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**Shelter Service And Classification
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Abstract

This document defines and registers a new service 'shelter', for the service URN to find, what instances of shelter service are closest to the user's location. The Location-to-Service Translation (LoST) protocol can provide these information for a geographical region.

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1. Introduction

It happens to announce shelter areas or locations before or after nature disasters occur. A hill area could be declared as a shelter area for being safe from a flood threat. LoST client can find out what instances of this service are closest to users. Examples include earthquake shelter, flood shelter, air-raid shelter, wildfire etc.

To prepare for or to respond to natural and man-made disasters, the public needs access to information about emergency shelters. Different types of emergencies call for different types of shelters. For example, residents should flee to an elevated building for a flood, but to an underground area for a hurricane. To locate appropriate near-by shelters, we can use the location-to-service translation protocol (LoST) [[RFC5222](#)], using a set of service URNs defined in this document.

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. Sub-Services for the 'shelter' service

This section defines the shelter service using the top-level service label 'shelter'.

```
urn:service:shelter
urn:service:shelter.airraid
urn:service:shelter.earthquake
urn:service:shelter.flood
urn:service:shelter.heatwave
urn:service:shelter.homeless
urn:service:shelter.hurricane
urn:service:shelter.wildfire
```

4. Example for finding shelters

In this example, we use the circular shape in queries and serviceLocation element in responses introduced by [LOST-EXT]. The <serviceLocation> element contains the geodetic coordinates of a point of service and must be contained in a <mapping> element. In responses such as <findServiceResponse>, a list of service URIs, each

with its own <serviceLocation> element, must be returned.

```
<?xml version="1.0" encoding="UTF-8"?>
<findService
  xmlns="urn:ietf:params:xml:ns:lost1"
  xmlns:p2="http://www.opengis.net/gml"
  serviceBoundary="value"
  recursive="true">
  <location id="6020688f1ce1896d" profile="geodetic-2d">
    <p2:Circle srsName="urn:ogc:def:crs:EPSG::4326">
      <p2:pos>37.775 -122.422</p2:pos>
      <p2:radius uom="urn:ogc:def:uom:EPSG::9001">
        2000.24
      </p2:radius>
    </p2:Circle>
  </location>
  <service>urn:service:shelter.earthquake</service>
</findService>
```

Figure 1: A <findService> query

The client is asking the LoST server to send URIs and other information of earthquake shelter places within 2000.24 meters from its approximate position specified in <p2:pos>.


```
<?xml version="1.0" encoding="UTF-8"?>
<findServiceResponse xmlns="urn:ietf:params:xml:ns:lost1"
  xmlns:p2="http://www.opengis.net/gml">
  <mapping
    expires="2007-01-01T01:44:33Z"
    lastUpdated="2006-11-01T01:00:00Z"
    source="authoritative.example"
    sourceId="7e3f40b098c711dbb6060800200c9a66">
    <displayName xml:lang="en">
      Emergency Earthquake shelter camp 1
    </displayName>
    <service>urn:service:shelter.earthquake</service>
    <uri>sip: earthquake_camp1@example.com</uri>
    <uri>xmpp:shelter_1@example.com</uri>
    <serviceNumber>2129397040</serviceNumber>
    <serviceLocation profile="geodetic-2d">
      <p2:Point id="point1"srsName="urn:ogc:def:crs:EPSG:4326">
        <p2:pos>37.725 -122.432</p2:pos>
      </p2:Point>
    </serviceLocation>
  </mapping>
  <mapping
    expires="2007-01-01T01:44:33Z"
    lastUpdated="2006-11-01T01:00:00Z"
    source="authoritative.example"
    sourceId="7e3f40b098c711dbb6060800200c9b356">
    <displayName xml:lang="en">
      Emergency Earthquake shelter camp 2
    </displayName>
    <service>urn:service:shelter.earthquake</service>
    <uri>sip:earthquake_camp2@example.com</uri>
    <uri>xmpp:shelter_2@example.com</uri>
    <serviceNumber>2129397157</serviceNumber>
    <serviceLocation profile="geodetic-2d">
      <p2:Point id="point1"srsName="urn:ogc:def:crs:EPSG:4326">
        <p2:pos>37.665 -122.321</p2:pos>
      </p2:Point>
    </serviceLocation>
  </mapping>
  <path>
    <via source="resolver.example"/>
    <via source="authoritative.example"/>
  </path>
  <locationUsed id="6020688f1ce1896d"/>
</findServiceResponse>
```

Figure 2: A <findServiceResponse>

In response to the query the LoST server says that the given shelters specified by these service locations are safe area from earth quake. In the same way he can request for other shelter services.

5. Security Considerations

The security considerations of [[RFC5031](#)] and [[RFC5222](#)] are relevant to this document.

6. IANA Considerations

6.1. Sub-Services for the 'shelter' Service

This section defines the service registration within the IANA registry, using the top-level service label 'shelter'.

urn:service:shelter 'shelter' service denotes a top-level service, and it encompasses all of the services listed below.

urn:service:shelter.airraid This service identifier is used to find a safe place from the air-raid. (example: bunker)

urn:service:shelter.earthquake A safe place from the earthquake can be found by using this identifier (example: tent)

urn:service:shelter.flood Sub-service is used to identify shelters from the flood disaster (example: a hill)

urn:service:shelter.heatwave Heat wave shelters are identified by using this identifier (example: cool places can be a shelter from heat wave)

urn:service:shelter.homeless This service identifier can be used by homeless people to find shelters (example: Usually located in urban neighborhoods)

urn:service:shelter.wildfire Wild fire shelters can be located by using this sub-service (example: safety device carried by wildland firefighter)

urn:service:shelter.hurricane This service identifier is used to search for safe places from the hurricane (example: storm rooms)

6.2. Initial IANA Registration

The following table contains the initial IANA registration for shelter services.

Service	Reference	Description
urn:service:shelter	TBD	Shelter services
urn:service:shelter.airraid	TBD	Air-raid shelter
urn:service:shelter.earthquake	TBD	Earth quake shelter
urn:service:shelter.flood	TBD	Flood shelter
urn:service:shelter.heatwave	TBD	Heat wave shelter
urn:service:shelter.homeless	TBD	Homeless shelter
urn:service:shelter.wildfire	TBD	Wild fire shelter
urn:service:shelter.hurricane	TBD	Hurricane shelter

7. References

7.1. Normative References

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

7.2. Informative References

- [I-D.forte-ecrit-lost-extensions]
 Forte, A. and H. Schulzrinne, "Location-to-Service Translation Protocol (LoST) Extensions", [draft-forte-ecrit-lost-extensions-02](#) (work in progress), March 2009.
- [RFC5031] Schulzrinne, H., "A Uniform Resource Name (URN) for Emergency and Other Well-Known Services", [RFC 5031](#), January 2008.
- [RFC5222] Hardie, T., Newton, A., Schulzrinne, H., and H. Tschofenig, "LoST: A Location-to-Service Translation Protocol", [RFC 5222](#), August 2008.
- [RFC5491] Winterbottom, J., Thomson, M., and H. Tschofenig, "GEOPRIV Presence Information Data Format Location Object (PIDF-LO) Usage Clarification, Considerations, and Recommendations", [RFC 5491](#), March 2009.

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