3GPP TSG CN Plenary **Tdoc NP-000615**
Meeting #10, Bangkok, Thailand
6th – 8th December 2000

Source: **TSG CN WG 2**

Title: **CRs to R99 Work Item CAMEL3, 23.078 part 1**

Agenda item: **7.2**

Document for: **APPROVAL**

Introduction:

This document contains **16** CRs on **R99** Work Item **"CAMEL3"**, that have been agreed by **TSG CN WG2**, and are forwarded to TSG CN Plenary meeting #10 for approval.

SPEC	CR	REV	TDoc	PHAS	SUBJECT	CAT	OLD VER
23.078	221	3	N2-000558	R99	Correction on CAMEL CF and OR	F	3.6.0
23.078	222	1	N2-000527	R99	Corrections in clauses 3 and 4	F	3.6.0
23.078	223	1	N2-000528	R99	Clarification for the relationship for DPs	F	3.6.0
23.078	224	2	N2-000556	R99	Clarification for the CUG data in Initial DP	F	3.6.0
23.078	225	1	N2-000530	R99	Correction on the SDL CAMEL_Store_Destination_Address	F	3.6.0
23.078	226		N2-000455	R99	Correction on the SDL gsmSSF	F	3.6.0
23.078	228	3	N2-000550	R99	Correction for ambiguous description in clause 10 and 11	F	3.6.0
23.078	229	1	N2-000520	R99	Clarification on GPRS 'guard timer'	F	3.6.0
23.078	230	1	N2-000523	R99	Specifying timer range values	F	3.6.0
23.078	231		N2-000467	R99	Correction to 'Initial DP SMS' Information Flow	F	3.6.0
23.078	233	3	N2-000553	R99	Second set of corrections of paragraph 6 GPRS	F	3.6.0
23.078	235		N2-000501	R99	Correction on error implementing a CR 23.078-159r1	F	3.6.0
23.078	236		N2-000509	R99	Correction on error implementing a CR 23.078-194r3	F	3.6.0
23.078	237		N2-000517	R99	CallGap IF correction	F	3.6.0
23.078	238		N2-000525	R99	CAMEL3 removal of duplicate RAI	F	3.6.0
23.078	244		N2-000482	R99	GsmSSF state transition in the case of Abandon/Disconnect is armed as an EDP-N, or when they are not armed	F	3.6.0

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Vienna, Austria, 16-20 October 2000

Document N2-000455
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or for SMG, use the format P-99-xxx

CHANGE REQUEST

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23.078	CR	226	Current Version:	3.6.0

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

For submission to:	TSG CN#10	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: Siemens **Date:** 9 October 2000

Subject: Correction on the SDL gsmSSF

Work item: CAMEL Phase 3

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

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			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:

Following corrections for the SDL gsmSSF are needed.
- Sheet 10: Check box “Arming rules fllfilled?” shall be “Arming rules fulfilled?”
- Sheet 27: State Waiting_For_End_Of_Temporary_Connection_For_DSI” shall be “..._DS” (remove “I” from “..._DSI”).

Clauses affected:

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:

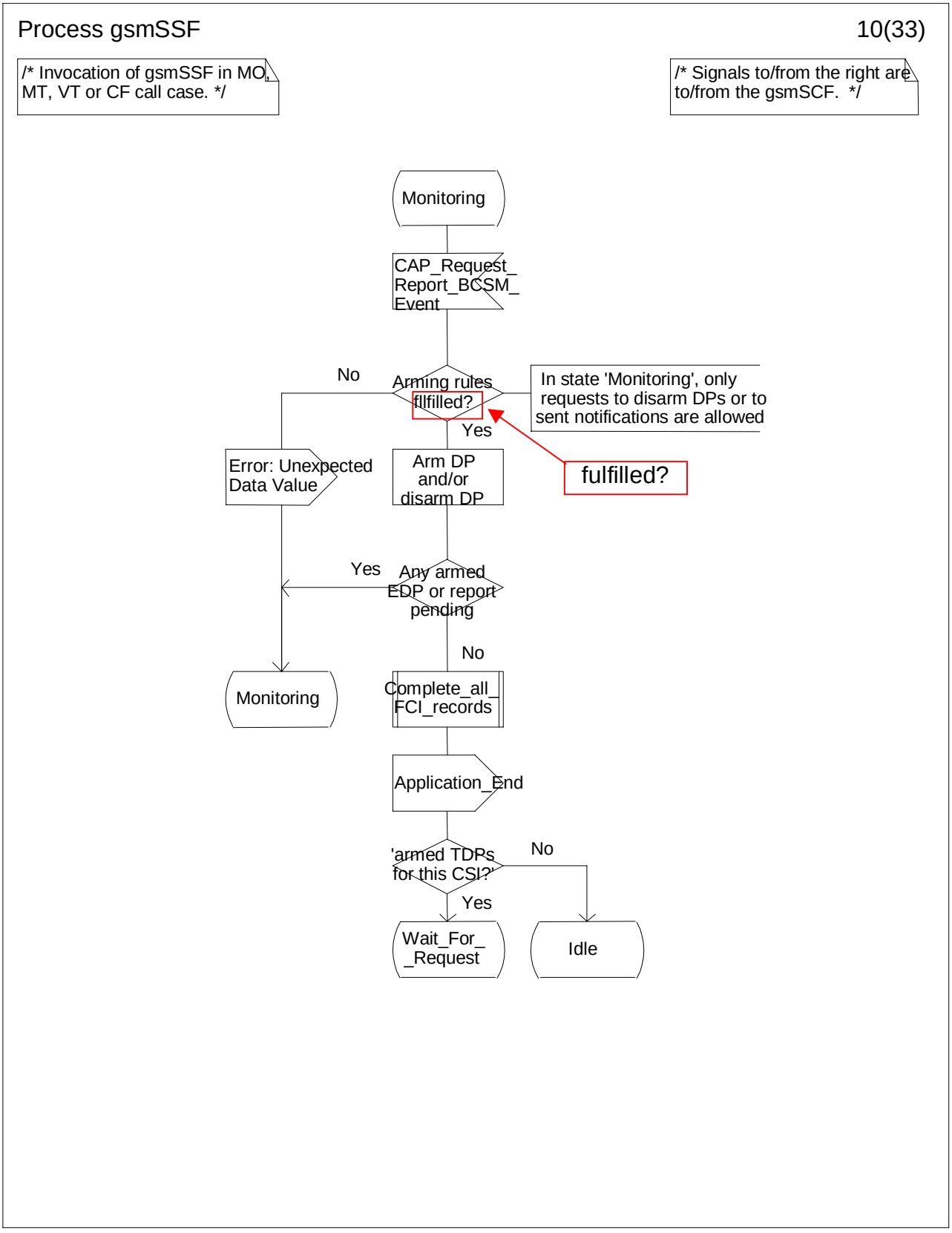

Figure 4.64j: Process gsmSSF (sheet 10)

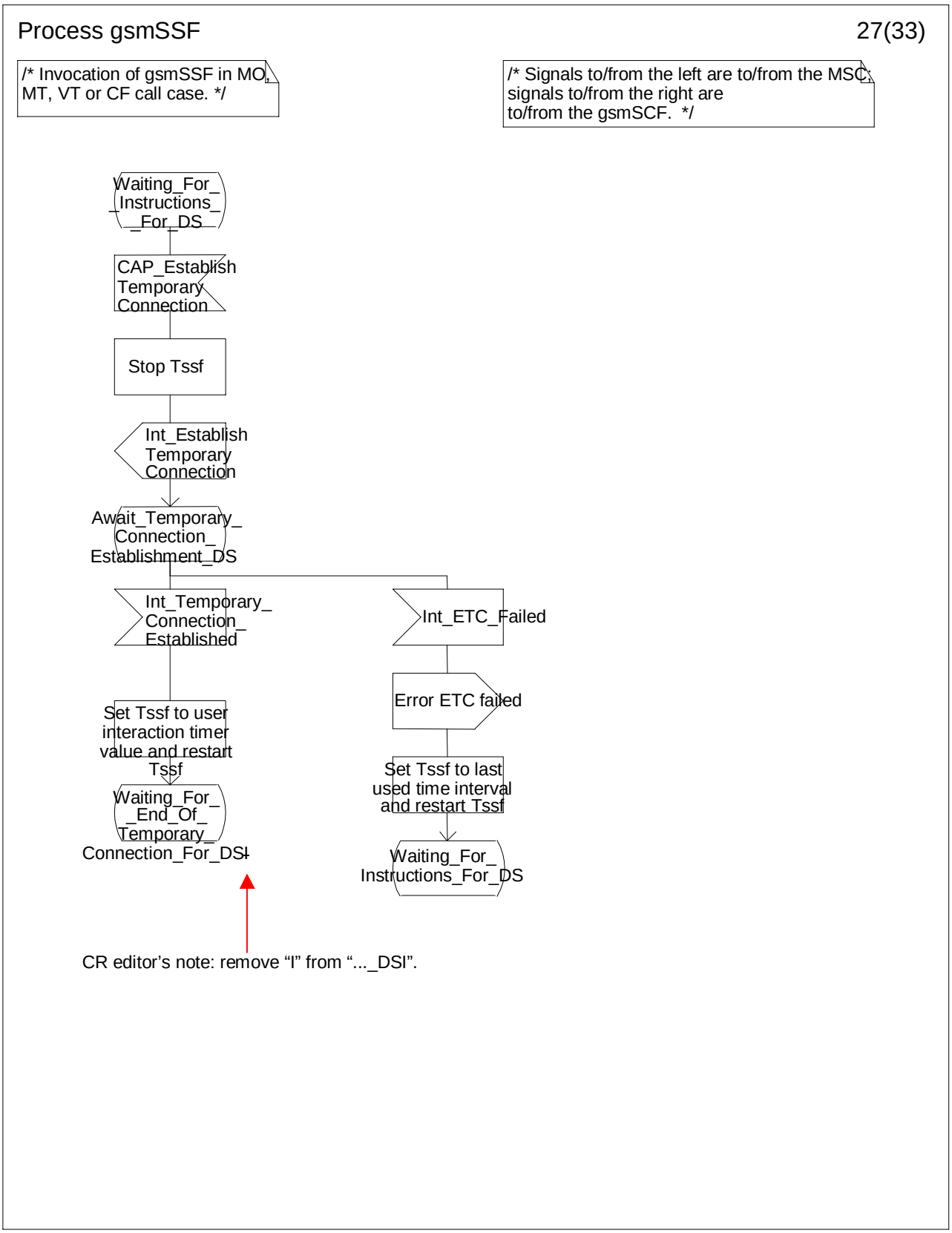

Figure 4.64aa: Process gsmSSF (sheet 27)

3GPP TSG-CN2#14 **Tdoc N2-000467**
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CHANGE REQUEST

23.078 CR 231 Current Version: 3.6.0

For submission to: TSG CN#10 for approval [X] strategic [ ]
for information [ ] non-strategic [ ]

Proposed change affects: (U)SIM [ ] ME [ ] UTRAN / Radio [ ] Core Network [X]

Source: Ericsson **Date:** 09 10 2000

Subject: Correction to 'Initial DP SMS' Information Flow

Work item: CAMEL Phase 3

Category:

F	Correction	[X]	**Release:**	Phase 2	[ ]
A	Corresponds to a correction in an earlier release	[ ]		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:

This CR introduces Proposes a correction to the 'Initial DP SMS' Information Flow (IF).

The Information Element (IE) 'TP Data Coding Scheme' is currently marked as Mandatory for Initial DP SMS. However, when Initial DP SMS is sent as a result of the sending of an SMS Command to the SMSC, then there is no TP Data Coding Scheme available in the TPDU.
Refer to 3G TS 23.040, sect. 9.2.2.4, which lists the available data items in the SMS-COMMAND TPDU.

For the CAMEL MO-SMS service, this IE is included in Initial DP SMS only in the case of an SMS-SUBMIT TPDU.

Therefore, this IE shall be marked as Conditional in the Initial DP SMS IF.

This correction is on stage 2 level only. The corresponding data element in the Operation Argument of InitialDPSMS, 'tPDataCodingScheme', is already specified as 'OPTIONAL'.

Clauses affected: 7.6.1.2

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: -

****** First Change ******

7.6.1.2 Initial DP SMS

7.6.1.2.1 Description

This IF is generated by the gsmSSF/gprsSSF when a trigger is detected at a DP in the state model, to request instructions from the gsmSCF.

7.6.1.2.2 Information Elements

The following information elements are required:

Information element name	Required	Description
Destination Subscriber Number	M	This IE contains a number to identify the Destination short message entity. The Destination Subscriber Number shall be retrieved from the SMS-SUBMIT TPDU or the SMS-COMMAND TPDU, which are specified in 3G TS 23.040 [21].
Calling Party Number	M	This IE carries the MSISDN of the subscriber who sent the short message.
Event Type	M	This IE indicates the armed event (i.e., *SMS_Collected_Info*) resulting in the Initial DP SMS IF.
IMSI	M	This IE identifies the mobile subscriber.
Location Information in MSC	C	This IE is described in a table below.
Location Information in SGSN	C	This IE is described in a table below.
Service Key	M	This IE indicates to the gsmSCF the requested CAMEL Service. It is used to address the required application/SLP within the gsmSCF.
Time And Timezone	M	This IE contains the time that the gsmSSF/gprsSSF was triggered, and the time zone the gsmSSF/gprsSSF resides in.
TP Short Message Submission Specific Information	M	This IE contains the 1st octect of the SMS-SUBMIT TPDU or the SMS-COMMAND TPDU, which are specified in 3G TS 23.040 [21]. For the SMS-SUBMIT TPDU, the 1st octet contains the following information: - Message Type Indicator - Reject Duplicates - Validity Period Format - Status Report Request - User Data Header Indicator - Reply Path For the SMS-COMMAND TPDU, the 1st octet contains the following information: - Message Type Indicator - User Data Header Indicator - Status Report Request Refer to 3G TS 23.040 [21] for an indication of which elements of this 1st octet are Mandatory and which elements are Conditional.

TP Protocol Identifier	M	This IE indicates the protocol used above SM-Transfer Layer. The TP Protocol Identifier shall be retrieved from the SMS-SUBMIT TPDU or the SMS-COMMAND TPDU, which are specified in 3G TS 23.040 [21].
TP Data Coding Scheme	~~M~~C	This IE indicates the data coding scheme of the TP-User Data field, and may indicate a message class. The message class may indicate e.g. the originator of the Short Message. The TP Data Coding Scheme shall be retrieved from the SMS-SUBMIT TPDU ~~or the SMS-COMMAND TPDU~~, which is~~are~~ specified in 3G TS 23.040 [21].
TP Validity Period	C	This IE indicates the length of the validity period or the absolute time of the validity period termination. This IE is only used for the SMS-SUBMIT TPDU. The TP Validity Period shall be retrieved from the SMS-SUBMIT TPDU which is specified in 3G TS 23.040 [21].
SMSC Address	M	This IE defines the address of the SMSC to which the MO short message is intended to be submitted.

M Mandatory (The IE shall always be sent).

C Conditional (The IE shall be sent, if available).

…

<unmodified>

…

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

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CHANGE REQUEST

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23.078 **CR** **244** Current Version: 3.6.0

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

For submission to: TSG CN#10 *list expected approval meeting # here ↑*

for approval [X] for information [ ]

strategic [ ] non-strategic [ ] *(for SMG use only)*

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: Nokia **Date:** 9 Oct 2000

Subject: GsmSSF state transition in the case of Abandon/Disconnect is armed as an EDP-N, or when they are not armed

Work item: CAMEL phase 3

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

F	Correction	[X]	**Release:**	Phase 2	[ ]
A	Corresponds to a correction in an earlier release	[ ]		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:

The CAMEL ph 3 gsmSSF shall go to IDLE always when O/T_Abandon or O/T_Disconnect detection point is armed as an EDP-N, or is not armed at all. The reasoning is the following:

1. O/T_Busy, O/T_No_Answer and Route_Select_Failure EDPs are implicitly disarmed when O/_Abandon is met -> No other EDPs can be met after the O/T_Abandon DP.

2. It is poor service logic design if O/T_Disconnect is armed as an EDP-R for one leg, and as an EDP-N (or not armed) for the other leg. If SCP wants to send FCI, both legs must have EDP-R for a reliable operation of the CAMEL service. For the follow-on call CAMEL services (disconnect of called leg must be EDP-R) the service can not run any more if the calling party has cleared as well -> the gsmSSF can vanish. The gsmSSF can loose Connect, but the re-connection is not possible anymore.

3. If O/T_Disconnect DP is encountered while waiting for instructions at the O/T_Answer EDP-R then this makes some difference. However, the only reasonable instructions at O/T_Answer would be FCI and Continue CAP operations. The gsmSSF can loose FCI operation of O/T_Answer DP, but on the other hand the subscribers never talked to each other in the particular call. The free format charging data is part of regular CDR data (according to the 3G TS 32.012). The regular CDR may not be created in this case at all -> there is no place to put FCI data anyway.

Clauses affected:

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:	The same shall be done to the CAMEL4 draft as well.

****** FIRST MODIFIED SECTION ******

4.5.6.4 Process gsmSSF and procedures

The call gap operation can only be received for an opened transaction between the gsmSSF and the gsmSCF.

. . . .

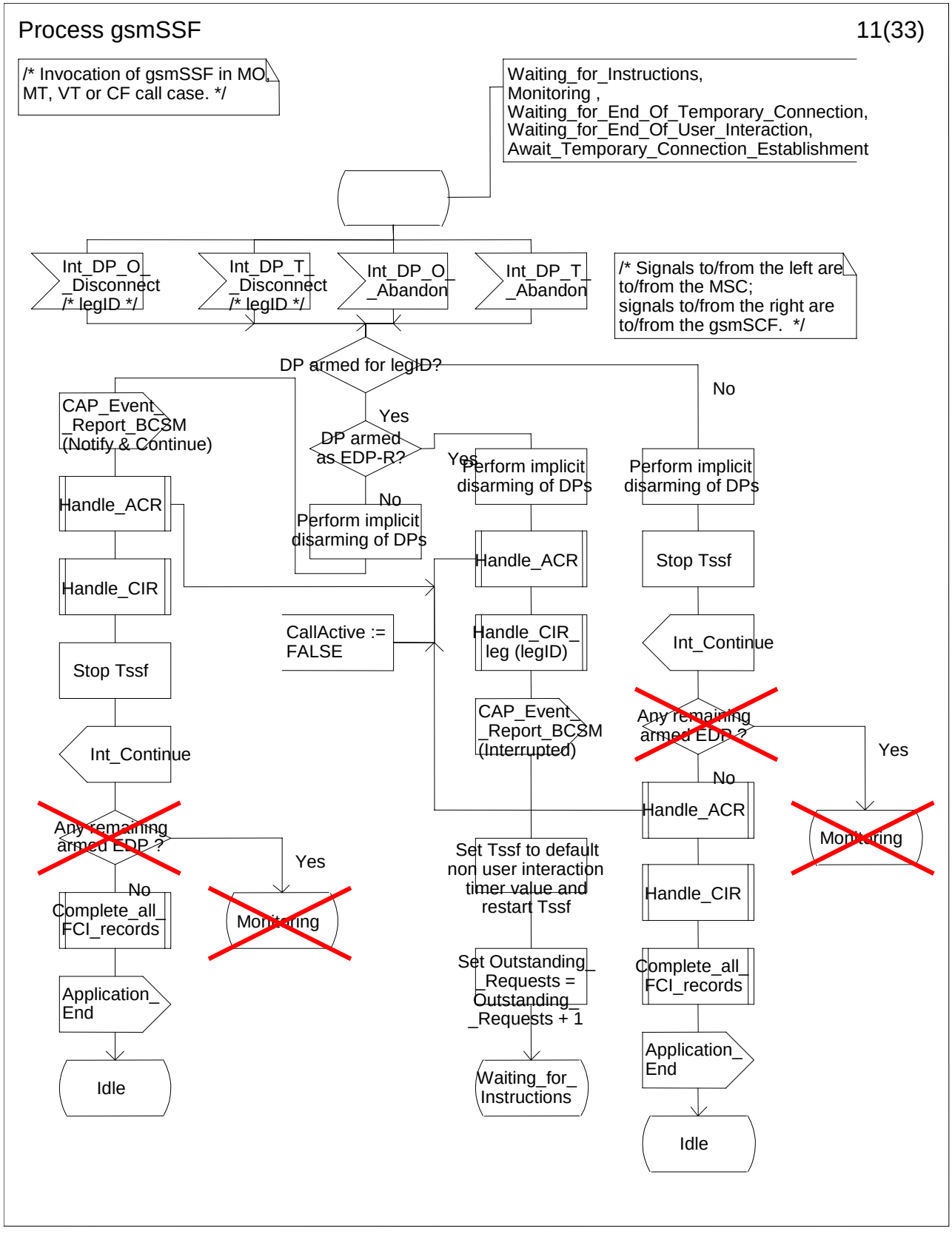

Figure 4.65k: Process gsmSSF (sheet 0)

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CHANGE REQUEST

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23.078	CR	235	Current Version:	3.6.0

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

For submission to:	TSG CN#10	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: Rapporteur **Date:** 12 October 2000

Subject: Correction on error implementing a CR 23.078-159r1

Work item: CAMEL Phase 3

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

F	Correction	[X]	**Release:**	Phase 2	[ ]
A	Corresponds to a correction in an earlier release	[ ]		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: To correct an error implementing CR 23.078-159r1 (N2-000205) which was approved by CN#7

Clauses affected: 6

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: [redacted] N2-000205-ETR-23078.doc

6.6.1.3 Entity Released GPRS

6.6.1.3.1 Description

This IF is used by the gprsSSF to inform the gsmSCF at any phase that a GPRS session or PDP context has been terminated by the SGSN without reporting any EDP.

6.6.1.3.2 Information Elements

The following information elements are required:

Information element name	Required	Description
Gprs Reference Number	C	This IE consists of a number assigned by the gprsSSF and a number assigned by the gsmSCF. It is used for TCAP dialogue segmentation. Refer to 3GPP TS 29.078 [5] for the usage of this element.
GPRS Cause	M	This IE contains the Cause value indicating the reason for discontinuation of the PDP context.
PDP ID	~~M~~C	This IE identifies the PDP context which has been terminated by the SGSN. If not present the relationship corresponds to the Attach/Detach State Model or to one single PDP context within a PDP context relationship.

