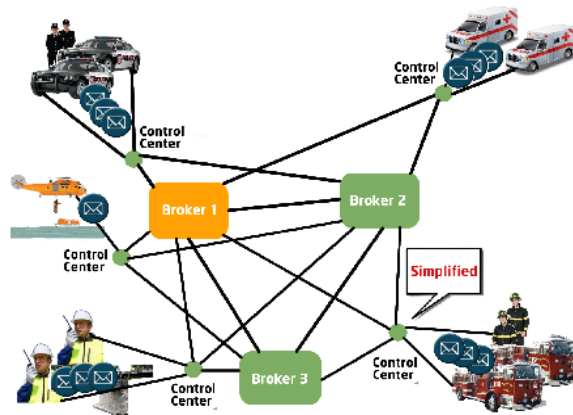


# Indian Ocean Tsunami X<sup>th</sup> Anniversary

## SPONSORSHIP OPPORTUNITY



**IOTX LANKA**

16 – 22 June 2014

NEGOMBO & COLOMBO



# IOTX LANKA: retrospective and prospective accounts of regional readiness to manage crises

2014 commemorates the 10<sup>th</sup> year anniversary of the “2004 Indian Ocean Megathrust Tsunami” (abbreviated as “IOT”). The IOT affected 13 countries, killed 226,000 people, injured 500,000 people, and affected 5 million people of which 1.5 million were children, leaving them homeless and loss of loved ones<sup>1</sup>. The total damage was estimated at US\$ 7.5 billion. Since then (excluding the IOT) the EMDAT<sup>2</sup> has recorded 2,224 natural disasters to-date for the Asia Pacific Region. They have killed 434,620 people, affected 1.25 billion people, and caused a total economic loss of over US\$ 568 billion.

“A decade of billions of dollars of economic setbacks with many millions of people dead and another billions of people affected!”

LIRNEasia is in the business of improving the lives of the people of the emerging Asia-Pacific by facilitating their use of ICTs and related infrastructures, catalyzing the reform of laws, policies and regulations to enable those uses through the conduct of policy-relevant research, training and advocacy with emphasis on building in-situ expertise. LIRNEasia endeavors using the IOT 10<sup>th</sup> anniversary milestone (IOTX) to bring about opportunities for relevant disaster management stakeholders, of all vested interests, in realizing the current strengths and weaknesses; then be exposed to innovations with potential to improve regional cohesiveness and responsiveness.

“The events, for the experts and the public, will bring about opportunities for regional stakeholders to share knowledge in mitigating the impact of disasters using ICTs.”

LIRNEasia is taking the lead in joining hands: *Stockholm Environment Agency, Tsinghua University, Organization for the Advancement of Structured Information Standards, Tilburg University, Sahana Software Foundation, International Telecommunications Union, World Meteorological Organization, Information Systems for Crisis Response And Management* in organizing a series of events. The aim is to use the IOT as a catalyst in determine our regional capacity and capability.

## IOTX TO SERVE THE REGION

**Engaging multiple disaster stakeholder:** International Organizations, Regional Academics, Researchers, Vendors, Service Providers, Non Governmental Organizations, Civil Society, Media, and the Public. The various events will bring together the right mix of participants for stimulated discussions and hands-on experiences of bounded topical interest.

**Strategic location:** Sri Lanka is a [foreigner friendly tourist destination](#)<sup>3</sup> with visa on arrival for most passport holders. Alternative is a simple process to apply on-line and receive an email confirmation for visa on arrival. The venues are located in the capitol Colombo and the nearby fishing town of Negombo (neighboring the airport approximately 30km from Colombo).

**Agenda tailored to regional needs:** The event range from expert workshops to engaging in hands-on ICT workshops to an academic conference around emergency communications. The event sequence, with synergies that cut across all events, are scheduled such that the participants can arrive ahead or follow-on to benefit from the preceding or subsequent programs.

