



# **Enabler Release Definition for Mobile Location Service (MLS)**

Candidate Version 1.4 – 04 Aug 2020

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**Open Mobile Alliance**  
OMA-ERELD-MLS-V1\_4-20200804-C

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# 1. Scope

The scope of this document is limited to the Enabler Release Definition of MLS 1.4 according to OMA Release process and the Enabler Release specification baseline listed in section 5.

## 2. References

### 2.1 Normative References

- [23.271] “Functional stage 2 description of Location Services”, 3GPP TS 23.271 Release 10  
[URL:http://www.3gpp.org/ftp/Specs/latest/Rel-10/23\\_series/](http://www.3gpp.org/ftp/Specs/latest/Rel-10/23_series/)
- [IOPPROC] “OMA Interoperability Policy and Process”, Version 1.12, Open Mobile Alliance™, OMA-ORG-IOP-Process-V1\_12, [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [MLP 3.5] “Mobile Location Protocol”, Version 3.5, Open Mobile Alliance™, OMA-TS-MLP-V3\_5  
[URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [MLP DTD] “MLP DTDs”, Version 3.5, Open Mobile Alliance™, OMA-SUP-DTD\_MLP-V3\_5  
[URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [MLP\_COM DTD\_3\_4] “MLP Common DTDs”, Version 3.4, Open Mobile Alliance™, OMA-SUP-DTD\_MLP\_ID\_QOP\_RES\_SHAPE-V3\_4  
[URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [MLP\_COM DTD\_3\_5] “MLP Common DTDs”, Version 3.5, Open Mobile Alliance™, OMA-SUP-DTD\_MLP\_ID\_QOP\_RES\_SHAPE-V3\_5  
[URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [MLS AD] “MLS Architecture Document”, Version 1.4, Open Mobile Alliance™, OMA-AD-MLS-V1\_4  
[URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [MLS RD] “MLS Requirements Document”, Version 1.4, Open Mobile Alliance™, OMA-RD-MLS-V1\_4  
[URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [RFC2119] “Key words for use in RFCs to Indicate Requirement Levels”, S. Bradner, March 1997,  
[URL:http://www.ietf.org/rfc/rfc2119.txt](http://www.ietf.org/rfc/rfc2119.txt)
- [RFC2119] “Key words for use in RFCs to Indicate Requirement Levels”, S. Bradner, March 1997,  
[URL:http://www.ietf.org/rfc/rfc2119.txt](http://www.ietf.org/rfc/rfc2119.txt)
- [RLP 1.2] “Roaming Location Protocol”, Version 1.2, Open Mobile Alliance™, OMA-TS-RLP-V1\_2  
[URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [RLP DTD] “RLP DTDs”, Version 1.2, Open Mobile Alliance™, OMA-SUP-DTD\_RLP-V1\_2  
[URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [SCRRULES] “SCR Rules and Procedures”, Open Mobile Alliance™, OMA-ORG-SCR\_Rules\_and\_Procedures,  
[URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [SUPL AD] “SUPL Architecture Document”, Version 3.0, Open Mobile Alliance™, OMA-AD-SUPL-V3\_0  
[URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [SUPL RD] “SUPL Requirements Document”, Version 3.0, Open Mobile Alliance™, OMA-RD-SUPL-V3\_0  
[URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)
- [TIA-881] 3GPP2 X.S0002-0, Version 2.0, May 2006: “MAP Location Service Enhancements”  
[URL: http://www.3gpp2.org/Public\\_html/specs/](http://www.3gpp2.org/Public_html/specs/)

### 2.2 Informative References

- [OMADICT] “Dictionary for OMA Specifications”, Version 1.9, Open Mobile Alliance™, OMA-ORG-Dictionary-V1\_9, [URL:http://www.openmobilealliance.org/](http://www.openmobilealliance.org/)

## 3. Terminology and Conventions

### 3.1 Conventions

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

All sections and appendixes, except “Scope”, “Release Version Overview” and “Conformance Requirements Notation Details”, are normative, unless they are explicitly indicated to be informative.

The formal notation convention used in sections 8 and 9 to formally express the structure and internal dependencies between specifications in the Enabler Release specification baseline is detailed in [SCR RULES].

