



## Location Matters™

### LOC-AID Get X / Y API Manual

Version 4.0, February 2011

LOC-AID Technologies, Inc.

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## How This Manual is Organized

### **Chapter 1: Technology and Service Overview**

Refer to this chapter for a high level overview of the LOC-AID Xchange Gateway (LXG) and typical use case scenarios.

### **Chapter 2: XML Schema Data Type Definition**

Refer to this chapter for detailed coding instructions on how to use LOC-AID's SOAP based Web Services and obtain an overview of the standard XML schema definitions

### **Chapter 3: Location Methods and Get X / Y Coordinates API**

Refer to this chapter for information on the different location retrieval methods that are offered by LOC-AID, as well as step by step coding instructions on how to return latitude and longitude coordinates.

### **Appendix**

Refer to this chapter for information on the following topics:

1. Typical error messages received and resolutions
2. Glossary of Terms

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## Chapter 1: Technology and Service Overview

LOC-AID Xchange Gateway is a location aggregation platform that allows you to easily integrate wireless location to any kind of content or service. We offer services that can be used through a wide range of delivery methods (SMS, WAP, WEB, JAVA, BREW, and MMS). These services can be used without worrying about location interconnectivity, interoperability, and delivery method. LOC-AID takes the worry out of location so that you can focus on what you do best: providing value-add services to your customers.

This chapter covers the following material:

- 1. LOC-AID Xchange Gateway (LXG)**

Overview of the LOC-AID platform

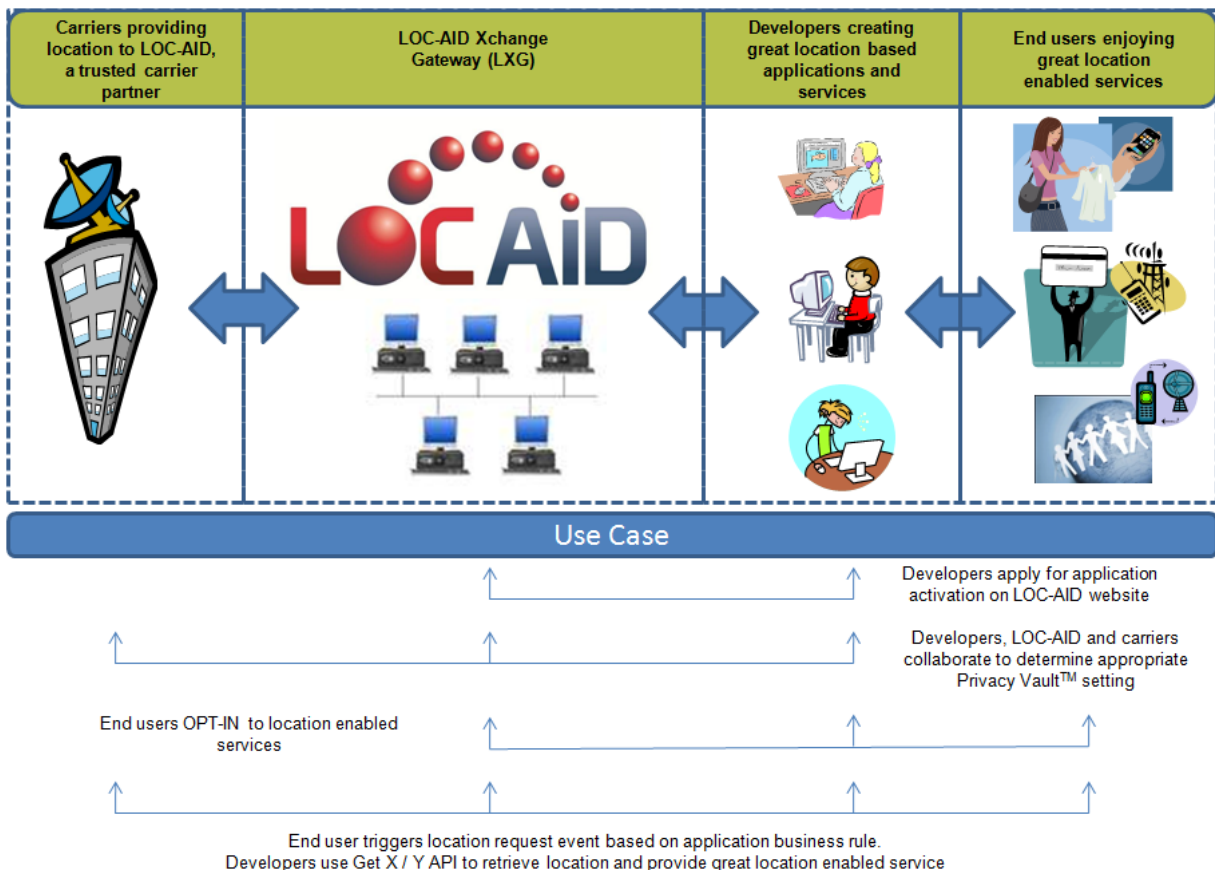
- 2. LOC-AID Function Specific API's**

Overview of the different LOC-AID Web Service APIs that are available to support a wide range of LBS features and functions

After reading this chapter, you will have a high level understanding of LOC-AID's approach to delivering timely, reliable location services and be ready to sign up and begin coding. Go on to Chapter 2 for information on how to get started.

### LOC-AID Xchange Gateway (LXG)

The LOC-AID Xchange Gateway (LXG) is a SOAP based XML Web Service that provides location information to third party applications. Developers can think of the LXG as a central hub for all their location information needs, and the XML Web Service API interfaces as the tools that allow the LXG and applications to communicate with each other. Some of the functionality included through our Web Service APIs are device registration, SMS messaging for end user OPT-IN, and of course a Get X / Y API.



## LOC-AID Function Specific APIs

The following Web Service APIs are currently available from LOC-AID. We are constantly improving our features and functions and as new APIs or operations are added, all LOC-AID customers will receive instructions on how to obtain an updated version of the LOC-AID Xchange Gateway Technical Manual.

### Device Registration API

The Device Registration API is a Web Service that supports and manages phone number registration into the LOC-AID Xchange Gateway (LXG). Use this API to register, cancel, lock and unlock location permission settings for a phone number.



### **Get X / Y API**

The Get X / Y API is a Web Service that supports and manages location requests and responses from the LXG. Use this API to obtain location information for one or more devices and configure location method settings.

### **Address API**

The Address API provides geographical information about the location of a registered MSISDN phone numbers in the LXG. The developer will create a profile for an end user and then be able to retrieve geographical information like address, city, and zip code. This API will not return the actual X/Y coordinates for the location.

### **SMS Messaging API**

The SMS Messaging API uses the LOC-AID short code to send an SMS text message to an end user and request OPT-IN to a location enabled service. Note that developers must have prior knowledge of an end user phone number and register the phone number to the LXG prior to using the SMS Messaging API.



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## Chapter 2: XML Schema Data Type Definition

This section covers the following material:

### 1. XML Schema Information

Detailed information on how to use the common XML structures of our SOAP platform

Once you are familiar with our common XML structure, you will be ready to use our function specific API's defined and listed in 'LOC-AID Function Specific API' section of Chapter 1.

### XML Schema Data Type Definition

The LOC-AID location platform uses the following structures. These structures define the data that are used by function specific API operations.

- LocationResponseBean Structure
- CoordinateGeo Structure
- Geometry Structure
- LocationTime Structure
- LocationAnswerResponseBean Structure
- SOAPException Structure
- BaseResponseBean Structure
- BaseTransactionResponseBean
- BaseErrorResponseBean Structure
- MsisdhErrorResponseBean Structure

For your convenience, a document that lists all of the Operation to Structure relationships is available in the Tech Notes section of the Developer Zone Document Repository found on our website.

## LocationResponseBean Structure

This structure specifies the information about the location, technology used, time, geographical coordinates, etc.

Name	Type	Description
baseResponseBean	tns:baseResponseBean	See BaseResponseBean structure for further information about this data type.
coordinateGeo	tns:coordinateGeo	Contains the geographical coordinate of the device. (See CoordinateGeo structure for further information about this data type).
direction	xs:string	Specifies the direction of movement (in degrees) of a positioned phone. This element is present if direction is provided in the carrier response. Currently this information is not provided by the carrier.
geometry	tns:geometry	Specifies the shape used to represent a geographic area which describes where a mobile subscriber is located. (See Geometry structure for further information about this data type). For a Get X/Y request this will typically be a circle.
locationTime	tns:locationTime	Contains information about the time when the positioning was performed. (See LocationTime structure for further information about this data type).
number	xs:string	Phone number in MSISDN format.
speed	xs:string	The speed of the phone in m/s. This element is present if speed is provided in the carrier response. Currently this information is not provided by the carrier.
status	xs:string	The status of the device's location.

Name	Type	Description
		Defined values: NOT_FOUND, IN_PROGRESS and FOUND.
technology	xs:string	This attribute represents the location method. (LEAST_EXPENSIVE   MOST_ACCURATE   CELL   A-GPS).

### CoordinateGeo Structure

This structure returns the geographical coordinate of the device and the format in which the coordinates are presented.

Name	Type	Description
Format	xs:string	Format (DMS or DECIMAL)
X	xs:string	Longitude. The first ordinate in a coordinate system Example: <X>80 14 24 W</X>
Y	xs:string	Latitude. Second ordinate in a coordinate system. Example: <Y>25 43 40 N</Y>

### Geometry Structure

This structure sets the description of the shape used to represent a geographic area which indicates where a mobile subscriber is located.

Name	Type	Description
inRadius	xs:double	The inner radius is the geodesic distance (in meters) between the center of the circle (that the arc is a part of) and the arc closest to the center. If the inner radius is 0 (zero) the area described represents a sector of a circle. <b>Possible Values:</b> Must be equal or greater than 0 (zero).
outRadius	xs:double	The radius of a circle furthest away from the position in a CircularArcArea (in meters). <b>Possible Values:</b> Must be equal or greater than 0 (zero).
Radius	xs:double:	The radius is the area of the uncertainty of the location fix. This value is provided by the carrier and is an indication of

Name	Type	Description
		the quality of the fix. Please see note to developer below. <b>Possible Values:</b> Must be equal or greater than 0 (zero).
startAngle	xs:double	The start angle is the angle (in degrees) between North and the first defined radius. <b>Defined Values:</b> 0-359 <startAngle>60</startAngle>
stopAngle	xs:double	The stop angle is the angle (in angularUnit) between the first and second defined radius. <b>Defined values:</b> 1-360
Type	xs:string	The name of the shape to be used. <b>Defined Values:</b> CircularArcArea   CircularArea   Point This parameter is not case sensitive. Depending on the chosen values some parameters in the Geometry Structure will be mandatory and some optional. Check the shape definition below for mandatory fields for each shape (*).

