

ShakeCast XML Documents

Extensible Markup Language (known by the acronym XML) is a widely used and easily implemented method of exchanging data between disparate computer systems. The ShakeCast System receives ShakeMap information in XML from the USGS web server and uses XML to communicate all kinds of information between ShakeCast servers:

- Data about ShakeCast Servers and the ShakeCast software itself
- Data about events (earthquakes) and products (data files) available on the network
- Status information that helps the administrators of ShakeCast servers tell if their network is running smoothly

This Section documents the ShakeCast XML file formats.

ShakeMap RSS Feed XML

RSS, which stands for “Really Simple Syndication” (sometimes called Rich Site Summary), has been adopted by news services, weblogs, and other online information services to send content to subscribers. After subscribing to an RSS feed, you will be notified when new content is available without having to visit the web site. The USGS ShakeMap RSS data feed contains

```
<?xml version="1.0"?>
<?xml-stylesheet href="shake_feed.xsl" type="text/xsl" media="screen"?>
<rss xmlns:geo="http://www.w3.org/2003/01/geo/wgs84_pos#"
xmlns:dc="http://purl.org/dc/elements/1.1/"
xmlns:eq="http://earthquake.usgs.gov/rss/1.0/" version="2.0">
<channel>
  <title>USGS Earthquake ShakeMaps</title>
  <description>List of ShakeMaps for events in the last 30
days</description>
  <link>http://earthquake.usgs.gov/</link>
  <dc:publisher>U.S. Geological Survey</dc:publisher>
  <pubDate>Mon, 16 Jul 2007 20:23:29 +0000</pubDate>
  <item>
    <title>6.7 - NEAR THE WEST COAST OF HONSHU, JAPAN</title>
    <description><![CDATA[Date: Mon,
16 Jul 2007 01:13:27 GMT<br />Lat/Lon: 37.574/138.44<br />Depth:
49<br />]]></description>
    <link>http://earthquake.usgs.gov/eqcenter/shakemap/global/shake/2
007ewac/</link>
    <pubDate>Mon, 16 Jul 2007 01:13:27 GMT</pubDate>
    <geo:lat>37.574</geo:lat>
    <geo:long>138.44</geo:long>
    <dc:subject>6</dc:subject>
    <eq:seconds>1184598989</eq:seconds>
    <eq:depth>49</eq:depth>
```

```
    <eq:region>global</eq:region>
    <eq:shakethumb>http://earthquake.usgs.gov/eqcenter/images/thumbs/
    shakemap_global_2007ewac.jpg</eq:shakethumb>
  </item>
</channel>
</rss>
```

Event XML

A ShakeCast Event is described by Event XML. A sample Event XML is shown in the following figure.

```
<event event_id="SAF_south7.8_se" event_version="1"
event_status="RELEASED" event_type="SCENARIO" event_name=""
event_location_description="SAF-southern M7.8 Scenario"
event_timestamp="2006-08-03 12:00:00"
external_event_id="SAF_south7.8_se" magnitude="7.8" lat="33.922270"
lon="-116.469670" />
```

Product XML

A ShakeCast Product is described by Product XML. A sample Product XML is shown in the following figure.

```
<product shakemap_id="SAF_south7.8_se" shakemap_version="1"
product_type="HAZUS" product_status="RELEASED" generating_server="1"
generation_timestamp="2007-02-08 16:07:03" lat_min="32.405603"
lat_max="35.455603" lon_min="-114.769670" lon_max="-119.353003" />
```

ShakeMap XML

A ShakeCast ShakeMap is described by ShakeMap XML. A sample ShakeMap XML is shown in the following figure.

```
<shakemap shakemap_id="SAF_south7.8_se" shakemap_version="1"
event_id="SAF_south7.8_se" event_version="1" shakemap_status="RELEASED"
generating_server="1" shakemap_region="ci" generation_timestamp="2007-
02-08 16:07:03" begin_timestamp="2007-02-08 16:07:03"
end_timestamp="2007-02-08 16:07:03" lat_min="32.405603"
lat_max="35.455603" lon_min="-119.353003" lon_max="-114.769670">
  <metric metric_name="MMI" min_value="10.0000" max_value="9.4900" />
  <metric metric_name="PGA" min_value="10.0002" max_value="9.9989" />
  <metric metric_name="PGV" min_value="10.0000" max_value="99.9109" />
  <metric metric_name="PSA03" min_value="10.0005" max_value="99.9687"
  />
  <metric metric_name="PSA10" min_value="10.0007" max_value="99.9747"
  />
  <metric metric_name="PSA30" min_value="1.7880" max_value="9.9989" />
```

</shakemap>

Exposure XML

A ShakeCast Exposure is described by Exposure XML. A sample Exposure XML is shown in the following figure.

```
<?xml version="1.0" encoding="UTF-8"?>
<exposure>
  xmlns:xlink="http://www.w3.org/1999/xlink"

  code_version="Pager 0.2.0"
  event_id="usneb6_06"
  version="1"
  timestamp="2006-10-11T16:07:03Z"
  source="us"
  status="RELEASED">

  <event
    type="ACTUAL"
    id="urn:earthquake.usgs.gov:origin:usneb6_06:1"
    magnitude="6.3"
    depth="17.1"
    latitude="-7.955000"
    longitude="110.430000"
    timestamp="2006-05-26T22:54:01GMT"
    description="JAVA, INDONESIA" />

  <shakemap
    code_version="3.1.1 GSM"
    id="urn:earthquake.usgs.gov:shakemap:usneb6_06:6"
    version="6"
    timestamp="2006-10-11T16:07:03Z"
    source="us"
    status="RELEASED" />

  <summary type="MMI" units="mmi">
    <bin label="I" value="1" range=".5,1.5)" keywords="incomplete">
      <measure type="population" value="0" units="people"
source="landscan2005" />
    </bin>
    <bin label="II" value="2" range="1.5,2.5)"
keywords="incomplete">
      <measure type="population" value="0" units="people" />
    </bin>
    <bin label="III" value="3" range="2.5,3.5)"
keywords="incomplete">
      <measure type="population" value="963142" units="people" />
    </bin>
  </summary>
</exposure>
```