**Summary of the International Conference of Crisis Mappers (ICCM 14)**

The 6th annual ICCM was held in New York City from November 6-9, 2014. The theme was **Affected Communities in Spotlight**, focused on better engaging and understanding populations as the primary reference frame during a disaster.

The conference began on November 6 with a series of pre-conference field visits and training sessions, followed by a Tech & Analysis Fair at Google’s New York headquarters. The full agenda is at <http://crisismappers.net/> and the recorded live stream is at: <<http://bit.ly/iccmnyclive>>

**November 7, 2014**

**AM: Introduction and First Ignite Sessions**

Nigel Snoad of the Google Crisis Response Team served as Master of Ceremonies

The goal of the CrisisMapping community is to serve affected populations and the ultimate end users (people whose lives are at risk or who want to make their lives better). Mapping is not just plots on a 2-D space. Mapping is about telling a story.

**Ignite session I** (Ignite talks are five minutes per presentation. The slides for all session 1 presentations are at:<<http://www.slideshare.net/CrisisMappers/iccm-2014-ignite-talks-session-1>>). [NB: the names in brackets after the summaries below and in various parts of the text are to flag the presentations for people who didn’t attend who might be interested in those sessions. Twitter addresses for most ignite presenters are indicated after the @ signs.]:

Celina Agalon, Open Cities and Global Solution Networks, @CelinaAgaton, “From Crisis to Community: Innovations from the Typhoon Haiyan Disaster Response and Beyond.”

Experiences in the Philippines and Toronto have been very important to her. A mix of infrastructure and communities is needed, along with community engagement. Focus on “community building” among local populations, vice “team building” among the responders. Data visualization is key and it’s often harder than expected to share maps across geographic boundaries. We should shift from focusing on crisis mapping to emphasizing community resilience mapping. The Philippines offers free training on OpenStreetMap (OSM) (<http://www.openstreetmap.org/>) and has a program to deploy drones across the country in 72 hours, with internet bandwidth provided via TV white space. Citizen reporting is being encouraged for resource protection. Sustainable livelihood is being emphasized—crops that can be delivered in 45-70 days, plus drip irrigation. The 1st province has been mapped with OSM and posted to Geonode (<http://geonode.org/>). Next year mapping of all 7,000 islands will start. [Al Santoli, Toni Yulo, Greg Tangonan, MIIS Center for Social Impact Learning (CSIL)]

Dale Kunce, American Red Cross, @calimapnerd, “Ground Truthing OSM During Disaster Response.”

Engage digital volunteers, supercharge maps with real time info and damage assessments. Answer questions like: How bad? Where? NGA (<https://www.nga.mil/Pages/default.aspx>) data were matched to OSM. Some professionals did a deep dive around Tacloban. The objective was to learn how to use the crowd to assess damage. Some 1,600 people were engaged. USAID asked the Red Cross to help map based on 3 categories: No damage, partially damaged, bad damage. The results were disappointing—Several different tagging schemes were in use in the area. Volunteers were only right about 35% of the time. Nadir imagery is great for mapping, but oblique is needed for damage assessment. Also, a house in the Philippines is not same as a house in the US and US volunteers were not always able to assess damage well. More frequent imagery and better base maps are needed, along with better field tools. We need to build new tools to help be better digital humanitarians. [Toni Yulo, Greg Tangonan]

Mikel Maron, Presidential Innovation Fellow, State/HIU, @mikel, “MapGive: Mapping from the Sky, Building Communities on the Ground.”

OSM is a virtual organization—a stable, dynamic, complex network. There are 4 Humanitarian OpenStreetMap Team (HOT) (<http://hot.openstreetmap.org/>) talks talking about OSM. The idea is how to be supporting but not controlling. Now it’s working with State’s Humanitarian Information Unit (HIU) (<http://www.state.gov/s/inr/hiu/>), emphasizing imagery to the crowd. Mapgive (<http://mapgive.state.gov/>) is a project to introduce newcomers to OSM. There are 27 Presidential Innovation Fellows. A goal is to make it easier for institutions to speak in tech terms. The 1st GIS session will be on Nov 21 at National Geographic. Geography awareness week will be Nov 16-22 (<http://geographyawarenessweek.wordpress.com/>). Community comms and dashboards are being emphasized. State is focusing on embassy posts. The Jerusalem consul general also is weighing in. State’s goal is to build natural partnerships guided by open relations.

Chad Blevins, USAID, @geocruizer, “Mapping for Resilience-Helping Make Bangladesh More Resilient.”

