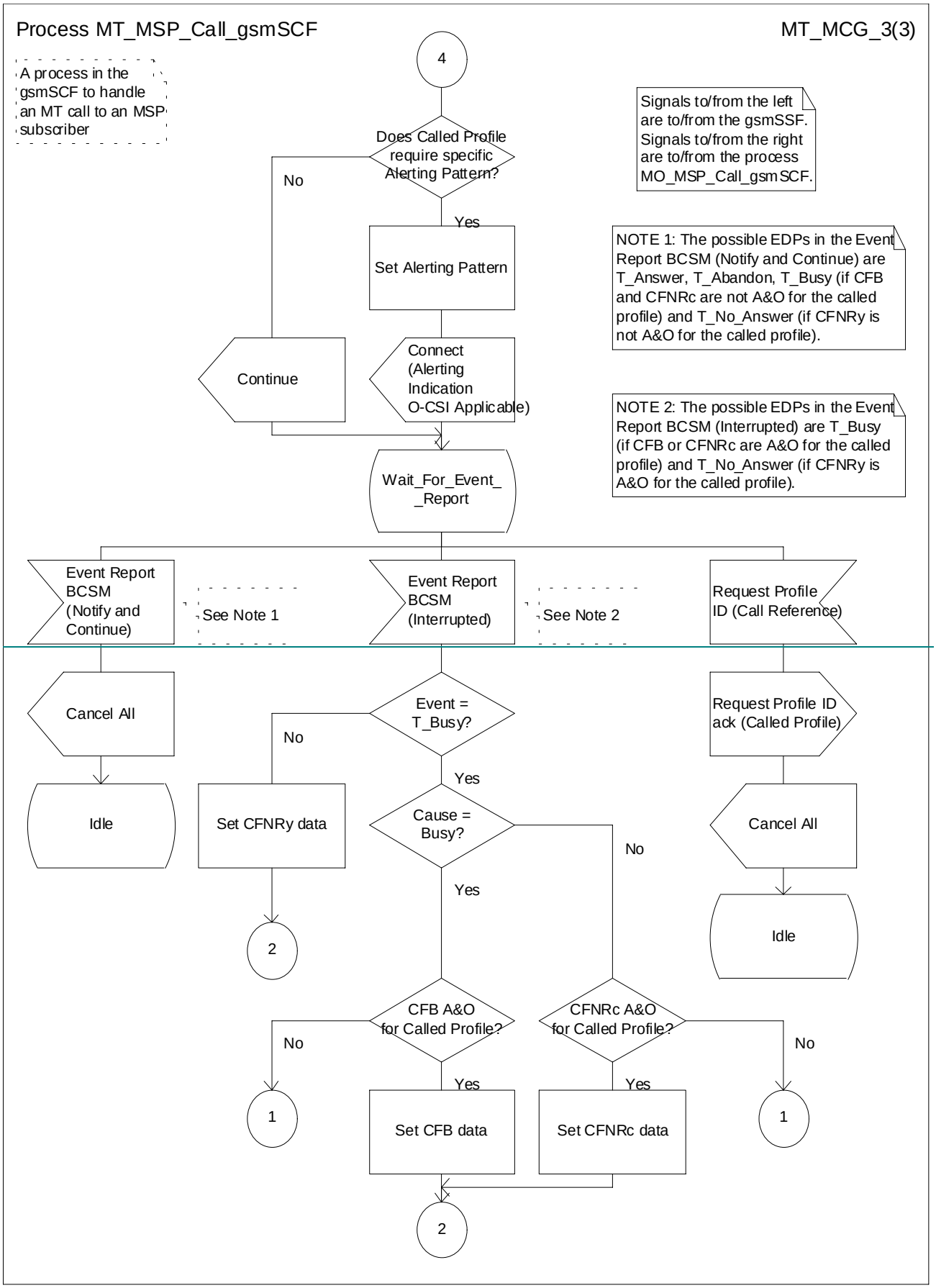


Figure 8: Process MT_MSP_Call_gsmSCF (sheet 2)


Process MT_MSP_Call_gsmSCF
MT_MCG_3(3)
A process in the gsmSCF to handle an MT call to an MSP subscriber
4
Does Called Profile require specific Alerting Pattern?
No
Yes
Set Alerting Pattern
Continue
Connect (Alerting Indication O-CSI Applicable)
Wait_For_Event_ _Report
Signals to/from the left are to/from the gsmSSF. Signals to/from the right are to/from the process MO_MSP_Call_gsmSCF.
NOTE 1: The possible EDPs in the Event Report BCSM (Notify and Continue) are T_Answer, T_Abandon, T_Busy (if CFB and CFNRc are not A&O for the called profile) and T_No_Answer (if CFNRy is not A&O for the called profile).
NOTE 2: The possible EDPs in the Event Report BCSM (Interrupted) are T_Busy (if CFB or CFNRc are A&O for the called profile) and T_No_Answer (if CFNRy is A&O for the called profile).
Event Report BCSM (Notify and Continue)
See Note 1
Event Report BCSM (Interrupted)
See Note 2
Request Profile ID (Call Reference)
Cancel All
Idle
Event = T_Busy?
No
Yes
Set CFNRy data
2
Cause = Busy?
No
Yes
Request Profile ID ack (Called Profile)
Cancel All
Idle
CFB A&O for Called Profile?
No
Yes
1
Set CFB data
CFNRc A&O for Called Profile?
No
Yes
1
Set CFNRc data
2

