

**Open Service Access (OSA);  
Mapping of Parlay X Web Services to Parlay/OSA APIs;  
Part 9: Terminal Location Mapping;  
Sub-part 2: Mapping to Mobility User Location CAMEL**



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Reference

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Keywords

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## Foreword

This Technical Report (TR) has been produced by ETSI Technical Committee Telecommunications and Internet converged Services and Protocols for Advanced Networking (TISPAN).

The present document is part 9, sub-part 2, of a multi-part deliverable providing an informative mapping of Parlay X Web Services to the Parlay Open Service Access (OSA) APIs and, where applicable, to IMS, as identified below:

- Part 1: "Common Mapping";
- Part 2: "Third Party Call Mapping";
- Part 3: "Call Notification Mapping";
- Part 4: "Short Messaging Mapping";
- Part 5: "Multimedia Messaging Mapping";
- Part 6: "Payment Mapping";
- Part 7: "Account Management Mapping";
- Part 8: "Terminal Status Mapping";
- Part 9: "Terminal Location Mapping";**
  - Sub-part 1: "Mapping to Mobility User Location";
  - Sub-part 2: "Mapping to Mobility User Location CAMEL";**
- Part 10: "Call Handling Mapping";
- Part 11: "Audio Call Mapping";
- Part 12: "Multimedia Conference Mapping";
- Part 14: "Presence Mapping".

NOTE: Part 13 has not been provided as there is currently no defined mapping between ES 202 391-13 [5] and the Parlay/OSA APIs. If a mapping is developed, it will become part 13 of this series.

The present document has been defined jointly between ETSI, The Parlay Group (<http://www.parlay.org>) and the 3GPP.

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# 1 Scope

The present document specifies the mapping of the Parlay X Terminal Location Web Service to the Mobility User Location CAMEL Service Capability Feature (SCF).

The Parlay X Web Services provide powerful yet simple, highly abstracted, imaginative, telecommunications functions that application developers and the IT community can both quickly comprehend and use to generate new, innovative applications.

The Open Service Access (OSA) specifications define an architecture that enables application developers to make use of network functionality through an open standardized interface, i.e. the Parlay/OSA APIs.

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# 2 References

For the purposes of this Technical Report (TR), the following references apply:

[1] ETSI TR 121 905: "Universal Mobile Telecommunications System (UMTS); Vocabulary for 3GPP Specifications (3GPP TR 21.905)".

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

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

[3] ETSI TR 102 397-1: "Open Service Access (OSA); Mapping of Parlay X Web Services to Parlay/OSA APIs; Part 1: Common Mapping".

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

[5] ETSI ES 202 391-13: "Open Service Access (OSA); Parlay X Web Services; Part 13: Address List Management".

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# 3 Definitions and abbreviations

## 3.1 Definitions

For the purposes of the present document, the terms and definitions given in TR 102 397-1 [3] apply.

## 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in TR 102 397-1 [3] apply.

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# 4 Mapping description

The Terminal Location capability can be implemented with Parlay/OSA Mobility User Location CAMEL.

It is applicable to ETSI OSA 1.x/2.x/3.x, Parlay/OSA 3.x/4.x/5.x and 3GPP Releases 4.x/5.x/6.x.