### 3.2 Definitions

<b>Enabler Release</b>	Collection of specifications that combined together form an enabler for a service area, e.g. a download enabler, a browsing enabler, a messaging enabler, a location enabler, etc. The specifications that are forming an enabler should combined fulfil a number of related market requirements.
<b>MCF</b>	Defined in [IOPPROC] as “All mandatory client features of the specification SCR”
<b>Minimum Functionality Description</b>	Description of the guaranteed features and functionality that will be enabled by implementing the minimum mandatory part of the Enabler Release.
<b>Minimum Functionality Description</b>	Description of the guaranteed features and functionality that will be enabled by implementing the minimum mandatory part of the Enabler Release.
<b>MSF</b>	Defined in [IOPPROC] as “All mandatory server features of the specification SCR”
<b>SUPL Enabled Terminal (SET)</b>	A device that is capable of communicating with a SUPL network. Examples of this could be a UE in UMTS, a MS in GSM or IS-95, or a PC over an IP-based transport.
<b>SUPL Location Platform (SLP)</b>	Entity responsible for SUPL Service Management and Position Determination. SLP contains the SLC and SPC Functions.

### 3.3 Abbreviations

<b>ERDEF</b>	Enabler Requirement Definition
<b>ERELED</b>	Enabler Release Definition
<b>MLP</b>	Mobile Location Protocol
<b>MLS</b>	Mobile Location Service
<b>OMA</b>	Open Mobile Alliance
<b>OMNA</b>	Open Mobile Naming Authority
<b>PCP</b>	Privacy Checking Protocol
<b>RLP</b>	Roaming Location Protocol
<b>SUPL</b>	Secure User Plane Location

## 4. Release Version Overview

### 4.1 Version 1.0 Functionality

The OMA Mobile Location Service V1.0 (MLS V1.0) consists of a set of location specifications complying with 3GPP Release 6 LCS Specification. MLS 1.0 is primarily intended for use in a 3GPP environment. Compliance to other environments is not a requirement but the specification has in several cases been extended to not unnecessary prevent use in other environments. The set of specifications in MLS V1.0 consist of MLP V3.2 and RLP V1.0.

### 4.2 Version 1.1 Functionality

The OMA Mobile Location Service V1.1 (MLS V1.1) consists of a set of location specifications complying with 3GPP Release 6 LCS Specifications. In addition MLS V1.1 supports the functions in the OMA SUPL V1.0 enabler. MLS 1.1 is primarily intended for use in a 3GPP environment. Compliance to other environments is not a requirement but the specification has in several cases been extended to not unnecessary prevent use in other environments. The set of specifications in MLS V1.1 consist of MLP V3.2, RLP V1.0 and PCP V1.0.

### 4.3 Version 1.2 Functionality

The OMA Mobile Location Service V1.2 (MLS V1.2) consists of a set of location specifications:

- Supporting functions in MLS 1.1 except for Lid and Lpp reference points.
- Complying with 3GPP Release 7 LCS Specifications except for Lid and Lpp reference points that are no longer supported.
- Supporting the OMA SUPL V2.0 enabler, [SUPL AD].
- Supporting 3GPP2 “MAP Location Service Enhancements”, [TIA-881].

The set of specifications in MLS V1.2 consist of MLP V3.3 and RLP V1.1.

### 4.4 Version 1.3 Functionality

MLS V1.3 is an evolution of MLS V1.2. The functional additions are:

- support of 3GPP Release 10 LCS Specification
- support of OMA SUPL V3.0
- support of OMA LPPe V1.0
- improvements of trigger feature

The set of specifications in MLS V1.3 consist of MLP V3.4 and RLP V1.2.

### 4.5 Version 1.4 Functionality

MLS V1.4 is an evolution of MLS V1.3. The functional additions are:

- Support of ILA use cases
  - o Support of unspecified and unregistered target mobile devices
  - o Support of access/location network related events
  - o Support of analytic events including support of multiple conditions for location reporting
- Indication from MLS application of supported shapes

The set of specifications in MLS V1.4 consist of MLP V3.5 and RLP V1.2.



## 5. Document Listing for MLS

This section is normative.

Doc Ref	Permanent Document Reference	Description
<b>Requirement Document</b>		
[MLS RD]	OMA-RD-MLS-V1_4-20150224-C	Requirement Document for MLS Enabler
<b>Architecture Document</b>		
[MLS AD]	OMA-AD-MLS-V1_4-20150224-C	Architecture Document for MLS Enabler
<b>Technical Specification</b>		
[MLP 3.5]	OMA-TS-MLP-V3_5-20200804-C	Specification that defines the MLP 3.5 protocol
<b>Supporting Files</b>		
[MLP DTD]	OMA-SUP-DTD_MLP-V3_5-20200804-C	DTD for the messages and included elements of the MLP protocol.  Working file in DTD directory: file: MLP_v3_5.dtd path: <a href="http://www.openmobilealliance.org/tech/dtd/">http://www.openmobilealliance.org/tech/dtd/</a>
[MLP_ID_QOP_RES_SHAPE DTD]	OMA-SUP-DTD_MLP_ID_QOP_RES_SHAPE-V3_5-20181211-C	DTD for the messages and included elements of the RLP protocols.  Working file in DTD directory: file: MLP_ID_QOP_RES_SHAPE_v3_5.dtd path: <a href="http://www.openmobilealliance.org/tech/dtd/">http://www.openmobilealliance.org/tech/dtd/</a>