M Mandatory (The IE shall always be sent).

C Conditional.

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CHANGE REQUEST

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23.078	CR	236	Current Version:	3.6.0

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

For submission to:	TSG CN#10	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: Rapporteur **Date:** 12 October 2000

Subject: Correction on error implementing a CR 23.078-194r3

Work item: CAMEL Phase 3

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

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			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: To correct an error implementing CR 23.078-194r3 (N2-000438) which was approved by CN#8

Clauses affected: 6

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:

6.4.6 Rules for Implicit Disarming of Detection Points

The following two tables give the rules for implicit disarming of event detection points.

Implicit EDP disarming rules are specified for the Attach/Detach State Model and PDP Context State Model. The tables specify which EDP's shall be disarmed (i.e. MonitorMode set to Transparent) if/when each EDP is encountered, irrespective of the EDP's MonitorMode (Transparent, NotifyAndContinue, or Request).

EDPs which are armed generically for GPRS PDP Context State Models shall only be implicitly disarmed at the end of the GPRS dialogue. Explicit disarming is possible.

When EDP's are armed with MonitorMode 'Request' (EDP-R's) are encountered, any implicit EDP disarming shall take place before reporting the EDP and transiting the gprsSSF to the WFI state (if not already suspended in the WFI state).

The table entry 'X' means that if one DP occurs (independently of arming and reporting to the gsmSCF) the marked one is implicitly disarmed. It shall be possible to rearm explicitly an implicitly disarmed DP.

Table 3: Implicit disarming rules for Schenario 1 (the rules apply for non-generically armed DPs)

Encountered DP	Implicit disarmed DPs					
	DP Change of Position GPRS Session	DP Change of Position Context	DP Detach	DP PDP Context Establishment	DP PDP Context Establishment Acknowledgement	DP PDP Context Disconnection
DP Change of Position GPRS Session	~~Note~~	~~Note~~	~~Note~~	~~Note~~	~~Note~~	~~Note~~
DP Change of Position Context	~~Note~~	~~Note~~	~~Note~~	~~Note~~	~~Note~~	~~Note~~
DP Detach	X	X	X	X	X	X
DP PDP Context Establishment				~~X~~		
DP PDP Context Establishment Acknowledgement				~~X~~	X	
DP PDP Context Disconnection		X			X	X

Table 4: Implicit disarming rules for Scenario 2 (the rules apply for non-gnerically armed DPs)

Encountered DP	Implicit disarmed DPs		
	DP Change of Position Context	DP PDP Context Establishment Acknowledgement	DP PDP Context Disconnection
DP PDP Context Establishment Acknowledgement		X	
DP PDP Context Disconnection	X	X	X
DP Change of Position Context			

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Document N2-000517
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CHANGE REQUEST

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23.078	CR	237	Current Version:	3.6.0

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

For submission to:	TSG CN#10	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: Nokia **Date:** 16 Oct 2000

Subject: CallGap IF correction

Work item: CAMEL phase 3

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

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			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: The display information related text will be removed from the CallGap IF.

Clauses affected: 4.6.2.3.2

Other specs affected:

Other 3G core specifications		→ List of CRs:	29.078 (N2-000516)
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:

****** FIRST MODIFIED SECTION ******

4.6.2.3 Call Gap

4.6.2.3.1 Description

This IF is used to activate/modify/remove a call gap mechanism in the gsmSSF. The call gap mechanism is used to reduce the rate at which specific service requests are sent to a gsmSCF.

A Call Gap operation can only be sent on an opened dialogue between a gsmSCF and a gsmSSF.

It is possible to have several call gapping conditions applicable to the same gsmSSF (i.e. each conditions were activated for a defined Service (identified by the serviceKey) by a defined gsmSCF (identified by the gsmSCFAddress).

4.6.2.3.2 Information Elements

Information element name	Status	Description
Gap Criteria	M	This IE specifies the criteria for a call to be subject to call gapping.
Gap Indicators	M	This parameter indicates the gapping characteristics.
Control Type	O	This parameter indicates the reason for activating call gapping. The value "sCPOverloaded" indicates that an automatic congestion detection and control mechanism in the SCP has detected a congestion situation. The value "manuallyInitiated" indicates that the service and or network/service management centre has detected a congestion situation, or any other situation that requires manually initiated controls. The controlType "manuallyInitiated" will have priority over "sCPOverloaded" call gap. It should be noted that also non-IN controlled traffic control mechanism can apply to an exchange with the SSF functionality. As the non-IN controlled traffic control is within the CCF, this traffic control has implicit priority over the IN controlled traffic control. The non-IN controlled traffic control may also have some influence to the IN call. Therefore it is recommended to take measures to coordinate several traffic control mechanisms. The non-IN controlled traffic control and co-ordinationof several traffic control mechanisms are out of the scope of core INAP.
Gap Treatment	O	This parameter indicates how calls that were rejected due to the call gapping condition and for which the Default Call Handling was set to "Release Call" shall be treated.

M Mandatory (The IE shall always be sent).

O Optional (Service logic dependent).

Gap Criteria contains one of the following (Choice):

Information element name	Status	Description
Basic Gap Criteria	O	This IE is a choice of various basic criteria.
Compound Gap Criteria	O	This IE is a choice of various criteria including a ScfID.

O Optional (Service logic dependent).

Compound Gap Criteria contains the following Information:

Information element name	Status	Description
Basic Gap Criteria	M	This IE is a choice of various criteria
ScfID	O	This IE contains the address of the gsmSCF which initiated the CallGapping.

M Mandatory (The IE shall always be sent).

O Optional (Service logic dependent).

Basic Gap Criteria contains one of the following (Choice):

Information element name	Status	Description
Called Address	O	This parameter contains a string of digits. At each call attempt, when the leading digits of the dialled number match this specific value, the call gapping treatment shall be applied to this call.
Service	O	This parameter contains a service key value. At each call attempt, when the service key match this specific value, the call gapping treatment shall be applied to this call.
Called Address and Service	O	This parameter contains a specific string of digits and a service key value. At each call attempt, when the leading digits of the dialled number and the service key of a call match these specific values, the call gapping treatment shall be applied to this call.
Calling Address and Service	O	This parameter contains a specific string of digits and a service key value. At each call attempt, when the leading digits of the calling party number and the service key match these specific values, the call gapping treatment shall be applied to this call.

O Optional (Service logic dependent).

Gap Indicators contains the following information:

Information element name	Status	Description
Duration	M	Duration specifies the total time interval during which call gapping for the specified gap criteria will be active. A duration of 0 indicates that gapping is to be removed. A duration of -2 indicates a network specific duration. Other values indicate duration in seconds.
Interval	M	This parameter specifies the minimum time between calls being allowed through. An interval of 0 indicates that calls meeting the gap criteria are not to be rejected. An interval of -1 indicates that all calls meeting the gap criteria are to be rejected. Other values indicate interval in milliseconds.

M Mandatory (The IE shall always be sent).

Gap Treatment contains one of the following (choice):

Information element name	Status	Description
Information To Send	O	This parameter indicates an announcement~~,~~ or a tone ~~or display information~~ to be sent to the calling party. At the end of information sending, the call shall be released.
Release Cause	O	If the call is to be released, this IE indicates a specific cause value to be sent in the release message. See EN 300 356-1 [20] for the coding.

O Optional (Service logic dependent).

Information To Send contains one of the following (choice):

Information element name	Status	Description
In-band Info	O	This parameter specifies the in-band information to be sent.
Tone	O	This parameter specifies a tone to be sent to the end-user.

O Optional (Service logic dependent).

In-band Info contains the following information:

Information element name	Status	Description
Message Id	M	This parameter indicates the message(s) to be sent, it can be one of the following:
Message Duration	O	This parameter indicates the maximum time duration in seconds that the message shall be played/repeated. ZERO indicates endless repetition.

M Mandatory (The IE shall always be sent).

O Optional (Service logic dependent).

Message Id contains one of the following (choice):

Information element name	Status	Description
Elementary Message Id	O	This parameter indicates a single announcement.

O Optional (Service logic dependent).

N2-000520
rev of N2-000462

3GPP/SMG Meeting #14
Vienna, Austria, 16-20 October 2000

Document

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**	**229r1**	Current Version:	3.6.0

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

For submission to: CN #10 *list expected approval meeting # here ↑*

for approval [X]
for information [ ]

strategic [ ]
non-strategic [ ]

(for SMG use only)

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: Alcatel **Date:** 18 October 2000

Subject: Clarification on GPRS 'guard timer'

Work item: CAMEL Phase 3

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	[ ]
Release 98	[ ]
Release 99	[X]
Release 00	[ ]

Reason for change: Clarification of 'guard timer'.

Clauses affected: 6.5.3.8.2.1

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: For clarification the 'guard timer' shall be given the full name as indicated in the subclause header, i,e. 'TC guard timer'.

— First modified section —

6.5.3.8 GPRS duration control, procedures Handle_AC_GPRS and Handle_ACR_GPRS

6.5.3.8.1 Overview

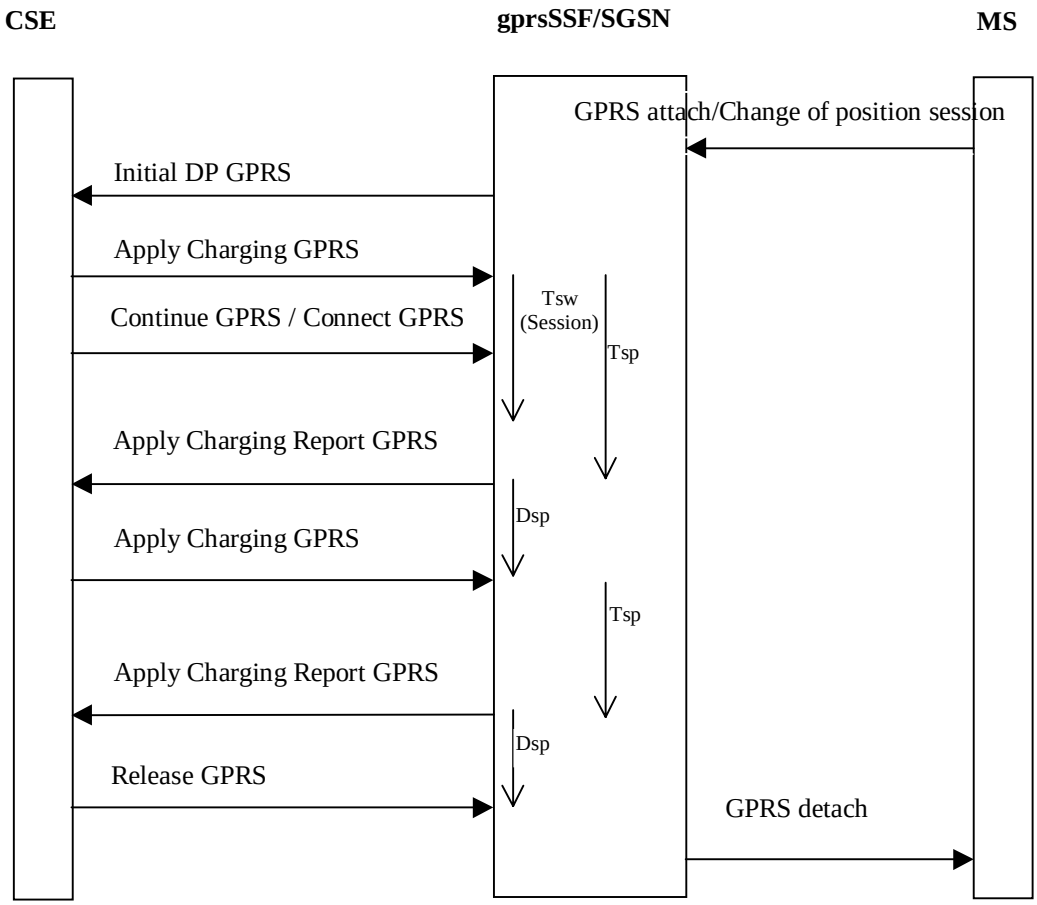

Figure 6.16a: Example of information flows for GPRS session duration at GPRS attach and change of position session

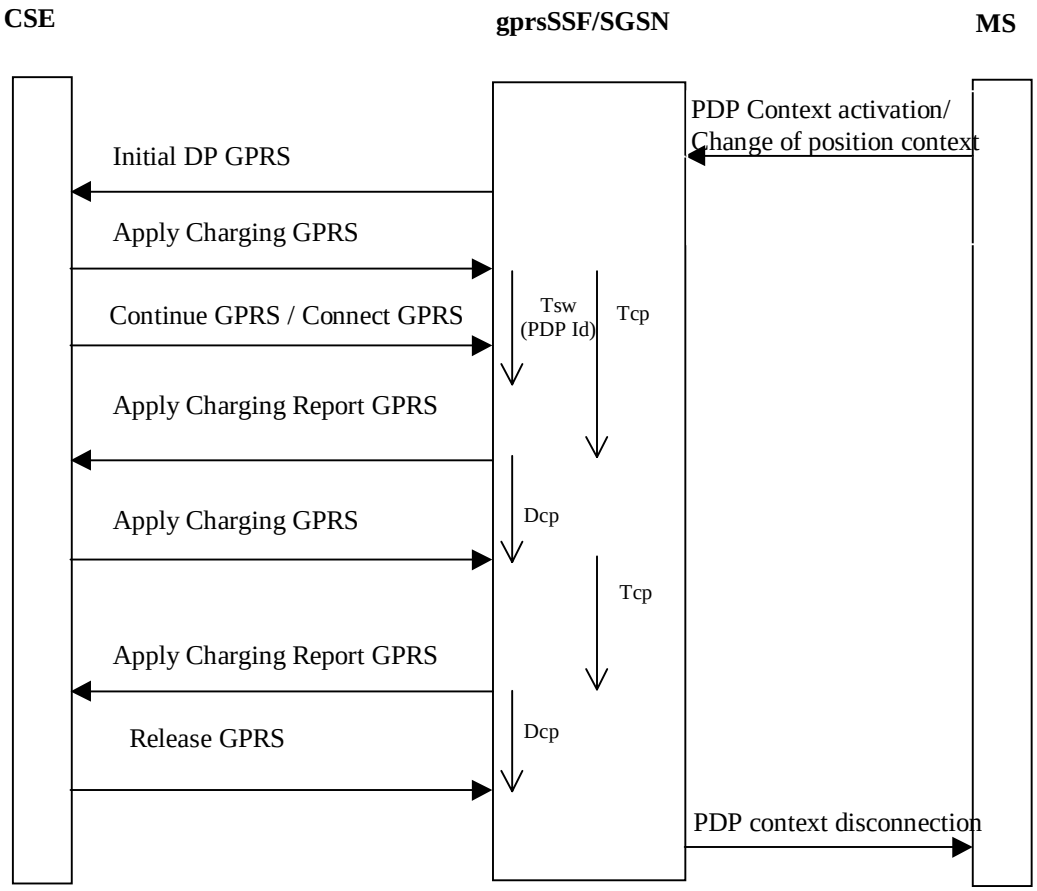

Figure 6.16b: Example of information flows for PDP context duration control at context activation and change of position context

These figures show examples of handling of the timers that are used in the process gprsSSF and in the procedures Handle_AC_GPRS and Handle_ACR_GPRS.

Duration timers (Tsp for the GPRS session and one Tcp for each PDP context) are used if the charging is on duration of the GPRS session or a PDP context.

Tariff Switch Timers (Tsw(Session) for the GPRS session and one Tsw(PDP Id) for each PDP context) define the start point of a new Tariff. Tsw(Session) is used for charging on duration. Tsw(PDP Id) is used for both methods of charging: duration charging and volume charging. If a PDP context is charged on duration and volume, only one Tsw(PDP Id) timer will be accepted from the gsmSCF for that PDP context.

Delta timers measure the response time of the gsmSCF after an Apply Charging Report GPRS operation:

- Dsp for the GPRS session; this delta timer is used for GPRS session period timing.
- Dcp for each PDP context; these delta timers are used for PDP context period timing.
- Dc for each PDP context; these delta counters are used for PDP context volume counting.

After the sending of Apply Charging Report GPRS, the gsmSCF may reply either with:

- Apply Charging GPRS, if the gsmSCF sends a new duration because of the expiration of the previous period or because of QOS change.
- Release GPRS, if the gsmSCF decides to release the GPRS session or PDP context.

~~Note: There may be Guard timer(s) in gprsSSF to supervise the response from the gsmSCF on the Apply Charging Report GPRS operation.~~

6.5.3.8.2 TC guard timer

6.5.3.8.2.1 General

When the gprsSSF sends an Apply Charging Report GPRS operation to the gsmSCF, with SessionActive or ContextActive variable set to TRUE, then the gprsSSF shall start the TC guard timer. The gprsSSF shall also mark for the Session or PDP Context for which the Apply Charging Report GPRS was sent, that a corresponding Apply Charging GPRS operation from the gsmSCF is expected.

When the gprsSSF receives an Apply Charging GPRS operation or a Release GPRS operation, then the 'Waiting-for-AC' marking(s) for the Session or PDP Context shall be removed. The gprsSSF shall then check if the TC guard timer shall be stopped (task box 'Check guard timer'). The TC guard timer shall be stopped if there are no more Apply Charging GPRS operations expected for the Session and all PDP Contexts.

When an event occurs that results in the termination of a PDP Context, then the 'Waiting-for-AC' markings for that PDP Context shall be removed. The gprsSSF shall then check if the TC guard timer shall be stopped (task box 'Check guard timer'). The TC guard timer shall be stopped if there are no more ApplyChargingGPRS operations expected for the Session and all PDP Contexts.

When the TC guard timer expires in state Monitoring, then the gprsSSF shall close the TC dialogue, provided that all conditions for closing the TC dialogue are fulfilled, ie. there are no Operation Results expected from the gsmSCF, no Operations or Errors to be sent to the gsmSCF and no Operations from the gsmSCF received and waiting to be processed.

When the TC guard timer expires in state Waiting_for_Instructions, then no action shall be taken.

Service Designers should note that if the gsmSCF does not send an Apply Charging GPRS or Release GPRS in response to an Apply Charging Report GPRS when the gprsSSF is awaiting such response, service behaviour may be unpredictable, unless the gprsSSF releases the PDP Context or Session involved. There may be additional timer(s) in gprsSSF to supervise the response from the gsmSCF on the Apply Charging Report GPRS operation.

6.5.3.8.2.2 Check guard timer

This clause describes the actions to be taken in the task box 'Check guard timer'.

The tasks to be executed in the 'Check guard timer' box depend on the event that resulted in execution of the task box.

6.5.3.8.2.2.1 Apply Charging GPRS

If 'Check guard timer' is executed as a result of an Apply Charging GPRS operation from the gsmSCF, then the appropriate 'Waiting-for-AC' marker shall be removed, dependig on the information received in the Apply Charging GPRS operation:

- ~~if the Apply Charging GPRS operation carries a Session Volume threshold, then the Session Volume 'Waiting-for-AC' marker shall be removed.~~

- if the Apply Charging GPRS operation carries a Session Time threshold, then the Session-Period 'Waiting-for-AC' marker shall be removed.

- if the Apply Charging GPRS operation carries a PDP Context Volume threshold, then the PDP Context-Volume 'Waiting-for-AC' marker shall be removed.

- if the Apply Charging GPRS operation carries a PDP Context Time threshold, then the PDP Context -Period 'Waiting-for-AC' marker shall be removed.

The gprsSSF then checks if there is any 'Waiting-for-AC' marker for the Session or any PDP Context. If there is no 'Waiting-for-AC' marker remaining, then the TC guard timer shall be stopped.

6.5.3.8.2.2.2 Release GPRS

If 'Check guard timer' is executed as a result of a Release GPRS operation from the gsmSCF, then the appropriate 'Waiting-for-AC' markers shall be removed, dependig on the information received in the Release GPRS operation:

- if the Release GPRS operation is for the Session, then the Session 'Waiting-for-AC' markers shall be removed.

- if the Release GPRS operation is for the PDP Context, then the PDP Context 'Waiting-for-AC' markers shall be removed.

The gprsSSF then checks if there is any 'Waiting-for-AC' marker for the Session or any PDP Context. If there is no 'Waiting-for-AC' marker remaining, then the TC guard timer shall be stopped.

6.5.3.8.2.2.3 PDP Context Disconnect

If 'Check guard timer' is executed as a result of a PDP Context Disconnect signal from the SGSN, then the 'Waiting-for-AC' markers for that PDP Context shall be removed.

The gprsSSF then checks if there is any 'Waiting-for-AC' marker for the Session or any PDP Context. If there is no 'Waiting-for-AC' marker remaining, then the TC guard timer shall be stopped.

3GPP TSG-N2
Vienna, Austria, 16 – 20 October 2000

Tdoc 3GPP N2-000523
Revision of N2-000466

CHANGE REQUEST

23.078 CR 230r1 Current Version: 3.6.0

For submission to: TSG CN#10 for approval [X] strategic [ ]
for information [ ] non-strategic [ ]

Proposed change affects: (U)SIM [ ] ME [ ] UTRAN / Radio [ ] Core Network [X]

Source: Ericsson **Date:** 17 10 2000

Subject: Specifying timer range values

Work item: CAMEL Phase 3

Category:

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	[ ]
Release 98	[ ]
Release 99	[X]
Release 00	[ ]

Reason for change:

The present CR proposes the following corrections.

(1) Process gsmSSF uses timer '**Tccd**' (Control of call duration). This timer monitors the reception of ApplyCharging after sending ApplyChargingReport for an active call. The value to be used for this timer is currently not specified.
A defined timer value or timer value range is, however, necessary to ensure proper functioning of CAMEL Services in a multi vendor control environment.

The present CR proposes a value range for Tccd of 1 to 20s. See Process gsmSSF, sheet 1.

(2) Process gprsSSF uses timer '**TC guard timer**' (Control of GPRS Session or PDP Context). This timer monitors the reception of ApplyChargingGPRS after sending ApplyChargingReportGPRS for an active GORS Session or PDP Context. The value to be used for of this timer is currently not specified.
A defined timer value or timer value range is, however, necessary to ensure proper functioning of CAMEL Services in a multi vendor control environment.

