3GPP TSG_CN
Plenary Meeting #9, Oahu, Hawaii
20th – 22nd September 2000.

Source: **TSG_N WG 4**

Title: **CR to R00 Work Item MAP Security**

Agenda item:

Document for: **APPROVAL**

Introduction:

This document contains 1 CR on R00 Work Item MAP Security, that has been agreed by TSG_N WG4, and is forwarded to TSG_N Plenary meeting #9 for approval.

SM	TDoc	SPEC	CR	REV	PHAS	VERS	SUBJECT	CAT
CN9	N4-000499	29.120	002		R00	3.0.0	Changes to support secure transport MAP for GLR	B

CHANGE REQUEST

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

29.120 CR **002**		Current Version: **3.0.0**

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

For submission to:	**CN#09**	for approval	**X**	strategic		*(for SMG*
list expected approval meeting # here ↑		for information		non-strategic	**X**	*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: (U)SIM   ME   UTRAN / Radio   Core Network **X**
(at least one should be marked with an X)

Source:	N4		**Date:**	14.07.00

Subject:	Changes to support secure transport MAP for GLR

Work item:	MAP security

Category:		F	Correction		**Release:**	Phase 2	
		A	Corresponds to a correction in an earlier release			Release 96	
(only one category		B	Addition of feature	**X**		Release 97	
shall be marked		C	Functional modification of feature			Release 98	
with an X)		D	Editorial modification			Release 99	
						Release 00	**X**

Reason for change:	This CR introduces the changes required for the MAP security mechanism to GLR.

Clauses affected:	7.1, 15, 15.1, 16, 17.2, 17.3

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:	

help.doc

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

7 General on MAP services

Refer to the corresponding section in 3G TS 29.002 with the exceptions described below.

7.1 Common MAP services

The following common services are used:

- MAP-OPEN service;

- MAP-CLOSE service;

- MAP-DELIMITER service;

- MAP-U-ABORT service;

- MAP-P-ABORT service;

- MAP-NOTICE service;

- MAP-SECURE-TRANSPORT-CLASS-1 service;

- MAP-SECURE-TRANSPORT-CLASS-2 service;

- MAP-SECURE-TRANSPORT-CLASS-3 service;

- MAP-SECURE-TRANSPORT-CLASS-4 service.

Replace the MAP-U-ABORT service as follows.

7.1.1 MAP-U-ABORT service

This service enables the service-user to request the MAP dialogue to be aborted. The service is an unconfirmed service with service-primitives as shown in table 7.1/1. MAP service-user in the GLR may set "application context not supported" as user reason.

Table 7.1/1: Service-primitives for the MAP-U-ABORT service

Parameters	Request	Indication
User reason	M	M(=)
Diagnostic information	U	C(=)
Specific information	U	C(=)

User reason:

This parameter can take the following values:

- resource limitation (congestion);

  the requested user resource is unavailable due to congestion;

- resource unavailable;

  the requested user resource is unavailable for reasons other than congestion;

- application procedure cancellation;

  the procedure is cancelled for reason detailed in the diagnostic information parameter;

- application context not supported;

  the requested application context is not supported;

- procedure error;

  processing of the procedure is terminated for procedural reasons.

Diagnostic information:

This parameter may be used to give additional information for some of the values of the user-reason parameter:

Table 7.1/2: User reason and diagnostic information

User reason	Diagnostic information
Resource limitation (congestion)	-
Resource unavailable	Short term/long term problem
Application procedure cancellation	Handover cancellation/ Radio Channel release/ Network path release/ Call release/ Associated procedure failure/ Tandem dialogue released/ Remote operations failure
Application context not supported	-
Procedure error	-

Specific information:

This parameter may be used for passing any user specific information. Establishment and processing of the Specific information is not specified by GSM and shall be performed according to operator specific requirements.

14 Void

15 Element of procedure

The elements of procedures for the MAP protocol are referred to the corresponding section in 3G TS 29.002 with the exceptions described below.

