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Technical Specification

Universal Mobile Telecommunications System (UMTS);
Open Service Access (OSA);
Parlay X web services;
Part 9: Terminal location
(3GPP TS 29.199-09 version 6.5.0 Release 6)

Reference

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Foreword

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The present document may refer to technical specifications or reports using their 3GPP identities, UMTS identities or GSM identities. These should be interpreted as being references to the corresponding ETSI deliverables.

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Contents

Foreword

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

3GPP acknowledges the contribution of the Parlay X Web Services specifications from The Parlay Group. The Parlay Group is pleased to see 3GPP acknowledge and publish the present document, and the Parlay Group looks forward to working with the 3GPP community to improve future versions of the present document.

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

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x   the first digit:

1   presented to TSG for information;

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y   the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

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Introduction

The present document is part 9 of a multi-part deliverable covering the 3rd Generation Partnership Project; Technical Specification Group Core Network and Terminals; Open Service Access (OSA); Parlay X Web Services, as identified below:

Part 1:   "Overview and common data definitions";
Part 2:   "Third party call";
Part 3:   "Call Notification";
Part 4:   "Short Messaging";
Part 5:   "Multimedia Messaging Service (MMS)";
Part 6:   "Payment";
Part 7:   "Account management";
Part 8:   "Terminal Status";
Part 9:   "Terminal location";
Part 10:   "Call handling";
Part 11:   "Audio call";
Part 12:   "Multimedia conference";
Part 13:   "Address list management";
Part 14:   "Presence".

1 Scope

The present document is Part 9 of the Stage 3 Parlay X Web Services specification for Open Service Access (OSA).

The OSA specifications define an architecture that enables application developers to make use of network functionality through an open standardized interface, i.e. the OSA APIs. The concepts and the functional architecture for the OSA are contained in 3GPP TS 23.198 [3]. The requirements for OSA are contained in 3GPP TS 22.127 [2].

The present document specifies the Terminal Location Web Service aspects of the interface. All aspects of the Terminal Location Web Service are defined here, these being:

- Name spaces.
- Sequence diagrams.
- Data definitions.
- Interface specification plus detailed method descriptions.
- Fault definitions.
- Service policies.
- WSDL Description of the interfaces.

The present document has been defined jointly between 3GPP TSG CN WG5, ETSI TISPAN and The Parlay Group.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- 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 TR 21.905: "Vocabulary for 3GPP Specifications".

[2]   3GPP TS 22.127: "Service Requirement for the Open Services Access (OSA); Stage 1".

[3]   3GPP TS 23.198: "Open Service Access (OSA); Stage 2".

[4]   3GPP TS 22.101: "Service aspects; Service principles".

[5]   W3C Recommendation (2 May 2001): "XML Schema Part 2: Datatypes".

NOTE: Available at http://www.w3.org/TR/2001/REC-xmlschema-2-20010502/.

[6]   3GPP TS 29.199-1: "Open Service Access (OSA); Parlay X web services; Part 1: Common".

[7]   ISO 6709: "Standard representation of latitude, longitude and altitude for geographic point locations".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TS 29.199-1 [6] apply.

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TS 29.199-1 [6] apply.

4 Detailed service description

Terminal Location provides access to the location of a terminal through:

- Request for the location of a terminal.

- Request for the location of a group of terminals.

- Notification of a change in the location of a terminal.

- Notification of terminal location on a periodic basis.

- Location is expressed through a latitude, longitude, altitude and accuracy.

When a request for a group of terminals is made, the response may contain a full or partial set of results. This allows the service to provide results based on a number of criteria including number of terminals for which the request is made and amount of time required to retrieve the information. This allows the requester to initiate additional requests for those terminals for which information was not provided.

5 Namespaces

The Terminal Location interface uses the namespace:

http://www.csapi.org/wsdl/parlayx/terminal_location/v2_3

The TerminalLocationNotificationManager interface uses the namespace:

http://www.csapi.org/wsdl/parlayx/terminal_location/notification_manager/v2_4

The TerminalLocationNotification interface uses the namespace:

http://www.csapi.org/wsdl/parlayx/terminal_location/notification/v2_2

The data types are defined in the namespace:

http://www.csapi.org/schema/parlayx/terminal_location/v2_2

The 'xsd' namespace is used in the present document to refer to the XML Schema data types defined in XML Schema [5]. The use of the name 'xsd' is not semantically significant.

6 Sequence diagrams

6.1 Terminal location query

Pattern: Request / Response.

For an application to determine the location of a terminal device, it provides a terminal device address and desired accuracy, and receives the location for the device requested.
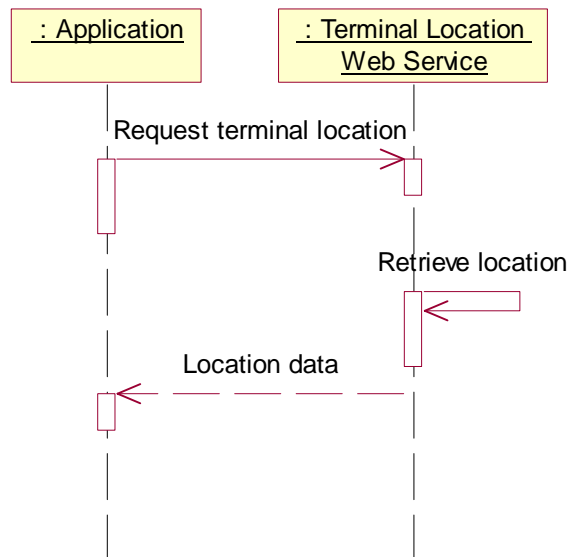
Figure 1

6.2 Terminal location group query

Pattern: Request / Response.

