Enabler Release Definition for Secure UserPlane for Location (SUPL)

Approved Version 1.0 – 15 Jun 2007

Open Mobile Alliance
OMA-ERELD-SUPL-V1_0-20070615-A

Contents

Figures

Tables

1. Scope

The scope of this document is limited to the Enabler Release Definition of SUPL (Secure UserPlane for Location) according to OMA Release process and the Enabler Release specification baseline listed in section 6.

2. References

2.1 Normative References

[23.271] 3GPP TS 23.271 Release 6 URL: http://www.3gpp.org/

[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

[RLP 1.0] "Roaming Location Protocol v1.0", Open Mobile Alliance™, OMA-TS-RLP-V1_0 URL: http://www.openmobilealliance.org/

[SUPL AD] "SUPL 1.0 Architecture Document", Open Mobile Alliance™, OMA-AD-SUPL-V1_0 URL:http://www.openmobilealliance.org/

[SUPL MO] "OMA Management Object for SUPL", Open Mobile Alliance™, OMA-TS-SUPL-MO-V1_0 URL: http://www.openmobilealliance.org/

[SUPL RD] "SUPL 1.0 Requirements Document", Open Mobile Alliance™, OMA-RD-SUPL-V1_0 URL:http://www.openmobilealliance.org/

[SUPL TS] "UserPlane Location Protocol v1.0", Open Mobile Alliance™, OMA-TS-ULP-V1_0 URL: 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 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

4. Introduction

This document outlines the Enabler Release Definition for SUPL 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.

SUPL V1.0 describes the protocol between a SUPL Enabled Terminal (SET) and SUPL Location Platform (SLP), see the Lup reference point in Figure 1.

Communication between SET and SLP is transported over a secured IP connection, with one exception: for network initiated SUPL transactions the SUPL INIT message shall be sent as an MT SMS [TIA-637] using a dedicated Teleservice Identifier [TIA-41] for CDMA, and for GSM/WCDMA, the WDP [WAP WDP] framing SHALL be used for MT SMS. For GSM/WCDMA, a SUPL INIT message can also be sent via WAP Push, where the Push message from the PPG to SET shall follow the WAP Push specifications as per [WAP POTAP].

SUPL draws on support from RLP V1.0, a protocol specification from the OMA MLS Enabler. RLP is used such that SLP's from different SUPL providers can exchange information for positioning of roaming subscribers.

Figure 1 shows an architectural diagram of SUPL, its components and interfaces.

