

FiCom Location API 2.0.0

Interface specification

FiCom Location API Working Group

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Table of Contents

1. Revision History.....	2
2. References.....	3
3. Introduction.....	4
3.1.About this document.....	4
4. Service types.....	5
5. Request and response parameters.....	6
5.1.Standard Location Immediate Request (SLIR).....	6
5.1.1.Ficom SLIR DTD.....	6
5.1.2.Other SLIR restrictions.....	6
5.2.Standard Location Immediate Answer (SLIA).....	7
5.2.1.Ficom SLIA DTD.....	7
6. Result codes and error codes.....	8

1. Revision History

1.0	25 Jun 2001	Tuija Kuusikero, Juha Nykopp Radiolinja	Based on LIF API 1.1
1.1	27 Jun 2001	Sami Lempinen, Jippii Group	Comments and preface
1.2	02 Jul 2001	Sami Lempinen, Jippii Group	Partial conversion from XML pseudocode to English
1.3	05 Jul 2001	Sami Lempinen, Jippii Group	Finished conversion from XML pseudocode to English
1.4	18 Aug 2001	Sami Lempinen, Jippii Group	Updated to reflect version 1.2 of the LIF API. The Periodic Location Reporting Service is changed to Triggered Location Reporting Service. Changes according to comments from Radiolinja and Suomen 2G. Removed RT-90 from the list of supported coordinates.
1.5	29 Aug 2001	Sami Lempinen, Jippii Group	Removed the Triggered Location Reporting Service due to the work-in-progress nature of this part of the LIF specification. Removed error code 204 (UNKNOWN SUBSCRIBER) as a duplicate of error code 4.
1.6	12 Sep 2001	Sami Lempinen, Jippii Group	Added the HLR Privacy Flag functionality to the list of supported operations.
1.7	09 Oct 2001	Sami Lempinen, Jippii Group	Removed the HLR Privacy Flag functionality due to privacy concerns by the group.
1.8	29 Nov 2001	Sami Lempinen, Jippii Group	Added IPv4 and IPv6 to the mobile subscriber identification. Added MS encoding to the SLIA and SLIR message descriptions. Minor reorganisation.
1.9	2 Jan 2002	Sami Lempinen, Jippii Group	Reorganisation of the document to complement LIF API 2.0.0. Added redefinitions of the SLIA and SLIR XML DTDs into the specification document, with description of the differences between the Ficom specification and the LIF specification. The XML DTDs are no longer distributed separately from this document. The LIF XML DTD modules are used as-is, but the top-level message structure is redefined in this document.
1.9.1	22 Jan 2002	Sami Lempinen, Jippii Group	Modified the version attribute in SLIR and SLIA elements to match LIF API 2.0.0. Added an explicit comment about not supporting Standard Location Immediate Report.
1.9.2	24 Jan 2002	Sami Lempinen, Jippii Group	Restricted the enc element of the msid element to values ENC or ASC (omitting B64) as per the suggestion by Radiolinja. Omitted UTM from the list of supported coordinate systems according to the suggestions from Radiolinja and Suomen 2G. The only supported coordinate system is LL using WGS-84 datum. Added a comment about the use of the ENC attribute as suggested by Radiolinja.
2.0.0	25 Jan 2002	Sami Lempinen, Jippii Group	Approved by the FiCom Location API working group as the first official version of the API specification.

2. References

<i>Identifier</i>	<i>Document</i>	<i>Issue</i>
[LIF API]	<i>Mobile Location Protocol Specification</i>	LIF TS 101 v2.0.0

3. Introduction

This document presents the interface for requesting and reporting subscriber location information.

The message structures presented in this document are a subset of the LIF (Location Interoperability Forum) specification version 2.0.0 [LIF API]. The purpose of this specification is to document the differences between the Ficom subset and the full LIF specification.

The goal of this design is to implement a valid subset of the LIF specification, so that every XML document that is valid according to this specification also validates correctly to the DTDs specified by LIF. This enables a system conformant to this specification operate correctly with another system that implements the full LIF specification.

The messages specified in this document apply to

- the operator-service provider interface and
- the operator-operator interface.

The purpose of the latter is to enable a service provider to access the location information of multiple operators through a single operator interface. This document does not mandate, however, that such a service is offered to the service provider.

Please note that the term *service provider* refers to any party acting in the role of providing services to end customers. In many cases, the network operator may also be a service provider.

This document will be complemented by a full set of XML DTDs or XML Schemas that specify the exact format of the location messages. These DTDs and/or Schemas are provided to the member organisations of FiCom for implementation work.

3.1.About this document

This document is co-operatively developed by the member organisations of Ficom. This document is maintained and updated alongside the development of the LIF location API and the Finnish location legislation.

