



Enabler Release Definition for Secure UserPlane for Location (SUPL)

Candidate Version 2.0 – 27 Jun 2008

Open Mobile Alliance
OMA-ERELD-SUPL-V2_0-20080627-C

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1. Scope

The scope of this document is limited to the Enabler Release Definition of SUPL (Secure UserPlane for Location) 2.0 according to OMA Release process and the Enabler Release specification baseline listed in section 5.

2. References

2.1 Normative References

[23.271]	3GPP TS 23.271 Release 6 http://www.3gpp.org/ftp/Specs/latest/Rel-6/23_series/
[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 1.0 AD]	“SUPL 1.0 Architecture Document”, Open Mobile Alliance™, OMA-AD-SUPL-V1_0 URL: http://www.openmobilealliance.org/
[SUPL1.0 RD]	“SUPL 1.0 Requirements Document”, Open Mobile Alliance™, OMA-RD-SUPL-V1_0 URL: http://www.openmobilealliance.org/
[SUPL AD]	“SUPL 2.0 Architecture Document”, Open Mobile Alliance™, OMA-AD-SUPL-V2_0 URL: http://www.openmobilealliance.org/
[SUPL MO]	“OMA Management Object for SUPL”, Open Mobile Alliance™, OMA-TS-SUPL-MO-V2_0 URL: http://www.openmobilealliance.org/
[SUPL RD]	“SUPL 2.0 Requirements Document”, Open Mobile Alliance™, OMA-RD-SUPL-V2_0 URL: http://www.openmobilealliance.org/
[SUPL TS-ULP]	“UserPlane Location Protocol v2.0”, Open Mobile Alliance™, OMA-TS-ULP-V2_0 URL: http://www.openmobilealliance.org/
[SUPL TS-ILP]	“UserPlane Location Protocol v2.0”, Open Mobile Alliance™, OMA-TS-ILP-V2_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”, "Release Version Overview" and “Conformance Requirements Notation Details”, are normative, unless they are explicitly indicated to be informative.

The formal notation convention used in sections 7 and 8 to formally express the structure and internal dependencies between specifications in the Enabler Release specification baseline is detailed in [SCR RULES].

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. Release Version Overview

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 V2.0 describes the protocol between a SUPL Enabled Terminal (SET) and SUPL Location Platform (SLP), see the Lrp reference point in Figure 1, and the protocol between SLC and SPC, see Llp 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, for GSM/WCDMA, the WDP [WAP WDP] framing SHALL be used for MT SMS, and for WLAN [UDP/IP] framing SHALL be used. 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.

