# RESTful bindings for Parlay X Web Services – Terminal Location

Candidate Version 1.1 – 11 Jan 2011

## Open Mobile Alliance

OMA-TS-ParlayREST_TerminalLocation-V1_1-20110111-C

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# 1. Scope

This specification defines a RESTful Terminal Location API using an HTTP protocol binding, based on the similar API defined in [3GPP 29.199-9].

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# 2. References

## 2.1 Normative References


**[3GPP 29.199-9]** 3rd Generation Partnership Project; Technical Specification Group Core Network and Terminals; Open Service Access (OSA); Parlay X Web Services; Part 9: Terminal Location (Release 7); 3GPP TS 29.199-9 URL: http://www.3gpp.org/

**[REST_TS_Common]** "RESTful bindings for Parlay X Web Services – Common", Open Mobile Alliance™, OMA-TS-ParlayREST_Common-V1, URL:http://www.openmobilealliance.org/

**[OMA_REST_TS_Common]** "Common definitions and specifications for OMA REST interfaces", Open Mobile Alliance™, OMA-TS-REST_Common-V1_0, URL: http://www.openmobilealliance.org/

**[RFC2119]** "Key words for use in RFCs to Indicate Requirement Levels", S. Bradner, March 1997, URL:http://www.ietf.org/rfc/rfc2119.txt

**[RFC2616]** "Hypertext Transfer Protocol -- HTTP/1.1", R. Fielding et. al, January 1999, URL:http://www.ietf.org/rfc/rfc2616.txt

**[RFC4627]** "The application/json Media Type for JavaScript Object Notation (JSON)", D. Crockford, July 2006, URL:http://www.ietf.org/rfc/rfc4627.txt

**[SCRRULES]** "SCR Rules and Procedures", Open Mobile Alliance™, OMA-ORG-SCR_Rules_and_Procedures, URL: http://www.openmobilealliance.org/

**[W3C-URLENC]** W3C HTML 2.0 Specification, form-urlencoded Media Type, URL: http://www.w3.org/MarkUp/html-spec/html-spec_8.html#SEC8.2.1

**[XMLSchema1]** W3C Recommendation, XML Schema Part 1: Structures Second Edition, URL: http://www.w3.org/TR/xmlschema-1/

**[XMLSchema2]** W3C Recommendation, XML Schema Part 2: Datatypes Second Edition, URL: http://www.w3.org/TR/xmlschema-2/


## 2.2 Informative References


**[OMADICT]** "Dictionary for OMA Specifications", Version 2.8, Open Mobile Alliance™, OMA-ORG-Dictionary-V2_8, URL:http://www.openmobilealliance.org/

**[REST_WP]** "White Paper on Guidelines for ParlayREST API specifications", Open Mobile Alliance™, OMA-WP-Guidelines-for-ParlayREST-API-specifications, URL:http://www.openmobilealliance.org/


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# 3. Terminology and Conventions

## 3.1 Conventions

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in [RFC2119].

All sections and appendixes, except “Scope” and “Introduction”, are normative, unless they are explicitly indicated to be informative.

## 3.2 Definitions

For the purpose of this TS, all definitions from the OMA Dictionary apply [OMADICT].

## 3.3 Abbreviations

| | |
|---|---|
| **API** | Application Programming Interface |
| **HTTP** | HyperText Transfer Protocol |
| **JSON** | JavaScript Object Notation |
| **MIME** | Multipurpose Internet Mail Extensions |
| **OMA** | Open Mobile Alliance |
| **REST** | REpresentational State Transfer |
| **SCR** | Static Conformance Requirements |
| **URI** | Uniform Resource Identifier |
| **URL** | Uniform Resource Locator |
| **XML** | Extensible Markup Language |

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# 4. Introduction

The ParlayREST Technical Specification for Terminal Location contains the HTTP protocol binding for the Parlay X Terminal Location Web Services specification, using the REST architectural style. The specification provides resource definitions, the HTTP verbs applicable for each of these resources, and the element data structures, as well as support material including flow diagrams and examples using the various supported message body formats (i.e. XML and JSON).

## 4.1 Version 1.0

Version 1.0 of the Terminal Location ParlayREST API specification supports the following operations:

- Obtain the current terminal location
- Obtain the terminal distance from a given location
- Obtain the distance between two terminals
- Manage client-specific subscriptions to periodic notifications
- Manage client-specific subscriptions to area (circle) notifications
- Manage client-specific subscriptions to distance notifications

## 4.2 Version 1.1

Version 1.1 of the Terminal Location ParlayREST API specification is a maintenance release.

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# 5. Terminal Location API definition

This section is organized to support a comprehensive understanding of the TerminalLocation API design. It specifies the definition of all resources, definition of all data structures, and definitions of all operations permitted on the specified resources.

Common data types, naming conventions, fault definitions and namespaces are defined in [OMA_REST_TS_Common] and [REST_TS_Common].

The remainder of this document is structured as follows:

Section 5 starts with a table listing all the resources (and their URL) used by this API, along with the data structure and the supported HTTP verbs (section 5.1). In addition, for each supported resource/verb combination, the table lists the Parlay X equivalent operation, where applicable. What follows are the data structures, divided by root elements and their child elements (section 5.2). A sample of typical use cases is included in section 5.3, described as high level flow diagrams.

The remaining subsections in section 5 contain the detailed specification for each of the resources. Each such subsection defines the resource, the request URI variables that are common for all HTTP commands, the possible HTTP response codes, and the supported HTTP verbs. For each supported HTTP verb, a description of the functionality is provided, along with an example of a request and an example of a response. For each unsupported HTTP verb, the returned HTTP error status is specified, as well as what should be returned in the Allow header.

All examples in section 5 use XML as the format for the message body. JSON examples are provided in Appendix D. Appendix B provides the Static Conformance Requirements (SCR).

For requests and responses that have a body, the following applies: in the requests received, the server SHALL support JSON and XML encoding of the parameters in the body, and MAY support www-form-urlencoded parameters in the body. The Server SHALL return either JSON or XML encoded parameters in the response body, according to the result of the content type negotiation as specified in [OMA_REST_TS_Common]. In notifications to the Client, the server SHALL use either XML or JSON encoding, depending on which format the client has specified in the related subscription.

Note: Throughout this document client and application can be used interchangeably.

## 5.1 Resource Summary

This section summarizes all the resources used by the TerminalLocation API.

The figure below visualizes the resource structure defined by this specification. Note that those nodes in the resource tree which have associated HTTP methods defined in this specification are depicted by solid boxes.

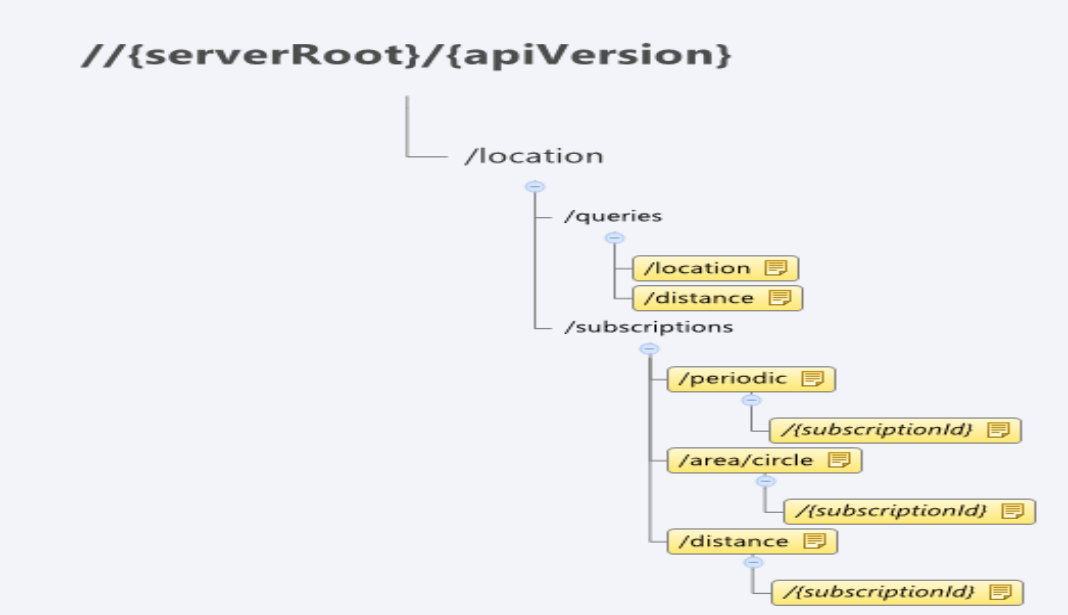


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**Figure 1 Resource structure defined by this specification**

The following table gives a detailed overview of the resources defined in this specification, the data type of their representation and the allowed HTTP methods.

**Purpose: poll terminal location and terminal distance**

| Resource (Purpose) | URL Base URL: http://{serverRoot}/{apiVersion}/location | Data Structures | HTTP verbs | | | |
|---|---|---|---|---|---|---|
| | | | GET | PUT | POST | DELETE |
| Terminal location | /queries/location?address={terminalId}<br><br>or<br><br>/queries/location?address={terminalId1}&address={terminalId2} | TerminalLocationList | return current location of the terminal or multiple terminals | no | no | no |
| Terminal distance | /queries/distance?address={terminalId}&latitude={lat}&longitude={lon}<br>or<br>/queries/distance?address={terminalId1}&address={terminalId2} | TerminalDistance | return current distance from terminal to the specified location or between two terminals | no | no | no |

**Purpose: location subscription**

| Resource (Purpose) | URL Base URL: http://{serverRoot}/{apiVersion}/location | Data Structures | HTTP verbs | | | |
|---|---|---|---|---|---|---|
| | | | GET | PUT | POST | DELETE |
| Periodic location notification subscriptions | /subscriptions/periodic | NotificationSubscriptionList (used for GET)<br>PeriodicNotificationSubscription (used for POST)<br>common:ResourceReference (optional alternative for POST response) | return all subscriptions | no | create new subscription | no |
| Individual periodic location notification subscription | /subscriptions/periodic/{subscriptionId} | PeriodicNotificationSubscription | return one subscription | update subscription | no | delete one subscription |

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| Resource (Purpose) | URL<br>Base URL: http://{serverRoot}/{apiVersion}/location | Data Structures | HTTP verbs | | | |
|---|---|---|---|---|---|---|
| | | | GET | PUT | POST | DELETE |
| Area (circle) notification subscriptions | /subscriptions/area/circle | NotificationSubscriptionList (used for GET)<br>CircleNotificationSubscription (used for POST)<br>common:ResourceReference (optional alternative for POST response) | return all subscriptions | no | create new subscription | no |
| Area (circle) individual notification subscription | /subscriptions/area/circle/{subscriptionId} | CircleNotificationSubscription | return one subscription | update subscription | no | delete one subscription |
| Distance notification subscriptions | /subscriptions/distance | NotificationSubscriptionList (used for GET)<br>DistanceNotificationSubscription (used for POST)<br>common:ResourceReference (optional alternative for POST response) | return all subscriptions | no | create new subscription | no |
| Distance individual notification subscription | /subscriptions/distance/{subscriptionId} | DistanceNotificationSubscription | return one subscription | update subscription | no | delete one subscription |

**Purpose: client notification**

| Resource (Purpose) | URL<br><provided by the client> | Data Structures | HTTP verbs | | | |
|---|---|---|---|---|---|---|
| | | | GET | PUT | POST | DELETE |
| Client notification callback resource | {provided by client} | SubscriptionNotification<br>SubscriptionCancellationNotification | no | no | notification on location changes | no |

## 5.2 Terminal Location Data Structures

The namespace for the Terminal Location data types is:

urn:oma:xml:rest:terminallocation:1

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The 'xsd' namespace is used in the present document to refer to the XML Schema data types defined in XML Schema [XMLSchema1, XMLSchema2]. The 'common' namespace is used in the present document to refer to the data types defined in [REST_TS_Common]. The use of the names 'xsd' and ‘common’ is not semantically significant.

### 5.2.1 Type: TerminalLocation

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

| Element | Type | Optional | Description |
|---|---|---|---|
| address | xsd:anyURI | No | Address of the terminal device to which the location information applies |
| locationRetrievalStatus | common:RetrievalStatus | No | Status of retrieval for this terminal device address |
| currentLocation | LocationInfo | Yes | Location of terminal. It is only provided if locationRetrievalStatus=Retrieved. |
| errorInformation | common:ServiceError | Yes | If locationRetrievalStatus=Error, this is the reason for the error. |

### 5.2.2 Type: TerminalLocationList

A type containing a list of terminal locations.

| Element | Type | Optional | Description |
|---|---|---|---|
| terminalLocation | TerminalLocation [1..unbounded] | No | Collection of the terminal locations |

A root element named terminalLocationList of type TerminalLocationList is allowed in request and/or response bodies.

### 5.2.3 Type: SubscriptionNotification

A type containing the notification subscription.

| Element | Type | Optional | Description |
|---|---|---|---|
| callbackData | xsd:string | Yes | CallbackData if passed by the application in the receiptRequest element during the associated subscription operation.<br>See [REST_TS_Common]. |
| terminalLocation | TerminalLocation [1..unbounded] | No | Collection of the terminal locations |
| enteringLeavingCriteria | EnteringLeavingCriteria | Yes | Indicates whether the notification was caused by the terminal entering or leaving the target area. (This part is provided for geographical notifications) |
| distanceCriteria | DistanceCriteria | Yes | Indicates which distance criteria that caused the notification. (This part is provided for distance notifications) |
| isFinalNotification | xsd:boolean | Yes | Will be set to true if it is a final notification about location change |
| link | common:Link [0..unbounded] | Yes | Link to other resources that are in relationship with the resource |

A root element named subscriptionNotification of type SubscriptionNotification is allowed in request and/or response bodies.

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### 5.2.4 Type: SubscriptionCancellationNotification

A type containing the subscription cancellation notification

| Element | Type | Optional | Description |
|---|---|---|---|
| callbackData | xsd:string | Yes | CallbackData if passed by the application in the receiptRequest element during the associated subscription operation.<br>See [REST_TS_Common]. |
| 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. |
| link | common:Link[0..unbounded] | Yes | Link to other resources that are in relationship with the resource |

A root element named subscriptionCancellationNotification of type SubscriptionCancellationNotification is allowed in request and/or response bodies.

### 5.2.5 Type: TerminalDistance

A type containing information about the distance from a terminal to a location or between two terminals, in addition the accuracy and timestamp of the information is provided.

| Element | Type | Optional | Description |
|---|---|---|---|
| distance | xsd:int | No | Distance from terminal to a location or between two terminals specified in meters |
| accuracy | xsd:int | Yes | Accuracy of the provided distance in meters |
| timestamp | xsd:dateTime | Yes | Date and time that location from which distance is calculated was collected |

A root element named terminalDistance of type TerminalDistance is allowed in request and/or response bodies.

### 5.2.6 Type: LocationInfo

A type containing location information with latitude, longitude and altitude, in addition the accuracy and a timestamp of the information is provided.

| Element | 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 |

A root element named locationInfo of type LocationInfo is allowed in request and/or response bodies.

### 5.2.7 Type: NotificationSubscriptionList

A type containing the different subscriptions.

| Element | Type | Optional | Description |
|---|---|---|---|
| circleNotificationSubscription | CircleNotificationSubscription [0..unbound] | Yes | Collection of CircleNotificationSubscription elements |
| periodicNotificationSubscription | PeriodicNotificationSubscription | Yes | Collection of PeriodicNotificationSubscription |

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| Element | Type | Optional | Description |
|---|---|---|---|
| | [0..unbound] | | elements |
| distanceNotificationSubscription | DistanceNotificationSubscription [0..unbound] | Yes | Collection of DistanceNotificationSubscription elements |

A root element named notificationSubscriptionList of type NotificationSubscriptionList is allowed in request and/or response bodies.

### 5.2.8 Type: CircleNotificationSubscription

A type containing data for notification, when the area is defined as a circle.

| Element | Type | Optional | Description |
|---|---|---|---|
| clientCorrelator | xsd:string | Yes | A correlator that the client MAY use to tag this particular resource representation during a request to create a resource on the server. In case the field is present, the server SHALL not alter its value, and SHALL provide it as part of the representation of this resource. In case the field is not present, the server SHALL NOT generate it. |
| resourceURL | xsd:anyURI | Yes | Self referring URL.SHALL NOT be included in POST requests, MUST be included in responses to any HTTP method that returns an entity body, and in PUT requests. |
| link | common:Link[0..unbounded] | Yes | Link to other resources that are in relationship with the resource |
| callbackReference | common:CallbackReference | No | Notification callback definition |
| requester | xsd:anyURI | Yes | It identifies the entity that is requesting the information.<br>The application invokes this operation on behalf of this entity. However, it does not imply that the application has authenticated the requester.<br>If this part is not present, the requesting entity is the application itself.<br>If this part is present, and the requester is not authorized to retrieve location info, a policy exception will be returned. |
| address | xsd:anyURI [1..unbounded] | No | Addresses of terminals to monitor. Reference to the group could be provided here if supported by implementation |
| 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 |
| enteringLeavingCriteria | 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 |

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| Element | Type | Optional | Description |
|---|---|---|---|
| frequency | xsd:int | No | Maximum frequency (in seconds) of notifications per subscriber (can also be considered minimum time between notifications) |
| duration | xsd:int | Yes | Period of time (in seconds) notifications are provided for. If set to “0” (zero), a default duration time, which is specified by the service policy, will be used. If the parameter is omitted, the notifications will continue until the maximum duration time, which is specified by the service policy, unless the notifications are stopped by deletion of subscription for notifications |
| count | xsd:int | Yes | Maximum number of notifications per individual address. For no maximum, either do not specify this part or specify a value of zero. Default value is 0. |

A root element named circleNotificationSubscription of type CircleNotificationSubscription is allowed in request and/or response bodies.

