

ETSI TR 129 998-6 V4.0.0 (2001-03)

Technical Report

**Universal Mobile Telecommunications System (UMTS);
Open Service Access (OSA);
Application Programming Interface (API) Mapping for OSA;
Part 6: User Location - User Status Service Mapping to MAP
(3GPP TR 29.998-6 version 4.0.0 Release 4)**



Reference

RTR/TSGN-0529998-6Uv4

Keywords

UMTS

ETSI

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Foreword

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Foreword

This Technical Report has been produced by the 3rd Generation Partnership Project (3GPP).

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- z the third digit is incremented when editorial only changes have been incorporated in the document.

Introduction

Structure of the OSA API Mapping (3GPP TR 29.998)

The Technical Report 3GPP TR 29.998 consists of a series of parts and subparts. An effort has been made to ensure that the part numbers used in the mapping TR correspond to the part numbers of the base OSA specification in 3GPP TS 29.198. For this reason, certain parts, for which no suitable mapping could be suggested, have not been delivered. At a later stage a mapping to a new protocol may become evident, in which case these missing parts will be developed.

The OSA documentation was defined jointly between 3GPP TSG CN WG5, ETSI SPAN 12 and the Parlay Consortium, in co-operation with the JAIN consortium. The 3GPP TR 29.998 is based on a mapping document with a wider scope, developed as part of this co-operation. Certain mappings defined in the course of this joint development are not applicable for 3GPP Release 4, which is why not all sub-parts have been delivered as part of 3GPP Release 4. However, it is expected that some will become applicable within the scope of 3GPP Release 5, which is why a common sub-part numbering is being retained, albeit with gaps for 3GPP Release 4.

If mapping for a certain Part is "Not Applicable" it can either indicate that a mapping does not exist (e.g. Part 2 Common Data), or the API is considered to be implemented directly on a physical entity, or via a proprietary mechanism.

The present document is part 6 of a multi-part TR covering the 3rd Generation Partnership Project: Technical Specification Group Core Network; Open Service Access (OSA); Application Programming Interface (API) Mapping for OSA, as identified below.

- 29.998-1: General Issues on API Mapping
- 29.998-2: *Not Applicable*
- 29.998-3: *Not Applicable*
- 29.998-4-1: Call Control Service Mapping; Subpart: API to CAP Mapping
- 29.998-4-2: Call Control Service Mapping; Subpart 2 generic call control INAP (not Rel-4)
- 29.998-4-3: Call Control Service Mapping; Subpart 3 multiparty call control INAP (not Rel-4)
- 29.998-4-4: Call Control Service Mapping; Subpart 4 multiparty call control SIP (not Rel-4)
- 29.998-4-5: Call Control Service Mapping; Subpart 5 multimedia call control extensions mapping to SIP (not Rel-4)
- 29.998-5-1: User Interaction Service Mapping; Subpart 1: API to CAP Mapping
- 29.998-5-2: User Interaction Service Mapping; Subpart 2 user interaction INAP (not Rel-4)
- 29.998-5-3: User Interaction Service Mapping; Subpart 3 user interaction Megacop (not Rel-4)

- 29.998-5-4: User Interaction Service Mapping; Subpart 4: API to SMS Mapping
29.998-6: User Location – User Status Service Mapping to MAP
 29.998-7: *Not Applicable*
 29.998-8: Data Session Control Service Mapping to CAP

OSA API specifications 29.198-family		OSA API Mapping - 29.998-family	
29.198-1	Part 1: Overview	29.998-1	Part 1: Overview
29.198-2	Part 2: Common Data Definitions	29.998-2	Not Applicable
29.198-3	Part 3: Framework	29.998-3	Not Applicable
29.198-4	Part 4: Call Control SCF	29.998-4-1	Subpart 1: Generic Call Control – CAP mapping
		29.998-4-2	
29.198-5	Part 5: User Interaction SCF	29.998-5-1	Subpart 1: User Interaction – CAP mapping
		29.998-5-2	
		29.998-5-3	
		29.998-5-4	Subpart 4: User Interaction – SMS mapping
29.198-6	Part 6: Mobility SCF	29.998-6	User Status and User Location – MAP mapping
29.198-7	Part 7: Terminal Capabilities SCF	29.998-7	Not Applicable
29.198-8	Part 8: Data Session Control SCF	29.998-8	Data Session Control – CAP mapping
29.198-9	Part 9: Generic Messaging SCF	29.998-9	Not Applicable
29.198-10	Part 10: Connectivity Manager SCF	29.998-10	Not Applicable
29.198-11	Part 11: Account Management SCF	29.998-11	Not Applicable
29.198-12	Part 12: Charging SCF	29.998-12	Not Applicable

1 Scope

The present document investigates how the OSA Mobility Interface Class methods defined in 3GPP TS 29.198-6 [5] can be mapped onto CAMEL Application Part (CAP) operations and Mobile Application Part (MAP) operations. The mapping of the OSA API to the CAP and relevant MAP operations is considered informative, and not normative. An overview of the mapping TR is contained in the introduction of the present document as well as in 3GPP TR 29.998-1 [10].