At USAID’s GeoCenter (<http://www.usaid.gov/news-information/press-releases/usaid-launches-new-geocenter> [surely there must be a better link to GeoCenter than a 2011 press release]) the focus is on “Mapping for Resilience”—areas such as agriculture, environment, disaster response, etc. The goal is to build USAID’s mapping & analysis capacity, to gather data and share it and engage with network of geographers. There are 25 GIS people in embassies around the world. As an example, in Bangladesh, the emphasis is on feeding the people, disaster relief and preps for future seasonal floods. Part of this is an initiative on “Feed the future,” which links with students at GW who create basic GIS products for Bangladesh. Students in Khulna University in Bangladesh will refine and improve these together with citizens based on local knowledge. A key point is how to make the land more resilient. This is a way to create more University partners around the world to solve their problems. [Stellar precision agriculture teams]

Kuo Yu (Slayer) Chuang, Geothings, @darkensiva, “Trusted Disaster Coordination among the Government, NGOs and the Public.”

Trusted disaster coordination requires both the public and various institutions. There was a pipeline explosion in Kaohsiung in SW Taiwan. Key questions were “What do local residents, NGOs, and the government need/want to know?” The city mayor delivered info through Facebook. The community tried to structure the information flow. The key issue is not about what tech is used, but who is engaged. 20 government volunteers addressed resources and management, working with people from NGOs who then replied and published, plus information from the community. A web-mobile tool is needed to link government, NGOs, and communities. Build on maps. About 40 NGOs now get push notification. They embedded iframe tags (<http://www.w3schools.com/tags/tag_iframe.asp>) from the internet. Taiwan is encouraging digital volunteers. Look for best interface between technology and people.

Hillary Ervin, Tulane/Development Services International, @ladyeloquence, “Mapping in a Time of Ebola: Gender Considerations in Outbreak Response.”

How can women engage best with the services that are available? In addition to caring for children they often are the primary caregivers. However, women have not generally been included in Ebola planning and responses. There is little gender info in some cases on Ebola (about 100 of 4,000 cases have detailed gender-related data). Some reports say that 23% more women are affected than men, probably due to their caregiver roles. Ebola challenges one’s humanity—you can’t hug people. Innovative outreach strategies are needed: Liberian girls are being trained to participate in community outreach. There also is an outreach to Ebola survivors among women to have them engage the community. Radio can be a powerful tool against Ebola in low literacy and low bandwidth environments. [Neyla Arnas, NDU/State Women, Peace & Security (WPS) initiative and Monterey Institute of International Studies (MIIS) Women’s International Perspective (WIP) publication.]

Renee Black, PeaceGeeks Canada, @peacegeeks, “Digital Humanitarian Networks & Apps in Support of Refugees.”

The UN has an initiative on Women Peace and Security (<http://www.un.org/en/peacekeeping/issues/women/wps.shtml> ). The agenda is to empower women. How to make women part of digital humanitarian network? A Services Advisor was set up by UNHCR for refugees in Jordan to improve information flow to refugees. It’s intended as a one-stop place to provide information—now there are some 60 organizations in 400 locations in Jordan. So activity info is posted with a map view as the default. Various categorizations are possible, e.g. all water access points, or organization views (refugee camps, NGOs)—many categories can be searched. A goal is to expand the reach of the Service Advisor to 2.9m Syrian refugees. Next will be the activation of Health Care facilities, to list all facilities in Ebola-affected countries, plus bed availability, etc. However, there is a shortage of reliable data. 1,000 facilities have yet to be geolocated. The next step is to improve field access to info. A key goal is how evaluate the project and do better [Neyla Arnas, NDU/State WPS, MIIS WIP]

Jirka Pánek, Dept of Development Studies, Olomouc, Czech, @jirkapanek, “The Czech Republic Crisis Map.”

What do you need to know as a victim? As a boy during the floods of 1997 he had to ride his bike to find out what was going on. The floods in 2010 were very different. There was much more information, but it needed better organization. This led to the Crisis Map of the Czech Republic. How to encourage people to become a crisis info reporter? Many tools are available now: Ushahidi (<http://www.ushahidi.com/>) and OSM, Twitter, Facebook, e-mail, etc. In recent floods, many reports made it onto the map. However, the first pulse of reporting crashed the map. Some people reported without location. It’s important to evaluate what’s happening on the ground, to share into. Despite the fact that there was little verification the quality of citizen reporting generally was good. [FEMA, Andreas Kartsen of Germany’s BKK]

Payal Patel: Google Crisis Response, @prpatel2, “Building a Platform to Disseminate Critical Public Messages Online & the Importance of Data Standards.”

