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Location-to-Service Translation Protocol (LoST) Sub-Services  
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Abstract

This document describes, how a LoST client can ask LoST server for the list of sub services that it supports, and to incorporate additional information about the service provider in response.

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LoST Sub-Services

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## 1. Introduction

The Location-to-Service Translation (LoST) protocol [LOST] maps service identifiers (URNs) and civic or geospatial information to service URIs based on service regions. This extension allows a LoST client to find the instances of the services and it's sub services, by asking a LoST server for the list of sub services that it supports. Even the deaf & dumb people or foreigner can make use of the advantages of this draft to contact the sub service of the instances of service, in which the LoST client is interested.

It provides an indication of which service and sub services the server can look up. The sub services are the capabilities of the given service. For example the sub service list of a PSAP can be urn:service:sos.police.terrorist, urn:service:sos.police.arson, urn:service:sos.police.robbery. This means that the given PSAP is able to handle terrorist attack, robbery, and a wild fire. So the clients come to know in advance whether a required sub service is offered for a particular area.

This document describes how to get sub service list of the instance of service, it can be accomplished by specifying additional information in the query using the extension named, 'sub-service'. Which will return all the sub services of requested service.

## 2. Terminology used in this document

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](#)].

## 3. LoST extension

A LoST client can ask a LoST server for the list of sub services it

knows about for a particular services in the given area. And he can find the sub-service information from the <findServiceResponse>. The LoST client will be interested in any one of them or combination of listed subservices. It will help a LoST client to locate the instances of services, those match more closely to his interest. It avoids the clients to query the service URIs returned to obtain additional information about the services, thus reducing the number of queries to be done to get the accurate search for the instances of service.

In the current scenario, the client doesn't know what kind of subservices the returned service uri supports, so he can't contact

the service uri with additional information(i.e. sub services or service options the client wants) to get a better and timely service.

We Introduce a new attribute and element to achieve this task. 'getsubservice' for the <findService> element and <subserviceList> for the <findServiceResponse> element.

#### [4.](#) sub-service

Suppose a LoST client is seeking help from the police to get protection from a thief. Currently, the Location-to-Service Translation (LoST) protocol only supports mapping of the locations of police stations. There are no options to know any particular information about the capabilities of the instance of the service. Using the sub-service information, the LoST client can get the details of a specific police station, which can handle a thief or arson etc.

#### [5.](#) sub-service in Request

```
<?xml version="1.0" encoding="UTF-8"?>
  <findService xmlns="urn:ietf:params:xml:ns:lost1"
    recursive="true" serviceBoundary="value" getSubservice="true">
    <location id="627b8bf819d0bad4d" profile="civic">
      <civicAddress
        xmlns="urn:ietf:params:xml:ns:pidf:geopriv10:civicAddr">
```

```

    <country>Germany</country>
    <A1>Bavaria</A1>
    <A3>Munich</A3>
    <A6>Otto-Hahn-Ring</A6>
    <HNO>6</HNO>
    <PC>81675</PC>
  </civicAddress>
</location>
  <service>urn:service:sos.police</service>
</findService>

```

Figure 1: A <findService> query with the new <getSubservice> attribute.

Here the LoST client is searching for police stations in the given area and finds it's capabilities.

## [6.](#) sub-service in Response

```

<?xml version="1.0" encoding="UTF-8"?>
<findServiceResponse xmlns="urn:ietf:params:xml:ns:lost1">
  <mapping
    expires="2007-01-01T01:44:33Z"
    lastUpdated="2006-11-01T01:00:00Z"
    source="esgw.ueber-110.de.example"
    sourceId="e8b05a41d8d1415b80f2cdbb96ccf109">
    <displayName xml:lang="de">
      Muenchen Polizei-Abteilung
    </displayName>
    <service>urn:service:sos.police</service>
    <subserviceList>
      urn:service:sos.police.terrorist
      urn:service:sos.police.arson
      urn:service:sos.police.robbery
    </subserviceList>
    <serviceBoundary
      profile="urn:ietf:params:lost:location-profile:basic-civic">
      <civicAddress

```

```

        xmlns="urn:ietf:params:xml:ns:pidf:geopriv10:civicAddr">
        <country>Germany</country>
        <A1>Bavaria</A1>
        <A3>Munich</A3>
        <PC>81675</PC>
        </civicAddress>
    </serviceBoundary>
    <uri>sip:munich-police@example.com</uri>
    <uri>xmpp:munich-police@example.com</uri>
    <serviceNumber>110</serviceNumber>
</mapping>
<path>
    <via source="esgw.ueber-110.de.example"/>
    <via source="polizei.muenchen.de.example"/>
</path>
<locationUsed id="627b8bf819d0bad4d"/>
</findServiceResponse>

```

Figure 3: A <findServiceResponse> civic address answer with the new <subserviceList> attribute.

The response of the previous query contains the details of the PSAP in the specified service region and it's sub-service list. This indicates that, the given instance of requested service is capable of handling terrorist, theft and arson. And it tells a mobile device

what kind of sub services are available close by that location. The LoST client can contact the service uri with additional information (i.e. sub services or service options the client wants) so that he will get a better and timely service from the requested uri.

## [7.](#) Security Considerations

The same security considerations as in [LOST] apply.

## [8.](#) IANA Considerations

TBD

## [9.](#) References

### [9.1.](#) Normative References

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.

### [9.2.](#) Informative References

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Winterbottom, J., Thomson, M., and H. Tschofenig, "GEOPRIV PIDF-LO Usage Clarification, Considerations and Recommendations", [draft-ietf-geopriv-pdif-lo-profile-11](#) (work in progress), February 2008.

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