The OSA specifications define an architecture that enables application developers to make use of network functionality through an open standardised interface, i.e. the OSA API's. The API specification is contained in the 3GPP TS 29.198 series of specifications. An overview of these is available in the introduction of the present document as well as in 3GPP TS 29.198-1 [1]. The concepts and the functional architecture for the Open Service Access (OSA) are described by 3GPP TS 23.127 [3]. The requirements for OSA are defined in 3GPP TS 22.127 [2].

The present document has been defined jointly between 3GPP TSG CN WG5, ETSI SPAN 12 and the Parlay Consortium, in co-operation with the JAIN consortium.

2 References

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] 3GPP TS 29.198-1: "Open Service Access; Application Programming Interface; Part 1: Overview".
- [2] 3GPP TS 22.127: "Stage 1 Service Requirement for the Open Service Access (OSA) (Release 4)".
- [3] 3GPP TS 23.127: "Virtual Home Environment (Release 4)".
- [4] 3GPP TR 22.905: "3GPP Vocabulary".
- [5] 3GPP TS 29.198-6: "Open Service Access; Application Programming Interface - Part 6: Mobility".
- [6] 3GPP TS 29.002: "Mobile Application Part (MAP) specification".
- [7] 3GPP TS 29.078: "CAMEL Application Part (CAP) specification – Phase 3".
- [8] 3GPP TS 22.101: "Universal Mobile Telecommunications System (UMTS): Service Aspects; Service Principles".
- [9] ITU-T Recommendation Q.850: "Usage of cause and location in the Digital Subscriber Signalling System No. 1 and the Signalling System No. 7 ISDN User Part".
- [10] 3GPP TR 29.998-1: "API Mapping for Open Service Access; Part 1: General Issues on API Mapping".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in TS 29.198-1 [1] apply.

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in TS 29.198-1 [1] apply.

4 User Status Service CAMEL Flows

The User Status (US) interface class allows applications to obtain the status of mobile telephony users.

4.1 triggeredStatusReportingStartReq

TriggeredStatusReportingStartReq is a method that is used to subscribe to triggered user status notifications so that events can be sent to the application.

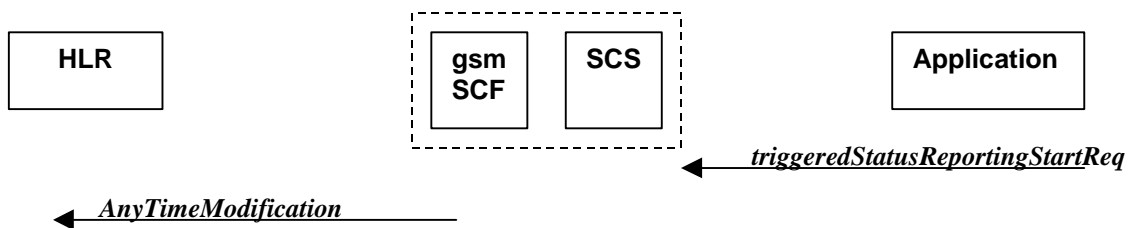


Figure 4-1: Call Flow for triggeredStatusReportingStartReq

Table 4-1: Normal Operation

Pre-conditions	
	An agreement is established between the network operator and the service provider for the event notification to be enabled
1	The application invokes the <i>triggeredStatusReportingStartReq</i> method
2	The gsmSCF sends a MAP <i>AnyTimeModification</i> to the HLR in order to activate the CAMEL Subscription Information (M-CSI). In case the Status Report is requested for multiple users, multiple ATM requests are sent to the HLR.

Table 4-2: Parameter Mapping

From: triggeredStatusReportingStartReq	To: MAP AnyTimeModification
appStatus users	subscriberIdentity modificationInstruction in modificationRequestFor-CSI has value 'activate', for M-CSI (Mobility CAMEL Subscription Information)
assignmentID	gsmSCF-Address

4.2 triggeredStatusReportingStop

triggeredStatusReportingStop is a method that is used by the application to disable triggered user status notifications.

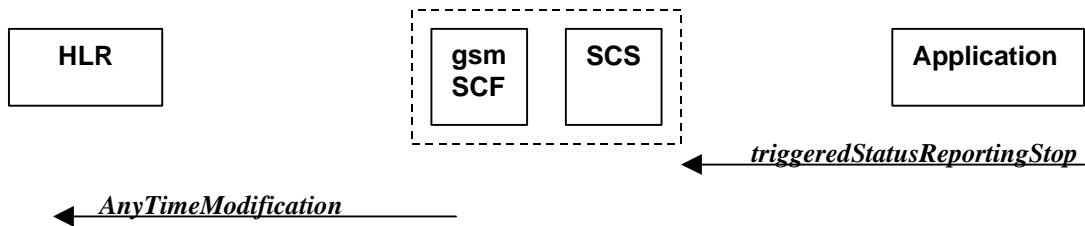


Figure 4-2: Call Flow for triggeredStatusReportingStop

Table 4-3: Normal Operation

Pre-conditions	An agreement is established between the network operator and the service provider for the status notification to be disabled
1	The application invokes the <i>triggeredStatusReportingStop</i> method
2	The gsmSCF sends a MAP <i>AnyTimeModificaionRequest</i> to the HLR in order to de-activate the CAMEL Subscription Information (M-CSI). In case stopping Status Reporting is requested for multiple users, multiple ATM requests are sent to the HLR.