## 5 Sequence diagrams

### 5.1 Single address query

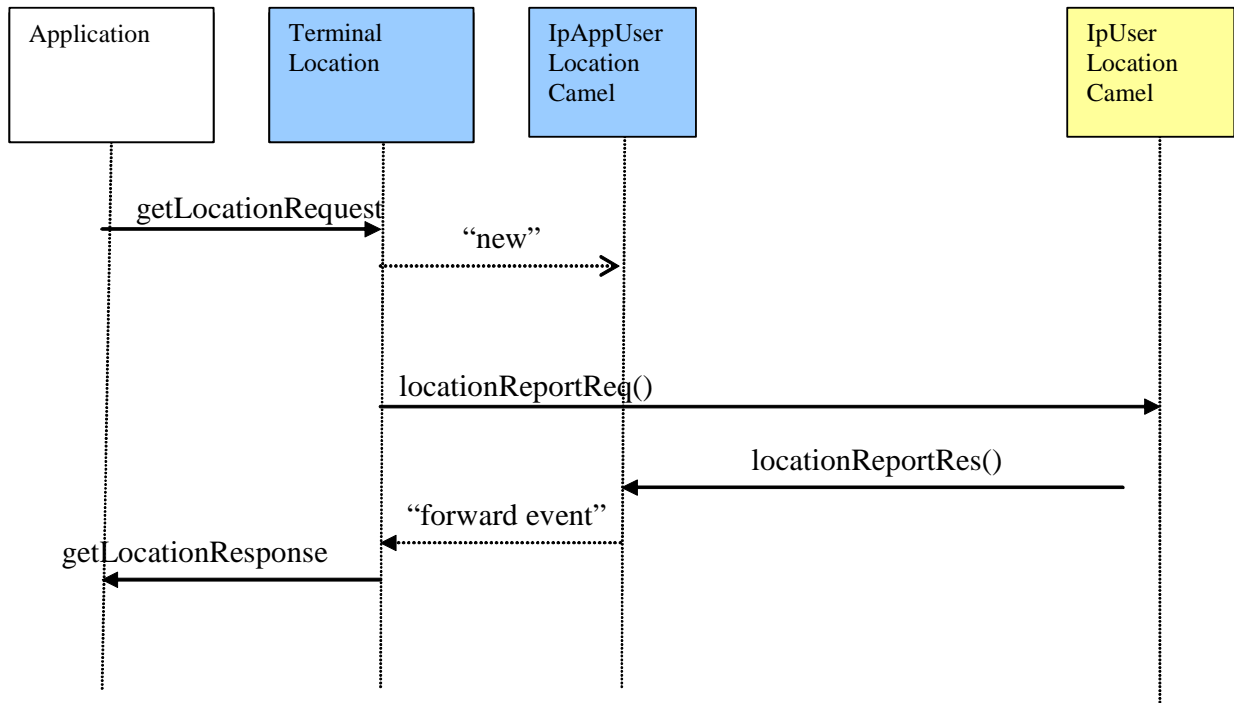


Figure 1

### 5.2 Group query

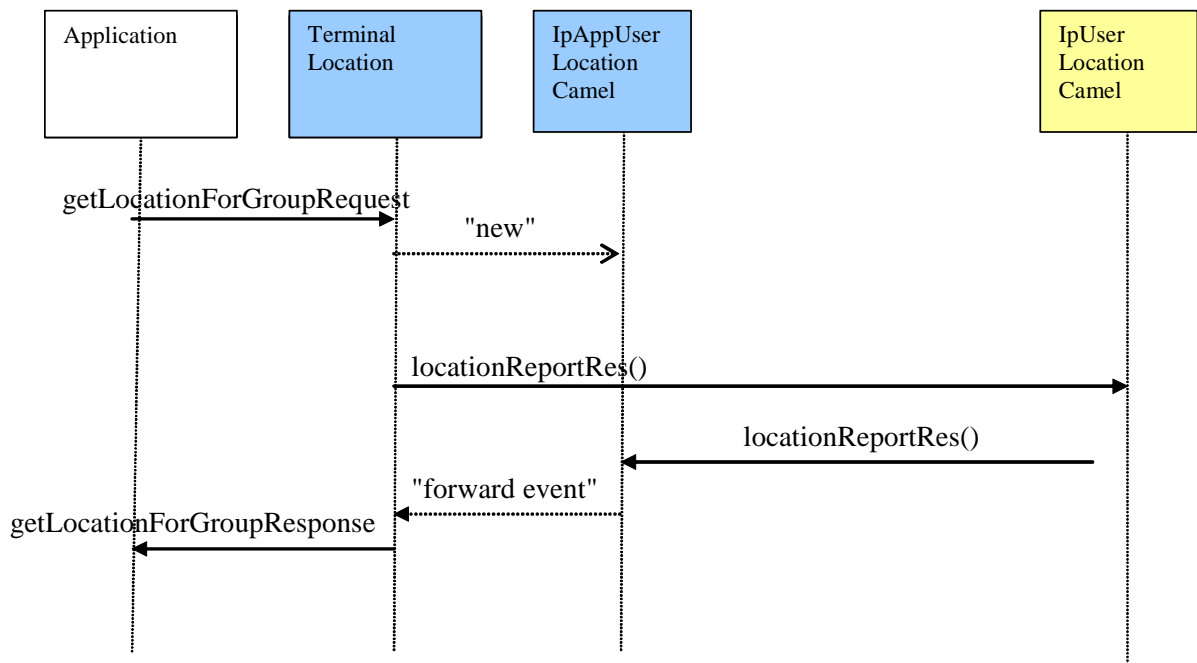


Figure 2

## 5.3 Periodic notification

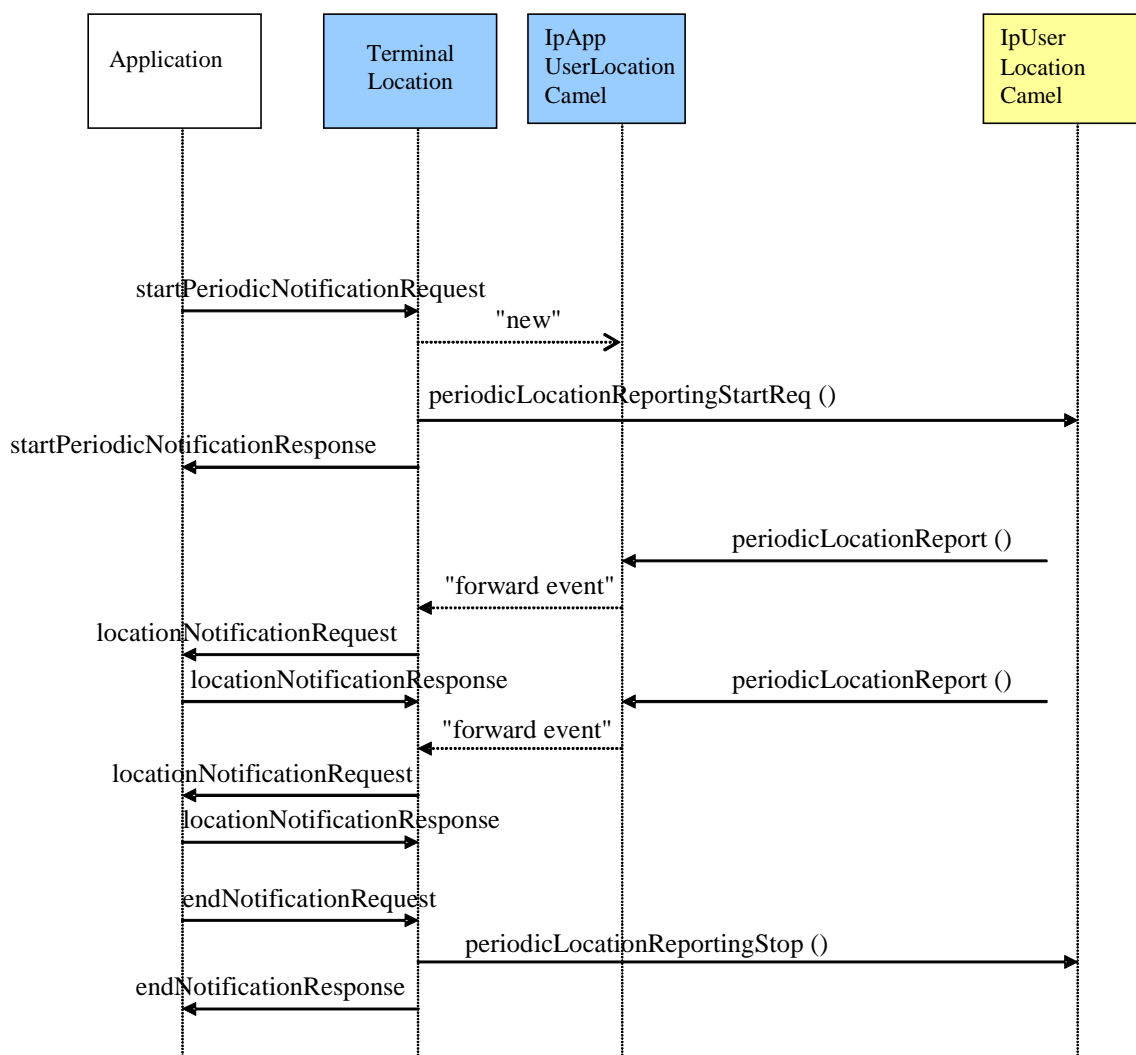


Figure 3

## 6 Detailed mapping information

### 6.1 Operations

#### 6.1.1 getLocation

The sequence diagram in clause 5.1 illustrates the flow for this operation.

A synchronous service from the Parlay X client's point of view is mapped onto an asynchronous service from the Parlay client's point of view. It is mapped to the following Parlay/OSA methods:

- `IpUserLocationCamel.locationReportReq;`
- `IpAppUserLocationCamel.locationReportRes;`
- `IpAppUserLocationCamel.locationReportErr.`

### 6.1.1.1 Mapping to `IpUserLocationCamel.locationReportReq`

The `IpUserLocationCamel.locationReportReq` method is invoked with the following parameters.

Name	Type	Comment
<code>appLocationCamel</code>	<code>IpAppUserLocationCamelRef</code>	Not mapped. Reference to callback (internal).
<code>users</code>	<code>TpAddressSet</code>	Specifies a single address, which is constructed based on the URI provided in the <b>address</b> part of the <b>getLocationRequest</b> message, mapped as described in TR 102 397-1 [3].

The **requestedAccuracy** part of the **getLocationRequest** message is not mapped to the `IpUserLocationCamel.locationReportReq` method.