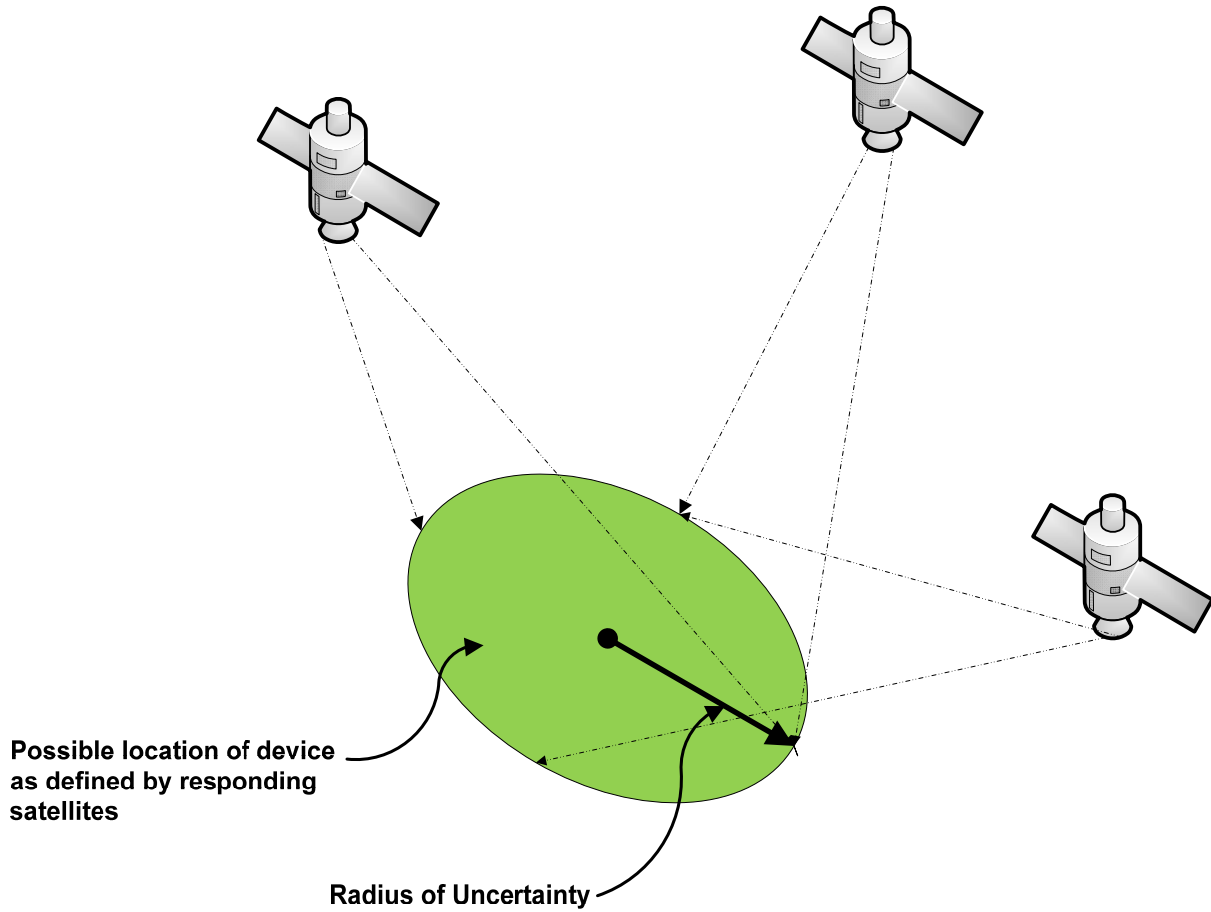
**Note to Developers:**

1.) For a GetLocationsX request a zero is typically returned for the inRadius, outRadius, startAngle, and stopAngle. The Type is generally “CircularArea”.

2.) The Radius of uncertainty is provided in the carrier response to the location request. It is a standard metric that represents the size of the area that will provide a high probability of the phone’s actual location. Qualitatively speaking, a small radius indicates a lower degree of uncertainty about the actual location of the phone. Larger accuracy values indicate larger error sources and thus lower ‘resolution’ of the phone’s location. In no case is the phone guaranteed to be within the radius provided.

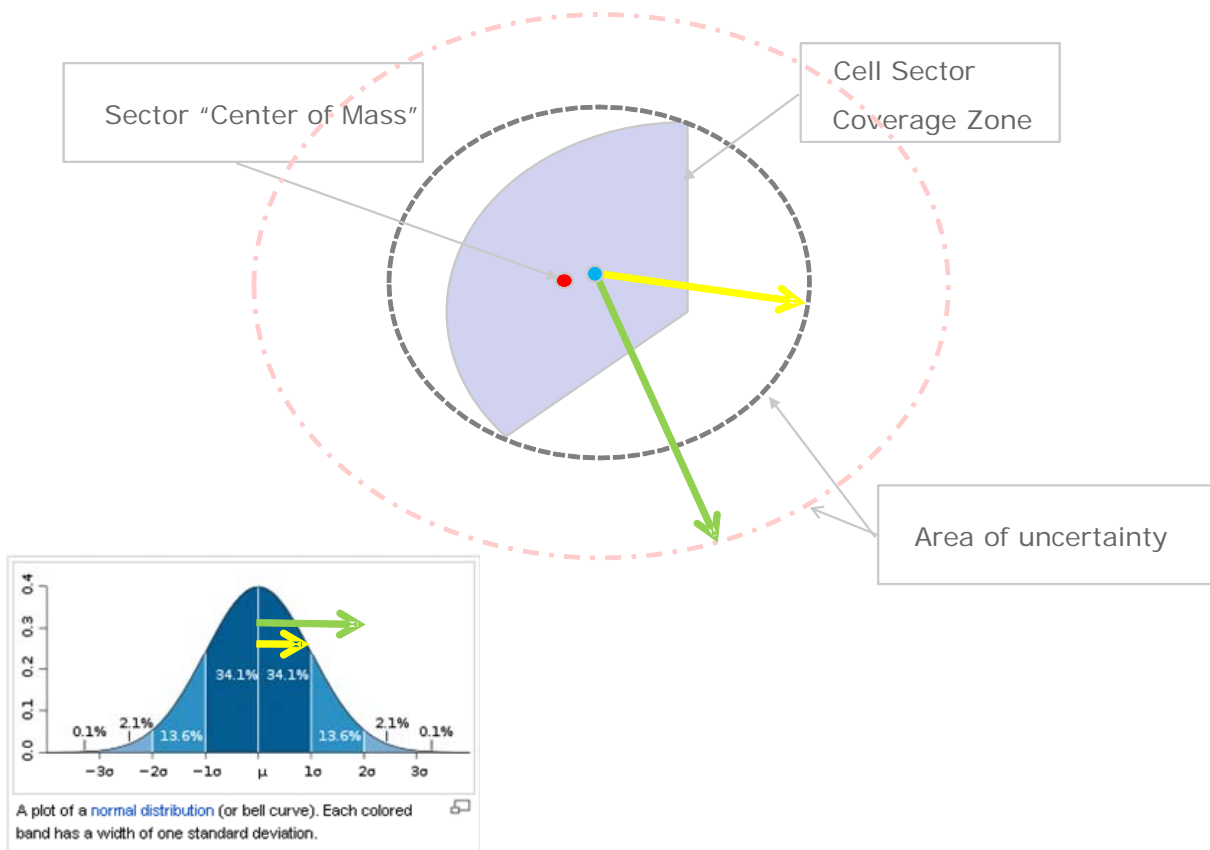
For AGPS, the value is derived from an algorithm that takes into account the position of the satellites being used, the number of satellites used to obtain the fix, signal path, and other factors. The figure below illustrated the concept of radius of uncertainty for an AGPS fix.

**Figure 1: AGPS Radius of Uncertainty.**



For a Cell-ID request the radius returned by the carrier is generally a fixed value managed by the carrier and is an indication of the area served by the cell sector associated to the mobile. The following diagrams help illustrate the concept of the radius of uncertainty for CellId.

**Figure 2: Cell sector coverage zone (area of the phone’s probable location) and the radius of uncertainty**



**\*Shape Definition**

**Shape: Point**

When this shape is selected, a point will be drawn in the map indicating the geographic coordinate.

Name	Type	Value	Example
inRadius	xs:double	Zero (0)	<inRadius>0</inRadius>
outRadius	xs:double	Zero (0)	<outRadius>0</outRadius>
Radius	xs:double	Zero (0)	<radius>0</radius>
startAngle	xs:double	Zero (0)	<startAngle>0</outRadius>
stopAngle	xs:double	Zero (0)	<stopAngle>0</stopAngle>
Type	xs:string	Point	<type>Point</type>

**Shape: CircularArea**

When this shape is selected, a circular area will be displayed on the map indicating where a mobile subscriber is located. Note: for a GetLocationsX query, the shape that will be returned is 'CircularArea'

A circular area is the set of points on the ellipsoid, which are at a distance from the point of origin less than or equal to the radius. If the radius is zero (0), the shape will be a point.

Name	Type	Value	Example
inRadius	xs:double	Zero (0)	<inRadius>0</inRadius>
outRadius	xs:double	Zero (0)	<outRadius>0</outRadius>
Radius	xs:double	Equal or greater than Zero (0)	<radius>50</radius>
startAngle	xs:double	Zero (0)	<startAngle>0</outRadius>
stopAngle	xs:double	Zero (0)	<stopAngle>0</stopAngle>
Type	xs:string	CircularArea	<type>CircularArea</type>

**Shape: CircularArcArea**

When this shape is selected, a circular arc area will be displayed in the map indicating where a mobile subscriber is located.

An arc is defined by a point of origin with one offset angle and one uncertainty angle plus one inner radius and one uncertainty radius.