She compared the long-standing US Emergency Broadcast System with new ways such as wireless, to get emergency reports to mobile users. Warnings now are available, but often do not provide details. Where can citizens go to get details? The Internet. However, traditional search results aren’t that timely or helpful. Google set out to build an authoritative public alert emergency warning based on official content, e.g. “TORNADO WARNING, DeKalb, TN.” The Common Alerting Protocol (CAP) can be a way to share widely. For example, tsunami warnings in Indonesia may be provided now in Bahasa, vice the CAP format, which limit their shareablity. Google is working with more than 18 authorities around the world. There are good search apps in Android or IOS devices that buzz and give you warning of a tsunami. They also work to warn of pending typhoons in Taiwan or in Colombia during rainy season. Principles for building tech products at scale include: Design for openness, use a standard and present info to the public in an easy-to-use, familiar way. [FEMA, Brian Steckler]

Andrew Mao, Harvard University/Microsoft Research, @mizzao, “Studying Collaboration and Collective Problem Solving through Crisis Mapping.”

Researchers looked for a better system for people to work together with computers by examining social psychology and crisis mapping. In the ‘60s labs with early computers were set up to provide a baseline and a place for repeatable experiments. But the labs didn’t generate much info that was useful to the field on how teams work together. The Standby Task Force (SBTF) (<http://blog.standbytaskforce.com/>) is an example of a self-organizing model that includes Media Monitoring and Geolocation Verification. But the SBTF is getting overloaded and people are burning out. A key question is how to reduce the intensity of demand and get more people engaged. A 1-year experiment has been underway to map communications patterns, divisions of labor, etc. How can different team structures affect performance? How can we do live mapping better? Please share field experience and feedback using an app that has been developed. This will be explored in a Sunday “self-organizing” session. [Paul Bartone and the “social psychology of distributed staffs” team. Get coordinates for the app.]

Hongyi Hu, MIT Lincoln Labs, “Leveraging Hobbyist & Opensource Tech to Provide Comms & Crisis Mapping Capabilities for Disaster Response.”

Harnessing tech for affected communities—are loved ones OK after a disaster? One way is by using Google person finder (<https://google.org/personfinder/global/home.html>). But what to do if comms are down? Lincoln Labs is looking at ways to leverage access to mobile devices that can promote two-way communications and horizontal sharing via WiFi and cell. The system will blend and synchronize data. It must be usable, inexpensive, robust, portable and scalable. To allow for practical operational tests and avoid regulatory hurdles, the present version of the system is focused only on basic comms—no voice, no internet. The plan is to build together, use open sources, and share. It is an ad hoc network with some nodes airborne, some static and some on mobile platform. No installation is needed for end users. It can work with SMS or a locally hosted web page. WiFi radio can cover several km. Amateur packet radio at 144 Mhz is a powerful tool. Researchers also modified an amateur WiFi mesh system at 2.4/5 Ghz for more b/w. Info is forwarded via a simple flooding protocol. Google maps has an API. The field testing will be at MIT or Fort Devens, MA. It’s called **CATAN (**Communications Assistance Technology over Ad hoc Networks). [Phil Stockdale, the JIEDDO family resilience team, Brian Steckler, etc. Look at adding this kind of capability to MiDAS]

Kate Chapman: Humanitarian Open Street Map, @wonderchook, “The Missing Maps Project: Mapping the World’s Most Vulnerable Together.”

Maps have contributed greatly to epidemiology. John Snow was able to map Cholera in London because there was a baseline city grid to work with. But often today there’s no base to map against—there are lots of blank spots on the global map. The Missing Maps project is being launched today (<http://www.missingmaps.org/>) as a partnership among the American Red Cross, the British Red Cross, Doctors Without Borders UK, and HOT. The goal is to map the most vulnerable people on earth, with a 2-year target of mapping 20 million people around the world. “People before data” is a core principle. Data will be open, but respectful of local wishes about sharing. (1) Remote volunteers will digitize satellite data. (2) Local volunteers will add information using Field Papers (<http://fieldpapers.org/>), (3) Lessons will be included from responses, and inform other responses—for example, Red Cross after-Haiyan damage assessment and logistic tasks. Information will be reported and saved to OSM. The team plans to host Mapathons. Volunteers can join from home. [Brian Steckler, PEAK/MiDAS]

Q&A

Ways have to be found to sustain local organizations so they can stay engaged with big NGOs. 1 of every 500 people in world (!) is a Red Cross volunteer or employee. The goal is to help local communities own maps for their own use. Hillary noted that women are not much involved in participatory mapping in the developing world. Be proactive and identify key women in communities. There is a good project in Somalia that works with wives of clan leaders. The success of the Grameen Bank in working with women is well documented. In the Bangladesh project students participants in Khulna had grown up in rural areas and were excited to join.