The present CR proposes a value range for TC guard timer of 1 to 20s. See process gprsSSF, sheet 1.

(3) Process gprsSSF and process SMS_SSF use timer '**Tssf**'. This timer monitors the sending or receiving of an operation when in state WFI.

For circuit switched call control, Tssf has a default value between 1 and 20s. No timer value or timer value range is currently specified for Tssf for GPRS and MO-SMS.

A defined timer value or timer value range is, however, necessary to ensure proper functioning of CAMEL Services in a multi vendor control environment.

The present CR proposes a default value for Tssf, for GPRS and MO-SMS, of 1 to 20s. See process gprsSSF, sheet 1 and process SMS_SSF, sheet 1.

(4) The wording '**TC guard timer**' shall be used consistently in the specification. That is, in text (section 6.5.3.8.2) and in the SDL (Process GPRS_SSF, sheets 5, 7, 11, 13, 16 and 19; Procedure Handle_AC_GPRS, sheets 1 and 2; Procedure Handle_ACR_GPRS, sheets 1 and 2).

(5) In sect. 6.5.3.8.2.2.1, the reference to the Session volume counter shall be removed. The Session volume counter has been removed from the CAMEL GPRS specification (refer to CRs submitted to and approved by 3GPP-CN #9).

Clauses affected: 4.5.6.4, 6.5.3.8.2, 6.5.3.9, 7.5.3

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: -

****** First Change ******

4.5.6.4 Process gsmSSF and procedures

The call gap operation can only be received for an opened transaction between the gsmSSF and the gsmSCF.

Process gsmSSF 1(33)

/* Invocation of gsmSSF in MO, MT, VT or CF call case. */

/* Timers used in the gsmSSF process:

Tssf: Application timer in the ssf.
Tcp: Timer for call period.
This timer measures the duration of a call period.
Tsw: Timer for tariff switch.
At the expiration of this timer, a new tariff switch shall be started.
Tw: Warning timer.
At the expiration of this timer, a warning tone shall be played to the calling party.
DELTA: time, measured in the gsmSSF, elapsed between the time an ApplyChargingReport operation is send to the gsmSCF and an ApplyCharging operation is received from the gsmSCF.
Tccd: Control of call duration timer.
This timer supervises ~~if~~ after sending of ACR a new AC is received.
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
*/

/* TASK definition:
The sending of an Application_Begin signal opens a new relationship to the gsmSCF.
The sending of an Application_End or Abort signal terminates the relationship to the gsmSCF.
*/

/* Decision box definition:

'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 gsmSSF has responded; that is the ongoing call will not send any signals furtheron to the gsmSSF.
NOTE: In this case the gsmSSF shall also go to idle.

*/

Figure Error! Reference source not found..**1a: Process gsmSSF (sheet 1)**

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

6.5.3.8.2 TC guard timer

6.5.3.8.2.1 General

When the gprsSSF sends an Apply Charging Report GPRS operation to the gsmSCF, with SessionActive or ContextActive variable set to TRUE, then the gprsSSF shall start the TC guard timer. The gprsSSF shall also mark for the Session or PDP Context for which the Apply Charging Report GPRS was sent, that a corresponding Apply Charging GPRS operation from the gsmSCF is expected.

When the gprsSSF receives an Apply Charging GPRS operation or a Release GPRS operation, then the 'Waiting-for-AC' marking(s) for the Session or PDP Context shall be removed. The gprsSSF shall then check if the TC guard timer shall be stopped (task box 'Check TC guard timer'). The TC guard timer shall be stopped if there are no more Apply Charging GPRS operations expected for the Session and all PDP Contexts.

When an event occurs that results in the termination of a PDP Context, then the 'Waiting-for-AC' markings for that PDP Context shall be removed. The gprsSSF shall then check if the TC guard timer shall be stopped (task box 'Check TC guard timer'). The TC guard timer shall be stopped if there are no more ApplyChargingGPRS operations expected for the Session and all PDP Contexts.

When the TC guard timer expires in state Monitoring, then the gprsSSF shall close the TC dialogue, provided that all conditions for closing the TC dialogue are fulfilled, ie. there are no Operation Results expected from the gsmSCF, no Operations or Errors to be sent to the gsmSCF and no Operations from the gsmSCF received and waiting to be processed.

When the TC guard timer expires in state Waiting_for_Instructions, then no action shall be taken.

Service Designers should note that if the gsmSCF does not send an Apply Charging GPRS or Release GPRS in response to an Apply Charging Report GPRS when the gprsSSF is awaiting such response, service behaviour may be unpredictable, unless the gprsSSF releases the PDP Context or Session involved.

6.5.3.8.2.2 Check TC guard timer

This clause describes the actions to be taken in the task box 'Check TC guard timer'.

The tasks to be executed in the 'Check TC guard timer' box depend on the event that resulted in execution of the task box.

6.5.3.8.2.2.1 Apply Charging GPRS

If 'Check TC guard timer' is executed as a result of an Apply Charging GPRS operation from the gsmSCF, then the appropriate 'Waiting-for-AC' marker shall be removed, dependig on the information received in the Apply Charging GPRS operation:

~~- if the Apply Charging GPRS operation carries a Session Volume threshold, then the Session-Volume 'Waiting-for-AC' marker shall be removed.~~

- if the Apply Charging GPRS operation carries a Session Time threshold, then the Session-Period 'Waiting-for-AC' marker shall be removed.
- if the Apply Charging GPRS operation carries a PDP Context Volume threshold, then the PDP Context-Volume 'Waiting-for-AC' marker shall be removed.
- if the Apply Charging GPRS operation carries a PDP Context Time threshold, then the PDP Context -Period 'Waiting-for-AC' marker shall be removed.

The gprsSSF then checks if there is any 'Waiting-for-AC' marker for the Session or any PDP Context. If there is no 'Waiting-for-AC' marker remaining, then the TC guard timer shall be stopped.

6.5.3.8.2.2.2 Release GPRS

If 'Check TC guard timer' is executed as a result of a Release GPRS operation from the gsmSCF, then the appropriate 'Waiting-for-AC' markers shall be removed, dependig on the information received in the Release GPRS operation:

- if the Release GPRS operation is for the Session, then the Session 'Waiting-for-AC' markers shall be removed.
- if the Release GPRS operation is for the PDP Context, then the PDP Context 'Waiting-for-AC' markers shall be removed.

The gprsSSF then checks if there is any 'Waiting-for-AC' marker for the Session or any PDP Context. If there is no 'Waiting-for-AC' marker remaining, then the TC guard timer shall be stopped.

6.5.3.8.2.2.3 PDP Context Disconnect

If 'Check TC guard timer' is executed as a result of a PDP Context Disconnect signal from the SGSN, then the 'Waiting-for-AC' markers for that PDP Context shall be removed.

The gprsSSF then checks if there is any 'Waiting-for-AC' marker for the Session or any PDP Context. If there is no 'Waiting-for-AC' marker remaining, then the TC guard timer shall be stopped.

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

6.5.3.9 SDL diagrams for process GPRS_SSF and procedures

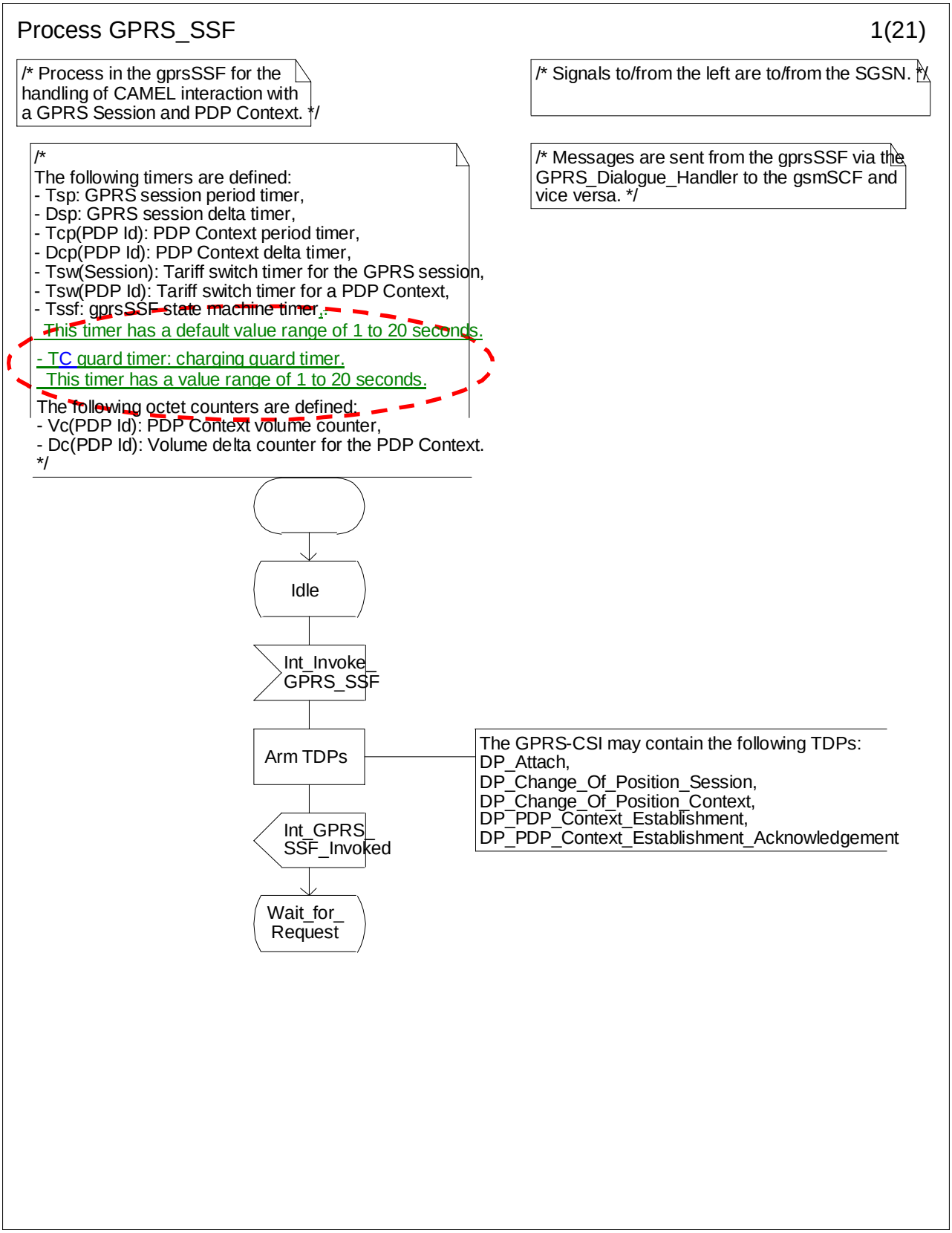

Figure 6.17a: Process GPRS_SSF (sheet 1)

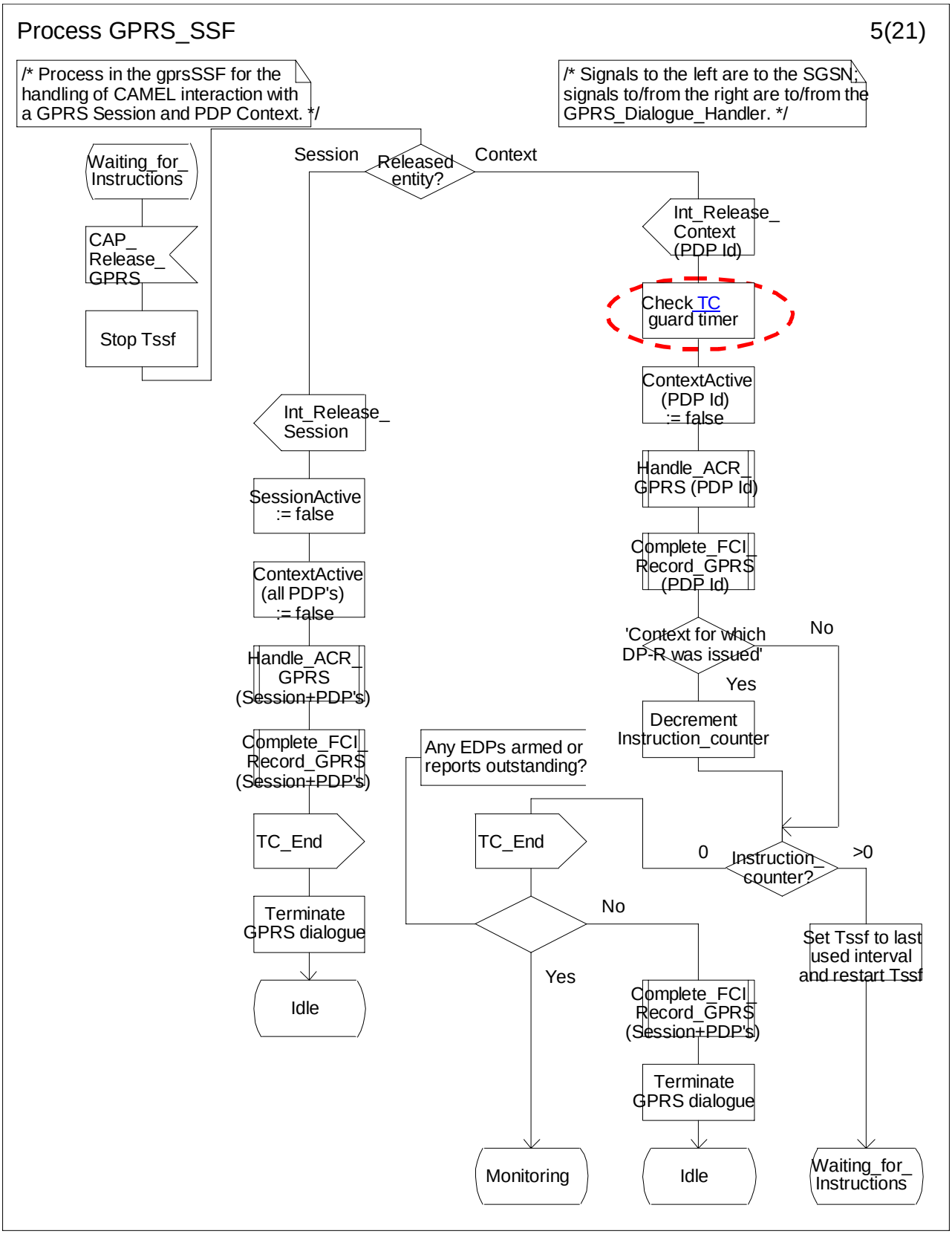

Figure 6.17c: Process GPRS_SSF (sheet 5)

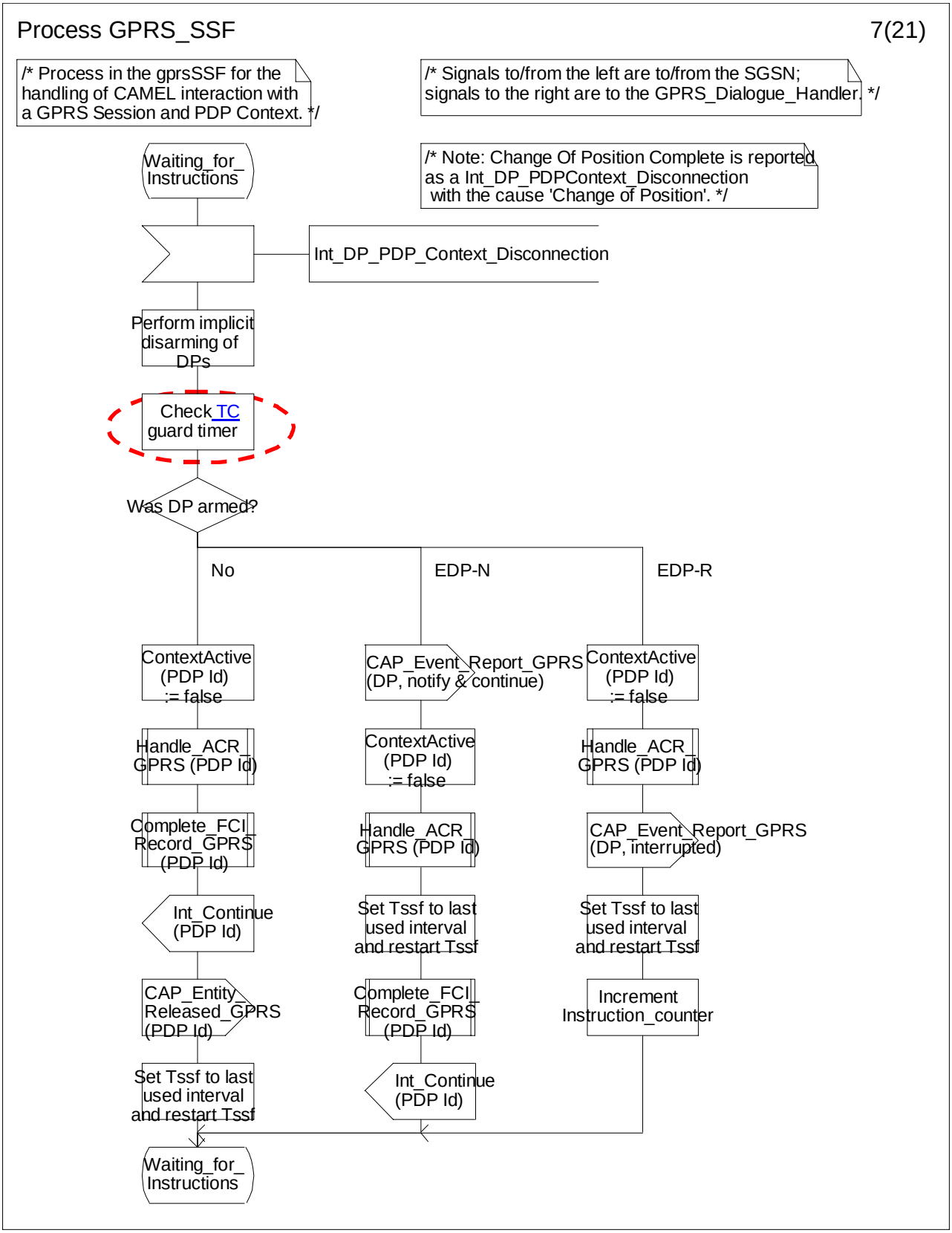

Figure 6.17g: Process GPRS_SSF (sheet 7)

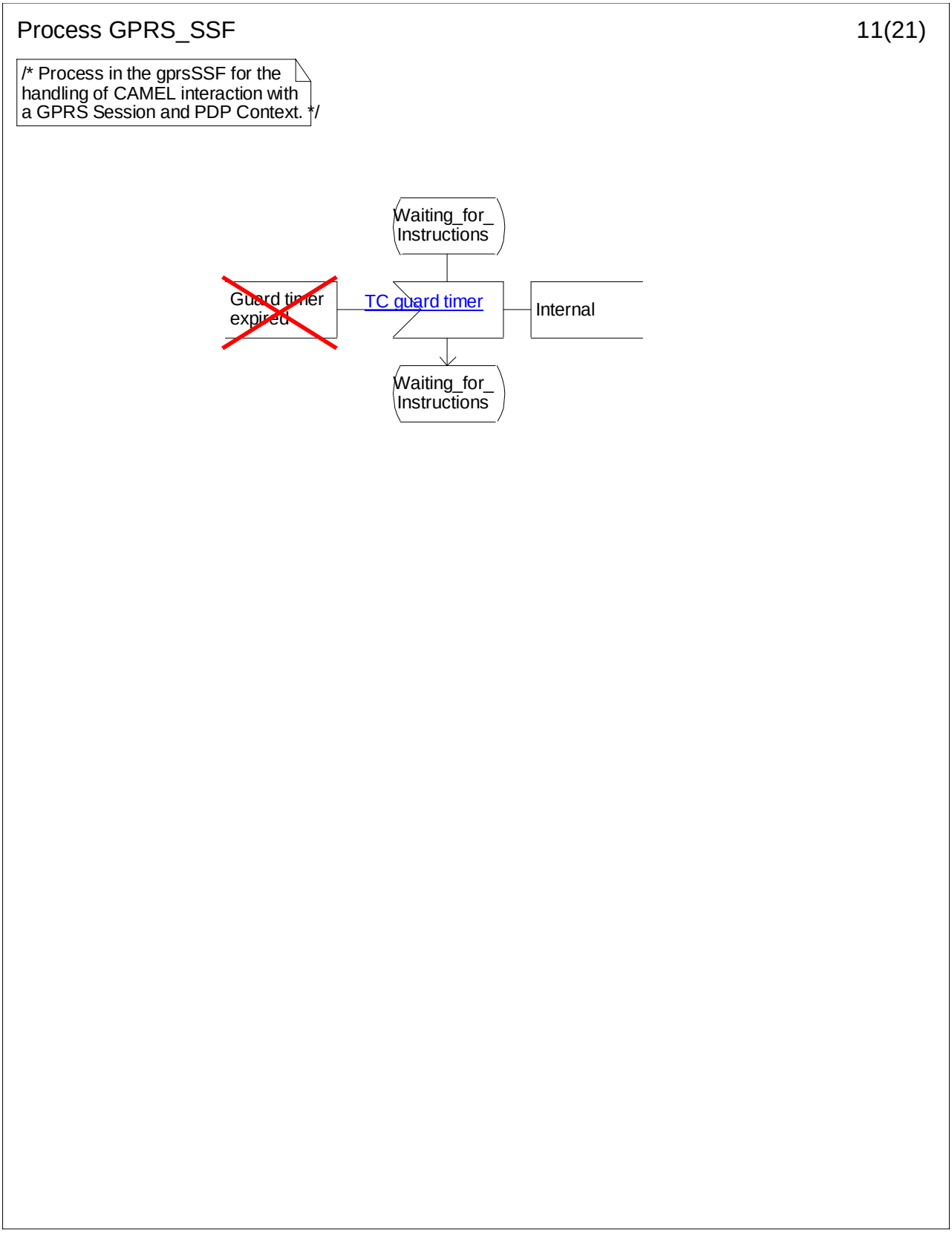

Figure 6.17k: Process GPRS_SSF (sheet 11)

