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## ***Mobile Location Protocol Support***

Using message formats based upon the Mobile Location Protocol (MLP) 3.0 specification, the Autodesk User Plane Location Gateway and Privacy Manager (UP-LGPM) operates with the LocationLogic platform to fulfill network-initiated location requests securely and reliably, within a user plane framework.

This technical bulletin describes the subset of MLP 3.0 protocol supported through the UP-LGPM. Corresponding to the Open Mobile Alliance™ (OMA) specification, MLP components are organized into Service, Element, and Transport levels.

The tables on the following pages list all MLP 3.0 elements and attributes for each level, indicating whether or not each is currently supported by the UP-LGPM with the LocationLogic platform.

See the OMA website for complete information about the MLP specification:

<http://www.openmobilealliance.org/index.html>

For information about setting properties to configure the MLP server, see “MLP Server Properties,” on page 11 of the *Autodesk LocationLogic User Plane Location Gateway and Privacy Manager Installation and Configuration Guide*.

## Standard Location Immediate Service Support

The UP-LGPM supports the *Standard Location Immediate Service*, which is used to request the location of one or more mobile subscribers when a response is required immediately (i.e., within a set time).

The UP-LGPM processes the two primary messages for this service as follows:

### ■ Standard Location Immediate Request (SLIR)

When the UP-LGPM receives a SLIR message from a network-initiated client, it authenticates the client application and verifies that all required device and privacy provisioning is complete.

### ■ Standard Location Immediate Answer (SLIA)

If the UP-LGPM cannot authenticate the client application, it returns a SLIA message with the proper error codes. Otherwise, after verifying that provisioning is complete, the UP-LGPM retrieves a position report, which it sends to the application in a SLIA message.

The tables that follow list all SLIR and SLIA elements and attributes, indicating which are supported by the UP-LGPM. Code examples follow.

#### MLP 3.0 SLIR DTD: Supported MLP\_SLIR Elements and Attributes (1 of 2)

ELEMENT	slir	msids	Supported
		msid	Supported
		codeword?	Not Supported
		gsm_net_param	Not Supported
		trans_id?	Not Supported
		eqop?	Supported
		geo_info?	Not Supported
		loc_type?	Supported
		prio?	Not Supported

### MLP 3.0 SLIR DTD: Supported MLP\_SLIR Elements and Attributes (2 of 2)

	pushaddr?	Not Supported
	service_coverage?	Not Supported
	%extension.param	Supported
ATTLIST	slir	
	ver CDATA	#FIXED "3.2.0"
	res_type (SYNC ASYNC)	Not Supported

### SLIR Code Example: Request for Subscriber Locations

```
<slir ver="3.0.0">
  <msids>
    <msid type="MDN">4152866691</msid>
    <msid type="MDN">4155075585</msid>
  </msids>
  <eqop>
    <resp_req type="LOW_DELAY" />
    <hor_acc>1000</hor_acc>
  </eqop>
  <loc_type type="CURRENT_OR_LAST" />
</slir>
```

### MLP 3.0 SLIA DTD: Supported MLP\_SLIA Elements and Attributes (1 of 2)

ELEMENT	slia	post	Supported
		req_id	Not Supported
		result	Supported
		add_info?	Supported

## MLP 3.0 SLIA DTD: Supported MLP\_SLIA Elements and Attributes (2 of 2)

	%extension.param	Supported
ATTLIST	slia	
	ver CDATA	#FIXED "3.2.0" Supported

### SLIA Code Example 1: Successful Positioning of Subscribers

```
<slia ver="3.0.0">
  <pos>
    <msid type="mdn">5105574903</msid>
    <pd>
      <time>20050505065057</time>
      <shape>
        <CircularArea>
          <coord>
            <X>38.0044823884964</X>
            <Y>-122.53856420516968</Y>
          </coord>
          <radius>669.8498936328945</radius>
        </CircularArea>
      </shape>
    </pd>
  </pos>
</slia>
```

### SLIA Code Example 2: Application Not Authorized

```
<slia ver="3.0.0">
  <result resid="3">UNAUTHORIZED APPLICATION</result>
</slia>
```

## *Transport Protocol Layer Support*

Although the MLP 3.0 specification indicates implementation using various transport mechanisms, the UP-LGPM currently supports only the HTTP protocol.

## *Element Layer Support*

UP-LGPM support for MLP Element Layer definitions is conveyed in the tables in this section.