15.1 SDL descriptions

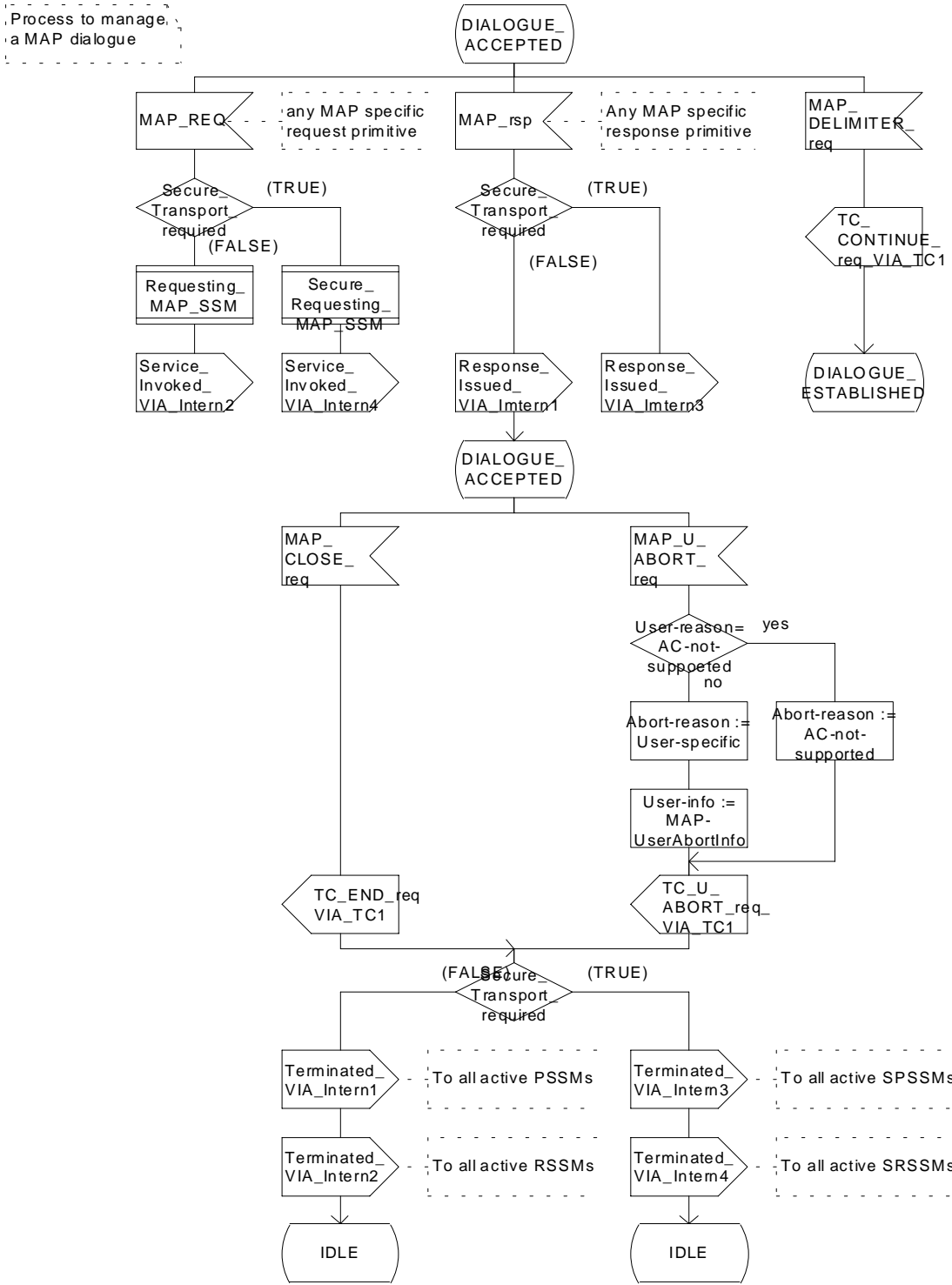Replace the corresponding part of Process Secure_MAP_DSM as figure 15.1/1.

Process to manage
a MAP dialogue

DIALOGUE_
ACCEPTED

MAP_REQ - - - any MAP specific
request primitive

MAP_rsp - - - Any MAP specific
response primitive

MAP_
DELIMITER_
req

Secure_
Transport
required

(TRUE)

Secure_
Transport
required

(TRUE)

TC_
CONTINUE_
req_VIA_TC1

(FALSE)

(FALSE)

Requesting_
MAP_SSM

Secure_
Requesting_
MAP_SSM

Service_
Invoked_
VIA_Intern2

Service_
Invoked_
VIA_Intern4

Response_
Issued_
VIA_Imtern1

Response_
Issued_
VIA_Imtern3

DIALOGUE_
ESTABLISHED

DIALOGUE_
ACCEPTED

MAP_
CLOSE_
req

MAP_U_
ABORT_
req

User-reason=
AC-not-
suppoeted

yes

no

Abort-reason :=
User-specific

Abort-reason :=
AC-not-
supported

User-info :=
MAP-
UserAbortInfo

TC_END_req
VIA_TC1

TC_U_
ABORT_req_
VIA_TC1

(FALSE)

Secure_
Transport
required

(TRUE)

Terminated_
VIA_Intern1

- To all active PSSMs

Terminated_
VIA_Intern3

- To all active SPSSMs

Terminated_
VIA_Intern2

- To all active RSSMs

Terminated_
VIA_Intern4

- To all active SRSSMs

IDLE

IDLE

Figure 15.1/1: Process Secure_MAP_DSM_GLR

16 Mapping onto TC services

Dialogue control, Service specific procedures and SDL descriptions are referred to the corresponding section in 3G TS 29.002 with the exceptions described below.

Replace the corresponding part of MAP_DSM as figure 16.1/1.

Process MAP_DSM_GLR   16.1.1(1)

Figure 16.1/1: Process MAP_DSM_GLR

17   Abstract syntax of the MAP protocol

17.1   General

Refer to the corresponding section in 3G TS 29.002 except Packages specifications and Application contexts.