1 Source of the Indian Ocean Tsunami facts taken from the NewScientist, the facts are available on the web: <http://www.newscientist.com/article/dn9931-facts-and-figures-asian-tsunami-disaster.html#.Uceuy9eEU8g>

2 The International Disaster Database website: <http://www.emdat.be/>

3 Best in Travel, 2012, Lonely Planet, the article on the web: <http://www.lonelyplanet.com/themes/best-in-travel-2013/top-10-countries/>

# IOTX LANKA: ICT Innovations for Strengthening Disaster Readiness and Response

The event draws attention to building capacity in the Asia Pacific Region through a sharing of knowledge and hands-on practical workshop experiences. The Media and Public will be invited to selected events to correspond with the experts as well as observe what new technology has to offer. Other events are for experts to debate the technical and policy intricacies of strengthening the ICT-enabled regional disaster management and emergency communication competencies.

## **The IOTX Lanka comprise four key events:**

- 1) Common Alerting Protocol (CAP) Implementation workshop for experts
- 2) Sahana Camp and Barcamp, a hands-on experience for technology developers
- 3) IOTX Disaster Risk Reduction (DRR) public lecture
- 4) ISCRAM-Asia regional conference for researchers and practitioners

## **CAP Implementation Workshops**

The CAP interoperable content standard was designed for interchanging critical life saving information between disparate systems and multiple emergency management agencies. CAP is much more than simply a content standard. It offers a framework for institutionalizing proper policies and procedures towards developing a comprehensive [functional early warning system](#)<sup>4</sup> and an ecology that improves National and cross-border alerting and situational-awareness to better serve populations at risk.

[Previous CAP Implementation Workshops](#)<sup>5</sup> addressed various aspects of CAP including: experience gained in implementing CAP by various countries; the tools for dissemination by major aggregators of alerts and warnings, as well as their needs for improved application of CAP; the efforts that CAP sponsoring organizations are taking to advance the CAP standard and its uptake as a standard of communicating all alerts through all media.

A **CAP Jump-Start workshop** will precede the CAP expert technical workshop to offer novices an introductory course on CAP as well as an opportunity become familiar with CAP through hands-on exercises.

A **CAP Code-fest**, to follow the main CAP Implementation Workshop would combine representatives of Alerting-Authorities (Government and Non-governmental), CAP experts, other Disaster Practitioners and Researchers along with technically competent academics and students. The objective of this hand-on exercise is to get the participants to experiment specific alerting work flows. They will have the choice of using one of many CAP software tools. They then assess them and make improvements and with the CAP Broker for interchanging warnings with national, regional, and international agencies. It is designed to stimulate a challenge between participant groups in accomplishing a software engineering challenge.

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4 Systems definition of an early warning system, found in the wikipedia: [http://en.wikipedia.org/wiki/Early\\_warning\\_system](http://en.wikipedia.org/wiki/Early_warning_system)

5 Access to all previously hosted CAP Implementation Workshops can be reached through the web: [http://www.wmo.int/pages/prog/amp/pwsp/CAP\\_2013\\_en.htm](http://www.wmo.int/pages/prog/amp/pwsp/CAP_2013_en.htm) include

IOTX will invite personnel from alerting agencies responsible for coordinating National and Regional warnings. Some would have implemented CAP, some with exposure to CAP, and others may be new to CAP. The workshop would be an opportunity for the novices and the experts to share the experiences and technicalities towards improving the warning standard for National and Regional interoperability.

## **Sahana Open Source Software Activities**

Sahana website:

[eden.sahanafoundation.org/wiki/Event/2014/IOTX](http://eden.sahanafoundation.org/wiki/Event/2014/IOTX)

The Sahana open source community has extensive experience with leveraging hackerthons, sahanacamps, and other FOSS community driven activities such as the Google Summer of Code and Google Code In, for building the Sahana Humanitarian Free and Open Source Software (HFOSS) modules. Academia from various parts of the world, with disaster management focus, are fond of using such events. The outcomes result in offering humanitarian practitioners and researchers a gamut of software solutions to run their disaster operations.

The IOTX proposed Sahana Camp and Barcamp would involve students, academics, researchers and practitioners in experimenting new and innovative ideas with the Sahana software framework for building emergency information exchange solutions.

