SAHANA Disaster Management System and Tracking Disaster Victims

presented by

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Core Team: Sahana Project,
Lanka Software Foundation

http://www.apan.org

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
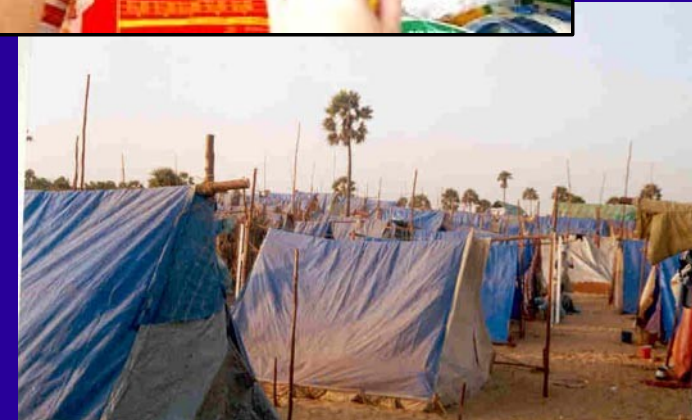
What is SAHANA?

- 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
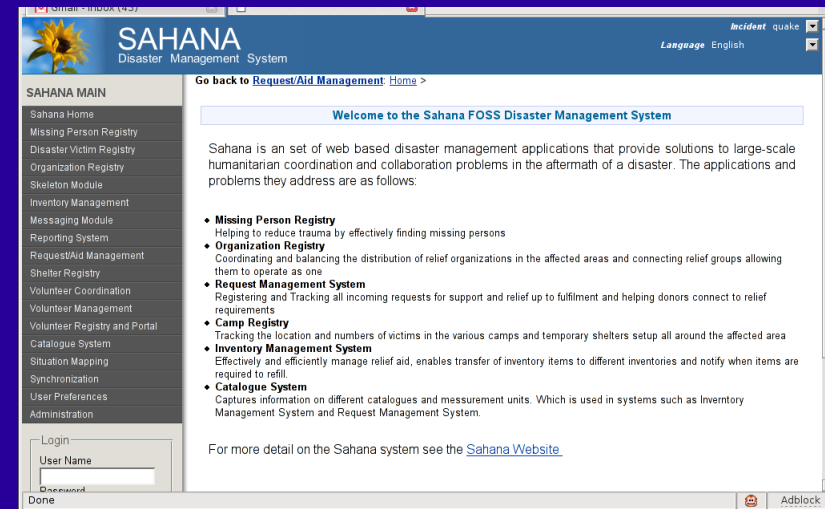
Technologies and Features in SAHANA

- FOSS/LAMP

- Synchronization

- Web Services

- Messaging

  - SMS, CAP,SMTP

- Localization

- Spatially enabled (GIS)