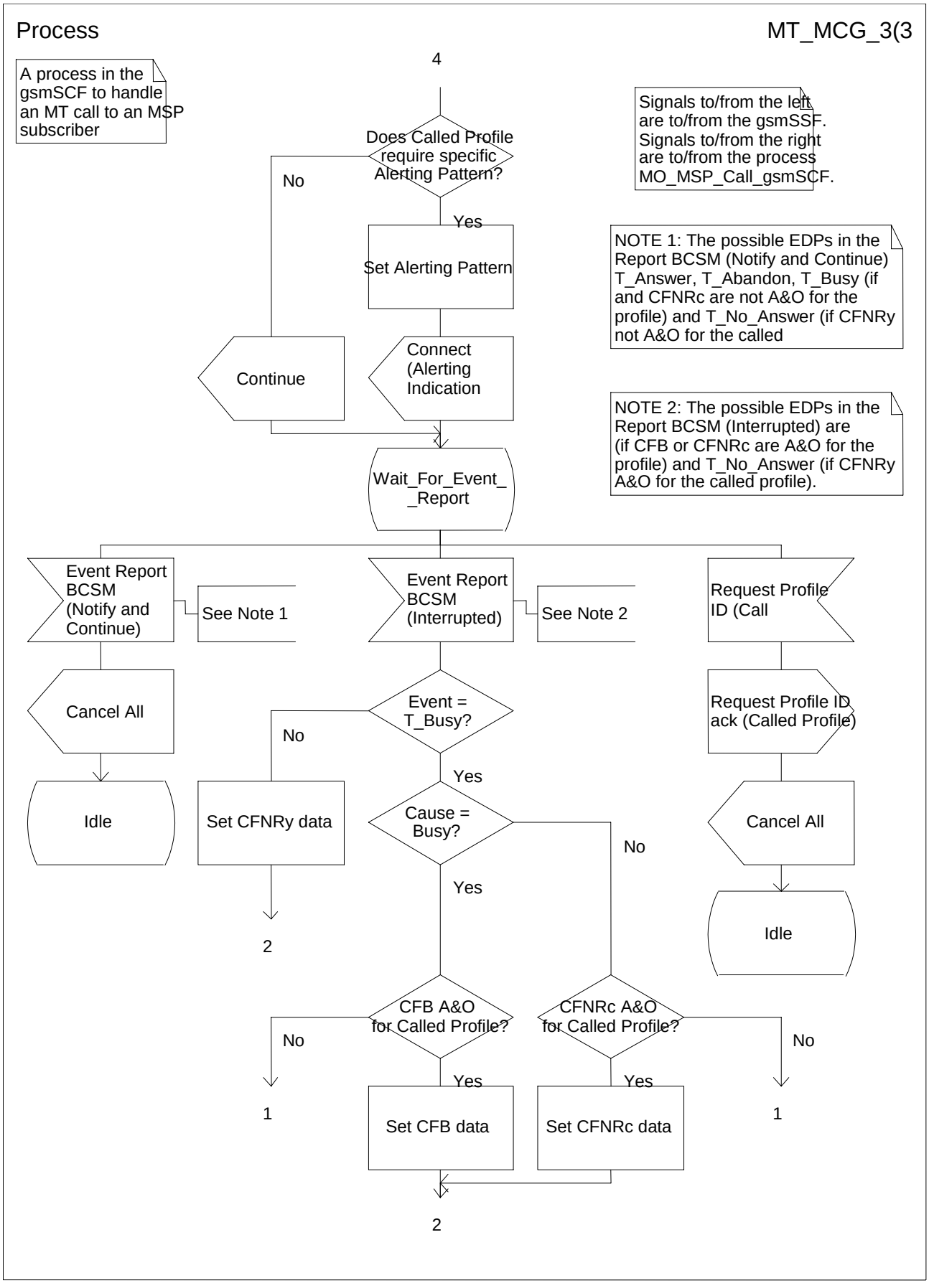


Figure 9: Process MT_MSP_Call_gsmSCF (sheet 3)

7.5.2 Information flows

…

7.6 Interaction with Supplementary Services

…

7.6.4 Call Forwarding

The Call Forwarding Supplementary Services can be provisioned per subscriber. However, services equivalent to the Call Forwarding Supplementary Services, implemented in the gsmSCF, will be available to the MSP subscriber per profile. This is described in subclause 8.1: Call Forwarding.

A subscriber should not be provided with both MSP equivalent Call Forwarding services and with GSM Call Forwarding supplementary services.

If the Call Forwarding Supplementary Services are provisioned per subscriber, then Call Forwarding will function as specified in 03.82 & will not distinguish between MSP & non-MSP subscribers.

…

7.6.13 Call Deflection (CD)

The Call Deflection Supplementary Service will be provisioned per subscriber. If CD is active, it will be active for all profiles. Data for the CD Supplementary Service will be stored in the HLR, and if appropriate in the VLR, in the usual manner. CD will function as specified in GSM 03.72 and will not distinguish between MSP and non-MSP subscribers.

When the MSP subscriber deflects an MT call, it triggers an interrogation of the gsmSCF for an MO Call. Using the call reference number, the gsmSCF can recognise that there is an ongoing dialogue for the MT call, and can then retrieve the profile to apply for the deflected call, see figure 5 and figure 9.

This gives the gsmSCF the opportunity to reject the call deflection per profile, providing the MSP subscriber is in a supporting network.

A subscriber provided with MSP equivalent Call Deflection service should not be provided with GSM Call Forwarding supplementary services.