Table 4-4: Parameter Mapping

From: triggeredStatusReportingStop	To: MAP AnyTimeModification
stopRequest	subscriberIdentity
assignmentID	(either extracted from assignmentID, or mapped from 'users')
stopScope	modificationInstruction in modificationRequestFor-CSI has value 'deactivate', for M-CSI
users	(Mobility CAMEL Subscription Information)
	gsmSCF-Address

4.3 statusReportReq

statusReportReq is a method that is used by the application to request a user status report. Note that this can be requested for multiple users at the same time.

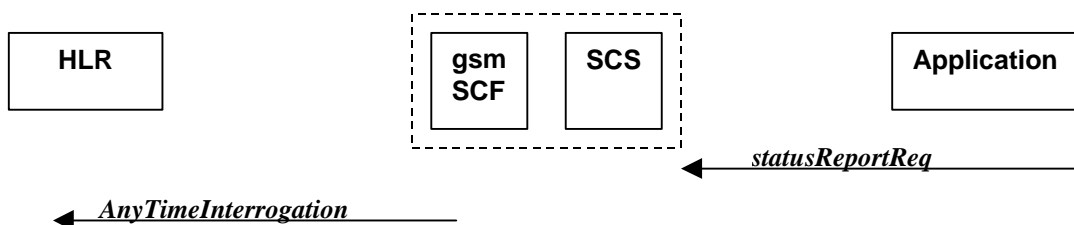


Figure 4-3: Call Flow for statusReportReq

Table 4-5: Normal Operation

Pre-conditions	
1	The application invokes the <i>statusReportReq</i> method
2	The gsmSCF sends a MAP <i>AnyTimeInterrogateRequest</i> to the HLR in order to request the subscriber status In case the Status Report is requested for multiple users, multiple ATI requests are sent to the HLR.

Table 4-6: Parameter Mapping

From: statusReportReq	To: MAP AnyTimeInterrogation
	Invoke id
appStatus	
users	subscriberIdentity
	requestedInfo (sequence of optional indicators, of which only subscriberState is present)
	gsmSCF-Address
assignmentID	

4.4 statusReportRes

statusReportRes is a method that is used by the HLR/SCS towards the application, in response to an earlier request for a user status report. Note that this can be requested for multiple users at the same time.

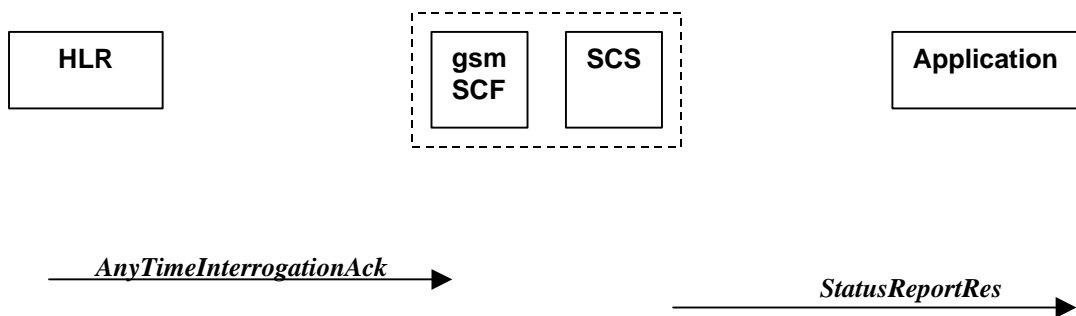


Figure 4-4: Call Flow for statusReportRes

Table 4-7: Normal Operation

Pre-conditions	The application has invoked a <i>statusReportReq</i> method, and this request has been forwarded to the HLR.
1	The HLR sends a MAP <i>AnyTimeInterrogationAck</i> to the HLR/SCS in response to the earlier request.
2	The gsmSCF/SCS respond to the application via <i>StatusReportRes</i> . In case the Status Report was requested for multiple users, multiple ATI acknowledgements are collected in the gsmSCF/SCS before a response is sent back to the Application.

Table 4-8: Parameter Mapping

To: statusReportRes	From: MAP AnyTimeInterrogationAck
	Invoke id
assignmentID	
status	
userID	
statusCode	
	subscriberInfo (sequence of optional parameters, of which only subscriberState present)
status	subscriberState

4.5 triggeredStatusReport

triggeredStatusReport is a method that is used to notify the application of the arrival of a requested user status report event.

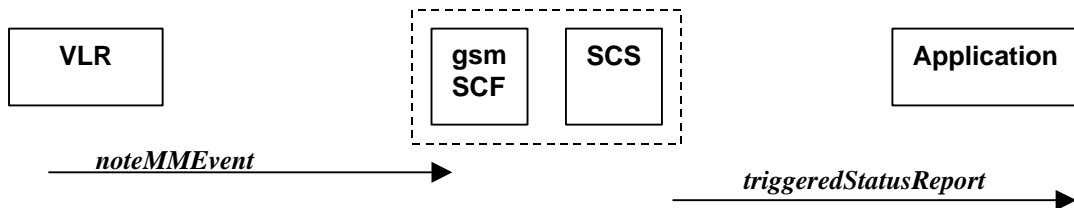


Figure 4-5: Call Flow for triggeredStatusReport

Table 4-9: Normal Operation

Pre-conditions	The Application has requested triggeredStatusReporting
1	The VLR sends a MAP <i>noteMM-Event</i> message to the CSE/SCS
2	The SCS sends a <i>triggeredStatusReport</i> to the Application

Table 4-10: Parameter Mapping

To triggeredStatusReport	From: MAP noteMM-Event
status	
userID	msisdn
statusCode	
status	event-Met
	serviceKey
	imsi
assignmentID	

5 User Status Service core-MAP Flows

The User Status (US) interface class allows applications to obtain the status of mobile telephony users.