When an application requires the locations of a set of terminal devices, it may provide an array of terminal device addresses, including network managed group addresses, and receive the location data for the set of devices requested.
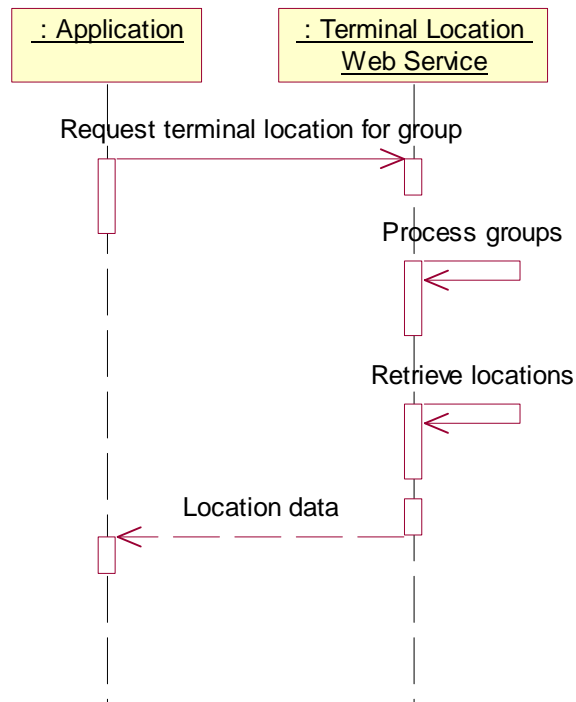
Figure 2

6.3 Terminal location notification

Pattern: Application Correlated Multiple Notification.

An application can be notified of a terminal device entering or leaving a geographical area. When a matching event occurs; a notification message will be sent to the application.
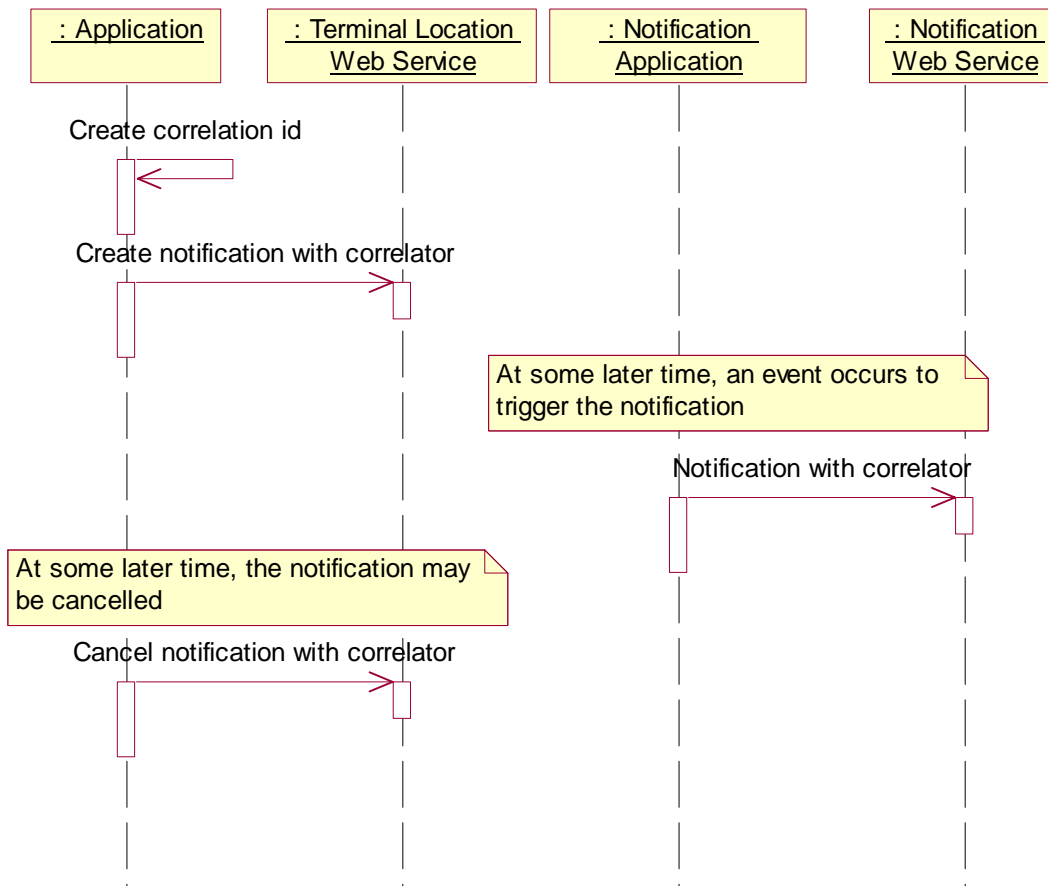
Figure 3

6.4 Terminal location notification with check immediate

In some applications, the terminal location notification will be used to watch for a specific location change. An example is a 'call when present' service, where the terminal location is checked and determined to be outside the target area, and a notification is set up to notify the application when the terminal enters the target area. Between the time of the original location determination and the time the notification is set up, the terminal could move into the target area - thus the notification on entry into the target area would not be sent.

