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TECHNICAL SPECIFICATION

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Diameter-based SLh interface for Control Plane LCS
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650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
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Contents

Foreword

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1 Scope

The present document describes the Diameter-based SLh interface between the GMLC and the HSS defined for the Control Plane LCS in EPC.

LCS procedures over the SLh interface are defined in the 3GPP TS 23.271 [2].

This specification defines the Diameter application for the GMLC-HSS, SLh reference point. The interactions between the HSS and the GMLC are specified, including the signalling flows. As LCS procedures over the Diameter-based SLh interface are identical to the MAP-based Lh interface, the descriptions of the Lh MAP operations defined in the 3GPP TS 29.002 [3] are mapped into the descriptions of the SLh Diameter commands.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 23.271: "Functional stage 2 description of Location Services (LCS)".

[3] 3GPP TS 29.002: "Mobile Application Part (MAP) specification".

[4] 3GPP TS 29.228: "IP multimedia (IM) Subsystem Cx Interface; Signalling flows and Message Elements".

[5] Void.

[6] 3GPP TS 33.210: "3G security; Network Domain Security (NDS); IP network layer security".

[7] IETF RFC 4960: "Stream Control Transport Protocol".

[8] 3GPP TS 29.229: "Cx and Dx Interfaces based on the Diameter protocol; protocol details".

[9] 3GPP TS 29.329: "Sh Interface based on the Diameter protocol; protocol details".

[10] 3GPP TS 23.003: "Numbering, addressing and identification ".

[11] 3GPP TS 23.012: "Location Management Procedures".

[12] 3GPP TS 29.272: "Mobility Management Entity (MME) and Serving GPRS Support Node (SGSN) related interfaces based on Diameter protocol".

[13] IETF RFC 2234: "Augmented BNF for syntax specifications".

[14] Void

[15] ITU-T Recommendation E.164: "The international public telecommunication numbering plan".

[16] 3GPP TS 29.273: "Evolved Packet System (EPS); 3GPP EPS AAA interfaces".

[17] IETF RFC 6733: "Diameter Base Protocol".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TR 21.905 [1], 3GPP TS 23.271 [2] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in TR 21.905 [1].

3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

ABNF	Augmented Backus-Naur form
AVP	Attribute Value Pair
H-GMLC	Home-Gateway Mobile Location Centre
IANA	Internet Assigned Numbers Authority
PMD	Pseudonym mediation device functionality
PPR	Privacy Profile Register
R-GMLC	Requesting-Gateway Mobile Location Centre
RFC	Request For Comments
V-GMLC	Visited-Gateway Mobile Location Centre

4 General Description

4.1 Introduction

The SLh reference point between the GMLC and the HSS is defined in the 3GPP TS 23.271 [2].

This document describes the Diameter-based SLh interface related procedures, message parameters and protocol specifications.

4.2 Architecture Overview

The architecture for support of Location Services in GSM, UMTS and EPS has been defined in 3GPP TS 23.271 [2] and the relevant network elements and interfaces are shown in the figure 4.2-1.