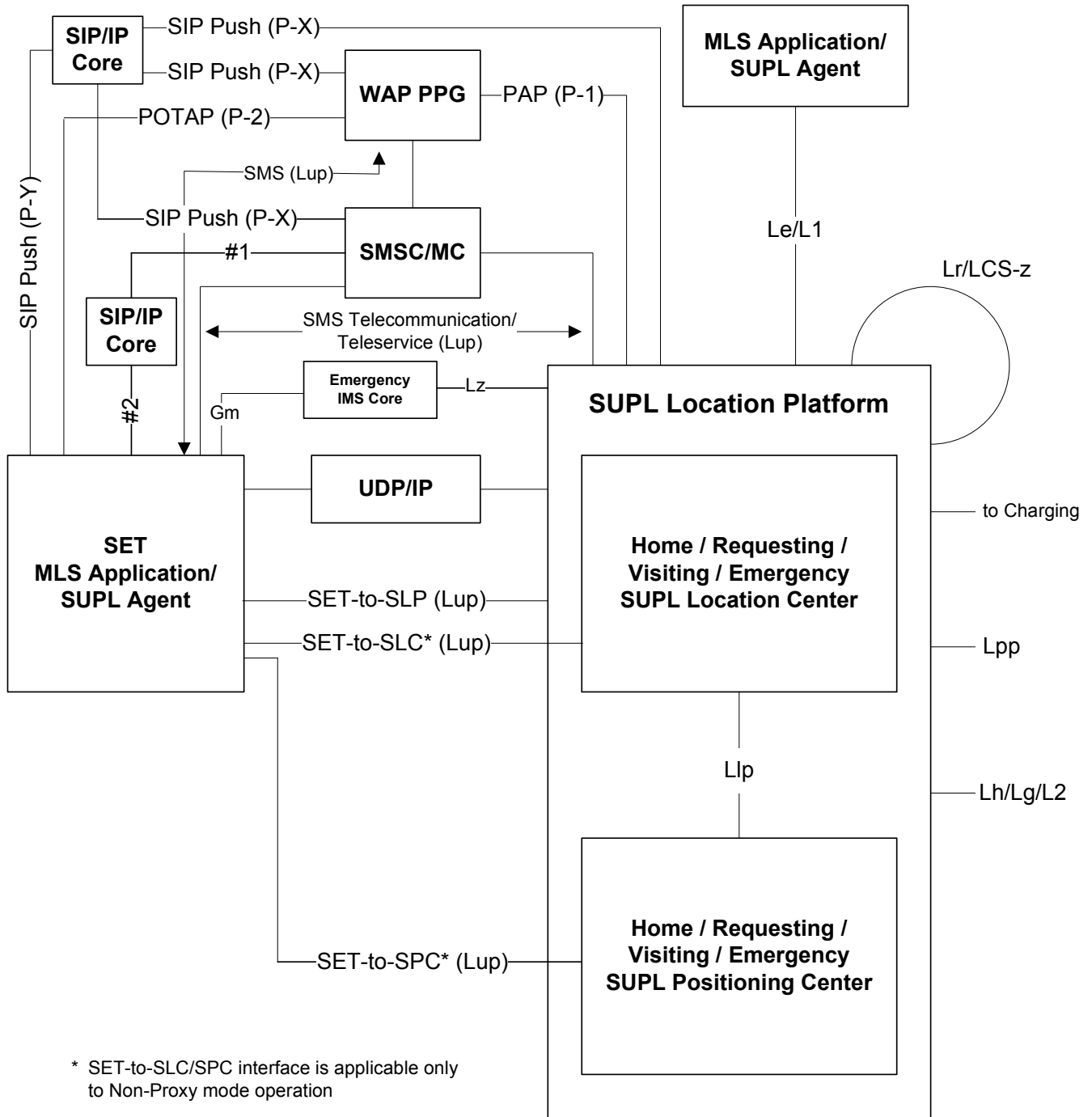


Figure 1: SUPL 2.0 Reference Points

4.1 Version 1.0 Functionality

The SUPL 1.0 enabler release main objective was to develop an industry standard framework for positioning over the User Plane. For more details about SUPL Requirements refer to [SUPL 1.0 RD].

The completed SUPL 1.0 enabler provides the following functionality;

- SUPL collaboration Network initiated
- SUPL collaboration SET initiated

For more details about SUPL functionality refer to [SUPL 1.0 AD].

4.2 Version 2.0 Functionality

This section is informative.

4.2.1 UserPlane Location Protocol (ULP)

The UserPlane Location Protocol (ULP) is a protocol-level instantiation of the Lp 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]

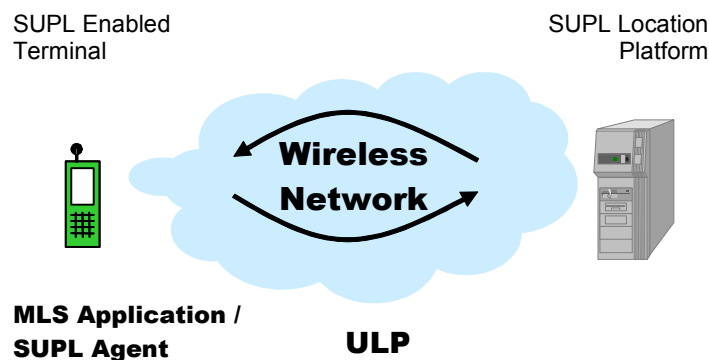


Figure 2: UserPlane Location Protocol

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.

4.2.2 Internal Location Protocol (ILP)

The function of the Lp reference point is logically separated into the Positioning Control Function and the Positioning Data Function.

4.2.3 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.

5. Document Listing for SUPL 2.0

This section is normative.

Doc Ref	Permanent Document Reference	Description
Requirement Document		
SUPL 2.0_RD	OMA-RD-SUPL-V2_0-20080627-C	Requirement Document for SUPL V2.0 Enabler
Architecture Document		
SUPL 2.0_AD	OMA-AD-SUPL-V2_0-20080627-C	Architecture Document for SUPL V2.0 Enabler
Technical Specifications		
SUPL 2.0_TS	OMA-TS-SUPL-MO-V2_0-20080627-C	Specification that defines the protocol for SUPL 2.0 on Management Object Specifications
SUPL 2.0_TS	OMA-TS-ULP-V2_0-20080627-C	Specification that defines the SUPL 2.0 UserPlane Location Protocol.
SUPL 2.0_TS	OMA-TS-ILP-V2_0-20080627-C	Specification that defines the SUPL 2.0 SPC-SLC 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 2.0 Enabler

6. 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 [SCRRULES].
- Feature/Application:** Entry in this column **SHOULD** be a short descriptive label to the **Item** in question.
- Requirement:** Expression in the column **MUST** be a valid `TerminalExpression` according to [SCRRULES] and it **MUST** accurately reflect the architectural requirement of the **Item** in question.