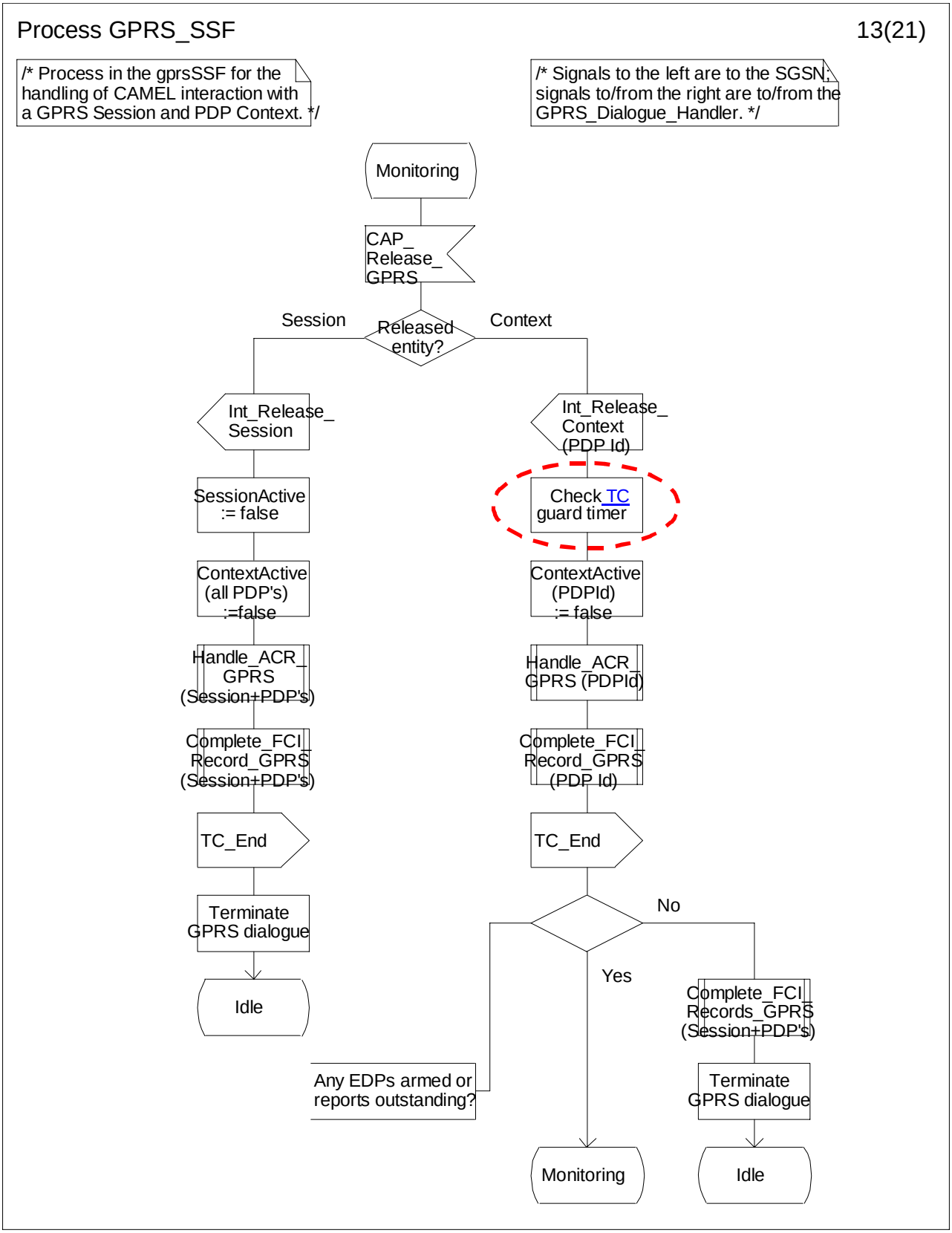

Figure 6.17m: Process GPRS_SSF (sheet 13)

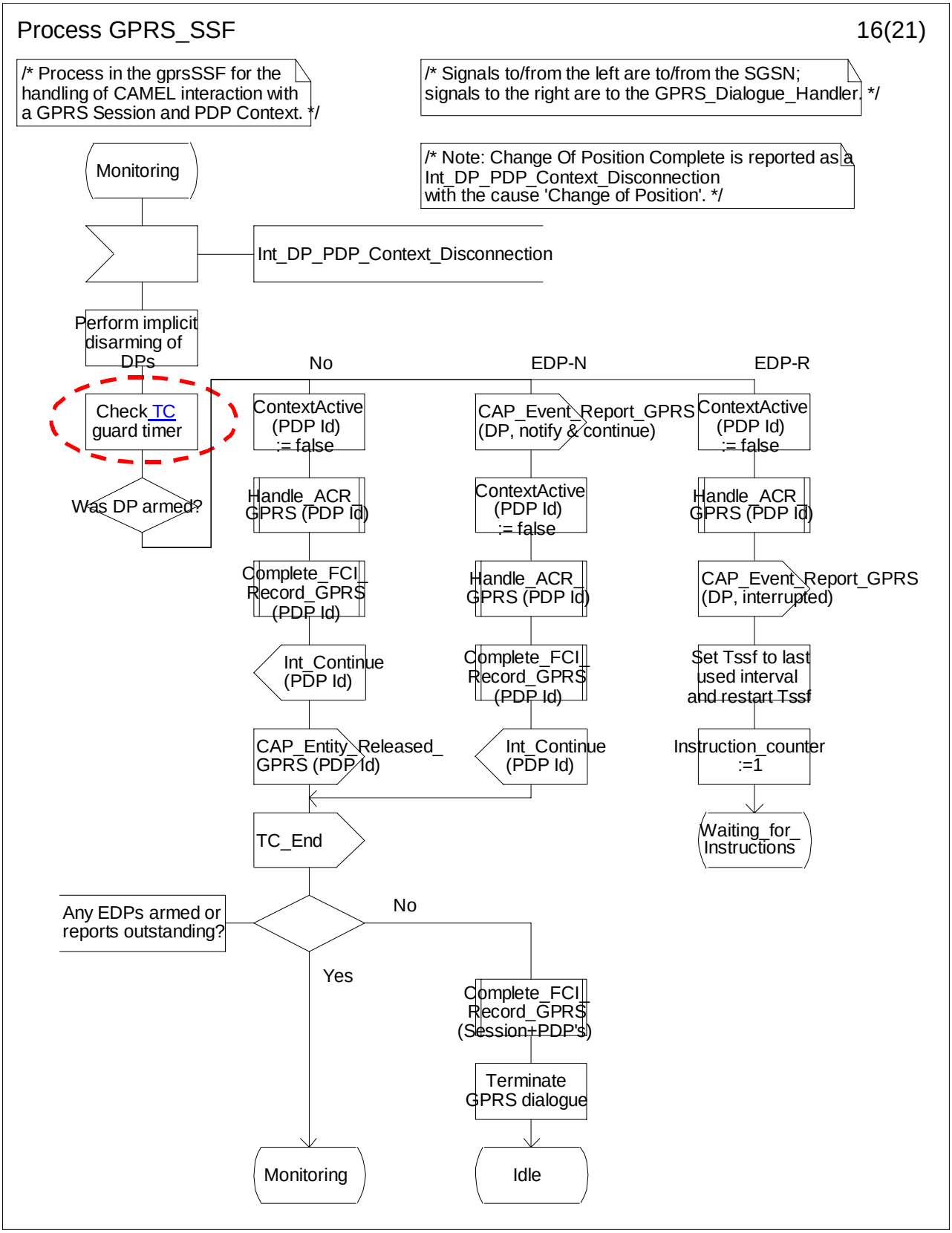

Figure 6.17p: Process GPRS_SSF (sheet 16)

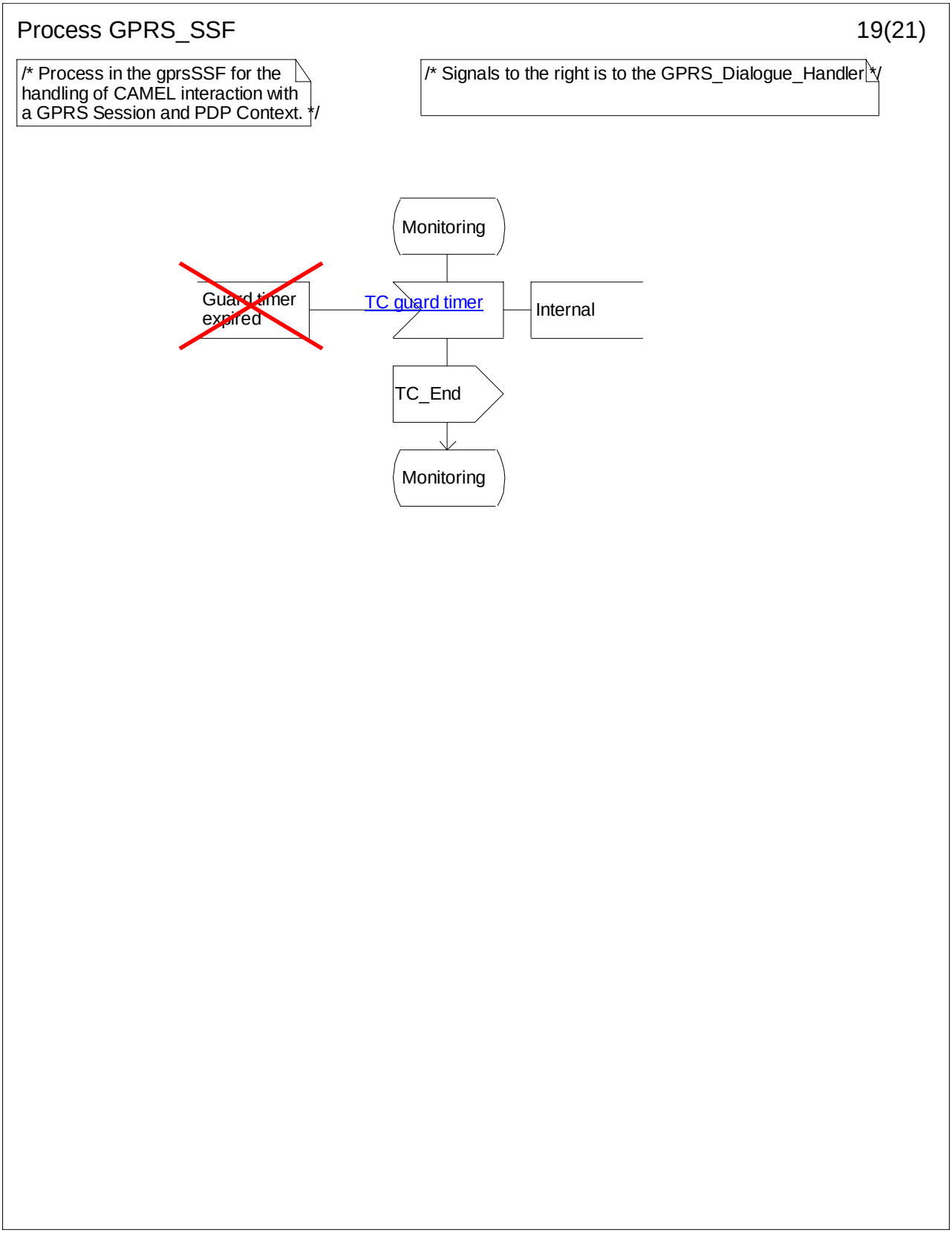

Figure 6.17s: Process GPRS_SSF (sheet 19)

Procedure Handle_AC_GPRS 1(2)

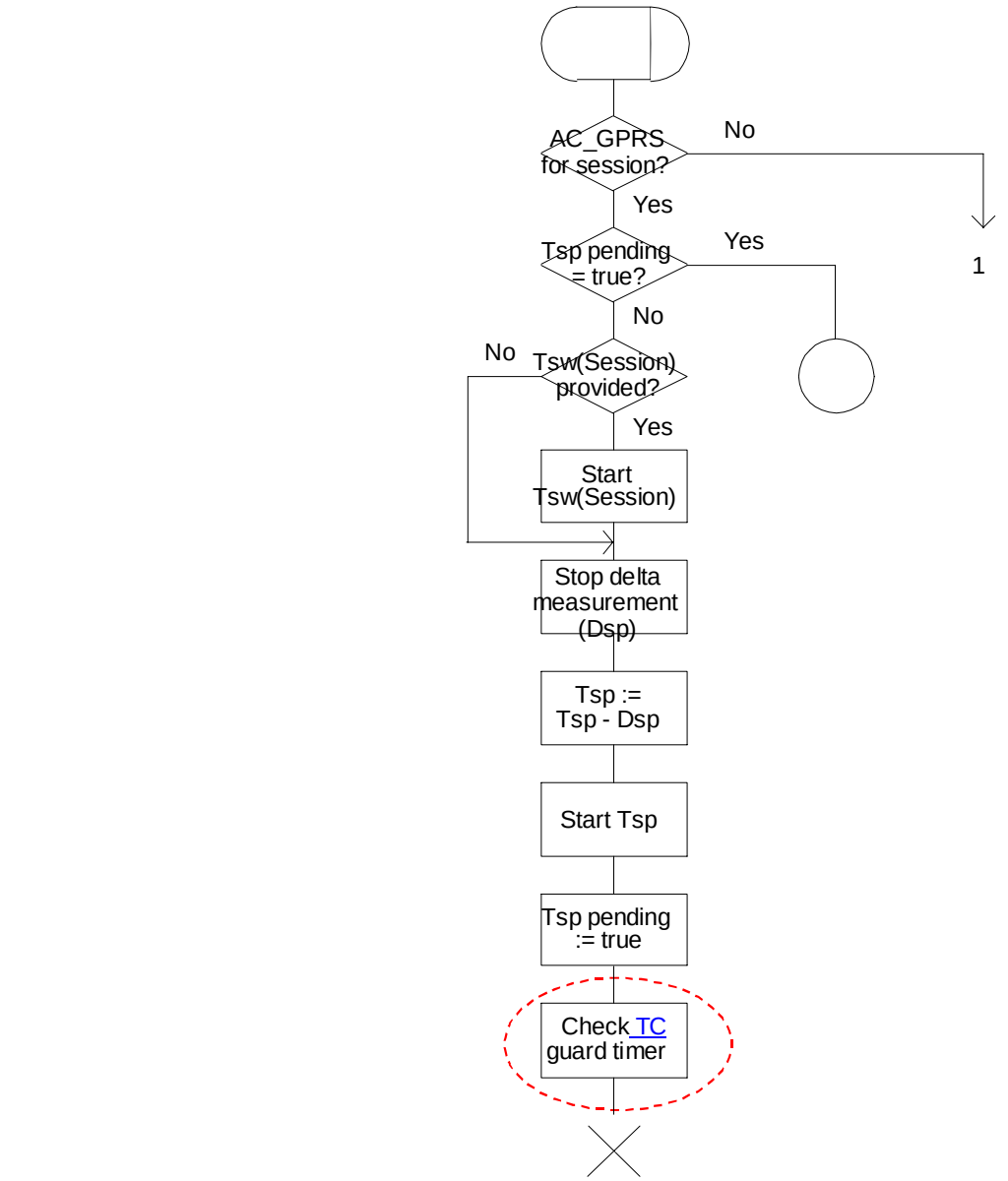

Figure 6.19a: Procedure Handle_AC_GPRS (sheet 1)

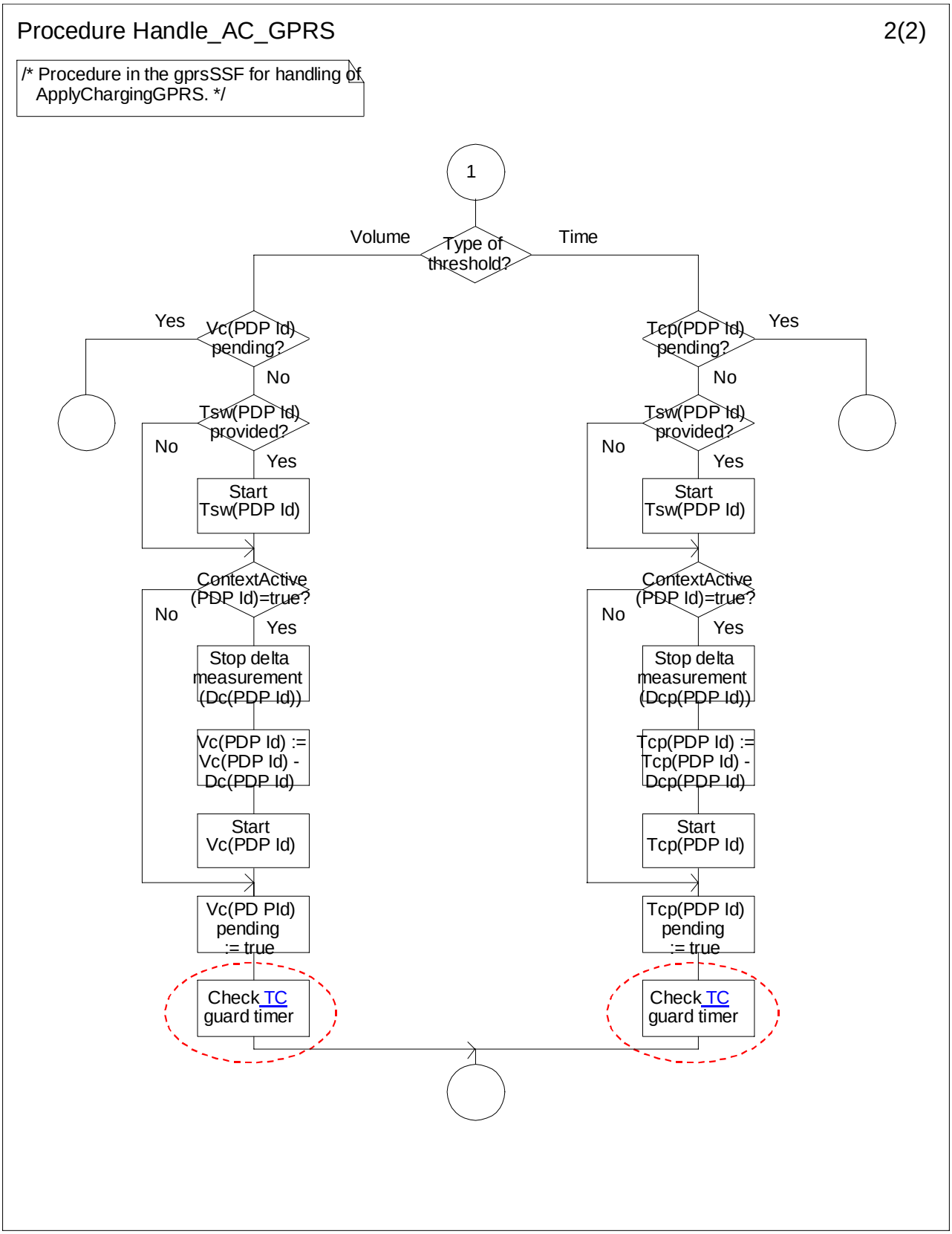

Figure 6.19b: Procedure Handle_AC_GPRS (sheet 2)

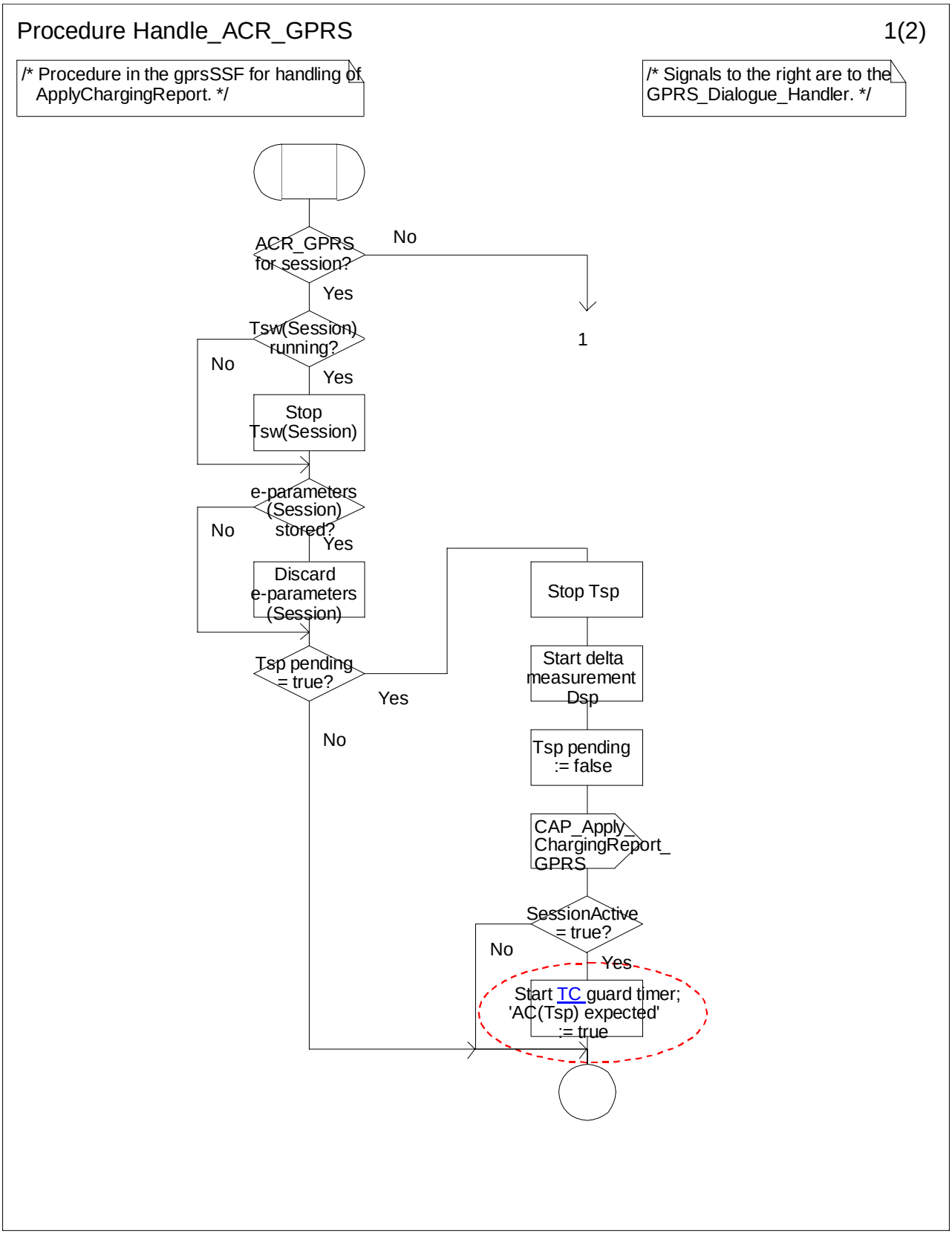

Figure 6.20a: Procedure Handle_ACR_GPRS (sheet 1)