5.1 statusReportReq

statusReportReq is a method that is used by the application to request a user status report. Note that this can be requested for multiple users at the same time

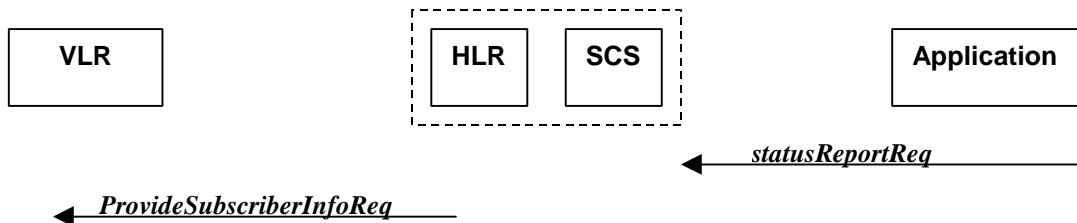


Figure 5-1: Call Flow for statusReportReq

Table 5-1: Normal Operation

Pre-conditions	
1	The application invokes the <i>statusReportReq</i> method
2	The HLR sends a MAP <i>ProvideSubscriberInfoRequest</i> to the VLR in order to request the subscriber status In case the Status Report is requested for multiple users, multiple PSI requests are sent to the VLR.

Table 5-2: Parameter Mapping

From: statusReportReq	To: MAP ProvideSubscriberInfo
	Invoke id
appStatus	
users	imsi (deduced from information in 'users')
	requestedInfo (sequence of optional indicators, of which only subscriberState is present)
assignmentID	

5.2 statusReportRes

statusReportRes is a method that is used by the HLR/SCS towards the application, in response to an earlier request for a user status report. Note that this can be requested for multiple users at the same time

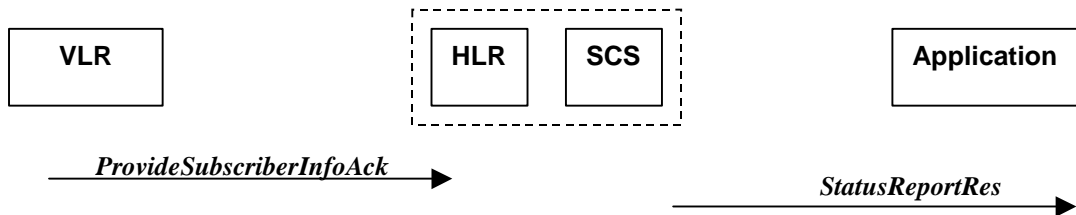


Figure 5-2: Call Flow for statusReportRes

Table 5-3: Normal Operation

Pre-conditions	The application has invoked a <i>statusReportReq</i> method, and this request has been forwarded to the VLR.
1	The VLR sends a MAP <i>ProvideSubscriberInfoAck</i> to the HLR/SCS in response to the earlier request.
2	The HLR/SCS respond to the application via <i>StatusReportRes</i> . In case the Status Report was requested for multiple users, multiple PSI acknowledgements are collected in the HLR/SCS before a response is sent back to the Application.

Table 5-4: Parameter Mapping

To: statusReportRes	From: MAP ProvideSubscriberInfoAck
	Invoke id
assignmentID	
status	
userID	
statusCode	
	subscriberInfo (sequence of optional parameters, of which only subscriberState is present)
status	subscriberState

6 Network User Location Call Flows

The Network User Location (NUL) provides location information, based on network-related information

Using the NUL functions, an application programmer can request the VLR number, the Location Area Identifier, geodetic Location Information and the Cell Global Identification and other mobile telephony specific location information, if the network is able to support the corresponding capability

6.1 locationReportReq

locationReportReq is a method used by the application to request for mobile-related location information on one or several users. A request of location information for several users shall mapped to several MAP-operation-requests.

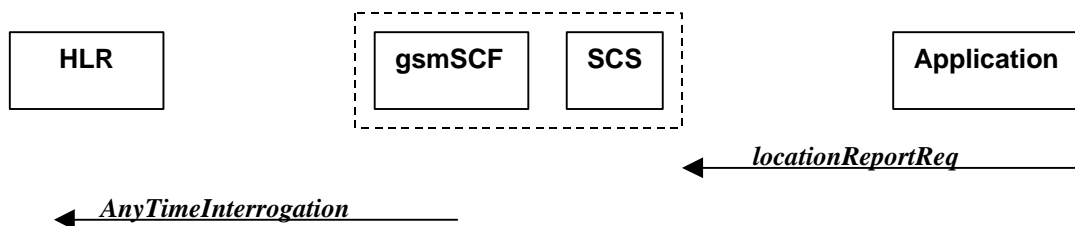


Figure 6-1: Call Flow for locationReportReq

Table 6-1: Normal Operation

Pre-conditions	An agreement is established between the network operator and the service provider for the <i>locationReportReq</i> to be enabled
1	The application invoked the <i>locationReportReq</i> method
2	The gsmSCF sends a MAP <i>AnyTimeInterrogationReq</i> to the HLR.

