Enabler Release Definition for Game Services CSI

Approved Version 1.0 – 29 Mar 2011

Open Mobile Alliance

OMA-ERELD-GS-CSI-V1_0-20110329-A

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1. Scope

The scope of this document is limited to the Enabler Release Definition of Game Services CSI V1.0 according to OMA Release process and the Enabler Release specification baseline listed in section 6.

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2. References

2.1 Normative References

[IOPPROC] "OMA Interoperability Policy and Process", Version 1.1, Open Mobile Alliance™, OMA-IOP-Process-V1_1, URL: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

[RFC2234] "Augmented BNF for Syntax Specifications: ABNF". D. Crocker, Ed., P. Overell. November 1997, URL:http://www.ietf.org/rfc/rfc2234.txt

[GSRD] "OMA Game Services Requirements", Version 1.0 Open Mobile Alliance™, V1_0-20050403-A, URL:http://www.openmobilealliance.org/

[GSARCH] "OMA Game Services Architecture ", Version 1.0, Open Mobile Alliance™, V0_3_6-20050907-D, URL:http://www.openmobilealliance.org/

[GSETR] "Enabler Test Requirements for Game Services Client Server Interface Enabler ", Version 1.0, Open Mobile Alliance™, V1_0-20051011-D, URL:http://www.openmobilealliance.org/

[GP10] OMA-GS-v1_0-20030612-C.zip , http://www.openmobilealliance.org/release_program/enabler_releases.html

[GP10JDOC] OMA-GamingPlatform-JavaDocs-V1_0-20030612-C.zip, http://www.openmobilealliance.org/release_program/enabler_releases.html

[DLOTA] Generic Content Download Over The Air Specification, Version 1.0, OMA-Download-OTA-v1_0-20030221-C, http://www.openmobilealliance.org/

[ClientServerInterface] "OMA Game Services Client/Server Interface" Version 1, Open Mobile Alliance™, Draft Version 0.1.4-2 , URL:http://www.openmobilealliance.org/

2.2 Informative References

[JAVA] "The Java Language Specification", http://java.sun.com

[J2ME] JSR-68 "J2ME Platform Specification" http://www.jcp.org/en/jsr/all

[MIDP10] JSR-37 "Mobile Information Device Profile for the J2ME Platform"

[MIDP20] JSR-118 "J2ME Mobile Information Device Profile"

[MSNET] "Getting Started with Visual Studio .NET and the Microsoft .NET Compact Framework", http://msdn.microsoft.com

[OMAVOCAB] Dictionary for OMA Specifications V3.0.0, :http://www.openmobilealliance.org/

[WIPI] KWISFS.K-05-002 "Wireless Internet Platform for Interoperability"

[IMSArch] "Utilization of IMS capabilities Architecture", OMA-AD-IMS-V1_0-20050204-C :http://www.openmobilealliance.org/

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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 9 and 10 to formally express the structure and internal dependencies between specifications in the Enabler Release specification baseline is detailed in [IOPPROC].

3.2 Definitions

Enabler Release	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.
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

ERDEF	Enabler Requirement Definition
ERELD	Enabler Release Definition
OMA	Open Mobile Alliance
CSI	Client/Server Interface
AI	Application Instance
AppID	Application ID
API	Application Programming Interface
AS	Actor Session
ASID	Actor Session ID
CSI	Client Server Interface
DBG	DeBuG message
ERR	ERRor code
GS	Game Services
HTTP	Hyper Text Transfer Protocol
HTTPS	Secure Hyper Text Transfer Protocol
ID	IDentity
INT	Integer
JSR	Java Specification Request
MIDP	Mobile Information Device Profile
MMS	Multimedia Message Service
MSG	MeSsaGe

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OMA	Open Mobile Alliance
P2P	Peer TO Peer
POS	POSition
SID	Session ID
SCR	Statistic Conformance Requirements
SMS	Short Message Service
SOAP	Simple Object Access Protocol
SSL	Secure Socket Layer
TCP	Transmission Control Protocol
TLS	Transport Layer Security
UDP	User Datagram Protocol
UTC	Coordinated Universal Time
WSDL	Web Services Description Language
XML	eXtensible Markup Language
XSD	XML Schema Definition

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4. Introduction

This document outlines the Enabler Release Definition for <<ENABLER>> and the respective conformance requirements for clients and servers implementing claiming compliance to it as defined by Open Mobile Alliance across the specification baseline.