- PDA/Mobile Accessibility

- LiveCD, LiveUSB
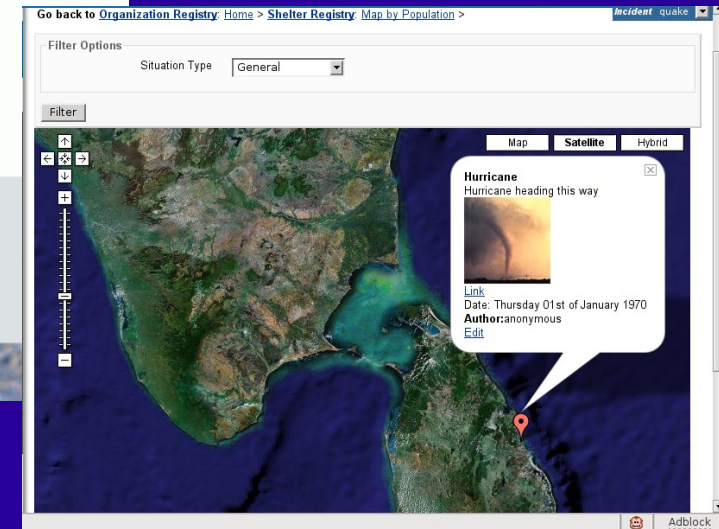
Deployment Scenario
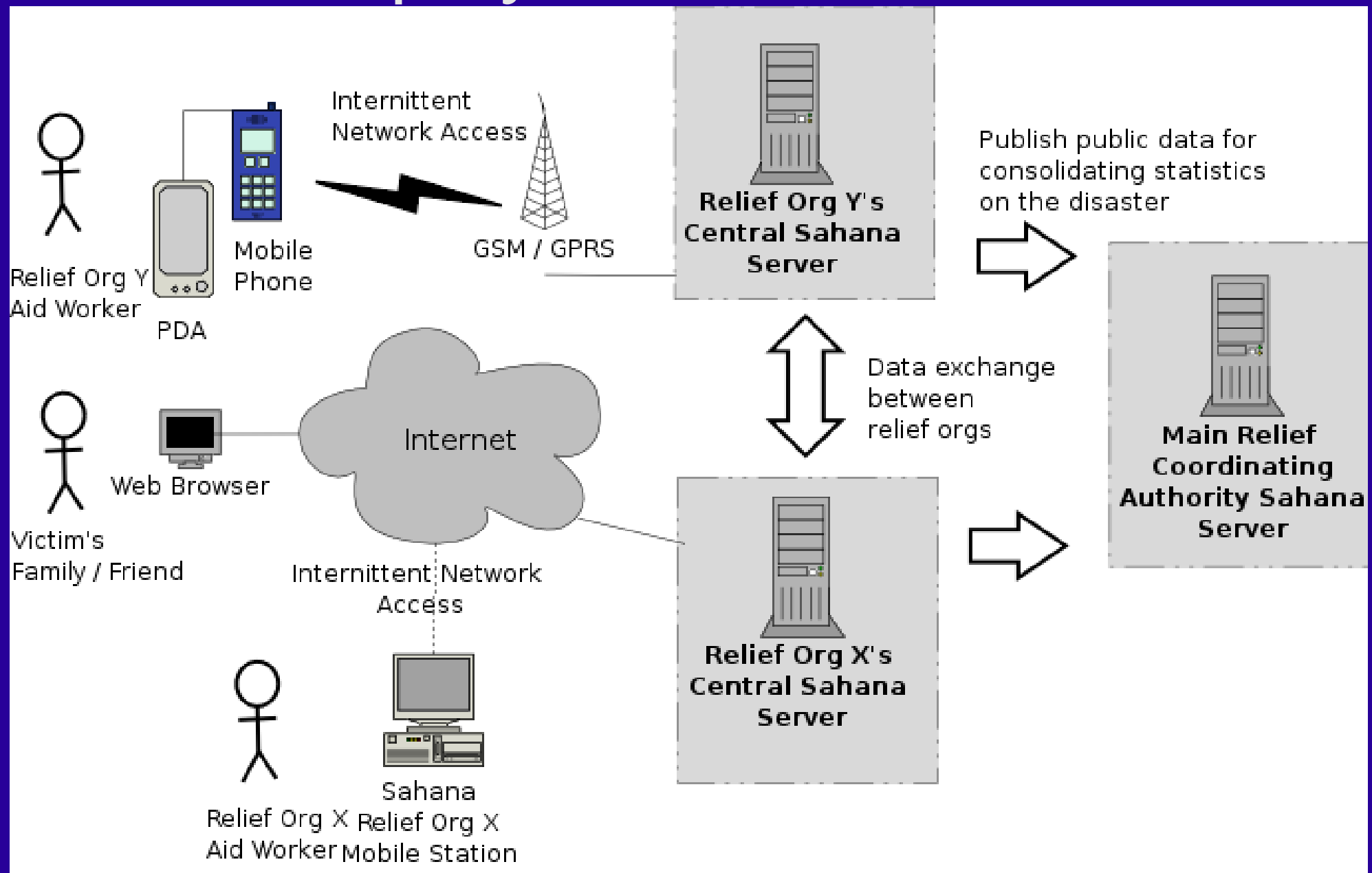
Core Modules