**Table 1: Listing of Documents in MLS Enabler**

## 6. OMNA Considerations

This release do not require any OMNA considerations

## 7. Conformance Requirements Notation Details

This section is informative

The tables in following chapters use the following notation:

- Item:** Entry in this column **MUST** be a valid `ScrItem` according to [SCRRULES].
- Feature/Application:** Entry in this column **SHOULD** be a short descriptive label to the **Item** in question.
- Requirement:** Expression in the column **MUST** be a valid `TerminalExpression` according to [SCRRULES] and it **MUST** accurately reflect the architectural requirement of the **Item** in question.

## 8. ERDEF for MLS - Client Requirements

This section is normative.

Item	Feature / Application	Status	Requirement
OMA-ERDEF-MLS-C-001	MLS Enabler	M	OMA-ERDEF-MLS-C-002 OR OMA-ERDEF-MLS-C-003 OR OMA-ERDEF-MLS-C-004
OMA-ERDEF-MLS-C-002	MLS Client	O	MLP 3.5:MCF
OMA-ERDEF-MLS-C-003	Requesting Location Server	O	RLP 1.2: MCF AND NOT (RLP-D-C-003 OR RLP-V-C-010 OR RLP-V-C-012)
OMA-ERDEF-MLS-C-004	Home Location Server	O	RLP 1.2: MCF

**Informative Note:** The requirement for Item OMA-ERDEF-MLS-C-003 exempt three privacy related SCR Items in RLP from being mandatory as they are not applicable for the Requesting Location Server.

**Table 2: ERDEF for MLS Client-side Requirements**

## 9. ERDEF for MLS - Server Requirements

This section is normative.

Item	Feature / Application	Status	Requirement
OMA-ERDEF-MLS-S-001	MLS Enabler	M	OMA-ERDEF-MLS-S-002 OR OMA-ERDEF-MLS-S-003 OR OMA-ERDEF-MLS-S-004
OMA-ERDEF-MLS-S-002	Requesting Location Server	O	MLP 3.5:MSF
OMA-ERDEF-MLS-S-003	Home Location Server	O	RLP 1.2: MSF AND NOT (RLP-D-S-003 OR RLP-V-S-010 OR RLP-V-S-012)
OMA-ERDEF-MLS-S-004	Visited Location Server	O	RLP 1.2:MSF

**Informative Note:** The requirement for Item OMA-ERDEF-MLS-S-003 exempt three privacy related SCR Items in RLP from being mandatory as they are not applicable for the Home Location Server.

**Table 3: ERDEF for MLS Server-side Requirements**

## Appendix A. Change History

(Informative)

### A.1 Approved Version History

Reference	Date	Description
OMA-ERELED-MLS-V1_0	19 Jul 2011	First Approved version
OMA-ERELED-MLS-V1_1	19 Jul 2011	First Approved version
OMA-ERELED-MLS-V1_2	19 Jul 2011	First Approved version
OMA-ERELED-MLS-V1_2_1	17 Nov 2011	First Approved version

### A.2 Draft/Candidate Version 1.4 History

Document Identifier	Date	Sections	Description
Draft Versions OMA-ERELED-MLS-V1_4	01 Jul 2014	n/a	Initial draft
	03 Sep 2014	5	Editorial update of permanent document references in section 5
	06 Nov 2014	1,5	Applied editorial corrections per CONRR
	23 Jan 2015	5	Implemented CR: OMA-LOC-2014-0194- CR_MLS_1_4_ERELED_Correction_SUP_Filename
	11 Feb 2015	5	Editorial update of permanent document references in section 5
Candidate Version OMA-ERELED-MLS-V1_4	24 Feb 2015	All	Status changed to Candidate by TP TP Ref # OMA-TP-2015-0061- INP_MLS_V1_4_ERP_and_ETR_for_Candidate_Approval
Draft Version OMA-ERELED-MLS-V1_4	21 Nov 2018	5	Status changed to Draft by LOC OMA-LOC-2018-0012- INP_MLS_Evolution_v1.4_ERP_for_Candidate_reapproval_notification
	05 Dec 2018	Section 5	Editorial update of permanent document references in section 5 Approved OMA Legal disclaimer updated
Candidate Version OMA-ERELED-MLS-V1_4	11 Dec 2018	All	Status changed to Candidate by LOC OMA-LOC-2018-0021- INP_MLS_Evolution_v1.4_ERP_for_Candidate_reapproval_notification
Candidate Version OMA-ERELED-MLS-V1_4	04 Aug 2020	All	Status changed to Candidate by LOC OMA-LOC-2020-0023- INP_MLS_Evolution_1.4_for_Candidate_Approval