Regarding the operations which are initiated by the VLR or SGSN toward HLR via GLR, the timer value used in the operations should be configured enough long to guarantee the GLR specific fallback mechanism.

17.2   Packages specifications

Regarding Packages specifications, only the supplier and consumer definition shall be considered for the GLR introduction. The supplier and consumer definition for the GLR specification are derived Table 17.2/1. For the other definitions of the package specifications are as in 3G TS 29.002.

Table 17.2/1: supplier and consumer definition

Operation Package	supplier	consumer
LocationUpdatingPackage-v3	HLR	GLR
	GLR	VLR
LocationCancellationPackage-v3	VLR or SGSN	GLR
	GLR	HLR
RoamingNumberEnquiryPackage-v3	VLR	GLR
	GLR	HLR
InfoRetrievalPackage-v2	HLR	GLR
	GLR	VLR
	GLR	SGSN
InfoRetrievalPackage-v1	HLR	GLR
	GLR	VLR
	GLR	SGSN
IMSIRetrievalPackage-v2	HLR	GLR
	GLR	VLR
SubscriberDataMngtStandAlonePackage-v3	VLR or SGSN	GLR
	GLR	HLR
SubscriberDataMngtPackage-v3	VLR or SGSN	GLR
	GLR	HLR
ResetPackage-v2	VLR or SGSN	GLR
	GLR	HLR
FunctionalSsPackage-v2	HLR	GLR
	GLR	HLR
BindingPackage-v1	HLR	GLR
	GLR	VLR
UnstructuredSsPackage-v2	HLR	GLR
	GLR	VLR
UnstructuredSsPackage-v1	HLR	GLR
	GLR	VLR
MTShortMsgRelayPackage-v3	IM-MSC or GLR	GMSC
	MSC	IM-MSC
	SGSN	GLR
MwdMngtPackage-v3	HLR	GLR
	GLR	SGSN
	GLR	VLR
MwdMngtPackage-v1	HLR	GLR
	GLR	VLR
DataRestorationPackage-v3	GLR	VLR
PurgingPackage-v3	HLR	GLR
	GLR	VLR
	GLR	SGSN
SubscriberInformationEnquiryPackage-v3	VLR	GLR
	GLR	HLR
GprsLocationUpdatingPackage-v3	HLR	GLR
	GLR	SGSN
FailureReportingPackage-v3	GLR	IM-GSN
SetReportingStatePackage-v3	VLR	GLR
	GLR	HLR
StatusReportPackage-v3	HLR	GLR
	GLR	VLR
RemoteUserFreePackage-v3	VLR	GLR
	GLR	HLR
CallCompletionPackage-v3	HLR	GLR
	GLR	VLR
SecureTransportHandlingPackage-v3	This operation package includes the operations required for the secure transport of MAP messages between any MAP entities.	

17.3   Application contexts

Regarding Application contexts specifications, only the responder and initiator definition shall be considered for the GLR introduction. The responder and initiator definition for the GLR specification are derived Table 17.3/1. For the other definitions of the package specifications are as in 3G TS 29.002.

Table 17.3/1: supplier and consumer definition

Application Context	Version	Initiator	Responder
locationCancellationContext	v3	HLR	GLR
		GLR	VLR or SGSN
imsiRetrievalContext	v2	VLR	GLR
		GLR	HLR
infoRetrievalContext	v2	VLR or SGSN	GLR
		GLR	HLR
mwdMngtContext	v3	VLR or SGSN	GLR
		GLR	HLR
msPurgingContext	v3	VLR or SGSN	GLR
		GLR	HLR
resetContext	v2	HLR	GLR
		GLR	VLR or SGSN
networkUnstructuredSsContext	v2	VLR	GLR
		GLR	HLR
		HLR	GLR
		GLR	VLR
networkFunctionalSsContext	v2	VLR	GLR
		GLR	HLR
shortMsgMT-RelayContext	v3	MSC	IM-MSC or GLR
		IM-MSC	MSC
		GLR	SGSN
networkLocUpContext	v3	VLR	GLR
		GLR	HLR
gprsLocationUpdateContext	v3	SGSN	GLR
		GLR	HLR
subscriberDataMngtContext	v3	HLR	GLR
		GLR	VLR or SGSN
roamingNumberEnquiryContext	v3	HLR	GLR
		GLR	VLR
gprsLocationInfoRetrievalContext	v3	IM-GSN	GLR
failureReportContext	v3	IM-GSN	GLR
subscriberInfoEnquiryContext	v3	HLR	GLR
		GLR	VLR
reportingContext	v3	VLR	GLR
		GLR	HLR
		HLR	GLR
		GLR	VLR
callCompletionContext	v3	VLR	GLR
		GLR	HLR
SecureTransportHandlingContext	v3	This application context is used for the secure transport of MAP messages between any MAP entities.	