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LocationGateway Mobile Internet Edition
Programmers Guide and Reference
Version 1.00.04

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Introduction

LocationGateway Mobile Internet Edition is an extension to the LocationGateway API that enables users to obtain the location of a handset within a mobile internet (WAP) session without knowledge of the handset MSISDN.

This Programmers Guide introduces the reader to the functions of LocationGateway Mobile Internet Edition and provides a reference and supplementary information on how to best use it.

Business arrangements for use of the API

Use of LocationGateway Mobile Internet Edition is subject to the same terms & restrictions as the standard LocationGateway API.

Contact Bryan Stockwell, Business Development Director, for more details.

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Syntax and conventions

This document uses camel case for representing parameter names, and heading case for server, folder and executable names. This is purely a matter of clarity; the underlying implementation is not case-sensitive.

What's new in this release?

Version 1 of LocationGateway Mobile Internet Edition is the first release of the product, made ready for use local search products in the UK.

Change Log

Document Version 1.00.04 / 11-Jul-2008 / CB

Yahoo! edition

Document Version 1.00.03a / 11-Jul-2008 / CB

Minor documentation detail corrections

Document Version 1.00.03 / 06-Mar-2008 / CB

First draft, including these changes from the original email

- Mid-level folder name changed to customer name
- Longitude parameter changed to lon= from long=
- Inclusion of new request parameter retLabel=
- Inclusion of new request parameter test=
- Inclusion of new request parameter carrierID=

Document Version 1.00.00 / 29-Feb-2008 / MMG

Initial interface specification released as an email

Quick Start

This section provides basic information on using the LocationGateway Mobile Internet Edition. Refer to the Guide section for how the product works, and the Reference section for details of individual parameters.

Fundamentals

LocationGateway Mobile Internet Edition requires the user to redirect the handset's mobile Internet session to Mobile Commerce's servers, where the handset is identified and location information is requested from the mobile phone network. On completion, the product returns the handset's mobile Internet session to the user's server with location information supplied as additional URL parameters.

The return URL is specified as a URL parameter on the initial session transfer and is checked to ensure that the request is associated with an authorised user.

Location information supplied on the return session transfer is a subset of the full LocationGateway API function set, providing location information and a single refined place name, or alternatively some error diagnostic information if the product was unable to provide a handset location.

Getting Started

Connecting to LocationGateway Mobile Internet Edition

In a mobile Internet application, at the point where handset location is required, place a clickable link to this URL:
http://www.mcproton.com/[customer]/Locate/device.aspx&retURL=[a_page_on_your_server]

The address in the retURL parameter specifies the page that LocationGateway Mobile Internet Edition will transfer the handset to after processing is complete. The parameter value must be URL-encoded, e.g. to have the handset redirected back to this URL,

http://your.server.com/show/location.aspx?sessionid=12345

then include this link in your page:
http://www.mcproton.com/[customer]/Locate/device.aspx&retURL=http%3A%2F%2Fyour.server.com%2Fshow%2Flocation.aspx%3Fsessionid%3D12345

Locating the Handset

When the link is clicked, the handset will connect to the LocationGateway Mobile Internet Edition. The product will validate the retURL value, and then attempt to obtain the MSISDN or other persistent identifier for the handset. This value will then be presented to the LocationGateway API, which will request location information from a mobile network operator.

This process takes place in the background. While it is running, LocationGateway Mobile Internet Edition may display a "Locating handset…" message.

When the LocationGateway API has received a response from the mobile network operator, it will redirect the handset back to the address supplied in the retURL parameter, appending location information as additional URL parameters.

Receiving a response from LocationGateway Mobile Internet Edition

The product delivers location information as a series of additional URL parameters. Using the example connection shown above, for a successful locate, the product would redirect the handset to the requested landing page like this:

http://your.server.com/show/location.aspx?sessionid=12345&returncode=0&diag=success&lat=[nn.nnn]&lon=[nnn.nnn]&radius=[n]&placename=[string]

where latitude and longitude are supplied as decimal values, radius is an integer and placename is a URL-encoded string.

If the location request was not successful, the product would redirect the handset to the requested landing page like this:

http://your.server.com/show/location.aspx?sessionid=12345&returncode=1&diag=[error_message]

where diag= contains a brief an explanation of the error is returned as a URL-encoded string.

Guide to LocationGateway MI Edition Operations

This section provides guidance and explanation on how the LocationGateway Mobile Internet Edition works. This section should be read in conjunction with the LocationGateway API Programmers Guide and Reference, which provides a full explanation of underlying handset location functionality.

Refer to the Reference section for full details of individual parameters.

Invoking LocationGateway MI Edition

LocationGateway MI Edition is invoked by linking to the service URL with service control information passed as URL parameters. The service will link back to the user's mobile Internet application using the supplied retURL= value.

Access to LocationGateway MI Edition

LocationGateway MI Edition operates from a customer-specific URL
http://www.mcproton.com/[customer]/Locate/device.aspx

Modes of Operation

LocationGateway MI Edition can operate in Live mode, White-List mode or Test mode. Operating status is set in the user account details for the underlying Location Gateway API connection, but can be modified downwards at the MI Edition level through use of the test= parameter.

- Test mode

  When the underlying Location Gateway API account is first created, it is set to Test mode. In this mode, the handset's ID or MSISDN is ignored, and the service returns a randomised location response.

- White-List mode

  To support demonstration of services on real handsets ahead of full operator approval, the underlying Location Gateway API account can be set to return live handset location only for handsets whose MSISDN has been registered on a white-list.

  Setting test=1 in this mode degrades the operating mode to Test mode.

- Live mode

  In Live mode, the service will return live handset location for all handsets where an ID or MSISDN can be detected.

  Setting test=1 in this mode degrades the operating mode to Test mode.

