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PACIFIC DISASTER CENTER

2005 ESRI International User Conference
July 2005
San Diego, CA

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EMOPS EWS

Rapid Customized Viewer Deployment


Paper UC1962
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EAST-WEST CENTER



Internet

PDC Mission Statement
The Pacific Disaster Center's mission is to provide applied information research and analysis support for the development of more effective policies, institutions, programs, and information products for the disaster management and humanitarian assistance communities of the Asia-Pacific region and beyond.

Fostering Disaster-Resistant Communities

Partnerships
East-West Center Program Office

PDC NEWS | 5 News archives

Latest Information on the Ongoing
PDC is collecting information resources for the public on this disaster. Click here for key overview resources, PDC has updated preliminary damage maps for India, Thailand, and Sri Lanka.

International Conference on Urban Disaster Reduction
PDC presents two papers at the International Conference on Urban Disaster Reduction, 3-Mar-2005

SEARCH

Asia Pacific Natural Hazards and Vulnerability Atlas

Local Hourly Weather:
Hawaiian Islands
Yesterday in Hawaii

INFORMATION

Hawaii Astronomical Tides
Hawaii Civil Defence
Hawaii Emergency Phone Numbers

Public Messages

PHW HST Mar 8 22:35 GMT Mar 9 08:35
TROPICAL CYCLONE WARNING

PHFO HST Mar 8 22:31 GMT Mar 9 08:31
AUTOMATED WIND AND PRECIPITATION DATA FOR SELECTED HAWAII STATIONS - #NOTS



Abstract

Hawaii County Remote Information Services



Hosted By: **PACIFIC DISASTER CENTER**

[Hawaii County Home](#)

[Launch Map Viewer](#)

The Pacific Disaster Center has worked closely with Hawaii County Data Systems Department, the County emergency response community (including Civil Defense, Police and Fire departments), and the Office of the Mayor to provide secured remote spatial information services for Hawaii County. The Remote Information Service (RIS) supports the County's strategy to develop these capabilities "in house" in the future.

RIS is a PDC-designed and hosted ArcIMS-based map service that utilizes existing data from PDC's Enterprise Geospatial Database (EGDB). Additional data resources (e.g. land zoning) have been provided by the Hawaii County Data Systems Department.

Emergency responders can use the RIS to locate an area of interest, show hazard layers or surrounding sites of importance, and evaluate alternative routes to, from, or around an area of interest. Users can also determine the name or ownership of an area of interest. The basic capability has many applications in planning for and responding to hazards including floods, tsunamis, landslides, and fires. It is also useful in determining optimal sites for roadblocks, and for planning evacuation routes. Users will also be able to determine if community buildings fall within a specified radius from a point of interest—a feature of great help when planning evacuation zones.

According to Lisa Wong, County of Hawaii, "We are grateful for the Pacific Disaster Center's expertise in providing the County of Hawaii emergency personnel with this critical information service. By leveraging PDC's technical knowledge and data resources, they were able to provide our county with technical resources that would not have otherwise been feasible."



South East Asia and Indian Ocean Tsunami Response Map Viewer

[PDC Home](#)

[Launch Map Viewer](#)

[Data Layers](#)

[Map Services](#)

[Map Services](#)

The South East Asia and Indian Ocean Tsunami Response Map Viewer is intended to provide an overview of the impact of the December 26th Sumatra earthquake and the associated tsunami. The site and its underlying Map Service have been created to support response and recovery efforts in the aftermath of this disaster, which has severely impacted countries in the Indian Ocean Basin.

The South East Asia and Indian Ocean Tsunami Response Map Viewer contains a number of baseline data layers including Landsat imagery, SRTM-derived elevation, coastlines, and major cities. It also contains event-related data including damage extent maps and high-resolution satellite imagery.