How to handle risk to people in vulnerable communities? What should be shared and what should be private? Kate: Put people before data. People may not want the village next door to know some things. Keep Personal Identifying Information (PII) private. Don’t put it on the map if they don’t want it there. [NB John Crowley is developing a risk model for humanitarian activities that could apply to this as well as risks to mappers.]

How to get info back to communities? USAID has partners in countries. MapKibera (<http://mapkibera.org/>) just finished mapping schools in Kibera, but not all can be found online, so copies need to be printed for everyone who provided info. [NB: Todd Huffman’s rules for info sharing should be an integral part of any operation where shared information is important. They are:

1. Create immediate value for anyone contributing data: contributors of information should get an immediate return for their efforts.
2. Return contributors’ data to them with improvements: any data that goes in should be available to be downloaded back out again. Further, any data should come back better than when it went in.
3. Share derivative works like analyses, spreadsheets, charts and reports, back with the data sharing community: urge users who create derivative works from shared data to contribute their products back to the group.

See pp. 8-9 of “Sharing to Succeed,” published by the Center for Technology and National Security Policy (CTNSP) at the National Defense University (NDU), <http://ctnsp.dodlive.mil/files/2013/08/DH-076.pdf>]**.**  Kibera is suffering from survey fatigue.

There is a 4W (Who, What, When, Why) platform for the Philippines. It’s now in Beta, using open source, open data, built on Sahana (<http://sahanafoundation.org/>). It will be made available at APEC (<http://www.apec.org/>) in the Philippines next year and it will be piloted in the US.

Sanjana: How can we ensure that info will continue to be made available to people in the field over time since corporations often don’t share? One way would be to make info available through a commercial model [but why should victims have to pay?]. What about people who are thinking about sharing but don’t know how it will be used? Present licenses are very squishy. Physical boundaries also may be fuzzy—“In which district do you live?” may be answered in ways that don’t align with maps. The source of also coding can be a source of concern. This is another reason to work on rules for open data before the crisis. Q: LW2. Could USAID’s Global Development Alliances (<http://www.usaid.gov/gda>) approach based on “shared values” between government and business be shaped to develop guiding principles for handling data? A. Will look into it.

Given the vast amount of data in a crisis (in Yolanda there were 38 different crisis maps), how to deal with fragmentation and info overload? A. WRT Ebola, DO NOT have USG put up another geo portal! Contribute to something that already exists. Set up a data API. Does the World Health Organization have an API for Ebola? Sanjana hates the present licensing system. The license OSM data is under is fuzzy with regard to who can do what with the information, which can cause problems when using info like satellite imagery. We need to be able to display data about layers.

For Payal, is the alert (tornado, etc.) based on location, or position, or what? A. Android and IOS devices include location capabilities (if they’re turned on), so you’ll the alert get it if it applies to your location. If you’re not in the immediate area, an internet search will bring the news of those alerts to the top. API data are accessible on infrastructure, but everything is always more subtle than it seems at first and data processing is enormously valuable.

There’s so much that could be done in microtasking beyond crisis mapping. See <https://www.zooniverse.org/> Single click volunteering is possible. How do you reward people? They tire quickly of just looking at spreadsheets. <http://www.micromappers.com> is on smart phones.

Q. Access to information also relates to the distribution of power. Need to address questions about social power distribution more often, including nationally, regionally and within communities. There were many discussions around equity and access to information and services.

Q. How does Lincoln Lab’s work on mesh networks (see Hongyi Hu’s presentation above) fit with the rooftop net which became Meraki (<https://meraki.cisco.com/customers/higher-education/mit>)? A. The present Lincoln Lab work is more basic.

Q. How do you handle info sharing for people who don’t speak primary languages? A. There’s a lot of work going on. There also is Translators Without Borders (<http://translatorswithoutborders.org/>)

**PM: Co-Keynote Speakers and additional Ignite Sessions**

The focus should move from the Resilience of Things (from and to disasters) to the Resilience of People. As was emphasized in this morning’s session: it’s about people, not data.

Remarks of Ms. Atefa Riazi (<http://www.un.org/press/en/2013/sga1403.doc.htm>), UN Chief Information Technology Officer and Assistant Secretary General to ICCM 2014, November 7, 2014:

We should aim for the “prevention of crisis,” vice “reaction to crisis.” There are many crises today: Ebola, human trafficking, drugs, food (800 million people don’t have enough food), failure to mitigate climate change, income disparity (1% of people have 40% of the world’s wealth), youth unemployment, Iraq, Ukraine, etc. The impact isn’t always quick: “The hiss of Titanic.” It takes time and many events to reach its full impact. This is the “revenge of small, repeated effects.” What are the causes and effects?” Vice and virtue are like color, sound, and heat—they are subjective. This leads to an uncertainty principle. Actions have ironic and unintended consequences. From a bureaucratic point of view, innovative people are a pain in the neck. Advances in technology are having significant impacts. For example, in East Africa alerts to livestock herders (such as for floods, droughts or market information) are issued via cell phones. Cattle are tracked in Europe via smart cards. Food security is a major issue in the information age. There are ways to make “the kissing bug” (so-called because it bites on the lips) sterile. Organs can be created, and small “smart dust” motes deployed with sensors.