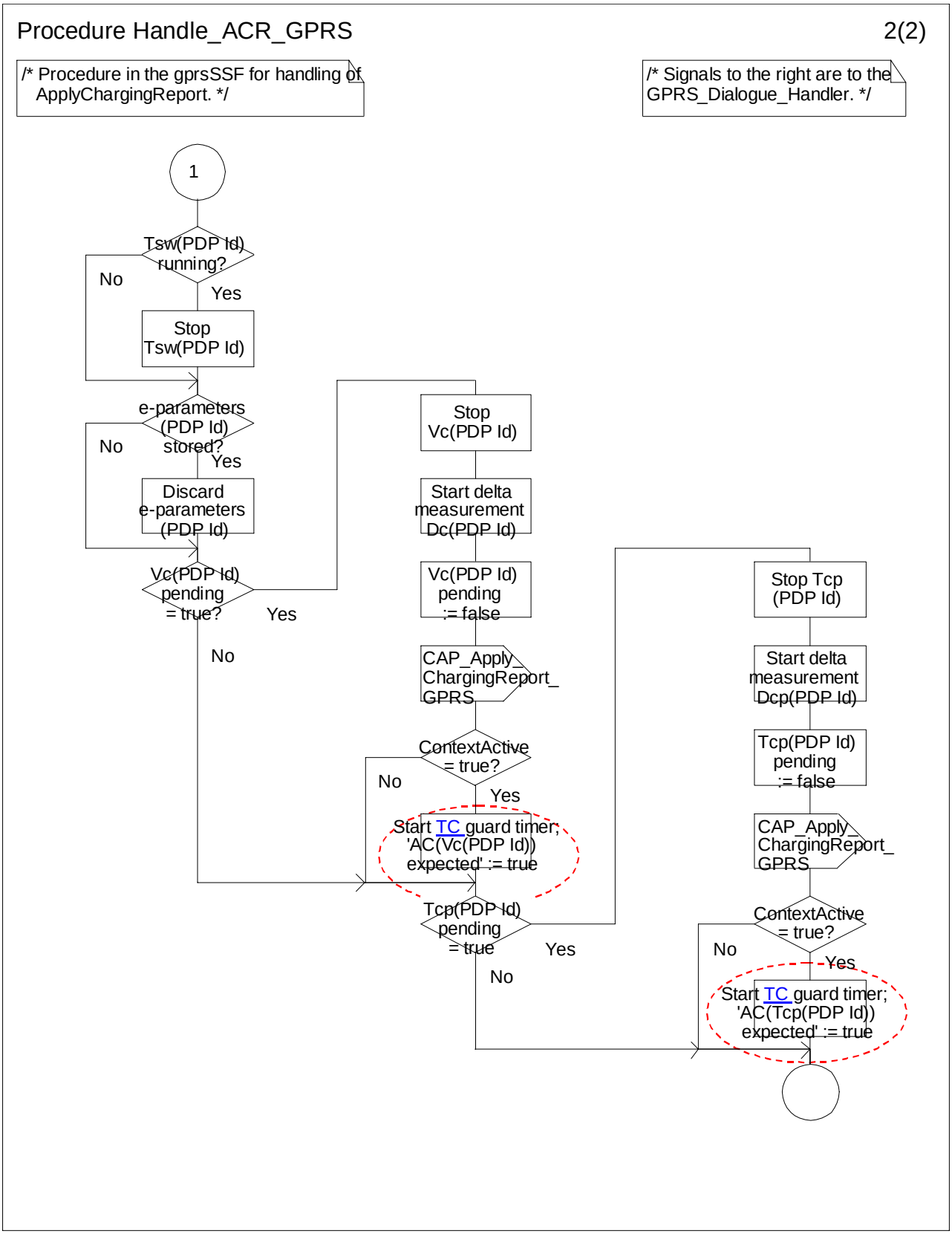

Figure 6.20b: Procedure Handle_ACR_GPRS (sheet 2)

****** Last Change ******

7.5.3 Handling of mobile originating SMS in the gsmSSF/gprsSSF

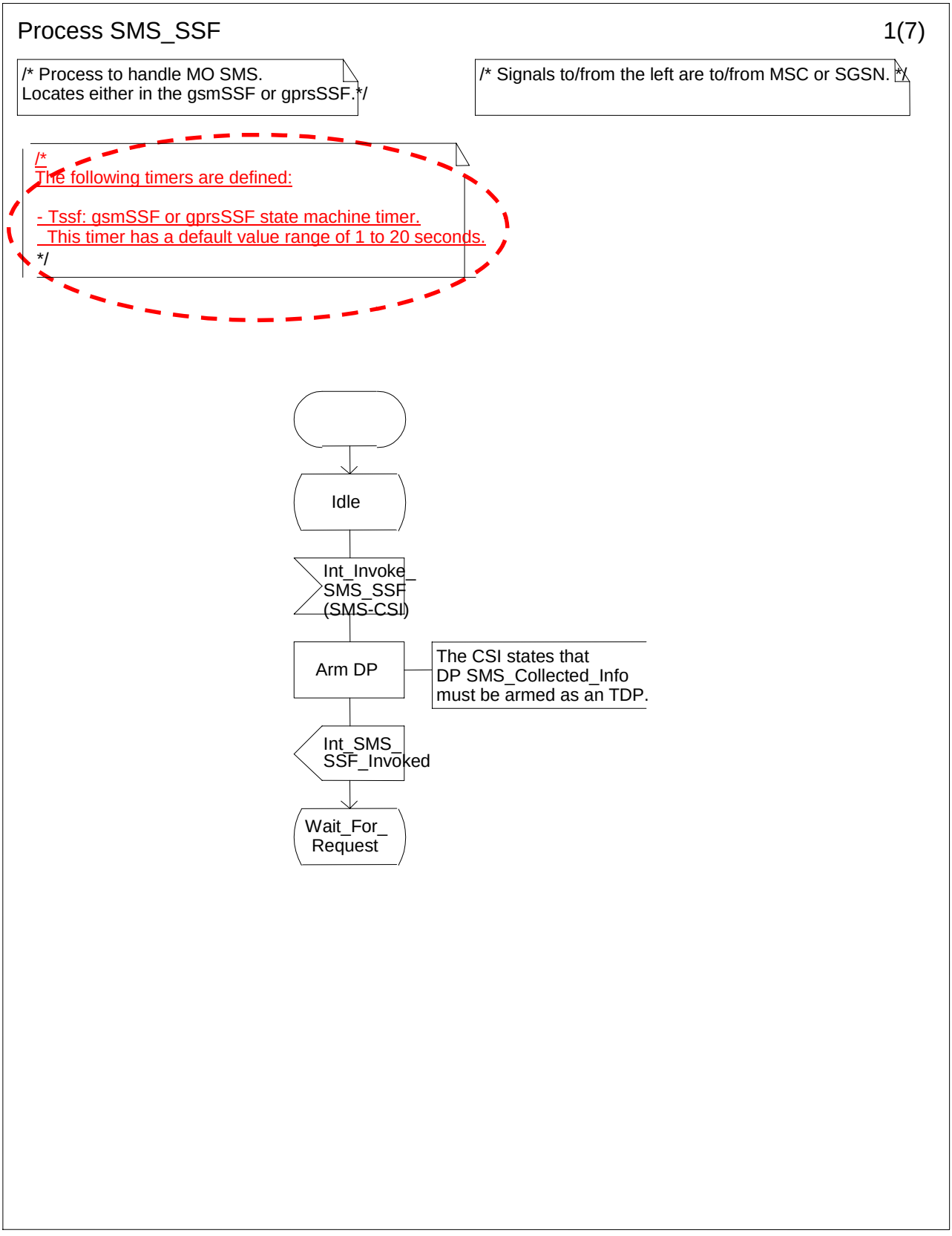

Figure 7.10a: Process SMS_SSF (sheet 1)

3GPP TSG CN WG2 Meeting #14
Wien, Austria, 16-20 Oct 2000

Document N2-000525
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	238	Current Version:	3.6.0

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

For submission to:	TSG CN#10	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:	Nokia		**Date:**	17 Oct 2000	
Subject:	CAMEL3 removal of duplicate RAI				
Work item:	CAMEL phase 3				

Category: *(only one category shall be marked with an X)*				**Release:**		
	F	Correction	X		Phase 2	
	A	Corresponds to a correction in an earlier release			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:	RAI is included twice in the IntitialDP-GPRS CAP operation.
Clauses affected:	

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:	In order to avoid incompatible changes the duplicate parameter is not removed. It is commented informally that RAI on the main level of IDP-GPRS is not used. In stage 2 this IE can be removed, i.e. it should not be visible in the main level of the operation. In the ASN.1 tag number is reserved, but never used.

****** FIRST MODIFIED SECTION ******

6.6.1.5 Initial DP GPRS

6.6.1.5.1 Description

This IF is generated by the gprsSSF when a trigger is detected at a DP in the GPRS state models, to request instructions from the gsmSCF.

6.6.1.5.2 Information Elements

The following information elements are required:

Information element name	Required	Description
Gprs Reference Number	M	This IE consists of a number assigned by the gprsSSF. It is used for TCAP dialogue segmentation. Refer to 3GPP TS 29.078 [5] for the usage of this element.
ServiceKey	M	This IE indicates to the gsmSCF the requested CAMEL Service. It is used to address the required application/SLP within the gsmSCF.
GPRS Event Type	M	This IE indicates the armed GPRS DP event resulting in the Initial Data Event IF.
MSISDN	M	This IE contains the basic MSISDN of the MS.
IMSI	M	This IE identifies the mobile subscriber.
Time and Time zone	M	This IE contains the time that the gprsSSF was triggered, and the time zone the gprsSSF resides in.
GPRS MS Class	C	This IE contains the MS network and radio access capabilities.
PDP Type	C	This IE identifies the PDP Type, e.g. X.25 or IP.
Quality of Service	C	This IE is described in the table below.
Access Point Name	C	This IE identifies the address Access Point Name the MS has requested to connect to.
~~Routeing Area Identity~~	~~C~~	~~This IE contains the location information of the MS.~~
Charging ID	C	This IE contains the Charging ID received from the GGSN for the PDP context.
SGSN Capabilities	C	This IE specifies the capabilities of the SGSN node to support the CAMEL interwork, e.g. support of Advice of Charge.
Location Information in SGSN	M	This IE is described in the subclause 7.6.1.3.2.
PDP Initiation Type	M	This IE indicates whether a PDP context was established as a result of a network-initiated request or as a result of a subscriber request.

M Mandatory (The IE shall always be sent).

C Conditional (The IE shall be sent, if available).

Quality of Service contains the following information elements:

Information element name	Required	Description
Requested QoS	C	This IE identifies the QoS requested by the subscriber for a new PDP Context. It shall be included if the InitialDPGPRS is sent at PDP Context Establishment, at PDP Context Establishment Acknowledgement and at Change of Position Context.
Subscribed QoS	C	This IE identifies the subscribed QoS. It shall be included if the InitialDPGPRS is sent at PDP Context Establishment, at PDP Context Establishment Acknowledgement and at Change of Position Context.
Negotiated QoS	C	This IE identifies the QoS which was negotiated between the user, the SGSN and the GGSN. It shall be included if the InitialDPGPRS is sent at PDP Context Establishment Acknowledgement and at Change of Position Context.

C Conditional (The IE shall be sent, if available)

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or for SMG, use the format P-99-xxx

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23.078	CR	222r1	Current Version:	3.6.0

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

For submission to:	TSG CN#10	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: Siemens **Date:** 19 October 2000

Subject: Corrections in clauses 3 and 4

Work item: CAMEL Phase 3

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	
Release 98	
Release 99	X
Release 00	

Reason for change:
- Service Key shall be included in VT/D/GPRS/SMS/M-CSI as well as O/T-CSI in the clause 3
- Descriptions on O/T_Exception (in 4.4.2.1.1.5 and 4.4.3.1.1.4 respectively) shall clearly indicate the subjectives.
- And some editorial corrections.

Clauses affected: 4

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:

***** Change in clause 3 *****

3.1 Definitions

.....

Service Key: Service Key identifies to the gsmSCF the service logic. The Service Key is administered by the HPLMN, and is passed transparently by the VPLMN/IPLMN to the gsmSCF. The Service Key is a part of the T/O/VT/D/GPRS/SMS/M-CSI.

Serving MLC: functional entity that performs location information retrieval.

***** Change in clause 4.2.1 *****

4.2.1 Definition and description

Certain basic call events may be visible to the GSM Service Control Function (gsmSCF). The DPs are the points in call at which these events are detected. The DPs for Mobile Originated Calls and Mobile Terminated Calls are described in subclauses 4.4.2 and 4.4.3.

A DP can be armed in order to notify the gsmSCF that the DP was encountered, and potentially to allow the gsmSCF to influence subsequent handling of the call. If the DP is not armed, the processing entity continues the processing without gsmSCF involvement.

Three different types of DPs are identified:

- Trigger Detection Point - Request (TDP-R).

  This detection point is statically armed and initiates a CAMEL control relationship when encountered and there is no existing relationship due to the same CSI. Processing is suspended when the DP is encountered.

- Event Detection Point - Request (EDP-R).

  This detection point is dynamically armed within the context of a CAMEL control relationship. Processing is suspended when encountering the DP and the gsmSSF waits for instructions from the gsmSCF.

- Event Detection Point - Notification (EDP-N).

  This detection point is dynamically armed within the context of a CAMEL control relationship. Processing is not suspended when encountering the DP.

The DPs are characterized in the following subclauses.

***** Change in clause 4.2.1.2.5 *****

4.2.1.2.5 Criteria at DP T_Busy and T_No_Answer

The HLR may store a list of up to 5 cause values.

The criteria for a mobile terminating call are checked in the GMSC or in MSC.

For mobile terminating calls in the GMSC, the HLR shall include the trigger criteria in the subscriber data sent to the GMSC. Reason is that the cause code received from ISUP is used in the trigger criteria check. The cause code is not

known at the time of sending the T-CSI to the GMSC.
If SRI-Ack includes the Not Reachable FTN, then HLR may decide not to include the trigger criteria, if the HLR has identified that T-CSI includes DP T_-Busy with cause code Not Reachable.

If SRI-Ack includes the Not Reachable FTN and also T-CSI, including DP T_-Busy with cause code, then the not reachable condition shall be mapped to an ISUP release code, which shall be used for triggering check.

For Mobile terminating calls in the VMSC, the trigger criteria are received in the VT-CSI from the HLR in Insert Subscriber Data IF. The triggering is based on the ISUP release cause code (call set up result).

The following criteria are applicable for DP T_Busy and T_No_Answer:

- Release cause code.

The trigger criteria are met if the cause code received from ISUP or MAP is equal to at least one of the cause codes in the trigger criteria list.

If trigger criteria are satisfied, either in GMSC or VMSC, then the corresponding Service Logic shall be invoked.
If a T-BCSM was already invoked and there is a control relationship at that moment, then no Service Logic shall be invoked.

When a RCH message is received in the GMSC and the subscriber has T-CSI then the forwarding reason in the RCH message shall be used to perform trigger criteria check for DP T_-Busy or DP T_-No_-Answer. If a match is found, then the corresponding Service Logic shall be invoked.
If a T-BCSM was already invoked and there is a relationship at that moment, then no Service Logic shall be invoked.

*** Change in the table 4.2 (clause 4.4.2.1) ***

The following table defines the different DPs which apply to mobile originating and forwarded calls.

Table 4.2: Description of O-BCSM DPs in the MSC

CAMEL Detection Point:	DP Type	Description:
DP Collected_Info	TDP-R	Indication that the O-CSI is analysed.
DP Analysed_Information	TDP-R (note 2)	Availability of routeing address and nature of address.
DP Route_Select_Failure	TDP-R (note 3), EDP-N, EDP-R	Indication that the call establishment failed.
DP O_Busy	EDP-N, EDP-R	Indication that: - a busy indication is received from the terminating party, - a not reachable event is determined upon a cause IE in the ISUP release message.
DP O_No_Answer	EDP-N, EDP-R	Indication that: - an application timer associated with the O_No_Answer DP expires, - a no answer event is determined upon a cause IE in the ISUP release message.
DP O_Answer	EDP-N, EDP-R	Indication that the call is accepted and answered by the terminating party.
DP O_Disconnect	EDP-N, EDP-R	A disconnect indication is received from the originating party or from the terminating party.
DP O_Abandon	EDP-N, EDP-R	Indication that a disconnect indication is received from the originating party during the call establishment procedure.
NOTE 1: The DPs are defined in ITU-T Q.1224 ([6]). NOTE 2: For TDP-R Analysed_Information new relationship to gsmSCF is opened. NOTE 3: DP Route_Select_Failure shall be reported as TDP-R when there is no relationship to gsmSCF. If a relationship to gsmSCF is already open, it shall be reported as EDP-R or EDP-N if armed so.		

***** Change in the clause 4.4.2.1.1.5 *****

4.4.2.1.1.5 O_Exception

Entry events:

- An exception condition is encountered. In addition to specific examples listed above, exception events include any type of failure, which means that the normal exit events for a PIC can not be met.

Actions:

- Default handling of the exception condition is being provided. This includes general actions necessary to ensure that no resources remain inappropriately allocated such as:
  - If any relationship exists between the gsmSSF and the gsmSCF, the gsmSSF shall send an error information flow closing the relationships and indicating that any outstanding call handling instructions will not run to completion.
  - The (G)MSC/gsmSSF should make use of vendor-specific procedures to ensure release of resources within the (G)MSC/gsmSSF, so that line, trunk and other resources are made available for new calls.

Exit events:

- Default handling of the exception condition by gsmSSF/(G)MSC completed.

***** Change in the table 4.3 (clause 4.4.3.1) *****

In the following table the different DPs (in the T-BCSM) are described.

Table 4.3: Description of T-BCSM DPs in the GMSC / VMSC

CAMEL Detection Point:	DP Type	Description:
DP Terminating_Attempt_ –Authorised	TDP-R	Indication that the T-CSI / VT_CSI is analysed.
DP T_Busy	TDP-R (note 2), EDP-N, EDP-R	Indication that: - a busy indication is received from the destination exchange, - Busy event is determined in the visited MSC, - Not reachable or call establishment failure event is determined from the HLR response or upon a cause IE in the ISUP release message.
DP T_No_Answer	TDP-R (note 2), EDP-N, EDP-R	Indication that an application timer associated with the T_No_Answer DP expires.
DP T_Answer	EDP-N, EDP-R	Call is accepted and answered by terminating party.
DP T_Disconnect	EDP-N, EDP-R	A disconnect indication is received from the terminating party or from the originating party.
DP T_Abandon	EDP-N, EDP-R	A disconnect indication is received from the originating party during the call establishment procedure.
NOTE 1: The DPs are defined in ITU-T Q.1224 ([6]). NOTE 2: DP T_No_Answer and DP T_Busy shall be reported as TDP-R when there is no relationship to gsmSCF. If a relationship to gsmSCF is already open, it shall be reported as EDP-R or EDP-N if armed so.		

***** Change in the clause 4.4.3.1.1.4 *****

4.4.3.1.1.4 T_Exception

Entry events:

- An exception condition is encountered. In addition to specific examples listed above, exception events include any type of failure, which means that the normal exit events for PIC cannot be met.

Actions:

- Default handling of the exception condition is being provided. This includes general actions necessary to ensure that no resources remain inappropriately allocated such as:

  - If any relationship exists between the gsmSSF and the gsmSCF, the gsmSSF shall send an error information flow closing the relationships and indicating that any outstanding call handling instructions will not run to completion.

  - The GMSC / VMSC / gsmSSF should make use of vendor-specific procedures to ensure release of resources within the GMSC / VMSC / gsmSSF, so that line, trunk and other resources are made available for new calls.

Exit events:

- Default handling of the exception condition by gsmSSF/GMSC completed.

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23.078	CR	223r1	Current Version:	3.6.0

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

For submission to:	TSG CN#10	for approval	X	strategic		(for SMG use only)
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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: Siemens **Date:** 19 October 2000

Subject: Clarification for the relationship for DPs

Work item: CAMEL Phase 3

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

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			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:
The descriptions on the relationship and the service logic for DP Route_Select_Failure, T_Busy and T_No_Answer are ambiguous. The intention was, due to the new TDP-R in CAMEL phase 3, to avoid initiating additional relationship for these DP to the gsmSCF if the relationship has been already established, as stated as Note 3 in the table 4.2 and Note 2 in the table 4.3. This CR provides the appropriate phrasing on this issue.
Also, this CR provides some text for 4.2.1.3 for the relationship.

Clauses affected: 4 (4.2.1.2.3, 4.2.1.2.5, 4.2.1.3)

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:

4.2.1.2.3 Criteria at DP Route_Select_Failure

The HLR may store a list of up to 5 cause values.

The criteria for a mobile originating call are checked in the originating MSC. The criteria for a mobile forwarded call are checked in the forwarding MSC.

For early forwarded calls in the GMSC, the HLR shall always include the trigger criteria in the subscriber data sent to the GMSC. Reason is that the cause code received from ISUP is used in the trigger criteria check. The cause code is not known at the time of sending the O-CSI to the GMSC.

For optimally routed late forwarded calls, the MSC shall always include the trigger criteria in the RCH message sent to the GMSC. Reason is that the cause code received from ISUP is used in the trigger criteria check. The cause code is not known at the time of sending the O-CSI to the GMSC.