Table 6-2: Parameter Mapping

From: locationReportReq	To: MAP AnyTimeInterrogationReq
	invokeID
appLocationCamel	
users	subscriberIdentity
	gsmSCF-Address
	requestedInfo (sequence of optional indicators, of which only locationInformation is present)
assignmentID	

6.2 locationReportRes

locationReportRes is a method that delivers a mobile location report towards the application. The report contains mobile-related location information for one or several users. A request of location information for several users shall mapped to several MAP-operation-requests.

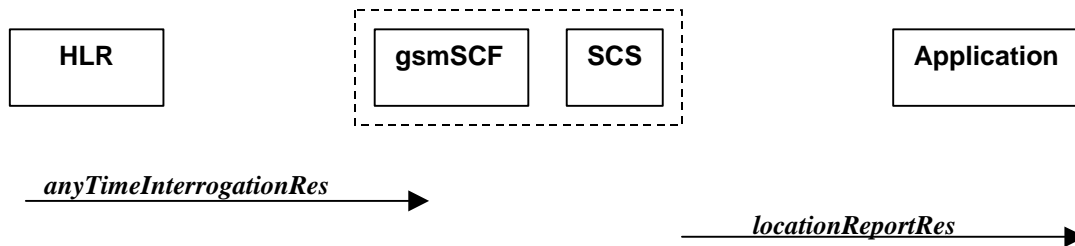


Figure 6-2: Call Flow for locationReportRes

Table 6-3: Normal Operation

Pre-conditions	The Application has previously invoked the <i>locationReportReq</i> method causing the gsmSCF to send a MAP <i>anyTimeInterrogation</i> to the HLR
1	The HLR sends MAP <i>anyTimeInterrogationRes</i> to the gsmSCF/SCS
2	The SCS responds to the application via a <i>locationReportRes</i> method invocation

Table 6-4: Parameter Mapping

From: MAP AnyTimeInterrogationAck	To: locationReportRes
invokeld	
	assignmentID
subscriberInfo (sequence of optional parameters, of which only locationInformation is present)	
locationInformation	locations
	UserID
	StatusCode
geographicalInformation geodeticInformation	GeographicalPosition (geodeticInformation is mapped if present, otherwise geographicInformation is used)
ageOfLocationInformation	Timestamp (calculated from ageOfLocationInfo)
vlr-number	VlrNumber
locationNumber	LocationNumber
cellGlobalIdorServiceAreaIdOrLai	CellidOrLai
extensionContainer	
selectedLSA-Id	
msc-Number	
currentLocationRetrieved	

6.3 locationReportErr

locationReportErr is a method that indicates that the location report request has failed.

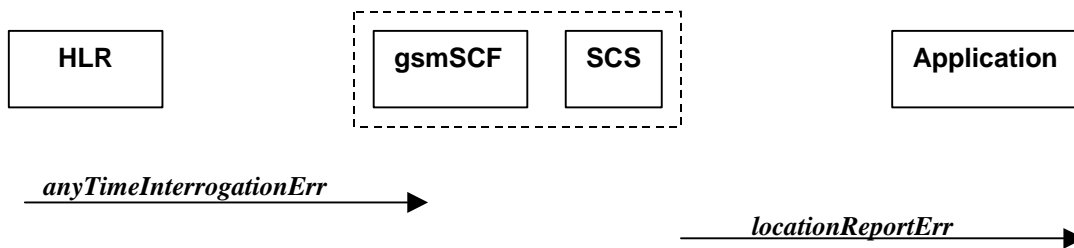


Figure 6-3: Call Flow for locationReportErr

Table 6-5: Normal Operation

Pre-conditions	The Application has previously invoked the <i>locationReportReq</i> method causing the gsmSCF to send a MAP <i>anyTimeInterrogation</i> to the HLR
1	The HLR responds with a negative acknowledgement <i>anyTimeInterrogationErr</i> to the gsmSCF/SCS
2	The SCS responds to the Application via a <i>locationReportErr</i> method invocation

Table 6-6: Parameter Mapping

From: MAP <i>anyTimeInterrogationErr</i>	To: <i>locationReportErr</i>
	assignmentID
SystemFailure ATI-NotAllowed DataMissing UnexpectedDataValue UnknownSubscriber	cause
	diagnostic

6.4 periodicLocationReportingStartReq

periodicLocationReportingStartReq is a method used by the application to request for periodic mobile location reports on one or several users. A request of location information for several users shall mapped to several MAP-operation-requests.