In the 20th century the most important invention was the internet. But one has to be careful about hyping the impact of the internet. People in the early 1900s predicted that airplanes would stop wars. They didn’t. Neither will the internet. In some places, freedom of the press means owning the press. The penalty in Burma is 15 years in jail for owning a fax machine. Ubiquitous sensors and information distribution mean nothing is now hidden. The Arab Spring is about visibility. Haiti was about innovation, collaboration, crowd-sourced information and GPS. But sometimes things go wrong--80% of child trafficking is done online. Cyber crime may represent the wars of the future. What will be the humanitarian impact of cyber crime? The “watering hole” is a place where people come to visit, and cyber attackers often mount attacks through it. There also are privacy impacts. The digital divide between haves and have nots is getting wider. The growing impact of mobile technology, “homo mobilis,” will be felt for 15-25 years. Tighter bonds (to one’s close friends) are becoming tighter, looser bonds looser (no one talks to people at bus stops anymore). 80% of phone calls begin inside cars [is this correct?]. The Madrid bombing was triggered by a cell phone.

The internal combustion was a great innovation that led to enormous, unforeseen impacts. So it will be with deforestation, climate change, etc. Ebola is having a devastating impact on the private sector in West Africa. We don’t pay enough attention to e-waste. Mercury persists for years—passed from mothers to children. Dioxin is like Agent Orange. Too many policies on pollution today are “NO, UNLESS….” How can we get the UNLESS out of it? The way we are using the planet is not sustainable. Can S&T improve the environment? Can it end hunger?  $1.2B people live on less than $1/day. Less than 6% of people have 45% of wealth. The poorest 20% of people get only 1.4%of income. Consider visible bugs vs invisible ones [not sure that I understood this point]. Change takes a long time. The technology paradox is that tech is both a thing AND a flow. But we often think of it as just being a thing. What is the aim of science? Negative impacts from scientific developments are choking off its own vitality. We can’t restrict innovation, but need to recognize that it does have broad implications, some of which are negative. We need to work better together and move away from Margaret Thatcher’s statement that “There is NO alternative” to “Another world is possible.”

Dr. Jemilah Mahmoud (<http://www.thestar.com.my/News/Nation/2014/05/07/Jemilah-Mahmood-to-head-UN-humanitarian-summit-secretariat/>)—World Humanitarian Summit, UN

Christmas decorations are painful for her. 26 Dec was the date of the Bam earthquake in Iran in 2003 and the Boxing Day tsunami in 2004. She knew the epicenter had been near Banda Aceh, but the radio broadcasts were all about Phuket, which meant that comms must have been down near the epicenter and that people couldn’t communicate. The number of people needing urgent assistance has more than doubled this year, even before the crisis in Iraq and the Ebola outbreak. Conflict generates the worst humanitarian needs, but more CrisisMappers are engaged in humanitarian assistance/disaster relief (HA/DR) than conflict. The number of conflicts is the highest since WWII, though not many are trans-border. Some 10 million people are stateless. There will be a World Humanitarian Summit in May 2016 in Istanbul. Actors will include national governments, humanitarian organizations, community responders, and others. There are six interconnected core challenges: The financing gap, the lack of a coherent approach to risk management, the call for localization, disrespect of International Humanitarian Law, fragmentation of efforts, and the overwhelming humanitarian need. The future is now. There are several themes for change: transformation through innovation (make it effective, manage risk, use technology, etc.), reducing vulnerability, and serving the needs of people in conflict. The solutions shouldn’t be short term. M-health apps, indicators of early warning (such as drought in Northern Kenya, etc.). could help, but we rarely heed the warnings even if advances in new sensors COULD do more. An important question is how to translate data into action to prevent such events from happening. But humanitarians are more at risk in conflict today than in the past. George Clooney’s satellite imagery project in Darfur showed the power of the private sector in one sense, but how do we know if the information is good? Humanitarians on the ground need to collaborate with digital volunteer groups. We still need good people. There are ethical challenges, such as data privacy and informed consent protection of people and data. The volunteer technical community has really helped. Humanitarian data exchange is important--how do you communicate info from digital maps to people who are used to white paper for maps? What happens if we get too dependent on technology? Make technology serve the needs of people and empower them. To give them more control: agree on principles, standards and ethics. Give power back to people. Bring the CrisisMappers and humanitarian/development movements together. Engage the next generation.

