SAHANA Disaster Management System and Tracking Disaster Victims

presented by

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Agenda

• Problems aftermath of a disaster
• Introduction to the Sahana Project
• Technology and features
• Core Modules
• Tracking Victims & SAHANA Victim registries
• Deployments
• Recognition
• Contributing to Sahana
• Conclusion
• Q & A session
Problem: Aftermath of Disasters

- Tracking Missing Persons and Internally Displaced Persons
- Coordinating all aid-groups/organizations and helping them to operate effectively as one
- Managing the multitude of requests from the affected region and matching them effectively to the pledges of assistance
- Tracking the location of all temporary shelters, camps etc
What is SAHANA?

- A Disaster Management System
- A Web based portal
  - with sub-applications ...
  - built to address the common disaster coordination and collaboration problems in disasters
  - between civil society, Gov, private sector, volunteers and the victims themselves
- A system to manage Disaster Aftermath
Technologies and Features in SAHANA

- FOSS/LAMP
- Synchronization
- Web Services
- Messaging
  - SMS, CAP, SMTP
- Localization
- Spatially enabled (GIS)
- PDA/Mobile Accessibility
- LiveCD, LiveUSB

http://www.apng.org
Deployment Scenario
Core Modules

• Organization Registry
  – Coordinating all aid groups and helping them to operate effectively as one
  – Helps maintain data (contact, services, region, etc) of organizations, groups and volunteers working in the disaster
  – “Who is doing what where?! How can we balance the coverage of support to all affected regions”
Organization Registration

Key: *req - Fields tagged with this have to be filled to submit the form successfully

Primary Details

These are the basic details of an organization. Organization name is required, but registration no is optional.

Organization Name: 
Registration Number (if any): 

Organization Type

Please specify the type of your organization. That is whether you are a government organization, multinational NGO, private organization etc.

Government

Organization Sector

Select the services your organization provides, that is what you do as an organization or services your organization can provide in a disaster. e.g. if you offer medical services select it.

- Supplier of Goods
- Communications
- DANA
- EMS
- FS
- Relief
- Rehabilitation
- SAR

Base Location *req

Country:
State:
City:

Contact Information

Please provide contact details that can be used to contact your organization in a disaster.
Missing Person Registry and Disaster Victim Registry

- Helps track and find missing, deceased, injured and displaced people and families
- Be able to record all structured meta data on a victim (pictures and biometric data)
- Indexing and Searching of all data
- “Please, please help me find my missing parents / child / relative”
Shelter Registry

- A System that tracks temporary shelters/camps set up after the disaster with GPS coordinates, contact info, services in the shelter, etc
- Statistics on the distribution of victims in the region
- Google maps, UMN mapserver

“Where are all these temporary shelters and camps and shelters located? how do I contact them?”
CAMPS REGISTRY

SAHANA MAIN

Location Information

Plot the Camp Location OR Enter its GPS coordinates below

Key: *req* - Fields tagged with this have to be filled to submit the form successfully

GIS Map

GPS Coordinates

Northing / Latitude

Easting / Longitude

Next
Request Management System

- System to coordinate and effectively “trade” the requests from the field to donations and pledges of support

- Transparency of donation utilization, tracking fulfilment details.

We need x number of tents not clothes! We have medical supply x, how many do you need and where can we send them
SAHANA
Disaster Management System

REQUEST/AID
MANAGEMENT

Make New Request

New Requester
Create New Requester. A new Person will be added to the Sahana Database.
Only the Full Name is required. But in order to Contact the Requester please add some contact information with this

Full Name

Mobile

Email

Available Card type: National Identity Card
Card Number

Telephone

Address

Next

Existing Requester
If you are a registered requester, Please enter the card number

Requester ID

Next
Other Modules

- Inventory Management System
  - Find Items, List Items, reorder level
  - Reports-expired items, destroyed items
- Child Protection System
- Volunteer Management
- Data Synchronizing
- Housing Registry
Significance of Tracking Victims

- Request aid management drastically depends on the people information
  - Donors can provide necessary items.
  - Requests duplication can be eliminated
- Increase the efficiency of Volunteers
  - Proper Volunteer allocation
  - Accelerate the relief process
- Whole disaster management process is based on accurate/available people information
Victim Tracking Methods

• Categorizing into various groups by age and victimized status

• Different Victim groups
  – Internally Displaced People
    • Children
    • Adults
  – Missing People
  – Found People
  – Injured/Deceased People
Victim Tracking Methods...

• Depending on the Victim group/s information to be captured varies
  - Capturing health, educational and behavioral information is vital with regard to children.
  - For adults that may be unnecessary
• For internally displaced people capturing major requirements like food, water, cloth can be captured.
• For missing/found people tracking information on water, food, cloth,..etc is not needed
Victim sub grouping

• Group categorization
  - such as families, tourists, passengers, pedestrians etc…
  - Common information for all the individuals of a group may be captured with the use of one wizard.
  - Assist agencies to identify their target set of victims.
  - Individual information should be recorded under each group and this should be done one by one.
  - Reduce the data capturing time
Groupwise Data to Capture

- Group Type—family, tourist, company, other
- Head of Group
- No of Members in group
- Status of Members
- Displaced Location
- Current Location
- Check list—water, food, cloth.....etc
Individual Data to capture

• Basic Details- **name**, age, dob, marital status, religion, race
• Identity- idcard number, passport, driving licence
• picture
• displaced/current location
• fingerprint
• physical details-eye color, skin color, etc...
Missing/Found Person Data

- Idcard, passport, driving licence, name, age
- Contact information - telno, address, etc...
- Capture Reporters Details
  - if two members of a family are looking for the head of the family, the data maybe used even to connect those two family members with each other.
- Photograph can be used to display in public places
Children Data

• Due to the age factor separate set of information should be captured
  - Personal Details
  - Educational details
  - Behavioural details
  - Health details
  - Emotional details
  - Relation details
SAHANA Disaster Victim Registry

• The Sahana Disaster Victim Registry is a central online repository where information on all the internally displaced disaster victims can be stored.

