Earthquake Scenario Simulation using CISN Display

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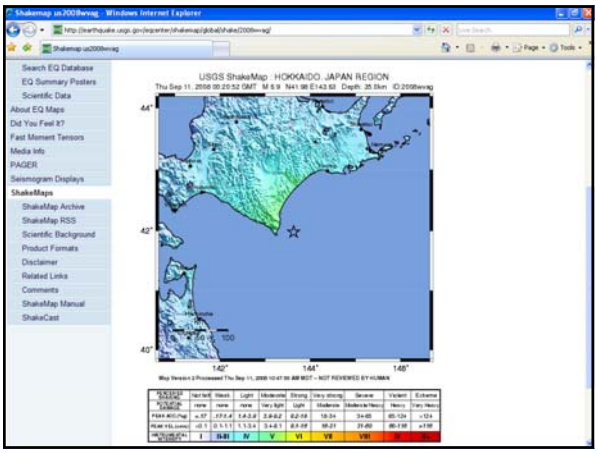


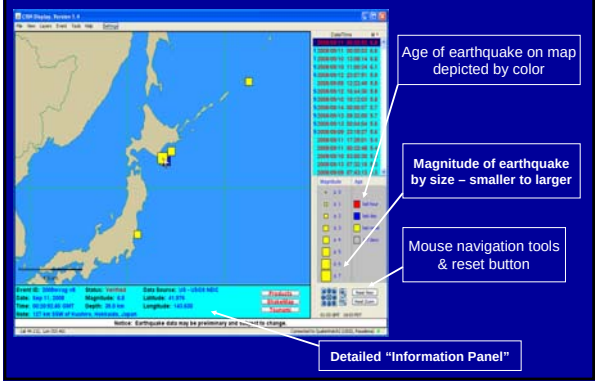
CISN Display

- Developed by California Integrated Seismic Network under funding from California OES and the USGS
- Real-time push of earthquake information (or scenario information) to Java application via the Internet
- CISN Display is a GIS application
- Provides customized notification based on user needs based on location and magnitude
  - Email
  - Short text message to cell phone/pager
  - Visual and audible alarms
- Usage restricted

~125 Connected Users
~700 registered

- 10news.com
- abc.com
- atsb-malaysia.com.my
- bnsf.com
- bppd.com
- ci.piedmont.ca.us
- cityofalhambra.org
- co.monterey.ca.us
- co.pierce.wa.us
- dalycity.org
- degenkolb.com
- dhn.mil.pe
- dnr.wa.gov
- dogami.state.or.us
- dot.ca.gov
- emd.wa.gov
- hko.gov.hk
- incois.gov.in
- kmi.com
- kozt.com
- lacofd.org
- mca.gov.to
- meteorology.gov.mv
- mwdh2o.com
- nbcuni.com
- noaa.gov
- oes.ca.gov
- ptwc.noaa.gov
- quileutenation.org
- redlandspolice.org
- reuters.com
- sbcfire.org
- scd.hawaii.gov
- seasidepd.org
- sed.ethz.ch
- tribune.com
- unesco.org
- usgs.gov
- ventura.org
- water.ca.gov
- wsdot.wa.gov
- + 14 .edu's