The **Sahana Camp** would invite a mix of regional disaster management, research, academic, and student participants. They will get to experience the technology typically used by the International Federation of Red Cross and Red Crescent Societies, Philippines Disaster Management, City of Los Angeles Community Resilience Mapping Tool, so on and so forth. The participants will work through a series of hands-on exercises, using the Sahana tools, and also experience developing a brand new module using the Sahana software framework. The objective is to provide opportunities for disaster managers, researchers, academics, and students to realize the strengths, weaknesses, opportunities, and threats of integrating free and open source Sahana tools into their business activities. Sahana Software Foundation is keen in recruiting students in the HFOSS developments and engage them with the open source community to engineer new components and integrate new ideas.

The **Sahana Barcamp** is for the Sahana community to come together in attempts to discuss future goals and objectives. A barcamp typically is an informal gathering with no specific agenda but facilitates the community to self organize and execute actions specific to the Sahana software.

## **DRR Public Lecture**

The DRR event will be the 5<sup>th</sup> concurrent public lecture of its kind. LIRNEasia has been organizing these events to create an annual forum for stakeholders of all nature: public, media, government, and private sector to debate Regional current affairs.

For instance, the [3rd DRR Public Lecture](#)<sup>6</sup> (2012) shared concepts on extending National warnings beyond tsunamis addressing an all-hazard all-media approach. The lecture proposed CAP-enabled procedures for empowering various regional and local alerting agencies with their own jurisdictional warnings but interconnecting them at a Regional and National level.

The 2014 DRR would invite a regional expert to deliver the public lecture. Another set panelist, also from the region, will combine with the main speaker to share knowledge with the audience. The selected experts (panelists and speaker) would be regional and international experts and authorities working closely with tsunami warning institutions. They, along with the public audience, will debate the reliability and effectiveness of the functional Indian Ocean Tsunami Warning and Coordination System. "If you can do it for tsunamis, you can do it for other disasters!". Hence, use the tsunami themed public lecture to offer the public a chance to challenge the experts.

### ***ISCRAM-Asia Conference***

Conference website:  
[www.iscramasia2014.org](http://www.iscramasia2014.org)

Outside of the main annual ISCRAM International conference, the ISCRAM community has a mandate to foster continental and country context ISCRAM events. ISCRAM conference in Asia, which started in 2006, has its roots from the University of Harbin, China. In 2012 the first ISCRAM-Asia conference was hosted in Beijing. Now, the IOTX Convention, will bring it further south, inviting everyone in the Asia Pacific Region but not limited to, to join us in Sri Lanka.

ISCRAM-Asia 2014 will merge with the aforementioned events as a tail-end event. This will be the pure academic portion of the ITOX event. Although categorized as an academic conference, we are outright encouraging practitioners to contribute their knowledge through insightful papers and poster presentations.