Name	Type	Value	Example
inRadius	xs:double	Equal or greater than Zero (0)	<inRadius>0.0</inRadius>
outRadius	xs:double	Equal or greater than Zero (0)	<outRadius>0.246</outRadius>
Radius	xs:double	Zero (0)	<radius>0</radius>
startAngle	xs:double	0-359	<startAngle>103.0</startAngle>
stopAngle	xs:double	1-360	<stopAngle>246.0</stopAngle>

Name	Type	Value	Example
Type	xs:string	CircularArcArea	<type>CircularArcArea</type>

### LocationTime Structure

This structure provides information about the time when the positioning was performed and about the UTC.

Name	Type	Description														
Time	xs:string	<p>In a location answer this element indicates the time when the positioning was performed.</p> <p>The time is expressed as yyyyMMddhhmmss where:</p> <table border="1"> <thead> <tr> <th>String</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>Yyyy</td> <td>Year</td> </tr> <tr> <td>MM</td> <td>Month</td> </tr> <tr> <td>Dd</td> <td>Day</td> </tr> <tr> <td>Hh</td> <td>Hours</td> </tr> <tr> <td>Mm</td> <td>Minutes</td> </tr> <tr> <td>Ss</td> <td>Seconds</td> </tr> </tbody> </table>	String	Description	Yyyy	Year	MM	Month	Dd	Day	Hh	Hours	Mm	Minutes	Ss	Seconds
String	Description															
Yyyy	Year															
MM	Month															
Dd	Day															
Hh	Hours															
Mm	Minutes															
Ss	Seconds															
Utc	xs:string	Specifies the UTC offset in hours and minutes. Positive values indicate time zones east of Greenwich														

### LocationAnswerResponseBean Structure

This structure specifies the information about the location, technology used, time, geographical coordinates, etc. Additionally it shows information about error and a transaction id for the request.

Name	Type	Description
BaseTransactionResponseBean	tns:BaseTransactionResponseBean	Specifies the information about error and Identifier of request.
locationResponse	tns:locationResponseBean+	Specifies the information about the location, technology used, time, geographical coordinates, etc. (See LocationResponseBean structure for further information about this data type.)

Name	Type	Description
msisdnError	tns:msisdnErrorResponseBean+	Shows the telephone number with error. (See MsisdnErrorResponseBean structure for further information about this data type)
Status	xs:string	Specifies the status of the location request for the telephone number (FOUND, IN_PROGRESS, TIME_OUT, etc...).

### SOAPException Structure

This structure provides an exception message when there is a problem obtaining location information.

Name	Type	Description
message	xs:string	A message describing the error.

### BaseResponseBean Structure

This structure describes information about an error message.

Name	Type	Description
Error	tns:baseErrorResponseBean	(See BaseErrorResponseBean structure for further information about this data type.)

### BaseTransactionResponseBean Structure

This structure specifies the information about the error and the identifier of request.

Name	Type	Description
transactionId	xs:long	Identifier of request.
BaseErrorResponseBean	tns:BaseErrorResponseBean	Shows the general error. (See BaseErrorResponse structure for further

Name	Type	Description
		information about this data type.)

### BaseErrorResponseBean Structure

This structure specifies the information related to general error.

Name	Type	Description
errorCode	xs:string	General error code
errorMessage	xs:string	General Message error

### MsisdnErrorResponseBean Structure

This structure specifies the information error associated with the telephone number.

Name	Type	Description
Msisdn	xs:string	The telephone number
baseErrorRes ponseBean	tns: BaseErrorResponse Bean	The information about the general error.

## Chapter 3: Get X / Y API

This chapter covers the following material:

### 1. Location Retrieval Options

Detailed explanation of the different ways that location can be retrieved

### 2. Get X / Y API

Detailed coding instructions on how to get location from the LOC-AID Xchange Gateway

Before reading this chapter, you should be familiar with the XML Schema data type definitions explained in Chapter 2 and with the OPT-IN End User requirements, which can be found in the Document Repository of the Developer's Zone on our website.

## Location Retrieval Options

Real world conditions play a major factor in determining the accuracy and speed in which an end user's location can be determined. Some of these factors include the type of handset, number of cell towers within range of the end user, proximity of the end user to a downtown tall building environment, end user defined privacy settings, and of course, whether the end user's device is turned on or off.

LOC-AID offers developers several options for selecting how location is retrieved:

### **A-GPS**

Assisted GPS based positioning method is used to determine location. The phone takes readings from both GPS satellites and nearby cellular base stations (towers), and with the help of a location server on the network determines location. A-GPS readings are typically more accurate than Cell based readings, but can take more time.

### **CELL**

Cell coverage based positioning method. The phone takes readings from nearby cellular base stations (towers), and with the help of a location server on the network determines location. Cell readings are typically faster than A-GPS readings, but can be less accurate.

Here are typical location retrieval times for Cell and A-GPS readings.

Location method	Response time
CELL TOWER BASED	3 – 9 secs
A-GPS	15 – 40 secs

In addition to the A-GPS and CELL options, LOC-AID offers two additional retrieval options.

### **MOST ACCURATE**

The fulfillment of the accuracy requirement takes precedence over the fulfillment of the cost requirement when choosing this location method. When you perform a Most\_Accurate request, the system will first attempt to get an A-GPS fix. If the A-GPS request is unsuccessful, it will immediately attempt to determine the location using Cell-Id.

### **LEAST EXPENSIVE**

The fulfillment of the cost requirement takes precedence over fulfillment of the accuracy requirement when choosing this location method. Performing a Least\_Expensive request will currently result in a Cell-Id request. If the Cell-id request is unsuccessful, it **will not** attempt an A-GPS request.

## **Get X / Y API**

These services implement operations that allow you to obtain location information for registered devices in the LOC-AID system.

Note that prior to receiving location from the LOC-AID Xchange Gateway, the end user must OPT-IN to the location enabled service (see the OPT-IN End User document in the Document Repository section of our Developer's Zone website for more details)

## Endpoint

To access the Get X / Y API go to the following URL:

<https://ws.LOC-AID.net:443/webservice/LatitudeLongitudeServices?wsdl>

## Operations

The Get X / Y API service has the following operations:

- getLocationX
- getLocationAnswer

The Get X / Y API service uses the following structures (structures are defined in Chapter 2):

- LocationResponseBean Structure
- CoordinateGeo Structure
- Geometry Structure
- LocationTime Structure
- LocationAnswerResponseBean Structure
- SOAPException Structure
- BaseResponseBean Structure
- BaseTransactionResponseBean Structure
- BaseErrorResponseBean Structure
- MsisdnErrorResponseBean Structure

A document that lists all of the Operation to Structure relationships is available in the Tech Notes section of the Developer Zone Document Repository found on our website.

### getLocationX operation

The getLocationX operation allows requesting the location of one or more devices. The returned elements depend on what type of synchronization you select.

#### **SyncType = syn**

Select syncType = syn when you want elements related to the device location returned directly in the response: geographical coordinates, time of the location, the number of the device the position method and the status of the device location.

- Note that there is a maximum of 10 MSISDN's that can be submitted per request

**Note to developers:** A single getLocationX syncType=syn operation will accept single or multiple MSISDNs in the requested. The getLocationX operation will return location data as available for valid phone numbers and return the appropriate errors for invalid phone numbers.

**SyncType = asyn**

Select syncType = asyn if you want to obtain a transaction id that can be used to retrieve location as part of the getLocationAnswer operation. The asyn parameter produces a different response than the syn parameter. Instead of location coordinates being returned directly in the response, the operation returns a transaction id that is used to invoke the getLocationAnswer operation. The current status of each phone's location will be updated in getLocationAnswer; depending on the timing some phones' location will be "in progress" while others will have completed (location data or error message will be returned). Successive calls to getLocationAnswer using the same transaction ID will NOT generate refreshed location for those with completed transactions. One location is delivered per device per getLocationX request.

- Note that asynchronous location results are available for 24 hours in the LXG system.
- Note that there is a maximum of 10 MSISDN's that can be submitted per request

**Input Message**

Name	Type	Description	Required (Y/N)
login	xs:string	User name.	Y
password	xs:string	User password.	Y
ClassID	xs:string	The application id	Y
msisdnList	xs:string+	A list of phone numbers in MSISDN format (limit 10 MSISDN per request).	Y
coordType	xs:string	Coordinate type output (DMS   DECIMAL)	Y

Name	Type	Description	Required (Y/N)
locationMethod	xs:string	This attribute represents the location method. (LEAST_EXPENSIVE   MOST_ACCURATE   CELL   A-GPS).	Y
syncType	xs:string	These attribute represents type of synchronization. The values are syn and asyn. (See explanation above)	Y
overage	xs:int	Allow to exceed the credit line. There are two values: "1" (without limit) and "0" (with limit). Always set this value to "1".	N

### Output Message

Name	Type	Description
Return	tns:locationResponseBean	Geographical Coordinates and elements related to the location. (Check Chapter 2: LocationResponseBean for further information about this data type.)

### Sample Code: *getLocationsX* Request (*syncType = syn*)

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:web="http://webservice.portico.locaid.net/">
  <soapenv:Header/>
  <soapenv:Body>
    <web:getLocationsX>
      <login>developerLBS@gmail.com</login>
      <password>locaid</password>
      <ClassID>86EMK</ClassID>
      <msisdnList>15055551212</msisdnList>
      <coordType>DMS</coordType>
      <locationMethod>LEAST_EXPENSIVE</locationMethod>
      <syncType>SYN</syncType>
      <overage>1</overage>
    </web:getLocationsX>
  </soapenv:Body>
</soapenv:Envelope>
```

**Sample Code: getLocationX Response (syncType = syn)**

```
<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/">
  <S:Body>
    <ns2:getLocationsXResponse xmlns:ns2="http://webservice.portico.locaid.net/">
      <return>
        <transactionId>2110</transactionId>
        <locationResponse>
          <coordinateGeo>
            <format>DMS</format>
            <x>77 0 28.577W</x>
            <y>12 8 15.779S</y>
          </coordinateGeo>
          <direction/>
          <geometry>
            <inRadius>0.0</inRadius>
            <outRadius>0.0</outRadius>
            <radius>12.0</radius>
            <startAngle>0.0</startAngle>
            <stopAngle>0.0</stopAngle>
            <type>CircularArea</type>
          </geometry>
          <locationTime>
            <time>20080513113959</time>
            <utc>0000</utc>
          </locationTime>
          <number>511996290001</number>
          <speed/>
          <status>FOUND</status>
          <technology>CELL</technology>
        </locationResponse>
      </return>
    </ns2:getLocationsXResponse>
  </S:Body>
</S:Envelope>
```

**Sample Code: getLocationX Request (syncType = asyn)**

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:web="http://webservice.portico.locaid.net/">
  <soapenv:Header/>
  <soapenv:Body>
    <web:getLocationsX>
      <login>developerLBS@gmail.com</login>
      <password>locaid</password>
      <ClassID>86EMK</ClassID>
      <msisdnList>15055551212</msisdnList>
      <coorType>DMS</coorType>
      <locationMethod>LEAST_EXPENSIVE</locationMethod>
      <syncType>ASYN</syncType>
      <overage>1</overage>
    </web:getLocationsX>
  </soapenv:Body>
</soapenv:Envelope>
```

### **Sample Code: getLocationX Response (syncType = asyn)**

```
<S:Envelope xmlns:S="http://schemas.xmlsoap.org/soap/envelope/">
  <S:Body>
    <ns2:getLocationsXResponse xmlns:ns2="http://webservice.portico.locaid.net/">
      <return>
        <transactionId>2111</transactionId>
      </return>
    </ns2:getLocationsXResponse>
  </S:Body>
</S:Envelope>
```

### **Referenced Faults**

The BaseErrorResponseBean contains the following error messages. For troubleshooting tips, see the Failure Error Definition section in the Appendix.