CISN Display - Example



CISN Display

Global View

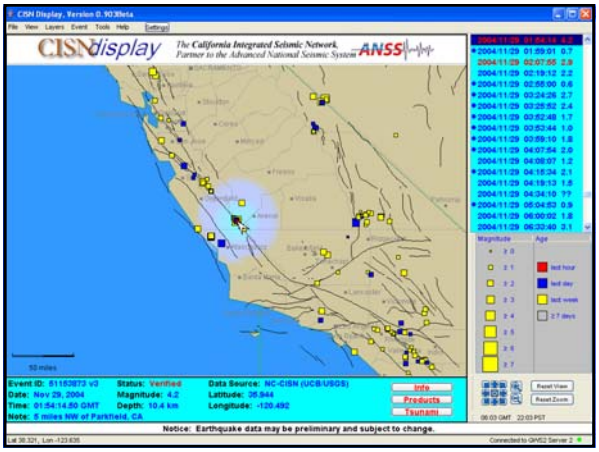
Local View

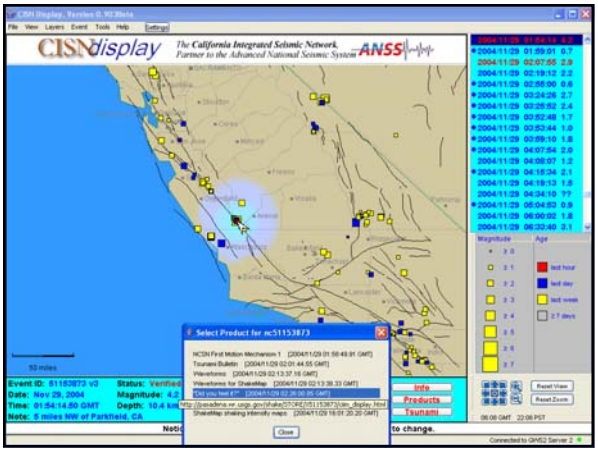
Optional Layers

Layers

CISN Display – Available GIS Layers

- US/Global Cities
- Major Roadways
- Major Railways
- Faults
- Runways
- Add your own…



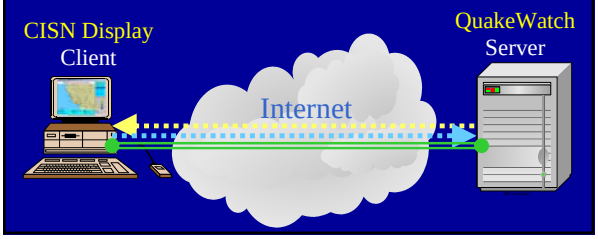


CISN Display interface to Web-based Products

- URLs provide realistic information
  - Waveform GIFs
  - Focal Mechanisms/ Moment Tensors
  - CIIM pages (Felt Reports)
  - ShakeMap
  - Tsunami Alerts
  - Aftershock Forecasts
  - HAZUS Input files

The CISN Display – How does it work?

Client requests a connection from the Server
Client authenticated
Client Subscribes to 'Event Channel' on QWServer



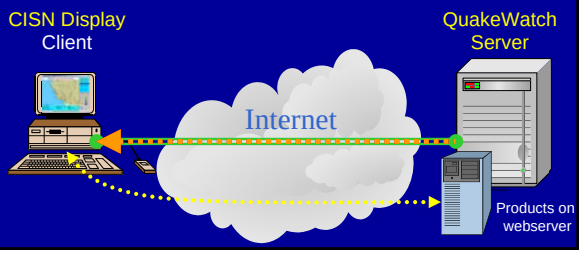
The CISN Display – How does it work?

Client subscribed to 'Event Channel (waiting)'

Earthquake Message!

ShakeMap Message (URL)!

Client goes out-of-band to retrieve ShakeMap from web

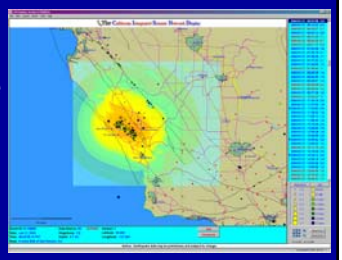


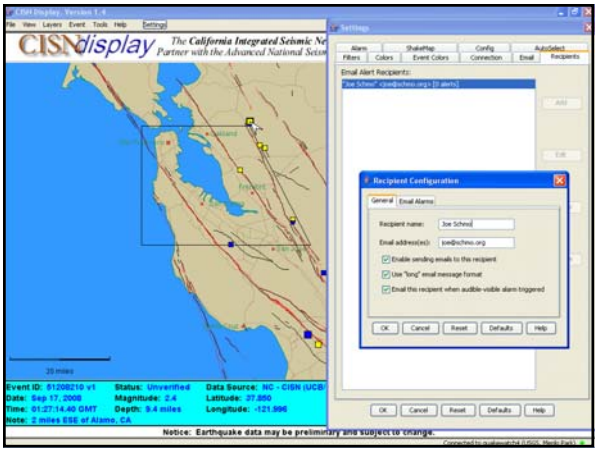
How to Make a Scenario Seem Like the Real Thing