OMA "Game Services CSI" (GS CSI) enables the interaction between the client and the server of game services in a standard manner. The enabler is a result of continuous work to define an industry-wide specification for developing game applications that operate over wireless communication networks.

This scope for the OMA GS CSI 1.0 enabler release is to define the protocols, messages and mechanisms necessary to enable operators, service providers and manufacturers to meet the challenges in advanced mobile game services, differentiation, and fast/flexible mobile game services creation. It builds upon the OMA GP v1.0 enabler release, but extends it to address the specific requirements enumerated in the OMA GS CSI v1.0 Requirements document.

There is a growing need for game services in the mobile industry so that the operators and service providers can make available to game developers in a standard manner. The OMA GS CSI enabler defines a set of interfaces in transport, session and application layers. OMA has already published release 1 of the game platform specifications [GP10]. [GP10] which provides some fundamental API inside the game server for a mobile game platform. However, they lack the complete client/server interface for a mobile game system that takes into account the need for the interaction between the client and the server of mobile game services. This specification addresses these missing aspects of [GP10].

The main differences between [GP10] and OMA GS CSI v1.0 are that the former specifies the API between the game logics and the game server, but the latter specifies the interface between the client and the server. [GP10] and GS CSI enabler are two independent enablers in the OMA Game Services Working Group.

For example, Improved functionality and usability is achieved by providing LOGIN, REGISTER, GETAS, etc. All of the functions provide mechanisms for the interaction between game clients and game servers.

The OMA GS CSI enabler allows game publishers and developers to provide their game clients independently, which can interact with all mobile game servers running in different operator networks, because the GS CSI enabler provides the same standard CSI operations for the clients and the servers.

OMA GS CSI v1.0 consists of a set of specifications developed by OMA to address the need for the game client and the game server of the mobile game system. For a detailed discussion of the overall system architecture, please refer to [GSARCH]. And, for a detailed discussion of the overall system requirement that is used to describe the enabler, please refer to [GSRD]. The client/server interfaces are specified in the [ClientServerInterface] specification. For a detailed discussion of the Enabler Test Requirements, please refer to [GSETR].

The OMA Client/Server Interface Specification [ClientServerInterface] specifies the communication between a game client on a mobile device and a game server, in which the server side part of the game is hosted. Both, the game client and the game server themselves are not specified, but considered as black boxes. The defined Interface can run on top of various transport layers, such as HTTP, SOAP, or UDP. This layer depends on the underlying network and device capabilities.

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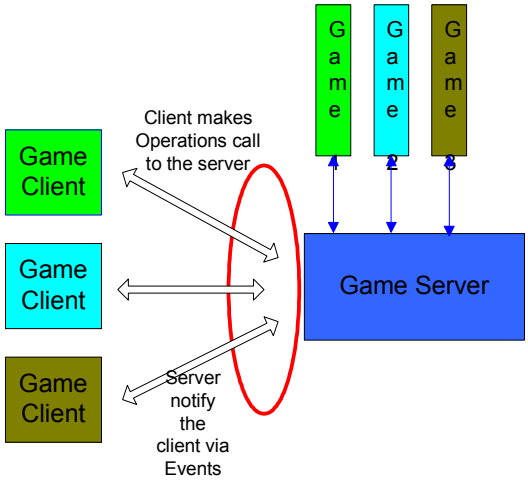

Figure 1: Client/Server Interface

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5. Description of Differences from Previous Version

This version is the intial enabler release.

