LwM2M v1.2 Requirements

http://openmobilealliance.org/release/LightweightM2M/V1_2-20190124-C/OMA-RD-LightweightM2M-V1_2-20190124-C.pdf

High-Level Functional Requirements

Sw-Mgmt-02	The SwMgmt Enabler SHALL create standardized mechanisms for manifest of the upgrade process <This is referring to the use of IETF SUIT manifest>
Gw-Enab-01	The LwM2M Enabler and LwM2M Gateway Enabler SHALL provide abilities to manage the end device through transparent mode, whereby LwM2M Gateway is pass through for commands on either direction
Gw-Enab-02	The LwM2M Enabler and LwM2M Gateway Enabler SHALL provide abilities to manage the end device through proxy mode, whereby LwM2M Gateway is acting as a LwM2M server on behalf of LwM2M server
Gw-Enab-03	The LwM2M Enabler and LwM2M Gateway Enabler SHALL provide abilities to manage the end device through adaptation mode, whereby LwM2M Gateway translates the different end device protocol as LwM2M towards the server and vice versa

HLFR – Trigger Mode

LwM2M-TRIG-01	Lightweight M2M MUST extend the Trigger Mode to other transports than SMS.
LwM2M-TRIG-03	Lightweight M2M MUST limit the Trigger Mode to Execute operations on the Registration Update Trigger and BootstrapRequest Trigger resources.
LwM2M-TRIG-04	Lightweight M2M MUST restrict the Trigger Mode to authorized entities.
LwM2M-TRIG-05	Lightweight M2M MUST allow the Trigger Mode to trigger a registration to the LwM2M Server.

HLFR – Information Reporting Interface

LwM2M-INFO-01	LwM2M Observe Operation MUST support attributes valid only for the observation in a standard way.
LwM2M-INFO-02	LwM2M Observe-Composite Operation MUST support attributes valid only for the observation in a standard way.
LwM2M-INFO-03	LwM2M MUST provide a way to observe only raising edge or falling edge transitions of Boolean resources.

HLFR – Device Management and Service Enablement Interface

LwM2M-DMSE-01	The LWM2M enabler SHALL allow the LWM2M Client to refuse a Create or Delete operation from the LwM2M Server.
LwM2M-DMSE-02	The LWM2M enabler SHALL give the LwM2M Server the ability to request the LwM2M Client to create Object Instances without being required to provide all of the Resource values of the new Instance.

HLFR – Communication Security

LwM2M-CS-01	The LwM2M enabler SHALL support the use of TLS 1.3. TLS 1.3 reduces the number of roundtrips.
LwM2M-CS-02	The LwM2M enabler SHALL support the use of DTLS 1.3. DTLS 1.3 in addition to the roundtrip improvements also optimizes the record layer format, which leads to lower over-the-wire overhead.
LwM2M-CS-03	The LwM2M enabler SHALL support the use of the DTLS 1.2 Connection ID. The Connection ID extension for DTLS adds an additional record layer header field to improve an alternative demultiplexing strategy. As a result, changes of the IP address and ports by NATs will not have an impact on the correct processing of DTLS-protected packets. Note that the Connection ID functionality is also available for DTLS 1.3.

Firmware Updates Requirements

LwM2M-FW-01	The LwM2M enabler SHALL support security protection of the firmware image and associated meta-data in an end-to-end fashion. Note that there is currently work ongoing to standardize the format of the meta-data along with the end-to-end security protection mechanism.
LwM2M-FW-02	The LwM2M enabler SHALL minimize the amount of redundant information contained in the LwM2M Firmware Update Object with respect to what is already contained in the end-to-end protected meta-data.
LwM2M-FW-03	The LwM2M enabler SHALL support extensible and flexible error reporting so that trouble-shooting is simplified.

Bootstrapping Requirements

LwM2M-BS-01	The LwM2M specification SHALL provide ability to rotate bootstrap credentials. This feature is, for example, needed when the long-term credential expires and needs to be replaced.

Profile Identifier Requirements

LwM2M-Ident-01	The LwM2M enabler SHALL support optional use of Profile ID in the client Registration message
LwM2M-Ident-02	When LwM2M Profile ID is present in the registration message, objects and instances MAY be omitted
LwM2M-Ident-03	Semantics and meaning of LwM2M profile IDs are outside scope of LwM2M specifications
LwM2M-Ident-04	LwM2M Profile Ids have to be registered with OMA and have publicly available precise definition and semantics

Registration Interface

LwM2M-REG-01	The LWM2M enabler SHALL allow LWM2M client to determine which LWM2M server(s) to register to when multiple LWM2M server accounts are configured.
LwM2M-REG-02	The LWM2M enabler SHALL allow configuration of LWM2M client to determine which LWM2M server(s) to register to.

Bootstrap and Registration Optimizations

LwM2M-Opt-01	The LWM2M enabler SHALL provide methods to optimize bootstrap sequence and payload(s) delivered during bootstrapping.
LwM2M-Opt-02	The LWM2M enabler SHALL provide methods to optimize registration sequence and payload(s) delivered during registration.
LwM2M-TRAN-BIND-05	The client SHALL assume that the server supports UDP binding even if the server does not include UDP (“U”) in the binding resource (Resource 7) of the LwM2M server object (Object 1).

Registration and Discovery

LwM2M-RD-01	Lightweight M2M SHOULD allow to declaring the version of several Objects in a registration payload at once.
LwM2M-RD-02	Lightweight M2M DISCOVER Operation SHOULD include a way to limit the depth of the returned response.

Bootstrap Clarifications

LwM2M-BOOT-PROV-01	The bootstrap process SHALL be able to initialize the Security object (Object 0) and LwM2M server objects (Object 1) from multiple sources including from the factory provisioning, smart card and network.
LwM2M-BOOT-PROV-02	Access Control on a per source basis SHALL be enabled on the Security object (Object 0) and LwM2M server objects (Object 1).

Version Negotiation

LwM2M-VER-01	The client and server SHALL be able to negotiate the version of the enabler to be used during the bootstrap process.
LwM2M-VER-02	The client and server SHALL be able to negotiate the version of the enabler to be used for LwM2M server communications.
LwM2M-VER-03	A LwM2M server SHALL be backward compatible with LwM2M clients using the same major version of the enabler.
LwM2M-VER-04	A LwM2M client SHALL be backward compatible with LwM2M servers using the same major version of the enabler.

Transports

LwM2M-Trans-01	The LWM2M enabler SHALL support MQTT.
LwM2M-Trans-02	The LWM2M enabler SHALL support HTTP/1.x