<b>Error Code</b>	<b>Error message</b>
00001	Invalid or inactive user
00003	The classId is not available
00004	Service not available for this user

<b>Error Code</b>	<b>Error message</b>
00005	Phone number not subscribed to the classId
00006	The carrier for this classId is not available yet
00007	User exceeded the credit limit
00008	The technology is not selected for the application and the carrier
00009	The number of transactions allowed per application has been reached
00010	The technology is not related to the carrier
00011	NOT_FOUND
00030	The number of transactions for the technology in the intro price plan has been reached
00032	Phone number is inactive, must be opted in again
00036	Phone number blocked for this classId
00037	Phone number has been suspended for this classId
00038	The subscription has been cancelled for this classId
00102	Congestion in Location Server
00136	Location method is not allowed
00501	Input parameter login must not be empty
00502	Input parameter password must not be empty
00503	Input parameter classId must not be empty
00505	Input parameter msisdnList must not be empty
00507	Input parameter coorType must not be empty
00508	Input parameter locationMethod must not be empty
00510	Input parameter syncType must not be empty
00705	Input parameter msisdn list not valid
00706	Input parameter msisdn list must range between 10 to 15 digits
00710	Input parameter coorType is not valid
00711	Input parameter locationMethod is not valid
00712	Input parameter overage is not valid
00713	Input parameter syncType is not valid
00727	Input parameter classId must have a maximum of 5 characters long
00735	Location data unavailable. Authorization denied
00738	This technology has reached the number of transactions allowed for this price plan. More transactions will be charged according with the overage price plan
00747	Input parameter coordType must have a maximum of 10

Error Code	Error message
	characters long

## APPENDIX

### Failure Error Definitions

Error messages can originate from two main buckets:

- SOAPException errors
- BaseErrorResponseBean and MsisdnErrorResponseBean errors

If the explanations below do not answer your questions, please check our FAQ section on the website or contact one of our technical support members at [cs@loc-aid.net](mailto:cs@loc-aid.net).

#### SOAPException Error

##### Input parameter classId must have a maximum of 5 characters long

###### Description:

The parameter “classId” entered must have a maximum of five characters.

###### Action(s) to take:

- Enter a valid value in the field shown by the error message.
- Check the parameter “classId” description provided in this guide.

##### Input parameter classId must not be empty

###### Description:

The parameter “classId” does not accept empty values.

###### Action(s) to take:

- Enter allowed parameters in the field according to the parameter definition provided in this guide.
- Make sure no parameter is empty.

---

### **Input parameter classIdList must not be empty**

**Description:**

The parameter “classIdList” does not accept empty values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure no parameter is empty.

### **Input parameter classIdList must have a maximum of 5 characters**

**Description:**

The parameter “classId” contained in the classIdList structure must have 5 characters.

**Action(s) to take:**

- Verify the classId parameter.

### **Input parameter coordType must have a maximum of 10 characters long**

**Description:**

The parameter “coordType” entered must have a maximum of ten characters.

**Action(s) to take:**

- Enter a valid value in the field shown by the error message.
- Check the parameter “coordType” description provided in this guide (Decimal or Dms).

### **Input parameter coorType is not valid**

**Description:**

The error message appears when entering an invalid value for the parameter “coorType”.

**Action(s) to take:**

- Review the parameter description provided in this guide. The valid values are Decimal and Dms.

### **Input parameter coorType must not be empty**

**Description:**

The parameter “coorType” does not accept empty values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation (Decimal or DMS).
- Make sure no parameter is empty.

#### **Input parameter locationMethod is not valid**

**Description:**

The parameter entered must have valid value for the “locationMethod” as specified in the description of the parameter in this guide.

**Action(s) to take:**

- Enter a valid value in the field shown by the error message.
- Check the parameter locationMethod description provided in this guide (Least\_expensive, Most\_accurate, etc).

#### **Input parameter locationMethod must not be empty**

**Description:**

The parameter “locationMethod” does not accept empty values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation (Least\_expensive, Most\_accurate. etc).
- Make sure no parameter is empty.

#### **Input parameter login must not be empty**

**Description:**

The parameter “login” does not accept empty values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide.
- Make sure no parameter is empty.

#### **Input parameter mlp is not valid**

**Description:**

The parameter entered must have valid value for the “mlp” as specified in the description of the parameter in this guide.

**Action(s) to take:**

- Enter a valid value in the field shown by the error message.
- Check the parameter “mlp” description provided in this guide. For more information go to the GetLocationMLP operation in the Get X / Y API.

**Input parameter mlp list contains empty msisdn**

**Description:**

The parameter “msisdn” does not accept empty values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation. For further details go the GetLocationsMLP operation in the Get X / Y API.
- Make sure no parameter is empty.

**Input parameter mlp list contains invalid msisdn**

**Description:**

The “msisdn” format is not correct.

**Action(s) to take:**

- Enter a correct “msisdn” in the field specified by the error message.
- Check if the “msisdn” entered is a numeric value.

**Input parameter mlp list must not be empty**

**Description:**

The parameter “mlpList” does not accept empty values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation. For further details go the GetLocationsMLP operation in the Get X / Y API.
- Make sure no parameter is empty.

### **Input parameter mlp must not be empty**

#### **Description:**

The parameter “mlp” does not accept empty values.

#### **Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation. For more information go the GetLocationMLP operation in the Get X / Y API.
- Make sure no parameter is empty.

### **Input parameter msisdn into mlp list must range between 10 to 15 digits**

#### **Description:**

The parameter “msisdn” entered must have valid elements and has to be in the range of the values shown and established in the parameter descriptions provided by this guide.

#### **Action(s) to take:**

- Enter the correct element in the field shown by the error message.
- Check the parameter “msisdnList” has between 10 to 15 digits.
- Make sure to include the “1” in front of area code.

### **Input parameter msisdn is not valid**

#### **Description:**

The “msisdnList” format is not correct.

#### **Action(s) to take:**

- Enter a correct “msisdnList” in the field specified by the error message.
- Check if the “msisdnList” entered is a numeric value.

### **Input parameter msisdn list must not be empty**

#### **Description:**

The parameter “msisdnList” does not accept empty values.

#### **Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide. For further information go to the GetLocationsX operation in the Get X / Y API.
- Make sure no parameter is empty.

### **Input parameter msisdn list must range between 10 to 15 digits**

#### **Description:**

The parameter “msisdnList” entered must have valid elements and have to be in the range of the values shown and established in the parameter descriptions provided by this guide.

#### **Action(s) to take:**

- Enter the correct element in the field shown by the error message.
- Check the parameter “msisdnList” is between 10 to 15 digits.
- Make sure to include the “1” in front of area code.

### **Input parameter msisdn must not be empty**

#### **Description:**

The parameter “msisdn” does not accept empty values.

#### **Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure no parameter is empty.

### **Input parameter msisdn must range between 10 to 15 digits**

#### **Description:**

The parameter “msisdn” must have valid elements and has to be in the range of the values shown and established in the parameter descriptions provided by this guide.

#### **Action(s) to take:**

- Enter the correct element in the field shown by the error message.
- Check the parameter “msisdn” has between 10 to 15 digits.
- Make sure to include the “1” in front of area code.

---

**Input parameter msisdnList must range between 10 to 15 digits****Description:**

The parameter “msisdnList” entered must have valid elements and has to be in the range of the values shown and established in the parameter descriptions provided by this guide.

**Action(s) to take:**

- Enter the correct element in the field shown by the error message.
- Check the parameter “msisdnList” has between 10 to 15 digits.
- Make sure to include the “1” in front of area code.

**Input parameter msisdnList not valid****Description:**

The “msisdnList” format is not correct.

**Action(s) to take:**

- Enter a correct “msisdnList” in the field specified by the error message.
- Check if the “msisdnList” entered is a numeric value.

**Input parameter overage is not valid****Description:**

The parameter entered must have valid value for the “overage” as specified in the description of the parameter in this guide.

**Action(s) to take:**

- Enter a valid value in the field shown by the error message.
- Check the parameter overage description provided in this guide.

**Input parameter password must not be empty****Description:**

The parameter “password” does not accept empty values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide.
- Make sure no parameter is empty.

### **Input parameter syncType is not valid**

**Description:**

The parameter entered must have valid value for the “syncType” as specified in the description of the parameter in this guide.

**Action(s) to take:**

- Enter a valid value in the field shown by the error message.
- Check the parameter “syncType” description provided in this guide (syn or asyn).

### **Input parameter transactionId is not valid**

**Description:**

This error message might appear when the transactionId is invalid.

**Action(s) to take:**

- Check that the number transaction is generated with the methods that you have selected.

### **Invalid or inactive user**

**Description:**

Either there is an incorrect user or password, or the user has been deactivated. The parameter entered must be an active, registered user.

**Action(s) to take:**

- Enter a valid user (login and password) in the field specified by the error message. Make sure there are no typos.
- Contact customer support to verify that the user is registered or approved. [cs@loc-aid.net](mailto:cs@loc-aid.net)

### **Location data unavailable. Authorization denied**

**Description:**

This error might appear when the user has not confirmed an authorization for location as defined by privacy flows that require end user authorization each time a location is requested.