- 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 "

http://localhost/~isuru/sahana-cvs-latest-2007-08/www/index.php?mod=or&act=reg_org

Getting Started   Latest BBC Headlines

SAHANA
Disaster Management System

Incident flood

ORGANIZATION REGISTRY

Home
Search
Register ▲
   Register an Organization
   Register a Department/Branch
View and Edit
Reports ▲
   Drill down Location Coverage
   Drill down Organization Coverage
   Organizations by Sector

SAHANA MAIN

Sahana Home
Situation Mapping
Missing Person Registry
Disaster Victim Registry
Organization Registry
Request/Aid Management
Shelter Registry
Inventory Management
Housing Registry
Messaging Module
Volunteer Coordination
Volunteer Management
Catalogue System
Reporting System
Synchronization
User Preferences
Administration
Skeleton Module

Login
User Name

Go back to Missing Person Registry: Home > Disaster Victim Registry: Home >

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 : [   ] *req

Registration Number(if any) : [   ] ? HELP

Organization Type

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

[Government ▼] *req

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
```
*req

Base Location *req

Country: [▼] ? HELP

State: [▼]

City: [▼]

Contact Information

Please provide contact details that can be used to contact your organization in a disaster

Done

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?"

File   Edit   View   History   Bookmarks   Tools   Help

http://demo.sahana.lk/index.php?mod=cr&act=acmp#   Google

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Sahana FOSS Disaster M...   Mailing list archives: July 2006

SAHANA DEMO
Disaster Management System

Incident Tsunami

CAMPS REGISTRY

Home

Search

Add Camp

Edit Camp

Reports

   View All Camps

   View By Location

   View Admin Details

   Location Map

SAHANA MAIN

Sahana Home

Missing Person Registry

Organization Registry

Camps Registry

Inventory Management

Request/Aid Management

Volunteer Coordination

Catalogue System

Situation Mapping

User Preferences

Administration

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

Location Information

Plot the Camp Location OR Enter its GPS coordinates below

GIS Map

GPS Coordinates

Northing / Latitude

Easting / Longitude

Next

Login

User Name

admin

Password

****

Login

http://demo.sahana.lk/index.php?mod=cr&act=acmp#

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 FOSS Disaster Management System - Firefox

File   Edit   View   History   Bookmarks   Tools   Help

http://localhost/~isuru/sahana-cvs-latest-2007-08/www/index.php?mod=rms&act=req_new#

Google

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Sahana FOSS Disaster M...   SourceForge.net: NYC-CSP

SAHANA
Disaster Management System

Incident flood

Go back to **Missing Person Registry**: Home >

Make New Request

REQUEST/AID MANAGEMENT

Home
Requests
  Make Request
  List Requests
  Search Requests
Pledges
  New Pledge
  List Pledges
  Search Pledges
Manage
  Fulfill Request

SAHANA MAIN

sadsad sadsd
Situation Mapping
Missing Person Registry
Disaster Victim Registry
Organization Registry
Request/Aid Management
Shelter Registry
Inventory Management
Housing Registry
Messaging Module
Volunteer Coordination
Volunteer Management
Catalogue System
Reporting System
Synchronization
User Preferences
Administration
Skeleton Module

Login

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		***req**
Mobile		
Email		
Available Card type	National Identity Card	
Card Number		***req**
Telephone		
Address		

Next

Existing Requester

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

Requester ID		***req**

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...