Note that the clientCorrelator is used for purposes of error recovery as specified in of [REST_TS_Common], and internal client purposes. The server is NOT REQUIRED to use the clientCorrelator value in any form in the creation of the URL of the resource. [REST_TS_Common] provides a recommendation regarding the generation of the value of this field.

## 5.2.9 Type: PeriodicNotificationSubscription

A type containing data for periodic subscription.

| Element | Type | Optional | Description |
|---|---|---|---|
| clientCorrelator | xsd:string | Yes | A correlator that the client MAY use to tag this particular resource representation during a request to create a resource on the server. In case the field is present, the server SHALL not alter its value, and SHALL provide it as part of the representation of this resource. In case the field is not present, the server SHALL NOT generate it. |
| resourceURL | xsd:anyURI | Yes | Self referring URL.SHALL NOT be included in POST requests, MUST be included in responses to any HTTP method that returns an entity body, and in PUT requests. |
| link | common:Link[0..unbounded] | Yes | Link to other resources that are in relationship with the resource |
| callbackReference | common:CallbackReference | No | Notification callback definition |
| requester | xsd:anyURI | Yes | It identifies the entity that is requesting the information.<br>The application invokes this operation on behalf of this entity. However, it does not imply that the application has authenticated the requester.<br>If this part is not present, the requesting entity is the application itself.<br>If this part is present, and the requester is not authorized to retrieve location info, a policy exception will be returned. |
| address | xsd:anyURI [1..unbounded] | No | Addresses of terminals to monitor |

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| Element | Type | Optional | Description |
|---|---|---|---|
| requestedAccuracy | xsd:int | No | Accuracy of the provided distance in meters |
| frequency | xsd:int | No | Maximum frequency (in seconds) of notifications (can also be considered minimum time between notifications) |
| duration | xsd:int | Yes | Period of time (in seconds) notifications are provided for. If set to "0" (zero), a default duration time, which is specified by the service policy, will be used. If the parameter is omitted, the notifications will continue until the maximum duration time, which is specified by the service policy, unless the notifications are stopped by deletion of subscription for notifications |

A root element named periodicNotificationSubscription of type PeriodicNotificationSubscription is allowed in request and/or response bodies.

Note that the clientCorrelator is used for purposes of error recovery as specified in [REST_TS_Common], and internal client purposes. The server is NOT REQUIRED to use the clientCorrelator value in any form in the creation of the URL of the resource. [REST_TS_Common] provides a recommendation regarding the generation of the value of this field.

## 5.2.10 Type: DistanceNotificationSubscription

A type containing data for distance subscription, with reference to other devices.

| Element | Type | Optional | Description |
|---|---|---|---|
| clientCorrelator | xsd:string | Yes | A correlator that the client MAY use to tag this particular resource representation during a request to create a resource on the server. In case the field is present, the server SHALL not alter its value, and SHALL provide it as part of the representation of this resource. In case the field is not present, the server SHALL NOT generate it. |
| resourceURL | xsd:anyURI | Yes | Self referring URL.SHALL NOT be included in POST requests, MUST be included in responses to any HTTP method that returns an entity body, and in PUT requests. |
| link | common:Link [0..unbounded] | Yes | Link to other resources that are in relationship with the resource |
| callbackReference | common:CallbackReference | No | Notification callback definition |
| requester | xsd:anyURI | Yes | It identifies the entity that is requesting the information.<br>The application invokes this operation on behalf of this entity. However, it does not imply that the application has authenticated the requester.<br>If this part is not present, the requesting entity is the application itself.<br>If this part is present, and the requester is not authorized to retrieve location info, a policy exception will be returned. |
| referencesAddress | xsd:anyURI [0..unbounded] | Yes | If specified, indicates address of each device that will be used as reference devices from which the distances towards monitored devices indicated in the Addresses will be monitored. |

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| Element | Type | Optional | Description |
|---|---|---|---|
| monitoredAddress | xsd:anyURI [1..unbounded] | No | Contains addresses of devices to monitor. If the ReferenceAddress is specified, then the distance between each monitored device and reference device(s) will be monitored. If the ReferenceAddress is not present, then the distance between each of the monitored devices will be monitored. Note that in that case there must be at least two addresses specified here. |
| distance | xsd:float | No | Distance between devices that shall be monitored |
| trackingAccuracy | xsd:float | No | Number of meters of acceptable error in tracking distance |
| criteria | DistanceCriteria | No | Indicates whether the notification should occur when the geographical relationship between monitored and referenced devices changes. |
| checkImmediate | xsd:boolean | No | Check location immediately after establishing notification |
| frequency | xsd:int | No | Maximum frequency (in seconds) of notifications per subscriber (can also be considered minimum time between notifications) |
| duration | xsd:int | Yes | Period of time (in seconds) notifications are provided for. If set to “0” (zero), a default duration time, which is specified by the service policy, will be used. If the parameter is omitted, the notifications will continue until the maximum duration time, which is specified by the service policy, unless the notifications are stopped by deletion of subscription for notifications |
| count | xsd:int | Yes | Maximum number of notifications per individual address. For no maximum, either do not specify this part or specify a value of zero. Default value is 0. |

A root element named distanceNotificationSubscription of type DistanceNotificationSubscription is allowed in request and/or response bodies.

Note that the clientCorrelator is used for purposes of error recovery as specified in [REST_TS_Common], and internal client purposes. The server is NOT REQUIRED to use the clientCorrelator value in any form in the creation of the URL of the resource. [REST_TS_Common] provides a recommendation regarding the generation of the value of this field.

## 5.2.11 Enumeration: EnteringLeavingCriteria

An enumeration, defining the direction of a terminal.

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

## 5.2.12 Void

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### 5.2.13 Enumeration: DistanceCriteria

An enumeration, defining the distance criteria between devices.

| Enumeration | Description |
|---|---|
| AllWithinDistance | All monitored devices are within the specified distance |
| AnyWithinDistance | Any of monitored devices gets within the specified distance |
| AllBeyondDistance | All monitored devices are beyond the specified distance |
| AnyBeyondDistance | Any of monitored devices gets beyond the specified distance |

### 5.2.14 Enumeration: DelayTolerance

An enumeration for what delay is acceptable.

| 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. |

### 5.2.15 Values of the Link “rel” attribute

The “rel” attribute of the Link element is a free string set by the server implementation, to indicate a relationship between the current resource and an external resource. The following are possible strings (list is non-exhaustive, and can be extended):

- TerminalLocationList
- TerminalDistance
- LocationInfo
- NotificationPeriodicSubscriptionList
- NotificationCircleSubscriptionList
- NotificationDistanceSubscriptionList
- SubscriptionNotification
- SubscriptionCancellationNotification
- CircleNotificationSubscription
- PeriodicNotificationSubscription
- DistanceNotificationSubscription

These values indicate the kind of resource that the link points to.

## 5.3 Sequence diagrams

### 5.3.1 Location query

This figure below shows a scenario to return location for single terminal or group of terminals.

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The resource:

- To get the location information for a single terminal or a group of terminals, read the resource below with the URL parameters terminal address or addresses

  **http://{serverRoot}/{apiVersion}/location/queries/location**

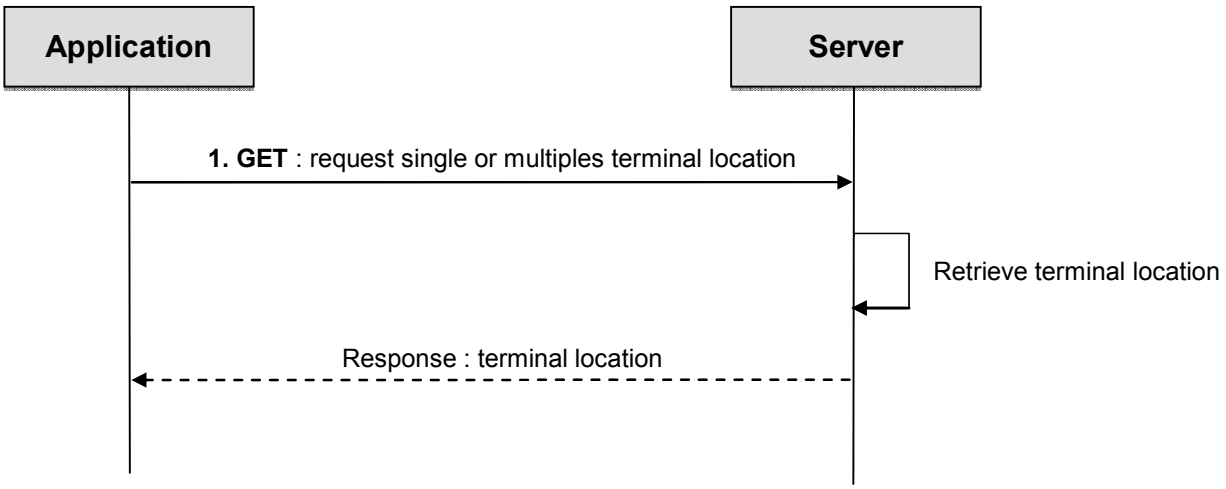


**Figure 2 Location query**

Outline of flow:

1. An application requests single or multiples terminal location with Request URL parameters such as terminal address or addresses (i.e. group) and desired accuracy using **GET** and receives the terminal location information.

## 5.3.2 Distance from location query

This figure below shows a scenario to return the distance of a terminal from a location.

The resource:

To get the distance between a terminal and a geographical location, read the resource below, while passing appropriate query parameters

**http://{serverRoot}/{apiVersion}/location/queries/distance**

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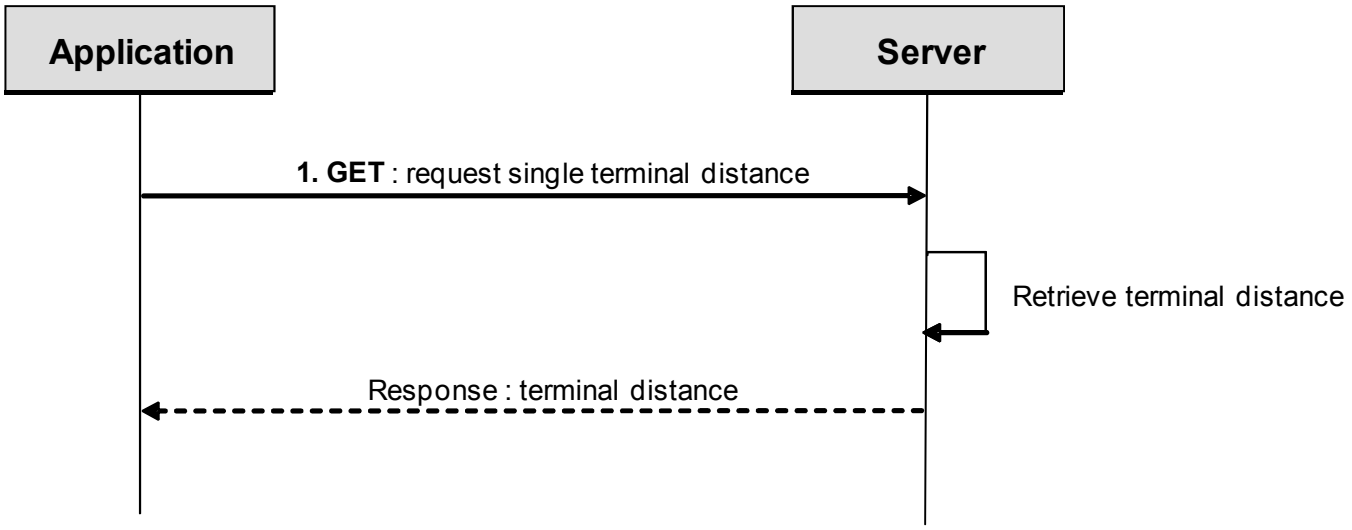


**Figure 3 Distance from location query**

Outline of flow:

1. An application requests the distance between a terminal and a geographical location by using GET with resource URL and request URL parameters such as terminal address and longitude/latitude of the geographical location. It receives the terminal distance information.

### 5.3.3 Distance between two terminals query

This figure below shows a scenario to return the distance between two terminals.

The resource:

- To get the distance between two terminals, read the resource below, while passing appropriate query parameters

  **http://{serverRoot}/{apiVersion}/location/queries/distance**

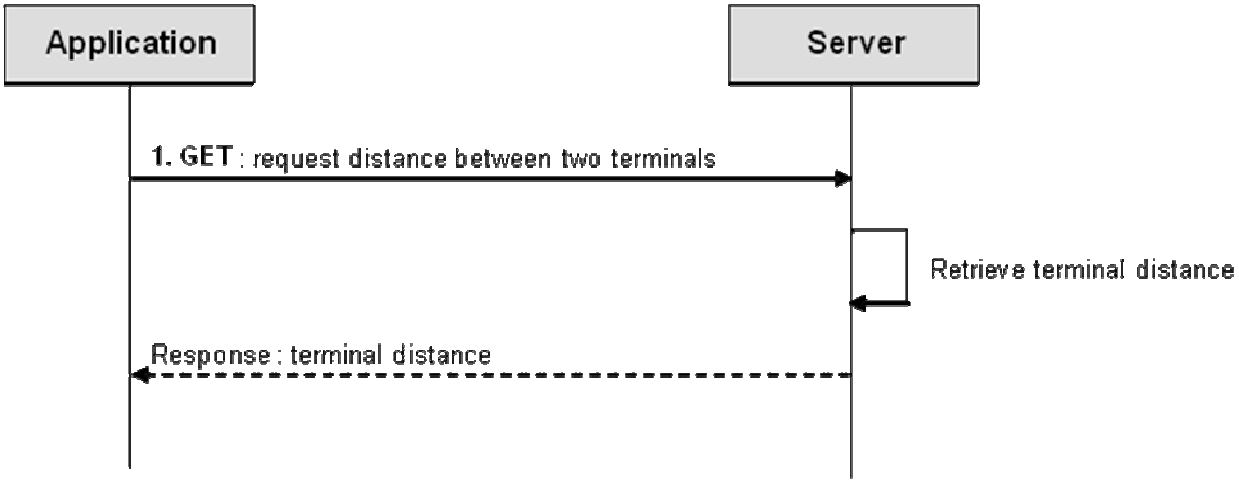


**Figure 4 Distance between two terminals query**

Outline of flow:

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1. An application requests the distance between two terminals by using GET with the resource URL and providing two different terminal addresses as Request URL parameters. It receives the terminal distance information.

## 5.3.4 Periodic location notification

This figure below shows a scenario to control subscriptions for periodic notifications about terminal location for a particular client.