**Action(s) to take:**

- A text message should be sent to end-users in order for them to grant authorization with values “Y”. Also they can deny the location with value “N”.

Value	Meaning
Y	This value indicates the end-user allows location only once.
N	This value indicates the end-user rejects location.

### Location method is not allowed

**Description:**

This message might appear when the location method selected is not allowed for the application.

**Action(s) to take:**

- Contact technical support at [cs@loc-aid.net](mailto:cs@loc-aid.net)

### NOT\_FOUND

**Description:**

This message appears in the following cases:

- a) When the telephone has not been located or
- b) When the telephone number needs a confirmation.

**Action(s) to take:**

- Check telephone has been turned on (case “a”).
- Execute the end-user registration procedure “OPT-IN”. For further details go to the SubscribePhone operation in the Device Registration section (case “b”)

### Phone number blocked for this classId

**Description:**

This error might appear when the phone number has been blocked for the application.

**Action(s) to take:**

- Contact technical support at [cs@loc-aid.net](mailto:cs@loc-aid.net).

### **Phone number has been locked for this classId**

**Description:**

This error might appear when the phone number has been locked for the application.

**Action(s) to take:**

- Phone number has been locked by the end user. If you want to retrieve location for this phone number, you will have to get the end user to UNLOCK the msisdn. Please see the SubscribePhone operation in the DeviceRegistration API for more information.

### **Phone number is inactive, must be opted in again**

**Description:**

This error might appear if a phone number has not participated in a location transaction for some time.

**Action(s) to take:**

- Execute the end user registration procedure OPT-IN.

### **Phone number not subscribed to the classId**

**Description:**

This error appears when the phone subscriber is not registered to the application (classId).

**Action(s) to take:**

- Execute the end user registration procedure "OPT-IN". For further details go to the SubscribePhone operation in the Device Registration section.

### **Service not available for this user**

**Description:**

This error might appear when the service is not part of the list of web services that you previously chose.

**Action(s) to take:**

- If the service is available, create a new application that includes this service. Otherwise, contact your account manager in order to acquire the service.

### **The carrier for this classId is not available yet**

**Description:**

This error might appear when the carrier has not approved the application yet (this is part of the process of the application registration). The error might also appear when the application is deactivated (OFF).

**Action(s) to take:**

- Wait until the application is available according to the date provided.
- Verify if the application is activated (ON).
- Contact technical support at [cs@loc-aid.net](mailto:cs@loc-aid.net)

**The classId is not available**

**Description:**

This error appears when the application has not yet been activated in the registration process of an application.

**Action(s) to take:**

- Wait until the application is available according to the date provided.
- If you don't know the date or the date has passed, contact technical support at [cs@loc-aid.net](mailto:cs@loc-aid.net) to see when the application will be activated.

**The number of transactions allowed per application has been reached**

**Description:**

This message appears when the number of transactions allowed per application has been reached.

**Action(s) to take:**

- Contact technical support at [cs@loc-aid.net](mailto:cs@loc-aid.net)

**The number of transactions for the technology in the intro price plan has been reached**

**Description:**

This error message appears when the account has already reached the maximum number of transaction allowed for the Intro price plan

**Action(s) to take:**

- Contact technical support at [cs@loc-aid.net](mailto:cs@loc-aid.net).

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**The subscription has been cancelled for this classId**

**Description:**

This error might appear when the phone number has been cancelled for the application.

**The technology is not related to the carrier**

**Description:**

This message appears when the technology cannot be supported by carrier. This means that the carrier doesn't have the technology implemented.

**Action(s) to take:**

- Do not use this technology for this carrier. Review other possible values for technology. This value is related with locationMethod in the GetLocationsX or GetLocation operation.
- Contact technical support at [cs@loc-aid.net](mailto:cs@loc-aid.net).

**The technology is not selected for the application and the carrier**

**Description:**

This message appears when the technology has not been selected for the application and carrier.

**Action(s) to take:**

- Review the possible values for technology. This value is related with locationMethod in the GetLocationsX or GetLocation operation.

**User exceeded the credit limit**

**Description:**

This message appears when the credit limit provided to you has been exceeded.

**Action(s) to take:**

- Contact your account manager

**Your account has already reached the maximum number of transactions allowed**

**Description:**

This message appears when the number of transactions allowed per account has been reached.

**Action(s) to take:**

- Contact your account manager

## **BaseErrorResponseBean and MsisdnErrorResponseBean Errors**

### **Unavailable service (Error code = 00000)**

**Description:**

This message appears for a variety of reasons, like unavailable service, unavailable data, etc.

**Action(s) to take:**

- Contact technical support at [cs@loc-aid.net](mailto:cs@loc-aid.net)

### **Invalid or inactive user (Error code = 00001/00002)**

**Description:**

Either there is an incorrect user or password, or the user has been deactivated. The parameter entered must be an active, registered user.

**Action(s) to take:**

- Enter a valid user (login and password) in the field specified by the error message. Make sure there are no typos.
- Contact customer support to verify that the user is registered or approved. [cs@loc-aid.net](mailto:cs@loc-aid.net)

### **The classId is not available (Error code = 00003)**

**Description:**

This error appears when the application has not yet been activated in the registration process of an application.

**Action(s) to take:**

- Wait until the application is available according to the date provided.

- If you don't know the date or the date has passed, contact technical support at [cs@loc-aid.net](mailto:cs@loc-aid.net) to see when the application will be activated.

#### **Service not available for this user (Error code = 00004)**

**Description:**

This error might appear when the service is not part of the list of web services that you previously chose.

**Action(s) to take:**

- If the service is available, create a new application that includes this service. Otherwise, contact your account manager in order to acquire the service.

#### **Phone number not subscribed to the classId (Error code = 00005)**

**Description:**

This error appears when the phone subscriber is not registered to the application (classId).

**Action(s) to take:**

- Execute the end user registration procedure "OPT-IN". For further details go to the SubscribePhone operation in the Device Registration section.

#### **The carrier for this classId is not available yet (Error code = 00006)**

**Description:**

This error might appear when the carrier has not approved the application yet (this is part of the process of the application registration). The error might also appear when the application is deactivated (OFF).

**Action(s) to take:**

- Wait until the application is available according to the date provided.
- Verify if the application is activated (ON).
- Contact technical support at [cs@loc-aid.net](mailto:cs@loc-aid.net)

#### **User exceeded the credit limit (Error code = 00007)**

**Description:**

This message appears when the credit limit provided to you has been exceeded.

Action(s) to take:

- Contact your account manager

**The technology is not selected for the application and the carrier (Error code = 00008)**

Description:

This message appears when the technology has not been selected for the application and carrier.

Action(s) to take:

- Review the possible values for technology. This value is related with locationMethod in the GetLocationsX or GetLocation operation.

**The number of transactions allowed per application has been reached (Error code = 00009)**

Description:

This message appears when the number of transactions allowed per application has been reached.

Action(s) to take:

- Contact your account manager

**The technology is not related to the carrier (Error code = 00010)**

Description:

This message appears when the technology cannot be supported by carrier. This means that the carrier doesn't have the technology implemented.

Action(s) to take:

- Do not use this technology for this carrier. Review other possible values for technology. This value is related with locationMethod in the GetLocationsX or GetLocation operation.
- Contact technical support at [cs@loc-aid.net](mailto:cs@loc-aid.net).

**NOT\_FOUND (Error Code = 00011)**

Description:

This message appears in the following cases:

- a) When the telephone has not been located or
- b) When the telephone number needs a confirmation.

Action(s) to take:

- Check telephone has been turned on (case “a”).
- Execute the end-user registration procedure “OPT-IN”. For further details go to the SubscribePhone operation in the Device Registration section (case “b”)

#### **Invalid command (Error code = 00012)**

Description:

This message appears when the command executed does not correspond to the proper privacy flow or state of the application.

Action(s) to take:

- Verify the privacy flow of the application and review all the proper commands.

#### **This phone has already been subscribed (Error code = 00013)**

Description:

This message appears when the phone number has already been subscribed to the application.

Action(s) to take:

- You do not need to do anything. The phone number has been registered in the LXG.

#### **The use of this phone location via this application has already been canceled (Error code = 00015)**

Description:

This message appears when the user has already canceled the subscription using the command CANCEL.

Action(s) to take:

- If you wish to obtain location information for this phone, you will have to obtain another OPT-IN from the end user and re-register the phone in the LXG.

**Please reply YES/NO to confirm subscription to this application (Error code = 00018)**

**Description:**

When the application has a privacy flow that requires a Double OPT-IN, the end user must confirm the subscription with the YES command or must cancel the subscription with the NO command.

**Action(s) to take:**

- Obtain a confirmation or deny from the end user and send the second OPT-IN result to the LXG by using the SubscribePhone operation in the Device Registration API.

**The phone is not subscribed into this application (Error code = 00019)**

**Description:**

This message appears when the phone number has not been subscribed or the user has executed the command: CANCEL.

**Action(s) to take:**

- In order to retrieve location, the phone number must be registered by using the OPT-IN command.

**The subscription for this application cannot be processed (Error code = 00020)**

**Description:**

This message appears when the user denies the confirmation for applications that require a Double OPT-IN.

**You have no applications to cancel (Error code = 00021)**

**Description:**

This message appears when the user executes a CANCEL command but the application has not yet been activated.

**Action(s) to take:**

- If you believe your application should be active, please contact technical support at [cs@loc-aid.net](mailto:cs@loc-aid.net).

**The subscription for this application is trusted (Error code = 00022)**

**Description:**

The application has a trusted safety level and there is no need to execute a phone registration.

**Action(s) to take:**

- No action is required. You may use the GetLocation or GetLocationsX operation to request location information.

**The use of this phone location via this application has already been authorized (Error code = 00024)**

**Description:**

The application has already been authorized in order to get location.

**Action(s) to take:**

- No action is required. You may OPT-IN, register and begin using LOC-AID location services.

**Your application needs an authorization (Error code = 00026)**

**Description:**

This error is triggered when applications have an Authorization component in their privacy flow. You will get this message if you try to retrieve location before an end user has sent a "Y" confirmation to be located.

**Action(s) to take:**

- The user should send command "Y" to be located.

**The number of transactions for the technology in the intro price plan has been reached (Error code = 00030)**

**Description:**

This error message appears when the account has already reached the maximum number of transaction allowed for the Intro price plan

**Action(s) to take:**

- Contact technical support at [cs@loc-aid.net](mailto:cs@loc-aid.net).