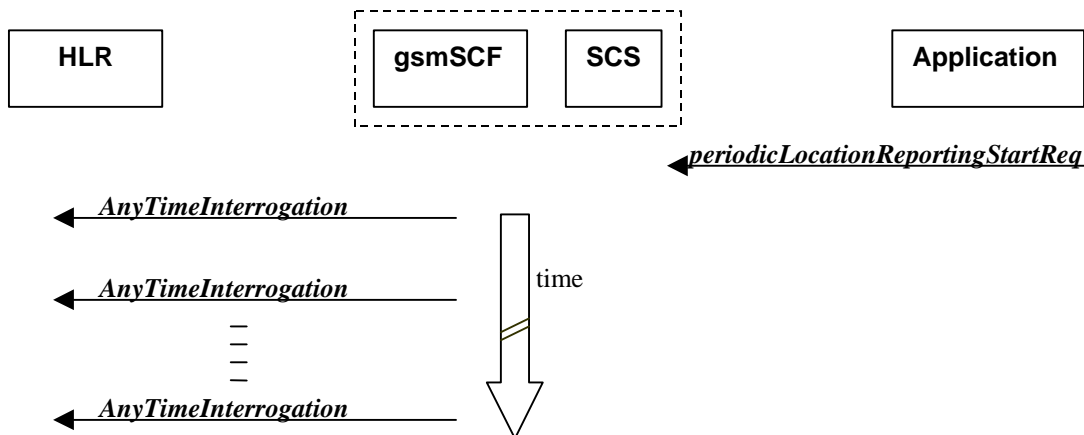


Figure 6-4: Call Flow for periodicLocationReportingStartReq

Table 6-7: Normal Operation

Pre-conditions	An agreement is established between the network operator and the service provider for the <i>periodicLocationReportingStartReq</i> to be enabled
1	The application invoked the <i>periodicLocationReportingStartReq</i> method
2	The gsmSCF sends a MAP <i>AnyTimeInterrogationReq</i> to the HLR, and repeats this according to the requested time interval..

Table 6-8: Parameter Mapping

From: <i>periodicLocationReportingStartReq</i>	To: MAP <i>AnyTimeInterrogationReq</i>
	invokeID
appLocation	
users	subscriberIdentity
	gsmSCF-Address
	requestedInfo (sequence of optional indicators, of which only locationInformation is present)
reportingInterval	
assignmentID	

6.5 periodicLocationReportingStop

periodicLocationReportingStop is a method used by the application to stop the sending of periodic mobile location reports for one or several users. A request of location information for several users shall mapped to several MAP-operation-requests.

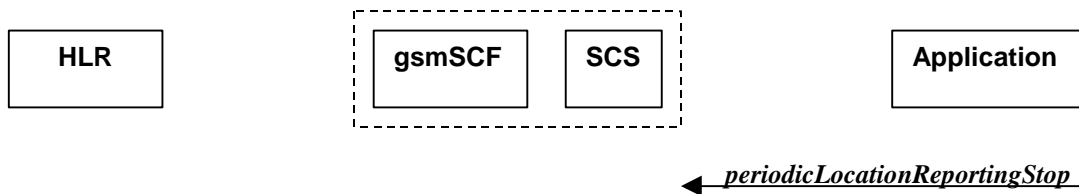


Figure 6-5: Call Flow for periodicLocationReportingStop

Table 6-9: Normal Operation

Pre-conditions	
1	The application invoked the <i>periodicLocationReportingStop</i> method
2	The gsmSCF stops the periodic sending of MAP <i>AnyTimeInterrogationReq</i> to the HLR, for the subscribers as indicated in the stop request (for details of StopRequest see e.g. with triggeredLocationReportingStop)..

Parameter Mapping

None.

6.6 periodicLocationReport

periodicLocationReport is a method that provides periodic delivery of mobile location reports. The reports are containing mobile-related location information for one or several users. A request of location information for several users shall mapped to several MAP-operation-requests.

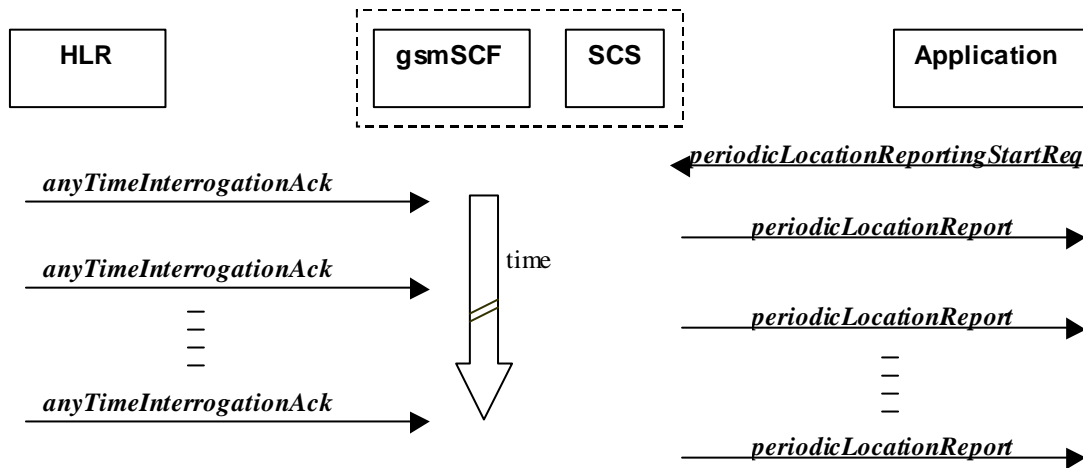


Figure 6-6: Call Flow for periodicLocationReport

Table 6-10: Normal Operation

Pre-conditions	The Application has previously invoked the <i>periodicLocationReportingStartReq</i> method causing the gsmSCF to periodically send MAP <i>anyTimeInterrogation</i> to the HLR
1	The HLR sends periodically <i>anyTimeInterrogationAck</i> to the gsmSCF/SCS
2	The SCS responds to the Application via <i>periodicLocationReport</i> method invocation

