ShakeMap Update: ShakeMap 3.1 ShakeCast 2.0

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Key Elements of ShakeMap

• Input comes from the real-time seismic network: magnitude, location, peak ground motions…

• Uses ground shaking predictions and site geological conditions to interpolate in areas of sparse station coverage…

• Generates and distributes maps of intensity, ground motions, GIS files, web pages, ...

• Reruns automatically as new data arrives
### Maps:

<table>
<thead>
<tr>
<th>Instrumental Intensity</th>
<th>Peak Ground Motion</th>
<th>Spectral Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Acceleration</td>
<td>0.3 sec</td>
</tr>
<tr>
<td>JPEG</td>
<td></td>
<td>pga.jpg</td>
</tr>
<tr>
<td>Postscript 8-1/2 x 11</td>
<td></td>
<td>pga.ps.zip</td>
</tr>
<tr>
<td>Poster</td>
<td></td>
<td>inter_pstr.ps.zip</td>
</tr>
</tbody>
</table>

### Media Maps:

- Decorated: tvmap.jpg, tvmap.ps.zip
- Bare: tvmap_bare.jpg, tvmap_bare.ps.zip
- Info Sheet: tvguide.txt

### Data:

#### Raw Grids

- Text X, Y, Z Values: grid.xyz.zip
- XML: grid.xml

#### GIS Files

- HAZUS Zip File: hazus.zip
- Shape Files: shape.zip
- KML: Northridge.kml

### Station Lists:

- Text: stationlist.txt
- XML: stationlist.xml

### Metadata

- Format: HTML, Text, XML
New in ShakeMap Version 3.1

- Uncertainty estimates
- grid.xml
- (New USGS Earthquake Program pages: earthquake.usgs.gov)
- Many minor changes (better ground motion estimates near finite faults, version numbers on maps, etc.)
- KML!
Google Earth and Earthquake Response

- **Simple Web browser-like client for GIS data and products**
  - Visualization and dynamic updates of multiple earthquake related products from various sources
- **KML, an open XML grammar and file format**
  - Data exchange among earthquake products, RSS, CAP…
- **Easy modeling and storing of geographic features, e.g., points, lines, images, and polygons**
  - Hypocenters, faults, ShakeMaps, PAGER, seismic stations…
Northridge Earthquake Intensity
Direct Access to Current Facility Database via Web (e.g., PHP)
ShakeCast

Getting ShakeMap information to the people who need it
Simplified ShakeMap/ShakeCast Flowchart

SHAKECAST SERVER

SHAKEMAP DATA & MAPS

Polling

USER'S SHAKECAST CLIENT

WEB PAGES & EMAIL

SUMMARY

USER DATABASES

FACILITIES

Bridge A
Overpass 1
Overpass 2
... Overpass 4

Location
Location
Location
Location

NOTIFICATIONS

Bill Jones
303 273 8123
jone@email
smith@mail
smith@call
im@pager

FRAIGILITIES

Bridge A
Overpass 1
Overpass 2
Overpass 3
Overpass 4

0.3/0.6g
0.2/0.5g
0.2/0.5g
25/50 cm/s

ESTIMATED DAMAGE

Bridge A
Overpass 1
Overpass 2
Overpass 3
Overpass 4

Damage Likely
Damage Likely
Damage Likely
Damage Likely

Damage Poss.

CELL PHONE & PAGER

NOTIFICATION
ShakeCast 2.0

- Lower the (IT) bar on adoption
- Separate delivery from processing (ShakeCast “Lite”)
- Product availability announced through RSS
- ShakeMap RSS Reader -- configurable to download selected products and, optionally, to launch processes
- Full processing, damage estimates, and notification for those who want it
**ShakeMaps**

ShakeMap is a product of the U.S. Geological Survey Earthquake Hazards Program in conjunction with regional seismic network operators. ShakeMap sites provide near-real-time maps of ground motion and shaking intensity following significant earthquakes. These maps are used by federal, state, and local organizations, both public and private, for post-earthquake response and recovery, public and scientific information, as well as for preparedness exercises and disaster planning.

Currently the following areas produce ShakeMaps:
(Images link to the most recent ShakeMap in the area)

- S California: (14204720)
- N California: (40183357)
- Pacific NW: (0602091926)
- Nevada: (2006047_175768)
- Utah: (13232)
- Alaska: (56882)
- Global: (jman_06)

What's New

- **February 2006**
  - ShakeMap RSS Feed
  - ShakeMap RSS Reader

- **July 2005**
  - Sign Up For ShakeCast User's Forum

- **June 2005**
  - ShakeCast Software Updated
The End

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