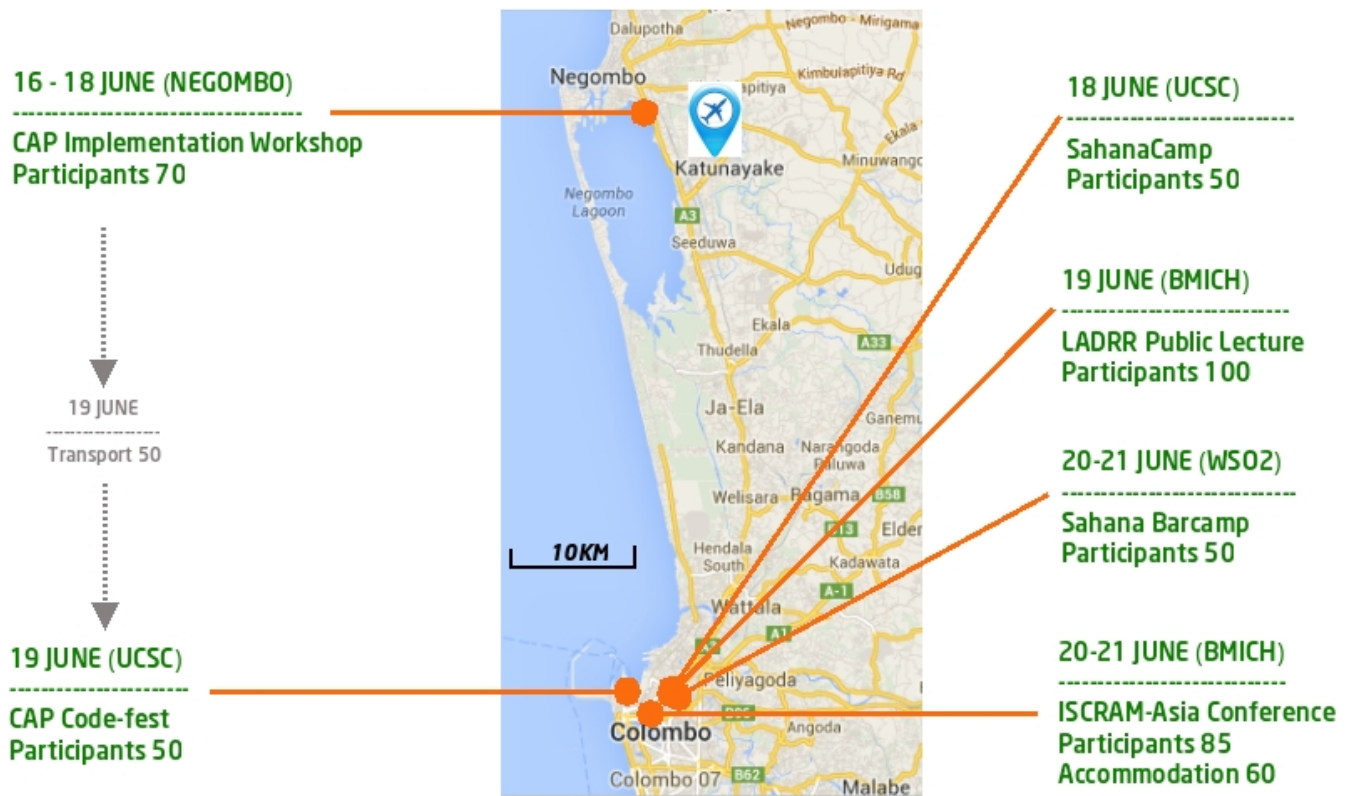
The conference would comprise multiple tracks to accommodate a diverse range of full paper (academic research and insights), short-paper, and poster sessions. The conference is requesting contributions in the themes: Disaster Preparedness, Response, Recovery, A blend of researchers and academics would review the papers for their relevance, authenticity, and standards. Selected authors would be invited to present.

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<sup>6</sup> The 2012 DRR public lecture blog: <http://lirneasia.net/2012/06/ladrr3/>



# ACTIVITIES AND PLAN



## Tabulation of Events, Dates, and Participation

Events and Dates in June [expected number of participants]					
16	17	18	19	20	21
CAP Jump Start [30]	CAP Implementation Workshop [70]				
		SahanaCamp [50]	CAP Code-fest [50]	Sahana Barcamp [30]	
			DRR Public Lecture [100] Gala Diner [150]	ISCRAM-Asia Conference [80]	

## Capacity, duration, and location

<b>Event</b>	<b>Participant Count</b>	<b>Duration in Days</b>	<b>Location</b>	<b>Venue</b>
CAP Jump Start	30	1	Negombo	Hotel in Negombo (TBA)
CAP Implementation Workshop	70	2	Negombo	Hotel in Negombo (TBA)
CAP workshop diner	85	1/4	Negombo	Hotel in Negombo (TBA)
SahanaCamp	50	1	Colombo	University of Colombo School of Computing
Sahana diner	70	1/4	Colombo	Hotel in Colombo (TBA)
CAP code-fest	50	1	Colombo	University of Colombo School of Computing
DRR	100	1/2	Colombo	BMICH Conference Hall or Sri Lanka Foundation Institute
IOTX Gala Diner	200	1/2	Colombo	Hotel in Colombo
Sahana Barcamp	30	2	Colombo	WSO2 premises
ISCRAM-ASIA Conference	70	2	Colombo	BMICH Convention Center
ISCRAM-Asia diner	100	1/2	Mount Lavinia	Hotel in Colombo

## Current Agenda

### IOTX DAYS ONE, TWO, & THREE

June 16	CAP Jump Start
08:30 – 08:45	Welcome to the CAP Jump Start (LIRNEasia)
08:45 – 09:30	CAP-101-abbreviated: Introducing Common Alerting Protocol (CAP)
09:30 - 10:15	CAP-105: Implementing a Source of CAP Alerts
10:00 – 10:30	Tea/Coffee break
10:30 – 12:30	CAP-204: Creating and Publishing CAP Alerts (hands-on exercise)
12:30 – 14:00	Lunch
14:00 – 15:30	CAP-106: Publishing a CAP Alert News Feed
15:30 – 16:00	Tea/Coffee break
	USD 2,000