```
                    ╱─────────────────────────────────╲
                   ╱   Add New Group/Add New Individual  ╲
                    ╲─────────────────────────────────╱

   Add New Group                          Add New Individual

┌─────────────────────────────┐   ┌─────────────────────────────────┐
│ Add Group Major Details Form │   │ Add Individual Major Details form │
│                              │   │                                 │
│  ┌────────────────────────┐  │   │  ┌───────────────────────────┐  │
│  │  Select the group type │  │   │  │ Select Group Type and Head│  │
│  └────────────────────────┘  │   │  └───────────────────────────┘  │
│                              │   │                                 │
│  ┌────────────────────────┐  │   │  ┌───────────────────────────┐  │
│  │  Group Head Information│  │   │  │      Basic Details        │  │
│  └────────────────────────┘  │   │  └───────────────────────────┘  │
│                              │   │                                 │
│  ┌────────────────────────┐  │   │  ┌───────────────────────────┐  │
│  │     No of Members      │  │   │  │        Identity           │  │
│  └────────────────────────┘  │   │  └───────────────────────────┘  │
│                              │   │                                 │
│  ┌────────────────────────┐  │   │  ┌───────────────────────────┐  │
│  │   Status of Members    │  │   │  │      Upload Picture       │  │
│  └────────────────────────┘  │   │  └───────────────────────────┘  │
└─────────────┬───────────────┘   │                                 │
              │                    │  ┌───────────────────────────┐  │
              ▼                    │  │    Contact Information     │  │
┌─────────────────────────────┐   │  └───────────────────────────┘  │
│ Add Group Location Details Form│  └────────────────┬────────────────┘
│                              │                    ▼
│  ┌────────────────────────┐  │   ┌─────────────────────────────────┐
│  │   Displaced Location   │  │   │ Add Individual Location Details Form│
│  └────────────────────────┘  │   │                                 │
│                              │   │  ┌───────────────────────────┐  │
│  ┌────────────────────────┐  │   │  │    Displaced Location     │  │
│  │    Current Location    │  │   │  └───────────────────────────┘  │
│  └────────────────────────┘  │   │                                 │
│                              │   │  ┌───────────────────────────┐  │