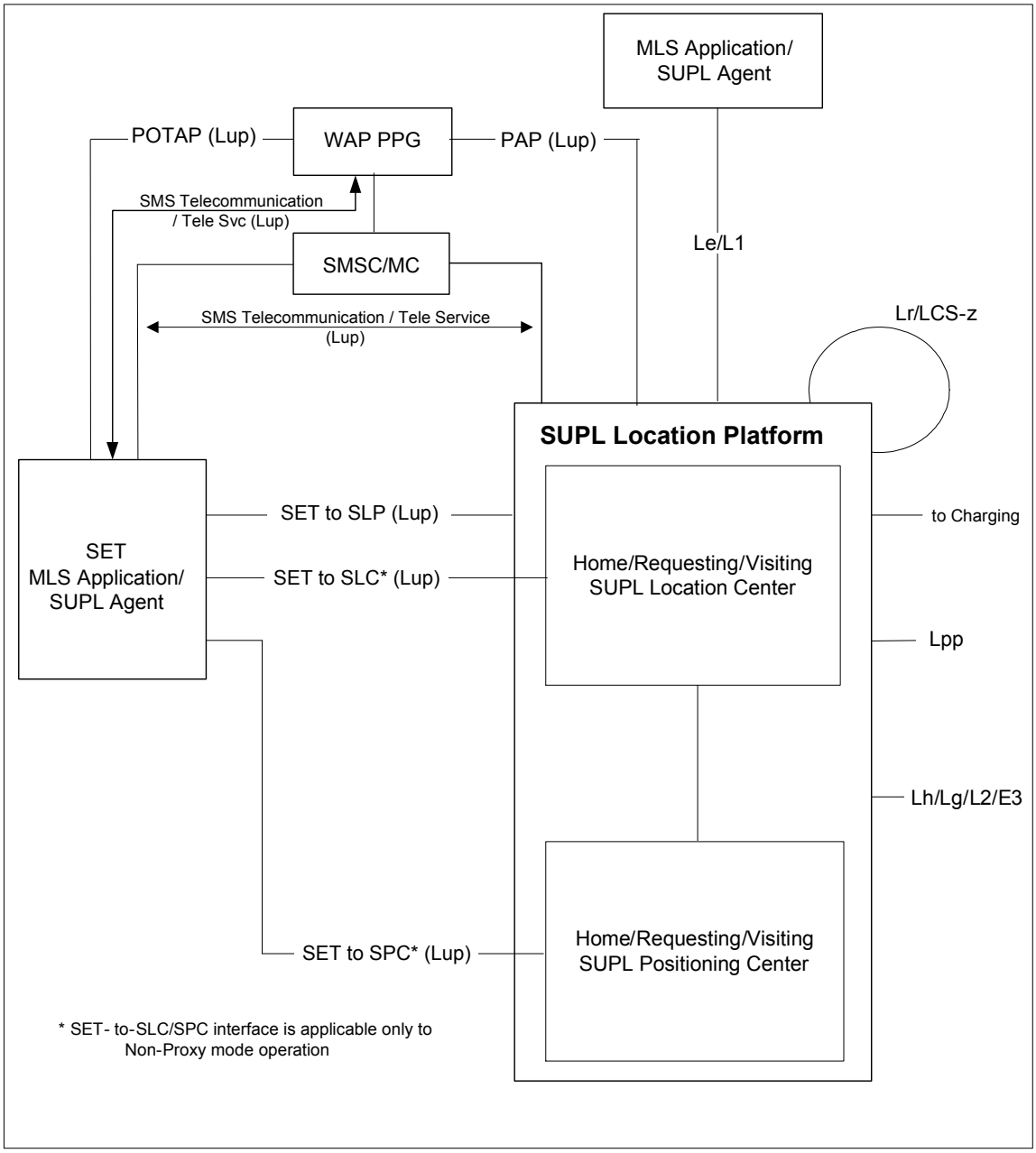

Figure 1: SUPL Reference Points

5. Description of Differences from Previous Version

It is the first version of the release.

6. Enabler Release Specification Baseline

SUPL Enabler handles information very personal and private in nature. Even if there are exceptions, for example in certain regions and/or use cases, all the implementations of SUPL Enabler SHALL fulfil the requirements for protecting the privacy of the user of the located device.

Doc Ref	Permanent Document Reference	Description
Requirement Document		
SUPL 1.0_RD	OMA-RD-SUPL-V1_0-20070615-A	Requirement Document for SUPL V1.0 Enabler
Architecture Document		
SUPL 1.0_AD	OMA-AD-SUPL-V1_0-20070615-A	Architecture Document for SUPL V1.0 Enabler
Technical Specifications		
SUPL 1.0_TS	OMA-TS-SUPL_MO-V1_0-20070615-A	Specification that defines the protocol for SUPL 1.0 on Management Object Specifications path: http://www.openmobilealliance.org/tech/omna/dm-mo
SUPL 1.0_TS	OMA-TS-ULP-V1_0-20070615-A	Specification that defines the SUPL 1.0 UserPlane Location Protocol.
Supporting Files		
SUPL 1.0_AC	OMA-SUP-AC_ap0004_supl-V1_0-20070615-A	Description of the Application Characteristic for SUPL 1.0. Working file in Application Characteristics directory: file: ac_ap00004_supl-v1_0.txt path: http://www.openmobilealliance.org/tech/omna/dm-ac

Table 1: Listing of Documents in SUPL V1.0 Enabler

7. Minimum Functionality Description for SUPL 1.0

This section is informative.

7.1 UserPlane Location Protocol (ULP)

The UserPlane Location Protocol (ULP) is a protocol-level instantiation of the Lup reference point. The protocol is used between the SLP (SUPL Location Platform) and a SET (SUPL Enabled Terminal). For more details about SUPL Requirements refer to [SUPL RD]. For more details about SUPL architecture and call-flows, refer to [SUPL AD]

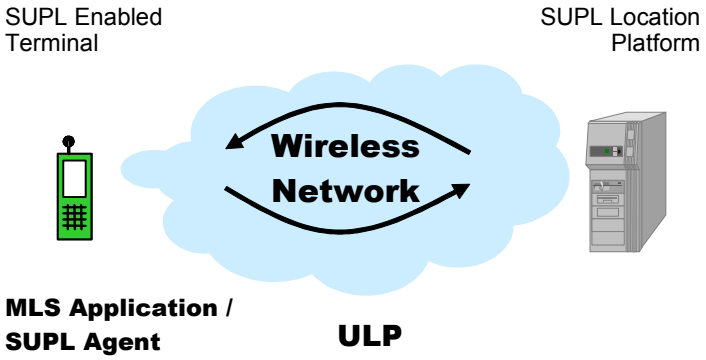

Figure 2: UserPlane Location Protocol

Possible realizations of a SUPL Location Platform functionality are within the GMLC, which is the Location Server defined in GSM and UMTS, and the MPC, which is defined in ANSI standards. Since the SUPL Location Platform should be regarded as a logical entity, other implementations are possible.

Depending which SUPL Agent initiates the dialogue, a SUPL INIT message is sent to the SET (network initiated), or a SUPL START message is sent to the SLP (SET initiated).

ULP can be implemented using various transport mechanisms. Currently, the only mapping defined is a mapping to TCP, with the following exception: the SUPL INIT message is transported over WAP Push or MT SMS.

7.2 Roaming Location Protocol (RLP)

RLP is an element of the OMA MLS Enabler, and facilitates the SUPL roaming scenarios. RLP is also known as Inter-Location Server Mobile Location Protocol.

