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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.
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>. 
<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.

<table>
<thead>
<tr>
<th>Service</th>
<th>Reference</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>urn:service:shelter</td>
<td>TBD</td>
<td>Shelter services</td>
</tr>
<tr>
<td>urn:service:shelter.airraid</td>
<td>TBD</td>
<td>Air-raid shelter</td>
</tr>
<tr>
<td>urn:service:shelter.earthquake</td>
<td>TBD</td>
<td>Earthquake shelter</td>
</tr>
<tr>
<td>urn:service:shelter.flood</td>
<td>TBD</td>
<td>Flood shelter</td>
</tr>
<tr>
<td>urn:service:shelter.heatwave</td>
<td>TBD</td>
<td>Heat wave shelter</td>
</tr>
<tr>
<td>urn:service:shelter.homeless</td>
<td>TBD</td>
<td>Homeless shelter</td>
</tr>
<tr>
<td>urn:service:shelter.wildfire</td>
<td>TBD</td>
<td>Wildfire shelter</td>
</tr>
<tr>
<td>urn:service:shelter.hurricane</td>
<td>TBD</td>
<td>Hurricane shelter</td>
</tr>
</tbody>
</table>

7. References

7.1. Normative References


7.2. Informative References


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