│  ┌────────────────────────┐  │   │  │     Current Location      │  │
│  │      GIS Location      │  │   │  └───────────────────────────┘  │
│  └────────────────────────┘  │   │                                 │
└─────────────┬───────────────┘   │  ┌───────────────────────────┐  │
              │                    │  │       GIS Location        │  │
              ▼                    │  └───────────────────────────┘  │
┌─────────────────────────────┐   └────────────────┬────────────────┘
│ Item Checklist Form          │                    ▼
│                              │   ┌─────────────────────────────────┐
│  ┌────────────────────────┐  │   │ Add Physical Details Form        │
│  │     Item Checklist     │  │   │  ┌───────────────────────────┐  │
│  └────────────────────────┘  │   │  │    Upload Finger Print    │  │
│                              │   │  └───────────────────────────┘  │
│  ┌────────────────────────┐  │   │                                 │
│  │   Group description    │  │   │  ┌───────────────────────────┐  │
│  └────────────────────────┘  │   │  │      Physical Details     │  │
└─────────────┬───────────────┘   │  └───────────────────────────┘  │
              │                    │                                 │
              ▼                    │  ┌───────────────────────────┐  │
                                   │  │       Other Details       │  │
                                   │  └───────────────────────────┘  │
                                   └────────────────┬────────────────┘
                                                    ▼
```

http://localhost/~isuru/sahana-cvs-latest-2007-08/www/index.php?mod=dvr&act=default#

Google

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SAHANA
Disaster Management System

Incident flood
Language English

Go back to Missing Person Registry: Home >

DISASTER VICTIM REGISTRY

Home

Add Disaster Victim(s)

  Add New Group

  Add New Individual

Edit Disaster Victim(s)

  Search and Edit Group

  Search and Edit Individual

List groups

  List groups/View members

Reports

  Drill Down By Group

  Drill Down By Shelter

  Drill Down By Incident

SAHANA MAIN

Sahana Home

Situation Mapping

Missing Person Registry

Disaster Victim Registry

Organization Registry

Request/Aid Management

Shelter Registry

Inventory Management

Housing Registry

Messaging Module

Volunteer Coordination

Volunteer Management

Catalogue System

Reporting System

Synchronization

User Preferences