The **acceptableAccuracy** part of the **getLocationRequest** message is not mapped to the `IpUserLocationCamel.locationReportReq` method. Instead it is used to filter geographic location information contained in the `IpAppUserLocationCamel.locationReportRes` method, as described in clause 6.1.1.2.

The result from `IpUserLocationCamel.locationReportReq` is of type `TpAssignmentID` and is used internally to correlate the callbacks. It is not mapped to the Parlay X interface.

Parlay exceptions thrown by `IpUserLocationCamel.locationReportReq` are mapped to Parlay X exceptions as defined in clause 6.2.

### 6.1.1.2 Mapping from `IpAppUserLocationCamel.locationReportRes`

The `IpAppUserLocationCamel.locationReportRes` method is invoked with the following parameters.

Name	Type	Comment
<code>assignmentId</code>	<code>TpAssignmentID</code>	Not mapped. [The value provide in the result from <code>IpUserLocationCamel.locationReportReq</code> ].
<code>locations</code>	<code>TpUserLocationCamelSet</code>	Specifies the location of a single user. If the location data is valid, then it is mapped to the <b>result</b> part of the <b>getLocationResponse</b> message, which is a <b>LocationInfo</b> structure. If the location data is invalid, a Parlay X exception is raised. Determining the validity of the location data is described below.



The `TpUserLocationCamel` structure is mapped to the **LocationInfo** structure, or a Parlay X exception, as follows.