The following criteria are applicable for DP Route_Select_Failure:

- Release cause code.

The trigger criteria are met if the cause code received from ISUP is equal to at least one of the cause codes in the trigger criteria list.

If a O-BCSM was already invoked and there is a relationship with the gsmSCF at that moment, then no additional relationship~~Service Logic~~ shall be initiated~~invoked~~.

4.2.1.2.4 Criteria at DP Terminating_Attempt_Authorised

The HLR may store a list of up to 5 basic service codes, each of which may represent an individual basic service or a basic service group. Compound basic service group codes, as defined in 3G TS 29.002 [4], are not allowed for conditional triggering. This list is a triggering list.

The criteria for DP Terminating_Attempt_Authorised are checked in the HLR for the GMSC or in the VLR for the MSC. The HLR shall only include T-CSI in the CAMEL subscription information sent to the GMSC if the criteria are met. The VLR shall only include VT-CSI in the CAMEL subscription information sent to the MSC if the criteria are met.

The basic service criterion is met if the basic service for the call matches a stored individual basic service code or is a member of the group defined by a stored basic service group code. For the purpose of this paragraph a general bearer service is a member of the corresponding bearer service group.

4.2.1.2.5 Criteria at DP T_Busy and T_No_Answer

The HLR may store a list of up to 5 cause values.

The criteria for a mobile terminating call are checked in the GMSC or in MSC.

For mobile terminating calls in the GMSC, the HLR shall include the trigger criteria in the subscriber data sent to the GMSC. Reason is that the cause code received from ISUP is used in the trigger criteria check. The cause code is not known at the time of sending the T-CSI to the GMSC.
If SRI-Ack includes the Not Reachable FTN, then HLR may decide not to include the trigger criteria, if the HLR has identified that T-CSI includes DP T_-Busy with cause code Not Reachable.

If SRI-Ack includes the Not Reachable FTN and also T-CSI, including DP T Busy with cause code, then the not reachable condition shall be mapped to an ISUP release code, which shall be used for triggering check.

For Mobile terminating calls in the VMSC, the trigger criteria are received in the VT-CSI from the HLR in Insert Subscriber Data IF. The triggering is based on the ISUP release cause code (call set up result).

The following criteria are applicable for DP T_Busy and T_No_Answer:

- Release cause code.

The trigger criteria are met if the cause code received from ISUP or MAP is equal to at least one of the cause codes in the trigger criteria list.

If trigger criteria are satisfied, either in GMSC or VMSC, then the corresponding Service Logic shall be invoked.
If a T-BCSM was already invoked and there is a ~~control~~ relationship with the gsmSCF at that moment, then no additional relationship~~Service Logic~~ shall be initiated~~invoked~~.

When a RCH message is received in the GMSC and the subscriber has T-CSI then the forwarding reason in the RCH message shall be used to perform trigger criteria check for DP T Busy or DP T No Answer. If a match is found, then the corresponding Service Logic shall be invoked.
If a T-BCSM was already invoked and there is a relationship with the gsmSCF at that moment, then no additional relationship~~Service Logic~~ shall be initiated~~invoked~~.

Table 4.1: Mapping of Send Info For Incoming Call (SIFIC) response, Send Routeing Info Ack (SRI-Ack) or Resume Call Handling (RCH) to ISUP release causes for triggering criteria check

SIFIC response / SRI-Ack / RCH "forwarding reason"	ISUP release cause number	ISUP release cause name
MS not reachable	20	Subscriber absent
MS Busy	17	User busy
Call deflection (note)	21	Call rejected
No reply	19	No answer from user (user alerted)

Note: Call Deflection is used only in the RCH operation, and in the Visited MSC. The same code point in the SIFIC response indicates CFU. However, the CFU invokation in the GMSC triggers in the Terminating_Attempt_Authorised DP; thus the reason code mapping is not needed in the CFU case.

4.2.1.3 Relationship

Given that an armed DP was encountered, the gsmSSF provides an information flow via ~~a~~the already established relationship with the gsmSCF.

A relationship between the gsmSSF and the gsmSCF for the purpose of operator specific service processing is considered to be a CAMEL relationship. There are two types of CAMEL relationships:

- A CAMEL control relationship if the gsmSCF is able to influence the call processing via the relationship.
- A CAMEL monitor relationship if the gsmSCF is not able to influence the call processing via the relationship.

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23.078	CR	225r1	Current Version:	3.6.0

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

For submission to:	TSG CN#10	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: Siemens **Date:** 19 October 2000

Subject: Correction on the SDL CAMEL_Store_Destination_Address

Work item: CAMEL Phase 3

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

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			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: On the SDL CAMEL_Store_Destination_Address, a signal “Int_Store_DA” is sent to the gsmSSF. However the receiving the signal is missing in the gsmSSF and the rearistic meaning of this signal in the MSC is only to store the destination address. Therefore this signal shall be replaced by a task box and denoted as “Store destination address (Destination Address, OR, Forwarding).

Clauses affected:

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:

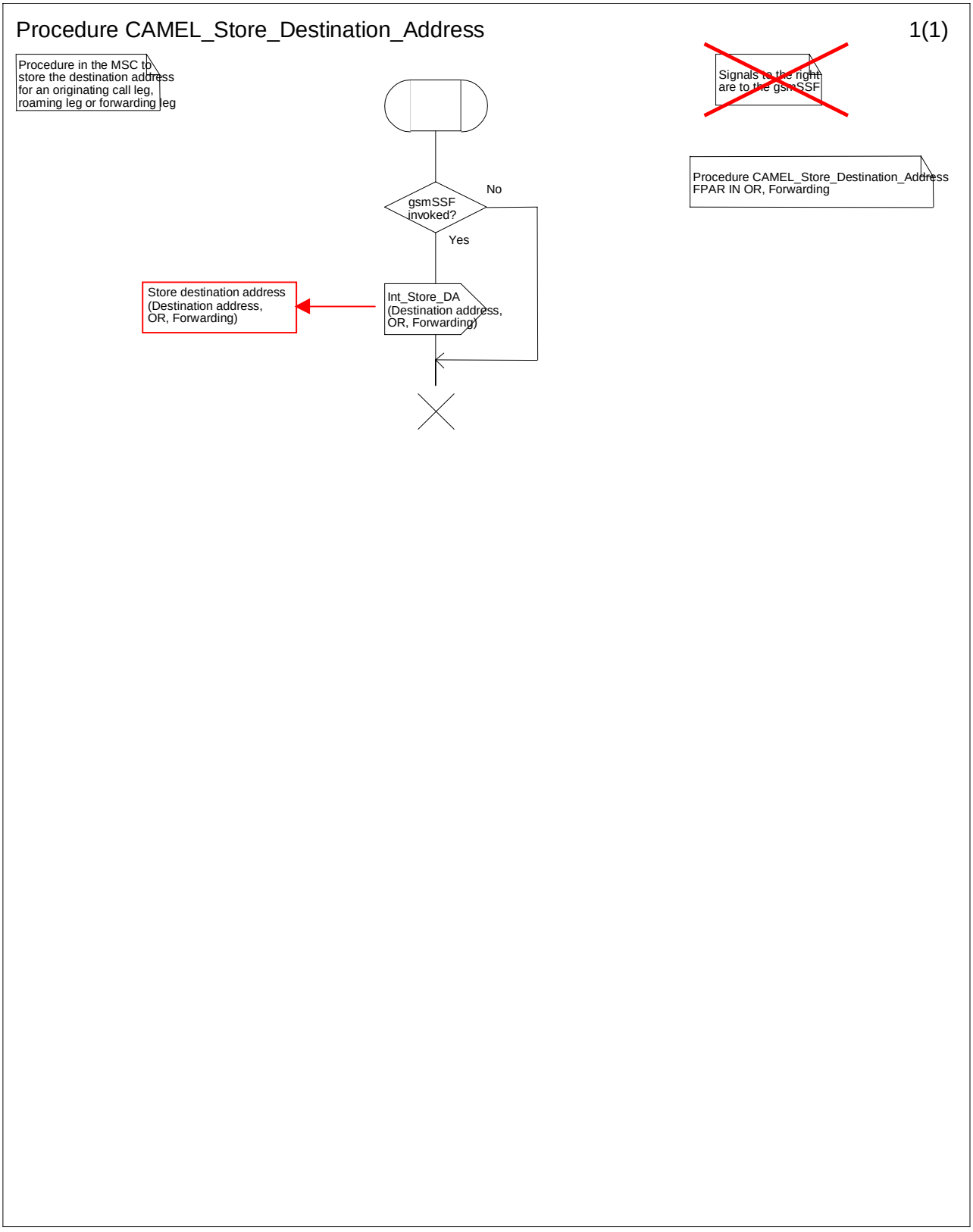

Figure 4.24: Procedure CAMEL_Store_Destination_Address (sheet 1)

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Document N2-000550
e.g. for 3GPP use the format TP-99xxx
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CHANGE REQUEST

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23.078	CR	228r3	Current Version:	3.6.0

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

For submission to:	TSG CN#10	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: Siemens **Date:** 20 October 2000

Subject: Correction for ambiguous description in clause 10 and 11

Work item: CAMEL Phase 3

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

F	Correction	[X]	**Release:**	Phase 2	[ ]
A	Corresponds to a correction in an earlier release	[ ]		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:

Some ambiguous descriptions were found in clauses 10 and 11 for ATSI, ATM and ATI. This CR corrects the IE descriptions under the following assumption.

ATSI It is possible to retrieve any number of the information specified in the Requested Info IE in one ATSI request.
The key to identify the subscriber shall be either IMSI or MSISDN.

ATM It is only one data which is modified in one ATM request.
The key to identify the subscriber shall be either IMSI or MSISDN.
The data which is requested to be modified shall be determined by the Service Logic in the gsmSCF.

ATI The key to identify the subscriber shall be either IMSI or MSISDN.

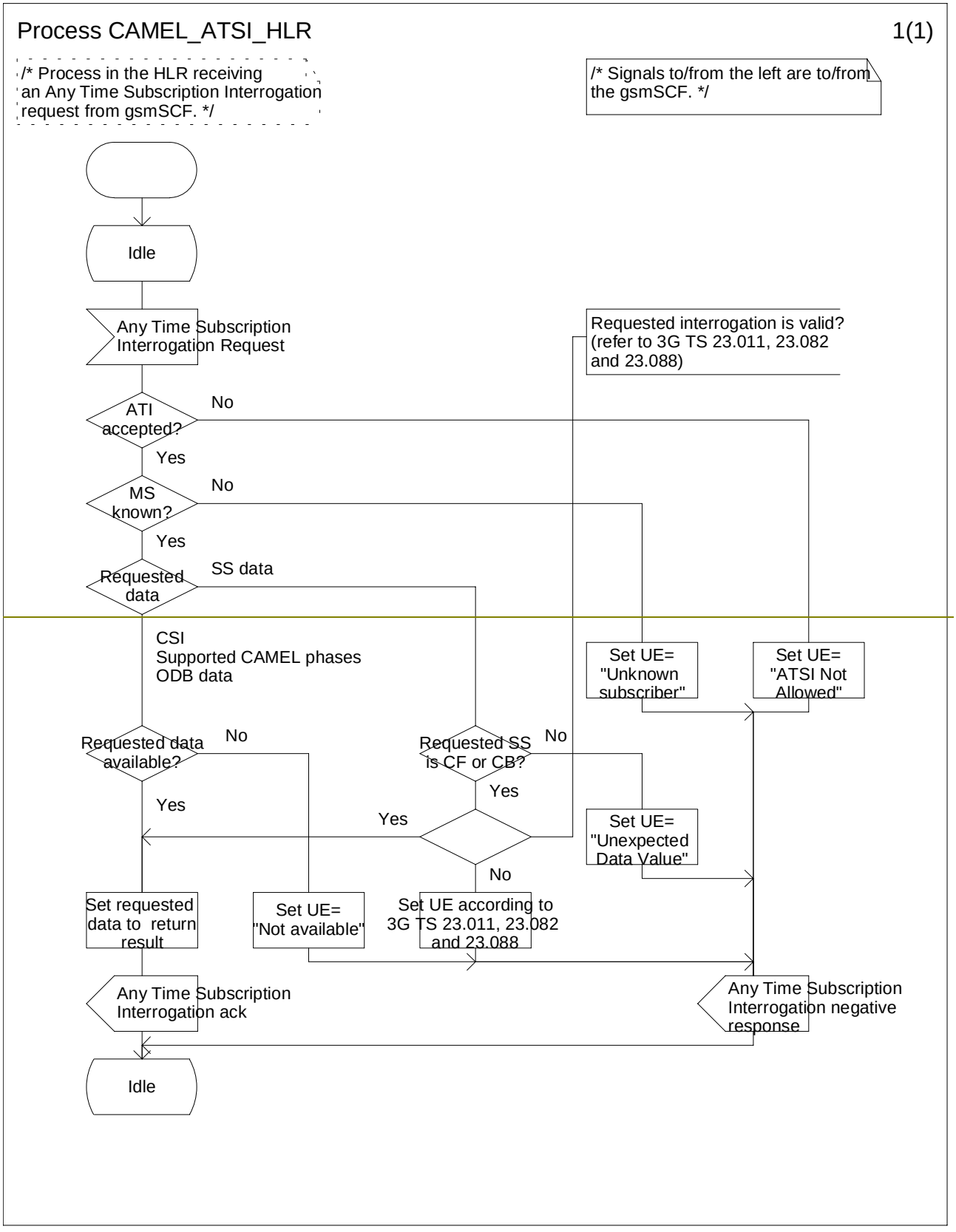
Clauses affected: 10 and 11

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:

***** First change in clause 10 *****


Process CAMEL_ATSI_HLR
1(1)
/* Process in the HLR receiving an Any Time Subscription Interrogation request from gsmSCF. */
/* Signals to/from the left are to/from the gsmSCF. */
Idle
Any Time Subscription Interrogation Request
Requested interrogation is valid? (refer to 3G TS 23.011, 23.082 and 23.088)
ATI accepted?
No
Yes
MS known?
No
Yes
Requested data
SS data
CSI
Supported CAMEL phases
ODB data
Set UE= "Unknown subscriber"
Set UE= "ATSI Not Allowed"
Requested data available?
No
Yes
Requested SS is CF or CB?
No
Yes
Yes
Set UE= "Unexpected Data Value"
No
Set requested data to return result
Set UE= "Not available"
Set UE according to 3G TS 23.011, 23.082 and 23.088
Any Time Subscription Interrogation ack
Any Time Subscription Interrogation negative response
Idle

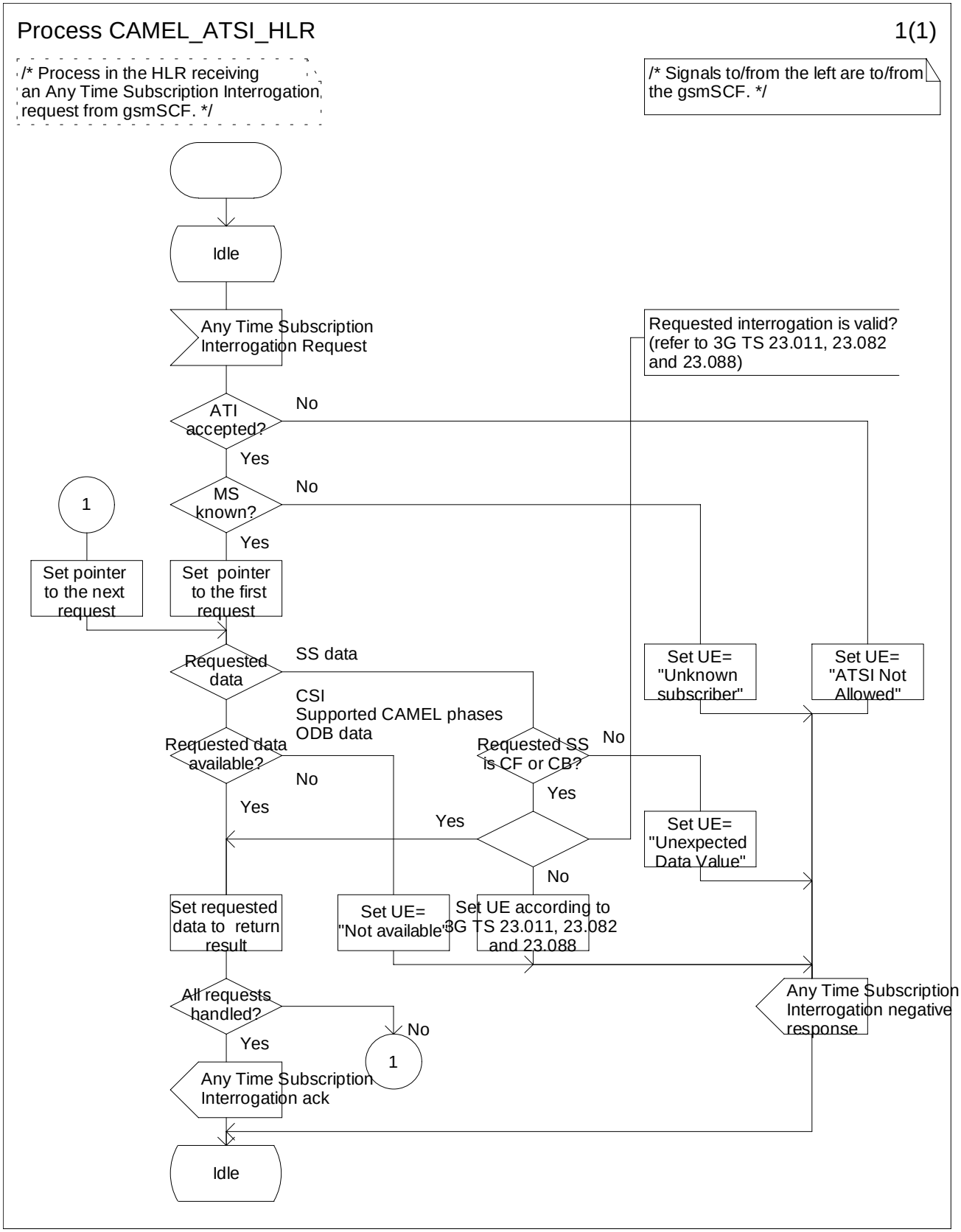


Figure 10.2: Process CAMEL_ATSI_HLR (sheet 1)

***** Next change in clause 10 *****

10.3.1.1 Any Time Subscription Interrogation Request

10.3.1.1.1 Description

This IF is used to request subscription information from the HLR at any time.

10.3.1.1.2 Information Elements

The following information elements are required:

Information element name	Required	Description
GsmSCF Address	M	This IE indicates the address of the interrogating gsmSCF.
Requested Info	M	This IE indicates the type of subscriber information being requested: This ~~can be~~ shall consist of one ~~of~~or more of the following list: - supplementary service, described in a table below - Operator Determined Barring - CAMEL Subscription Information, described in a table below - supported CAMEL phases in VLR - supported CAMEL phases in SGSN
Subscriber Identity	M	This IE identifies the subscriber for which the information is requested. The identity shall be~~can be~~ either~~one of~~: - IMSI, or - MSISDN

M Mandatory (The IE shall always be sent).

Supplementary service contains the following information:

Information element name	Required	Description
SS code	M	This IE indicates a supplementary service as defined in ~~3G~~ 3G ~~TS~~ TS 22.~~004~~ 004 [25]. Only the Call Forwarding and Call Barring supplementary services are allowed for this IE.
Basic Service	O	See 3G TS 22.002 [24].

M Mandatory (The IE shall always be sent).

O Optional (Service Logic Dependent).

CAMEL subscription information contains the following information:

Information element name	Required	Description
CAMEL subscription information	M	This IE indicates which CAMEL Subscription Information is requested. It shall be ~~may be~~ one of the following elements: O-CSI/T-CSI/VT-CSI/TIF-CSI/GPRS-CSI/SMS-CSI/SS-CSI/M-CSI/D-CSI

M Mandatory (The IE shall always be sent).

10.3.1.2 Any Time Modification Request

10.3.1.2.1 Description

This IF is used to modify information in the HLR at any time.

10.3.1.2.2 Information Elements

The following information elements are required:

Information element name	Required	Description
gsmSCF Address	M	This IE indicates the address of the interrogating gsmSCF.
Subscriber Identity	M	This IE identifies the subscriber for which the information is requested. The identity shall be either~~can be one of~~: - IMSI, or - MSISDN
Modification Request for Call Forwarding SS data	O~~C~~	This IE indicates the data of Call Forwarding data to be modified. It is described in a table below.
Modification Request for Call Barring SS data	O~~C~~	This IE indicates the data of call barring data to be modified. It is described in a table below.
Modification Request for CAMEL Subscription Information	O~~C~~	This IE indicates the Modification Request for CAMEL Subscription Information. It is described in a table below.

M Mandatory (The IE shall always be sent).

O Optional (Service Logic dependent).

~~C Conditional (The IE shall be sent, if available).~~

Modification Request for Call Forwarding SS data contains the following information:

Information element name	Required	Description
SS Code	M	This IE indicates Call Forwarding supplementary service as defined in 3G TS 22.004 [25].
Basic Service	O	See 3G TS 22.002 [24].
SS Status	O	See 3G TS 23.011 [26]. Provisioning and withdrawal are not allowed for the gsmSCF.
Forwarded-to Number	O	See 3G TS 23.082 [27].
Forwarded-to Subaddress	O	See 3G TS 23.082 [27].
No Reply Condition Time	O	See 3G TS 23.082 [27].
Modify Notification Flag	O	This IE contains an instruction to activate or de-activate the Notification-to-CSE flag.

M Mandatory (The IE shall always be sent).

O Optional (Service Logic dependent).

Modification Request for Call Barring SS data contains the following information:

Information element name	Required	Description
SS Code	M	This IE indicates Call Barring supplementary service as defined in 3G TS 22.004 [25].
Basic Service	O	See 3G TS 22.002 [24].
SS Status	O	See 3G TS 23.011 [26]. Provisioning and withdrawal are not allowed for the gsmSCF.
Password	O	See 3G TS 23.011 [26].
Wrong password attempts counter	O	See 3G TS 23.011 [26].
Modify Notification flag	O	This IE contains an instruction to activate or de-activate the Notification-to-CSE flag.