Administration

Skeleton Module

Disaster Victim Registry

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 dependending on the legal aspects of the deployement. Also the groupwise information is captured. This module can be used by any NGO/organization prior or after to a disaster.
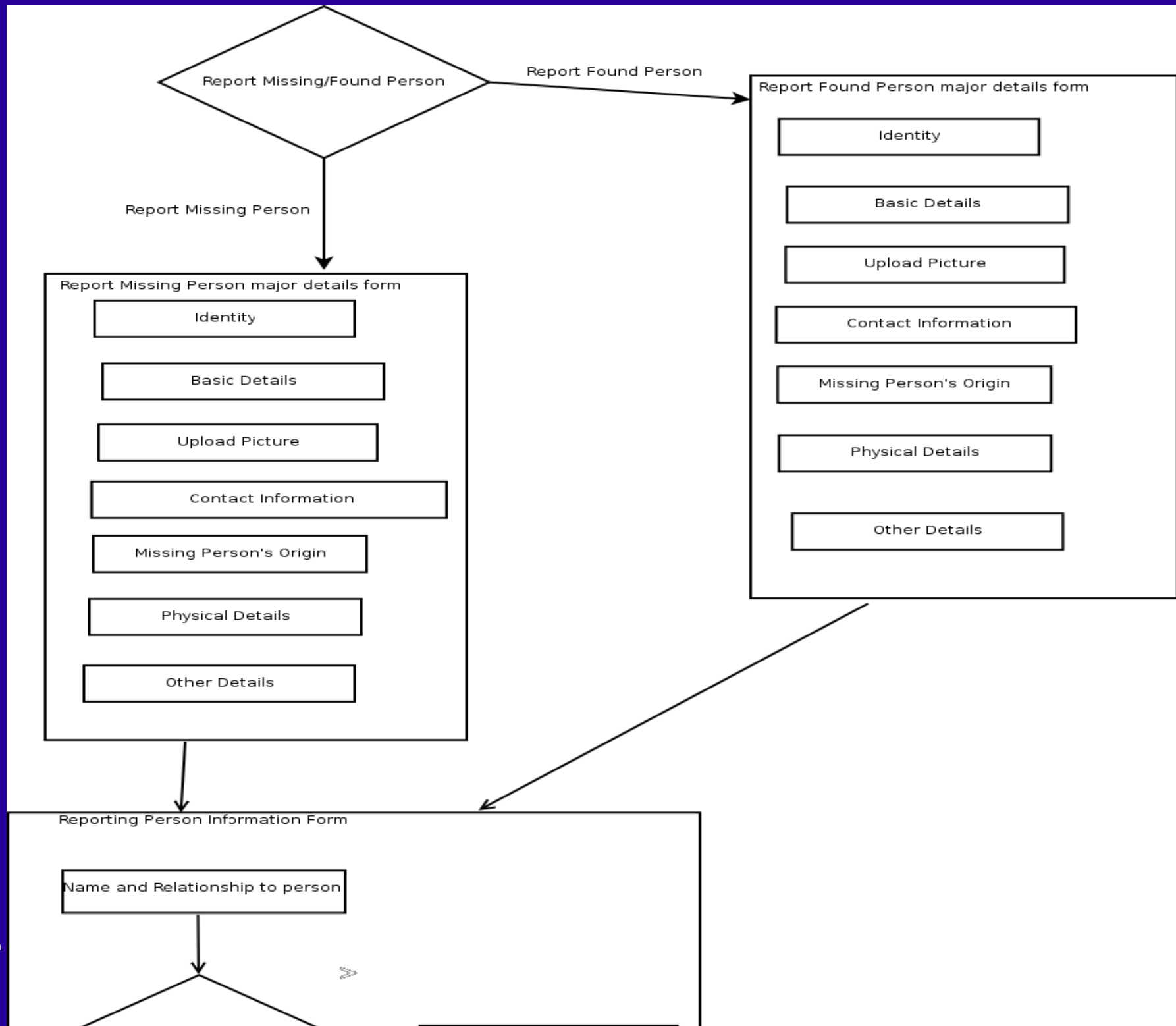
Features Include:

- 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

Dinesh Zoysa

Suraj

Premadasa

John

http://localhost/~isuru/sahana-cvs-latest-2007-08/www/index.php?mod=dvr&act=default#

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

Report Missing/Found Person

Report Found Person

Report Found Person major details form

- Identity
- Basic Details
- Upload Picture
- Contact Information
- Missing Person's Origin
- Physical Details
- Other Details

Report Missing Person

Report Missing Person major details form

- Identity
- Basic Details
- Upload Picture
- Contact Information
- Missing Person's Origin
- Physical Details
- Other Details

Reporting Person Information Form

- Name and Relationship to person

File   Edit   History   Bookmarks   Tools   Help

http://localhost/~isuru/sahana-cvs-latest-2007-08/www/index.php?mod=mpr&act=default

Getting Started   Latest BBC Headlines   .   .   .   .

SAHANA
Disaster Management System

Incident flood
Language English

Go back to

Missing Person Registry

MISSING PERSON REGISTRY

- Home
- Search for a Person
- Report a Missing Person
- Edit a Missing Person
- Report a Found Person
- Reports

SAHANA MAIN

- Sahana Home
- Situation Mapping
- Missing Person Registry
- Disaster Victim Registry
- Organization Registry
- Request/Aid Management
- Shelter Registry
- Inventory Management
- Housing Registry
- Messaging Module
- Volunteer Coordination
- Volunteer Management
- Catalogue System
- Reporting System
- Synchronization
- User Preferences
- Administration
- Skeleton Module

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 the 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

Suraj

Assign to more incidents

Dinesh Zoysa

Assign to more incidents

### Latest updates on Missing People

John

Assign to more incidents

Premadasa

Assign to more incidents

Login

User Name

Password

Login

Done

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
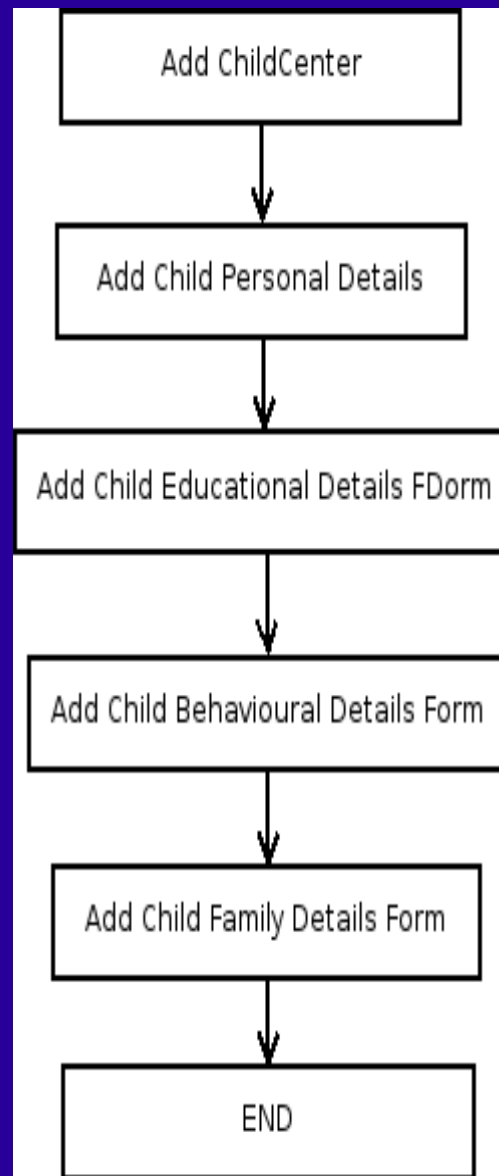
Deployments

- NewYork city USA-2007

  - SAHANA is included in the NewYork 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 they 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/