June 17	CAP implementation workshop (Day 1)
08:30 – 10:00	Session I: Opening of the CAP Implementation Workshop Welcome from WMO, ITU, OASIS, and LIRNEasia with <b>Sponsor speaking opportunities</b> Invited speaker: Sri Lanka Disaster Management Center
10:00 – 10:30	Tea/Coffee break
10:30 – 12:00	Session II: Alerting authorities and warning strategies continental experiences
12:00 – 12:30	Session III: Panel discussion – regional responsibilities
12:30 – 14:00	Lunch
14:00 – 15:30	Session IV: Implemented and operational CAP country profiles
15:30 – 16:00	Tea/Coffee break
16:00 – 17:30	Session V: CAP profiles and the repository for adaptation
19:00 – 22:00	Welcome diner and <b>Sponsor speaking opportunity</b>
June 18	CAP implementation workshop (Day 2)
09:00 – 10:30	Session VI: CAP Aggregators and their objectives
10:30 – 11:00	Tea/Coffee Break
11:00 – 12:30	Session VII: Panel discussion – extensions and alternatives
12:30 – 14:00	Lunch
14:00 – 15:30	Session VIII: CAP solution vendors and dissemination tools
15:30 – 15:30	Session IX: Panel discussion – communications provider responsibilities
15:30 – 16:00	Tea/Coffee break
16:00 – 17:30	Session X: Final comments and workshop report discussion
	~ USD 9,000



<b>June 18</b>	<b>SahanaCamp</b>
08:30 – 09:00	Session I: Opening of the Sahana Camp; Welcome from LIRNEasia and Sahana Software Foundation; Overview of the Camp agenda
09:00 – 10:00	Session II: Identifying problems, fall into teams, and get started
10:00 – 10:30	Tea/Coffee
10:30 – 12:30	Session III: Getting the first code base working
12:30 – 13:30	Lunch
13:30 – 15:30	Session IV: Integrating and committing the code
15:30 – 16:00	Tea/Coffee
16:00 – 17:30	Session V: Wrap up code, documentation, and discussions
19:00 – 22:00	Diner and <b><i>Sponsor speaking opportunity</i></b>
	<b>USD 12,000</b>

#### IOTX DAY FOUR

<b>June 19</b>	<b>CAP Code-fest</b>
07:00 – 08:30	Participants in Negombo transported to Colombo
09:00 – 09:15	Session I: Welcome from LIRNEasia and Sahana Software Foundation Overview of the days program
09:15 – 10:30	Session II: Creating a CAP country profile, register of alerting authorities and templates
10:30 – 11:00	Tea/Coffee break
11:00 – 12:30	Session III: Creating and issuing direct and cascade alerts
12:30 – 13:30	Lunch
13:30 – 14:30	Session IV: Working with Simple Alert and Google/other Aggregators
14:30 – 15:00	Session V: Wrap up and final discussions
15:00 – 15:30	Participants transported to DRR venue
	<b>USD 3,000</b>

<b>June 19</b>	<b>LIRNEasia DRR Pubic Lecture</b>
15:30 – 16:00	Registration
16:00 – 16:15	Session I: Welcome from LIRNEasia and main speaker introduction
16:15 – 17:00	Session II: Main lecture – TBA
17:00 – 17:10	Session III: Panel introductions
17:10 – 17:30	Session IV: Discussion
17:30 – 18:00	Reception with Tea/Coffee
	<b>USD 10,000</b>

<b>June 19</b>	<b>IOTX Gala Diner</b>
19:00 – 19:40	Welcome from LIRNEasia, SSF, OASIS, WMO, ITU, and ISCRAM
19:40 – 20:00	<b>Sponsors speaking opportunities</b>
20:00 – 21:30	Diner
21:30 – 22:00	Cultural show
22:00 – 23:00	Participants shuttled to respective hotels
	USD 8,000












