Sahana: a practical information solution path for international disaster management

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For the Resilient Disaster Systems: Improving Services Delivery to Disaster Areas Symposium, University of Sydney, 19 September 2014
The Historic Trigger: 2004 Indian Ocean Earthquake & Tsunami

☀ At least 226,000 dead
☀ Up to 5 million people lost their homes, or access to food and water
☀ 1 million people left without a means to make a living
☀ At least $7.5 billion in the cost of damages

“Facts and Figures: Asian Tsunami Disaster”
New Scientist, 20 January 2005
Sahana first deployed for Sri Lanka tsunami response
Improving Sahana for Wider Use

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Use of Open Source Web code makes Sahana easy to get and modify:

- Web Disaster Management, Australian Computer Society, April 2005
- Quick Check of the Sahana Disaster Management System, for COMP1710, Australian National University, March 2006.
Sahana Functions

- Organization Registry
- Project Tracking
- Human Resources
- Inventory
- Assets
- Assessments
- Scenarios & Events
- Maps
- Shelter Management
- Messaging

From Sahana Eden Manual
Sahana Implementation

Web-based user interface to a database application.

Sahana uses MySQ PHP and Python (for Sahana Eden)

Original 2004/2005 Sahana used one CSS style sheet and tables for formatting.

By 2006 Sahana used CSS for layout in place of tables, making it more compatible with small, old and mobile devices.
Sahana Deployments: 2004 to 2014

- 22 Disaster Response Deployments
- 13 Disaster Preparedness Deployments
- 25+ Countries
Disaster Response Deployments to 2009

2004 - Indian Ocean Earthquake & Tsunami
2005 - Philippine - Landslides
2005 - Pakistan - Kashmir Earthquake
2006 - Indonesia - Yogjakarta Earthquake
2007 - Peru - Ica Earthquake
2007 - Bangladesh - Cyclone Sidr
2008 - China - Chengdu-Sitzuan Earthquake
2008 - Myanmar - Cyclone Nargis
2008 - India - Bihar Flooding
Sahana Software Foundation: 2009

- In 2009 a US 501(c)(3) non-profit organization what established to help promote Sahana internationally.
- Mission: To save lives by providing information management solutions that enable organizations and communities to better prepare for and respond to disasters.
- Sahana Software Foundation develops free and open source software that solves concrete problems and brings efficiencies to disaster response coordination between governments, aid organizations, civil society and disaster survivors.
Disaster Response After 2009

1. 2010 - Venezuela - Floods
2. 2010 - Mexico - Veracruz Hurricane
3. 2010 - Pakistan - Floods
4. 2010 - Chile - Earthquake
5. 2010 - Haiti - Earthquake
6. 2011 - USA - Joplin Tornado
7. 2011 - Japan - Tohoku Earthquake & Tsunami
8. 2011 - New Zealand - Christchurch Earthquake
9. 2011 - Colombia - Floods
10. 2012 - USA - Hurricane Sandy
11. 2012 - Chile - Wildfires
12. 2013 - Philippines - Typhoon Haiyan
13. 2014 - Bosnia - Floods
Preparedness Deployments

- 2007 - USA - Sahana Emergency Management System
- 2009 - USA - NLM: People Locator
- 2011 - Asia Pacific - Red Cross Resource Mapping System
- 2011 - Disaster Risk Reduction (DRR) Project Portal
- 2012 - Africa - EUROSHA Humanitarian Mapping Platform
- 2012 - Philippines - Relief Goods & Inventory Management
- 2013 - Timor Leste - Disaster Risk Management System
- 2013 - USA - Community Resilience Mapping Tool
- 2013 - Sri Lanka - Disaster Preparedness & Response Division
- 2011 - USA - Give2LA
- 2014 - Caucasus and Central Asia - Humanitarian Data Platform
- 2014 - USA - Maritime Common Operating Platform
- 2014 - Italy - Shelters & Evacuee Management
Community

- 40 members from 12 countries
- Programs
  - Google Code In
  - Google Summer of Code
  - Sahana Internship Program
  - Training program
  - SahanaCamp
- Virtual Community
  - Wiki
  - Mailing List
  - IRC Chat
- Partners
Testimonials

Faced with disaster situations, like those lived by [Chile] in the last days, the need for information becomes imperative. With this Smart Center, we can significantly reduce response times for the persons that search, and optimize volunteer work.

Lorenza Donoso, President of the Chilean Red Cross on the Sahana Eden-based Smart Center solution, used in response to wildfires in early 2012

Sahana [Eden] is blowing my mind. I can’t think of any project we’ve done that we couldn’t build on this platform.

@CDRP_FSU (Center for Disaster Risk Policy at Florida State University), 2012

No innovation matters more than that which saves lives.

Avelino J. Cruz, Jr., Secretary of National Defense of the Philippines on the use of Sahana following disastrous mudslides in 2005
Awards and Honors

- Computerworld Honors Laureate in Human Services 2013
- Gartner “Cool Vendor” in Risk Management & Compliance 2010
- Public Private Businesses Inc. Best Practices Award 2010
- Free Software Foundation Award for Social Benefit 2006
Support the City of Los Angeles

Give2LA is the official website for the City of Los Angeles that provides information on volunteer and donation opportunities to support emergency preparedness, response and recovery. Tax deductible contributions for Cash and Corporate in-kind items can be made through one or more of the non-profit organizations listed.

The spirit of philanthropy is an integral part of Los Angeles culture. Give2LA is a great way for individuals, groups and organizations interested in volunteering to help worthy causes and efforts before, during and after an emergency. Please register to receive notifications of future Requests for Volunteers and to apply for requests online.

DONATE

You
You can support our preparedness, response and recovery activities by making a monetary donation or by donating goods and services.
CLICK HERE TO VIEW DONATION OPPORTUNITIES.

Corporations & Organizations
Corporations and Organizations can donate to support the City of Los Angeles, and also receive Situation Awareness Reports.
CLICK HERE TO REGISTER.

VOLUNTEER

You
You can donate your time by becoming a volunteer to aid survivors of disasters or local emergencies.
CLICK HERE TO VIEW REQUEST FOR VOLUNTEERS.

Organizations & Groups
Organizations and Groups can volunteer to support the City of Los Angeles, and also receive Situation Awareness Reports.
CLICK HERE TO REGISTER.
Geographical Information System (GIS)

Maps... and more
Why Map Data?

Much faster to understand
Bring aid to where it's needed most:
Wider Humanitarian Open Source Software Community

Humanitarian Open Source Software Meeting at Linux Australia Conference, January 31, 2013
Research on Sahana

65 papers mentioning Sahana in 2014 so far:

- Sahana Community Resilience Mapping Tool (Eisenman et al).
- Risk reduction Drager and Robertson
- Ontology Liu, Chen and Wang
- SMS Li, Li, Ginjala and Zaman & Reuter et al.
- GIS and logistics systems Horita, Link, Porto de Albuquerque and Hellingrath
- Crowd-sourcing Poblet, García-Cuesta and Casanovas

Twelve books mentioning Sahana:

Decision Aid Models for Disaster Management and Emergencies by Vitoriano, Montero & Da Ruan, 2013
Social Media, Crisis Communication, and Emergency Management: Leveraging Web 2.0 by White (2011)
More Information

- Sahana
- Foundation: http://sahanafoundation.org/
- Demo: http://sahanafoundation.org/products/demo/
- Download: http://sahanafoundation.org/products/eden/
- Tom Worthington: http://tomw.net.au/

This presentation is available at:
http://tomw.net.au/technology/it/sahana_disaster_management/

It is based on the
SahanaCamp IOTX - Overview and History of Sahana