The resource:

- To start subscription to periodic notifications about terminal location for a particular client, create new resource under

  **http://{serverRoot}/{apiVersion}/location/subscriptions/periodic**

- To update or delete an individual subscription for periodic notifications about terminal location for a particular client, use the resource

  **http://{serverRoot}/{apiVersion}/location/subscriptions/periodic/{subscriptionId}**

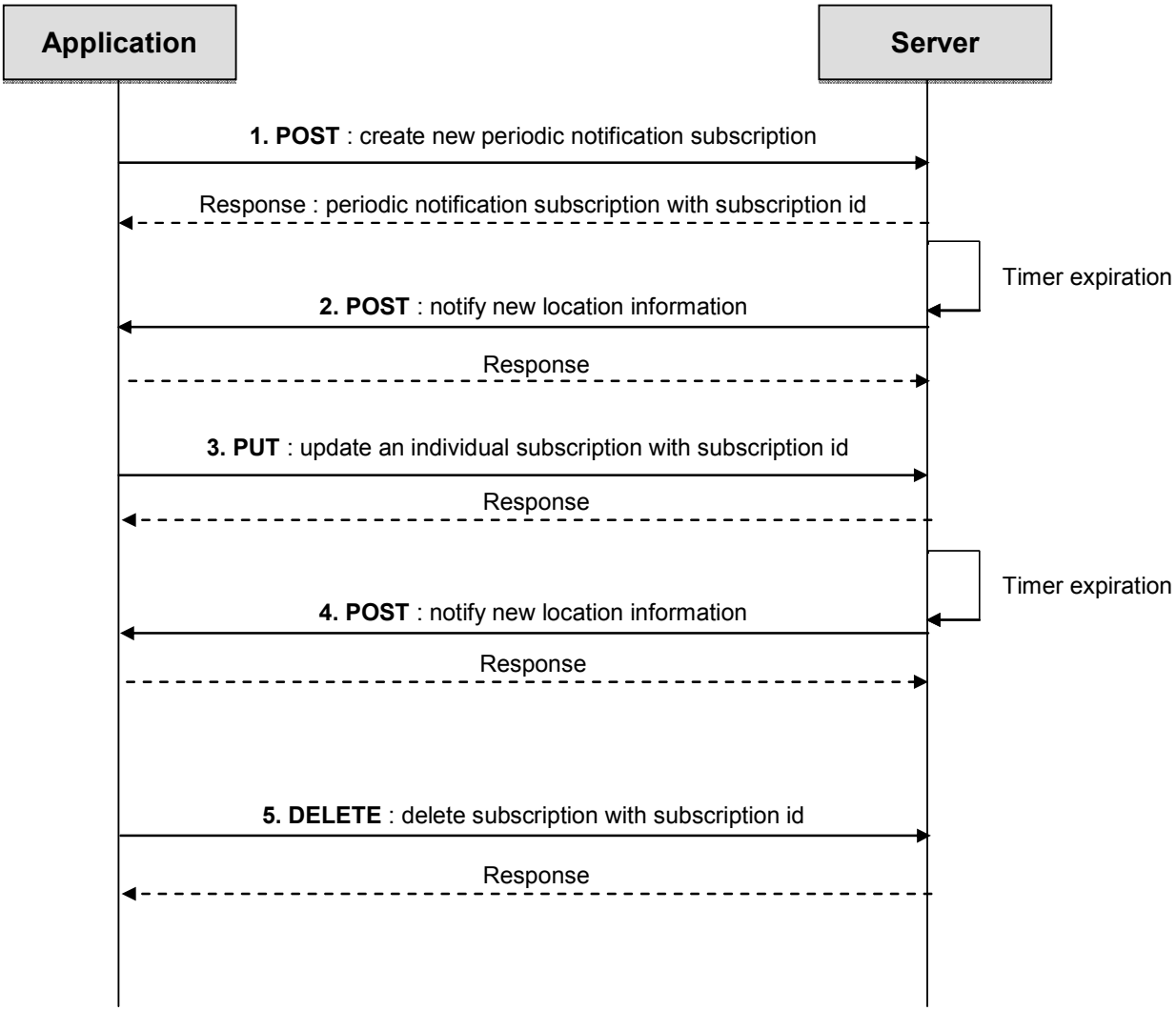


**Figure 5 Periodic location notification**

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Outline of flow:

1. An application creates a new periodic notification subscription for the particular client by using POST and receives the resulting resource URL containing the subscriptionId.
2. When the set up timer expires, the REST service on the server notifies the application of current location information using POST to the application supplied notifyURL. This is repeated each time interval.
3. An application updates an individual subscription for periodic location notification for the particular client by using PUT to resource URL containing the subscriptionId.
4. When the set up timer expires, the REST service on the server notifies the application of current location information using POST to the application supplied notifyURL. This is repeated each time interval.
5. An application deletes a subscription for periodic location notification and stop notifications for a particular client by using DELETE to resource URL containing the subscriptionId.

### 5.3.5 Area (circle) location notification

This figure below shows a scenario to control subscriptions for notification about terminal movement in relation to the geographic area (circle), crossing in and out, for a particular client.

The resource:

- To start subscription to notifications about terminal movements in relation to the geographic area (circle), crossing in and out, for a particular client, create new resource under

  **http://{server root}/{api version}/location/subscriptions/area/circle**

- To update or delete an individual subscription for notifications about terminal movements in relation to the geographic area (circle), crossing in and out, for a particular client, use the resource

  **http://{server root}/{api version}/location/subscriptions/area/circle/{subscriptionId}**

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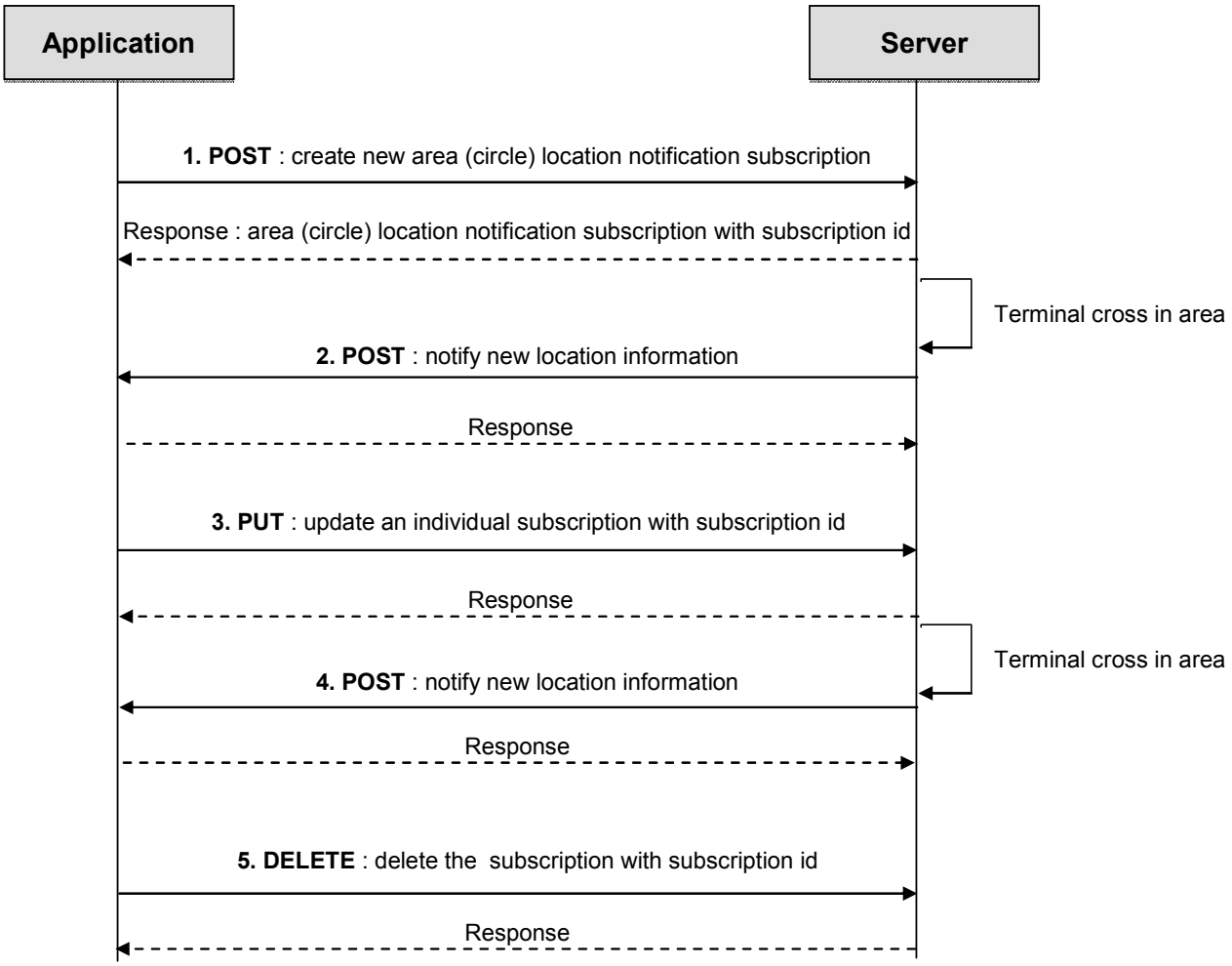


**Figure 6 Area (circle) location notification**

Outline of flow:

1. An application creates a new area (circle) notification subscription for the particular client by using POST and receives the resulting resource URL containing the subscriptionId.
2. When the terminal crosses in or out the specified area (circle) the REST service on the server notifies the application using POST to the application supplied notifyURL.
3. An application updates an individual subscription for area (circle) notification for the particular client by using PUT to resource URL containing the subscriptionId.
4. When the terminal crosses in or out the updated specified area (circle) the REST service on the server notifies the application using POST to the application supplied notifyURL.
5. An application deletes a subscription for area (circle) notification and stop notifications for the particular client by using DELETE to resource URL containing the subscriptionId.

## 5.3.6 Distance location notification

This figure below shows a scenario to control subscriptions for notifications about changes in the geographical relationships between terminals (a client has passed a border by either approaching or leaving another referenced client).

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The resource and operation used

- To start subscription to notifications about changes in the geographical relationships between terminals, create new resource under

  **http://{serverRoot}/{apiVersion}/location/subscriptions/distance**

- To update or delete an individual subscription for notifications about changes in the geographical relationships between terminals for a particular client, use the resource

  **http://{serverRoot}/{apiVersion}/location/subscriptions/distance/{subscriptionId}**

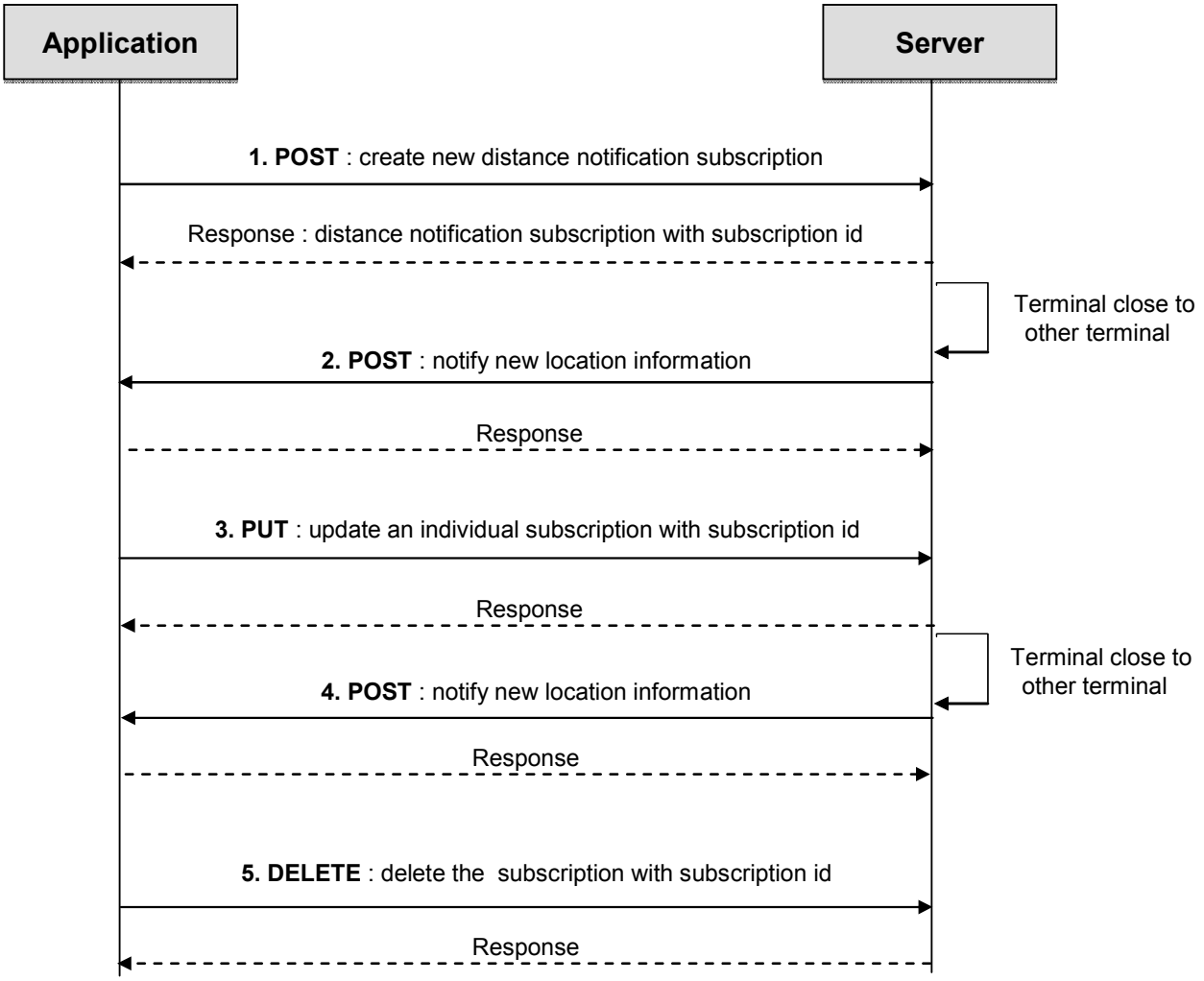


**Figure 7 Distance location notification**

Outline of flow:

1. An application creates a new distance notification subscription for the particular client by using POST and receives the resulting resource URL containing the subscriptionId.
2. When a terminal passes the border by either approaching or leaving the referenced terminal, the REST service on the server notifies the application by using POST to the application supplied notifyURL.
3. An application updates an individual subscription for distance notification for the particular terminal by using PUT to resource URL containing the subscriptionId.

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4. When a terminal passes the border by either approaching or leaving the referenced terminal, the REST service on the server notifies the application by using POST to the application supplied notifyURL.
5. An application deletes a subscription for distance notification and stop notifications for the particular client by using DELETE to resource URL containing the subscriptionId.

# 5.4 Resource: Terminal Location

The resource used is:

**http://{serverRoot}/{apiVersion}/location/queries/location**

This resource is used to return location for single terminal or group of terminals.

## 5.4.1 Request URI variables

The following request URI variables are common for all HTTP commands:

| Name | Description |
|---|---|
| serverRoot | server base url: hostname+port+base path. Example: http://example.com/exampleAPI |
| apiVersion | version of the ParlayREST API client wants to use (e.g. 1 for version 1.x) |

## 5.4.2 Response codes

### 5.4.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

### 5.4.2.2 Exception fault codes

For Policy Exception and Service Exception fault codes applicable to Terminal Location, see [3GPP 29.199-9].

## 5.4.3 GET

This operation is used to read terminal location information. If the requester parameter is present and the requester is not authorized, PolicyException (POL0002) will be returned.

Request URL parameters are:

| Name | Type/value | Optional | Description |
|---|---|---|---|
| requester | xsd:anyURI | Yes | It identifies the entity that is requesting the information.<br>The application invokes this operation on behalf of this entity. However, it does not imply that the application has authenticated the requester.<br>If this part is not present, the requesting entity is the application itself.<br>If this part is present, and the requester is not authorized to retrieve location info, a policy exception will be returned. |

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| | | | |
|---|---|---|---|
| address | xsd:anyURI[1..unbounded] | No | Address(es) of the terminal device(s) 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 | xsd:int | Yes | Maximum acceptable age (in seconds) of the location information that is returned |
| responseTime | xsd:int | Yes | Indicates the maximum time (in seconds) that the application can accept to wait for a response |
| Tolerance | DelayTolerance | No | Indicates the priority of response time versus accuracy |

### 5.4.3.1 Example 1: (one terminal address) (Informative)

#### 5.4.3.1.1 Request

```
GET /exampleAPI/1/location/queries/location?address=tel%3A%2B1-555-0100&tolerance=LowDelay&requestedAccuracy=1000
&acceptableAccuracy=1000  &maximumAge=180&responseTime=300 HTTP/1.1
Accept: application/xml
Host: example.com
```

#### 5.4.3.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: nnnn
Date: Thu, 04 Jun 2009 02:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<tl:terminalLocationList xmlns:tl="urn:oma:xml:rest:terminallocation:1">
  <terminalLocation>
    <address>tel:+1-555-0100</address>
    <locationRetrievalStatus>Retrieved</locationRetrievalStatus>
    <currentLocation>
      <latitude>-80.86302</latitude>
      <longitude>41.277306</longitude>
      <altitude>1001.0</altitude>
      <accuracy>100</accuracy>
      <timestamp>2009-06-03T00:27:23.000Z</timestamp>
    </currentLocation>
  </terminalLocation>
</tl:terminalLocationList>
```

### 5.4.3.2 Example 2: (multiple terminal addresses) (Informative)

#### 5.4.3.2.1 Request

```
GET /exampleAPI/1/location/queries/location?address=tel%3A%2B1-555-0100&address=tel%3A%2B1-555-0101&Tolerance=
```

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```
LowDelay&requestedAccuracy=1000&acceptableAccuracy=1000 HTTP/1.1
Accept: application/xml
Host: example.com
```

#### 5.4.3.2.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: nnnn
Date: Thu, 04 Jun 2009 02:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<tl:terminalLocationList
 xmlns:tl="urn:oma:xml:rest:terminallocation:1">
 <terminalLocation>
  <address>tel:+1-555-0100</address>
  <locationRetrievalStatus>Retrieved</locationRetrievalStatus>
  <currentLocation>
   <latitude>-80.86302</latitude>
   <longitude>41.277306</longitude>
   <altitude>1001.0</altitude>
   <accuracy>100</accuracy>
   <timestamp>2009-06-03T00:27:23.000Z</timestamp>
  </currentLocation>
 </terminalLocation>
 <terminalLocation>
  <address>tel:1-555-0101</address>
  <locationRetrievalStatus>Error</locationRetrievalStatus>
  <errorInformation>
   <messageId>SVC0001</messageId>
   <text>A service error occurred. %1 %2</text>
   <variables>Location information is not available for</variables>
   <variables>tel:1-555-0101</variables>
  </errorInformation>
 </terminalLocation>
</tl:terminalLocationList>
```

### 5.4.3.3 Example 3: (location with unsupported accuracy) (Informative)

#### 5.4.3.3.1 Request