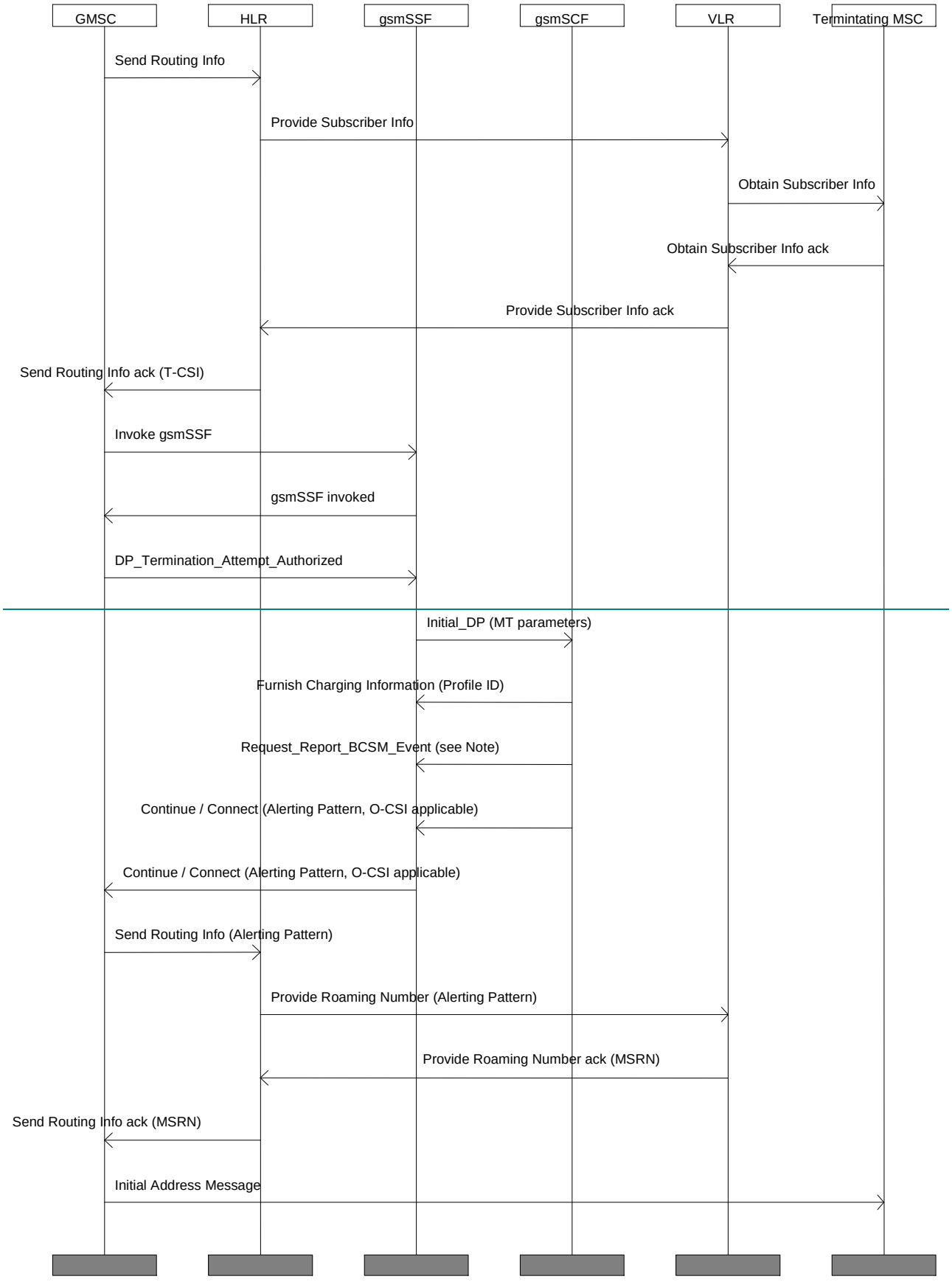
…

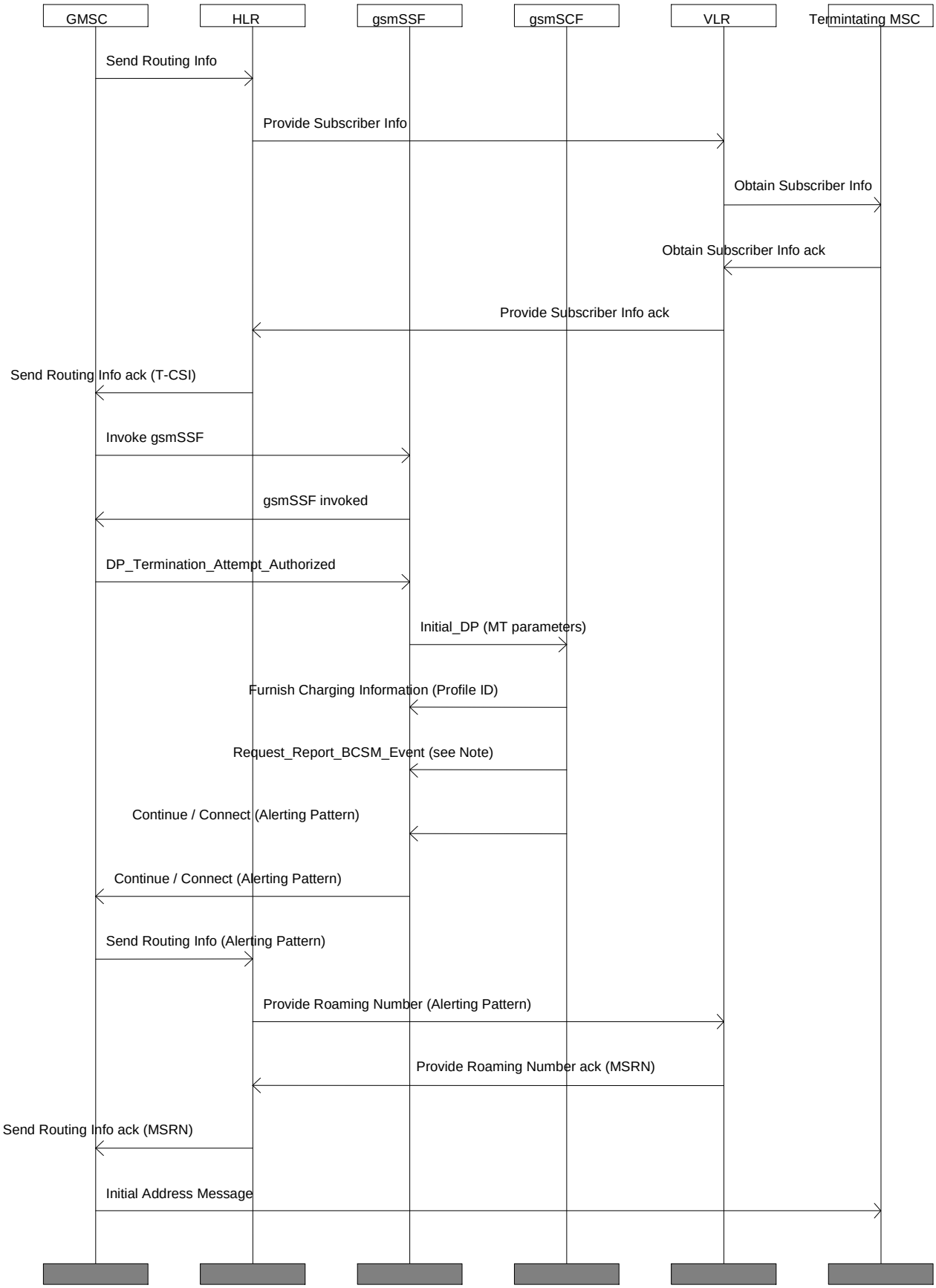
7.9 Equivalent services implemented by the gsmSCF