• Adding a new victim group, searching a new victim group, editing and deleting victim group.

• Adding a new victim, searching, editing and deleting victims.

• Generating reports such as drill down by group, drill down by shelter, drill down by incident etc...
24th APAN meeting

http://www.apng.org

Add New Group/Add New Individual

Add New Group

Add New Individual

Add Group Major Details Form

- Select the group type
- Group Head Information
- No of Members
- Status of Members

Add Group Location Details Form

- Displaced Location
- Current Location
- GIS Location

Item Checklist Form

- Item Checklist
- Group description

Add individual Major Details Form

- Select Group Type and Head

Add individual Location Details Form

- Displaced Location
- Current Location
- GIS Location

Add Physical Details Form

- Upload Finger Print
- Physical Details
- Other Details
The SAHANA Disaster Victim Registry is a central online repository where information on all the disaster victims can be stored. Information like name, age, contact number, id card number, religion, race, displaced location, current location and other physical details are captured. Also victims picture and finger print details can be uploaded to the system depending on the legal aspects of the deployment. Also the groupwise information is captured. This module can be used by any NGO/organization prior or after to a disaster.

**Features Include:**
- Capture Information on Disaster Victim groups (Toursists, Passengers, Families, etc.)
- Capture Information on each disaster victim
- Picture upload and finger print upload facility
- Searching for different groups and individuals
- Modify Information on groups and individuals
- Various Reporting functionalities

**Latest updates on Reported Victims**

- Dineth Zoysa
- Suraj
- Premadasa
- John
SAHANA Missing Person Registry

• The Missing Person Registry is an online bulletin board of both missing and found people.

• The relief coordinating body operating the Sahana MPR may define the status of victims

• Add Missing Person, Search Missing Person, Edit person, Delete person

• Reports
  - List All Missing people
  - List All Found people
The Missing person registry is an online bulletin board of missing and found people. It not only captures information about the people missing and found, but the information of the person seeking them is also captured, which increases to the chances of people finding each other. For example if two members of a family unit is looking for the head of the family, we can use this data at least to connect those two family members. Features include:

- Meta data around the individual such identity numbers, visual appearance, last seen location, status, etc.
- Sounds-like name search (using metafore and soundex algorithms)
- Uploading of a persons picture
- Grouping by family unit or other groups types

Latest updates on Found People

Suri
Assign to more incidents

Dinesh Zovse
Assign to more incidents

Latest updates on Missing People

John
Assign to more incidents

Premadeva
Assign to more incidents
SAHANA Children Registry

• Children Registry is the central repository to manage children

• Major functions
  – Abilities to track, edit and modify child personal details, health details, education details, behavioral
  – Details of the relations of that child in separate forms
  – Generate reports based on the selected criteria.

• Data can be exported into word, excel, pdf... format
Deployments

- New York City USA-2007
  - SAHANA is included in the New York City's disaster management plan.
  - Shelteree tracking system, staff registration system, site system, Staff activation, notification and deployment system was successfully deployed
  - 3000000 victim, 17000 Staff, 500 concurrent users
  - 4 Linux Clusters
Deployments......

- **Terre des Hommes - Sri Lanka 2006** - Deployed with new Child Protection Module
- The customized version of SAHANA was deployed to capture information on children related to their education, behaviour and health.
- The system was fully deployed on a **windows** environment and a user familiarization session was conducted to ease the usage.
Deployements Contd....

• Pre-deployment in Sarvodaya, **Sri Lanka**
  – Customization for Sahana requirements

• Pre-deployed independently in **Australia**

• Yogjakarta Earthquake, **Indonesia** – 2006
  – Deployed by ACS, Indonesian Reliefsource

• Pre-deployment for Red Cross, **Sri Lanka**
Recognition

- 2006 FSF award for Social benefit
- User award from RedHat Summit
- ICTA award for contributors
- Software 2006 CA USA, Good Samantarian award
- Free Software Foundation (FSF) award for Social benefit inspired by SAHANA
- Source forge Project of the month June 2006
How to contribute?

• Development
  – sahana-maindev@sourceforge.net

• Domain Expertise
  – humanitarian-ict@yahoogroups.com

• Quality Assurance
  – http://sourceforge.net/projects/sahana

• Deployments

• Funding
Conclusion

• The Sahana victim registries namely the Disaster Victim Registry, the Missing Person Registry and the Children Registry are very well suited and have been successfully deployed for large scale disasters.

• All three modules can be deployed independently or together depending on the need of the targeted disaster scenario and are designed to have a tight integration when deployed simultaneously.
Conclusion contd...

- ICT can bring significant efficiencies to the coordination/collaboration effort in a large disaster.
- Sahana is a success example of the application of FOSS to build public ICT good in the humanitarian domain.
- An example of a successful global partnership of practitioners and volunteers working together to provide a solution for the common good.
Q&A

http://sahana.lk/
http://sourceforge.net/projects/sahana/