Rt. Hon David Miliband (<http://www.rescue.org/david-miliband>), President, International Rescue Committee

Why are record numbers of people being displaced? First, a growing number of states can’t contain the political, ethnic, religious differences within political boundaries, or meet the needs of their citizens. In aggregate, the world has never been more rich or peaceful. But within about 30 states conditions are very bad. This is a feature of globalization. 2. The international system is too weak and divided to overcome state failings

There are changes in the humanitarian sector—it’s big and getting bigger. There are more and longer intra-border wars. The duration of displacement for refugees is longer. There is a growing body of urban refugees.

Solutions. Stop talking about saving lives, which implies actions at a point after the conflict or disaster. Focus on survival, which begins before the crisis, and continues. Engage both providers and recipients. Don’t fight the age of empowerment. The average refugee is out there for over 20 years, not counting Palestinians. We need new approaches—solutions must set up economies, not just give things. In Lebanon $100/mo was given to help people get through the winter. Each $1 spent led to $2.16 injected into the local economy. The number of IDPs is 2x refugees. Refugees aren’t allowed to work. Conditions in South Sudan shouldn’t have been a surprise. How can we help people monitor movements when they’re in threat environments? There will be a global revolution in services in 20 years—accountability needs to flow to meet the needs of recipients. However, the accountability relationship (to donors) almost keeps out innovation. Innovations here are in their infancy.

Q. What’s come out of the innovation fund? Good things. Refugees in Somalia are being monitored using SMS texting. The unintended positive effect was that the diaspora also was watching and saw that good things were being done and so the diaspora channeled funds. There have been some very innovative ideas, like the use of colored beads to help people count the breaths of children to see if they were suffering from pneumonia. The results went from 22% success rates to 65%. Leverage crises: the 1952 London fog led to the clean air act.

Q. Is it as simple as giving someone a cell phone? Not by itself (also need power and connectivity). Smart phones can help in many ways, but we must be able to charge and connect them. Tech also can help or hinder and bad actors are doing as much with tech as good ones. Google’s plan to provide worldwide connections could help, but there is a lot to be done. Imagine the world in 2050. Get the young people onboard. Use them to help reduce the risky behavior of people going into terrorist/criminal groups.

Q. How could digital humanitarians help? What could they do? The next revolution is data definition. Analytics and modeling are critical. In Iran there are 400 doctors for 10 million people [Is Iran the right country in this reference?]. Need to get more people in health care—we don’t innovate when there’s no money in it.

Q. Jerri Husch. Monitoring and establishing accountability is important. Leaders rarely have the moral integrity to use info to change decisions. Unless you say publically what you’re going to do, you won’t be held accountable. A. The field has under-invested in data gathering. Researchers must be willing to publish their findings. There needs to be a “Yelp” for humanitarian accountability, and donor accountability. Field workers should be incentivized to admit if what they’re doing isn’t having an impact. There need to be incentives for learning from field experiences. Donor behavior is key. Ebola-data generally are unreliable. It’s essential to mobilize the will of affected populations. Also need to estimate the future world and factor it in. Public-private partnerships in social issues are essential.

Q. Is the UN going to hand over its innovation role to the private sector, or do better itself? A. The closer to the Security Council the greater your cell phone “signal loss is.” Believe the UN is open to alliances.

Q. Political responsibility. With all resources it takes to find out if something is going to occur, will leaders have courage to take them into account in decision-making? A. People are inside with cell phones. Bad propaganda is being put out. We have a leadership gap in so many areas. Humanitarian actors can only do so much. Humanitarianism can stop the dying, but politics is needed to stop the killing.

Q. What does accountability mean to institutions? Leaders should be held accountable.

Q. John Crowley. Traditional data flows get frozen while moving “up the line.” What will change it? Arguments for secrecy are growing weaker. Preaching the virtues of openness but practicing secrecy is hypocrisy. However organizations aren’t being called out. Is it a source problem? Data are locked in PDFs or behind firewalls. Researchers need to be able to see more. WHO is not good at this.

Q. Is there a different impact if the $100 is given to men vs. women? Of the $100/mo given to people for 6 mo in Lebanon, 27% went to women. This led to tensions within households. But the gender difference didn’t lead to improved outcomes one way or another. Need to help the host community as well as refugee communities. Microfinance has worked better for women, vice men (since women seem to put more priority on organization). Donors also must consider culture. Mobile cash has made an enormous impact.