Name	Type	Comment
TpUserLocation Camel: StatusCode	TpMobilityError	If this element value is other than <code>P_M_OK</code> , then the location retrieval attempt has failed and the element error value is mapped to a Parlay X exception as defined in clause 6.2.
TpUserLocation Camel: UserID	TpAddress	This element is mapped to the <b>LocationInfo:Address</b> element, but only if the <code>StatusCode</code> element value is <code>P_M_OK</code> .
All other elements of The <code>TpUserLocationCamel</code> structure are defined only if the <code>StatusCode</code> element value is <code>P_M_OK</code> .		
TpUserLocation Camel: Geographical PositionPresent	TpBoolean	For <code>GeographicalPositionPresent</code> (of type <code>TpBoolean</code> ): <ul style="list-style-type: none"> <li>If the value is "False", then the location retrieval attempt has failed and the Parlay X exception <b>SVC0001: Service error</b> is returned.</li> </ul>
TpUserLocation Camel: Geographical Position	TpGeographical Position	<ul style="list-style-type: none"> <li>If the value is "True", then the <code>GeographicalPosition</code> element is present. It specifies a position and an area of uncertainty. It is mapped to the elements of <b>LocationInfo</b> as follows: <ul style="list-style-type: none"> <li>Longitude maps to <b>Longitude</b></li> <li>Latitude maps to <b>Latitude</b></li> <li><code>TypeOfUncertaintyShape</code> and all other related elements of the <code>GeographicalPosition</code> field map to <b>Accuracy</b>. However, if the mapped <b>Accuracy</b> value is greater than the value of the <b>acceptableAccuracy</b> part of the original <b>getLocationRequest</b> message, then the Parlay X exception <b>SVC0200: Accuracy out of limit</b> is returned instead.</li> </ul> </li> </ul>
TpUserLocation Camel: TimestampPresent	TpBoolean	If the <code>TimestampPresent</code> element value is "False", then the <code>Timestamp</code> element is not present.
TpUserLocation Camel: Timestamp	TpDateAndTime	If the <code>TimestampPresent</code> element value is "True", then the <code>Timestamp</code> element maps to <b>LocationInfo:Timestamp</b> .
TpUserLocation Camel: <i>...all other elements</i>	Tp...	All other elements of <code>TpUserLocationCamel</code> are Camel-specific and are not mapped to the <b>LocationInfo</b> structure.

Note that there is no mapping to the **LocationInfo:Altitude** element of the **result** part of the **getLocationResponse** message.

### 6.1.1.3 Mapping from `IpAppUserLocationCamel.locationReportErr`

The `IpAppUserLocationCamel.locationReportErr` method is invoked with the following parameters.

Name	Type	Comment
assignmentId	TpAssignmentID	Not mapped. [The value provide in the result from <code>IpUserLocationCamel.locationReportReq</code> ].
cause	TpMobilityError	Specifies the error and additional information that led to the failure.
diagnostic	TpMobilityDiagnostic	The error value/information is mapped to a Parlay X exception as defined in clause 6.2.

## 6.1.2 getLocationForGroup

The sequence diagrams in clause 5.2 illustrates the flow for this operation.

A synchronous service from the Parlay X client's point of view is mapped onto an asynchronous service from the Parlay client's point of view. It is mapped to the following Parlay/OSA methods:

- `IpUserLocationCamel.locationReportReq;`
- `IpAppUserLocationCamel.locationReportRes;`
- `IpAppUserLocationCamel.locationReportErr.`

### 6.1.2.1 Mapping to `IpUserLocationCamel.locationReportReq`

The `IpUserLocationCamel.locationReportReq` method is invoked with the following parameters.

Name	Type	Comment
<code>appLocationCamel</code>	<code>IpAppUserLocationCamelRef</code>	Not mapped . Reference to callback (internal).
<code>users</code>	<code>TpAddressSet</code>	Specifies multiple addresses. Each address is constructed based on the URI provided in the <b>addresses</b> part of the <b>getLocationForGroupRequest</b> message, mapped as described in TR 102 397-1 [3].

The **requestedAccuracy** part of the **getLocationForGroupRequest** message is not mapped to the `IpUserLocationCamel.locationReportReq` method.

The **acceptableAccuracy** part of the **getLocationForGroupRequest** message is not mapped to the `IpUserLocationCamel.locationReportReq` method. Instead it is used to filter geographic location information contained in the `IpAppUserLocationCamel.locationReportRes` method, as described in clause 6.1.2.2.

The result from `IpUserLocationCamel.locationReportReq` is of type `TpAssignmentID` and is used internally to correlate the callbacks. It is not mapped to the Parlay X interface.

Parlay exceptions thrown by `IpUserLocationCamel.locationReportReq` are mapped to Parlay X exceptions as defined in clause 6.2.

### 6.1.2.2 Mapping from `IpAppUserLocationCamel.locationReportRes`

The `IpAppUserLocationCamel.locationReportRes` method is invoked with the following parameters.