Table 6-11: Parameter Mapping

From: MAP AnyTimeInterrogationAck	To: PeriodicLocationReport
invokeID	assignmentID
subscriberInfo (sequence of optional parameters, of which only is present)	
locationInformation	locations
	UserID
	StatusCode
geographicalInformation geodeticInformation	GeographicalPosition (geodeticInformation is mapped if present, otherwise geographicInformation is used)
ageOfLocationInformation	Timestamp
vlr-number	VlrNumber
locationNumber	LocationNumber
cellGlobalIdorServiceAreaIdOrLai	CellIdOrLai
extensionContainer	
selectedLSA-Id	
msc-Number	
currentLocationRetrieved	

6.7 periodicLocationReportErr

periodicLocationReportErr is a method that indicates that the requested periodic location report has failed. Note that errors only concerning individual users are reported in the ordinary periodicLocationReport() message.

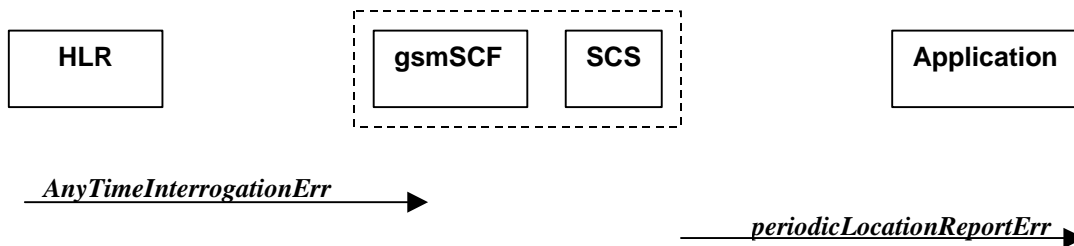


Figure 6-7: Call Flow for periodicLocationReportErr

Table 6-12: Normal Operation

Pre-conditions	The Application has previously invoked the <i>periodicLocationReportingStartReq</i> method causing the gsmSCF to periodically send MAP <i>anyTimeInterrogation</i> to the HLR
1	The HLR sends a negative acknowledgement <i>anyTimeInterrogationErr</i> to the gsmSCF/SCS
2	The SCS responds to the Application via <i>periodicLocationReportErr</i> method invocation

Table 6-13: Parameter Mapping

From: MAP <i>anyTimeInterrogationErr</i>	To: <i>periodicLocationReportErr</i>
	assignmentID
SystemFailure ATI-NotAllowed DataMissing UnexpectedDataValue UnknownSubscriber	cause
	diagnostic

6.8 triggeredLocationReportingStartReq

triggeredLocationReportingStartReq is a method used by the application to request for user location reports, containing mobile related information, when the location is changed (the report is triggered by the location change, e.g. change of VLR number, change of Global Cell Identification or other location information if available).

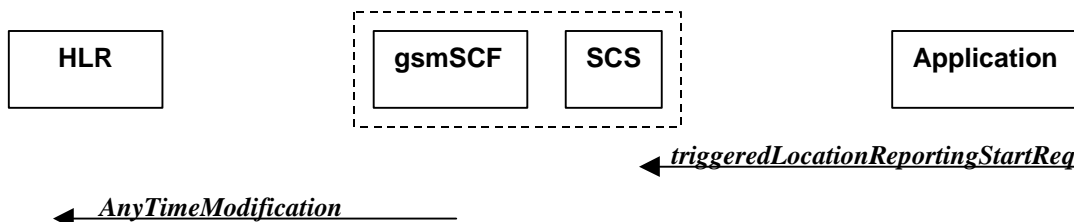


Figure 6-8: Call Flow for triggeredLocationReportingStartReq

Table 6-14: Normal Operation

Pre-conditions	An agreement is established between the network operator and the service provider for the <i>triggeredLocationReportingStartReq</i> to be disabled
1	The application invoked the <i>triggeredLocationReportingStartReq</i> method
2	The gsmSCF sends a MAP <i>AnyTimeModificationReq</i> to the HLR in order to activate the CAMEL subscription Information (M-CSI). In case the Location Report is requested for multiple users, multiple ATM requests are sent to the HLR.

Table 6-15: Parameter Mapping

From: <i>triggeredLocationReportingStartReq</i>	To: MAP <i>AnyTimeModificationReq</i>
appLocation	
users	subscriberIdentity modificationInstruction in modificationRequestFor-CSI has value 'activate', for M-CSI (Mobility CAMEL Subscription Information)
	gsmSCF-Address
triggers	

6.9 triggeredLocationReportingStop

triggeredLocationReportingStop is a method used by the application to request that triggered mobile location reporting should stop.