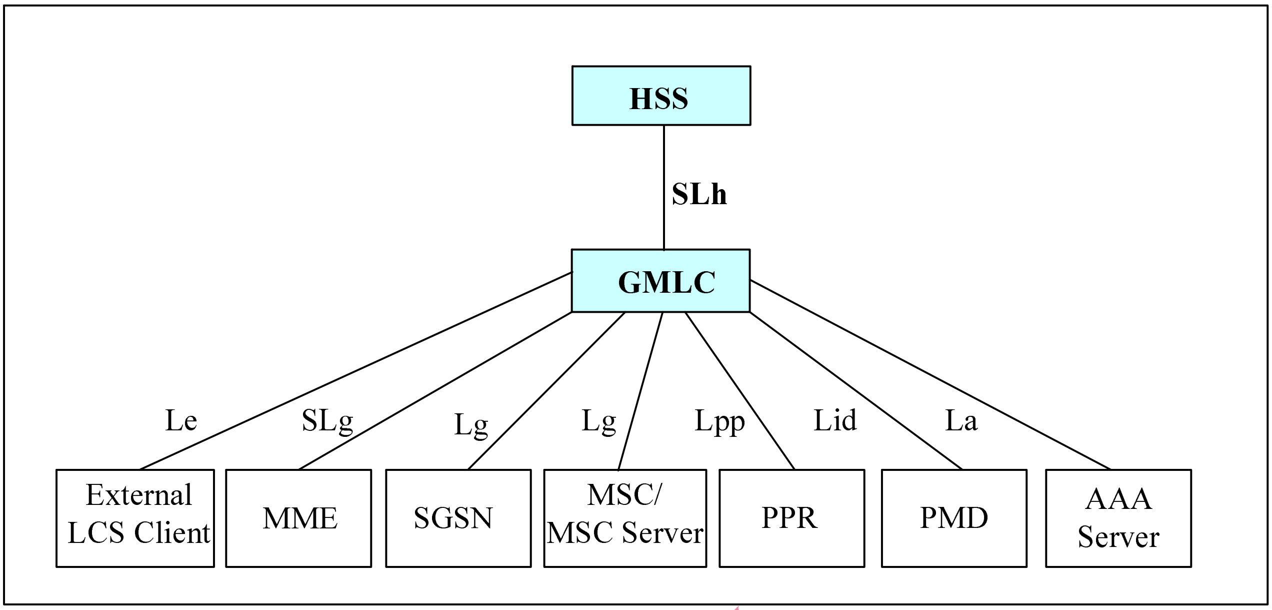

Figure 4.2-1: Overview of the LCS Functional Architecture

In this architecture, the SLh interface is defined between the Gateway Mobile Location Center (GMLC) and the Home Subscriber Server (HSS) to allow the GMLC to request routing information from the HLR or HSS.

4.3 Functional Requirements of SLh Interface

The requirements for SLh interface are defined in 3GPP TS 23.271 [2].

The SLh interface is used by the GMLC to request routing information from the HSS i.e. the address of the H-GMLC, and/or the address of the visited MSC/MSC server, SGSN, 3GPP AAA server or MME for a particular target UE whose location has been requested.

5 Diameter-based SLh Interface

5.1 Introduction

This section describes the Diameter-based SLh interface related procedures and Information elements exchanged between functional entities.

In the tables that describe the Information Elements transported by each Diameter command, each Information Element is marked as (M) Mandatory, (C) Conditional or (O) Optional in the "Cat." column. For the correct handling of the Information Element according to the category type, see the description detailed in section 6 of the 3GPP TS 29.228 [4].

5.2 Procedure Descriptions

5.2.1 Send Routing Information for LCS

5.2.1.1 General

This procedure is used between the GMLC and the HSS. The procedure is invoked by the GMLC and is used:

- To retrieve routing information for LCS for a specified user from the HSS.

This procedure is mapped to the commands LCS-Routing-Info-Request/Answer in the Diameter application specified in chapter 6. Tables 5.2.1.1/1 and 5.2.1.1/2 detail the involved information elements.

Table 5.2.1.1/1: Send Routing Information for LCS (SLh-LCS-SRI)

Information element name	Mapping to Diameter AVP	Cat.	Description
IMSI	User-Name	C	This information element shall contain the IMSI of the targeted user. This IE shall be present if the MSISDN is absent.
MSISDN	MSISDN	C	This information element shall contain the MSISDN of the targeted user. This IE shall be present if the IMSI is absent.
GMLC Number	GMLC-Number	O	This information element shall contain the ISDN (E.164) number of the requesting GMLC.
Supported Features (See 3GPP TS 29.229 [8])	Supported-Features	O	If present, this information element shall contain the list of features supported by the origin host.