**Phone number is inactive, must be opted in again (Error Code = 00032)**

**Description:**

This error might appear if a phone number has not participated in a location transaction for some time.

**Action(s) to take:**

- Execute the end user registration procedure OPT-IN.

**The service is temporarily unavailable (Error code = 00034)**

**Description:**

This message might appear when there is a problem with the system.

**Action(s) to take:**

- Contact technical support at [cs@loc-aid.net](mailto:cs@loc-aid.net).

**Subscriber is unavailable. The subscription has been cancelled (Error code = 00035)**

**Description:**

This message appears when the phone number has been cancelled from the subscription of the application.

**Phone number blocked for this classId (Error Code = 00036)**

**Description:**

This error might appear when the phone number has been blocked for the application.

**Action(s) to take:**

- Contact technical support at [cs@loc-aid.net](mailto:cs@loc-aid.net).

**Phone number has been suspended for this classId (Error Code = 00037)**

**Description:**

This error might appear when the phone number has been locked for the application.

**Action(s) to take:**

- Phone number has been locked by the end user. If you want to retrieve location for this phone number, you will have to get the end user to UNLOCK the msisdn. Please see the SubscribePhone operation in the DeviceRegistration API for more information.

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**The subscription has been cancelled for this classId (Error Code = 00038)**

**Description:**

This error might appear when the phone number has been cancelled for the application.

**Congestion in Location Server (Error code = 00102)**

**Description:**

This message might appear when the number of transactions allowed per application has been reached.

**Action(s) to take:**

- Contact technical support at [cs@loc-aid.net](mailto:cs@loc-aid.net).

**Location method is not allowed (Error code = 00136)**

**Description:**

This message might appear when the location method selected is not allowed for the application.

**Action(s) to take:**

- Contact technical support at [cs@loc-aid.net](mailto:cs@loc-aid.net)

**Input parameter login must not be empty (Error code = 00501)**

**Description:**

The parameter "login" does not accept empty values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide.
- Make sure no parameter is empty.

**Input parameter password must not be empty (Error code = 00502)**

**Description:**

The parameter "password" does not accept empty values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide.
- Make sure no parameter is empty.

**Input parameter classId must not be empty (Error code = 00503)**

**Description:**

The parameter "classId" does not accept empty values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide.
- Make sure no parameter is empty.

**Input parameter msisdN must not be empty (Error code = 00504)**

**Description:**

The parameter "msisdN" does not accept empty values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure no parameter is empty.

**Input parameter msisdN List must not be empty (Error code = 00505)**

**Description:**

The parameter "msisdNList" does not accept empty values.

**Action(s) to take:**

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- Enter allowed parameters in the field according to the parameter definition provided in this guide. For further information go to the GetLocationsX operation in the Get X / Y API.
- Make sure no parameter is empty.

### **Input parameter mlpList must not be empty (Error code = 00506)**

#### **Description:**

The parameter “mlpList” does not accept empty values.

#### **Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation. For further details go the GetLocationsMLP operation in the Get X / Y API.
- Make sure no parameter is empty.

### **Input parameter coorType must not be empty (Error code = 00507)**

#### **Description:**

The parameter “coorType” does not accept empty values.

#### **Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation (Decimal or DMS).
- Make sure no parameter is empty.

### **Input parameter locationMethod must not be empty (Error code = 00508)**

#### **Description:**

The parameter “locationMethod” does not accept empty values.

#### **Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation (Least\_expensive, Most\_accurate. etc).
- Make sure no parameter is empty.

**Input parameter mlp must not be empty (Error code = 00509)**

**Description:**

The parameter “mlp” does not accept empty values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation. For more information go the GetLocationMLP operation in the Get X / Y API.
- Make sure no parameter is empty.

**Input parameter syncType must not be empty (Error code = 00510)**

**Description:**

The parameter “syncType” does not accept empty values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation (syn or asyn).
- Make sure no parameter is empty.

**Input parameter beginDate must not be empty (Error Code=00511)**

**Description:**

The parameter “beginDate” does not accept empty values.

**Action(s) to take:**

- Enter allowed format: YYYY= Year, MM=month, DD=day, hh=hours and mm=minutes. For example: 200807301919.
- Make sure no parameter is empty.

**Input parameter EndDate must not be empty (Error Code=00512)**

**Description:**

The parameter “endDate” does not accept empty values.

**Action(s) to take:**

- Enter allowed values with the following format: YYYY= Year, MM=month, DD=day, hh=hours and mm=minutes. For example: 200807301919.

- Make sure no parameter is empty.

#### **Input parameter language must not be empty (Error Code=00514)**

**Description:**

The parameter “language” does not accept empty values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation (EN and ES).
- Make sure no parameter is empty.

#### **Input parameter coordinateGeoList must not be empty (Error Code = 00519)**

**Description:**

The parameter “coordinateGeoList” does not accept empty values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure no parameter is empty.

#### **Input parameter coordinateGeo must not be empty (Error Code = 00520)**

**Description:**

The parameter “coordinateGeo” does not accept empty values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure no parameter is empty.

#### **Input parameter format must not be empty (Error Code = 00521)**

**Description:**

The parameter “format” does not accept empty values.

**Action(s) to take:**

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- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure no parameter is empty.

### **Input parameter X must not be empty (Error Code = 00522)**

#### **Description:**

The parameter “X” does not accept empty values.

#### **Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure no parameter is empty.

### **Input parameter Y must not be empty (Error Code = 00523)**

#### **Description:**

The parameter “Y” does not accept empty values.

#### **Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure no parameter is empty.

### **Input parameter transactionId is not valid (Error code = 00704)**

#### **Description:**

This error message might appear when the transactionId is invalid.

#### **Action(s) to take:**

- Check that the number transaction is generated with the methods that you have selected.

### **Input parameter msisdnList not valid (Error code = 00705)**

#### **Description:**

The “msisdnList” format is not correct.

Action(s) to take:

- Enter a correct “msisdnList” in the field specified by the error message.
- Check if the “msisdnList” entered is a numeric value.

**Input parameter msisdnList must range between 10 to 15 digits (Error code = 00706)**

Description:

The parameter “msisdnList” entered must have valid elements and have to be in the range of the values shown and established in the parameter descriptions provided by this guide.

Action(s) to take:

- Enter the correct element in the field shown by the error message.
- Check the parameter “msisdnList” is between 10 to 15 digits.
- Make sure to include the “1” in front of area code.

**Input parameter msisdn not valid (Error code = 00707)**

Description:

The “msisdn” format is not correct.

Action(s) to take:

- Enter a correct “msisdn” in the field specified by the error message.
- Check if the “msisdn” entered is a numeric value.

**Input parameter msisdn must range between 10 to 15 digits (Error code = 00708)**

Description:

The parameter “msisdn” entered must have valid elements and has to be in the range of the values shown and established in the parameter descriptions provided by this guide.

Action(s) to take:

- Enter the correct element in the field shown by the error message.
- Check the parameter “msisdn” has between 10 to 15 digits.
- Make sure to include the “1” in front of area code.

**Input parameter msisdn must not be listed more than once (Error code = 00709)**

**Description:**

The content of the parameter msisdnList has been repeated more than once.

**Action(s) to take:**

- Verify that you are not repeating the same msisdn

**Input parameter coorType is not valid (Error code = 00710)**

**Description:**

The error message appears when entering an invalid value for the parameter “coorType”.

**Action(s) to take:**

- Review the parameter description provided in this guide. The valid values are Decimal and Dms.

**Input parameter locationMethod is not valid (Error code = 00711)**

**Description:**

The parameter entered must have valid value for the “locationMethod” as specified in the description of the parameter in this guide.

**Action(s) to take:**

- Enter a valid value in the field shown by the error message.
- Check the parameter locationMethod description provided in this guide (Least\_expensive, Most\_accurate, etc).

**Input parameter overage is not valid. (Error code = 00712)**

**Description:**

The parameter entered must have valid value for the “overage” as specified in the description of the parameter in this guide.

**Action(s) to take:**

- Enter a valid value in the field shown by the error message.
- Check the parameter overage description provided in this guide.

**Input parameter syncType is not valid (Error code = 00713)**

**Description:**

The parameter entered must have valid value for the “syncType” as specified in the description of the parameter in this guide.

**Action(s) to take:**

- Enter a valid value in the field shown by the error message.
- Check the parameter “syncType” description provided in this guide (syn or asyn).

**Input parameter mlp is not a valid (Error code = 00714)**

**Description:**

The parameter entered must have valid value for the “mlp” as specified in the description of the parameter in this guide.

**Action(s) to take:**

- Enter a valid value in the field shown by the error message.
- Check the parameter “mlp” description provided in this guide. For more information go to the GetLocationMLP operation in the Get X / Y API.

**Input parameter endDate is not valid (Error Code=00715)**

**Description:**

The parameter entered must have valid value for the “endDate” as specified in the description of the parameter in this guide.

**Action(s) to take:**

- Enter a valid value in the field shown by the error message.
- Check the parameter endDate description provided in this guide.

**Input parameter emailResponse is not valid (Error Code=00716)**

**Description:**

The parameter entered must have valid value for the “emailResponse” as specified in the description of the parameter in this guide.

**Action(s) to take:**

- Enter a valid value in the field shown by the error message.
- Check the parameter emailResponse description provided in this guide.

**Input parameter language is not valid (Error Code=00717)****Description:**

The parameter entered must have valid value for the “language” as specified in the description of the parameter in this guide.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation. The valid values are EN and ES.

**Input parameter interval is not valid (Error Code=00719)****Description:**

The parameter entered must have valid value for the “interval” as specified in the description of the parameter in this guide.

**Action(s) to take:**

- Enter a valid value in the field shown by the error message.
- Check the parameter interval does not contain letters or strange characters.

**Input parameter speedLimited is not valid (Error Code=00720)****Description:**

The parameter entered must have valid value for the “speedLimited” as specified in the description of the parameter in this guide.

**Action(s) to take:**

- Enter a valid value in the field shown by the error message.
- Check the parameter interval does not contain letters or strange characters

**Input parameter speedMeasure is not valid (Error Code=00721)****Description:**

The parameter entered must have valid value for the “speedMeasure” as specified in the description of the parameter in this guide.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation. The valid values are Km/h and Mi/h.

**Input parameter coordinateGeoList is not valid (Error Code = 00722)****Description:**

The parameter coordinate entered is not completed and must have valid values for “X” e “Y” as specified in the description of the parameter in this guide.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.