7.9.1 Call Forwarding

Call Forwarding services will be provided in the gsmSCF per profile. An MT call to an MSP subscriber will be subject to the provided call forwardings for the called profile.

The Call Forwarding services, implemented by the gsmSCF, should operate in the same way as the GSM Call Forwarding Supplementary Services. The MSP subscriber should have control over the call forwarding data (Registration, Erasure, Activation, Deactivation, Interrogation). The method for controlling this data is a network option.


GMSC
HLR
gsmSSF
gsmSCF
VLR
Terminating MSC
Send Routing Info
Provide Subscriber Info
Obtain Subscriber Info
Obtain Subscriber Info ack
Provide Subscriber Info ack
Send Routing Info ack (T-CSI)
Invoke gsmSSF
gsmSSF invoked
DP_Termination_Attempt_Authorized
Initial_DP (MT parameters)
Furnish Charging Information (Profile ID)
Request_Report_BCSM_Event (see Note)
Continue / Connect (Alerting Pattern, O-CSI applicable)
Continue / Connect (Alerting Pattern, O-CSI applicable)
Send Routing Info (Alerting Pattern)
Provide Roaming Number (Alerting Pattern)
Provide Roaming Number ack (MSRN)
Send Routing Info ack (MSRN)
Initial Address Message


GMSC
HLR
gsmSSF
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Initial Address Message

NOTE: Request_Report_BCSM_Event will contain the list Arm_DP_List (see figure 1). This list will contain the following elements:

T_Answer	EDP-N
T_Abandon	EDP-N
T_Busy	EDP-N (Unless CFB and/or CFNRc are A&O for the called profile, in which case EDP-R)
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Figure 12: Information flow for a successful MT call to a profile with some Call Forwardings Active and Operative

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3GPP TSG-N SS ad hoc meeting #4 *Tdoc 3GPP N_SS-99 159*
Henley-on-Thames, UK
30th November – 2nd December 1999

3G CHANGE REQUEST

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23.097 **CR** **003** Current Version: 3.0.1

3G specification number ↑ *↑ CR number as allocated by 3G support team*

For submision to TSG CN#6 *list TSG meeting no. here ↑*

for approval [X]
for information [ ]

(only one box should be marked with an X)

Form: 3G CR cover sheet, version 1.0 *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/3GCRF-xx.rtf*

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

Source: N SS ad-hoc **Date:** 01/12/1999

Subject: Interaction between MSP Call Forwarding & GSM Call Forwarding

3G Work item: MSP Phase 1

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

F	Correction	
A	Corresponds to a correction in a 2G specification	X
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Release:

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

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O&M specifications		→ List of CRs:	

Other comments:

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

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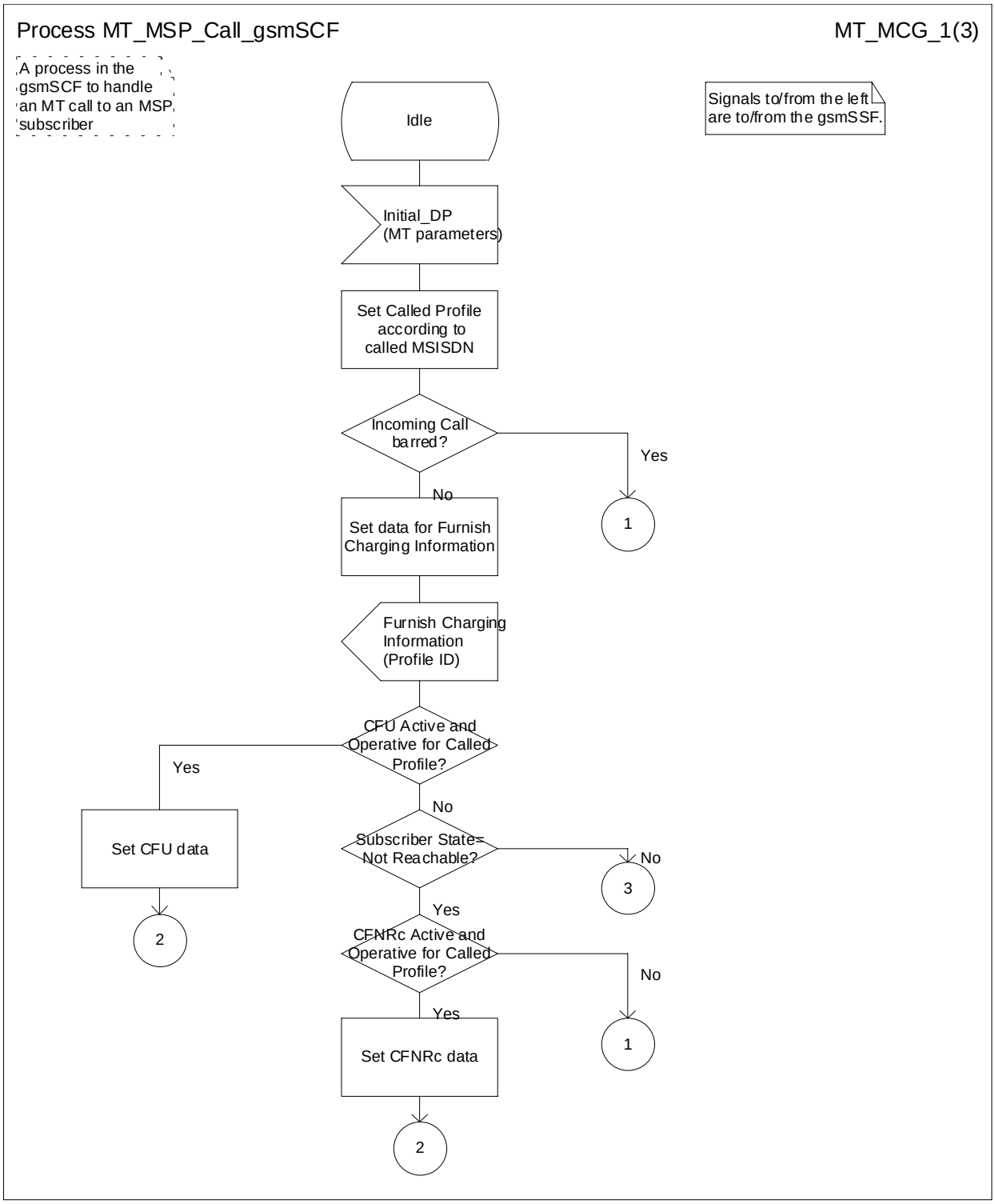
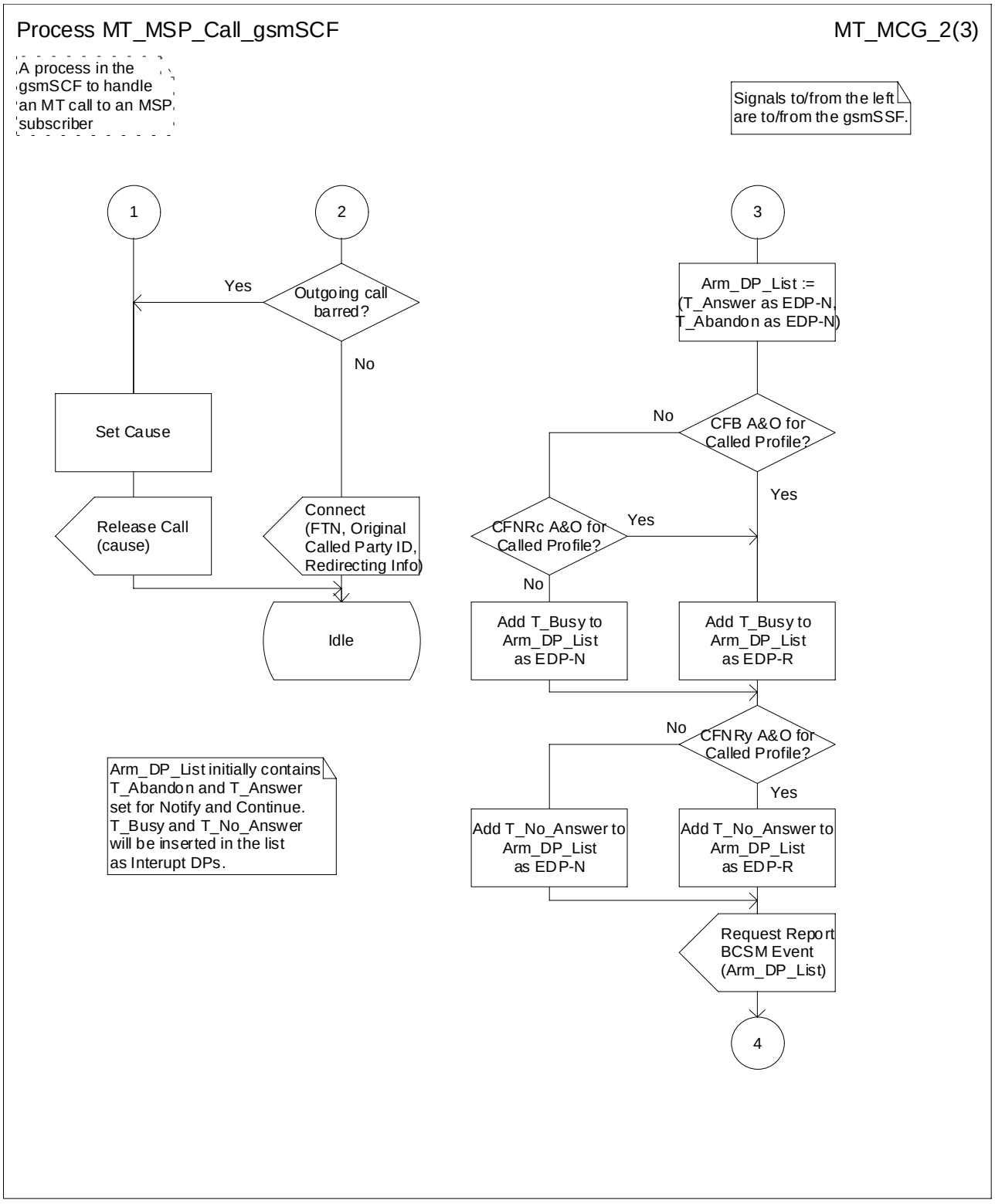