Q What would you like the speakers to work on? (1) Send an e-mail to [David.Miliband@rescue.org](mailto:David.Miliband@rescue.org) [verify e-mail] and tell him what problem you want to work on. (2) Ms. Raizi: How to address trafficking and how to work in cyber crime and cyber security? (3) Dr. Mahmoud: (a) Need ideas for what are critical innovations to transform humanitarian actions. (b) How to build on big data for future challenges. (c) Please contact us. Modeling and simulation is very important.

**Ignite session II (**slides at:<<http://www.slideshare.net/CrisisMappers/iccm-2014-ignite-talks-session-2>>)

Patrick Meier, QCRI, @PatrickMeier, “Humanitarian UAVs: Challenges, Controversies & Here to Stay.”

A Haitian team in Port au Prince now can deploy UAVs on their own. Skyeye (<http://www.skyeyeproject.com/>) is operating in the Philippines. Information is printed on waterproof rollable posters to share with communities. A fixed-wing UAV has been developed for $60. This represents empowerment at the community level. The UAViators movement (<http://uaviators.org/>) is VERY disrupting. There are policy issues. There is a course on UAVs in Humanitarian situations. Air-Vid (<http://uaviators.org/main/authorization/signIn?target=http%3A%2F%2Fuaviators.org%2Fforum%2Fuaviators-adds-air-vid-as-key-collaborator>) can provide access to more than 500 UAV pilots around the world. There is a code of conduct. Tie to OSM. CorePhil DSI (<http://corephil.webnode.com/>) provides aerial surveys and UAV development. Micromappers (<http://www.micromappers.com/>) supports disaster response with a single click. It’s important to learn how use new sources of data and to use 3G/4G networks to export data. Google is working in this space as noted in an earlier ignite session. Digital Humanitarians (<http://digitalhumanitarians.com/>), who are supported by the ICT4Peace Foundation (<http://ict4peace.org/>), leverage digital networks for humanitarian responses. [Stellar precision agriculture team, MIIS CSIL, USIP PeaceTech Lab]

Brian Tomasczewski, Rochester Institute of Technology, @bangeo\_brian, “Crisis Maps, Mapping & Spatial Thinking.”

Structure, solve, and reason about maps. SpatialRwanda will build next generation crisis maps. Think spatially to solve local problems. Spatial thinking brings a voice to ICT software training. Iwacu (a Rwandan news service) provides free and open spatial thinking. A GIS4Disaster book promotes cross-boundary thinking. There are scenario-based serious GIS games. For example, players are asked to pick 3 choices of information to be included in a map to represent storm surges. The game measures the game players’ spatial thinking skills. Brian is looking for partners to examine relationships between spatial thinking and disaster management. [USIP PeaceTech Lab]

Matthew Scott, World Vision International, @wvpeaceprize, “Conflict Analysis.”

World Vision offers a prize every September to a peacemaker or peacebuilder. Lots of rich data is helping us understand violent data. How can it be mined and used better? How to link peace activists and policy makers? How can the relative importance of actor groups be addressed? The “Volcano Theory” asks questions like: “Has this happened before?” “At the core, what are the drivers of violence?” Lots of data are being analyzed in the global north, but we need platforms for people living in crisis areas to share unstructured, context-rich data at grass roots levels. But there are privacy concerns if shared, so the data can be wrapped in tags for protection. Upload data and use them to support conflict analysis. People on the ground want to be heard. But the Security Council and other fora leaders are acting with very LITTLE data. #peacespeedevidence@wvpeaceprize. [MIIS META lab, USIP PeaceTech Lab]

Alison Cole. Open Society Justice Initiative, @\_AJCole, “Technology for Truth”

There are many halfway utilized facts. How to use them better? Success lies in teamwork, so need to establish common goals. Lawyers may have to disclose sources during a trial or a hearing. Judge’s Question 1: Is the info Relevant? A. It depends on the substance of law. They are developing an app. Linkages can establish things like: “Who is responsible?” Judge’s Question 2: Is the info Reliable and authenticatable? A. The chain of custody is key. Also need to look at the information’s originality, integrity, date/location, bias, etc., Question 3 relates to Analysis: “Where did it come from? “ [Nick Rostow and Neyla]

Sucharita Varanasi, MEDICAPT, @suchskv, “Harnessing the Power of Technology to Document Sexual Violence in Conflict.”