**Input parameter coordinateGeo is not valid (Error Code = 00723)****Description:**

The input parameter “coordinateGeo” does not accept wrong values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure no parameter is wrong.

**Input parameter format is not valid (Error Code = 00724)****Description:**

The input parameter “format” does not accept wrong values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure no parameter is wrong.

**Input parameter X is not valid (Error code= 00725)****Description:**

The “X” format is not correct.

**Action(s) to take:**

- Enter a correct “X” in the field specified by the error message.

- Check if the “X” parameter has the proper structure according to the format parameter.

**Input parameter Y is not valid (Error code= 00726)**

**Description:**

The “Y” format is not correct.

**Action(s) to take:**

- Enter a correct “Y” format in the field specified by the error message.
- Check if “Y” parameter has the proper structure according to the format parameter.

**Input parameter classId must have a maximum of 5 characters long (Error code = 00727)**

**Description:**

The parameter “classId” entered must have a maximum of five characters.

**Action(s) to take:**

- Enter a valid value in the field shown by the error message.
- Check the parameter “classId” description provided in this guide.

**Input parameter beginDate must not be lower than or equal to {0} time (Error Code=00728)**

**Description:**

The error message appears when beginDate is lower or equal to current date in GMT = {0}.

**Action(s) to take:**

- Enter allowed values with the following format: YYYY= Year, MM=month, DD=day, hh=hours and mm=minutes. If current time and day is 200807301919 then you should enter 200807301920 or 200807302020.

**Input parameter beginDate must not be greater than or equal to endDate time (Error Code=00729)**

**Description:**

The error message appears when beginDate is lower or equal to the endDate.

**Action(s) to take:**

- Check that date of endDate must be greater than date of beginDate.

**Input parameter endDate must not be greater than or equal to {0} hours (Error Code=00730)**

**Description:**

The value of {0} is configuring with 72 hours. The error message appears when endDate is greater or equal to 72 hours.

**Action(s) to take:**

- Enter a valid value in the field shown by the error message.

**The range between dates must be greater than or equal to location interval I (Error Code=00731)**

**Description:**

This error message appears when the interval (minutes) is greater than the amount of minutes between beginDate and endDate.

**Action(s) to take:**

- Enter a valid value in the field shown by the error message.
- Enter a value in interval lower than the range between the beginDate and the endDate.

**Input parameter interval must range between {0} to {1} minutes (Error Code=00732)**

**Description:**

This error message appears when the interval is out of range between 2 and 1440 minutes. The value {0} is configuring with 2 and {1} is configuring with 1440 minutes.

**Action(s) to take:**

- Enter a valid value in the field shown by the error message.
- Enter values inside range between 2 to 1440 minutes.

**Input parameter speedLimited must range between {0} to {1} (Error Code=00733)**

**Description:**

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This error message appears when the speedLimited is out of range, between 0 and 999. The value {0} is configuring with 0 and {1} is configuring with 999.

### Action(s) to take:

- Enter a valid value in the field shown by the error message.
- Enter values inside range between 0 to 999 minutes.

### **Location data unavailable. Authorization denied (Error code = 00735)**

#### Description:

This error might appear when the user has not confirmed an authorization for location as defined by privacy flows that require end user authorization each time a location is requested.

#### Action(s) to take:

- A text message should be sent to end-users in order for them to grant authorization with values “Y”. Also they can deny the location with value “N”.

Value	Meaning
Y	This value indicates the end-user allows location only once.
N	This value indicates the end-user rejects location.

### **This technology has reached the number of transactions allowed for this price plan. More transactions will be charged according with the Overage Price Plan. (Error code = 00738)**

#### Description:

This error message appears when the account has already reached the maximum number of transactions allowed for the price plan selected.

#### Action(s) to take:

- Contact technical support at [cs@loc-aid.net](mailto:cs@loc-aid.net)

### **Input parameter coordinateGeo list must contain at least two elements (Error Code = 00741)**

#### Description:

The parameter “classId” does not accept empty values.

Action(s) to take:

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure no parameter is empty.

**Input parameter coordType must have a maximum of 10 characters long (Error code = 00747)**

Description:

The parameter “coordType” entered must have a maximum of ten characters.

Action(s) to take:

- Enter a valid value in the field shown by the error message.
- Check the parameter “coordType” description provided in this guide (Decimal or Dms).

**Input parameter classIdList must not be empty (Error code = 00749)**

Description:

The parameter “classIdList” does not accept empty values.

Action(s) to take:

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure no parameter is empty.

**Input parameter classId must not be listed more than once (Error code = 00751)**

Description:

The parameter classId must be unique for each classIdList.

Action(s) to take:

- Do not repeat the data input of the classId parameter.

**Input parameter classIdList must have a maximum of 5 characters (Error code = 00752)**

Description:

The parameter “classId” contained in the classIdList structure must have 5 characters.

Action(s) to take:

- Verify the classId parameter.

**Input parameter profile is not valid (Error Code = 01002)**

Description:

The input parameter profile does not accept wrong values.

Action(s) to take:

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure no parameter is wrong.

**Input parameter profile contains none valid layer (Error Code = 01006)**

Description:

The input parameter profile does not accept invalid layer.

Action(s) to take:

- Enter input parameter valid.

**Input parameter profile contains a non-valid layer (Error Code = 01007)**

Description:

The input parameter profile does not accept invalid layer.

Action(s) to take:

- Enter input parameter valid.

**Input parameter zoom must no be empty (Error Code = 01008)**

Description:

The parameter “zoom” does not accept empty values.

Action(s) to take:

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.

- Make sure no parameter is empty.

**Input parameter zoom is not valid (Error Code = 01009)**

**Description:**

The input parameter “zoom” does not accept wrong values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure no parameter is wrong.

**Input parameter type must not be empty (Error Code = 01012)**

**Description:**

The parameter “type” does not accept empty values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure no parameter is empty.

**Input parameter type is not valid (Error Code = 01013)**

**Description:**

The parameter “type” does not accept wrong values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure no parameter is wrong.

**Input parameter image type must not be empty (Error Code = 01014)**

**Description:**

The parameter “image type” does not accept empty values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.

- Make sure no parameter is empty.

#### **Input parameter image type is not valid (Error Code = 01015)**

##### **Description:**

The input parameter “image type” does not accept wrong values.

##### **Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure no parameter is wrong.

#### **Input parameter height is not valid (Error Code = 01016)**

##### **Description:**

The input parameter “height” does not accept wrong values.

##### **Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure no parameter is wrong.

#### **Input parameter width is not valid (Error Code = 01017)**

##### **Description:**

The input parameter “width” does not accept wrong values.

##### **Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure no parameter is wrong.

#### **Input parameter height must range between {1} and {2} (meters) (Error Code = 01018)**

##### **Description:**

The parameter “height” should fluctuate between (0) and (1) meters.

##### **Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.

- Make sure the parameter ranges between {0} and {1} (meters).

**Input parameter width must range between {1} and {2} (meters) (Error Code = 01019)**

**Description:**

The parameter “width” should fluctuate between (1) and (2) meters.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure the parameter ranges between {0} and {1} (meters).

**Input parameter zoom reaches digit limit (Error Code = 01020)**

**Description:**

This message might appear when the input parameter zoom reached digit limit.

**Action(s) to take:**

- Make sure the input parameter zoom does not reach digit limit.

**Input parameter radius is not valid (Error Code = 01022)**

**Description:**

The input parameter “radius” does not accept wrong values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure no parameter is wrong.

**Input parameter inRadius must be between {0} and {1} (meters) (Error Code = 01023)**

**Description:**

The parameter “inRadius” should fluctuate between (0) and (1) meters.

**Action(s) to take:**

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- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure the parameter ranges between {0} and {1} (meters).

### **Input parameter outRadius must be equal or greater than 0 (Error Code = 01024)**

#### **Description:**

The parameter “outRadius” should be equal or greater than 0.

#### **Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure the parameter is equal or greater than 0.

### **Input parameter startAngle must range between 0 to 359 (Error Code = 01025)**

#### **Description:**

The parameter “startAngle” should fluctuate between 0 and 359.

#### **Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure the parameter ranges between 0 and 359.

### **Input parameter stopAngle must range between 1 to 360 (Error Code = 01026)**

#### **Description:**

The parameter “stopAngle” should fluctuate between 0 and 359.

#### **Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure the parameter ranges between 1 and 360.

### **Input parameter stopAngle must be greater than startAngle (Error Code = 01027)**

#### **Description:**

This message might appear when the Input parameter stopAngle don't be greater than startAngle.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure Input parameter stopAngle must be greater than startAngle.

**Input parameter outRadius must be greater than inRadius (Error Code = 01028)**

**Description:**

This message might appear when the Input parameter outRadius is not greater than the inRadius.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure Input parameter outRadius is greater than the inRadius.

**Input parameter distanceUnit is not valid (Error Code = 01029)**

**Description:**

The input parameter “distanceUnit” does not accept wrong values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure no parameter is wrong.

**Input parameter addressProfile must not be empty (Error Code = 03002)**

**Description:**

The parameter “addressProfile” does not accept empty values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation ({0}, {1}, {0} {1}, etc).
- Make sure no parameter is empty.

**Input parameter addressProfile is not valid (Error Code = 03003)****Description:**

The parameter entered must have valid value for the “addressProfile” as specified in the description of the parameter in this guide.

**Action(s) to take:**

- Enter a valid value in the field shown by the error message.
- Check the parameter addressProfile description provided in this guide ({0}, {1}, {0} {1}, etc).

**Input parameter message must not be empty (Error code = 04001)****Description:**

The parameter “message” does not accept empty values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide.
- Make sure no parameter is empty.

**Not\_sent (Error code = 04002)****Description:**

This message appears when a message could not be sent.

**Action(s) to take:**

- Contact technical support at [cs@loc-aid.net](mailto:cs@loc-aid.net)

**Finish for Violation (Error code = 05019)****Description:**

This message appears when the report of violation has been finished. Only happens when the violationWarning was set to ONCE; and if the violation occurs before the end date of the geofencing.

**Action(s) to take:**

- Contact technical support at [cs@loc-aid.net](mailto:cs@loc-aid.net)

**Input parameter radius must range between 0 to 10.00 km (Error code= 07005)**

**Description:**

The parameter radius ranges between 0 and 10 kilometers.

