Sahana CAP Implementation in Asia

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Presentation Outline

- Sahana Overview
- SAMBRO Scope
- Risk Mapping & Predefined Alert Areas
- Multi-language Multi-sequence Alerting
- Delivery through multiple technology modes
- Implementation challenges
- Way forward, scaling into rest of Asia and the Pacific
SAHANA OVERVIEW
How does Sahana help

- **Directory** of organizations, offices and people to support communication and coordination
- **Incident management** sharing real-time information
- **Who’s Doing What Where (3W)** information to identify where there are gaps and overlaps
- Records what **resources** are available and where to support disaster
- Brings all information together in a single platform to provide situational awareness.
Technology

Host locally in the command center on a Laptop

Synchronize these 2 together...

Host in the Cloud

MIT Open Source License
Sahana Response to the European Refugee Crisis

Volunteers contributing to an effective response

Refugee Coordination Croatia

Latest Information

- News | Spendenstop Kinderkleidung | Hamburg Städte
- Hamburg | Hamburg | Hamburg

Spendenstop Kinderkleidung

SPENDENSTOP BIS AUF WEITERES: Kinderkleidung

Wir haben wirklich sehr viel bekommen und sind sehr gut ausgestattet!

Dominic König - Kleiderkammer Messelhafen

Refugee
Coordination
Croatia
Active Deployments

Red Cross (IFRC)
UN World Food Programme
Asia Disaster Preparedness Center
Philippines Government: DSWD
Nepal Government: DHM
Timor-Leste Government: NDMD
City of Los Angeles
India, Japan, Taiwan, Portugal
Sahana Center of Excellence at AIT

- Sahana COE @ AIT is a program being developed with the Geoinformatics Center (GIC) of AIT

- Building a **program and services to sustain** SAHANA deployments. Starting with Maldives, Myanmar, and Philippines
  - Regional capacity building in preparedness and response
  - Technology Research and Development
  - Rapid Response with Situational-Information and on the ground support

- Continue offering, primarily, Asia and the Pacific (but not limited to) with preparedness and response solutions/services for building resilient communities
SAHANA ALERTING AND MESSAGING BROKER SCOPE
Scope of SAMBRO

functions

Mitigation → Risk Reduction
Recovery → Prevention
Response → Preparedness
Hazardous event → Warning

Scope

SAMBRO architecture

Keep it Simple

GIS

RESOURCE MESSAGING (EDXL-RM)

INCIDENT REPORTING (EDXL-SITREP)

ALERTING / WARNING (EDXL-CAP)
Cultivating Alerting Cliques through a CAP Stewardship and a Community of Practice

- CAP on a Map aims to build systems and capacity to cover the Asia Pacific with alerting zones
  - Start with Maldives, Myanmar, and the Philippines
  - Scale in to Bangladesh, Cambodia, Indonesia, Laos, Sri Lanka, Timor-Leste …
- Identify cross-boarder alerting cliques and foster cooperation
- Encourage a South-South CAP Stewarding Community of Practice
- Continue until the Asian and the Pacific is completely “covered”
RISK MAPPING FOR DEVELOPING PREDEFINED AREAS
Spatial Representation of Risk

Risk = Hazard \times Physical Vulnerability \times Cost/Quantity

(Probability of occurrence) (Degree of losses to elements at risk) (Quantification of exposed elements)

**Hazard**
- Type of hazard
- Intensity
- Duration
- Spatial Extent

**Vulnerability**

**Elements-at-risk**
- Type of elements at risk
- Numbers
- Economic value
- Location

**Exposure**
- Overlay of hazard & element at risk

**Modeling + GIS**

**Field Data**

**Overlay of hazard & element at risk**

**RS + GIS**
Risk Mapping for Impact-based Alerting

- Develop predefined alert areas
- Overlay telecom infrastructure maps to determine reliability
- Identify communities that require special attention
- Risk specific targeted alerting
MULTI-LANGUAGE MULTIPLE-SEQUENCE ALERTING / WARNING
All governments have various public alerting systems:

- **Earthquakes/tsunami** by e-mail, news wire, Web sites, pagers, telephone calls ...

- **Weather** by news wire, fax, radio, television, e-mail, SMS text on cell phones ...

- **Fire, Security, Transportation** by television, radio, sirens, police with bullhorns...
UX improves multi-language and multi-sequence

Cyclone NILAM-12
2012 October 31

NILAM-12
LK Met Dept
02:00 UTC
Update

INFO>
02:00 UTC

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North
Northeast
CAP on a Map: keeping it simple

Sahana Alerting and Messaging Broker (SAMBRO)

improving Multi-Agency Situational-Awareness
IMPLEMENTATION CHALLENGES
A few challenges with the implementations in Maldives, Myanmar, and Philippines

- Different warning priorities for different event types
- Variations in content and processes at various stages of a message status; e.g. <description> changes during Flood rise, to saturate, to fall.
- Alerting small boats distant from mobile coverage; last-mile still not covered in many areas for receiving near-real-time hazard information
- Multiple language issues with some non-Latin scripting characters don't display
- Need both a subscription (recipient controlled) and a group push (publisher controlled) approach for message distribution, looking into EDXL-DE
- Getting countries to adopt all-hazards approach but it is a start on the long path with mindset still hung up on large scale events only
- Multiple steps of messaging authorization and re-authoring
We are exploring best-practices

• What are the User Interfaces and User Experiences for efficiently authoring messages for multiple languages, multiple sequences, ...?

• What are the methods and practices for advocating cross-boarder cooperation and exchange of alerts?
Thailand - 2016 CAP Implementation Workshop

Asian Institute of Technology and the Sahana Software Foundation propose to host the next workshop in Thailand