Name	Type	Comment
<code>assignmentId</code>	<code>TpAssignmentID</code>	Not mapped. [The value provide in the result from <code>IpUserLocationCamel.locationReportReq</code> ].
<code>locations</code>	<code>TpUserLocationCamelSet</code>	Specifies the location of multiple users. It is mapped to the <b>result</b> part of the <b>getLocationForGroupResponse</b> message, which is a set of <b>LocationData</b> structures.

Each `TpUserLocationCamel` structure is mapped to a **LocationData** structure as follows.

Name	Type	Comment
TpUserLocation Camel: StatusCode	TpMobilityError	If this element value is other than <code>P_M_OK</code> , then the location retrieval attempt has failed and the element error value is mapped to a Parlay X exception as defined in clause 6.2. This Parlay X exception is returned in the <b>LocationData:ErrorInformation</b> element and the <b>LocationData:ReportStatus</b> element is assigned a value of <b>Error</b> .
TpUserLocation Camel: UserID	TpAddress	This element is mapped to the <b>LocationData:LocationInfo:Address</b> element.
All other elements of The <code>TpUserLocationCamel</code> structure are defined only if the <code>StatusCode</code> element value is <code>P_M_OK</code> .		
TpUserLocation Camel: Geographical PositionPresent	TpBoolean	For <code>GeographicalPositionPresent</code> (of type <code>TpBoolean</code> ): <ul style="list-style-type: none"> <li>If the value is "False", then the location retrieval attempt has failed and the Parlay X exception <b>SVC0001: Service error</b> is returned in the <b>LocationData:ErrorInformation</b> element and the <b>LocationData:ReportStatus</b> element is assigned a value of <b>Error</b>.</li> <li>If the value is "True", then the <code>GeographicalPosition</code> element is present. It specifies a position and an area of uncertainty. The <b>LocationData:ReportStatus</b> element is assigned a value of <b>Retrieved</b> and the <code>GeographicalPosition</code> element is mapped as follows: <ul style="list-style-type: none"> <li><code>Longitude</code> maps to <b>LocationData:LocationInfo:Longitude</b></li> <li><code>Latitude</code> maps to <b>LocationData:LocationInfo:Latitude</b></li> <li><code>TypeOfUncertaintyShape</code> and all other related elements of the <code>GeographicalPosition</code> field map to <b>LocationData:LocationInfo:Accuracy</b>. However, if the mapped <b>Accuracy</b> value is greater than the value of the <b>acceptableAccuracy</b> part of the original <code>getLocationForGroupRequest</code> message, then the Parlay X exception <b>SVC0200: Accuracy out of limit</b> is returned instead in the <b>LocationData:ErrorInformation</b> element and the <b>LocationData:ReportStatus</b> element is re-assigned a value of <b>Error</b>.</li> </ul> </li> </ul>
TpUserLocation Camel: Geographical Position	TpGeographical Position	
TpUserLocation Camel: TimestampPresent	TpBoolean	If the <code>TimestampPresent</code> element value is "False", then the <code>Timestamp</code> element is not present.
TpUserLocation Camel: Timestamp	TpDateAndTime	If the <code>TimestampPresent</code> element value is "True", then the <code>Timestamp</code> element maps to <b>LocationData:LocationInfo:Timestamp</b> .
TpUserLocation Camel: <i>...all other elements</i>	Tp...	All other elements of <code>TpUserLocationCamel</code> are Camel-specific and are not mapped to the <b>LocationData</b> structure.

Note that there is no mapping to the **LocationInfo:Altitude** element of any **LocationData** structure returned in the **result** part of the `getLocationForGroupResponse` message.

In the event that a `TpUserLocationCamel` element is missing for a requested address in the original request, then a **LocationData** structure is included in the **result** part of the `getLocationForGroupResponse` message. This **LocationData** structure contains the following element values:

- `LocationData:ReportStatus` value = `NotRetrieved`;
- `LocationData:LocationInfo:Address` value = the missing address.

### 6.1.2.3 Mapping from `IpAppUserLocationCamel.locationReportErr`

The `IpAppUserLocationCamel.locationReportErr` method is invoked with the following parameters.

Name	Type	Comment
assignmentId	TpAssignmentID	Not mapped. [The value provide in the result from <code>IpUserLocationCamel.locationReportReq</code> ].
cause	TpMobilityError	Specifies the error and additional information that led to the failure.
diagnostic	TpMobilityDiagnostic	The error value/information is mapped to a Parlay X exception as defined in clause 6.2.

### 6.1.3 getTerminalDistance

This operation is mapped to the same Parlay operations as the **getLocation** operation. The only difference between the operations is in the final distance calculation and the information presented to the caller.

A synchronous service from the Parlay X client's point of view is mapped onto an asynchronous service from the Parlay client's point of view. It is mapped to the following Parlay/OSA methods:

- `IpUserLocationCamel.locationReportReq;`
- `IpAppUserLocationCamel.locationReportRes;`
- `IpAppUserLocationCamel.locationReportErr.`

#### 6.1.3.1 Mapping to `IpUserLocationCamel.locationReportReq`

The `IpUserLocationCamel.locationReportReq` method is invoked with the following parameters.