Using the check immediate flag, after the notification is established, the terminal location will be determined, and if the terminal is in the target area, then a notification will be sent immediately. The following sequence diagram shows this scenario.
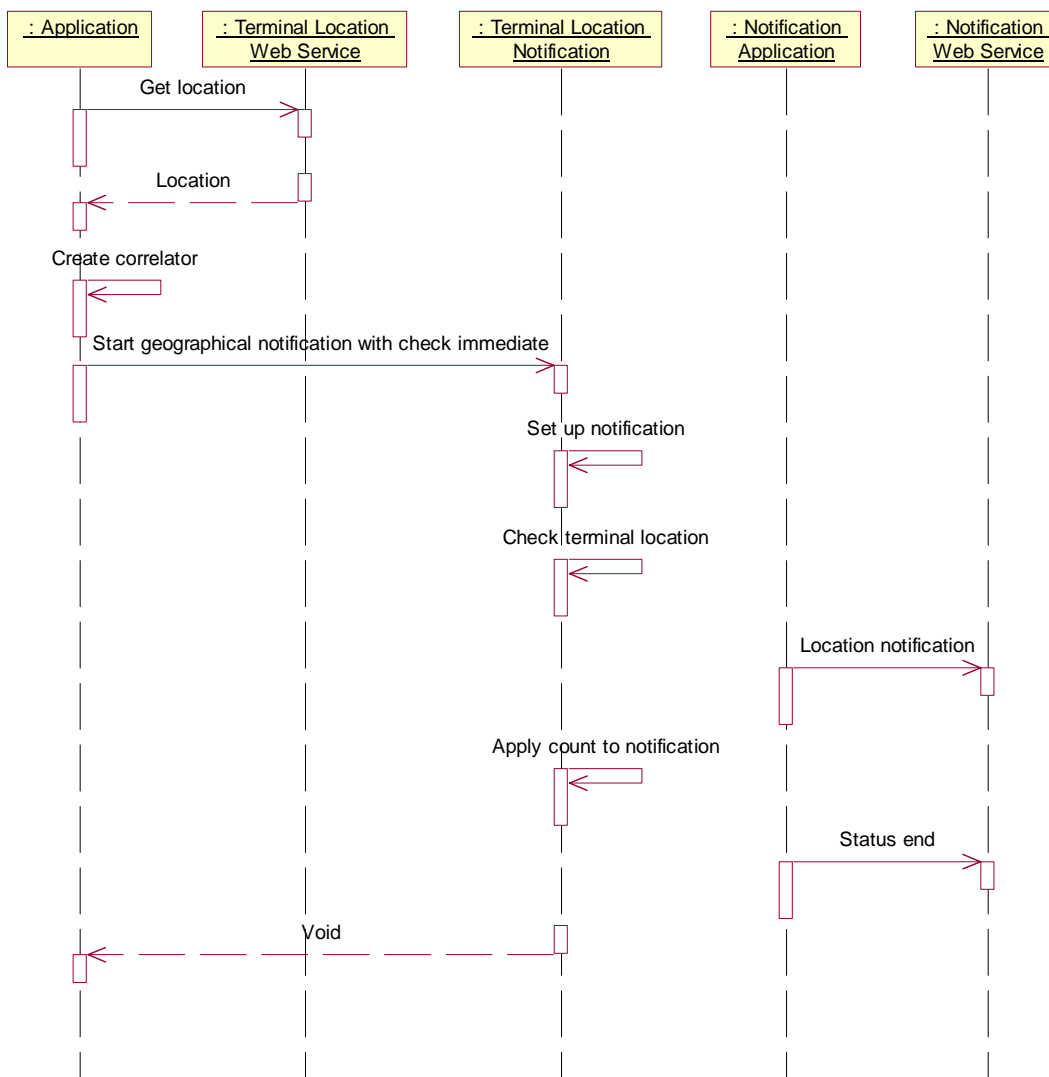
Figure 4

This sequence shows:

- The Enterprise Application checks the location of a terminal, and receives its location (in this scenario determining that the terminal is outside the target area).

- The Enterprise Application generates a correlator, and starts a notification with criteria defined to notify the Enterprise Web Service when the terminal enters the target area and the check immediate flag set to true.

- Sets up the notification to monitor terminal location.

- Check the current location of the terminal, and determine if the terminal lies inside the target area.

- In this case, the terminal is in the target area, and a notification is delivered to the Enterprise Web Service.

- The count of notifications is incremented and compared to the notification count limit.

- In this case, a single notification was requested, and the end notification message is sent.

- The startGeographicalNotification operation completes.

This scenario includes the full set of interactions in one sequence, which also shows that the notifications can be received concurrent with the creation of the notification.

6.5 Terminal location periodic notification

Pattern: Application Correlated Multiple Notification.