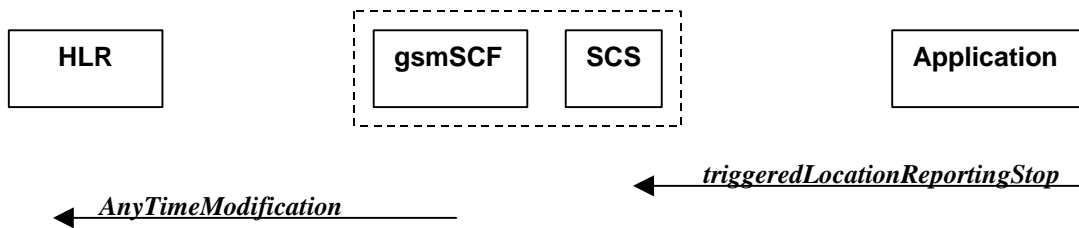


Figure 6-9: Call Flow for triggeredLocationReportingStop

Table 6-16: Normal Operation

Pre-conditions	
1	The application has initiated a <i>triggeredLocationReportingStop</i> method
2	The gsmSCF sends a MAP <i>AnyTimeModificationReq</i> to the HLR in order to de-activate the CAMEL subscription Information (M-CSI). In case stopping of triggered location reporting is requested for multiple users, multiple ATM requests are sent to the HLR.

Table 6-17: Parameter Mapping

From: <i>triggeredLocationReportingStop</i>	To: MAP <i>AnyTimeModificationReq</i>
stopRequest assignmentID stopScope users	subscriberIdentity (either extracted from assignmentID, or mapped from 'users') modificationInstruction in ModificationRequestFor-CSI has value 'deactivate', for M-CSI (Mobility CAMEL Subscription Information)
	gsmSCF-Address

6.10 triggeredLocationReport

triggeredLocationReport is a method providing the delivery of a report that is indicating that one or several user's mobile location has changed.

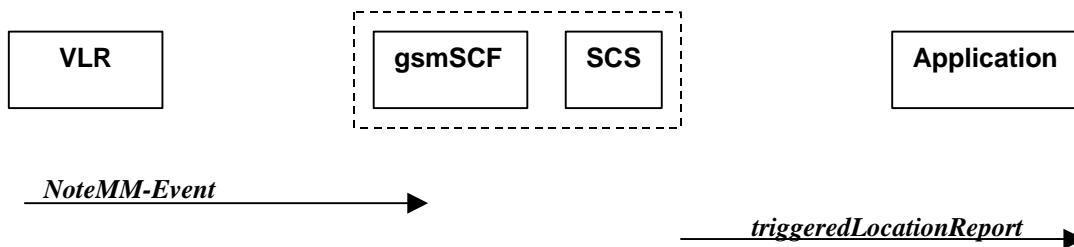


Figure 6-10: Call Flow for triggeredLocationReport

Table 6-18: Normal Operation

Pre-conditions	
1	The application invoked the <i>triggeredLocationReportingStartReq</i> method

Table 6-19: Parameter Mapping

From: MAP NoteMM-Event	To: triggeredLocationReport
	assignmentID
serviceKey	
imsi	
msisdn	
locationInformation	location
	UserID (from msisdn)
	StatusCode
geographicalInformation geodeticInformation	GeographicalPosition
ageOfLocationInformation	Timestamp (calculated from ageOfLocationInfo)
vlr-number	VlrNumber
locationNumber	LocationNumber
cellGlobalIdorServiceAreaIdOrLai	CellIdOrLai
extensionContainer	
selectedLSA-Id	
msc-Number	
currentLocationRetrieved	
eventMet	criterion

6.11 triggeredLocationReportErr

triggeredLocationReportErr is a method indicating that a requested *triggeredLocationReportingStartReq* has failed.

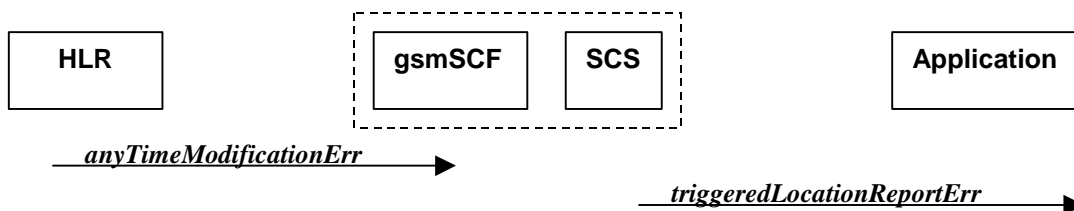


Figure 6-11: Call Flow for triggeredLocationReportErr

Table 6-20: Normal Operation

Pre-conditions	The Application has previously invoked the <i>triggeredLocationReportingStartReq</i> method, causing the gsmSCF to send a MAP <i>anyTimeModificationReq</i> to the HLR
1	The HLR sends a negative response <i>anyTimeModificationErr</i> to the gsmSCF/SCS
2	The SCS sends <i>triggeredLocationReportErr</i> to the Application.

Table 6-21: Parameter Mapping

From: MAP <i>anyTimeModificationErr</i>	To: <i>triggeredLocationReportErr</i>
	assignmentID
Any Time Modification Not Allowed Data Missing Unexpected Data Value Unknown Subscriber Bearer service not provisioned Teleservice not provisioned Call Barred Illegal SS operation SS error status SS incompatibility SS subscription violation Information Not Available	cause
	diagnostic

Annex A (informative): Change history

Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
16 Mar 2001	CN_11	NP-010131	011	-	CR 29.998: for moving TR 29.998 from R99 to Rel 4 (N5-010159)	3.2.0	4.0.0

History

Document history		
V4.0.0	March 2001	Publication