



Enabler Release Definition for LwM2M_VirtualObserveNotify

Candidate Version 1.0 – 03 Apr 2019

Open Mobile Alliance
OMA-ERELD-LwM2M_VirtualObserveNotify-V1_0-20190403-C

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1. Scope

The scope of this document is limited to the Enabler Release Definition of LWM2M VirtualObserveNotify V1.0 according to OMA Release process and the Enabler Release specification baseline listed in section 0.

2. References

2.1 Normative References

- [PORTFOLIO_TS] “Lightweight M2M – Portfolio Object”, Version 1.0, Open Mobile Alliance, OMA-TS-LWM2M PortfolioObj-V1_0, [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)

2.2 Informative References

- [OMADICT] “Dictionary for OMA Specifications”, Version 2.9, Open Mobile Alliance™, OMA-ORG-Dictionary-V2_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.

3.2 Definitions

Minimum Functionality Description	Description of the guaranteed features and functionality that will be enabled by implementing the minimum mandatory part of the Enabler Release.
Reference Release	A set of specifications and/or white papers which form a formal deliverable of OMA. The release can be referenced or otherwise used to support implementable enabler releases, but it cannot by itself be implemented in products.

3.3 Abbreviations

LwM2M	Lightweight Machine to Machine (refers to this OMA enabler)
OMA	Open Mobile Alliance
OMNA	Open Mobile Naming Authority
RRELD	Reference Release Definition

Kindly consult [OMADICT] for more abbreviations used in this document.

4. Release Version Overview

The Information Reporting Interface is used by a LwM2M Server to observe any changes of resources on a registered LwM2M Client, receiving notifications when new values are available. In LightweightM2M version 1.0, a single notification message can only include resources in a single object. In LightweightM2M version 1.1, the LwM2M Enabler can support a mechanism for atomic reporting of resources across different objects in a single notification. However, the conditions and rules of a notification message are too simple to satisfy complex scenarios that described as follows:

- The notification message can only be sent when multiple subscription conditions are met at the same time.
- Only some of the observed resources are included in the notification message, and other resources are only used as subscription conditions.
- Compared with the last notification message, this notification message only contains the changed resources.

In order to satisfy the requirements described above, this specification defines an Object to realize flexibly reporting resources across different objects in a single client notification message under different conditions and rules.

4.1 Version 1.0 Functionality

Version 1.0 of the Virtual Observe Notify object is used to support following functionalities.

1. Reporting resources across different objects in a single client notification message.
2. Supporting AND conditions for subscription, that is, a single client notification can be sent just when multiple subscription conditions are met at the same time.
3. Using resources as only the condition for Observe operation.
4. Reporting changed resources by a notification message.

5. Document Listing for LwM2M VirtualObserveNotify 1.0

This section is normative.

Doc Ref	Permanent Document Reference	Description
Technical Specification		
[VirtualObserveNotify_TS]	OMA-TS-LwM2M_VirtualObserveNotify-V1_0-20190403-C	Technical Specification for LwM2M VirtualObserveNotify Object
Supporting File		
[LwM2M_VirtualObserveNotify_XML]	OMA-SUP-LwM2M_VirtualObserveNotify-V1_0-20190403-C	XML document for LightweightM2M Portfolio Object Working file in profiles directory: File: LwM2M_VirtualObserveNotify-V1_0.xml Path: http://www.openmobilealliance.org/tech/profiles

Table 1: Listing of Documents in LwM2M VirtualObserveNotify 1.0

6. OMNA Considerations

The present Enabler Release consists in a new LwM2M Object. This LwM2M Object will be registered with the OMNA LwM2M Object registry.

Object URN Identifier	Organization	Object Specification URL	Description
urn:oma:lwm2m:oma:22	OMA	“Object Virtual Observe Notify Technical Specification”, Version 1.0, Open Mobile Alliance™, OMA-TS-LwM2M_VirtualObserveNotify-V1_0, URL:http://www.openmobilealliance.org/	LwM2M VirtualObserveNotify Object

7. API Considerations

Not Applicable.

Appendix A. Change History (Informative)

A.1 Approved Version History

Reference	Date	Description
n/a	n/a	No prior version

A.2 Draft/Candidate Version History

Reference	Date	Sections	Description
Draft Versions OMA-EREELD- LwM2M_VirtualObserveNotify-V1_0	03 Feb 2019	All	Base line Document
	01 Mar 2019	5	Document list updated with File updates
	03 Apr 2019	5	Document list updated
Candidate Version OMA-EREELD- LwM2M_VirtualObserveNotify-V1_0	03 Apr 2019	n/a	Status changed to Candidate by IPSO WG IPSO WG ref # OMA-IPSO-2019-0049R01- MINUTES_01Apr2019_F2F_Porto