Figure 7: Process MT_MSP_Call_gsmSCF (sheet 1)



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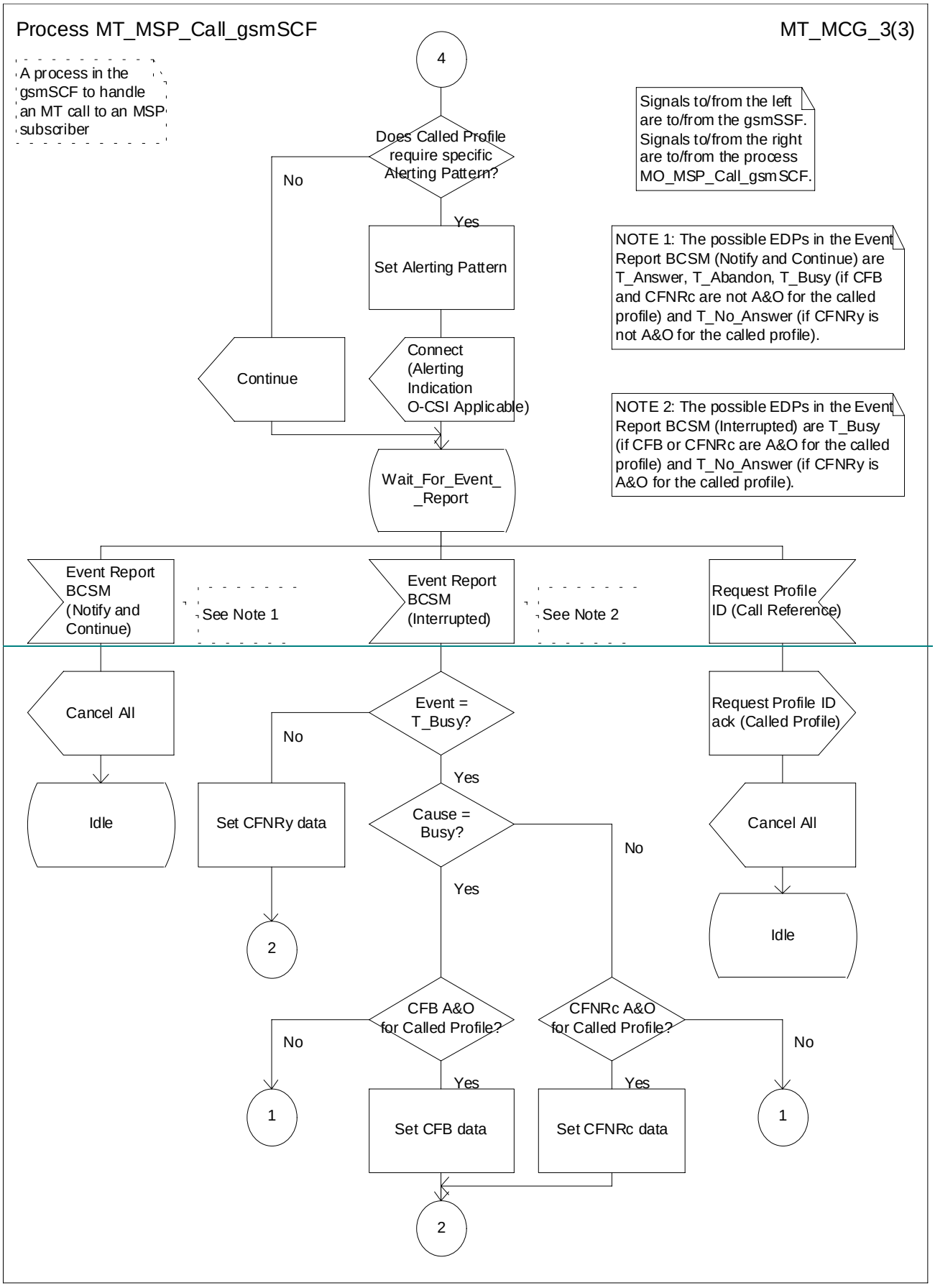
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A process in the gsmSCF to handle an MT call to an MSP subscriber
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Event Report BCSM (Notify and Continue)
See Note 1
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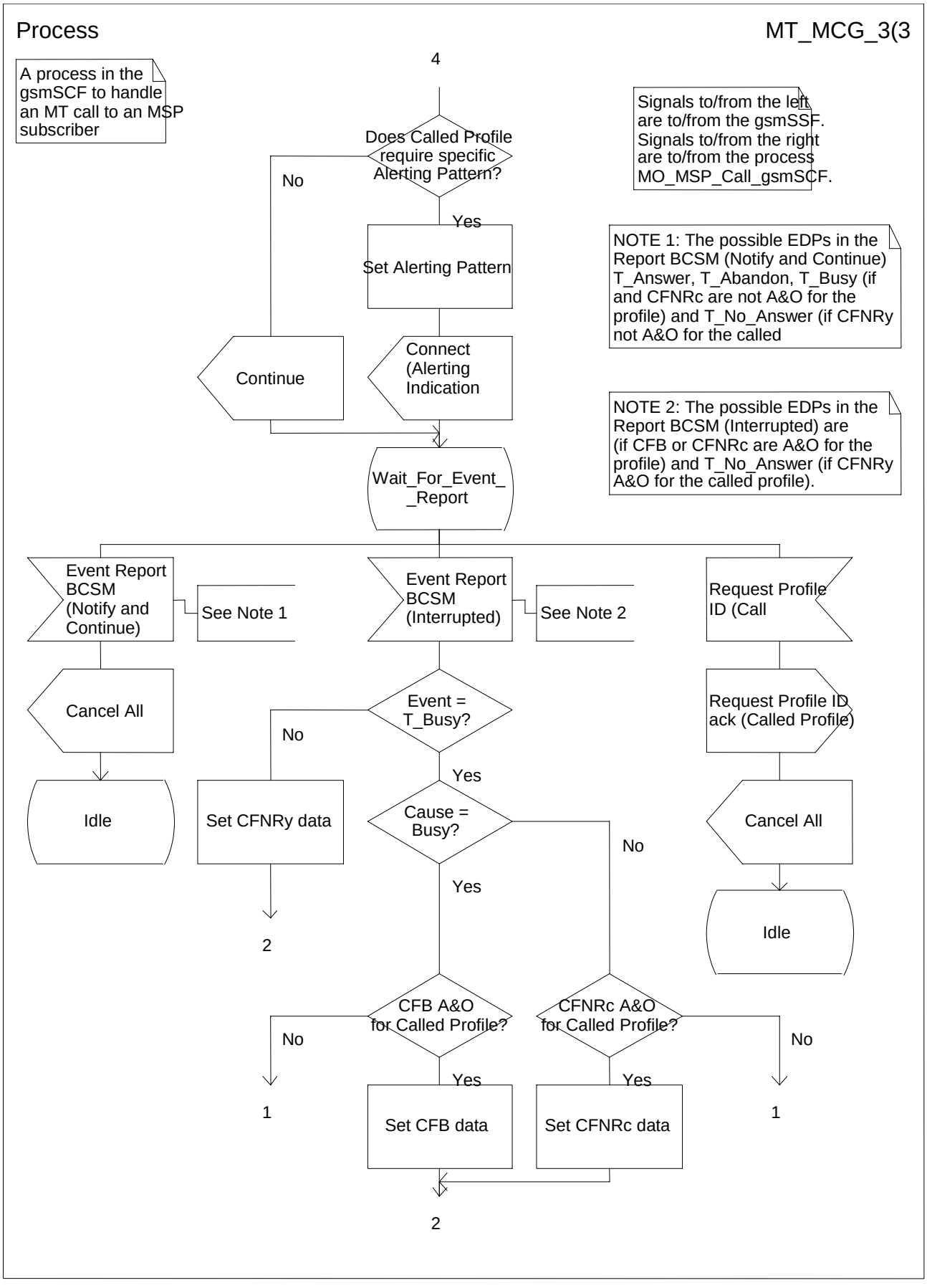
Cancel All
Idle
Event = T_Busy?
No
Yes
Set CFNRy data
2
Cause = Busy?
No
Yes
Request Profile ID ack (Called Profile)
Cancel All
Idle
CFB A&O for Called Profile?
No
Yes
1
Set CFB data
CFNRc A&O for Called Profile?
No
Yes
1
Set CFNRc data
2