An application can be notified of a terminal device location on a periodic basis. At each interval, a notification message will be sent to the application.
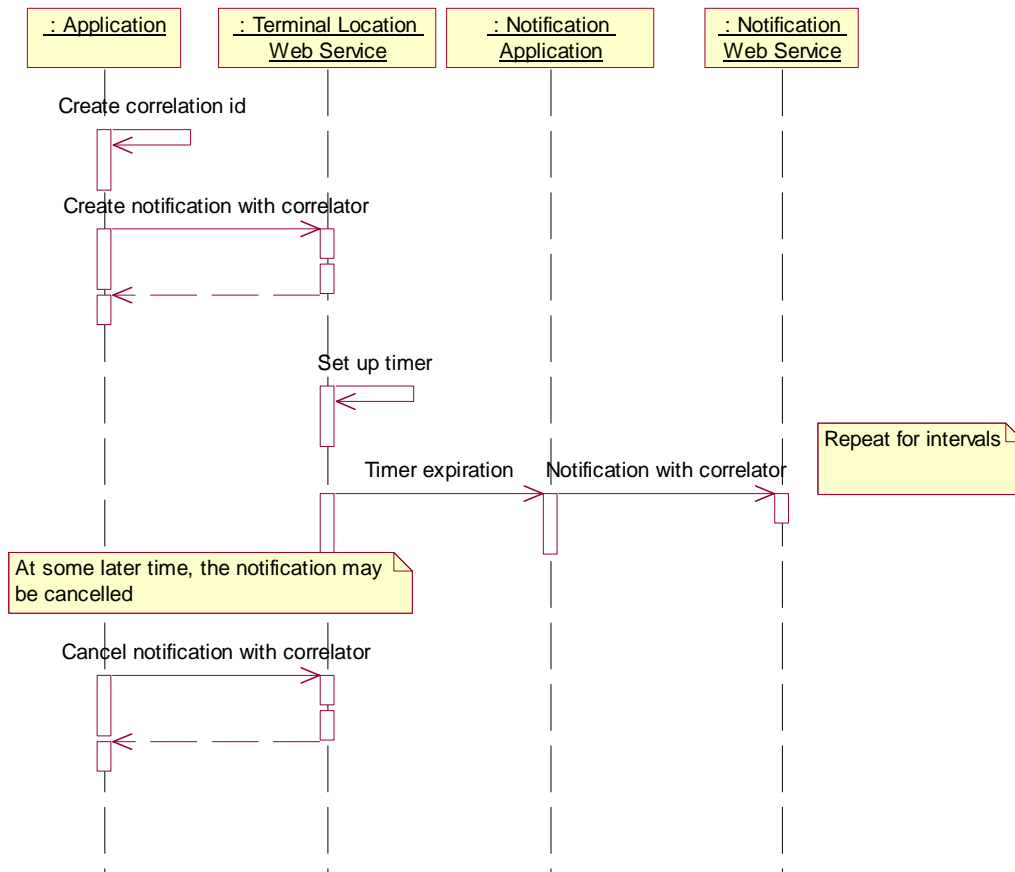
Figure 5

7   XML Schema data type definition

7.1   Latitude and Longitude values

Latitude and longitude values used in the present document follow the conventions of the ISO 6709 [7] specification, as it applies to latitudes and longitudes specified using decimal degrees.

Latitude values are expressed as floating point numbers in the range -90.0000 to +90.0000, using decimal degrees (as opposed to minutes and seconds). Positive values indicate locations north of and on the equator. Negative values indicate locations south of the equator.

Longitude values are expressed as floating point numbers in the range -180.0000 to +180.0000, using decimal degrees (as opposed to minutes and seconds). Positive values indicate locations east of and on the prime meridian (Greenwich). Negative values indicate locations west of the prime meridian up to the 180th meridian.

7.2   Accuracy values

Two accuracy values are used in some of the operations. These values express the desire of the application for the location information to be provided by the Web Service. The choice of values may influence the price that the Service Provider charges.

The 'requested accuracy' expresses the range in which the application wishes to receive location information. This may influence the choice of location technology to use (for instance, cell sector location may be suitable for requests specifying 1 000 meters, but GPS technology may be required for requests below 100 meters).

The 'acceptable accuracy' expresses the range that the application considers useful - if the location cannot be determined within this range, then the application would prefer not to receive the information. For instance, a taxi tracking service to determine the closest taxi to a person may not be useful if the accuracy cannot be provided within 1 000 meters to provide prompt service. This will also reduce customer satisfaction issues, since results that are not useful can be handled appropriately for billing (e.g. Service Provider may choose not to bill for these).

In triggered notifications, a tracking accuracy is defined. This accuracy refers not to the accuracy for the area being checked against, but rather for the accuracy of the technology used to track the terminal. For instance, a fine grained tracking accuracy would be suitable for tracking the terminal entering a specific location, like a person arriving at a destination building. A coarse grained tracking accuracy would be appropriate for determining when a person has arrived at a city after a plane trip or a truck nearing the vicinity of a warehouse.

The "maximum_age" expresses the maximum age that the application considers useful. This can be used by the service provider to supply cached location information rather than always do a direct network location request.

The "response time" expresses the expected response time from an application point of view. If the network is unable to respond within the desired time frame the application would prefer not to have the information as it may no longer be useful.

The "tolerance" expresses the priority of response time versus accuracy. If the application is delay tolerant the network is expected to return a location with the requested accuracy even if this means not complying with the requested response time. The application can also indicate that it is more important that the location information is returned within the requested time even if this implies that the requested accuracy can not be fulfilled. An indication of "no delay" which implies that the application expects the service provider to return any current location estimate immediately.

7.3   EnteringLeavingCriteria enumeration

Indicator for whether the notification is related to entering an area or leaving an area.

Enumeration	Description
Entering	Terminal is entering an area
Leaving	Terminal is leaving an area

7.4 LocationInfo structure

Location information represented as a coordinate.