M Mandatory (The IE shall always be sent).

O Optional (Service Logic dependent).

Modification Request for CAMEL Subscription Information contains the following information:

Information element name	Required	Description
Requested CSI	M	This IE indicates which CSI shall be modified. Only one CSI may be changed in one ATM Request.
Modify Notification flag	O	This IE contains an instruction to activate or de-activate the Notification-to-CSE flag.
Modify CSI state	O	This IE contains an instruction to activate or de-activate the CSI.

M Mandatory (The IE shall always be sent).

O Optional (Service Logic dependent).

***** Next change in clause 11 *****

11.3.1.1 Any Time Interrogation Request

11.3.1.1.1 Description

This IF is used to request information (Mobile Station location) from the GMLC.

11.3.1.1.2 Information Elements

The following information elements are required:

Information element name	Required	Description
gsmSCF Address	M	This IE indicates the address of the interrogating gsmSCF.
Requested Info	M	This IE indicates the type of information that is requested. It shall have the following value: - Mobile Station location
Mobile Station Identity	M	This IE identifies the Mobile Station of which the information is requested. The identity shall be either~~can be one of the following list~~: - IMSI, or - MSISDN

M Mandatory (The IE shall always be sent).

***** Next change in clause 11 *****

11.3.3.1 Any Time Interrogation Request

11.3.3.1.1 Description

This IF is used to request information (subscriber state and/or location) from the HLR at any time.

11.3.3.1.2 Information Elements

The following information elements are required:

Information element name	Required	Description
gsmSCF Address	M	This IE indicates the address of the interrogating gsmSCF.
Requested Info	M	This IE indicates the type of subscriber information being requested: - Location Information - Subscriber State - Current Location Current Location shall not be present if Location Information is not present in Requested Info
Subscriber Identity	M	This IE identifies the subscriber for which the information is requested. The identity shall be either~~can be one of~~: - IMSI, or - MSISDN

M Mandatory (The IE shall always be sent).

3GPP TSG CN WG2#14
Vienna, Austria 16 – 20 of October 2000

Document ***N2-000553***
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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23.078	**CR**	**233 R3**	Current Version:	3.6.0

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

For submission to: CN #10 *list expected approval meeting # here ↑*

for approval [X] for information [ ]

strategic [ ] non-strategic [ ] *(for SMG use only)*

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: Alcatel **Date:** ~~10~~20/10/00

Subject: Second set of corrections of paragraph 6 GPRS

Work item: CAMEL Phase 3

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	[ ]
Release 98	[ ]
Release 99	[X]
Release 00	[ ]

Reason for change: Various corrections in the GPRS paragraph

N2-000488 => N2-000526 => N2-000548 => N2-000553

Clauses affected: 6.5.3.1, 6.5.3.3, 6.5.3.4, 6.5.3.8

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:

Paragraph 6.5..3.1 Process GPRS_SSF,

- addition of the definition of controlling and monitoring relation ship
- use of ~~State Model~~State Model instead of session/PDP context for the relationship

Paragraph 6.3.3.3 and Paragraph 6.5.3.4 are transferred into 6.5.3.8

Paragraph 6.5.3.8,

- addition of old 6.5.3.3 and 6.5.3.4.
- addition of charging on volume and charging on volume and duration for PDP context.

6.5.3 Handling GPRS in the gprsSSF

6.5.3.1 Process GPRS_SSF

A relationship exists between the gsmSCF and the Attach/Detach State Model~~A/D SM,~~ ~~Session~~ and/or between the gsmSCF and every PDP context State Model~~SM PDP Context.(ref. Figure 6.5 and Figure 6.6).~~ The~~e~~is relationship may be in controlling or monitoring mode.
When a ContinueGPRS, ConnectGPRS or RequestReportGPRSEvent operation is received, then the relationship between the gsmSCF and Attach/Detach State Model~~A/D SM~~, and between the gsmSCF ~~and~~and ~~every~~a PDP Context ~~SM~~ State Model~~the Session or a PDP Context~~ may be downgraded from controlling to monitoring.
When Tssf expires, the CAMEL procedures that are waiting for an instruction from the gsmSCF shall receive an Int_Error signal. The Default GPRS Handling parameter determines the subsequent action of those CAMEL procedures.
If the Default GPRS Handling parameter is set to 'Release', then:

- if the GPRS Dialogue is controlling a GPRS Session, then the gprsSSF shall release the entire GPRS Session;
- if the GPRS Dialogue is controlling a single PDP Context, then the gprsSSF shall release the PDP Context.

The task box 'Open GPRS Dialogue' comprises all the tasks that are required for starting a GPRS dialogue. This includes, amongst others, the allocation of a GPRS Reference Number and the allocation of resources.
The task box 'Terminate GPRS Dialogue' comprises all the tasks that are required for closing a GPRS dialogue.

6.5.3.2 Process GPRS_Dialogue_Handler

When process gprsSSF sends a TC_End request primitive to process GPRS_Dialogue_Handler, then the corresponding TC_End TC Message shall be sent to the gsmSCF only when the following conditions have been fulfilled:

- The gprsSSF has processed all Operations that the gprsSSF has received from the gsmSCF.
- No Operations remain to be sent from the gprsSSF to the gsmSCF.
- The gprsSSF is not waiting for a Result or Error component for any Operations that the gprsSSF has sent to the gsmSCF.

6.5.3.3 Pocedure Handle_AC_GPRS

Procedure Handle_AC_GPRS is called from process gprsSSF with the following input parameters:

- 'Session'. The Apply Charging GPRS procedure shall be executed for the Session
- 'PDP Id'. The Apply Charging GPRS procedure shall be executed for the indicated PDP Context.

6.5.3.4 Pocedure Handle_ACR_GPRS

Procedure Handle_ACR_GPRS is called from process gprsSSF with the following input parameters:

- 'Session'. The Apply Charging Report GPRS procedure shall be executed for the Session. This procedure checks if a Session Period report is pending and if so, sends this report to the gsmSCF.
- 'PDP Id'. The Apply Charging Report GPRS procedure shall be executed for the indicated PDP Context. This procedure checks if a Context Volume report is pending and if so, sends this report to the gsmSCF. The procedure then checks if a Context Period is pending and if so, sends this report to the gsmSCF.
- 'Session + PDPs'. The Apply Charging Report GPRS procedure shall be executed for the Session and all PDP Contexts. The sequence of checking the reports shall be as follows:
  1) The procedure checks the pending Volume and Period reports for each PDP Context.
  2) The procedure then checks the pending Period report for the Session.

When a PDP Context Volume counter or PDP context Period timer expires, then the procedure Apply Charging Report GPRS procedure is called with the PDP Id as input parameter. The procedure will then check both reports for that PDP Context.

6.5.3.5 Pocedure Complete_FCI_Record_GPRS

Procedure Complete_FCI_Record_GPRS is called from process gprsSSF with the following input parameters:

- 'Session'. The Complete_FCI_Record_GPRS procedure shall be executed for the Session.
- 'PDP Id'. The Complete_FCI_Record_GPRS procedure shall be executed for the indicated PDP Context.
- 'Session + PDPs'. The Complete_FCI_Record_GPRS procedure shall be executed for the Session and all PDP Contexts.

6.5.3.6 Procedure Handle_SCI_GPRS

For terminology see subclause 4.5.6.3.
The gsmSCF may send e-parameters to the Session and to individual PDP Contexts.
When e-parameters are sent for the Session, the SGSN will forward these e-parameters directly to the Mobile Station.
When e-parameters are sent for a PDP Context and that PDP Context is not yet acknowledged (= active), then the SGSN shall retain these parameters (pending parameters). These parameters will be sent to the Mobile Station when the PDP Context is acknowledged.
The gsmSCF may send two sets of e-parameters and a Tariff Switch for the Session or a PDP Context. The first set of e-parameters shall be sent to the SGSN and the second set of e-parameters shall be stored. This second set of e-parameters shall be sent to the SGSN when the tariff switch expires.
When the Tariff Switch for the Session expires, then the stored e-parameters for the Session shall be sent to the SGSN.
When the Tariff Switch for a PDP Context expires before that PDP Context is acknowledged, then the pending e-parameters for that PDP Context shall be replaced by the stored e-parameters for that PDP Context.
The stored e-parameters for that PDP Context shall be discarded.
When the Tariff Switch for a PDP Context expires after that PDP Context has been acknowledged, then the stored e-parameters for that PDP Context shall be sent to the SGSN.

6.5.3.6.1 Handling of SCI_GPRS for the Session

1) Precondition: no Tsw running for the Session:

   if 1 set of e-parameters received --> send e-parameters to the SGSN;

   if 2 sets of e-parameters received --> error;

   if 1 set of e-parameters and Tariff Switch received --> error;

   if 2 sets of e-parameters and Tariff Switch received --> send 1st set of e-parameters to the SGSN/start Tsw (Session)/store 2nd set of e-parameters.

2) Precondition: Tsw running for the Session and no e-parameters stored for the Session:

   if 1 set of e-parameters received --> error;

   if 2 sets of e-parameters received --> send 1st set of e-parameters to the SGSN/store 2nd set of e-parameters;

   if 1 set of e-parameters and Tariff Switch received --> error;

   if 2 sets of e-parameters and Tariff Switch received --> error.

3) Precondition: Tsw running for the Session and e-parameters stored for the Session:

   if 1 set of e-parameters received --> error;

   if 2 sets of e-parameters received --> error;

   if 1 set of e-parameters and Tariff Switch received --> error;

   if 2 sets of e-parameters and Tariff Switch received --> error.

6.5.3.6.2 Handling of SCI_GPRS for a PDP Context

1) Precondition: before a PDP Context Establishment Acknowledgement event is detected and no Tsw running for this PDP Context:

   if 1 set of e-parameters received --> send e-parameters to the SGSN;

   if 2 sets of e-parameters received --> error;

   if 1 set of e-parameters and Tariff Switch received --> error;

   if 2 sets of e-parameters and Tariff Switch received --> send 1st set of e-parameters to the SGSN/start Tsw(PDP Id)/store 2nd set of e-parameters;

2) Precondition: before a PDP Context Establishment Acknowledgement event is detected and Tsw running for this PDP Context and no e-parameters stored for this PDP Context:

   if 1 set of e-parameters received --> error;

   if 2 sets of e-parameters received --> send 1st set of e-parameters to the SGSN/store 2nd set of e-parameters;

   if 1 set of e-parameters and Tariff Switch received --> error;

   if 2 sets of e-parameters and Tariff Switch received --> error.

3) Precondition: before a PDP Context Establishment Acknowledgement event is detected and Tsw running for this PDP Context and e-parameters stored for this PDP Context:

   if 1 set of e-parameters received --> error;

   if 2 sets of e-parameters received --> error;

   if 1 set of e-parameters and Tariff Switch received --> error;

   if 2 sets of e-parameters and Tariff Switch received --> error.

4) Precondition: after a PDP Context Establishment Acknowledgement event is detected and no Tsw running for this PDP Context:

   if 1 set of e-parameters received --> send e-parameters to the SGSN;

   if 2 sets of e-parameters received --> error;

   if 1 set of e-parameters and Tariff Switch received --> start Tsw(PDP Id)/store e-parameters;

   if 2 sets of e-parameters and Tariff Switch received --> send 1st set of e-parameters to the SGSN/start Tsw(PDP Id)/store 2nd set of e-parameters.

5) Precondition: after a PDP Context Establishment Acknowledgement event is detected and Tsw running for this PDP Context and no e-parameters stored for this PDP Context;

   if 1 set of e-parameters received --> store e-parameters;

   if 2 sets of e-parameters received --> send 1st set of e-parameters to the SGSN/store 2nd set of e-parameters;

   if 1 set of e-parameters and Tariff Switch received --> error;

   if 2 sets of e-parameters and Tariff Switch received --> error.

6) Precondition: after a PDP Context Establishment Acknowledgement event is detected and Tsw running for this PDP Context and e-parameters stored for this PDP Context:

   if 1 set of e-parameters received --> error;

   if 2 sets of e-parameters received --> error;

   if 1 set of e-parameters and Tariff Switch received --> error;

   if 2 sets of e-parameters and Tariff Switch received --> error.

6.5.3.7 Procedure Handle_PDP_Acknowledgement

Procedure Handle_PDP_Acknowledgement is called when an event occurs that may signal the activation (= Acknowledgement) of a PDP Context. The event signal is passed on to the Handle_PDP_Acknowledgement procedure.

~~6.5.3.86~~6.5.3.8 GPRS ~~charging duration~~duration and volume control~~, procedures Handle_AC_GPRS and Handle_ACR_GPRS~~

6.5.3.~~8~~68.~~1~~31 ~~Overview~~ Examples of information flows for GPRS session and PDP context ~~duration~~ control

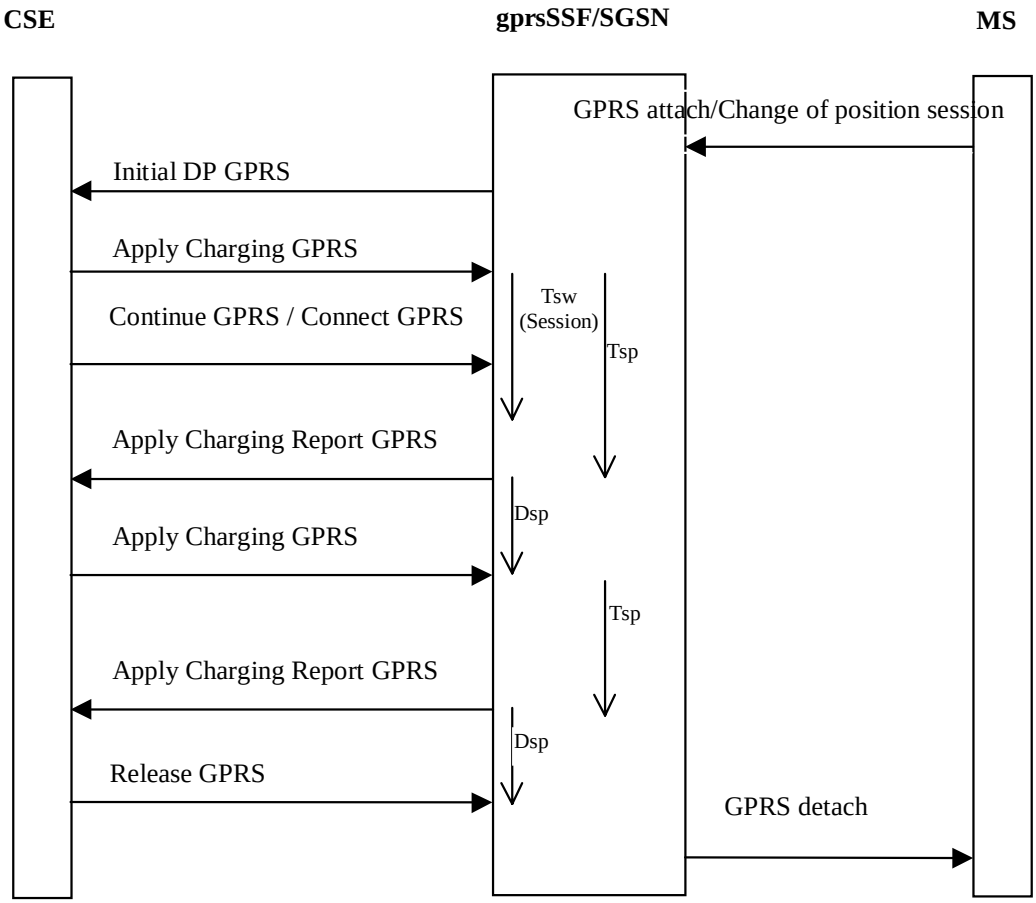


Figure Error! Reference source not found..**1A: Example of information flows for GPRS session duration at GPRS attach and change of position session**

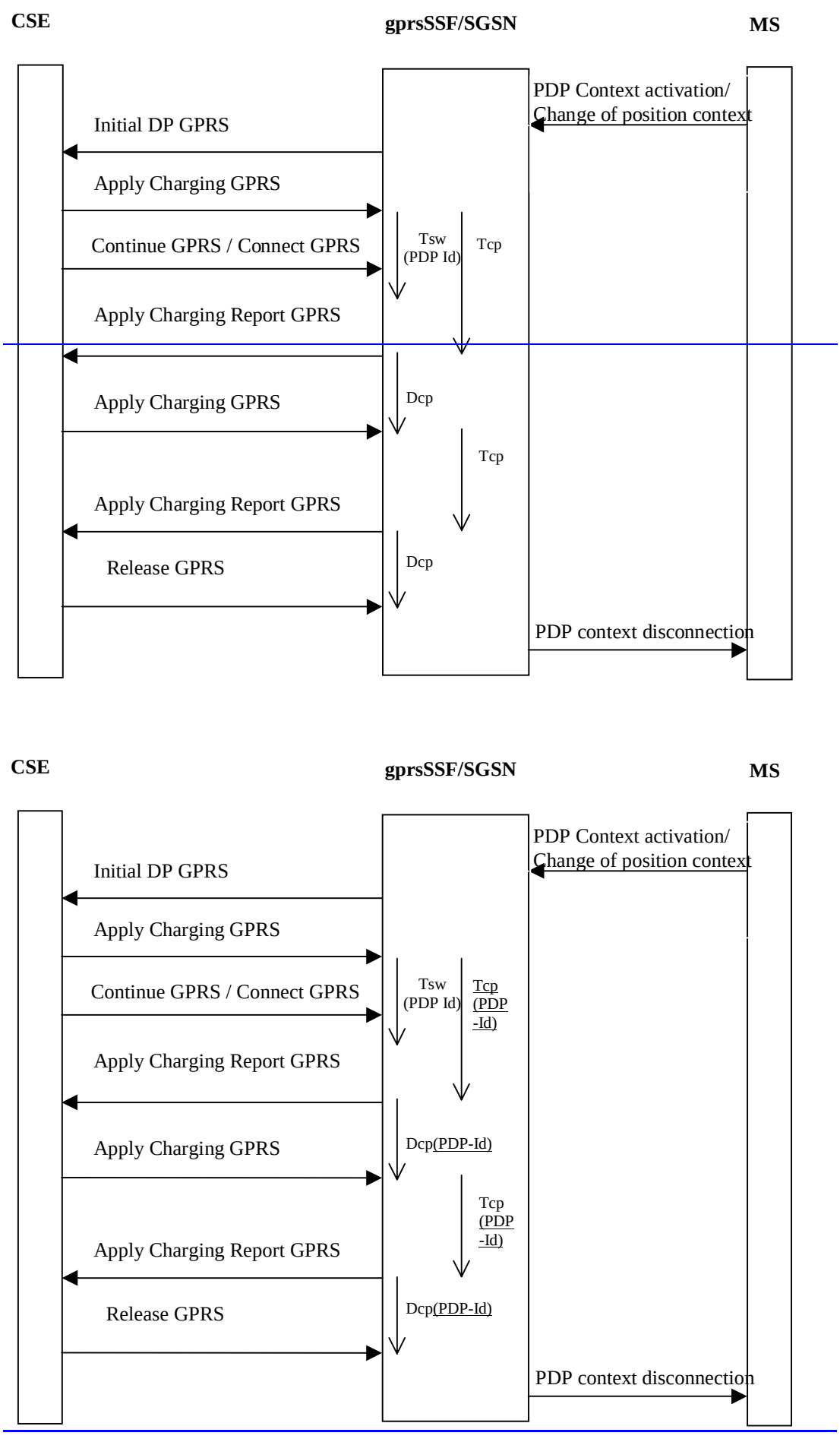


Figure Error! Reference source not found..**1B: Example of information flows for PDP context duration control at context activation and change of position context**