### *Identity Element Definitions*

The table below identifies MLP\_ID definitions supported by the UP-LGPM.

**Supported MLP\_ID Elements and Attributes (1 of 3)**

ELEMENT	msid	#PCDATA	Supported
ATTLIST	msid		Supported
	type	"MDN"	Supported
	MSISDN		Not Supported
	IMSI		Not Supported
	IMEI		Not Supported
	MIN		Not Supported
	MDN		Supported
	EME_MSID		Not Supported
	ASID		Not Supported

### Supported MLP\_ID Elements and Attributes (2 of 3)

	OPE_ID		Not Supported
	IPV4		Not Supported
	IPV6		Not Supported
	SESSID		Not Supported
	SIP_URI		Not Supported
	TEL_URL		Not Supported
	enc		Not Supported
ELEMENT	msid_range		Not Supported
ELEMENT	msids	msid	Supported
		codeword?	Not Supported
		session?	Not Supported
		trans_id?	Not Supported
		msid_range	Not Supported
		codeword*	Not Supported
ELEMENT	codeword		Not Supported
ELEMENT	esrd		Not Supported
ELEMENT	esrk		Not Supported
ELEMENT	session		Not Supported

### Supported MLP\_ID Elements and Attributes (3 of 3)

ELEMENT	start_msid	Not Supported
ELEMENT	stop_msid	Not Supported
ELEMENT	trans_id	Not Supported

### *Location Element Definitions*

The table below identifies MLP\_LOC definitions supported by the UP-LGPM.

### Supported MLP\_LOC Elements and Attributes (1 of 3)

ELEMENT	pos	msid	Supported
		pd	Supported
		poserr	Supported
		gsm_net_param?	Not Supported
		trans_id?	Not Supported
ATTLIST	pos		Supported
	pos_method		Not Supported
ELEMENT	eme_pos		Not Supported
ELEMENT	trl_pos		Not Supported
ELEMENT	Pd		
		time	Supported
		shape	Supported

### Supported MLP\_LOC Elements and Attributes (2 of 3)

		alt	Supported
		alt_acc	Supported
		speed	Supported
		direction	Supported
		lev_conf	Not Supported
		qos_not_met	Not Supported
ELEMENT	pos_err	result	Supported
		add_info?	Supported
		time	Supported
ELEMENT	time	#PCDATA	Supported
ATTLIST	time		Supported
	utc_off	CDATA "0000"	Supported
ELEMENT	alt	#PCDATA	Supported
ELEMENT	alt_acc	#PCDATA	Supported
ATTLIST	alt_acc		Supported
	qos_class		Not Supported
ELEMENT	qos_not_met		Not Supported
ELEMENT	direction	#PCDATA	Supported
ELEMENT	speed	#PCDATA	Supported
ELEMENT	lev_conf		Not Supported



### Supported MLP\_LOC Elements and Attributes (3 of 3)

ELEMENT	geo_info		Not Supported
ELEMENT	CoordinateReferenceSystem		Not Supported
ELEMENT	Identifier		Not Supported
ELEMENT	code		Not Supported
ELEMENT	codeSpace		Not Supported
ELEMENT	edition		Not Supported
ELEMENT	service_coverage		Not Supported
ENTITY	% mlp_res.dtd	SYSTEM "MLP_RES_300.DTD"	Supported

### *Result Element Definitions*

The table below identifies MLP\_RES definitions supported by the UP-LGPM.

### Supported MLP\_RES Elements and Attributes

ELEMENT	add_info	#PCDATA	Supported
ELEMENT	result	#PCDATA	Supported
ATTLIST	result		Supported
	resid CDATA	#REQUIRED	Supported

## Shape Element Definitions

The table below identifies MLP\_SHAPE definitions supported by the UP-LGPM.

### Supported MLP\_SHAPE Elements and Attributes (1 of 3)

ELEMENT	shape	Point	Not Supported
		LineString	Not Supported
		Polygon	Not Supported
		Box	Not Supported
		CircularArea	Supported
		CircularArcArea	Not Supported
		EllipticalArea	Not Supported
		MultiLineString	Not Supported
		MultiPoint	Not Supported
		MultiPolygon	Not Supported
		LinearRing	Supported
ELEMENT	distanceUnit	#PCDATA	Not Supported
ELEMENT	angularUnit	#PCDATA	Not Supported
ELEMENT	angle	#PCDATA	Not Supported
ELEMENT	coord	(X, Y?, Z?)	Supported
ELEMENT	X	#PCDATA	Supported
ELEMENT	Y	(#PCDATA	Supported