Name	Type	Optional	Description
Latitude	xsd:float	No	Location latitude
Longitude	xsd:float	No	Location longitude
Altitude	xsd:float	Yes	Location altitude
Accuracy	xsd:int	No	Accuracy of location provided in meters
Timestamp	xsd:dateTime	No	Date and time that location was collected

7.5 RetrievalStatus enumeration

Enumeration of the location items that are related to an individual retrieval in a set.

Enumeration	Description
Retrieved	Location retrieved, with result in CurrentLocation element.
NotRetrieved	Location not retrieved, CurrentLocation is not provided (does not indicate an error, no attempt may have been made).
Error	Error retrieving location.

7.6 LocationData structure

Data structure containing device address, retrieval status and location information. As this can be related to a query of a group of terminal devices, the ReportStatus element is used to indicate whether the information for the device was retrieved or not, or if an error occurred.

Name	Type	Optional	Description
Address	xsd:anyURI	No	Address of the terminal device to which the location information applies
ReportStatus	RetrievalStatus	No	Status of retrieval for this terminal device address
CurrentLocation	LocationInfo	Yes	Location of terminal. It is only provided if ReportStatus=Retrieved.
ErrorInformation	common:ServiceError	Yes	If ReportStatus=Error, this is the reason for the error. Error due to privacy verification will be expressed as POL0002 in the ServiceError.

7.7 DelayTolerance enumeration

Enumeration of the delay tolerance items that forms part of the location request.

Enumeration	Description
NoDelay	The server should immediately return any location estimate that it currently has. If no estimate is available, the server shall return the failure indication and may optionally initiate procedures to obtain a location estimate (e.g. to be available for a later request).
LowDelay	Fulfilment of the response time requirement takes precedence over fulfilment of the accuracy requirement. The server shall return any current location estimate with minimum delay. The server shall attempt to fulfil any accuracy requirement, but in doing so shall not add any additional delay (i.e. a quick response with lower accuracy is more desirable than waiting for a more accurate response).
DelayTolerant	Fulfilment of the accuracy requirement takes precedence over fulfilment of the response time requirement. If necessary, the server should delay providing a response until the accuracy requirement of the requesting application is met. The server shall obtain a current location with regard to fulfilling the accuracy requirement.

8 Web service interface definition

8.1 Interface: TerminalLocation

Request the location for a terminal.

8.1.1 Operation: GetLocation

This operation is intended to retrieve the location for a single terminal. The accuracy requested is the desired accuracy for the response. The acceptable accuracy is the limit acceptable to the requester. If the accuracy requested cannot be supported, a PolicyException (POL0230) will be returned to the application. If the accuracy of the location is not within the acceptable accuracy limit, then the location will not be returned, instead a ServiceException (SVC0200) will be returned. The URI provided is for a single terminal, not a group URI. If a group URI is provided, a PolicyException will be returned to the application.

If tolerance is indicated this affects the priority of accuracy, response time and maximum estimate age.

8.1.1.1 Input message: GetLocationRequest

Part name	Part type	Optional	Description
Address	xsd:anyURI	No	Address of the terminal device for which the location information is requested
RequestedAccuracy	xsd:int	No	Accuracy of location information requested
AcceptableAccuracy	xsd:int	No	Accuracy that is acceptable for a response
MaximumAge	common:TimeMetric	Yes	Maximum acceptable age, in seconds, of the location information that is returned
ResponseTime	common:TimeMetric	Yes	Indicates the maximum time that the application can accept to wait for a response
Tolerance	DelayTolerance	No	Indicates the priority of response time versus accuracy

8.1.1.2 Output message: GetLocationResponse

Part name	Part type	Optional	Description
Result	LocationInfo	No	Location of the terminal for which location information was requested

8.1.1.3 Referenced faults

ServiceException from 3GPP TS 29.199-1 [6]:

- SVC0001: Service error.

- SVC0002: Invalid input value.

- SVC0200: Accuracy out of limit.

PolicyException from 3GPP TS 29.199-1 [6]:

- POL0001: Policy error.

- POL0002: Privacy error.

- POL0006: Groups not allowed.

- POL0230: Requested accuracy not supported.

8.1.2 Operation: GetTerminalDistance

This operation is intended to determine the distance of a terminal from a location. The URI provided is for a single terminal, not a group URI. If a group URI is provided, a PolicyException will be returned to the application.

8.1.2.1 Input message: GetTerminalDistanceRequest

Part name	Part type	Optional	Description
Address	xsd:anyURI	No	Address of terminal to check
Latitude	xsd:float	No	Latitude of the location to measure from
Longitude	xsd:float	No	Longitude of the location to measure from

8.1.2.2 Output message: GetTerminalDistanceResponse

Part name	Part type	Optional	Description
Result	xsd:int	No	Distance from terminal to the location specified in meters

8.1.2.3 Referenced faults

ServiceException from 3GPP TS 29.199-1 [6]:

- SVC0001: Service error.

- SVC0002: Invalid input value.

PolicyException from 3GPP TS 29.199-1 [6]:

- POL0001: Policy error.

- POL0002: Privacy error.

- POL0006: Groups not allowed.

8.1.3 Operation: GetLocationForGroup

The getLocationForGroup operation initiates a retrieval activity, where one or more terminals, or groups of terminals, may have their locations determined. The accuracy requested is the desired accuracy for the response. If the accuracy requested is not supported, a PolicyException (POL0230) will be returned to the application. If the location retrieved is not within the acceptable accuracy limit, then the location data will contain a ServiceError (SVC0200).