[Launch Map Viewer](#)

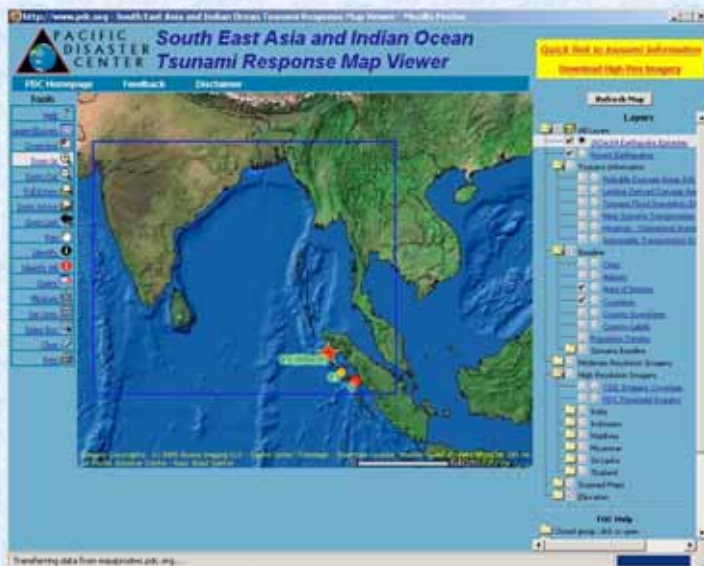
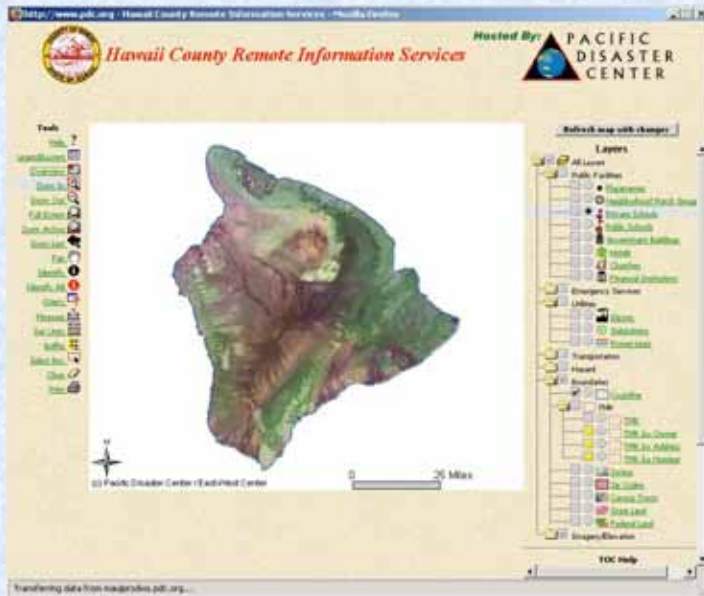
GIS users: Images of the High-Res Imagery are available to download through the web viewer in accordance with the terms outlined in the [Data/Code Licenses](#). Imagery details and file specifications are outlined in a [SACAME](#) file.

Map users: High-Res Imagery download instructions

To obtain a download account please send an e-mail to info@pdc.org with your full contact information, a brief description of your organization and your intended use of the data.

The South East Asia and Indian Ocean Tsunami Response Map Viewer provides a convenient way to access and navigate the various maps, images, and GIS data. For GIS users, the data may also be accessed via the underlying Map Service (see below), and/or via the [PDC's Asia Pacific Natural Hazard Information Network \(APNHIN\)](#). Additional data will be continuously added as it is made available, especially satellite imagery and associated analysis. If you have additional resources you wish to contribute, please e-mail info@pdc.org.

An approach extending the functionality of the base ESRI HTML viewer using XML configuration and re-usable JSP/Java/JavaScript components for rapid, customized viewer deployment will be presented. After creating numerous HTML viewer sites and maintaining custom code across applications, the Pacific Disaster Center leveraged the ESRI HTML code and branched it into engine- and template-related components to speed development and deployment and to enhance viewer maintainability.