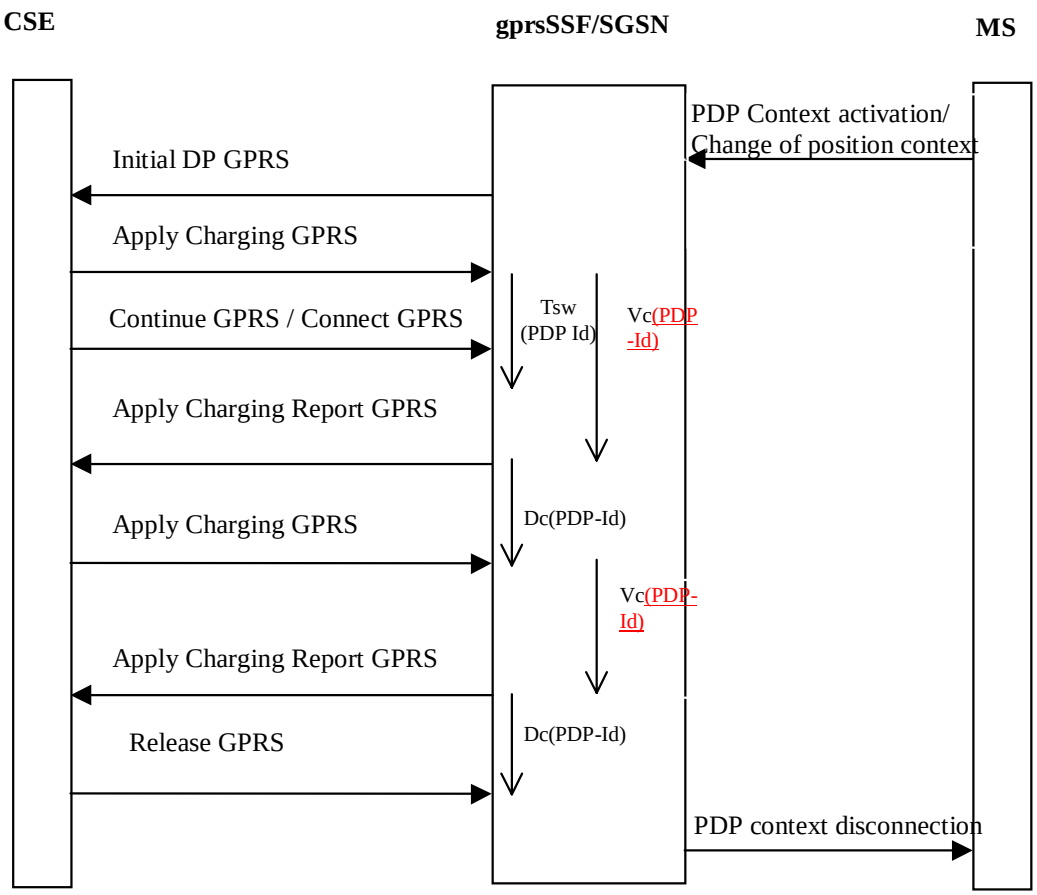
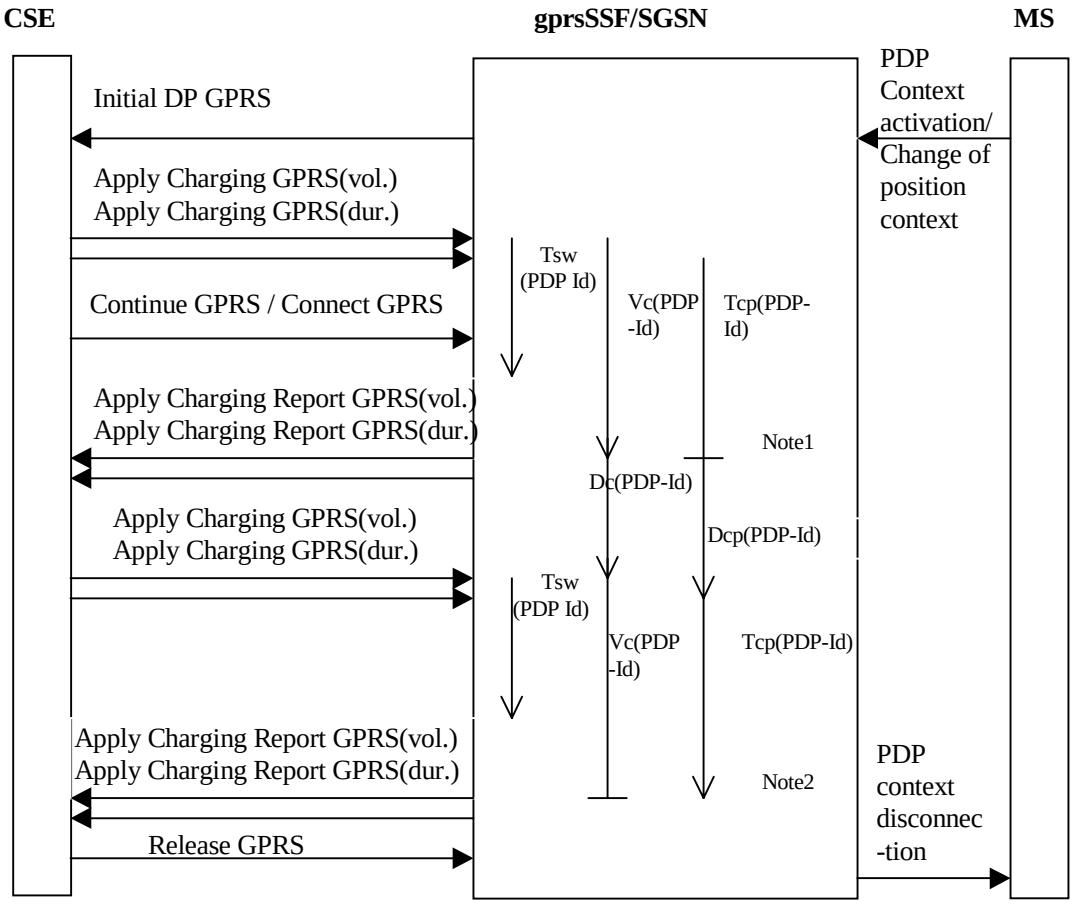


Figure Error! Reference source not found.**.1.c: Example of information flows for PDP context volume control at context activation and change of position context**



Note 1 : Vc threshold reached~~time out~~, Tcp is stopped
Note 2 : Tcp time out, Vc is stopped

Figure Error! Reference source not found..**1.d: Example of information flows for PDP context volume and duration control at context activation and change of position context**

These figures show examples of handling of the timers that are used in the process gprsSSF and in the procedures Handle_AC_GPRS and Handle_ACR_GPRS.
Duration timers (Tsp for the GPRS session and one Tcp for each PDP context) are used if the charging is on duration of the GPRS session or a PDP context.
Tariff Switch Timers (Tsw(Session) for the GPRS session and one Tsw(PDP Id) for each PDP context) define the start point of a new Tariff. Tsw(Session) is used for charging on duration. Tsw(PDP Id) is used for both methods of charging: duration charging and volume charging. If a PDP context is charged on duration and volume, only one Tsw(PDP Id) timer will be accepted from the gsmSCF for that PDP context.
Delta timers measure the response time of the gsmSCF after an Apply Charging Report GPRS operation:

- Dsp for the GPRS session; this delta timer is used for GPRS session period timing.
- Dcp for each PDP context; these delta timers are used for PDP context period timing.
- Dc for each PDP context; these delta counters are used for PDP context volume counting.

After the sending of Apply Charging Report GPRS, the gsmSCF may reply either with:

- Apply Charging GPRS, if the gsmSCF sends a new duration because of the expiration of the previous period or because of QOS change.
- Release GPRS, if the gsmSCF decides to release the GPRS session or PDP context.

Note: There may be Guard timer(s) in gprsSSF to supervise the response from the gsmSCF on the Apply Charging Report GPRS operation.

3GPP CN2 Meeting #14
Vienna, Austria, 16-20 October 2000

Document N2-000556
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

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23.078	CR	224r2	Current Version:	3.6.0

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

For submission to:	TSG CN #10	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: Siemens **Date:** 19 October 2000

Subject: Clarification for the CUG data in Initial DP

Work item: CAMEL Phase 3

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	
Release 98	
Release 99	X
Release 00	

Reason for change: This CR provides which CUG data shall be used in Initial DP IF.

Clauses affected:

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:

***** First modified section *****

4.6.1.5 Initial DP

4.6.1.5.1 Description

This IF is generated by the gsmSSF when a trigger is detected at a DP in the BCSM, to request instructions from the gsmSCF.

4.6.1.5.2 Information Elements

The following information elements are required:

Information element name	MO	MF	MT	VT	Description
Additional Calling Party Number	-	C	C	C	The calling party number provided by the access signalling system of the calling user.
Bearer Capability	M	C	C	C	This IE indicates the type of the bearer capability connection to the user.
Called Party Number	C	M	M	M	This IE contains the number used to identify the called party in the forward direction. For the MO and MF calls this parameter is used in the case of TDP Route_Select_Failure (this is the destination number used to route the call) and in the case of TDP Busy and TDP No Reply (this is the MSISDN when the destination number used for the call is a MSRN, or in the case of unsuccessful establishment received from the HLR via MAP interface, otherwise it is the number used to route the call). For the VT calls when there is no forwarding pending this is the MSISDN received in the Provide Roaming Number; if the MSISDN is not available, the basic MSISDN is used. For the MT and VT call case when there is call forwarding or call deflection pending, this is the MSISDN, i.e. not the forwarded-to or deflected-to number.
Called Party BCD Number	C	-	-	-	This IE contains the number used to identify the called party in the forward direction. It is used for MO call in all cases except in the case of TDP Route_Select_Failure. For the TDP Collected_Information, the number contained in this IE shall be identical to the number received over the access network. It may e.g. include service selection information, such as ∗ and # digits, or carrier selection information dialled by the subscriber. For the TDP Analysed_Information, the number contained in this IE shall be the dialled number received over the network access or received from a gsmSCF in a CONNECT operation, service selection information, such as * and # digits may be present (see subclause 4.2.1.2.2), carrier selection information dialled by the subscriber is not present.
Calling Party Number	M	C	C	C	This IE carries the calling party number to identify the calling party or the origin of the call.
Calling Partys Category	M	C	C	C	Indicates the type of calling party (e.g., operator, pay phone, ordinary subscriber).
CallGap Encountered	C	C	C	C	This parameter indicates the type of gapping the related call have been subjected to. This parameter shall be present only if a call gapping context is applicable to the initialDP operation.
Call Reference Number	M	M	M	M	This IE may be used by the gsmSCF for inclusion in a network optional gsmSCF call record. It has to be coupled with the identity of the MSC which allocated it in order to define unambiguously the identity of the call. For MO calls, the call reference number is set by the serving VMSC and included in the MO call record. For MT calls, the call reference number is set by the GMSC and included in the RCF call record in the GMSC and in the MT call record in the terminating MSC. For VT calls, the call reference number is set by the GMSC and included in the RCF call record in the GMSC and in the MT call record in the terminating MSC. For CF calls, the call reference number is set by the GMSC and included in the CF record in the forwarding MSC.
Cause	C	C	C	C	This IE indicates the cause specific to the armed BCSM DP event. This IE is applicable to DP Route_Select_Failure and DP T_Busy. The cause may be used by the SCF to decide about the further handling of the call.
Event Type BCSM	M	M	M	M	This IE indicates the armed BCSM DP event, resulting in the Initial DP IF.

Information element name	MO	MF	MT	VT	Description
Additional Calling Party Number	-	C	C	C	The calling party number provided by the access signalling system of the calling user.
Ext-Basic Service Code	C	C	C	C	This IE indicates the type of basic service i.e., teleservice or bearer service.
High Layer Compatibility	C	C	C	C	This IE indicates the type of the high layer compatibility, which will be used to determine the ISDN-teleservice of a connected ISDN terminal.
IMSI	M	M	M	M	This IE identifies the mobile subscriber.
IP SSP Capabilities	C	C	C	C	This IE indicates which SRF resources are supported within the gsmSSF and are available. If this IE is absent, this indicates that no gsmSRF is attached and available.
Location Information	M	-	C	M	This IE is described in the next table.
Location Number	M	C	C	C	For mobile originated calls this IE represents the location of the calling party. For all other call scenarios this IE contains the location number received in incoming ISUP signalling.
MSC Address	M	M	M	M	For MO calls, the MSC Address carries the international E.164 address of the serving VMSC. For MT calls, the MSC Address carries the international E.164 address of the GMSC. For VT calls, the MSC Address carries the international E.164 address of the serving VMSC. For CF calls, the MSC Address carries the international E.164 address of the forwarding MSC.
GMSC Address	-	M	-	M	For CF calls, the GMSC Address carries the international E.164 address of the GMSC. For VT calls, the GMSC Address carries the international E.164 address of the GMSC.
Carrier	C	C	C	C	The content of this IE is described in the next table. The IE may be sent when the VPLMN and the HPLMN of the subscriber are both North American. For MO calls, this IE shall contain any carrier that was dialed by the calling subscriber. If no carrier was dialed, the IE shall contain the calling subscriber's subscribed carrier. For MT and VT calls, the IE shall contain the carrier subscribed to by the called subscriber. For CF calls, the IE shall contain the carrier subscribed to by the forwarding subscriber.
Original Called Party ID	-	C	C	C	This IE carries the dialled digits if the call has met call forwarding on the route to the gsmSSF.
Redirecting Party ID	-	M	C	C	This IE indicates the directory number the call was redirected from.
Redirection Information	-	M	C	C	This IE contains forwarding related information, such as redirection counter.
Service Key	M	M	M	M	This IE indicates to the gsmSCF the requested CAMEL Service. It is used to address the required application/SLP within the gsmSCF.
Subscriber State	-	-	C	C	This IE indicates the status of the MS. The states are: - CAMELBusy: The MS is engaged on a transaction for a mobile originating or terminated circuit-switched call. - NetworkDeterminedNotReachable: The network can determine from its internal data that the MS is not reachable. - AssumedIdle: The state of the MS is neither "CAMELBusy" nor "NetworkDeterminedNotReachable". - Not provided from VLR.
Time And Timezone	M	M	M	M	This IE contains the time that the gsmSSF was triggered, and the time zone the gsmSSF resides in.
GSM Forwarding Pending	-	-	C	C	This parameter indicates that a forwarded-to-number was received and the call will be forwarded due to GSM supplementary service call forwarding in the GMSC/VMSC. This parameter is present in the following cases: - When the FTN is received from the HLR prior to triggering in the Terminating_Attempt_Authorised DP. - When a conditional call forwarding or call deflection is invoked in the GMSC/MSC, and T_Busy or T_No_answer is reported as a TDP.

Information element name	MO	MF	MT	VT	Description
Additional Calling Party Number	-	C	C	C	The calling party number provided by the access signalling system of the calling user.
Service Interaction Indicators Two	C	C	C	C	This IE is sent if it is received in the ISUP message or due to previous CAMEL processing. The IE is described in a table below.
CUG Index	C	-	-	-	See 3G TS 23.085 [9] for details of this IE.
CUG Interlock Code	C	C	C	C	See 3G TS 23.085 [9] for details of this IE. The latest available data shall be used, i.e., if the CUG data which had been obtained in the ISUP IAM or from the VLR has been modified by the previous Connect or Continue With Argument IF, this modified data shall be used. ~~In the MO case this IE is received from the VLR.unconditionalfrom~~
Outgoing Access Indicator	C	C	C	C	See 3G TS 23.085 [9] for details of this IE. In the MO case this IE is received from the VLR.

M Mandatory (The IE shall always be sent).

C Conditional (The IE shall be sent, if available).

- Not applicable.

Location Information is defined in 3G TS 23.018 [3]. The following differences apply:

Information element name	MO	MF	MT	VT	Description
Location Number	-	-	C	C	See 3G TS 23.018 [3].
Service area ID	C2	-	C	C	See 3G TS 23.018 [3].
Cell ID	C2		C	C	See 3G TS 23.018 [3].
Geographical information	C	-	C	C	See 3G TS 23.018 [3].
Geodetic information	C	-	C	C	See 3G TS 23.018 [3].
VLR number	M	-	C	M	See 3G TS 23.018 [3].
Age Of location information	M	-	C	C	See 3G TS 23.018 [3].
Current Location Retrieved	-	-	-	-	Not applicable
Location area ID	C2		C	C	See 3G TS 23.003 [37].
Selected LSA Identity	C1	-	C1	C1	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. In the case of multiple matches the LSA ID with the highest priority shall be sent. See 3G TS 23.073 [23].

M Mandatory (The IE shall always be sent).

C Conditional (The IE shall be sent, if available. Further conditions are in the description column.).

C1 Conditional (The IE shall be sent, if available and SoLSA is supported).

C2 Conditional (One and only one of the three conditional IEs shall be sent).

- Not applicable.

Carrier contains the following information:

Information element name	MO	MF	MT	VT	Description
Carrier Identification Code	M	M	M	M	This IE uniquely identifies a North American long distance carrier.
Carrier Selection Information	M	M	M	M	This IE indicates the way the carrier was selected e.g.: – dialled – subscribed

M Mandatory (The IE shall always be sent).

Service Interaction Indicators Two contains the following information:

Information element name	MO	MF	MT	VT	Description
Forward Service Interaction Indicator	C	C	C	C	This IE is described in a table below.
HOLD Treatment Indicator	C	-	-	C	This IE indicates whether the CAMEL subscriber can invoke HOLD for the call.
CW Treatment Indicator	C	-	-	C	This IE indicates whether CW can be applied for a call to the CAMEL subscriber whilst this call is ongoing.
ECT Treatment Indicator	C	-	-	C	This IE indicates whether the call leg can become part of an ECT call initiated by the calling subscriber.

C Conditional (The IE shall be sent, if available).

- Not applicable.

Forward Service Interaction Indicator contains the following information:

Information element name	MO	MF	MT	VT	Description
Conference Treatment Indicator	C	C	C	C	This IE indicates whether the call leg can become part of a MPTY call initiated by the called subscriber.
Call Diversion Treatment Indicator	C	C	C	C	This IE indicates whether the call can be forwarded using the Call Forwarding or Call Deflection Supplementary Services.

C Conditional (The IE shall be sent, if available).

***** Next modified section *****

4.7 Interaction with supplementary services

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4.7.4 Closed User Group

For a CUG subscriber with CAMEL services:

- The HLR shall store (and transfer to the VLR) the necessary subscriber data to ensure that the served subscriber is not unnecessarily prevented by CUG constraints from originating calls.
- The HLR shall store the necessary subscriber data to ensure that the served subscriber is not unnecessarily prevented by CUG constraints from receiving calls.

For an MO or MF call, the CUG information for that call shall be sent to the gsmSCF in the Initial DP.

If the gsmSCF returns a Continue message, the call shall continue with the original CUG information unchanged.

If the gsmSCF returns a Connect or Continue With Argument message, the CUG handling in table 4.6 applies.

Table 4.6: CUG handling on receipt of Connect or Continue With Argument for an MO or MF call

CUG parameters in message	Handling
Non-CUG call (note 1)	Remove CUG information for the call and continue as a non-CUG call
CUG information (note 2)	Call shall continue with modified CUG information
No CUG information	Call shall continue with original CUG information
NOTE 1: Received in Service Interaction Indicators Two IE. NOTE 2: CUG information consists of at least one of CUG Interlock Code and Outgoing Access Indicator.	

For an MT or VT call which is to be routed to the terminating subscriber, the CUG information shall be extracted from the incoming ISUP IAM and sent to the gsmSCF in the Initial DP, but the gsmSCF shall not have the ability to change the CUG information for the call.

For an MT or VT call which is to be forwarded under CAMEL control, if the gsmSCF returns a Connect or Continue With Argument message, the CUG information is extracted and the CUG handling in table 4.6 applies.

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Vienna, Austria, 16-20 October 2000

Document N2-000558
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	221r3	Current Version:	3.6.0

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

For submission to:	TSG CN#10	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: Siemens **Date:** 20 October 2000

Subject: Correction on CAMEL CF and OR

Work item: CAMEL Phase 3

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

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			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: See next page.

Clauses affected:

Other specs affected:

Other 3G core specifications	X	→ List of CRs:	29.078-118r2
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:

Reason for change:

The description on the charging constraints between the basic optimal routeing and the call forwarding in 23.079 (chapter 9.1) provides the criteria to perform the optimal routeing. If none of the criteria met, no optimal routeing is done (use the reference address instead).
This means the CAMEL interaction shall end and the dialogue between the gsmSSF and the gsmSCF shall also be terminated.
The latest specifications fail the above handling.

Example
Starting at the procedure Obtain_Routeing_address (23.018) and assume that the procedure CAMEL_MT_GMSC_INIT (23.078) delivers the result "CAMEL_FTN", the problem occurs if DP T_Busy is armed as EDP-N, then;

(1) the procedure Route_Permitted (23.079) delivers the output "False",
(2) the procedure Obtains_Routeing_Address (23.018) calls CAMEL_MT_GMSC_DISC4.
(3) the procedure CAMEL_MT_GMSC_DISC4 sends Int_DP_T_Busy.
(4) the process gsmSSF sends CAP_EventReportBCSM (T_Busy, interrupted) to the gsmSCF,
(5) the gsmSCF may sends any operation to the gsmSSF.
(6) no matter what the destination address, if any, in the previous operation, the procedure Obtains_Routeing_Address (23.018) ignores it.

(6) is ok, but the dialogue between the gsmSSF and the gsmSCF is still alive.
Especially after the step (4) the gsmSCF may try another number to connect and arm a DP, because the gsmSCF does not know no more CF is permitted.

To solve this problem, the series of CR propose;

23.078 set additional IE, RouteNotPermitted, in Event Specific Information BCSM for T_Busy to indicate that the call forward shall be cancelled.
29.078 corresponding stage 3

4.6.1.4 Event Report BCSM

4.6.1.4.1 Description

This IF is used to notify the gsmSCF of a call-related event (i.e., BCSM events as answer and disconnect) previously requested by the gsmSCF in a Request Report BCSM Event IF.

4.6.1.4.2 Information Elements

The following information elements are required:

Information element name	MO	MF	MT	VT	Description
Event type BCSM	M	M	M	M	This IE specifies the type of event that is reported.
Event Specific Information BCSM	C	C	C	C	This IE indicates the call related information specific to the event.
Leg ID	M	M	M	M	This IE indicates the party in the call for which the event is reported.
Misc Call Info	M	M	M	M	This IE indicates the DP type.

M Mandatory (The IE shall always be sent).

C Conditional (The IE shall be sent, if available).

If the Event Type BCSM IE contains either O_Answer or T_Answer, then the Event Specific Information BCSM IE contains the following information elements:

Information element name	MO	MF	MT	VT	Description
Destination address	M	M	M	M	This IE specifies the destination address for the call leg.
OR	-	C	C	-	This IE indicates that the call was subject to basic Optimal Routeing as specified in 3G TS 23.079 [36].
Forwarded call	-	M	C	C	This IE indicates that the call has been subject to GSM call forwarding.

M Mandatory (The IE shall always be sent).

C Conditional (The IE shall be sent if its value is True, otherwise it shall not be sent).

- Not applicable.

If the Event Type BCSM IE contains one of Route_Select_Failure, O_Called_Party_Busy, O_Disconnect or T_Disconnect, then the Event Specific Information BCSM IE contains the following information element:

Information element name	MO	MF	MT	VT	Description
Cause	C	C	C	C	This IE indicates the cause.

C Conditional (The IE shall be sent if available).

If the Event Type BCSM IE contains T_Busy then the Event Specific Information BCSM IE contains the following information elements:

Information element name	MO	MF	MT	VT	Description
Cause	C	C	C	C	This IE indicates the cause.
Call forwarded	-	-	C	C	This IE indicates that the call may be forwarded by the appropriate GSM Call Forwarding supplementary service.
Route not permitted	-	-	C	-	This IE indicates that call forwarding will not take place in this GMSC due to the rules of basic optimal routeing. See 3G TS 23.079 [36].

C Conditional (The IE shall be sent if available).

- Not applicable.

If the Event Type BCSM IE contains T_No_Answer then the Event Specific Information BCSM IE contains the following information element:

Information element name	MO	MF	MT	VT	Description
Call forwarded	-	-	C	C	This IE indicates that the call may be forwarded by the appropriate GSM Call Forwarding supplementary service.

C Conditional (The IE shall be sent if available).

- Not applicable.

If the Event Type BCSM IE contains O_No_Answer then the Event Specific Information BCSM IE is not included.