If tolerance is indicated this affects the priority of accuracy, response time and maximum estimate age.

The Web Service may return a result set that does not include complete information, allowing the Web Service implementation to choose to deliver a partial set of results to accommodate other conditions, such as avoiding timeouts. In this case, the addresses for which no attempt was made to provide data will be marked NotRetrieved in the result for each address for which a location retrieved was not attempted.

8.1.3.1 Input message: GetLocationForGroupRequest

Part name	Part type	Optional	Description
Addresses	xsd:anyURI [1..unbounded]	No	List of URIs to get location for, including group URIs
RequestedAccuracy	xsd:int	No	Accuracy of location requested in meters
AcceptableAccuracy	xsd:int	No	Accuracy that is acceptable for a response in meters
MaximumAge	common:TimeMetric	Yes	Maximum acceptable age, in seconds, of the location information that is returned
ResponseTime	common:TimeMetric	Yes	Indicates the maximum time that the application can accept to wait for a response
Tolerance	DelayTolerance	No	Indicates the priority of response time versus accuracy

8.1.3.2 Output message: GetLocationForGroupResponse

Part name	Part type	Optional	Description
Result	LocationData [1..unbounded]	No	Set of results for the request

8.1.3.3 Referenced faults

ServiceException from 3GPP TS 29.199-1 [6]:

- SVC0001: Service error.

- SVC0002: Invalid input value.

- SVC0004: No valid addresses.

- SVC0006: Invalid group.

PolicyException from 3GPP TS 29.199-1 [6]:

- POL0001: Policy error.

- POL0003: Too many addresses.

- POL0006: Groups not allowed.

- POL0007: Nested groups not allowed.

- POL0230: Requested accuracy not supported.

8.2 Interface: TerminalLocationNotificationManager

Set up notifications for terminal location events using geographical based definitions.

8.2.1 Operation: StartGeographicalNotification

Notifications of location changes are made available to applications. The number and duration of notifications may be requested as part of the setup of the notification or may be governed by service policies, or a combination of the two.

If CheckImmediate is set to true, then the notification will be set up, and then the current value of the terminal location will be checked. If the terminal location is within the radius provided and the criteria is Entering or is outside the radius and the criteria is Leaving, a notification will be sent to the application. This notification will count against the count requested. This addresses the case where the location of the device changes during the time the notification is being set up, which may be appropriate in some applications.

The correlator provided in the reference must be unique for this Web Service at the time the notification is initiated, otherwise a ServiceException (SVC0005) will be returned to the application.

If the frequency requested is more often than allowed by the service policy, then the value in the service policy will be used. If the duration requested exceeds the time allowed in the service policy, then the value in the service policy will be used. If the notification period (duration) ends before all of the notifications (count) have been delivered, then the notification terminates. In all cases, when the notifications have run their course (by duration or count), an end of notifications message will be provided to the application.

Service policies may govern what count values can be requested, including maximum number of notifications allowed and whether unlimited notifications can be requested (i.e. either by not specifying the optional Count message part or by specifying it with a value of zero). If the count value requested is not in policy, a PolicyException (POL0004 or POL0005 as appropriate) will be returned.

The criteria will be met when the terminal enters the area defined as the circle of the radius provided around the point provided (latitude, longitude). The tracking accuracy provided will determine how fine grained the determination of where the terminal is at is. A tracking accuracy with a high value (coarse grained tracking) may result in more or less notifications (false notifications or missed notifications) than actual entries and exits from the area defined.

Service policies govern what values can be provided for tracking accuracy, including a minimum number of meters for tracking accuracy that can be requested. If the value provided is not within policy, a PolicyException (POL0230) will be returned.

8.2.1.1 Input message: StartGeographicalNotificationRequest

Part name	Part type	Optional	Description
Reference	common:SimpleReference	No	Notification endpoint definition
Addresses	xsd:anyURI [1..unbounded]	No	Addresses of terminals to monitor
Latitude	xsd:float	No	Latitude of center point
Longitude	xsd:float	No	Longitude of center point
Radius	xsd:float	No	Radius of circle around center point in meters
TrackingAccuracy	xsd:float	No	Number of meters of acceptable error in tracking distance
Criteria	EnteringLeavingCriteria	No	Indicates whether the notification should occur when the terminal enters or leaves the target area
CheckImmediate	xsd:boolean	No	Check location immediately after establishing notification
Frequency	common:TimeMetric	No	Maximum frequency of notifications (can also be considered minimum time between notifications)
Duration	common:TimeMetric	Yes	Length of time notifications occur for, do not specify to use default notification time defined by service policy
Count	xsd:int	Yes	Maximum number of notifications. For no maximum, either do not specify this part or specify a value of zero.

8.2.1.2 Output message: StartGeographicalNotificationResponse

Part name	Part type	Optional	Description
None			

8.2.1.3 Referenced faults

ServiceException from 3GPP TS 29.199-1 [6]:

- SVC0001: Service error.

- SVC0002: Invalid input value.

- SVC0004: No valid addresses.

- SVC0005: Duplicate correlator.

- SVC0006: Invalid group.

PolicyException from 3GPP TS 29.199-1 [6]:

- POL0001: Policy error.

- POL0003: Too many addresses.

- POL0004: Unlimited notifications not supported.

- POL0005: Too many notifications requested.

- POL0006: Groups not allowed.

- POL0007: Nested groups not allowed.

- POL0009: Invalid frequency requested.