7. ERDEF for SUPL 2.0 - Client Requirements

This section is normative.

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 OR OMA-ERDEF-SUPL-C-005 OR OMA-ERDEF-SUPL-C-006
Network and security types			
OMA-ERDEF-SUPL-C-002	SET supporting GSM/WCDMA mode, GBA authentication	O	ULP-A-C-001 AND ULP-A-C-003
OMA-ERDEF-SUPL-C-003	SET supporting GSM/WCDMA mode, ACA model	O	ULP-A-C-001 AND ULP-A-C-004
OMA-ERDEF-SUPL-C-004	SET supporting CDMA mode, GBA authentication	O	ULP-A-C-002 AND ULP-A-C-003
OMA-ERDEF-SUPL-C-005	SET supporting CDMA mode, OMA-CIBAauthentication	O	ULP-A-C-002 AND ULP-A-C-005
OMA-ERDEF-SUPL-C-006	SET supporting CDMA mode, ACA authentication	O	ULP-A-C-002 AND ULP-A-C-004

Table 2: ERDEF for SUPL 2.0 Client-side Requirements

8. ERDEF for SUPL 2.0 - Server Requirements

This section is normative.

Item	Feature / Application	Status	Requirement
OMA-ERDEF-SUPL-S-001	Support of ULP Procedures	M	OMA-ERDEF-SUPL-S-004 OR OMA-ERDEF-SUPL-S-005 OR OMA-ERDEF-SUPL-S-006 OR OMA-ERDEF-SUPL-S-007 OR OMA-ERDEF-SUPL-S-008
OMA-ERDEF-SUPL-S-002	Support of RLP, H-SLP part	O	RLP 1.1: MCF
OMA-ERDEF-SUPL-S-003	Support of RLP, V-SLP part	O	RLP 1.1: MSF
OMA-ERDEF-SUPL-S-004	Support of ILP, SLC part	O	ILP 1.0 MCF
OMA-ERDEF-SUPL-S-005	Support of ILP, SPC part	O	ILP 1.0 MSF
Network and security types			
OMA-ERDEF-SUPL-S-006	SLP supporting GSM/WCDMA mode, GBA authentication	O	ULP-A-S-001 AND ULP-A-S-003
OMA-ERDEF-SUPL-S-007	SLP supporting GSM/WCDMA mode, ACA authentication model	O	ULP-A-S-001 AND ULP-A-S-004
OMA-ERDEF-SUPL-S-008	SLP supporting GSM/WCDMA mode, SLC only authentication model	O	ULP-A-S-001 AND ULP-A-S-006
OMA-ERDEF-SUPL-S-009	SLP supporting CDMA mode, GBA authentication model	O	ULP-A-S-002 AND ULP-A-S-003
OMA-ERDEF-SUPL-S-0010	SLP supporting CDMA mode, OMA-CIBA authentication model	O	ULP-A-S-002 AND ULP-A-S-005
OMA-ERDEF-SUPL-S-0011	SLP supporting CDMA mode, ACA authentication model	O	ULP-A-S-002 AND ULP-A-S-004
OMA-ERDEF-SUPL-S-0012	SLP supporting CDMA mode, SLC only authentication model	O	ULP-A-S-002 AND ULP-A-S-006

Table 3: ERDEF for SUPL 2.0 Server-side Requirements

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 2.0 History

Document Identifier	Date	Sections	Description
Draft Versions OMA-ERELED-SUPL-V2_0	16 Apr 2007	All	Initial draft
	24 Sep 2007	9, 10	Implemented agreed CR OMA-LOC-2007-0318
	04 Oct 2007	1, 4, 9, 10	Implemented agreed CRs OMA-LOC-2007-0350R01 OMA-LOC-2007-0355R01- OMA-LOC-2007-0356
	09 Oct 2007	All	Updated with correct template Updated figure 1
	03 Jun 2008	5	Updated with new dates and MO V2.0
Candidate Versions OMA-ERELED-SUPL-V2_0	27 Jun 2008	n/a	Status changed to Candidate by TP TP ref#: OMA-TP-2008-0251- INP_SUPL_V2.0_ERP_for_Candidate_Approval