**Action(s) to take:**

- Verify that the values entered in the radius parameter ranges between 0 and 10 kilometers.
- Check the radius parameter description provided by this guide.

**Input parameter unit must not be empty (Error code= 07006)**

**Description:**

The parameter “unit” does not accept empty values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide.
- Make sure no parameter is empty.

**Input parameter unit is not valid (Error code= 07007)**

**Description:**

The format of the parameter “unit” is not correct.

**Action(s) to take:**

- Enter a correct “unit” format in the field according to the parameter definition provided in this guide.

**Input parameter coordinate must not be empty (Error code= 07008)**

**Description:**

The parameter “coordinate” does not accept empty values.

**Action(s) to take:**

- Enter allowed parameters in the field according to the parameter definition provided in this guide.

- Make sure no parameter is empty.

**Input parameter coordinate must be unique (Error code= 07009)**

**Description:**

The parameter “coordinate” must have a unique geographical coordinate value.

**Action(s) to take:**

- Verify that the parameters “coordinate” have a unique value.

**Input parameter property must not be empty (Error code= 07012)**

**Description:**

The parameter “property” does not accept empty values.

**Action(s) to take:**

- Enter allowed values in the field according to the parameter definition provided in this guide.
- Make sure no parameter is empty.

**Input parameter propertyList must not be empty (Error code= 07013)**

**Description:**

The parameter “propertyList” does not accept empty values.

**Action(s) to take:**

- Enter allowed values in the field according to the parameter definition provided in this guide.
- Make sure no parameter is empty.

**Input parameter directory must not be empty (Error code= 07014)**

**Description:**

The parameter “directory” does not accept empty values.

**Action(s) to take:**

- Enter allowed values in the field according to the parameter definition provided in this guide.

- Make sure no parameter is empty.

#### **Input parameter directory is not valid (Error code= 07015)**

**Description:**

The “directory” format is not correct.

**Action(s) to take:**

- Enter a correct “directory” format in the field according to the parameter definition provided in this guide.
- Verify the values for the parameter, see the POIs Directory in the Appendix

#### **Input parameter attribute must not be empty (Error code= 07016)**

**Description:**

The parameter “attribute” does not accept empty values.

**Action(s) to take:**

- Enter allowed values in the field according to the parameter definition provided in this guide. Verify the proper values for this parameter, see the POIs Directory in the Appendix.
- Make sure no parameter is empty.

#### **Input parameter name must not be empty (Error code= 07017)**

**Description:**

The parameter “name” does not accept empty values.

**Action(s) to take:**

- Enter allowed values in the field according to the parameter definition provided in this guide. Verify the proper values for this parameter, see the POIs Directory in the Appendix.
- Make sure no parameter is empty.

#### **Input parameter name is not valid (Error code= 07018)**

**Description:**

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The “name” format is not correct.

### Action(s) to take:

- Enter a correct “name” format in the field according to the parameter definition provided in this guide.
- Verify the proper values for this parameter, see the POIs Directory in the Appendix.

### **Input parameter value must not be empty (Error code= 07019)**

#### Description:

The parameter “value” does not accept empty values.

#### Action(s) to take:

- Enter allowed values in the field according to the parameter definition provided in this guide.
- Verify the proper values for this parameter according to the Attribute – Description selected, see the POIs Directory in the Appendix.
- Make sure no parameter is empty.

### **Input parameter value is not valid (Error code= 07020)**

#### Description:

The “value” format is not correct.

#### Action(s) to take:

- Enter a correct “value” format in the field according to the parameter definition provided in this guide.
- Verify the proper values for this parameter, see the POIs Directory in the Appendix.

### **The number of coordinates must be greater than one (Error code= 07021)**

*To getPOIBetweenPoints*

#### Description:

The getPOIBetweenPoints needs more than one geographical coordinates to obtain the list of POIs.

#### Action(s) to take:

- Enter more than one geographical coordinates.

*To getPOIArea*

**Description:**

The getPOIArea needs more than two geographical coordinates to obtain the list of POIs to obtain the polygonal area.

**Action(s) to take:**

- Enter more than two geographical coordinates.

**The list of coordinates should not form a straight line (Error code= 07022)**

**Description:**

The list of geographical coordinates should form a polygonal area.

**Action(s) to take:**

- Verify the values of the geographical coordinates.

**The search area is too large (Error code= 07023)**

**Description:**

The search area is greater than 10 kilometers from the center of the polygonal area.

**Action(s) to take:**

- The list of geographical coordinates must have a radius less than 10 kilometers.

**Input parameter propertyList must not contain an invalid property element. (Error code= 07025)**

**Description:**

The propertyList parameter contains at least one invalid property parameter.

**Action(s) to take:**

- Verify the values and the format of the property parameters.

**Input parameter outRadius must be greater than parameter inRadius (Error code= 07026)**

**Description:**

The outRadius is less than the inRadius.

**Action(s) to take:**

- The outRadius parameter must be always greater than the inRadius. Review and change their values.

**Input parameter outRadius must be greater than 0 and less or equal to 2 km (Error code= 07027)**

**Description:**

This message appears when the value of the outRadius parameter is out of this range:  
outRadius = <0,2Km.]

**Action(s) to take:**

- Verify the valid values for the outRadius parameter.

**Input parameter inRadius must be greater or equal to 0 and less than 2 km (Error code= 07028)**

**Description:**

This message appears when the value of the inRadius parameter is out of this range:  
inRadius = [0,2Km>

**Action(s) to take:**

- Verify the valid values for the inRadius parameter.

**Input parameter azimuth must range between 0 to 359 (Error code= 07029)**

**Description:**

This message appears when the parameter azimuth is not in the range of 0 to 359 degrees.

**Action(s) to take:**

- Contact technical support at [cs@loc-aid.net](mailto:cs@loc-aid.net).

**Input parameter offsetAngle must range between 1 to 360 (Error code= 07030)**

**Description:**

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This message appears when the parameter `offsetAngle` is not in the range of 1 to 360 degrees.

### Action(s) to take:

- Contact technical support at [cs@loc-aid.net](mailto:cs@loc-aid.net).

### **Input parameter `lengthMeasure` must not be empty (Error Code = 11001)**

#### Description:

The parameter “`lengthMeasure`” does not accept empty values.

#### Action(s) to take:

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure no parameter is empty.

### **Input parameter `lengthMeasure` is not valid (Error Code = 11002)**

#### Description:

The input parameter format does not accept wrong values.

#### Action(s) to take:

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure no parameter is wrong.

### **Input parameter `command` must not be empty (Error code = 13001)**

#### Description:

The parameter “`command`” does not accept empty values.

#### Action(s) to take:

- Enter allowed parameters in the field according to the parameter definition provided in this guide for each operation.
- Make sure no parameter is empty.

### **Input parameter `command` is not valid (Error code = 13002)**

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### Description:

The parameter entered must have a valid command.

### Action(s) to take:

- Enter a valid value in the field shown by the error message. See the SubscribePhone operation in the Device Registration API for the list of valid commands.

## Glossary of Terms

**A-GPS:** Assisted GPS based positioning method is used to determine location. The phone takes readings from both GPS satellites and nearby cellular base stations (towers), and with the help of a location server on the network determines location. A-GPS readings are typically more accurate than Cell based readings, but can take more time.

**CELL:** Cell coverage based positioning method. The phone takes readings from nearby cellular base stations (towers), and with the help of a location server on the network determines location. Cell readings are typically faster than A-GPS readings, but can be less accurate.

**CLASSID:** Identifier of an application associated to the developer.

**D:** Indicates that the time format will be in days.

**DMS:** Format in degrees, minutes and seconds. The associated coordinate is presented in X (longitude) and Y (latitude). For example, if the format is DMS then the result will be "X" equals 80 06 42 W and "Y" equals 26 24 04 N.

**DECIMAL:** Format in decimal. The associated coordinate is presented in X (longitude) and Y (latitude). For example, if the format is Decimal then the result will be "X" equals -80.1116 and "Y" equals 26.4011.

**GPS:** Global Positioning System is a global satellite-based system for determining precise location on Earth.

**GSM:** Global System for Mobile is the most popular standard for mobile phones in the world. GSM is a cellular network, which means that mobile phones connect to it by searching cells in the immediate vicinity.

**H:** Indicates that the time format will be in hours.

**ISDN:** Integrated Services Digital Network or Isolated Subscriber Digital Network is a telephone system network that integrates speech and data on the same lines.

**LBS:** Location-Based Services refers to a broad range of services that are based on (or enhanced by) information about the physical location of a user and/or device.

**LEAST\_EXPENSIVE:** The fulfillment of the cost requirement takes precedence over fulfillment of the accuracy requirement when choosing a location method.

**LOCATION METHOD:** Method of location that depends on an available carrier and kind of device. It is called a positioning method.

**M:** Indicates that the time format will be in minutes.

**MLP:** Mobile Location Protocol is an application-level protocol that obtains the position of mobile stations (mobile phones, wireless personal digital assistants and so on) independent of underlying network technology.

**MOST\_ACCURATE:** The fulfillment of the accuracy requirement takes precedence over fulfillment of the cost requirement when choosing a location method.

**MS:** Mobile Station.

**MSISDN:** Mobile Subscriber ISDN. MSISDN is a number uniquely identifying a subscription in a GSM or UMTS mobile network. Simply put, it is the telephone number to the SIM card in a mobile/cellular phone.

**NONE:** Indicates that this parameter is not going to contain a value.

**PRIVACY FLOW:** Communication term used by LOC-AID to document different communication requirements between an application and an end user regarding privacy disclosure. LOC-AID has several different privacy flows.

**S:** Indicates that the time format will be in seconds.

**SLIA:** Service Location Immediate Answer. Transaction of the MLP protocol.

**SLIR:** Service Location Immediate Request. Transaction of the MLP protocol.





## About LOC-AID Technologies

LOC-AID operates the world's largest mobile location data gateway and manages the most secure, privacy-protected platform for wireless providers including Verizon Wireless, Sprint, America Movil, TelCel, Bell Mobility, AT&T and TELUS. Based in San Francisco, CA, with offices across North America, LOC-AID simplifies and manages the complex technical and approval interfaces of location-based services (LBS) for mobile developers. LOC-AID also offers a portfolio of location-enablement services including geo-fencing, geo-coding, and location analytics.

For more information, visit [www.loc-aid.com](http://www.loc-aid.com)

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