- POL0230: Requested accuracy not available.

- POL0231: Geographic notification not available.

8.2.2 Operation: StartPeriodicNotification

Periodic notifications provide location information for a set of terminals at an application defined interval. The accuracy requested is the desired accuracy for the response. If the accuracy requested is not supported, a PolicyException (POL0230) will be returned to the application.

8.2.2.1 Input message: StartPeriodicNotificationRequest

Part name	Part type	Optional	Description
Reference	common:SimpleReference	No	Notification endpoint definition
Addresses	xsd:anyURI [1..unbounded]	No	Addresses of terminals to monitor
RequestedAccuracy	xsd:int	No	Accuracy of location requested in meters
Frequency	common:TimeMetric	No	Maximum frequency of notifications (can also be considered minimum time between notifications)
Duration	common:TimeMetric	Yes	Length of time notifications occur for, do not specify to use default notification time defined by service policy

8.2.2.2 Output message: StartPeriodicNotificationResponse

Part name	Part type	Optional	Description
None			

8.2.2.3 Referenced faults

ServiceException from 3GPP TS 29.199-1 [6]:

- SVC0001: Service error.

- SVC0002: Invalid input value.

- SVC0004: No valid addresses.

- SVC0005: Duplicate correlator.

- SVC0006: Invalid group.

PolicyException from 3GPP TS 29.199-1 [6]:

- POL0001: Policy error.

- POL0003: Too many addresses.

- POL0006: Groups not allowed.

- POL0007: Nested groups not allowed.

- POL0009: Invalid frequency requested.

- POL0230: Requested accuracy not available.

- POL0232: Periodic notification not available.

8.2.3   Operation: EndNotification

The application may end a notification (either type) using this operation.

Until this operation returns, notifications may continue to be received by the application.

An end of notification (endNotification) message will not be delivered to the application for a notification ended using this operation.

8.2.3.1   Input message: EndNotificationRequest

Part name	Part type	Optional	Description
Correlator	xsd:string	No	Correlator of request to end

8.2.3.2   Output message: EndNotificationResponse

Part name	Part type	Optional	Description
None			

8.2.3.3   Referenced faults

ServiceException from 3GPP TS 29.199-1 [6]:

- SVC0001: Service error.

- SVC0002: Invalid input value.

PolicyException from 3GPP TS 29.199-1 [6]:

- POL0001: Policy error.

8.3 Interface: TerminalLocationNotification

Notification interface to which notifications are delivered.

8.3.1 Operation: LocationNotification

When the location of a monitored device changes a notification is delivered to the application with the new location information. If a group identifier was used, the terminal device URI is provided, not the group URI.

8.3.1.1 Input message: LocationNotificationRequest

Part name	Part type	Optional	Description
Correlator	xsd:string	No	Correlator provided in request to set up this notification
Data	LocationData [1..unbounded]	No	Location information for terminal
Criteria	EnteringLeavingCriteria	Yes	Indicates whether the notification was caused by the terminal entering or leaving the target area. (This part is provided for geographical notifications, not for periodic notifications)

8.3.1.2 Output message: LocationNotificationResponse

Part name	Part type	Optional	Description
None			

8.3.1.3 Referenced faults

None.

8.3.2 Operation: LocationError

The location error message is sent to the application to indicate that the notification for a terminal, or for the whole notification, is being cancelled by the Web Service.

8.3.2.1 Input message: LocationErrorRequest

Part name	Part type	Optional	Description
Correlator	xsd:string	No	Correlator provided in request to set up this notification.
Address	xsd:anyURI	Yes	Address of terminal if the error applies to an individual terminal, or not specified if it applies to the whole notification.
Reason	common:ServiceError	No	Reason notification is being discontinued.

8.3.2.2 Output message: LocationErrorResponse

Part name	Part type	Optional	Description
None			

8.3.2.3 Referenced faults

None.

8.3.3 Operation: LocationEnd

The notifications have completed for this correlator. This message will be delivered when the duration or count for notifications have been completed. This message will not be delivered in the case of an error ending the notifications or deliberate ending of the notifications (using endNotification operation).

8.3.3.1 Input message: LocationEndRequest

Part name	Part type	Optional	Description
Correlator	xsd:string	No	Correlator provided in request to set up this notification.

8.3.3.2 Output message: LocationEndResponse

Part name	Part type	Optional	Description
None			

8.3.3.3 Referenced faults

None.

9 Fault definitions

New fault definitions for this service.

9.1 Fault: ServiceException

9.1.1 SVC0200: Accuracy out of limit.

Name	Description
Message Id	SVC0200
Text	Accuracy of location is not within acceptable limit.
Variables	None

9.2 Fault: PolicyException

9.2.1 POL0230: Requested accuracy not supported.

Name	Description
Message Id	POL0230
Text	Requested accuracy is not supported.
Variables	None

9.2.2 POL0231: Geographic notification not available

Name	Description
Message Id	POL0231
Text	Geographic notification is not available
Variables	None

9.2.3 POL0232: Periodic notification not available

Name	Description
Message Id	POL0232
Text	Periodic notification is not available
Variables	None