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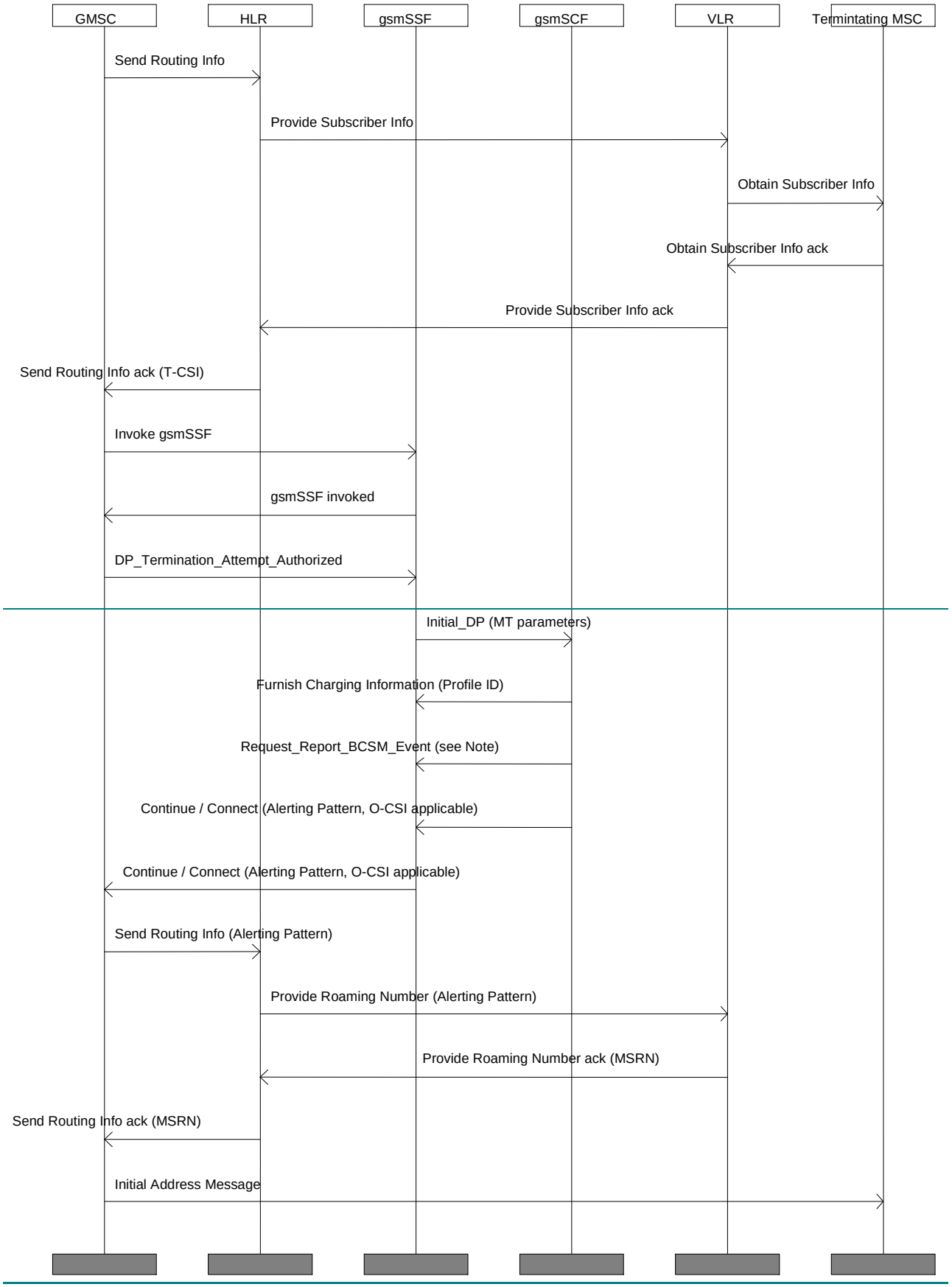
GMSC
HLR
gsmSSF
gsmSCF
VLR
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Obtain Subscriber Info
Obtain Subscriber Info ack
Provide Subscriber Info ack
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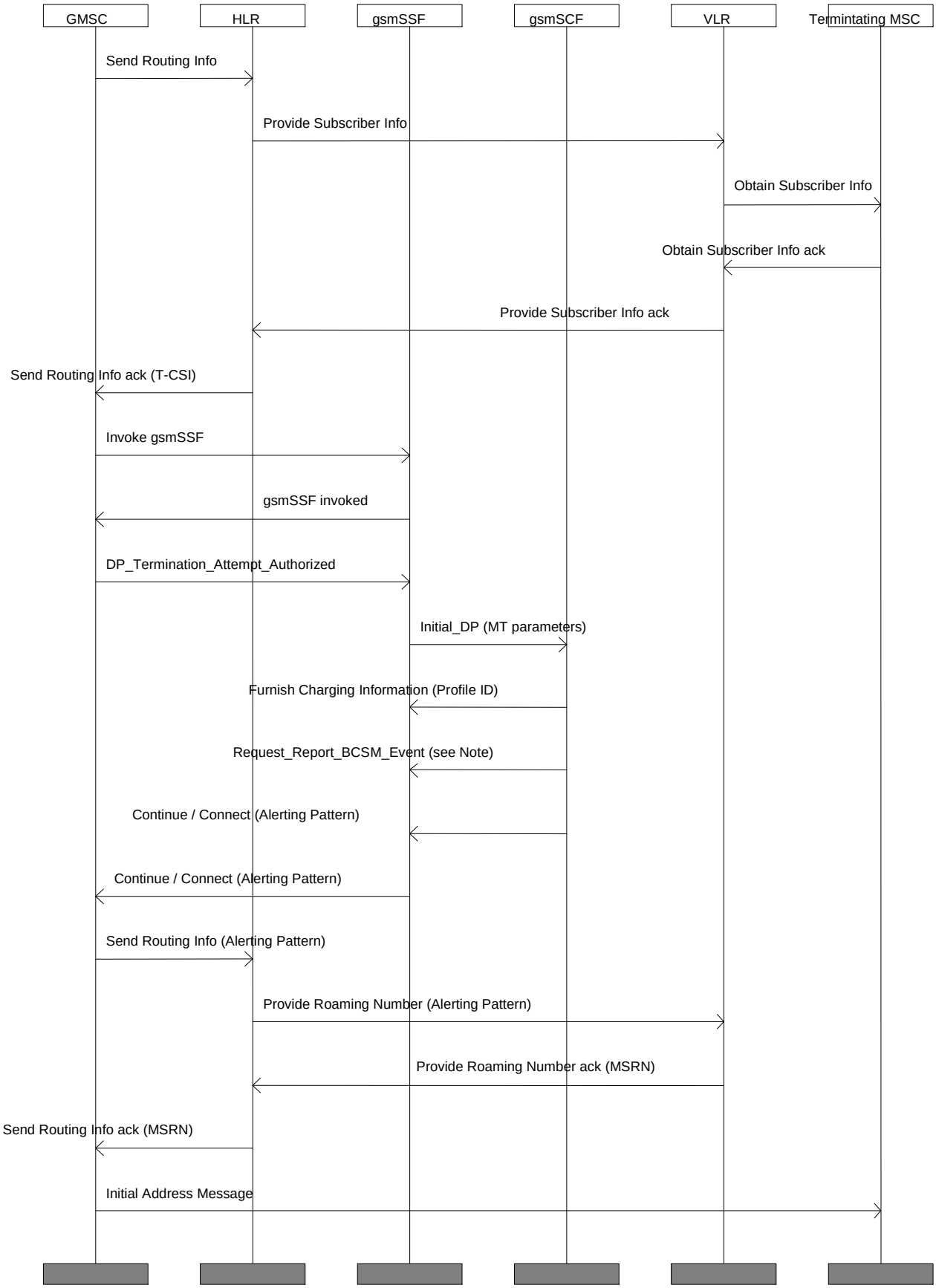
Initial_DP (MT parameters)
Furnish Charging Information (Profile ID)
Request_Report_BCSM_Event (see Note)
Continue / Connect (Alerting Pattern, O-CSI applicable)
Continue / Connect (Alerting Pattern, O-CSI applicable)
Send Routing Info (Alerting Pattern)
Provide Roaming Number (Alerting Pattern)
Provide Roaming Number ack (MSRN)
Send Routing Info ack (MSRN)
Initial Address Message


GMSC
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Send Routing Info
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Continue / Connect (Alerting Pattern)
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Provide Roaming Number (Alerting Pattern)
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Initial Address Message

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…