



Enabler Release Definition for SyncML Common Specifications

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Open Mobile Alliance
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1. Scope

The scope of this document is limited to the Enabler Release Definition of the SyncML Common Specifications which provide support for both OMA Data Synchronization (DS) and OMA Device Management (DM) according to OMA Release process and the Enabler Release specification baseline listed in section 5. The Open Mobile Alliance SyncML Common v1.2 specifications are based on the OMA SyncML Common v1.1.2 specifications with the addition of previous requirements and change requests identified in the SyncML Initiative, Ltd.

The SyncML Initiative, Ltd. was a not-for-profit corporation formed by a group of companies who co-operated to produce an open specification for data synchronization and device management. Prior to SyncML, data synchronization and device management had been based on a set of different, proprietary protocols, each functioning only with a very limited number of devices, systems and data types. These non-interoperable technologies have complicated the tasks of users, manufacturers, service providers, and developers. Further, a proliferation of different, proprietary data synchronization and device management protocols has placed barriers to the extended use of mobile devices, has restricted data access and delivery and limited the mobility of the users.

SyncML is a specification that contains the following main components:

- An XML-based representation protocol
- A synchronization protocol and a device management protocol
- Transport bindings for the protocol

The data representation specifies an XML DTD that allows the representation of all the information required to perform synchronization or device management, including data, metadata and commands. The synchronization and device management protocols specify how SyncML messages conforming to the DTD are exchanged in order to allow a SyncML client and server to exchange additions, deletes, updates and other status information.

There are also DTDs that define the representation of information about the device such as memory capacity, and the representation of various types of Meta information such as security credentials.

Although the SyncML specification defines transport bindings that specify how to use a particular transport to exchange messages and responses, the SyncML representation, synchronization and device management protocols are transport-independent. Each SyncML package is completely self-contained, and could in principle be carried by any transport. The initial bindings specified are HTTP, WSP and OBEX, but there is no reason why SyncML could not be implemented using email or message queues, to list only two alternatives. Because SyncML messages are self-contained, multiple transports may be used without either the server or client devices having to be aware of the network topology. Thus, a short-range OBEX connection could be used for local connectivity, with the messages being passed on via HTTP to an Internet-hosted synchronization server.

To reduce the data size, a binary coding of SyncML based on the WAP Forum's WBXML is defined. Messages may also be passed in clear text if required. In this and other ways SyncML addresses the bandwidth and resource limitations imposed by mobile devices.

SyncML is both data type and data store independent. SyncML can carry any data type that can be represented as a MIME object. To promote interoperability between different implementations of SyncML, the specification includes the representation formats used for common PIM data.

The OMA SyncML Common Specifications v1.2 Enabler Release includes the following types of documents:

- The XML-based representation protocol which specifies the common XML syntax and semantics used by all SyncML protocols and is the superset of the DS and DM representation protocols
- The transport bindings
- The Meta Information associated with a SyncML command or data item or collection used by all SyncML protocols
- The logical structure and format of the notification messages used by all SyncML server alerted notifications