```
GET /exampleAPI/1/location/queries/location?address=tel%3A%2B1-555-0100&tolerance=LowDelay&requestedAccuracy=10&
acceptableAccuracy=100 HTTP/1.1
Accept: application/xml
Host: example.com
```

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#### 5.4.3.3.2 Response

```
HTTP/1.1 400 Bad Request
Content-Type: application/xml
Content-Length: nnnn
Date: Thu, 04 Jun 2009 02:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<common:requestError xmlns:common="urn:oma:xml:rest:common:1">
<link rel="TerminalLocationList" href="http://example.com/exampleAPI/1/location/queries/location"/>
  <policyException>
    <messageId>POL0230</messageId>
    <text>The requested accuracy %1 is not supported by the policy</text>
    <variables>10</variables>
  </policyException>
</common:requestError>
```

### 5.4.3.4 Example 4: (unauthorized requester) (Informative)

#### 5.4.3.4.1 Request

```
GET /exampleAPI/1/location/queries/location?requester=tel%3A%2B 1-555-0102&address= tel%3A%2B1-555-
0100&tolerance=LowDelay&requestedAccuracy=10&acceptableAccuracy=100 HTTP/1.1
Accept: application/xml
Host: example.com
```

#### 5.4.3.4.2 Response

```
HTTP/1.1 400 Bad Request
Content-Type: application/xml
Content-Length: nnnn
Date: Thu, 04 Jun 2009 02:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<common:requestError xmlns:common="urn:oma:xml:rest:common:1">
  <policyException>
    <messageId>POL0002</messageId>
    <text>Privacy error.</text>
  </policyException>
</common:requestError>
```

## 5.4.4 PUT

Method not supported by the resource. The returned HTTP error status is 405. The server should also include the 'Allow: GET' field in the response as per section 14.7 of [RFC 2616].

## 5.4.5 POST

Method not supported by the resource. The returned HTTP error status is 405. The server should also include the 'Allow: GET' field in the response as per section 14.7 of [RFC 2616].

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### 5.4.6 DELETE

Method not supported by the resource. The returned HTTP error status is 405. The server should also include the 'Allow: GET' field in the response as per section 14.7 of [RFC 2616].

## 5.5 Resource: Terminal distance

The resource used is:

**http://{serverRoot}/{apiVersion}/location/queries/distance**

This resource is used to return distance between either:

- A terminal and a geographical location.
- Two terminals

### 5.5.1 Request URI variables

The following request URI variables are common for all HTTP commands:

| Name | Description |
|---|---|
| serverRoot | server base url: hostname+port+base path. Example: http://example.com/exampleAPI |
| apiVersion | version of the ParlayREST API client wants to use (e.g. 1 for version 1.x) |

### 5.5.2 Response codes

#### 5.5.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

#### 5.5.2.2 Exception fault codes

For Policy Exception and Service Exception fault codes applicable to Terminal Location, see [3GPP 29.199-9].

### 5.5.3 GET

This operation is used to return the distance between either:

- A terminal and a geographical location.
- Two terminals

If the requester parameter is present and the requester is not authorized, PolicyException (POL0002) will be returned.

Request URL parameters are:

| Name | Type/value | Optional | Description |
|---|---|---|---|
| requester | xsd:anyURI | Yes | It identifies the entity that is requesting the information. The application invokes this operation on behalf of this entity. However, it does not imply that the application has authenticated the requester.<br>If this part is not present, the requesting entity is the application itself.<br>If this part is present, and the requester is not authorized to retrieve location info, a policy exception |

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| | | | |
|---|---|---|---|
| | | | will be returned. |
| address | xsd:anyURI[1..2] | No | One or two terminal addresses of terminal to check.<br>The second "address" parameter SHALL NOT be used when the distance between a terminal and a location is requested. |
| latitude | xsd:float | Yes | Latitude of the location to measure from. SHALL NOT be used when the distance between two terminals is requested. |
| longitude | xsd:float | Yes | Longitude of the location to measure from. SHALL NOT be used when the distance between two terminals is requested. |

#### 5.5.3.1 Example 1: (distance between a terminal and a location) (Informative)

##### 5.5.3.1.1 Request

This example shows also an alternative way to indicate desired content type in response from the server, by using URL query parameter "?resFormat" which is described in [OMA_REST_TS_Common].

```
GET /exampleAPI/1/location/queries/distance?resFormat=XML&address=tel%3A%2B1-555-0101&latitude=50&longitude=125 HTTP/1.1
Host: example.com
```

##### 5.5.3.1.2 Response:

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: nnnn
Date: Thu, 04 Jun 2009 02:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<tl:terminalDistance xmlns:tl="urn:oma:xml:rest:terminallocation:1">
  <distance>100</distance>
</tl:terminalDistance>
```

#### 5.5.3.2 Example 2: (distance between two terminals) (Informative)

##### 5.5.3.2.1 Request

```
GET /exampleAPI/1/location/queries/distance?address=tel%3A%2B1-555-0101& address=tel%3A%2B1-555-0102 HTTP/1.1
Accept: application/xml
Host: example.com
```

##### 5.5.3.2.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: nnnn
```

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```
Date: Thu, 04 Jun 2009 02:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<tl:terminalDistance xmlns:tl="urn:oma:xml:rest:terminallocation:1">
  <distance>100</distance>
</tl:terminalDistance>
```

#### 5.5.3.3 Example 3: (invalid address) (Informative)

##### 5.5.3.3.1 Request

```
GET /exampleAPI/1/location/queries/distance?address=tel%3A%2B1-555-0199&latitude=50&longitude=125 HTTP/1.1
Accept: application/xml
Host: example.com
```

##### 5.5.3.3.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: nnnn
Date: Thu, 04 Jun 2009 02:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<common:requestError xmlns:common="urn:oma:xml:rest:common:1">
   <link rel="TerminalDistance" href="http://example.com/exampleAPI/1/location/queries/distance"/>
   <serviceException>
   <messageId>SVC0002</messageId>
   <text> Invalid input value for message part %1</text>
   <variables>tel:+1-555-0199</variables>
  </serviceException>
</common:requestError>
```

#### 5.5.3.4 Example 4: (too many addresses) (Informative)

##### 5.5.3.4.1 Request

```
GET /exampleAPI/1/location/queries/distance?address=tel%3A%2B1-555-0199&address=tel%3A%2B1-555-0198&address=tel%3A%2B1-555-0101  HTTP/1.1
Accept: application/xml
Host: example.com
```

##### 5.5.3.4.2 Response

```
HTTP/1.1 400 Bad Request
Content-Type: application/xml
Content-Length: nnnn
Date: Thu, 04 Jun 2009 02:51:59 GMT
```

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```
<?xml version="1.0" encoding="UTF-8"?>
<common:requestError xmlns:common="urn:oma:xml:rest:common:1">
  <link rel="TerminalDistance" href="http://example.com/exampleAPI/1/location/queries/distance"/>
 <policyException>
      <messageId>POL0003</messageId>
      <text>Too many addresses specified in message part %1</text>
      <variables>addresses</variables>
  </policyException>
</common:requestError>
```

### 5.5.4 PUT

Method not supported by the resource. The returned HTTP error status is 405. The server should also include the 'Allow: GET' field in the response as per section 14.7 of [RFC 2616].

### 5.5.5 POST

Method not supported by the resource. The returned HTTP error status is 405. The server should also include the 'Allow: GET' field in the response as per section 14.7 of [RFC 2616].

### 5.5.6 DELETE

Method not supported by the resource. The returned HTTP error status is 405. The server should also include the 'Allow: GET' field in the response as per section 14.7 of [RFC 2616].

## 5.6 Resource: Periodic location notification subscriptions

The resource used is:

**http://{serverRoot}/{apiVersion}/location/subscriptions/periodic**

This resource is used to control subscriptions for periodic location notification for a particular client.

### 5.6.1 Request URI variables

The following request URI variables are common for all HTTP commands:

| Name | Description |
|---|---|
| serverRoot | server base url: hostname+port+base path. Example: http://example.com/exampleAPI |
| apiVersion | version of the ParlayREST API client wants to use (e.g. 1 for version 1.x) |

### 5.6.2 Response codes

#### 5.6.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

#### 5.6.2.2 Exception fault codes

For Policy Exception and Service Exception fault codes applicable to Terminal Location, see [3GPP 29.199-9].

### 5.6.3 GET

Read all active subscriptions for periodic location notifications for the particular client.

No URL parameters.

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#### 5.6.3.1 Example (Informative)

##### 5.6.3.1.1 Request

```
GET /exampleAPI/1/location/subscriptions/periodic HTTP/1.1
Accept: application/xml
Host: example.com
```

##### 5.6.3.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Date: Thu, 04 Jun 2009 02:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<tl:notificationSubscriptionList xmlns:tl="urn:oma:xml:rest:terminallocation:1">
  <periodicNotificationSubscription>
    <clientCorrelator>0001</clientCorrelator>
    <resourceURL>http://example.com/exampleAPI/1/location/subscriptions/periodic/tel:+1-555-0101</resourceURL>
    <callbackReference>
      <notifyURL>http://application.example.com/notifications/LocationNotification</notifyURL>
      <callbackData>1234</callbackData>
    </callbackReference>
    <address>tel:+1-555-0100</address>
    <requestedAccuracy>10</requestedAccuracy>
    <frequency>10 </frequency>
  </periodicNotificationSubscription>
  <periodicNotificationSubscription>
    <clientCorrelator>0002</clientCorrelator>
    <resourceURL>http://example.com/exampleAPI/1/location/subscriptions/periodic/tel:+1-555-0102</resourceURL>
    <callbackReference>
      <notifyURL>
        http://application.example.com/notifications/LocationNotification
      </notifyURL>
      <callbackData>5678</callbackData>
    </callbackReference>
    <address>tel:+1-555-0100</address>
    <address>tel:+1-555-0101</address>
    <requestedAccuracy>10</requestedAccuracy>
    <frequency>10</frequency>
  </periodicNotificationSubscription>
</tl:notificationSubscriptionList>
```

### 5.6.4 PUT

Method not supported by the resource. The returned HTTP error status is 405. The server should also include the 'Allow: GET, POST' field in the response as per section 14.7 of [RFC 2616].

### 5.6.5 POST

This operation is used to create a new periodic location notification subscription for the particular client.

If the requester parameter is present and the requester is not authorized, PolicyException (POL0002) will be returned.

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Note: server implementation may use clientCorrelator value, if provided by client, as {subscriptionId}. Otherwise, sequence number should be generated for {subscriptionId}. This is to make sure that client can have a stable and predictable URL for online subscriptions.

### 5.6.5.1 Example 1: returning a representation of created resource (Informative)

#### 5.6.5.1.1 Request

```
POST /exampleAPI/1/location/subscriptions/periodic HTTP/1.1
Content-Type: application/xml
Accept: application/xml
Host: example.com
Content-Length: nnnn

<?xml version="1.0" encoding="UTF-8"?>
<tl:periodicNotificationSubscription xmlns:tl="urn:oma:xml:rest:terminallocation:1">
  <clientCorrelator>0001</clientCorrelator>
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/LocationNotification</notifyURL>
    <callbackData>1234</callbackData>
  </callbackReference>
  <address>tel:+1-555-0100</address>
  <requestedAccuracy>10</requestedAccuracy>
  <frequency>10</frequency>
</tl:periodicNotificationSubscription>
```

#### 5.6.5.1.2 Response

```
HTTP/1.1 201 Created
Content-Type: application/xml
Location: http://example.com/exampleAPI/1/location/subscriptions/periodic/tel:+1-555-0100
Date: Thu, 04 Jun 2009 02:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<tl:periodicNotificationSubscription xmlns:tl="urn:oma:xml:rest:terminallocation:1">
  <clientCorrelator>0001</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/location/subscriptions/periodic/tel:+1-555-0100</resourceURL>
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/LocationNotification</notifyURL>
    <callbackData>1234</callbackData>
  </callbackReference>
  <address>tel:+1-555-0100</address>
  <requestedAccuracy>10</requestedAccuracy>
  <frequency>10</frequency>
</tl:periodicNotificationSubscription>
```

### 5.6.5.2 Example 2: returning the location of created resource (Informative)

#### 5.6.5.2.1 Request

```
POST /exampleAPI/1/location/subscriptions/periodic HTTP/1.1
```

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```
Content-Type: application/xml
Accept: application/xml
Host: example.com
Content-Length: nnnn

<?xml version="1.0" encoding="UTF-8"?>
<tl:periodicNotificationSubscription xmlns:tl="urn:oma:xml:rest:terminallocation:1">
  <clientCorrelator>0001</clientCorrelator>
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/LocationNotification</notifyURL>
    <callbackData>1234</callbackData>
  </callbackReference>
  <address>tel:+1-555-0100</address>
  <requestedAccuracy>10</requestedAccuracy>
  <frequency>10</frequency>
</tl:periodicNotificationSubscription>
```

#### 5.6.5.2.2 Response

```
HTTP/1.1 201 Created
Content-Type: application/xml
Location: http://example.com/exampleAPI/1/location/subscriptions/periodic/tel:+1-555-0100
Content-Length: nnnn
Date: Thu, 04 Jun 2009 02:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<common:resourceReference xmlns:common="urn:oma:xml:rest:common:1">
  <resourceURL>http://example.com/exampleAPI/1/location/subscriptions/periodic/tel:+1-555-0100</resourceURL>
</common:resourceReference>
```

### 5.6.6 DELETE

Method not supported by the resource. The returned HTTP error status is 405. The server should also include the 'Allow: GET, POST' field in the response as per section 14.7 of [RFC 2616].

## 5.7 Resource: Individual periodic location notification subscription

The resource used is:

**http://{serverRoot}/{apiVersion}/location/subscriptions/periodic/{subscriptionId}**

This resource is used to control individual subscription for periodic location notifications for a particular client.

### 5.7.1 Request URI variables

The following request URI variables are common for all HTTP commands:

| Name | Description |
|---|---|
| serverRoot | server base url: hostname+port+base path. Example: |

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| | |
|---|---|
| | http://example.com/exampleAPI |
| apiVersion | version of the ParlayREST API client wants to use (e.g. 1 for version 1.x) |
| subscriptionId | identifier of the subscription |

## 5.7.2 Response codes

### 5.7.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

### 5.7.2.2 Exception fault codes

For Policy Exception and Service Exception fault codes applicable to Terminal Location, see [3GPP 29.199-9].

## 5.7.3 GET

This operation is used to read an individual subscription for periodic location notifications for the particular client.

No URL parameters

### 5.7.3.1 Example (Informative)

#### 5.7.3.1.1 Request

```
GET /exampleAPI/1/location/subscriptions/periodic/tel: %3A%2B1-555-0100 HTTP/1.1
Accept: application/xml
Host: example.com
```

#### 5.7.3.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Date: Thu, 04 Jun 2009 02:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<tl:periodicNotificationSubscription xmlns:tl="urn:oma:xml:rest:terminallocation:1">
  <clientCorrelator>0001</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/location/subscriptions/periodic/tel:+1-555-0100</resourceURL>
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/LocationNotification</notifyURL>
    <callbackData>1234</callbackData>
  </callbackReference>
  <address>tel:+1-555-0100</address>
  <requestedAccuracy>10</requestedAccuracy>
  <frequency>10</frequency>
</tl:periodicNotificationSubscription>
```

## 5.7.4 PUT

This operation is used to update an individual subscription for periodic location notifications for the particular client.

If the requester parameter is present and the requester is not authorized, PolicyException (POL0002) will be returned.

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#### 5.7.4.1 Example (Informative)

##### 5.7.4.1.1 Request

```
PUT /exampleAPI/1/location/subscriptions/periodic/tel%3A%2B1-555-0100 HTTP/1.1
Content-Type: application/xml
Accept: application/xml
Host: example.com
Content-Length: nnnn

<?xml version="1.0" encoding="UTF-8"?>
<tl:periodicNotificationSubscription xmlns:tl="urn:oma:xml:rest:terminallocation:1">
  <clientCorrelator>0001</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/location/subscriptions/periodic/tel:+1-555-0100</resourceURL>
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/LocationNotification</notifyURL>
    <callbackData>1234</callbackData>
  </callbackReference>
  <address>tel:+1-555-0100</address>
  <requestedAccuracy>5</requestedAccuracy>
  <frequency>60</frequency>
</tl:periodicNotificationSubscription>
```

##### 5.7.4.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Date: Thu, 04 Jun 2009 02:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<tl:periodicNotificationSubscription xmlns:tl="urn:oma:xml:rest:terminallocation:1">
  <clientCorrelator>0001</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/location/subscriptions/periodic/tel:+1-555-0100</resourceURL>
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/LocationNotification</notifyURL>
    <callbackData>1234</callbackData>
  </callbackReference>
  <address>tel:+1-555-0100</address>
  <requestedAccuracy>5</requestedAccuracy>
  <frequency>60</frequency>
</tl:periodicNotificationSubscription>
```

### 5.7.5 POST

Method not supported by the resource. The returned HTTP error status is 405. The server should also include the ‘Allow: GET, PUT, DELETE’ field in the response as per section 14.7 of [RFC 2616].

### 5.7.6 DELETE

This operation is used to delete a subscription for periodic location notifications and stop notifications for a particular client.