### IOTX DAY FIVE & SIX

<b>June 20</b>	<b>ISCRAM-Asia Conference (Day 1)</b>
08:00 – 08:30	Registration
08:30 – 08:45	Session I: Opening of the ISCRAM-Asia 2014 Conference Welcome from LIRNEasia and Sponsor speaking opportunities
08:45 – 9:30	Session II: Keynote speech
09:30 – 10:00	Session III: <b>Sponsor speaking opportunity</b>
10:00 – 10:30	Tea/Coffee
10:30 – 11:20	Session IV: Track 01 - Panel discussion (4 short-papers)
11:30 – 12:30	Session V: Tracks 02 & 03 (8 full-papers)
12:30 – 14:00	Lunch
14:00 – 14:50	Session VI: Track 04 - Panel discussion (4 short-papers)
15:00 – 16:00	Session VII: Tracks 05 & 06 (8 full-papers)
16:00 – 16:30	Tea/Coffee
16:30 – 17:30	Session VIII: Poster presentations
<b>June 21</b>	<b>ISCRAM-Asia Conference (Day 2)</b>
08:30 – 09:15	Session IX: Keynote speech
09:30 – 10:00	Session X: <b>Sponsor speaking opportunity</b>
10:00 – 10:30	Tea/Coffee
10:30 – 11:20	Session XI: Track 07 - Panel discussion (4 short-papers)
11:30 – 12:30	Session XII: Tracks 08 & 09 (8 full-papers)
12:30 – 14:00	Lunch
14:00 – 15:00	Session XIII: Tracks 10 & 11 (8 full-papers)
15:00 – 16:00	Session XIV: Track 12 (8 full-papers)
16:00 – 16:30	Tea/Coffee
16:30 – 17:30	Session XV: Poster presentations
19:00 – 22:00	Conference farewell diner and <b>sponsor speaking opportunity</b>
	USD 30,000

June 20 & 21	Sahana Barcamp
08:30 – 09:00	Session I: Opening of the Sahana Barcamp; Welcome from WSO2 and Sahana Software Foundation; Overview of the Barcamp agenda
09:00 – 10:00	Session II: Identifying problems, fall into teams, and get started
10:00 – 10:30	Tea/Coffee
10:30 – 12:30	Session III: Getting the first actions working
12:30 – 13:30	Lunch
13:30 – 15:30	Session IV: Integrating actions in to Sahana Software
15:30 – 16:00	Tea/Coffee
16:00 – 17:30	Session V: Wrap up code, documentation, and discussions
	~ USD 4,000

## SPONSORSHIP OPPORTUNITIES

Sponsors of IOTX LANKA benefit from high visibility both on site and through WMO, ITU, OASIS, SSF, ISCRAM, and LIRNEasia global communication and regional media coverage. This positions your organization as a leader operating at the intersection of ICT, Disaster Management, Policy, and Business issues.

<b>Benefits</b>	<b>Platinum Sponsor (Max. 2)</b>	<b>Gold Sponsor (Max. 5)</b>	<b>Silver Sponsor (Max. 8)</b>
Executive address to the DRR public lecture, Hackathon dinner and ISCRAM panel discussion (brief speaking slot)			
Executive quote in the IOTX LANKA press release on the event			
Logo insertion in the IOTX LANKA event announcement			
Opportunity to have an exhibition booth at the ISCRAM-Asia conference and DRR public lecture			
Thanks and announcement of company and representative executive(s) at the IOTX LANKA Gala dinner			
Recognition (logoed) in tiered fashion (Platinum, Gold, Silver): <ul style="list-style-type: none"> <li>- In the IOTX conference program</li> <li>- On site signage</li> <li>- On the LIRNEasia, WMO, OASIS, Sahana, and ISCRAM website's</li> <li>- IOTX web page (with link to company's website)</li> <li>- In the presentation to the plenary and on holding slides during the event</li> </ul>	Platinum sponsor	Gold sponsor	Silver sponsor
Conference bag	Right to provide logoed bag and insert gift	One insert of gift	
Reserved delegate place	5	3	1
Exclusive invitation to next ISCRAM, OASIS, SSF, and LIRNEasia events			
<b>Investment</b>	<b>USD 10,000</b>	<b>USD 5,000</b>	<b>USD 2,000</b>

## ABOUT

### ISCRAM

ISCRAM ([Information Systems for Crisis Response and Management](#)) was first used for the first international ISCRAM Workshop in Brussels in 2004. From 2004 to 2009, the ISCRAM Community expanded into a globally active community of researchers, academics, practitioners, policy makers with an interest in this new area.