Functional Requirements for both Application to Location Server interface and inter-Location Server interface for 3GPP networks may be found in 23.271 Rel6 [23.271]. However, those parts of RLP which are used by SUPL are specified in a way that they can be used by wireless networks other than 3GPP.

RLP can be implemented using various transport mechanisms. Currently, the only mapping defined is a mapping to HTTP.

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.

9. ERDEF for SUPL 1.0 - Client Requirements

Item	Feature / Application	Status	Requirement
OMA-ERDEF-SUPL-C-001	Support of SET Procedures	M	OMA-ERDEF-SUPL-C-002 OR OMA-ERDEF-SUPL-C-003 OR OMA-ERDEF-SUPL-C-004
OMA-ERDEF-SUPL-C-002	SET supporting GSM/WCDMA mode, PSK-TLS authentication	O	ULP-A-C-001
OMA-ERDEF-SUPL-C-003	SET supporting GSM/WCDMA mode, alternative authentication model	O	ULP-A-C-002
OMA-ERDEF-SUPL-C-004	SET supporting CDMA mode	O	ULP-A-C-003

Table 2: ERDEF for SUPL 1.0 Client-side Requirements

10.ERDEF for SUPL 1.0 - Server Requirements

Item	Feature / Application	Status	Requirement
OMA-ERDEF-SUPL-S-001	Support of SUPL	M	OMA-ERDEF-SUPL-S-002 OR OMA-ERDEF-SUPL-S-003
OMA-ERDEF-SUPL-S-002	Support of Home SLP Procedures	O	OMA-ERDEF-SUPL-S-005 OR OMA-ERDEF-SUPL-S-006 OR OMA-ERDEF-SUPL-S-007
OMA-ERDEF-SUPL-S-003	Support of Visited SLP Procedures for Roaming	O	OMA-ERDEF-SUPL-S-008 OR OMA-ERDEF-SUPL-S-009
OMA-ERDEF-SUPL-S-004	Support of Home SLP Procedures for Roaming	O	OMA-ERDEF-SUPL-S-014 OR OMA-ERDEF-SUPL-S-015
OMA-ERDEF-SUPL-S-005	Home SLP supporting GSM/WCDMA mode, PSK-TLS authentication	O	ULP-A-S-001
OMA-ERDEF-SUPL-S-006	Home SLP supporting GSM/WCDMA mode, alternative authentication model	O	ULP-A-S-002
OMA-ERDEF-SUPL-S-007	Home SLP supporting CDMA mode	O	ULP-A-S-003
OMA-ERDEF-SUPL-S-008	Support of Visited SLP Procedures for Roaming, GSM/WCDMA mode	O	OMA-ERDEF-SUPL-S-010 OR OMA-ERDEF-SUPL-S-012
OMA-ERDEF-SUPL-S-009	Support of Visited SLP Procedures for Roaming, CDMA mode	O	OMA-ERDEF-SUPL-S-010 OR OMA-ERDEF-SUPL-S-011 OR OMA-ERDEF-SUPL-S-012 OR OMA-ERDEF-SUPL-S-013
OMA-ERDEF-SUPL-S-010	Support in Visited SLP for roaming with calculation in Home-SLP, Proxy mode	O	ULP-B-S-001
OMA-ERDEF-SUPL-S-011	Support in Visited SLP for roaming with calculation in Home-SLP, Non-Proxy mode	O	ULP-B-S-002
OMA-ERDEF-SUPL-S-012	Support in Visited SLP for roaming with calculation in Visited-SLP, Proxy mode	O	ULP-B-S-003

OMA-ERDEF-SUPL-S-013	Support in Visited SLP for roaming with calculation in Visited-SLP, Non-Proxy mode	O	ULP-B-S-004
OMA-ERDEF-SUPL-S-014	Support of Home SLP Procedures for Roaming, GSM/WCDMA mode	O	OMA-ERDEF-SUPL-S-016 OR OMA-ERDEF-SUPL-S-018
OMA-ERDEF-SUPL-S-015	Support of Home SLP Procedures for Roaming, CDMA mode	O	OMA-ERDEF-SUPL-S-016 OR OMA-ERDEF-SUPL-S-017 OR OMA-ERDEF-SUPL-S-018 OR OMA-ERDEF-SUPL-S-019
OMA-ERDEF-SUPL-S-016	Support in Home SLP for roaming with calculation in Home-SLP, Proxy mode	O	ULP-C-S-001
OMA-ERDEF-SUPL-S-017	Support in Home SLP for roaming with calculation in Home-SLP, Non-Proxy mode	O	ULP-C-S-002
OMA-ERDEF-SUPL-S-018	Support in Home SLP for roaming with calculation in Visited-SLP, Proxy mode	O	ULP-C-S-003
OMA-ERDEF-SUPL-S-019	Support in Home SLP for roaming with calculation in Visited-SLP, Non-Proxy mode	O	ULP-C-S-004

Table 3: ERDEF for SUPL 1.0 Server-side Requirements

Appendix A. Change History (Informative)

A.1 Approved Version History

Reference	Date	Description
OMA-ERELD-SUPL-V1_0	15 Jun 2007	No prior version