No URL parameters

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#### 5.7.6.1 Example (Informative)

##### 5.7.6.1.1 Request

```
DELETE /exampleAPI/1/location/subscriptions/periodic/tel: %3A%2B 1-555-0100 HTTP/1.1
Accept: application/xml
Host: example.com
```

##### 5.7.6.1.2 Response

```
HTTP/1.1 204 No Content
Date: Thu, 04 Jun 2009 02:51:59 GMT
```

## 5.8 Resource: Area (circle) notification subscriptions

The resource used is:

**http://{serverRoot}/{apiVersion}/location/subscriptions/area/circle**

This resource is used to control subscriptions for notification about terminal movements in relation to the geographic area (circle), crossing in and out, for a particular client.

### 5.8.1 Request URI variables

The following request URI variables are common for all HTTP commands:

| Name | Description |
|---|---|
| serverRoot | server base url: hostname+port+base path. Example: http://example.com/exampleAPI |
| apiVersion | version of the ParlayREST API client wants to use (e.g. 1 for version 1.x) |

### 5.8.2 Response codes

#### 5.8.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

#### 5.8.2.2 Exception fault codes

For Policy Exception and Service Exception fault codes applicable to Terminal Location, see [3GPP 29.199-9].

### 5.8.3 GET

This operation is used to read all active movement notifications subscriptions for the particular client.

No URL parameters

#### 5.8.3.1 Example (Informative)

##### 5.8.3.1.1 Request

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```
GET /exampleAPI/1/location/subscriptions/area/circle HTTP/1.1
Accept: application/xml
Host: example.com
```

#### 5.8.3.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Date: Thu, 04 Jun 2009 02:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<tl:notificationSubscriptionList xmlns:tl="urn:oma:xml:rest:terminallocation:1">
 <circleNotificationSubscription>
  <clientCorrelator>0003</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/location/subscriptions/area/circle/tel:+1-555-0101</resourceURL>
  <callbackReference>
   <notifyURL>http://application.example.com/notifications/LocationNotification</notifyURL>
   <callbackData>4444</callbackData>
  </callbackReference>
  <address>tel:+1-555-0100</address>
  <latitude>100.23</latitude>
  <longitude>-200.45</longitude>
  <radius>500</radius>
  <trackingAccuracy>10</trackingAccuracy>
  <enteringLeavingCriteria>Entering</enteringLeavingCriteria>
  <checkImmediate>true</checkImmediate>
  <frequency>10</frequency>
 </circleNotificationSubscription>
 <circleNotificationSubscription>
  <clientCorrelator>0004</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/location/subscriptions/area/circle/tel:+1-555-0102</resourceURL>
  <callbackReference>
   <notifyURL>http://application.example.com/notifications/LocationNotification</notifyURL>
   <callbackData>5555</callbackData>
  </callbackReference>
  <address>tel:+1-555-0100</address>
  <address>tel:+1-555-0101</address>
  <latitude>100.23</latitude>
  <longitude>-200.45</longitude>
  <radius>500</radius>
  <trackingAccuracy>10</trackingAccuracy>
  <enteringLeavingCriteria>Entering</enteringLeavingCriteria>
  <checkImmediate>true</checkImmediate>
  <frequency>10</frequency>
 </circleNotificationSubscription>
</tl:notificationSubscriptionList>
```

## 5.8.4 PUT

Method not supported by the resource. The returned HTTP error status is 405. The server should also include the ‘Allow: GET, POST’ field in the response as per section 14.7 of [RFC 2616].

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## 5.8.5 POST

This operation is used to create new movement notification subscription for the particular client.

If the requester parameter is present and the requester is not authorized, PolicyException (POL0002) will be returned.

Note: server implementation may use clientCorrelator value, if provided by client, as {subscriptionId}. Otherwise, sequence number should be generated for {subscriptionId}. This is to make sure that client can have a stable and predictable URL for online subscriptions. May be required when multiple client instances are used for performance reasons.

### 5.8.5.1 Example (Informative)

#### 5.8.5.1.1 Request

```
POST /exampleAPI/1/location/subscriptions/area/circle HTTP/1.1
Content-Type: application/xml
Accept: application/xml
Host: example.com
Content-Length: nnnn

<?xml version="1.0" encoding="UTF-8"?>
<tl:circleNotificationSubscription
  xmlns:tl="urn:oma:xml:rest:terminallocation:1">
<clientCorrelator>0003</clientCorrelator>
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/LocationNotification</notifyURL>
    <callbackData>4444</callbackData>
  </callbackReference>
  <address>tel:+1-555-0100</address>
  <latitude>100.23</latitude>
  <longitude>-200.45</longitude>
  <radius>500</radius>
  <trackingAccuracy>10</trackingAccuracy>
  <enteringLeavingCriteria>Entering</enteringLeavingCriteria>
  <checkImmediate>true</checkImmediate>
  <frequency>10</frequency>
</tl:circleNotificationSubscription>
```

#### 5.8.5.1.2 Response

```
HTTP/1.1 201 Created
Content-Type: application/xml
Location: http://example.com/exampleAPI/1/location/subscriptions/area/circle/tel:+1-555-0100/}
Date: Thu, 04 Jun 2009 02:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<tl:circleNotificationSubscription xmlns:tl="urn:oma:xml:rest:terminallocation:1">
  <clientCorrelator>0003</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/location/subscriptions/area/circle/tel:+1-555-0100</resourceURL>
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/LocationNotification</notifyURL>
    <callbackData>4444</callbackData>
  </callbackReference>
  <address>tel:+1-555-0100</address>
```

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```
  <latitude>100.23</latitude>
  <longitude>-200.45</longitude>
  <radius>500</radius>
  <trackingAccuracy>10</trackingAccuracy>
  <enteringLeavingCriteria>Entering</enteringLeavingCriteria>
  <checkImmediate>true</checkImmediate>
  <frequency>10</frequency>
</tl:circleNotificationSubscription>
```

### 5.8.6 DELETE

Method not supported by the resource. The returned HTTP error status is 405. The server should also include the 'Allow: GET, POST' field in the response as per section 14.7 of [RFC 2616].

## 5.9 Resource: Area (circle) individual notification subscription

The resource used is:

**http://{serverRoot}/{apiVersion}/location/subscriptions/area/circle/{subscriptionId}**

This resource is used to control individual subscription for notifications about terminal movement in relation to the geographic area (circle), crossing in and out, for a particular client.

### 5.9.1 Request URI variables

The following request URI variables are common for all HTTP commands:

| Name | Description |
|---|---|
| serverRoot | server base url: hostname+port+base path. Example: http://example:80/ParlayREST |
| apiVersion | version of the ParlayREST API client wants to use (e.g. 1 for version 1.x) |
| subscriptionId | identifier of the subscription |

### 5.9.2 Response Codes

#### 5.9.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

#### 5.9.2.2 Exception fault codes

For Policy Exception and Service Exception fault codes applicable to Terminal Location, see [3GPP 29.199-9].

### 5.9.3 GET

This operation is used to read an individual subscription for movement notification for the particular client.

No URL parameters

#### 5.9.3.1 Example (Informative)

##### 5.9.3.1.1 Request

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```
GET /exampleAPI/1/location/subscriptions/area/circle/tel:+1-555-0100 HTTP/1.1
Accept: application/xml
Host: example.com
```

#### 5.9.3.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Date: Thu, 04 Jun 2009 02:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<tl:circleNotificationSubscription xmlns:tl="urn:oma:xml:rest:terminallocation:1">
  <clientCorrelator>0003</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/location/subscriptions/area/circle/tel:+1-555-0100</resourceURL>
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/LocationNotification</notifyURL>
    <callbackData>4444</callbackData>
  </callbackReference>
  <address>tel:+1-555-0100</address>
  <latitude>100.23</latitude>
  <longitude>-200.45</longitude>
  <radius>500</radius>
  <trackingAccuracy>10</trackingAccuracy>
  <enteringLeavingCriteria>Entering</enteringLeavingCriteria>
  <checkImmediate>true</checkImmediate>
  <frequency>10</frequency>
</tl:circleNotificationSubscription>
```

## 5.9.4 PUT

This operation is used to update the subscription for movement notification for the particular client.

If the requester parameter is present and the requester is not authorized, PolicyException (POL0002) will be returned.

### 5.9.4.1 Example: update radius (Informative)

#### 5.9.4.1.1 Request

```
PUT /exampleAPI/1/location/subscriptions/area/circle/tel:+1-555-0100 HTTP/1.1
Content-Type: application/xml
Accept: application/xml
Host: example.com
Content-Length: nnnn

<?xml version="1.0" encoding="UTF-8"?>
<tl:circleNotificationSubscription xmlns:tl="urn:oma:xml:rest:terminallocation:1">
  <clientCorrelator>0003</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/location/subscriptions/area/circle/tel:+1-555-0100</resourceURL>
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/LocationNotification</notifyURL>
    <callbackData>4444</callbackData>
  </callbackReference>
  <address>tel:+1-555-0100</address>
```

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```
  <latitude>100.23</latitude>
  <longitude>-200.45</longitude>
  <radius>50</radius>
  <trackingAccuracy>10</trackingAccuracy>
  <enteringLeavingCriteria>Entering</enteringLeavingCriteria>
  <checkImmediate>true</checkImmediate>
  <frequency>10</frequency>
</tl:circleNotificationSubscription>
```

#### 5.9.4.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Date: Thu, 04 Jun 2009 02:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<tl:circleNotificationSubscription xmlns:tl="urn:oma:xml:rest:terminallocation:1">
  <clientCorrelator>0003</clientCorrelator>
  <resourceURL>
http://example.com/exampleAPI/1/location/subscriptions/area/circle/tel:+1-555-0100
</resourceURL>
<callbackReference>
    <notifyURL>http://application.example.com/notifications/LocationNotification</notifyURL>
    <callbackData>4444</callbackData>
  </callbackReference>
  <address>tel:+1-555-0100</address>
  <latitude>100.23</latitude>
  <longitude>-200.45</longitude>
  <radius>50</radius>
  <trackingAccuracy>10</trackingAccuracy>
  <enteringLeavingCriteria>Entering</enteringLeavingCriteria>
  <checkImmediate>true</checkImmediate>
  <frequency>10</frequency>
</tl:circleNotificationSubscription>
```

## 5.9.5 POST

Method not supported by the resource. The returned HTTP error status is 405. The server should also include the 'Allow: GET, PUT, DELETE' field in the response as per section 14.7 of [RFC 2616].

## 5.9.6 DELETE

This operation is used to delete subscription for movement notifications and stop notifications for the particular client.

No URL parameters

### 5.9.6.1 Example (Informative)

#### 5.9.6.1.1 Request

```
DELETE /exampleAPI/1/location/subscriptions/area/circle/tel%3A%2B1-555-0100 HTTP/1.1
Accept: application/xml
```

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```
Host: example.com
```

#### 5.9.6.1.2 Response

```
HTTP/1.1 204 No Content
Date: Thu, 04 Jun 2009 02:51:59 GMT
```

# 5.10 Resource: Distance notification subscriptions

The resource used is:

**http://{serverRoot}/{apiVersion}/location/subscriptions/distance**

This resource is used to control subscriptions for notification about changes in the geographical relationships between terminals (a client has passed a border by either approaching or leaving another referenced client).

## 5.10.1 Request URI variables

The following request URI variables are common for all HTTP commands:

| Name | Description |
|---|---|
| serverRoot | server base url: hostname+port+base path. Example: http://example.com/exampleAPI |
| apiVersion | version of the ParlayREST API client wants to use (e.g. 1 for version 1.x) |

## 5.10.2 Response codes

### 5.10.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

### 5.10.2.2 Exception fault codes

For Policy Exception and Service Exception fault codes applicable to Terminal Location, see [3GPP 29.199-9].

## 5.10.3 GET

This operation is used to read all active distance notifications subscriptions for the particular client.

No URL parameters

### 5.10.3.1 Example (Informative)

#### 5.10.3.1.1 Request

```
GET /exampleAPI/1/location/subscriptions/distance HTTP/1.1
Accept: application/xml
```

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```
Host: example.com
```

#### 5.10.3.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Date: Thu, 04 Jun 2009 02:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<tl:notificationSubscriptionList
xmlns:tl="urn:oma:xml:rest:terminallocation:1">
 <distanceNotificationSubscription>
  <clientCorrelator>0006</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/location/subscriptions/distance/tel:+1-555-0101</resourceURL>
  <callbackReference>
   <notifyURL>http://application.example.com/notifications/LocationNotification</notifyURL>
   <callbackData>6666</callbackData>
  </callbackReference>
  <referenceAddress>tel:+1-555-0100</referenceAddress>
  <monitoredAddress>tel:+1-555-0101</monitoredAddress>
  <monitoredAddress>tel:+1-555-0102</monitoredAddress>
  <distance>100</distance>
  <trackingAccuracy>10</trackingAccuracy>
  <criteria>AllWithinDistance</criteria>
  <checkImmediate>true</checkImmediate>
  <frequency>10</frequency>
 </distanceNotificationSubscription>
 <distanceNotificationSubscription>
  <clientCorrelator>0007</clientCorrelator>
  <resourceURL>
http://example.com/exampleAPI/1/location/subscriptions/distance/tel:+1-555-0102</resourceURL>
  <callbackReference>
   <notifyURL>http://application.example.com/notifications/LocationNotification</notifyURL>
   <callbackData>7777</callbackData>
  </callbackReference>
  <monitoredAddress>tel:+1-555-0100</monitoredAddress>
  <monitoredAddress>tel:+1-555-0101</monitoredAddress>
  <monitoredAddress>tel:+1-555-0102</monitoredAddress>
  <distance>1000</distance>
  <trackingAccuracy>50</trackingAccuracy>
  <criteria>AnyBeyondDistance</criteria>
  <checkImmediate>true</checkImmediate>
  <frequency>10</frequency>
 </distanceNotificationSubscription>
</tl:notificationSubscriptionList>
```

## 5.10.4 PUT

Method not supported by the resource. The returned HTTP error status is 405. The server should also include the 'Allow: GET, POST' field in the response as per section 14.7 of [RFC 2616].

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## 5.10.5 POST

This operation is used to create new distance notification subscription for the particular client.

If the requester parameter is present and the requester is not authorized, PolicyException (POL0002) will be returned.

Note: server implementation may use **clientCorrelator** value, if provided by client, as {subscriptionId}. Otherwise, sequence number should be generated for {subscriptionId}. This is to make sure that client can have a stable and predictable URL for online subscriptions.

### 5.10.5.1 Example (Informative)

#### 5.10.5.1.1 Request

```
POST /exampleAPI/1/location/subscriptions/distance HTTP/1.1
Content-Type: application/xml
Accept: application/xml
Host: example.com
Content-Length: nnnn

<?xml version="1.0" encoding="UTF-8"?>
<tl:distanceNotificationSubscription
xmlns:tl="urn:oma:xml:rest:terminallocation:1">
<clientCorrelator>0006</clientCorrelator>
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/LocationNotification</notifyURL>
    <callbackData>6666</callbackData>
  </callbackReference>
  <referenceAddress>tel:+1-555-0100</referenceAddress>
  <monitoredAddress>tel:+1-555-0101</monitoredAddress>
  <monitoredAddress>tel:+1-555-0102</monitoredAddress>
  <distance>100</distance>
  <trackingAccuracy>10</trackingAccuracy>
  <criteria>AllWithinDistance</criteria>
  <checkImmediate>true</checkImmediate>
  <frequency>10</frequency>
</tl:distanceNotificationSubscription>
```

#### 5.10.5.1.2 Response

```
HTTP/1.1 201 Created
Content-Type: application/xml
Location: http://example.com/exampleAPI/1/location/subscriptions/distance/tel:+1-555-0100
Date: Thu, 04 Jun 2009 02:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<tl:distanceNotificationSubscription xmlns:tl="urn:oma:xml:rest:terminallocation:1" >
  <clientCorrelator>0006</clientCorrelator>
<resourceURL>http://example.com/exampleAPI/1/location/subscriptions/distance/tel:+1-555-0100</resourceURL>
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/LocationNotification</notifyURL>
    <callbackData>6666</callbackData>
  </callbackReference>
  <referenceAddress>tel:+1-555-0100</referenceAddress>
```

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```
  <monitoredAddress>tel:+1-555-0101</monitoredAddress>
  <monitoredAddress>tel:+1-555-0102</monitoredAddress>
  <distance>100</distance>
  <trackingAccuracy>10</trackingAccuracy>
  <criteria>AllWithinDistance</criteria>
  <checkImmediate>true</checkImmediate>
  <frequency>10</frequency>
</tl:distanceNotificationSubscription>
```

### 5.10.6 DELETE

Method not supported by the resource. The returned HTTP error status is 405. The server should also include the 'Allow: GET, POST' field in the response as per section 14.7 of [RFC 2616].

## 5.11 Resource: Distance individual notification subscription

The resource used is:

**http://{serverRoot}/{apiVersion}/location/subscriptions/distance/{subscriptionId}**

This resource is used to control individual subscription for notifications about changes in the geographical relationships between terminals (a client has passed a border by either approaching or leaving another referenced client).

### 5.11.1 Request URI variables

The following request URI variables are common for all HTTP commands:

| Name | Description |
|---|---|
| serverRoot | server base url: hostname+port+base path. Example: http://example:80/ParlayREST |
| apiVersion | version of the ParlayREST API client wants to use (e.g. 1 for version 1.x) |
| subscriptionId | identifier of the subscription |

### 5.11.2 Response Codes

#### 5.11.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

#### 5.11.2.2 Exception fault codes

For Policy Exception and Service Exception fault codes applicable to Terminal Location, see [3GPP 29.199-9].

### 5.11.3 GET

This operation is used to read an individual subscription for distance notification for the particular client.

No URL parameters

#### 5.11.3.1 Example (Informative)

##### 5.11.3.1.1 Request