In 2009, the ISCRAM Association was formally established as a non-profit association in Belgium. A new Constitution was approved and a new Board was elected at the first General Assembly at the ISCRAM2009 Conference in Gothenburg. At the ISCRAM2011 Conference in Lisbon, the new Bylaws of the Association were approved at the General Assembly.

The ISCRAM Association's primary mission is to foster **a community dedicated to promoting research and development, exchange of knowledge and deployment of information systems for crisis management**, including the social, technical and practical aspects of all information and communication systems used or to be used in all phases of management of emergencies, disasters and crises.

### Sahana Software Foundation

The [Sahana Software Foundation](#) (SSF) is dedicated to the mission of saving lives by providing information management solutions that enable organizations and communities to better prepare for and respond to disasters. It is essentially a global community volunteering their software engineering and disaster management expertise in developing Humanitarian Free and Open Source Software (H-FOSS).

The first build of the software emerged following the "2004 Indian Ocean Tsunami". January of 2005, a group of voluntary software engineers and disaster managers combined, then leveraged the Lanka Software Foundation as the host (eventually progressing to the first owner), in developing a software solution to assist the Government of Sri Lanka in managing the 2004 IOT humanitarian catastrophe. The word "Sahana" in the Sinhala language, means "Relief" in English. In 2007, Sahana divested to becoming the Sahana Software Foundation, registered in California, USA, as a 503 non-for-profit organization.

Since the inception, [Sahana has been deployed to aid in many major disasters world-wide](#). The last deployment is still being used by the City of New York emergency managers, aiding in the Sandy Hurricane humanitarian relief and recovery efforts. Various renditions of the software implementation is regularly used by the Asia Disaster Preparedness Center, International Federation of Red Cross and Red Crescent Societies, US National Library of Medicine, City of Los Angeles, and the City of New York as a management tool in preparation for disasters.

### OASIS

OASIS ([Organization for the Advancement of Structured Information Standards](#)) is a non profit consortium that drives the development, convergence and adoption of open standards for the global information society.

OASIS promotes industry consensus and produces worldwide standards for security, Cloud computing, SOA, Web services, the Smart Grid, electronic publishing, emergency management, and other areas. OASIS open standards offer the potential to lower cost, stimulate innovation, grow global markets, and protect the right of free choice of technology.

OASIS members broadly represent the marketplace of public and private sector technology leaders, users and influencer. The consortium has more than 5,000 participants representing over 600 organizations and individual members in more than 65 countries

OASIS is distinguished by its transparent governance and operating procedures. Members themselves set the OASIS technical agenda, using a lightweight process expressly designed to promote industry consensus and unite disparate efforts. Completed work is ratified by open ballot. Governance is accountable and unrestricted. Officers of both the OASIS Board of Directors and Technical Advisory Board are chosen by democratic election to serve two-year terms. Consortium leadership is based on individual merit and is not tied to financial contribution, corporate standing, or special appointment.

### ***International Telecommunications Union***

ITU ([www.itu.int](http://www.itu.int)) is the United Nations specialized agency for information and communication technologies - ICTs. They allocate global radio spectrum and satellite orbits, develop the technical standards that ensure networks and technologies seamlessly interconnect, and strive to improve access to ICTs to underserved communities worldwide. Through their work, they protect and support everyone's fundamental right to communicate. One reason because it helps manage and control emergency services. We are unique among UN agencies in having both public and private sector membership. So in addition to our 193 Member States, ITU membership includes ICT regulators, leading academic institutions and some 700 private companies.

### ***World Meteorological Organization***

The [World Meteorological Organization](http://www.wmo.int) (WMO) is a specialized agency of the United Nations. It is the UN system's authoritative voice on the state and behaviour of the Earth's atmosphere, its interaction with the oceans, the climate it produces and the resulting distribution of water resources. WMO has a membership of 191 Member States and Territories (on 1 January 2013). As weather, climate and the water cycle know no national boundaries, international cooperation at a global scale is essential for the development of meteorology and operational hydrology as well as to reap the benefits from their application. WMO provides the framework for such international cooperation.