Name	Type	Comment
appLocationCamel	IpAppUserLocationCamelRef	Not mapped . Reference to callback (internal).
users	TpAddressSet	Specifies a single address, which is constructed based on the URI provided in the <b>address</b> part of the <b>getTerminalDistanceRequest</b> message, mapped as described in TR 102 397-1 [3].

The **latitude** and **longitude** parts of the **getTerminalDistanceRequest** message are not mapped to the `IpUserLocationCamel.locationReportReq` method. Instead they are used to compute distance information using the latitude and longitude location information returned in the `IpAppUserLocationCamel.locationReportRes` method, as described in clause 6.1.3.2.

The result from `IpUserLocationCamel.locationReportReq` is of type `TpAssignmentID` and is used internally to correlate the callbacks. It is not mapped to the Parlay X interface.

Parlay exceptions thrown by `IpUserLocationCamel.locationReportReq` are mapped to Parlay X exceptions as defined in clause 6.2.

#### 6.1.3.2 Mapping from `IpAppUserLocationCamel.locationReportRes`

The `IpAppUserLocationCamel.locationReportRes` method is invoked with the following parameters.

Name	Type	Comment
assignmentId	TpAssignmentID	Not mapped. [The value provide in the result from <code>IpUserLocationCamel.locationReportReq</code> ].
locations	TpUserLocationCamelSet	Specifies the location of a single user If the location data is valid, then it is mapped to the <b>result</b> part of the <b>getTerminalDistanceResponse</b> message. If the location data is invalid, a Parlay X exception is raised. Determining the validity of the location data is described below.

The `TpUserLocationCamel` structure is mapped to the **result** part of the **getTerminalDistanceResponse** message, or a Parlay X exception, as follows.

Name	Type	Comment
TpUserLocation Camel: StatusCode	TpMobilityError	If this element value is other than <code>P_M_OK</code> , then the location retrieval attempt has failed and the element error value is mapped to a Parlay X exception as defined in clause 6.2.
TpUserLocation Camel: UserID	TpAddress	This element is not mapped, but is the same value as the <code>users</code> parameter of the <code>IpUserLocationCamel.locationReportReq</code> method.
All other elements of The <code>TpUserLocationCamel</code> structure are defined only if the <code>StatusCode</code> element value is <code>P_M_OK</code> .		
TpUserLocation Camel: Geographical PositionPresent	TpBoolean	For <code>GeographicalPositionPresent</code> (of type <code>TpBoolean</code> ): <ul style="list-style-type: none"> <li>If the value is "False", then the location retrieval attempt has failed and the Parlay X exception <b>SVC0001: Service error</b> is returned.</li> </ul>
TpUserLocation Camel: Geographical Position	TpGeographical Position	<ul style="list-style-type: none"> <li>If the value is "True", then the <code>GeographicalPosition</code> element is present. It specifies a position and an area of uncertainty. It is mapped as follows: <ul style="list-style-type: none"> <li><code>Longitude</code> and <code>Latitude</code> values are compared with the values of the <b>latitude</b> and <b>longitude</b> parts of the <b>getTerminalDistanceRequest</b> message to derive a distance value in meters for the <b>result</b> part of the <b>getTerminalDistanceResponse</b> message</li> <li><code>TypeOfUncertaintyShape</code> and all other related elements of the <code>GeographicalPosition</code> field are used to derive an accuracy value. However, if the derived accuracy value does not conform with the value of the <b>MinimumAcceptableAccuracy</b> web service policy, then the Parlay X exception <b>SVC0200: Accuracy out of limit</b> is returned instead.</li> </ul> </li> </ul>
TpUserLocation Camel: ...all other elements	Tp...	No other elements of <code>TpUserLocationCamel</code> are mapped.

### 6.1.3.3 Mapping from `IpAppUserLocationCamel.locationReportErr`

The `IpAppUserLocationCamel.locationReportErr` method is invoked with the following parameters.

Name	Type	Comment
assignmentId	TpAssignmentID	Not mapped. [The value provide in the result from <code>IpUserLocationCamel.locationReportReq</code> ].
cause	TpMobilityError	Specifies the error and additional information that led to the failure.
diagnostic	TpMobilityDiagnostic	The error value/information is mapped to a Parlay X exception as defined in clause 6.2.

### 6.1.4 startGeographicalNotification, locationNotification, locationError

Triggered notifications based on geographical areas are not supported under the Camel mapping.

### 6.1.5 startPeriodicNotification, locationNotification, locationError

The sequence diagram in clause 5.3 illustrates the flow of events when a client establishes a periodic location notification request.

The Parlay X **startPeriodicNotification** service is mapped onto an invocation of the Parlay `IpUserLocationCamel.periodicLocationReportingStartReq` service, establishing a periodic location notification request. When network events occur, the Parlay notification services `IpAppUserLocationCamel.periodicLocationReport` and `IpAppUserLocationCamel.periodicLocationReportErr` occur. These are mapped onto the Parlay X **locationNotification** and **locationError** notification services.

If the value of the **duration** part exceeds the time allowed in the web service **MaximumNotificationDuration** policy, then the value in the service policy will be used. When the notifications have run their course (by **duration**), an end of notifications message (**locationEndRequest** message) will be provided to the application and the `IpUserLocationCamel.periodicLocationReportingStop` method will be invoked.