```
GET /exampleAPI/1/location/subscriptions/distance/tel:+1-555-0100 HTTP/1.1
```

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```
Accept: application/xml
Host: example.com
```

#### 5.11.3.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Date: Thu, 04 Jun 2009 02:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<tl:distanceNotificationSubscription xmlns:tl="urn:oma:xml:rest:terminallocation:1">
  <clientCorrelator>0006</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/location/subscriptions/distance/tel:+1-555-0100</resourceURL>
<callbackReference>
    <notifyURL>http://application.example.com/notifications/LocationNotification</notifyURL>
    <callbackData>6666</callbackData>
  </callbackReference>
  <referenceAddress>tel:+1-555-0100</referenceAddress>
  <monitoredAddress>tel:+1-555-0101</monitoredAddress>
  <monitoredAddress>tel:+1-555-0102</monitoredAddress>
  <distance>100</distance>
  <trackingAccuracy>10</trackingAccuracy>
  <criteria>AllWithinDistance</criteria>
  <checkImmediate>true</checkImmediate>
  <frequency>10</frequency>
</tl:distanceNotificationSubscription>
```

## 5.11.4 PUT

This operation is used to update the subscription for distance notification for the particular client.

If the requester parameter is present and the requester is not authorized, PolicyException (POL0002) will be returned.

### 5.11.4.1 Example: add a monitored address (Informative)

#### 5.11.4.1.1 Request

```
PUT ./exampleAPI/1/location/subscriptions/distance/tel:+1-555-0100 HTTP/1.1
Content-Type: application/xml
Accept: application/xml
Host: example.com
Content-Length: nnnn

<?xml version="1.0" encoding="UTF-8"?>
<tl:distanceNotificationSubscription xmlns:tl="urn:oma:xml:rest:terminallocation:1">
  <clientCorrelator>0006</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/location/subscriptions/distance/tel:+1-555-0100</resourceURL>
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/LocationNotification</notifyURL>
    <callbackData>6666</callbackData>
  </callbackReference>
```

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```
  <referenceAddress>tel:+1-555-0100</referenceAddress>
  <monitoredAddress>tel:+1-555-0101</monitoredAddress>
  <monitoredAddress>tel:+1-555-0102</monitoredAddress>
  <monitoredAddress>tel:+1-555-0103</monitoredAddress>
  <distance>100</distance>
  <trackingAccuracy>10</trackingAccuracy>
  <criteria>AllWithinDistance</criteria>
  <checkImmediate>true</checkImmediate>
  <frequency>10</frequency>
</tl:distanceNotificationSubscription>
```

#### 5.11.4.1.2 Response

```
HTTP/1.1 200 OK
Content-Type: application/xml
Date: Thu, 04 Jun 2009 02:51:59 GMT

<?xml version="1.0" encoding="UTF-8"?>
<tl:distanceNotificationSubscription xmlns:tl="urn:oma:xml:rest:terminallocation:1">
  <clientCorrelator>0006</clientCorrelator>
  <resourceURL>http://example.com/exampleAPI/1/location/subscriptions/distance/tel:+1-555-0100</resourceURL>
  <callbackReference>
    <notifyURL>http://application.example.com/notifications/LocationNotification</notifyURL>
    <callbackData>6666</callbackData>
  </callbackReference>
  <referenceAddress>tel:+1-555-0100</referenceAddress>
  <monitoredAddress>tel:+1-555-0101</monitoredAddress>
  <monitoredAddress>tel:+1-555-0102</monitoredAddress>
  <monitoredAddress>tel:+1-555-0103</monitoredAddress>
  <distance>100</distance>
  <trackingAccuracy>10</trackingAccuracy>
  <criteria>AllWithinDistance</criteria>
  <checkImmediate>true</checkImmediate>
  <frequency>10</frequency>
</tl:distanceNotificationSubscription>
```

## 5.11.5 POST

Method not supported by the resource. The returned HTTP error status is 405. The server should also include the 'Allow: GET, POST, DELETE' field in the response as per section 14.7 of [RFC 2616].

## 5.11.6 DELETE

This operation is used to delete subscription for distance notifications and stop notifications for the particular client.

No URL parameters

### 5.11.6.1 Example (Informative)

#### 5.11.6.1.1 Request

```
DELETE /exampleAPI/1/location/subscriptions/distance/tel:+1-555-0100 HTTP/1.1
Accept: application/xml
```

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```
Host: example.com
```

#### 5.11.6.1.2 Response:

```
HTTP/1.1 204 No Content
Date: Thu, 04 Jun 2009 02:51:59 GMT
```

# 5.12 Resource: Client notification callback resource

This resource is a client provided callback URL for notification about location changes. ParlayREST does not make any assumption about the structure of this URL

## 5.12.1 Request URI variables

Client provided.

## 5.12.2 Response Codes

### 5.12.2.1 HTTP Response Codes

For HTTP response codes, see [OMA_REST_TS_Common].

### 5.12.2.2 Exception fault codes

For Policy Exception and Service Exception fault codes applicable to Terminal Location, see [3GPP 29.199-9].

## 5.12.3 GET

Method not supported by the resource. The returned HTTP error status is 405. The server should also include the 'Allow: POST' field in the response as per section 14.7 of [RFC 2616].

## 5.12.4 PUT

Method not supported by the resource. The returned HTTP error status is 405. The server should also include the 'Allow: POST' field in the response as per section 14.7 of [RFC 2616].

## 5.12.5 POST

This operation is used to notify client about message arrival.

### 5.12.5.1 Example 1: Circle area notification (one terminal) (Informative)

#### 5.12.5.1.1 Request

```
POST /notifications/LocationNotification HTTP/1.1
Content-Type: application/xml
Accept: application/xml
Host: application.example.com
Content-Length: nnnn

<?xml version="1.0" encoding="UTF-8"?>
<tl:subscriptionNotification xmlns:tl="urn:oma:xml:rest:terminallocation:1">
  <callbackData>4444</callbackData>
  <terminalLocation>
    <address>tel:+1-555-0100</address>
    <locationRetrievalStatus>Retrieved</locationRetrievalStatus>
    <currentLocation>
```

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```
    <latitude>-80.86302</latitude>
    <longitude>41.277306</longitude>
    <altitude>1001.0</altitude>
    <accuracy>100</accuracy>
    <timestamp>2009-06-03T00:27:23.000Z</timestamp>
   </currentLocation>
  </terminalLocation>
  <enteringLeavingCriteria>Entering</enteringLeavingCriteria>
  <isFinalNotification>false</isFinalNotification>
  <link rel="CircleNotificationSubscription"
        href="http://example.com/exampleAPI/1/location/subscriptions/area/circle/tel:+1-555-0100"/>
</tl:subscriptionNotification>
```

#### 5.12.5.1.2 Response

```
HTTP/1.1 204 No Content
Date: Thu, 04 Jun 2009 02:51:59 GMT
```

### 5.12.5.2 Example 2: Periodic location notification (one terminal) (Informative)

#### 5.12.5.2.1 Request

```
POST /notifications/LocationNotification HTTP/1.1
Content-Type: application/xml
Accept: application/xml
Host: application.example.com
Content-Length: nnnn

<?xml version="1.0" encoding="UTF-8"?>
<tl:subscriptionNotification xmlns:tl="urn:oma:xml:rest:terminallocation:1">
  <callbackData>1234</callbackData>
  <terminalLocation>
    <address>tel:+1-555-0100</address>
    <locationRetrievalStatus>Retrieved</locationRetrievalStatus>
    <currentLocation>
      <latitude>-80.86302</latitude>
      <longitude>41.277306</longitude>
      <altitude>1001.0</altitude>
      <accuracy>100</accuracy>
      <timestamp>2009-06-03T00:27:23.000Z</timestamp>
    </currentLocation>
  </terminalLocation>
  <isFinalNotification>false</isFinalNotification>
  <link rel="PerodicNotificationSubscription"
        href="http://example.com/exampleAPI/1/location/subscriptions/periodic/tel:+1-555-0100"/>
</tl:subscriptionNotification>
```

#### 5.12.5.2.2 Response:

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```
HTTP/1.1 204 No Content
Date: Thu, 04 Jun 2009 02:51:59 GMT
```

### 5.12.5.3 Example 3: Distance location notification (one terminal) (Informative)

#### 5.12.5.3.1 Request

```
POST /notifications/LocationNotification HTTP/1.1
Content-Type: application/xml
Accept: application/xml
Host: application.example.com
Content-Length: nnnn

<?xml version="1.0" encoding="UTF-8"?>
<tl:subscriptionNotification xmlns:tl="urn:oma:xml:rest:terminallocation:1">
  <callbackData>6666</callbackData>
  <terminalLocation>
    <address>tel:+1-555-0100</address>
    <locationRetrievalStatus>Retrieved</locationRetrievalStatus>
    <currentLocation>
      <latitude>-80.86302</latitude>
      <longitude>41.277306</longitude>
      <altitude>1001.0</altitude>
      <accuracy>100</accuracy>
      <timestamp>2009-06-03T00:27:23.000Z</timestamp>
    </currentLocation>
  </terminalLocation>
  <distanceCriteria>AllBeyondDistance</distanceCriteria>
  <isFinalNotification>false</isFinalNotification>
  <link rel="DistanceNotificationSubscription"
        href="http://example.com/exampleAPI/1/location/subscriptions/distance/tel:+1-555-0100"/>
</tl:subscriptionNotification>
```

#### 5.12.5.3.2 Response

```
HTTP/1.1 204 No Content
Date: Thu, 04 Jun 2009 02:51:59 GMT
```

### 5.12.5.4 Example 4: Final periodic location notification (Informative)

#### 5.12.5.4.1 Request

```
POST /notifications/LocationNotification HTTP/1.1
Accept: application/xml
Content-Type: application/xml
Host: application.example.com
Content-Length: nnnn

<?xml version="1.0" encoding="UTF-8"?>
<tl:subscriptionNotification xmlns:tl="urn:oma:xml:rest:terminallocation:1">
  <callbackData>1234</callbackData>
```

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```
  <terminalLocation>
    <address>tel:+1-555-0100</address>
    <locationRetrievalStatus>Retrieved</locationRetrievalStatus>
    <currentLocation>
      <latitude>-80.86302</latitude>
      <longitude>41.277306</longitude>
      <altitude>1001.0</altitude>
      <accuracy>100</accuracy>
      <timestamp>2009-06-03T00:27:23.000Z</timestamp>
    </currentLocation>
  </terminalLocation>
  <isFinalNotification>true</isFinalNotification>
  <link rel="FinalDistanceNotificationSubscription"
        href="http://example.com/exampleAPI/1/location/subscriptions/periodic/tel:+1-555-0100"/>
</tl:subscriptionNotification>
```

#### 5.12.5.4.2 Response:

```
HTTP/1.1 204 No Content
Date: Thu, 04 Jun 2009 02:51:59 GMT
```

### 5.12.5.5 Example 5: Subscription cancellation notification (Informative)

#### 5.12.5.5.1 Request

```
POST /notifications/LocationNotification HTTP/1.1
Content-Type: application/xml
Accept: application/xml
Host: application.example.com
Content-Length: nnnn

<?xml version="1.0" encoding="UTF-8"?>
<tl:subscriptionCancellationNotification xmlns:tl="urn:oma:xml:rest:terminallocation:1">
  <callbackData>6666</callbackData>
  <address>tel:+1-555-0100</address>
  <reason>
     <messageId>SVC0001</messageId>
     <text>A service error occurred. %1 %2</text>
     <variables>Location information is not available for</variables>
     <variables>tel:+1-555-0100</variables>
  </reason>
  <link rel="DistanceNotificationSubscription"
      href="http://example.com/exampleAPI/1/location/subscriptions/distance/tel:+1-555-0100"/>
</tl:subscriptionCancellationNotification>
```

#### 5.12.5.5.2 Response

```
HTTP/1.1 204 No Content
Date: Thu, 04 Jun 2009 02:51:59 GMT
```

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### 5.12.6 DELETE

Method not supported by the resource. The returned HTTP error status is 405. The server should also include the 'Allow: POST' field in the response as per section 14.7 of [RFC 2616].

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# Appendix A. Change History (Informative)

## A.1 Approved Version History

| Reference | Date | Description |
|---|---|---|
| n/a | n/a | No prior version –or- No previous version within OMA |

## A.2 Draft Version 1.1 History

| Document Identifier | Date | Sections | Description |
|---|---|---|---|
| Draft Versions:<br>OMA-TS-ParlayREST_TerminalLocation-V1_1 | 29 Oct 2010 | All examples | Initial version from: OMA-TS-ParlayREST_TerminalLocation-V1_0-20101008-D<br>AD001 duplicate of AD005 |
| | | All Examples | AD002 |
| | | 5.x | AD003 |
| | | D6 | AD004 |
| | | D26 | AD006 |
| | | D27 | AD007 |
| | | D28 | AD008 |
| | | 5.2.x | G0022 |
| | 02 Nov 2010 | editorial | Comments from ARC CC 2nd of November |
| | 17 Nov 2010 | All examples | OMA-ARC-REST-2010-0658R01-CR_resFormat_in_Terminal_Location |
| | 24 Nov 2010 | All examples | OMA-ARC-REST-2010-0675R01-CR_CONRR_update_G0050_and_AI_194.doc |
| | 30 Nov 2010 | 2 and A | Removed “enabler” and corrected the history appendix |
| Candidate Version:<br>OMA-TS-ParlayREST_TerminalLocation-V1_1 | 11 Jan 2011 | All | Status changed to Candidate by TP:<br>OMA-TP-2010-0531R01-INP_ParlayREST_2_0_for_Candidate_approval |

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# Appendix B. Static Conformance Requirements (Normative)

The notation used in this appendix is specified in [SCRRULES].

## B.1 SCR for ParlayREST.TerminalLocation Server

| Item | Function | Reference | Requirement |
|---|---|---|---|
| PARLAYREST-LOC-SUPPORT-S-001-M | Support for the TERMINALLOCATION REST API | 5 | |
| PARLAYREST-LOC-SUPPORT-S-002-M | Support for the XML request & response format | 5 | |
| PARLAYREST-LOC-SUPPORT-S-003-M | Support for the JSON request & response format | 5 | |

### B.1.1 SCR for ParlayREST.TerminalLocation.TerminalLocation Server

| Item | Function | Reference | Requirement |
|---|---|---|---|
| PARLAYREST-LOC-LOC-S-001-M | Support for returning current location of terminals | 5.4 | |
| PARLAYREST-LOC-LOC-S-002-M | Read terminal location information for a single address - GET | 5.4.3 | |
| PARLAYREST-LOC-LOC-S-003-M | Read terminal location information for a group of addresses - GET | 5.4.3 | |

### B.1.2 SCR for ParlayREST.TerminalLocation. TerminalDistanceFromLocation Server

| Item | Function | Reference | Requirement |
|---|---|---|---|
| PARLAYREST-LOC-LOC-DIST-S-001-O | Support for returning distance from terminal current location | 5.5 | PARLAYREST-LOC- LOC-DIST-S-002-O |
| PARLAYREST-LOC-LOC-DIST-S-002-O | the distance from current terminal location - GET | 5.5.3 | |

### B.1.3 SCR for ParlayREST.TerminalLocation. PeriodicLocationNotificationSubscriptions Server

| Item | Function | Reference | Requirement |
|---|---|---|---|
| PARLAYREST-LOC-LOC-NOTIF-SUBSCR-S-001-O | Support for controlling subscriptions for periodic location notification for a particular client. | 5.6 | PARLAYREST-LOC-LOC-NOTIF-SUBSCR-S-003-O |
| PARLAYREST-LOC-LOC-NOTIF- | Read all active subscriptions for | 5.6.3 | |

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| Item | Function | Reference | Requirement |
|---|---|---|---|
| SUBSCR-S-002-O | periodic notifications for the particular client - GET | | |
| PARLAYREST-LOC-LOC-NOTIF-SUBSCR-S-003-O | Create a new periodic notification subscription for the particular client - POST | 5.6.5 | |

## B.1.4 SCR for ParlayREST.TerminalLocation. IndividualPeriodicNotificationSubscr Server

| Item | Function | Reference | Requirement |
|---|---|---|---|
| PARLAYREST-LOC-IND-NOTIF-SUBSCR-S-001-O | Support for controlling individual subscription for periodic location notifications for a particular client. | 5.7 | |
| PARLAYREST-LOC-IND-NOTIF-SUBSCR-S-002-O | Read an individual subscription for periodic location notifications for the particular client.- GET | 5.7.3 | |
| PARLAYREST-LOC-IND-NOTIF-SUBSCR-S-003-O | Update an individual subscription for periodic location notifications for the particular client.- PUT | 5.7.4 | |
| PARLAYREST-LOC-IND-NOTIF-SUBSCR-S-004-O | Delete a subscription for periodic location notifications and stop notifications for a particular client. - DELETE | 5.7.6 | |