The change history in the beginning of the document outlines the significant changes in this document.

4. Service types

This FiCom location API provides a national adaptation of the LIF Standard Location Immediate Service for the member organisations of FiCom. Other service types are not supported by this version of the API, and will be added to later versions of this specification.

The Standard Location Immediate Service provides the necessary functionality for establishing interoperability guidelines for basic types of location-dependent services.

The requests associated with the Standard Location Immediate Service are listed below.

Service	Description
Standard Location Immediate Service	<p>This is a standard query service with support for a large set of parameters. This service is used when a single location response is required immediately (within a set time).</p> <p>This service consists of the following messages:</p> <ul style="list-style-type: none">● Standard Location Immediate Request (SLIR)● Standard Location Immediate Answer (SLIA) <p>The Standard Location Immediate Report is not supported by this version of the specification.</p>

5. Request and response parameters

This section presents the structure of the messages associated with the services requests and responses. The Ficom API uses the XML DTD modules from LIF API 2.0.0. The service and request DTDs are redefined so that they

- concentrate on the essential features and
- provide a valid subset of the LIF DTD.

5.1. Standard Location Immediate Request (SLIR)

This section presents the structure of the Ficom SLIR message. This is done by redefining the top-level SLIR DTD and providing a set of restrictions on the accepted values of the message elements.

5.1.1. Ficom SLIR DTD

```
<!-- FICOM_MLP_SLIR-->
<!ELEMENT          slir                (client, msids, eqop?,
                                        geo_info?, loc_type?, prio?)>
<!ATTLIST         slir                slir
                                        ver CDATA          #FIXED "2.0.0"
                                        res_types CDATA     #FIXED "PERSISTENT">
<!ENTITY          % mlp_loc.dtd        SYSTEM "MLP_LOC_200.DTD">
<!ENTITY          % mlp_id.dtd         SYSTEM "MLP_ID_200.DTD">
<!ENTITY          % mlp_func.dtd       SYSTEM "MLP_FUNC_200.DTD">
<!ENTITY          % mlp_qop.dtd        SYSTEM "MLP_QoP_200.DTD">
<!ENTITY          % mlp_gsm_net_param.dtd SYSTEM
                                        "MLP_GSM_NET_PARAM_200.DTD">

%mlp_loc.dtd;
%mlp_id.dtd;
%mlp_func.dtd;
%mlp_qop.dtd;
%mlp_gsm_net_param.dtd
```

The differences between the Ficom SLIR DTD and the LIF one are:

- The extension entities have been removed.
- The `msids` element is the only allowed subscriber identification method.
- The `res_types` attribute of the `slir` element is fixed to `PERSISTENT`.
- The `pushaddr` element has been removed.

5.1.2. Other SLIR restrictions

The following other restrictions apply in comparison to the LIF specification:

- The allowed values for the `type` attribute of the `msid` element are `MSISDN`, `IMSI`, `IPV4` or `IPV6` (default: `MSISDN`).
- The allowed values for the `enc` attribute of the `msid` element are `ASC` or `CRP`

(default: `ASC`). This attribute indicates whether the identification is provided in encrypted (`ENC`) or plaintext (`ASC`) form.

- The only allowed content for the `coord_sys` element is `LL`.
- The only allowed content for the `datum` element is `WGS-84`.

5.2. Standard Location Immediate Answer (SLIA)

This section presents the structure of the Ficom SLIA message. This is done by redefining the top-level SLIA DTD.

5.2.1. Ficom SLIA DTD

```
<!-- FICOM_MLP_SLIA -->
<!ELEMENT      slia                ((pos+ | req_id), result, add_info?)>
<!ATTLIST      slia
  ver CDATA          #FIXED "2.0.0">
  res_type CDATA     #FIXED "PERSISTENT">

<!ENTITY       % mlp_shape.dtd     SYSTEM "MLP_SHAPE_200.DTD">
<!ENTITY       % mlp_loc.dtd       SYSTEM "MLP_LOC_200.DTD">
<!ENTITY       % mlp_id.dtd        SYSTEM "MLP_ID_200.DTD">
<!ENTITY       % mlp_func.dtd      SYSTEM "MLP_FUNC_200.DTD">

%mlp_shape.dtd;
%mlp_loc.dtd;
%mlp_id.dtd;
%mlp_func.dtd;
```

The differences between the Ficom SLIA DTD and the LIF SLIA DTD are:

- The extension entities have been removed.
- The `res_types` attribute of the `slir` element is fixed to `PERSISTENT`.
- The `pushaddr` element has been removed.

6. Result codes and error codes

The result codes and error codes are as defined in [LIF API].