WMO facilitates the free and unrestricted exchange of data and information, products and services in real- or near-real time on matters relating to safety and security of society, economic welfare and the protection of the environment. In the specific case of weather-, climate and water-related hazards, which account for nearly 90% of all natural disasters, WMO's programmes provide vital information for the advance warnings that save lives and reduce damage to property and the environment. WMO also contributes to reducing the impacts of human-induced disasters, such as those associated with chemical and nuclear



accidents, forest fire and volcanic ash. Studies have shown that, apart from the incalculable benefit to human well-being, every dollar invested in meteorological and hydrological services produces an economic return many times greater, often ten times or more. WMO was leveraging the Severe Weather Forecasting and Demonstration Project of WMO to increase the uptake of CAP by NMHSs in many countries.

## **Stockholm Environment Institute**

[Stockholm Environment Institute](#) (SEI) is an independent international research institute. We have been engaged in environment and development issues at local, national, regional and global policy levels for more than 20 years. SEI was formally established in 1989 by the Swedish Government and celebrated its 20th anniversary in October 2009. The Institute has established a reputation for rigorous and objective scientific analysis in the field of environment and development. Our goal is to bring about change for sustainable development by bridging science and policy. We do this by providing integrated analysis that supports decision makers.

The Asia Centre in Bangkok plays a key role in fulfilling SEI's mission to bridge science and policy to help advance sustainable development, through research, capacity-building, and engagement with stakeholders. Established in January 2004, SEI Asia has a multinational staff with strong connections across the region. Its work cuts across SEI's four research themes, but focused on two key areas:

- Climate change and resilient development in Southeast Asia: the governance of disaster risk and adaptation at multiple scales.
- Sustainable land, water, energy and food management (i.e. nexus planning), looking at cross-scale impacts of policy decisions on the resilience of livelihoods and the reduction of persistent poverty.

Aiming to actively contribute to a transition towards socially and environmentally sustainable development in Asia, the Centre has made it a priority to build a strong network of research and policy organizations in the region and to provide platforms to share knowledge and engage stakeholders. We also emphasize linking research to policy-makers and building capacity among regional partners, to enable them to more effectively inform and influence policy.

SEI Asia has expertise in adaptation science, environmental education, environmental engineering and sustainable infrastructure, environmental science, development communications, geochemistry, geography, hydrology and water resources engineering, natural resource management, rural and regional development planning, social economy, sociology and public policy.

## **LIRNEasia**

LIRNEasia is a regional information and communication technology (ICT) policy and regulation think tank active across the Asia Pacific. Its mission is to improve the lives of the people of the emerging Asia-Pacific by facilitating their use of ICTs and related infrastructures; by catalyzing the reform of laws, policies and regulations to enable those uses through the conduct of policy-relevant research, training and advocacy with emphasis on building in-situ

expertise.

To that end, LIRNEasia endeavors to catalyze the transformation of governance and regulation of ICTs in the emerging Asia Pacific region from obstructive, inhibiting regimes, into ones that will allow opportunities for people to use ICTs in ways that will improve their lives. Our immediate priority is building a team of Asia Pacific ICT policy and regulatory professionals that can work on equal terms with the best in the world.

LIRNEasia has been engaging in early warning system research since 2005. A key element has been investigating interoperable content standards for disseminating complete and consistent warnings; especially, in the Asia Pacific context. Since 2006, LIRNEasia has been sharing the experiences from the studies with the researchers and practitioners worldwide.

Organizing and hosting capacity building actions such as conferences and workshops are not new to LIRNEasia. To name a few events organized by LIRNEasia - CPRsouth is a LIRNEasia governed annual conference with an aim to create policy intellectuals capable of informed and effective intervention in ICT policy and regulatory processes in specific country contexts. The Annual "telecom and regulatory reform training courses" provide cutting-edge, policy-relevant knowledge, drawing from ongoing research, designed to enhance the strategic thinking of a senior decision makers in the telecom and related sectors. The bi-annual SAFIR workshop is designed to address the challenges drawing from the economic principles that underlie the practice of regulation as well as the specificities of South Asian politico-economic context.

## NEXT STEPS

*To further discuss any of the above opportunities, please contact*

### ASIA

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