The methodology used and the benefits gained to application, data, and systems analysts/engineers along with Emergency Managers and other end-users are illustrated through several implemented, in-production sites as well as the viewer spawning/customization process.

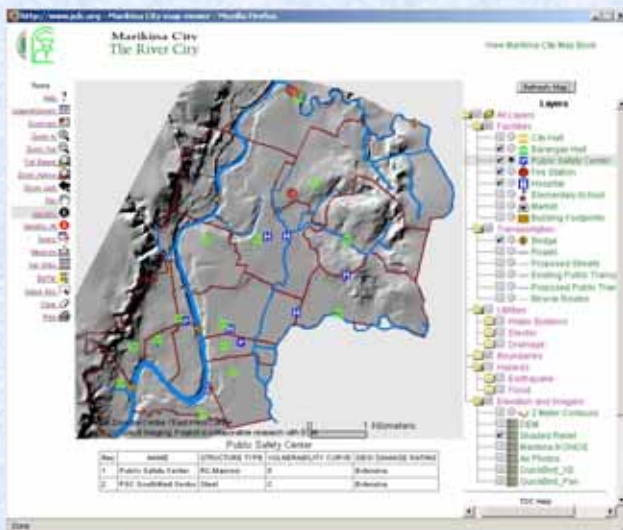
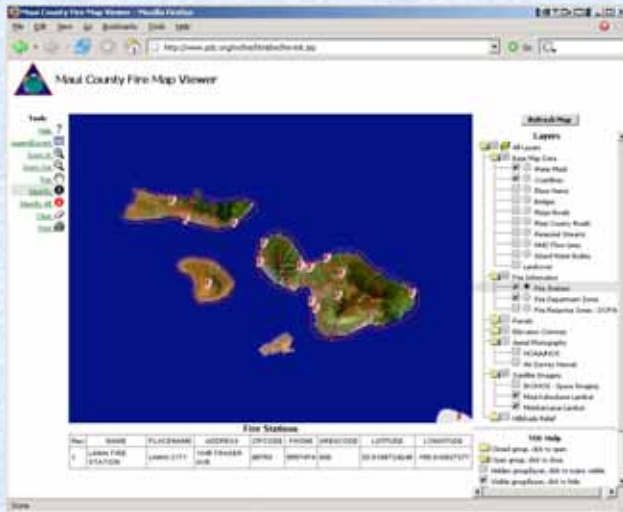
Goals and Objectives



- Decrease time to deliver
- Increase reusability
- Increase customization
- Increase consistency
- Increase automation



- Use Java, JSP, XML, and Ant
- Use a modified D. Bollinger TOC
- Packaged, stand-alone WAR
- Deploy to Servlet 2.3, JSP 1.2 (Tomcat 4.1.x)
- Use ArcSDE views and database functions
- Use JDBC authentication/authorization



- Create new viewer in hours with complete functionality
- Easy to re-package and re-deploy with new functionality using Ant
- Can customize look-n-feel to customers website color/font scheme
- Can restrict tools/functions per viewer
- Build tools once, use many times
- Learn tools once, use many times
- Leverage power of Java and related technologies including platform independence

- Started with an ArcIMS 4.0.1 HTML viewer when making a site for a County of Hawaii customer
 - Spending way too much time making viewers instead of making viewer tools
 - Spending way too much time integrating new and existing tools into other viewers
- Separated 90% of the business logic and presentation
 - Still a bit of embedded JavaScript output
 - 100% on the way

- Business logic into own CVS module
 - AKA Viewer Engine
 - Contains shared resources
 - aims*.js (aimsXML.js) -> vng-aimsxml.jsp
 - Toolbar images
- Presentation into own CVS module
 - AKA Viewer Template
 - Contains application specifics
 - Frame sources (top, refresh, metadata, print, legend)
 - Map loading and refreshing images