The Periodic Notification related operations are mapped to/from the following Parlay/OSA methods:

- `IpUserLocationCamel.periodicLocationReportingStartReq;`
- `IpUserLocationCamel.periodicLocationReportingStop;`
- `IpAppUserLocationCamel.periodicLocationReport;`
- `IpAppUserLocationCamel.periodicLocationReportErr.`

#### 6.1.5.1 Mapping to `IpUserLocationCamel.periodicLocationReportingStartReq`

The `IpUserLocationCamel.periodicLocationReportingStartReq` method is invoked with the following parameters.

Name	Type	Comment
appLocationCamel	IpAppUserLocationCamelRef	Reference to callback for receiving notifications. Correlated internally with the endpoint for the corresponding Parlay X location notification service specified in the <b>reference</b> part of the <b>startPeriodicNotificationRequest</b> message.
users	TpAddressSet	Specifies a set of addresses for which the location shall be reported. They are constructed from the URIs provided in the <b>addresses</b> part of the <b>startPeriodicNotificationRequest</b> message, mapped as described in TR 102 397-1 [3].
reportingInterval	TpDuration	Specifies the requested interval in seconds between the reports. It is derived from the value of the <b>frequency</b> part.

The **requestedAccuracy** part of the **startPeriodicNotificationRequest** message is not mapped to the `IpUserLocationCamel.periodicLocationReportingStartReq` method.

The result from `IpUserLocationCamel.periodicLocationReportingStartReq` is of type `TpAssignmentID` and is used internally to correlate the callbacks. It is correlated internally with the endpoint for the corresponding Parlay X location notification service specified in the **reference** part of the **startPeriodicNotificationRequest** message.

Parlay exceptions thrown by `IpUserLocationCamel.periodicLocationReportingStartReq` are mapped to Parlay X exceptions as defined in clause 6.2.

#### 6.1.5.2 Mapping to `IpUserLocationCamel.periodicLocationReportingStop`

When the notifications have run their course (by **duration**), the `IpUserLocationCamel.periodicLocationReportingStop` method will be invoked with the following parameters.

Name	Type	Comment
stopRequest	TpMobilityStopAssignmentData	Specifies that the whole of the assignment shall be stopped, as follows: <ul style="list-style-type: none"> <li>• <code>AssignmentId</code> = the result from the <code>IpUserLocationCamel.periodicLocationReportingStartReq</code> method invocation</li> <li>• <code>StopScope</code> = <code>P_M_ALL_IN_ASSIGNMENT</code></li> <li>• <code>Users</code> = null set.</li> </ul>

Irrespective of the result returned from this method invocation, the **locationEndRequest** message is sent to the Parlay X application (at the endpoint specified in the **reference** part of the **startPeriodicNotificationRequest** message).

### 6.1.5.3 Mapping from IpAppUserLocationCamel.periodicLocationReport

The IpAppUserLocationCamel.periodicLocationReport method is invoked with the following parameters.

Name	Type	Comment
assignmentId	TpAssignmentID	Not mapped. [The value provide in the result from the IpUserLocationCamel.periodicLocationReportingStartReq].
locations	TpUserLocation CamelSet	Specifies the location of multiple users. For each user, if the location data is valid, then it is mapped to the <b>data</b> part of a <b>locationNotificationRequest</b> message, which is a <b>LocationInfo</b> structure. For each user with invalid location data, the notifications for this user are cancelled and a Parlay X exception is returned in the <b>reason</b> part of a <b>locationErrorRequest</b> message. Both message types are delivered to the Parlay X application at the endpoint specified in the <b>reference</b> part of the <b>startPeriodicNotificationRequest</b> message; the latter also defines the value of the <b>correlator</b> part of both message types. Determining the validity of the location data for each user is described below.

Each TpUserLocationCamel structure is mapped to a **LocationInfo** structure, or a Parlay X exception, as follows.