2. References

2.1 Normative References

- [IOPPROC] “OMA Interoperability Policy and Process”, Open Mobile Alliance™, OMA-IOP-Process-V1_2_0, [URL:http://www.openmobilealliance.org](http://www.openmobilealliance.org)
- [REPPRO] “SyncML Representation Protocol”, Open Mobile Alliance™, OMA-SyncML-RepPro-V1_2, [URL:http://www.openmobilealliance.org](http://www.openmobilealliance.org)
- [REPPRODTD] “SyncML Representation Protocol, Document Type Definition ”, Open Mobile Alliance™, OMA-SyncML-RepPro-DTD-V1_2, [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)
- [SAN] “SyncML Server Alerted Notification”, Open Mobile Alliance™, OMA-SyncML-SAN-V1_2, [URL:http://www.openmobilealliance.org](http://www.openmobilealliance.org)
- [SYNCHHTTP] “SyncML HTTP Binding Specification”, Open Mobile Alliance™, OMA-SyncML-HTTPBinding-V1_2, [URL:http://www.openmobilealliance.org](http://www.openmobilealliance.org)
- [SYNCMETA] “SyncML Meta Information”, Open Mobile Alliance™, OMA-SyncML-MetaInfo-V1_2, [URL:http://www.openmobilealliance.org](http://www.openmobilealliance.org)
- [SYNCMETADTD] “SyncML Meta Information, Document Type Definition”, Open Mobile Alliance™, OMA-SyncML-MetaInfo-V1_2, [URL:http://www.openmobilealliance.org](http://www.openmobilealliance.org)
- [SYNCOBEX] “SyncML OBEX Binding Specification”, Open Mobile Alliance™, OMA-SyncML-OBEXBinding-V1_2, [URL:http://www.openmobilealliance.org](http://www.openmobilealliance.org)
- [SYNCWSP] “SyncML WSP Binding Specification”, Open Mobile Alliance™, OMA-SyncML-WSPBinding-V1_2, [URL:http://www.openmobilealliance.org](http://www.openmobilealliance.org)

2.2 Informative References

None

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” and “Introduction”, 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 [IOPPROC].

3.2 Definitions

Data Synchronization –The act of establishing an equivalence between two data collections, where each data element in one item maps to a data item in the other, and their data is equivalent.

Enabler Release –a 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 combined fulfill a number of related market requirements.

Minimum Functionality Description – Description of the guaranteed features and functionality that will be enabled by implementing the minimum mandatory part of the Enabler Release.

3.3 Abbreviations

DM	Device Management
DS	Data Synchronization
DTD	Document Type Definition
ERDEF	Enabler Requirement Definition
ERELD	Enabler Release Definition
OMA	Open Mobile Alliance
SCR	Static Conformance Requirements
SyncML	Synchronization Mark-up Language
XML	Extensible Mark-up Language

4. Introduction

This document outlines the Enabler Release Definition for the SyncML Common Specifications and the respective conformance requirements for client and server implementations claiming compliance to the Open Mobile Alliance DS and DM v1.2 specifications.

The Common Specifications include documents that define the binding requirements for communicating SyncML over various transports. Although SyncML is transport independent, a set of common bindings is defined to encourage interoperability.

The SyncML representation protocol is defined by a set of messages that are conveyed between entities participating in a SyncML operation. The messages are represented as an XML document. The SyncML Representation Protocol document in the Common Specifications defines the logical structure and format of various SyncML messages that are used by DS, DM or both. The SyncML representation protocol supports protocol models that are based on a request/response command structure, as well as those that are based on a "blind push" command structure.

The SyncML server alerted notification specification outlines a mechanism providing a server the ability to notify a client by defining the logical structure and format of SyncML notification messages that can be used by DS, DM, or both.

Meta Information that is used to convey characteristics of the data object to be synced or managed (e.g. Maximum size, format, type) or of the datastore (memory, state) is defined in another of the Common Specifications.

5. Enabler Release Specification Baseline

The following section comprises the Common specifications in the OMA DS v1.2 enabler release. The name Common was used in the SyncML Initiative to describe this set of documents because they are used both by SyncML Data Synchronization and SyncML Device Management.