10   Service policies

Name	Type	Description
MinimumAccuracy	xsd:int	Minimum value for requested accuracy
MinimumAcceptableAccuracy	xsd:int	Minimum value for acceptable accuracy
MinimumTrackingAccuracy	xsd:int	Minimum value for tracking accuracy
GeographicalNotificationAvailable	xsd:boolean	Can notifications be set on a geography
PeriodicNotificationAvailable	xsd:boolean	Can a periodic notification be set up
AltitudeAlwaysAvailable	xsd:boolean	Is altitude available for all location responses
AltitudeSometimesAvailable	xsd:boolean	Is altitude available for some or all location responses (if AltitudeAlwaysAvailable is true, this is also true)
MaximumNotificationAddresses	xsd:int	Maximum number of addresses for which a notification can be set up
MaximumNotificationFrequency	common:TimeMetric	Maximum rate of notification delivery (also can be considered minimum time between notifications)
MaximumNotificationDuration	common:TimeMetric	Maximum amount of time a notification may be set up for
MaximumCount	xsd:int	Maximum number of notifications that may be requested
UnlimitedCountAllowed	xsd:boolean	Allowed to specify unlimited notification count (i.e. either by not specifying the optional Count message part in StartGeographicalNotificationRequest or by specifying a value of zero)
GroupSupport	xsd:boolean	Groups URIs may be used
NestedGroupSupport	xsd:boolean	Are nested groups supported in group definitions

Annex A (normative):
WSDL for terminal location

The document/literal WSDL representation of this interface specification is compliant to 3GPP TS 29.199-1 [6] and is contained in text files (contained in archive 29199-09-650-doclit.zip) which accompanies the present document.

Annex B (informative):
Description of Parlay X Web Services Part 9: Terminal location for 3GPP2 cdma2000 networks

This annex is intended to define the OSA Parlay X Web Services Stage 3 interface definitions and it provides the complete OSA specifications. It is an extension of OSA Parlay X Web Services specifications capabilities to enable operation in cdma2000 systems environment. They are in alignment with 3GPP2 Stage 1 requirements and Stage 2 architecture defined in:

[1]   3GPP2 X.S0011-D: 'cdma2000 Wireless IP Network Standard ", Version 1.1

[2]   3GPP2 S.R0037-0: "IP Network Architecture Model for cdma2000 Spread Spectrum Systems", Version 3.0

[3]   3GPP2 X.S0013-A: "All-IP Core Network Multimedia Domain"

These requirements are expressed as additions to and/or exclusions from the 3GPP Release 6 specification.
The information given here is to be used by developers in 3GPP2 cdma2000 network architecture to interpret the 3GPP OSA specifications.

B.1   General Exceptions

The terms 3GPP and UMTS are not applicable for the cdma2000 family of standards. Nevertheless these terms are used (3GPP TR 21.905) mostly in the broader sense of "3G Wireless System". If not stated otherwise there are no additions or exclusions required.

CAMEL mappings are not applicable for cdma2000 systems.

B.2   Specific Exceptions

B.2.1   Clause 1: Scope

There are no additions or exclusions.

B.2.2   Clause 2: References

There are no additions or exclusions.

B.2.3   Clause 3: Definitions and abbreviations

There are no additions or exclusions.

B.2.4   Clause 4: Detailed service description

There are no additions or exclusions.

B.2.5   Clause 5: Namespaces

There are no additions or exclusions.

B.2.6 Clause 6: Sequence diagrams

There are no additions or exclusions.

B.2.7 Clause 7: XML Schema data type definition

There are no additions or exclusions.

B.2.8 Clause 8: Web Service interface definition

There are no additions or exclusions.

B.2.9 Clause 9: Fault definitions

There are no additions or exclusions.

B.2.10 Clause 10: Service policies

There are no additions or exclusions.

B.2.11 Annex A (normative): WSDL for terminal location

There are no additions or exclusions.

Annex C (informative): Change history

Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	New
Dec 2003	CN_21	NP-030552	--	--	Submitted to CN#22 for Information	1.0.0	
Jan 2004	--	--	--	--	Added The W3C WSDL representation of the APIs specified in the present document is contained in a set of files which accompany the present document: px0326rpcenc.zip px0326rpclit.zip	1.0.1	
Jun 2004	CN_24	NP-040274	--	--	Split into multi-part specification. 29.199-0n, for n=1,2…9. Submitted to CN#24 for Information	1.0.3	
Sep 2004	CN_25	NP-040360	--	--	Draft v200 submitted to TSG CN#25 for Approval.	2.0.0	6.0.0
Dec 2004	CN_26	NP-040487	0001	--	Add PXWS Terminal Location Tracking Accuracy	6.0.0	6.1.0
Jun 2005	CT_28	CP-050221	0002	--	Optionals for Part 9	6.1.0	6.2.0
Dec 2005	CT_30	CP-050574	0003	--	Add missing parameters for quality of position in PXWS Terminal Location	6.2.0	6.3.0
Dec 2005	CT_30	CP-050574	0004	--	Need Address element in LocationData since CurrentLocation element is optional	6.2.0	6.3.0
Mar 2007	CT_35	CP-070045	0008	--	Add OSA Parlay Web Services support for 3GPP2 networks	6.3.0	6.4.0
Mar 2007	--	--	--	--	Editorial: Aligned 5 Namespaces	6.4.0	6.4.1
Jun 2007	CT_36	CP-070345	0011	--	Correction to Common Faults namespace version number	6.4.0	6.5.0

History

Document history		
V6.1.0	December 2004	Publication
V6.2.0	June 2005	Publication
V6.3.0	December 2005	Publication
V6.4.0	March 2007	Publication (Withdrawn)
V6.4.1	March 2007	Publication
V6.5.0	June 2007	Publication