Name	Type	Comment
TpUserLocation Camel: StatusCode	TpMobilityError	<ul style="list-style-type: none"> <li>If this element value is other than P_M_OK, then the location retrieval attempt has failed and the element error value is mapped to a Parlay X exception as defined in clause 6.2.</li> <li>This Parlay X exception is reported to the Parlay X application in the <b>reason</b> part of a <b>locationErrorRequest</b> message.</li> </ul>
TpUserLocation Camel: UserID	TpAddress	This element is mapped to either the <b>data</b> part of a <b>locationNotificationRequest</b> message, i.e. the <b>LocationInfo:Address</b> element, or the <b>address</b> part of a <b>locationErrorRequest</b> message.
All other elements of The TpUserLocationCamel structure are defined only if the StatusCode element value is P_M_OK.		
TpUserLocation Camel: Geographical PositionPresent	TpBoolean	For GeographicalPositionPresent (of type TpBoolean): <ul style="list-style-type: none"> <li>If the value is "False", then the location retrieval attempt has failed and the Parlay X exception <b>SVC0001: Service error</b> is reported to the Parlay X application in the <b>reason</b> part of a <b>locationErrorRequest</b> message.</li> </ul>
TpUserLocation Camel: Geographical Position	TpGeographical Position	<ul style="list-style-type: none"> <li>If the value is "True", then the GeographicalPosition element is present. It specifies a position and an area of uncertainty. It is mapped as follows: <ul style="list-style-type: none"> <li>Longitude maps to <b>LocationInfo:Longitude</b></li> <li>Latitude maps to <b>LocationInfo:Latitude</b></li> <li>TypeOfUncertaintyShape and all other related elements of the GeographicalPosition field map to <b>LocationInfo:Accuracy</b>. However, if the mapped <b>Accuracy</b> value does not conform with the value of the <b>MinimumAcceptableAccuracy</b> web service policy, then the Parlay X exception <b>SVC0200: Accuracy out of limit</b> is returned instead in the <b>reason</b> part of a <b>locationErrorRequest</b> message.</li> </ul> </li> </ul>
TpUserLocation Camel: TimestampPresent	TpBoolean	If the TimestampPresent element value is "False", then the Timestamp element is not present.
TpUserLocation Camel: Timestamp	TpDateAndTime	If the TimestampPresent element value is "True", then the Timestamp element maps to <b>LocationInfo:Timestamp</b> .
TpUserLocation Camel: ...all other elements	Tp...	All other elements of TpUserLocationCamel are Camel-specific and are not mapped to the <b>LocationInfo</b> structure.

Note that there is no mapping to the **LocationInfo:Altitude** element returned in the **data** part of any **locationNotificationRequest** message.

### 6.1.5.4 Mapping from `IpAppUserLocationCamel.periodicLocationReportErr`

The `IpAppUserLocationCamel.periodicLocationReportErr` method is invoked with the following parameters.

Name	Type	Comment
assignmentId	TpAssignmentID	Not mapped. [The value provide in the result from <code>IpUserLocationCamel.periodicLocationReportingStartReq</code> ].
cause	TpMobilityError	Specifies the error and additional information that led to the failure.
diagnostic	TpMobilityDiagnostic	The error value/information is mapped to a Parlay X exception as defined in clause 6.2. <ul style="list-style-type: none"> <li>This Parlay X exception is reported to the Parlay X application (at the endpoint specified in the <b>reference</b> part of the <b>startPeriodicNotificationRequest</b> message) in the <b>reason</b> part of a <b>locationErrorRequest</b> message. The <b>address</b> part of this message is null, indicating that the error applies to the whole notification. The <b>correlator</b> part of this message is also derived from the <b>reference</b> part of the <b>startPeriodicNotificationRequest</b> message.</li> </ul>

### 6.1.6 endNotification

The sequence diagram in clause 5.3 illustrates the flow of events when a periodic location notification request is terminated.

#### 6.1.6.1 Mapping to `IpUserLocationCamel.periodicLocationReportingStop`

The Parlay X **endNotification** service is mapped onto an invocation of the Parlay `IpUserLocationCamel.periodicLocationReportingStop` service, terminating the notification request.

This method is invoked with the following parameters.

Name	Type	Comment
stopRequest	TpMobilityStop AssignmentData	Specifies that the whole of the assignment shall be stopped, as follows: <ul style="list-style-type: none"> <li>AssignmentId = the result from the <code>IpUserLocationCamel.periodicLocationReportingStartReq</code> method invocation</li> <li>StopScope = P_M_ALL_IN_ASSIGNMENT</li> <li>Users = null set.</li> </ul>

Parlay exceptions thrown by `IpUserLocationCamel.periodicLocationReportingStop` are mapped to Parlay X exceptions as defined in clause 6.2.

### 6.1.7 locationEnd

The **locationEnd** notification is called when the notification ends due to the end of the duration being met, as described in clause 6.1.5.2. The notification does not occur when the notification is deliberately ended or in the case of an error. There is no mapping from Parlay/OSA for this capability.



## 6.2 Exceptions

### 6.2.1 Mapping from TpMobilityError

The following table indicates how TpMobilityError values are mapped to Parlay X exceptions.

Value	Service Exception	Notes
P_M_SYSTEM_FAILURE	SVC0001	With error number
P_M_UNAUTHORIZED_NETWORK	SVC0001	With error number
P_M_UNAUTHORIZED_APPLICATION	SVC0001	With error number: i.e. including the value of TpMobilityDiagnostic, if available
P_M_UNKNOWN_SUBSCRIBER	SVC0002	
P_M_ABSENT_SUBSCRIBER	SVC0002	
P_M_POSITION_METHOD_FAILURE	SVC0001	With error number: i.e. including the value of TpMobilityDiagnostic, if available

### 6.2.2 Mapping from Parlay/OSA Method Exceptions

In addition to the common mapping of Parlay/OSA API method exceptions to Parlay X Web Service exceptions, which is defined in TR 102 397-1 [3], there are the following service-specific exception mappings:

Parlay/OSA Exception	Service Exception	Notes
P_INVALID_REPORTING_INTERVAL	SVC0001	With error number

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## 7 Additional notes

No additional notes.

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## History

<b>Document history</b>		
V1.1.1	August 2005	Publication