## Supported MLP\_SHAPE Elements and Attributes (2 of 3)

ELEMENT	Z	#PCDATA	Supported
ELEMENT	Point	coord	Supported
ATTLIST	Point		
	gid ID		Not Supported
	srsName CDATA		Not Supported
ELEMENT	LineString		Not Supported
ELEMENT	Box		Not Supported
ELEMENT	LinearRing	coord	Supported
		coord	Supported
		coord	Supported
		coord*	Supported
ATTLIST	LinearRing		
	gid ID		Not Supported
	srsName CDATA		Not Supported
ELEMENT	Polygon		Not Supported
ELEMENT	outerBoundaryIs		Not Supported
ELEMENT	innerBoundaryIs		Not Supported
ELEMENT	CircularArcArea		Not Supported
ELEMENT	CircularArea	coord	Supported
		radius	Supported

### Supported MLP\_SHAPE Elements and Attributes (3 of 3)

		distanceUnit?	Not Supported
ATTLIST	CircularArea		
	gid ID		Not Supported
	srsName CDATA		Not Supported
ELEMENT	EllipticalArea		Not Supported
ELEMENT	inRadius		Not Supported
ELEMENT	outRadius		Not Supported
ELEMENT	radius	#PCDATA	Supported
ELEMENT	semiMajor		Not Supported
ELEMENT	semiMinor		Not Supported
ELEMENT	startAngle		Not Supported
ELEMENT	stopAngle		Not Supported
ELEMENT	MultiLineString		Not Supported
ELEMENT	MultiPoint		Not Supported
ELEMENT	MultiPolygon		Not Supported

## Quality of Position Element Definitions

The table below identifies MLP\_QOP definitions supported by the UP-LGPM.

### Supported MLP\_QOP Elements and Attributes (1 of 2)

ELEMENT	Eqop	resp_req?	Supported
		resp_timer?	Supported
		ll_acc?	Supported
		hor_acc?	Supported
		alt_acc?	Supported
ELEMENT	Qop	ll_acc?	Supported
		hor_acc?	Supported
		alt_acc?	Supported
ELEMENT	Ll_acc	#PCDATA	Supported
ATTLIST	Ll_acc		
	qos_class		Not Supported
ELEMENT	hor_acc	#PCDATA	Supported
ATTLIST	hor_acc		
	qos_class		Not Supported
ELEMENT	max_loc_age	#PCDATA	Supported
ELEMENT	resp_req	EMPTY	Supported
ATTLIST	resp_req		

### Supported MLP\_QOP Elements and Attributes (2 of 2)

type			Supported
NO_DELAY			Supported
LOW_DELAY			Supported
DELAY_TOL			Supported
ELEMENT	resp_timer	#PCDATA	Supported

### *Context Element Definitions*

The tables below identify MLP\_CTXT and MLP\_HDR definitions supported by the UP-LGPM.

### Supported MLP\_CTXT Elements and Attributes (1 of 2)

ELEMENT	client	id	Supported
		pwd?	Supported
		serviceid?	Not Supported
		requestmode?	Not Supported
ELEMENT	sessionid	#PCDATA	Not Supported
ELEMENT	Id	#PCDATA	Supported
ELEMENT	requestor	id	Supported
		serviceid?	Not Supported
ATTLIST	requestor		

## Supported MLP\_CTXT Elements and Attributes (2 of 2)

	type	"MDN"	Supported
	MSISDN		Not Supported
	NAME		Not Supported
	EMAIL		Not Supported
	URL		Not Supported
	SIPURL		Not Supported
	IMS		Not Supported
	MDN		Supported
	ASID		Not Supported
ELEMENT	pwd	#PCDATA	Supported
ELEMENT	serviceid		Not Supported
ELEMENT	requestmode		Not Supported
ATTLIST	requestmode		Not Supported
	type		Not Supported
ELEMENT	subclient		Not Supported
ATTLIST	subclient		Not Supported
	last_client		Not Supported

### Supported MLP\_HDR Elements and Attributes

ELEMENT	Hdr	client	Supported
		sessionid	Not Supported
		client	Not Supported
		sessionid	Not Supported
		subclient*	Not Supported
		requestor?	Supported
ATTLIST	Hdr		Supported
	Ver	CDATA	#FIXED "3.0.0"
			Supported

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