## B.1.5 SCR for ParlayREST.TerminalLocation. AreaCircleNotificationSubscriptions Server

| Item | Function | Reference | Requirement |
|---|---|---|---|
| PARLAYREST-LOC-AREA-CIR-NOTIF-SUBSCR-S-001-O | Support for controlling subscriptions for notification about terminal movements in relation to the geographic area (circle), crossing in and out, for a particular client. | 5.8 | PARLAYREST-LOC-AREA-CIR-NOTIF-SUBSCR-S-003-O |
| PARLAYREST-LOC-AREA-CIR-NOTIF-SUBSCR-S-002-O | Read all active movement notifications subscriptions for the particular client - GET | 5.8.3 | |

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| Item | Function | Reference | Requirement |
|---|---|---|---|
| PARLAYREST-LOC-AREA-CIR-NOTIF-SUBSCR-S-003-O | Create new movement notification subscription for the particular client.<br>- POST | 5.8.5 | |

## B.1.6 SCR for ParlayREST.TerminalLocation. AreaCircleIndividualNotificationSubscription Server

| Item | Function | Reference | Requirement |
|---|---|---|---|
| PARLAYREST-LOC-AREA-CIR-IND-NOTIF-SUBSCR-S-001-O | Support for controlling individual subscription for notifications about terminal movements in relation to the geographic area (circle), crossing in and out, for a particular client. | 5.9 | |
| PARLAYREST-LOC-AREA-CIR-IND-NOTIF-SUBSCR-S-002-O | Read an individual subscription for movement notification for the particular client.<br>- GET | 5.9.3 | |
| PARLAYREST-LOC-AREA-CIR-IND-NOTIF-SUBSCR-S-003-O | Update the subscription for movement notification for the particular client.- PUT | 5.9.4 | |
| PARLAYREST-LOC-AREA-CIR-IND-NOTIF-SUBSCR-S-004-O | Delete subscription for movement notifications and stop notifications for the particular client.- DELETE | 5.9.6 | |

## B.1.7 SCR for ParlayREST.TerminalLocation. DistanceNotificationSubscriptions Server

| Item | Function | Reference | Requirement |
|---|---|---|---|
| PARLAYREST-LOC-DIST-NOTIF-SUBSCR-S-001-O | Support for controlling subscriptions for notification about changes in the geographical relationships between terminals. | 5.10 | PARLAYREST-LOC-DIST-NOTIF-SUBSCR-S-003-O |
| PARLAYREST-LOC-DIST-NOTIF-SUBSCR-S-002-O | Read all active distance notifications subscriptions for the particular client.- GET | 5.10.3 | |
| PARLAYREST-LOC-DIST-NOTIF-SUBSCR-S-003-O | Create new distance notification subscription for the | 5.10.5 | |

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| Item | Function | Reference | Requirement |
|---|---|---|---|
| | particular client.- POST | | |

## B.1.8 SCR for ParlayREST.TerminalLocation. DistanceIndividualNotificationSubscription Server

| Item | Function | Reference | Requirement |
|---|---|---|---|
| PARLAYREST-LOC-DIST-IND-NOTIF-SUBSCR-S-001-O | Support for controlling individual subscription for notifications about changes in the geographical relationships between terminals. | 5.11 | |
| PARLAYREST-LOC-DIST-IND-NOTIF-SUBSCR-S-002-O | Read an individual subscription for distance notification for the particular client.- GET | 5.11.3 | |
| PARLAYREST-LOC-DIST-IND-NOTIF-SUBSCR-S-003-O | Update the subscription for distance notification for the particular client - PUT | 5.11.4 | |
| PARLAYREST-LOC-DIST-IND-NOTIF-SUBSCR-S-004-O | Delete subscription for distance notifications and stop notifications for the particular client. - DELETE | 5.11.6 | |

## B.1.9 SCR for ParlayREST. TerminalLocation. ClientNotificationCallbackResource Server

| Item | Function | Reference | Requirement |
|---|---|---|---|
| PARLAYREST-LOC-CLIENT-NOTIF-CALLB-S-001-O | Support for callback URL for notification about location changes | 5.12 | PARLAYREST-LOC-CLIENT-NOTIF-CALLB-S-002-O |
| PARLAYREST-LOC-CLIENT-NOTIF-CALLB-S-002-O | Notify client about message arrival - POST | 5.12.5 | |

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# Appendix C. Application/x-www-form-urlencoded Request Format for POST Operations (Normative)

In all ParlayREST specifications, Appendix C defines a format for API requests where the body of the request is encoded using the application/x-www-form-urlencoded MIME type.

In this particular specification, Appendix C has been intentionally left empty.

Note: The use case for x-www-form-urlencoded parameters is the submission of the parameters directly to the REST resource from an HTML form in a web browser. The web browser submits forms using the POST method. Therefore, this section only applies to the POST method. As there are only POST methods for notification defined in this specification, there are no x-www-form-urlencoded parameters to specify.

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# Appendix D. JSON examples (Informative)

JSON (JavaScript Object Notation) is a lightweight, text-based, language-independent data interchange format. It provides a simple means to represent basic name-value pairs, arrays and objects. JSON is relatively trivial to parse and evaluate using standard JavaScript libraries, and hence is suited for Parlay REST invocations from browsers or other processors with JavaScript engines. Further information on JSON can be found at [RFC 4627].

The following examples show the request and response for various operations using a JSON binding. The examples follow the XML to JSON serialization rules in [OMA_REST_TS_Common]. A JSON response can be obtained by using the content type negotiation mechanism specified in [OMA_REST_TS_Common].

For full details on the operations themselves please refer to the section number indicated.

## D.1 Get location single address (section 5.4.3.1)

Request:

```
GET /exampleAPI/1/location/queries/location?address=tel%3A%2B1-555-0100&tolerance=LowDelay&requestedAccuracy=1000
&acceptableAccuracy=1000 HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnnn
Date: Thu, 04 Jun 2009 02:51:59 GMT

{"terminalLocationList": {"terminalLocation": {
   "address": "tel:+1-555-0100",
   "currentLocation": {
      "accuracy": "100",
      "altitude": "1001.0",
      "latitude": "-80.86302",
      "longitude": "41.277306",
      "timestamp": "2009-06-03T00:27:23.000Z"
   },
   "locationRetrievalStatus": "Retrieved"
}}}
```

## D.2 Get location multiple addresses (section 5.4.3.2)

Request:

```
GET /exampleAPI/1/location/queries/location?address=tel%3A%2B1-555-0100&address=tel%3A%2B1-555-0101&
Tolerance=LowDelay&requestedAccuracy=1000&acceptableAccuracy=1000 HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 200 OK

Content-Type: application/json
Content-Length: nnnn
```

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```
Date: Thu, 04 Jun 2009 02:51:59 GMT

{"terminalLocationList": {"terminalLocation": [
   {
      "address": "tel:+1-555-0100",
      "currentLocation": {
         "accuracy": "100",
         "altitude": "1001.0",
         "latitude": "-80.86302",
         "longitude": "41.277306",
         "timestamp": "2009-06-03T00:27:23.000Z"
      },
      "locationRetrievalStatus": "Retrieved"
   },
   {
      "address": "tel:1-555-0101",
      "errorInformation": {
         "messageId": "SVC0001",
         "text": "A service error occurred. %1 %2",
         "variables": [
            "Location information is not available for",
            "tel:1-555-0101"
         ]
      },
      "locationRetrievalStatus": "Error"
   }
]}}
```

# D.3 Location with unsupported accuracy (section 5.4.3.3)

Request:

```
GET /exampleAPI/1/location/queries/location?resFormat=JSON&address= tel%3A%2B1-555-
0100&tolerance=LowDelay&requestedAccuracy=10&acceptableAccuracy=100 HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnnn
Date: Thu, 04 Jun 2009 02:51:59 GMT

{"requestError": {
   "link": {
      "href": "http://example.com/exampleAPI/1/location/queries/location",
      "rel": "TerminalLocationList"
   },
   "policyException": {
      "messageId": "POL0230",
      "text": "The requested accuracy %1 is not supported by the policy",
      "variables": "10"
   }
}}
```

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# D.4 Location with unauthorized requester (section 5.4.3.4)

Request:

```
GET /exampleAPI/1/location/queries/location?requester=tel%3A%2B1-555-0102&address=tel%3A%2B1-555-0100&tolerance=LowDelay&
requestedAccuracy=10&acceptableAccuracy=100 HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnnn
Date: Thu, 04 Jun 2009 02:51:59 GMT

{"requestError": {
   "policyException": {
      "messageId": "POL0002",
      "text": "Privacy error."
   }
}}
```

# D.5 Distance between a terminal and a location (section 5.5.3.1)

Request:

```
GET /exampleAPI/1/location/queries/distance?resFormat=JSON&address=tel%3A%2B1-555-0101&latitude=50&longitude=125 HTTP/1.1
Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnnn
Date: Thu, 04 Jun 2009 02:51:59 GMT

{"terminalDistance": {"distance": "100"}}
```

# D.6 Distance between two terminals (section 5.5.3.2)

Request:

```
GET /exampleAPI/1/location/queries/distance?address=tel%3A%2B1-555-0101& address=tel%3A%2B1-555-0102 HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnnn
Date: Thu, 04 Jun 2009 02:51:59 GMT
```

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```
{"terminalDistance": {"distance": "100"}}
```

# D.7 Invalid address (section 5.5.3.3)

Request:

```
GET /exampleAPI/1/location/queries/distance?address=tel%3A%2B+1-555-0199&latitude=50&longitude=125 HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Content-Length: nnnn
Date: Thu, 04 Jun 2009 02:51:59 GMT

{"requestError": {
   "link": {
      "href": "http://example.com/exampleAPI/1/location/queries/distance",
      "rel": "TerminalDistance"
   },
   "serviceException": {
      "messageId": "SVC0002",
      "text": " Invalid input value for message part %1",
      "variables": " tel:++1-555-0199"
   }
}}
```

# D.8 Too many addresses (section 5.5.3.4)

Request:

```
GET /exampleAPI/1/location/queries/distance?address=tel%3A%2B+1-555-0199&address=tel%3A%2B+1-555-
0198&address=tel%3A%2B1-555-0101  HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 400 Bad Request
Content-Type: application/json
Content-Length: nnnn
Date: Thu, 04 Jun 2009 02:51:59 GMT

{"requestError": {
   "link": {
      "href": "http://example.com/exampleAPI/1/location/queries/distance",
      "rel": "TerminalDistance"
   },
   "policyException": {
      "messageId": "POL0003",
      "text": " Too many addresses specified in message part %1",
```

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```
      "variables": "addresses"
   }
}}
```

# D.9 Get periodic notification subscriptions (section 5.6.3)

Request:

```
GET /exampleAPI/1/location/subscriptions/periodic HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Date: Thu, 04 Jun 2009 02:51:59 GMT

{"notificationSubscriptionList": {"periodicNotificationSubscription": [
   {
      "address": "tel:+1-555-0100",
      "callbackReference": {
         "callbackData": "1234",
         "notifyURL": "http://application.example.com/notifications/LocationNotification"
      },
      "clientCorrelator": "0001",
      "frequency": "10",
      "requestedAccuracy": "10",
      "resourceURL": http://example.com/exampleAPI/1/location/subscriptions/periodic/tel:+1-555-0101 "
   },
   {
      "address": [
         "tel:+1-555-0100",
         "tel:+1-555-0101"
      ],
      "callbackReference": {
         "callbackData": "5678",
         "notifyURL": " http://application.example.com/notifications/LocationNotification"
      },
      "clientCorrelator": "0002",
      "frequency": "10",
      "requestedAccuracy": "10",
      "resourceURL": "http://example.com/exampleAPI/1/location/subscriptions/periodic/tel:+1-555-0102"
   }
]}}
```

# D.10 Create new periodic notification subscription, returning a representation of created resource (section 5.6.5.1)

Request:

```
POST /exampleAPI/1/location/subscriptions/periodic HTTP/1.1
Content-Type: application/JSON
Accept: application/json
```

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```
Host: example.com
Content-Length: nnnn

{"periodicNotificationSubscription": {
   "address": "tel:+1-555-0100",
   "callbackReference": {
      "callbackData": "1234",
      "notifyURL": "http://application.example.com/notifications/LocationNotification"
   },
   "clientCorrelator": "0001",
   "frequency": "10",
   "requestedAccuracy": "10"
}}
```

Response:

```
HTTP/1.1 201 Created
Content-Type: application/json
Location: http://example.com/exampleAPI/1/location/subscriptions/periodic/tel:+1-555-0100
Date: Thu, 04 Jun 2009 02:51:59 GMT

{"periodicNotificationSubscription": {
   "address": "tel:+1-555-0100",
   "callbackReference": {
      "callbackData": "1234",
      "notifyURL": "http://application.example.com/notifications/LocationNotification"
   },
   "clientCorrelator": "0001",
   "frequency": "10",
   "requestedAccuracy": "10",
   "resourceURL": "http://example.com/exampleAPI/1/location/subscriptions/periodic/tel:+1-555-0100"
}}
```

# D.11 Create new periodic notification subscription, returning the location of created resource (section 5.6.5.2)

Request:

```
POST ./exampleAPI/1/location/subscriptions/periodic HTTP/1.1
Content-Type: application/JSON
Accept: application/json
Host: example.com
Content-Length: nnnn

{"periodicNotificationSubscription": {
   "address": "tel:+1-555-0100",
   "callbackReference": {
      "callbackData": "1234",
      "notifyURL": "http://application.example.com/notifications/LocationNotification"
   },
   "clientCorrelator": "0001",
   "frequency": "10",
   "requestedAccuracy": "10"
}}
```

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Response:

```
HTTP/1.1 201 Created
Content-Type: application/json
Location: http://example.com/exampleAPI/1/location/subscriptions/periodic/tel:+1-555-0100
Content-Length: nnnn
Date: Thu, 04 Jun 2009 02:51:59 GMT

{"resourceReference": {
   "resourceURL": "http://example.com/exampleAPI/1/location/subscriptions/periodic/tel:+1-555-0100"
}}
```

# D.12 Read individual notification subscription (section 5.7.3)

Request:

```
GET /exampleAPI/1/location/subscriptions/periodic/tel%3A%2B1-555-0100 HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/JSON
Date: Thu, 04 Jun 2009 02:51:59 GMT

{"periodicNotificationSubscription": {
   "address": "tel:+1-555-0100",
   "callbackReference": {
      "callbackData": "1234",
      "notifyURL": "http://application.example.com/notifications/LocationNotification"
   },
   "clientCorrelator": "0001",
   "frequency": "10",
   "requestedAccuracy": "10",
   "resourceURL": "http://example.com/exampleAPI/1/location/subscriptions/periodic/tel:+1-555-0100"
}}
```

# D.13 Update individual notification subscription (section 5.7.4)

Request:

```
PUT /exampleAPI/1/location/subscriptions/periodic/tel%3A%2B1-555-0100 HTTP/1.1
Content-Type: application/json
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Date: Thu, 04 Jun 2009 02:51:59 GMT

{"periodicNotificationSubscription": {
   "address": "tel:+1-555-0100",
```

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```
   "callbackReference": {
      "callbackData": "1234",
      "notifyURL": "http://application.example.com/notifications/LocationNotification"
   },
   "clientCorrelator": "0001",
   "frequency": "60",
   "requestedAccuracy": "5",
   "resourceURL": "http://example.com/exampleAPI/1/location/subscriptions/periodic/tel:+1-555-0100"
}}
```

Delete a notification subscription (section 5.7.6.1)

Request:

```
DELETE /exampleAPI/1/location/subscriptions/periodic/tel%3A%2B1-555-0100 HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 204 No Content
Date: Thu, 04 Jun 2009 02:51:59 GMT
```

# D.14 Read all active area(circle) notification subscriptions (section 5.8.3)

Request:

```
GET /exampleAPI/1/location/subscriptions/area/circle HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Date: Thu, 04 Jun 2009 02:51:59 GMT

{"notificationSubscriptionList": {"circleNotificationSubscription": [
   {
      "address": "tel:+1-555-0100",
      "callbackReference": {
         "callbackData": "4444",
         "notifyURL": "http://application.example.com/notifications/LocationNotification"
      },
      "checkImmediate": "true",
      "clientCorrelator": "0003",
      "enteringLeavingCriteria": "Entering",
      "frequency": "10",
      "latitude": "100.23",
      "longitude": "-200.45",
      "radius": "500",
      "resourceURL": "http://example.com/exampleAPI/1/location/subscriptions/area/circle/tel:+1-555-0101",
```

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```
      "trackingAccuracy": "10"
   },
   {
      "address": [
         "tel:+1-555-0100",
         "tel:+1-555-0101"
      ],
      "callbackReference": {
         "callbackData": "5555",
         "notifyURL": "http://application.example.com/notifications/LocationNotification"
      },
      "checkImmediate": "true",
      "clientCorrelator": "0004",
      "enteringLeavingCriteria": "Entering",
      "frequency":"10",
      "latitude": "100.23",
      "longitude": "-200.45",
      "radius": "500",
      "resourceURL": "http://example.com/exampleAPI/1/location/subscriptions/area/circle/tel:+1-555-0102",
      "trackingAccuracy": "10"
   }
]}}
```