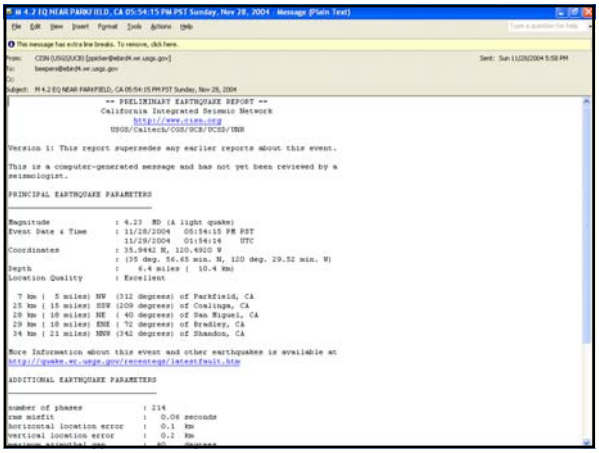
- Before scenario
  - Construct the mainshock
    - Magnitude, when, where, length, mechanism, ground motions
  - Generate aftershock catalog
    - Same information needed as for mainshock
  - Generate supporting information for web
    - ShakeMap, probability reports, tsunami warnings, DYFI, mechanisms, HAZUS
  - Establish private QWServer in advance
  - Install CISN Display clients on user computers
    - Configure to connect to private server
    - Configure for email, audible alarms
- On day of Scenario
  - Participants run CISN Display
  - Operator submits information into scenario QWServer
    - Catalog and URL links submitted in "real-time"

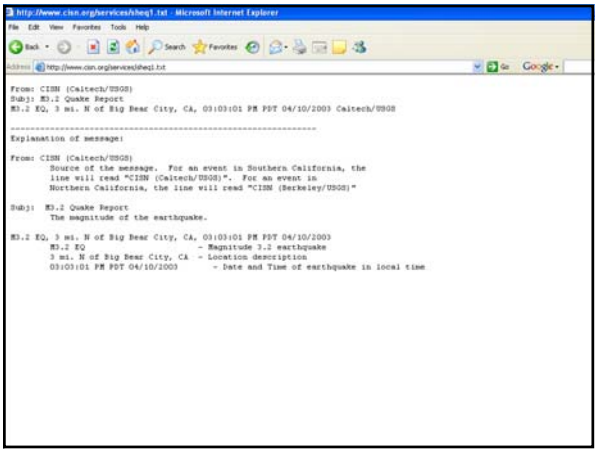
Table-top exercise features

- Scaleable
- Offline
- Automated
- Highly configurable
- Integrated
- Platform Independent
- Audible alarms
- SMS and email notification









The CISN Display - System Requirements

- Recommended Hardware (Minimum)
  - CPU: 1 GHz
  - RAM: 384 MB or Higher
  - Monitor Resolution 1024 x 762 or higher
- System Software
  - JAVA (JRE 1.4) installed
- Network Connectivity
  - IP address (Registered or Private)
  - Inbound/Outbound access on ports 39988/39977 to a QuakeWatch Servers (without Proxy Server)
- Client Software
  - CISN Display application
- CISN Display User
  - CISN 'User Account' → www.cisn.org/software

Summary

- CISN Display provides
  - automated, configurable scenario simulation
  - Realistic (alarms, SMS, email, real-time)
  - Scaleable usage
  - Secure
- More information
  - www.cisn.org/software
  - Handouts
- Take it out for a test drive! It's easy.