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6. Document Listing for Game Services Client/Server Interface

This section is normative.

Doc Ref	Permanent Document Reference	Description
Requirement Document		
[GS-RD]	OMA-RD-Game-Services-V1_0-20110329-A	Defines the requirements for the Game Services Client/Server Interface specifications
Architecture Document		
[GS-AD]	OMA-AD-Game-Services-Architecture-V1_0-20110329-A	Defines the overall architecture for Game Services CSI v1.0 including informative descriptions of the technologies and their uses
Technical Specifications		
[GS-CSI]	OMA-TS-Game-Services-Client-Server-Interface-V1_0-20110329-A	Defines a set of interfaces in transport, session and application layers. Enables the controlled usability of wireless games, e.g. the ability to execute games and has a standardized interaction with the game server. The defined technology is an initial Game Services System that can be extended into a more comprehensive Game Services System in the future. Note: the SCR is added to this document as its appendix

Table 1: Listing of Documents in Game Services CSI Enabler

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7. Minimum Functionality Description for Game Services Client/Server Interface

This section is informative.

The OMA Client/Server Interface [ClientServerInterface] exposes a set of API interfaces, including the following operations (Additional, their Parameters, Return Values, sequence diagrams, and XML Schema definitions):

- Login and Registration: Login, Logout, and Register;
- Game Persistence: GetAS, GetInv, Activate, Deactivate, Name;
- Game Creation and Matchmaking: CreateAI, CreateAIPrivate, ForceAIRnd;
- Game Play: Start, End, Quit, HandoverTurn, SendData;
- Messaging: SendTxtMsg;
- Highscore: SetScore, GetScorePos, GetScoresByPos, GetScoresByID, GetScoresByUser
- Shadows(Ghosts): SetShadow, GetShadow;
- Miscellaneous: Ping, DateTime.

In addition to the above mentioned interfaces, there are events defined, which can be polled from the mobile device. Events such as: a new player has joined a game, someone has left, a turn is handed over, a text message has been received, or similar.

The polling of events is necessary because in the MIDP 1.0 [MIDP10] and MIDP 2.0 [MIDP20] specification, only the support of HTTP is mandatory.

The defined events are listed as the following:

- EvDeactivate,
- EvActivate,
- EvJoin,
- EvStart,
- EvEnd,
- EvQuit,
- EvTurn,
- EvData,
- EvTxtMsg,
- EvStatus.

The current enabler also defines the following operations for Event Queue Operations:

- GetEvents,
- GetEventHistory,
- RaiseEvent.

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The OMA Game Services CSI Enabler v1.0 and the former [GP10] are two independent enablers in the OMA Game Services, and they, along with future Game Services enablers, will compose together the OMA Mobile Game Services Standard System.

This enabler has dependency with the OMA-Download-V1_0 Enabler [OMADL] and OMA-DRM-V2_0 Enabler [OMADRM].Through these enablers, the GS Enabler could provide download games and keep contents rights.

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8. 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.

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9. ERDEF for Game Services CSI - Client Requirements

This section is normative.

Item	Feature / Application	Status	Requirement
OMA-ERDEF-GSCSI-V1_0-C-001	Game Services Client	M	ClientServerInterface : MCF

Table 2: ERDEF for Game Services CSI Client-side Requirements

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10.ERDEF for Game Services CSI - Server Requirements

This section is normative.

Item	Feature / Application	Status	Requirement
OMA-ERDEF-GSCSI-V1_0-S-001	Game Services Server	M	ClientServerInterface : MSF

Table 3: ERDEF for Game Services CSI Server-side Requirements

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Appendix A. Change History (Informative)

A.1 Approved Version History

Reference	Date	Description
OMA-ERELD-GS-CSI-V1_0-20110329-A	29 Mar 2011	Status changed to Approved by TP: OMA-TP-2011-0094-INP_GS_CSI_V1_0_ERP_for_Final_Approval

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