Description	Document Reference
SyncML Representation Protocol, Open Mobile Alliance™, OMA-SyncML-RepPro-V1_2, URL:http://www.openmobilealliance.org	[REPPRO]
SyncML Representation Protocol, Document Type Definition, Open Mobile Alliance™, OMA-SyncML-RepPro-DTD-V1_2, URL:http://www.openmobilealliance.org	[REPPRODTD]
SyncML Server Alerted Notification, Open Mobile Alliance™, OMA-SyncML-SAN-V1_2, URL:http://www.openmobilealliance.org	[SAN]
SyncML HTTP Binding Specification, Open Mobile Alliance™, OMA-SyncML-HTTPBinding-V1_2, URL:http://www.openmobilealliance.org	[SYNCHHTTP]
SyncML Meta Information, Open Mobile Alliance™, OMA-SyncML-MetaInfo-V1_2, URL:http://www.openmobilealliance.org	[SYNCMETA]
SyncML Meta Information, Document Type Definition, Open Mobile Alliance™, OMA-SyncML-MetaInfo-V1_2, URL:http://www.openmobilealliance.org	[SYNCMETADTD]
SyncML OBEX Binding, Open Mobile Alliance™, OMA-SyncML-OBEXBinding-V1_2, URL:http://www.openmobilealliance.org	[SYNCOBEX]
SyncML WSP Binding Specification, Open Mobile Alliance™, OMA-SyncML-WSPBinding-V1_2, URL:http://www.openmobilealliance.org	[SYNCWSP]

6. Minimum Functionality Description for the Common Specifications

This section is informative.

6.1 Minimum Functionality of Client Implementations using the Common Specifications

This section is informative.

- The list of minimum functionality for a DS or DM client using the Common Specifications is very numerous. Please refer to the Enabler Release specification baseline listed in Section 5.

6.2 Minimum Functionality of Server Implementations using the Common Specifications

This section is informative.

The list of minimum functionality for a DS or DM server using the Common Specifications is very numerous. Please refer to the Enabler Release specification baseline listed in Section 5.

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 [IOPPROC].

Feature/Application:

Entry in this column **SHOULD** be a short descriptive label to the **Item** in question.

Status:

Entry in this column **MUST** accurately reflect the architectural status of the **Item** in question.

- M means the **Item** is mandatory for the class
- O means the **Item** is OPTIONAL for the class
- NA means the **Item** is not applicable for the class

Requirement:

Expression in the column **MUST** be a valid TerminalExpression according to [IOPPROC] and it **MUST** accurately reflect the architectural requirement of the **Item** in question.

8. ERDEF for Common Specifications - Client Requirements

This section is normative.

Table 1 ERDEF for Common Specifications Client-side Requirements

Item	Feature / Application	Status	Requirement
OMA-ERDEF-DS-C-001	Client	M	[REPPRO] AND [REPPRODTD] AND [SAN] AND [SYNCHTTP] AND [SYNCMETA] AND [SYNCMETADTD] AND [SYNCOBEX] AND [SYNCWSP]

9. ERDEF for Common Specifications - Server Requirements

This section is normative.

Table 2 ERDEF for Common Specifications Server-side Requirements

Item	Feature / Application	Status	Requirement
OMA-ERDEF-DS-S-001	Server	M	[REPPRO] AND [REPPRODTD] AND [SAN] AND [SYNCHTTP] AND [SYNCMETA] AND [SYNCMETADTD] AND [SYNCOBEX] AND [SYNCWSP]

Appendix A. Change History

(Informative)

A.1 Approved Version History

Reference	Date	Description
OMA-ERELED-SyncML-Common-v1_1_2-20030612-A	12 June 2003	Approved by TP, TP ref# OMA-TP-2003-0265R1

A.2 Draft/Candidate Version 1.2 History

Document Identifier	Date	Sections	Description
Draft Versions OMA-ERELED-SyncML-Common-v1_2	12 Dec 2003	All	Initial Draft
	16 Dec 2003	All	No longer using SyncML continuing activities template
	19 Jan 2004	All	Update copyrights to include 2004. Minor editorial corrections.
	23 Mar 2004	2.1, 8, 9	Updates from consistency review. References updated to the general http://www.openmobilealliance.org , make conformance reference to IOP Policy and Process document, and update conformance tables to include specific references.
	05 May 2004	3.2, 7	Final Draft editorial review and corrections; correct key word usage.
Candidate Version OMA-ERELED-SyncML-Common-v1_2	01 Jun 2004	n/a	Status changed to Candidate by TP TP ref # OMA-TP-2004-0177-SyncML-Common-V1_2-for-candidate