  The underlying Location Gateway API account is normally set to Live mode when operator approval has been obtained.

Randomised location

This means that the caller will be located randomly in the UK.

The randomiser is weighted to ensure that 90% of the time you be located in a UK city.

Customer Authentication

Customer Authentication is linked to the retURL= value. This value is checked against a table of registered values, and the request will only be processed if a valid match is found.

Customer Authentication operates on all modes of operation

Function Set

The LocationGateway MI Edition exposes a limited subset of underlying LocationGateway API functions. These functions are listed in this section.

For a full discussion of individual functions, please refer to the LocationGateway API Programmers Guide and Reference.

Handset location by MSISDN

The service attempts to detect the MSISDN or persistent ID of a handset, and returns location information for that handset.

Location information

The service returns location as a circle. The centre of the circle is specified as a latitude / longitude point in decimal degrees, and the radius as a value in metres.

Placename Information

The service returns a single refined placename. This is derived from the handset location and radius combined with urban density information for the location.

Error Handling

The service will trap and manage errors and respond to the calling session with additional error information falling into one of three categories. The returncode= parameter will indicate the success or failure of the service call. In the event of failure, the diag= parameter will give further information

- Mobile Internet Edition interface errors (95xx)

  This category of errors will be reported if the service rejects the request.
- Location Gateway API security errors (94xx)

  This category of errors will be reported if the underlying LocationGateway API determines that the requestor is not authorised to obtain location for the requested MSISDN or associated network operator.
- Location request errors (93xx)

  This category of errors will be reported if the mobile network operator is unable to return a location for the handset.

Appendix A provides details of specific error messages in each category.

Best Practices

Define your constants

To help you evolve your program code as we add more features to the service, we recommend you set up definitions in your code for the major constants used in the service, specifically:

- Server name (currently www.mcproton.com)
- path (currently /[customer]/Locate)
- executable (currently device.aspx)

This will facilitate changes as we introduce new API functions and versions.

Specifying the network

In order to locate a phone the underlying Location Gateway API needs to know the network the phone is on, so that it can request the phones location from that network. In normal usage the API will determine what network the phone is on by using the OfTel prefix tables, over-ridden by exception tables covering known cases where the phone has been ported to another network. These exception tables are managed automatically and learn from failed location requests against OfTel prefix tables, and from successful requests contrary to the OfTel prefix tables.

The underlying Location Gateway API will support request information to force a location to be placed with a specific operator, over-riding automatic network determination. To support this in the MI Edition, we have planned for the introduction of a carrierID= parameter on the service request. We do not yet have

a common identification scheme for mobile network operators so we have also planned for the introduction of customer-specific carrier specifications.

Appendix B provides a cross-reference to different carrier ID schemes used by various partners.

Note that carrierID= is not implemented in the current release of the Location Gateway Mobile Internet Edition.

Reference

This section describes all URL parameters on the session transfers to and fromLocation Gateway Mobile Internet Edition.

Connection Request

Name	Value	Description	Note
retURL	string	The address where the handset session will be transferred to when location operations have completed.	i. MANDATORY ii. Must be URL-encoded iii. The URL may include its own parameters. These will be preserved.
retLabel	string	The text label displayed for the Cancel link on the “Locating handset...” screen	i. Optional ii. Must be URL- encoded iii. Not currently in use. Reserved for future release.
test	boolean	Force location request to run in test mode 0 = False / 1 = True	i. Optional ii. Test mode always returns a randomised location response iii. Default is 0 = False
carrierID	numeric	Identifies the mobile network operator that is providing network data transport for the handset.	i. Optional ii. Not currently in use. iii. Reserved for future release.

Return Response

Name	Value	Description	Note
returncode	boolean	0 = Locate successful / 1 = Request failed	
diag	string	Additional diagnostic information	Will be URL-encoded
lat long	numeric numeric	Location co-ordinates of handset as decimal degrees Range: Lat +90 degrees north of Equator to - 90 south of Equator Long -180 West of Greenwich to +180 degrees East of Greenwich Format: Decimal (nnn.nnnnn)	i. Optional ii. Test mode always returns a randomised location response iii. Default is 0 = False
radius	numeric	Value in metres describing the area about lat, lon where the handset has been located	
placename	string	A place name determined by lat, lon then refined by radius and type of locality	Will be URL-encoded

Appendix A – Error Codes

This section lists error codes & descriptions that may be returned in the diag= parameter.

Mobile Internet Edition interface errors (95xx)

Error-Code	Description
9500	Service not operational
9501	Request rejected - Unregistered return URL
9509	9509 Request failed - Unknown error

Location Gateway API security errors (94xx)

Error-Code	Description
9400	User is disallowed from accessing Location Feed from this operator
9401	User has not been configured to access Location Feed from this operator
9402	MSISDN does not appear in white list
9403	MSISDN not detected

Location request errors (93xx)

Error-Code	Description
9300	Sorry we can't locate you at the moment, please try again later
9301	Unexpected failure
9302	Failed Authentication with operator
9303	Unexpected Location Protocol Error
9304	Operator Location service unavailable
9305	Caller is unknown to network
9306	Cannot locate as caller is unreachable
9307	This operator is not supported
9308	Cannot locate. User has opted for privacy
9309	The location request cannot be satisfied

Appendix B – Carrier IDs

At some point in its lifetime the service will make use of carrier ID values passed in on the service request. The carrier ID may be used to assist identification of handset for location purposes, or to control what material appears on a splash screen.

This appendix provides a cross-reference between different carried ID schemes used by different partners.

Country	Mobile Operator	Mobile Commerce Ltd carrierID=	[customer] carrierID=
UK	O2	3	
UK	Orange	5	
UK	T-Mobile	4	
UK	Vodafone	2	

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