Spawning / Deployment Process

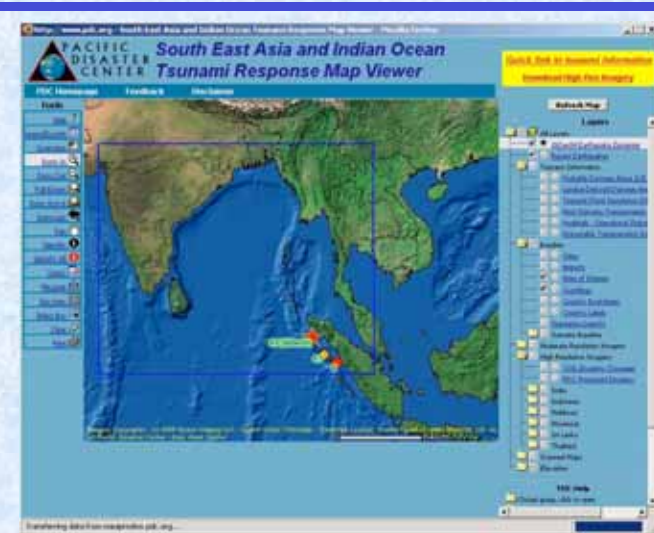
- Unzip template package
- Rename files with project code
 - atlas, atli, apnhintsu, mcfire, hcris, ...
- Condition files with project code
- Edit language and CSS files
- Edit Table of Contents (next slide)
 - Best to have TOC straw man prior to spawn
- Make new Eclipse project and add Ant build
 - Packages template and engine into a WAR and deploys to Tomcat as a web application with **no** dependencies

- Time from unzip to deploy
 - No edits = 1 hour

- Modified Dave Bollinger dbGroup TOC code from ArcScripts
 - “Brains” moved to Engine
 - Configuration moved to Template
 - JSP page with JavaScript wrapper
 - Soon to be XML
- Root TOC has:
 - Title, caption, autorefresh, swatch, and metadata
- Groups have (including Group01):
 - Caption, opened, swatch, and metadata
- Layers have:
 - Name, caption, swatch, display, metadata, and tool



Hawaii County



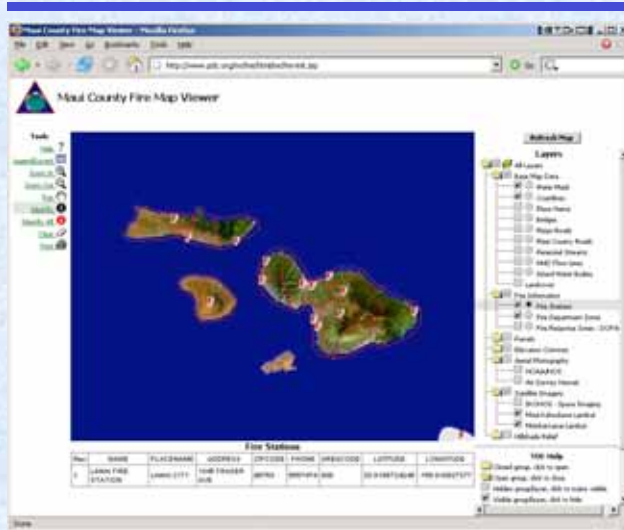
Indian Ocean Tsunami



World Atlas



Hawaii Atlas



Maui County FD



Marikina City



American Samoa

No link:

- Vietnam Atlas
- Makani Pahili
- Maui County

- More transition to Java Connector Object Model and other Java components
- Abstract language constructs to ResourceBundle for translations
- Provide online interfaces to XML configuration for on-the-fly changes
- Provide support for other map servers
- Provide layer authentication/authorization
- Provide services for map and data usage outside a viewer environment
- Support for Java 1.5.x and Servlet 2.4 / JSP 2.0 (Tomcat 5.x)
- Use Ant for automated spawning process



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