# D.15 Create new notification subscription (section 5.8.5)

Request:

```
POST /exampleAPI/1/location/subscriptions/area/circle HTTP/1.1
Content-Type: application/json
Accept: application/json
Host: example.com
Content-Length: nnnn

{"circleNotificationSubscription": {
   "address": "tel:+1-555-0100",
   "callbackReference": {
      "callbackData": "4444",
      "notifyURL": "http://application.example.com/notifications/LocationNotification"
   },
   "checkImmediate": "true",
   "clientCorrelator": "0003",
   "enteringLeavingCriteria": "Entering",
   "frequency":"10",
   "latitude": "100.23",
   "longitude": "-200.45",
   "radius": "500",
   "trackingAccuracy": "10"
}}
```

Response:

```
HTTP/1.1 201 Created
Content-Type: application/json
 Location: http://example.com/exampleAPI/1/location/subscriptions/area/circle/tel:+1-555-0100
Date: Thu, 04 Jun 2009 02:51:59 GMT
```

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{"circleNotificationSubscription": {
"address": "tel:+1-555-0100",
"callbackReference": {
"callbackData": "4444",
"notifyURL": "http://application.example.com/notifications/LocationNotification"
},
"checkImmediate": "true",
"clientCorrelator": "0003",
"enteringLeavingCriteria": "Entering",
"frequency": "10",
"latitude": "100.23",
"longitude": "-200.45",
"radius": "500",
"resourceURL": "http://example.com/exampleAPI/1/location/subscriptions/area/circle/tel:+1-555-0100",
"trackingAccuracy": "10"
}}

# D.16 Get individual notification subscription (section 5.9.3)

Request:

```
GET /exampleAPI/1/location/subscriptions/area/circle/tel:+1-555-0100 HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Date: Thu, 04 Jun 2009 02:51:59 GMT
```

{"circleNotificationSubscription": {
"address": "tel:+1-555-0100",
"callbackReference": {
"callbackData": "4444",
"notifyURL": "http://application.example.com/notifications/LocationNotification"
},
"checkImmediate": "true",
"clientCorrelator": "0003",
"enteringLeavingCriteria": "Entering",
"frequency": "10",
"latitude": "100.23",
"longitude": "-200.45",
"radius": "500",
"resourceURL": "http://example.com/exampleAPI/1/location/subscriptions/area/circle/tel:+1-555-0100",
"trackingAccuracy": "10"
}}

# D.17 Update subscription for notification (section 5.9.4)

Request:

```
PUT /exampleAPI/1/location/subscriptions/area/circle/tel:+1-555-0100 HTTP/1.1
```

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```
Content-Type: application/json
Accept: application/json
Host: example.com
Content-Length: nnnn

{"circleNotificationSubscription": {
   "address": "tel:+1-555-0100",
   "callbackReference": {
      "callbackData": "4444",
      "notifyURL": "http://application.example.com/notifications/LocationNotification"
   },
   "checkImmediate": "true",
   "clientCorrelator": "0003",
   "enteringLeavingCriteria": "Entering",
   "frequency": "10",
   "latitude": "100.23",
   "longitude": "-200.45",
   "radius": "50",
   "resourceURL": "http://example.com/exampleAPI/1/location/subscriptions/area/circle/tel:+1-555-0100",
   "trackingAccuracy": "10"
}}
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Date: Thu, 04 Jun 2009 02:51:59 GMT

{"circleNotificationSubscription": {
   "address": "tel:+1-555-0100",
   "callbackReference": {
      "callbackData": "4444",
      "notifyURL": "http://application.example.com/notifications/LocationNotification"
   },
   "checkImmediate": "true",
   "clientCorrelator": "0003",
   "enteringLeavingCriteria": "Entering",
   "frequency": "10",
   "latitude": "100.23",
   "longitude": "-200.45",
   "radius": "50",
   "resourceURL": "\http://example.com/exampleAPI/1/location/subscriptions/area/circle/tel:+1-555-0100",
   "trackingAccuracy": "10"
}}
```

## D.18 Delete a subscription for area(circle) notification (section 5.9.6)

Request:

```
DELETE /exampleAPI/1/location/subscriptions/area/circle/tel:+1-555-0100 HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

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```
HTTP/1.1 204 No Content
Date: Thu, 04 Jun 2009 02:51:59 GMT
```

# D.19 Read distance notification subscription (section 5.10.3)

Request:

```
GET /exampleAPI/1/location/subscriptions/distance HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Date: Thu, 04 Jun 2009 02:51:59 GMT

{"notificationSubscriptionList": {"distanceNotificationSubscription": [
   {
      "callbackReference": {
         "callbackData": "6666",
         "notifyURL": "http://application.example.com/notifications/LocationNotification"
      },
      "checkImmediate": "true",
      "clientCorrelator": "0006",
      "criteria": "AllWithinDistance",
      "distance": "100",
      "frequency": "10",
      "monitoredAddress": [
         "tel:+1-555-0101",
         "tel:+1-555-0102"
      ],
      "referenceAddress": "tel:+1-555-0100",
      "resourceURL": "http://example.com/exampleAPI/1/location/subscriptions/distance/tel:+1-555-0101",
      "trackingAccuracy": "10"
   },
   {
      "callbackReference": {
         "callbackData": "7777",
         "notifyURL": "http://application.example.com/notifications/LocationNotification"
      },
      "checkImmediate": "true",
      "clientCorrelator": "0007",
      "criteria": "AnyBeyondDistance",
      "distance": "1000",
      "frequency": "10",
      "monitoredAddress": [
         "tel:+1-555-0100",
         "tel:+1-555-0101",
         "tel:+1-555-0102"
      ],
      "resourceURL": "http://example.com/exampleAPI/1/location/subscriptions/distance/tel:+1-555-0102",
      "trackingAccuracy": "50"
   }
```

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```
]}}
```

# D.20 Create new distance notification (section 5.10.5)

Request:

```
POST /exampleAPI/1/location/subscriptions/distance HTTP/1.1
Content-Type: application/json
Accept: application/json
Host: example.com
Content-Length: nnnn

{"distanceNotificationSubscription": {
   "callbackReference": {
      "callbackData": "6666",
      "notifyURL": "http://application.example.com/notifications/LocationNotification"
   },
   "checkImmediate": "true",
   "clientCorrelator": "0006",
   "criteria": "AllWithinDistance",
   "distance": "100",
   "frequency": "10",
   "monitoredAddress": [
      "tel:+1-555-0101",
      "tel:+1-555-0102"
   ],
   "referenceAddress": "tel:+1-555-0100",
   "trackingAccuracy": "10"
}}
```

Response:

```
HTTP/1.1 201 Created
Content-Type: application/json
Location: http://example.com/exampleAPI/1/location/subscriptions/distance/tel:+1-555-0100
Date: Thu, 04 Jun 2009 02:51:59 GMT

{"distanceNotificationSubscription": {
   "callbackReference": {
      "callbackData": "6666",
      "notifyURL": "http://application.example.com/notifications/LocationNotification"
   },
   "checkImmediate": "true",
   "clientCorrelator": "0006",
   "criteria": "AllWithinDistance",
   "distance": "100",
   "frequency": "10",
   "monitoredAddress": [
      "tel:+1-555-0101",
      "tel:+1-555-0102"
   ],
   "referenceAddress": "tel:+1-555-0100",
   "resourceURL": "http://example.com/exampleAPI/1/location/subscriptions/distance/tel:+1-555-0100",
   "trackingAccuracy": "10"
}}
```

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# D.21 Read a subscription for distance notification (section 5.11.3)

Request:

```
GET /exampleAPI/1/location/subscriptions/distance/tel:+1-555-0100 HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Date: Thu, 04 Jun 2009 02:51:59 GMT

{"distanceNotificationSubscription": {
   "callbackReference": {
      "callbackData": "6666",
      "notifyURL": "http://application.example.com/notifications/LocationNotification"
   },
   "checkImmediate": "true",
   "clientCorrelator": "0006",
   "criteria": "AllWithinDistance",
   "distance": "100",
   "frequency": "10",
   "monitoredAddress": [
      "tel:+1-555-0101",
      "tel:+1-555-0102"
   ],
   "referenceAddress": "tel:+1-555-0100",
   "resourceURL": "http://example.com/exampleAPI/1/location/subscriptions/distance/tel:+1-555-0100",
   "trackingAccuracy": "10"
}}
```

# D.22 Update a distance notification subscription (section 5.11.4.1)

Request:

```
PUT /exampleAPI/1/location/subscriptions/distance/tel:+1-555-0100 HTTP/1.1
Content-Type: application/json
Accept: application/json
Host: example.com
Content-Length: nnnn

{"distanceNotificationSubscription": {
   "callbackReference": {
      "callbackData": "6666",
      "notifyURL": "http://application.example.com/notifications/LocationNotification"
   },
   "checkImmediate": "true",
   "clientCorrelator": "0006",
   "criteria": "AllWithinDistance",
   "distance": "100",
   "frequency": "10",
   "monitoredAddress": [
```

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```
        "tel:+1-555-0101",
        "tel:+1-555-0102",
        "tel:+1-555-0103"
    ],
    "referenceAddress": "tel:+1-555-0100",
    "resourceURL": "http://example.com/exampleAPI/1/location/subscriptions/distance/tel:+1-555-0100",
    "trackingAccuracy": "10"
}}
```

Response:

```
HTTP/1.1 200 OK
Content-Type: application/json
Date: Thu, 04 Jun 2009 02:51:59 GMT

{"distanceNotificationSubscription": {
    "callbackReference": {
        "callbackData": "6666",
        "notifyURL": "http://application.example.com/notifications/LocationNotification"
    },
    "checkImmediate": "true",
    "clientCorrelator": "0006",
    "criteria": "AllWithinDistance",
    "distance": "100",
    "frequency": "10",
    "monitoredAddress": [
        "tel:+1-555-0101",
        "tel:+1-555-0102",
        "tel:+1-555-0103"
    ],
    "referenceAddress": "tel:+1-555-0100",
    "resourceURL": "http://example.com/exampleAPI/1/location/subscriptions/distance/tel:+1-555-0100",
    "trackingAccuracy": "10"
}}
```

# D.23 Delete a distance notification subscription (section 5.11.6.1)

Request:

```
DELETE /exampleAPI/1/location/subscriptions/distance/tel:+1-555-0100 HTTP/1.1
Accept: application/json
Host: example.com
```

Response:

```
HTTP/1.1 204 No Content
Date: Thu, 04 Jun 2009 02:51:59 GMT
```

# D.24 Circle area notification – one terminal (section 5.12.5.1)

Request:

```
POST /notifications/LocationNotification HTTP/1.1
Content-Type: application/json
```

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```
Accept: application/json
Host: application.example.com
Content-Length: nnnn

{"subscriptionNotification": {
   "callbackData": "4444",
   "enteringLeavingCriteria": "Entering",
   "isFinalNotification": "false",
   "link": {
      "href": "http://example.com/exampleAPI/1/location/subscriptions/area/circle/tel:+1-555-0100",
      "rel": "CircleNotificationSubscription"
   },
   "terminalLocation": {
      "address": "tel:+1-555-0100",
      "currentLocation": {
         "accuracy": "100",
         "altitude": "1001.0",
         "latitude": "-80.86302",
         "longitude": "41.277306",
         "timestamp": "2009-06-03T00:27:23.000Z"
      },
      "locationRetrievalStatus": "Retrieved"
   }
}}
```

Response:

```
HTTP/1.1 204 No Content
Date: Thu, 04 Jun 2009 02:51:59 GMT
```

# D.25 Periodic location notification – one terminal (section 5.12.5.2)

Request:

```
POST /notifications/LocationNotification HTTP/1.1
Content-Type: application/json
Accept: application/json
Host: application.example.com
Content-Length: nnnn

{"subscriptionNotification": {
   "callbackData": "1234",
   "isFinalNotification": "false",
   "link": {
      "href": "http://example.com/exampleAPI/1/location/subscriptions/periodic/tel:+1-555-0100",
      "rel": "PerodicNotificationSubscription"
   },
   "terminalLocation": {
      "address": "tel:+1-555-0100",
      "currentLocation": {
         "accuracy": "100",
         "altitude": "1001.0",
         "latitude": "-80.86302",
```

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```
            "longitude": "41.277306",
            "timestamp": "2009-06-03T00:27:23.000Z"
        },
        "locationRetrievalStatus": "Retrieved"
    }
}}
```

Response:

```
HTTP/1.1 204 No Content
Date: Thu, 04 Jun 2009 02:51:59 GMT
```

# D.26 Distance notification – one terminal (section 5.12.5.3)

Request:

```
POST /notifications/LocationNotification HTTP/1.1
Content-Type: application/json
Accept: application/json
Host: application.example.com
Content-Length: nnnn

{"subscriptionNotification": {
    "callbackData": "6666",
    "distanceCriteria": "AllBeyondDistance",
    "isFinalNotification": "false",
    "link": {
        "href": "http://example.com/exampleAPI/1/location/subscriptions/distance/tel:+1-555-0100",
        "rel": "DistanceNotificationSubscription"
    },
    "terminalLocation": {
        "address": "tel:+1-555-0100",
        "currentLocation": {
            "accuracy": "100",
            "altitude": "1001.0",
            "latitude": "-80.86302",
            "longitude": "41.277306",
            "timestamp": "2009-06-03T00:27:23.000Z"
        },
        "locationRetrievalStatus": "Retrieved"
    }
}}
```

Response:

```
HTTP/1.1 204 No Content
Date: Thu, 04 Jun 2009 02:51:59 GMT
```

# D.27 Final periodic location notification (section 5.12.5.4)

Request:

```
POST /notifications/LocationNotification HTTP/1.1
```

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```
Content-Type: application/json
Accept: application/json
Host: application.example.com
Content-Length: nnnn

{"subscriptionNotification": {
   "callbackData": "1234",
   "isFinalNotification": "true",
   "link": {
      "href": "http://example.com/exampleAPI/1/location/subscriptions/periodic/tel:+1-555-0100",
      "rel": "FinalDistanceNotificationSubscription"
   },
   "terminalLocation": {
      "address": "tel:+1-555-0100",
      "currentLocation": {
         "accuracy": "100",
         "altitude": "1001.0",
         "latitude": "-80.86302",
         "longitude": "41.277306",
         "timestamp": "2009-06-03T00:27:23.000Z"
      },
      "locationRetrievalStatus": "Retrieved"
   }
}}
```

Response:

```
HTTP/1.1 204 No Content
Date: Thu, 04 Jun 2009 02:51:59 GMT
```

# D.28 Subscription cancellation notification (section 5.12.5.5)

Request:

```
POST /notifications/LocationNotification HTTP/1.1
Content-Type: application/json
Accept: application/json
Host: application.example.com
Content-Length: nnnn

{"subscriptionCancellationNotification": {
   "address": "tel:+1-555-0100",
   "callbackData": "6666",
   "link": {
      "href": "http://example.com/exampleAPI/1/location/subscriptions/distance/tel:+1-555-0100",
      "rel": "DistanceNotificationSubscription"
   },
   "reason": {
      "messageId": "SVC0001",
      "text": "A service error occurred. %1 %2",
      "variables": [
         "Location information is not available for",
         "tel:+1-555-0100"
      ]
   }
```

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```
}}
```

Response:

```
HTTP/1.1 204 No Content
Date: Thu, 04 Jun 2009 02:51:59 GMT
```

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# Appendix E. Parlay X operations mapping (Informative)

The table below illustrates the mapping between REST resources/operations and Parlay X equivalent operations.

| ParlayREST Resource | ParlayREST Method | ParlayREST Section reference | Parlay X equivalent operation |
|---|---|---|---|
| Terminal location | GET | 5.4.3 | GetLocation<br>GetLocationForGroup |
| Terminal distance | GET | 5.5.3 | GetTerminalDistance |
| Periodic location notification subscriptions | POST | 5.6.5 | StartPeriodicNotification |
| Individual periodic location notification subscription | PUT | 5.7.4 | StartPeriodicNotification |
| Individual periodic location notification subscription | DELETE | 5.7.6 | EndNotification |
| Area (circle) notification subscriptions | POST | 5.8.5 | StartGeographicalNotification |
| Area (circle) individual notification subscription | PUT | 5.9.4 | StartGeographicalNotification |
| Area (circle) individual notification subscription | DELETE | 5.9.6 | EndNotification |
| Distance notification subscriptions | POST | 5.10.5 | StartDistanceNotification |
| Distance individual notification subscription | PUT | 5.11.4 | StartDistanceNotification |
| Distance individual notification subscription | DELETE | 5.11.6 | EndNotification |
| Client notification callback resource | POST<br>POST<br>POST<br>POST | 5.12.5 | LocationNotification<br>DistanceNotification<br>LocationEnd<br>LocationError |

**Table 1 Parlay X operations mapping**

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