MEDICAPT is a mobile app being developed by “The program for human rights in conflict zones” of the Physicians for Human Rights (<http://physiciansforhumanrights.org/medicapt/>). She showed a picture of “Zelda,” a medical robot/avatar, and partner robots “Ted” and “Gerty.” The need is to get solar panels to Ted and Gerty against saboteurs, but they can only use a conveyor belt that’s subject to interruption, slow downs, etc. One of the biggest threats to information transfer is the impunity that perpetrators have in many places. There is a lot of potential to make better use of tech. For example, helping to get info from one place to another and then in forms that are appropriate for the police, lawyers and judges. A key is to have network access. Another question is the capacity of the network since many legal files are large. Saboteurs also may undercut data security, which is a major problem when trying to preserve chains of custody and patient confidentiality. Work is needed. Please help us. [Nick Rostow, Neyla, Alex Crowther, MIIS Cyber Security Initiative (MCySec)]

Wendy Betts, Director of Eyewitness to Atrocity at International Bar Association (<http://www.ibanet.org/>), “eyeWitness Project.”

It is hard to know what to trust in video evidence. For example, a video of assassinations in the field was later deemed a fake. A Syrian video was shown to have been taken earlier than claimed. There were the famous photoshopped sharks in posts at the time of Sandy. Videos are embellished. Even credible videos may be disbelieved. How can citizen video be authenticated? Many initiatives are underway to verify crowd-sourced video--for example, by developing ways to inject metadata at the point of capture. Calculate hash values for images at the point of capture to detect modification and combine with GPS data. The eyeWitness organization maintains a chain of custody of images. Use dissemination, connectivity and collaboration to verify content. We need to turn on the light of truth. [1st JSU(V), Nick Rostow]

Elise Baker, Physicians for Human Rights, USA, @elise\_baker, “Interactive Syria Map: Anatomy of a Crisis.”

She presented mapping from inside Syria. One display showed attacks on medical facilities, with various related data. About 90% of the attacks were by Syrian government forces. Some 7% were by identified others, some unknown. Other data are included in the map, such as the number killed, etc. There are challenges such as how to keep from analysts from being overwhelmed by data, perhaps by adding popups. Recommendations include adding pictures. How can Drs’ personal stories be told? In some cases there is a serious lack of info. Mapping has been hard since ISIS took over in eastern Syria. How use crowdsourcing while keeping both security for reporters and accuracy? [SynglyphX]

Morgan Hargrave, WITNESS, @witnessorg, “Empowering Human Rights Documentation.”

The video of the Rodney King beating was used as an example. There is a LOT of information available today: 120 hrs of YouTube video are uploaded each minute. A new crop of documenters and reporters is emerging. Affected communities are in the spotlight. It’s not enough to build great tools for mappers. Tools must be provided for the average person. Informacam (<https://guardianproject.info/informa/>) addresses secure and verified mobile media—“metadata for good.” An example of the downsides of the unsecured posting of even innocent photos is that poachers in South Africa are using tourists’ geotags to find and kill animals. Push for informacam to be adopted by companies. There also are steps for protection such as facial blurring (the opposite of enhancing clarity about incidents). Communities need a range of tools that match their capabilities and needs. [Nick Rostow, MCySec]

Leesa Astredo, Info4Disasters, @viequesbound, “The Emotional Impact of Emergency Response on the Digital Humanitarian.”

This heartfelt presentation asked “How do people feel while they’re engaged in Digital Humanitarian operations?” They clearly are compassionate, but also get burned out. Some get PTSD. It’s important to recognize the signs and understand that it’s OK to feel that way. Safety nets exist for larger, boots-on-the-ground organizations, but not for digital volunteers, who also may have secondary crises. The volunteers are helping everybody but themselves. Volunteers need to take time for themselves. Share stories. Nigel noted that mental health is an extraordinarily important topic. Recognize it’s important to take time to breath, reach out to others, and ask for help. You may be affected later, after the urgency has passed. [Tony Spinosa]

One presentation on crisis response field research is not included since it has not yet been published.

Q. What are some challenges in using videos from a legal/medical perspective? A. Video often is used first for advocacy and news, which is much different than for trial. We need to know who’s collecting. There are strange networks extending in and out of the favelas in Brazil, with linkages like a spaghetti bowl. Legal processes need rigor. How to balance core legal tests with other demands, like publicity? Multiple users have multiple needs. MediCAPT is developing a clinical forensics tool using special tech. It is very different from the Rodney King video which used existing tools. Can YouTube be made evidentiary? Some people are working that, but this group is working at point of capture—Establish authenticity, then curate. Need to show to the judge that info is reliable. If one can show the judge that a community has rallied around a particular approach, it helps. The defense only has to raise a reasonable doubt. Search involves finding the needle in a haystack, storing it, packaging it to recreate a scene. [Nick, MCySec]

Q. How do you take the politics out of violent conflict situations? A. There was a request to crowdsource a review of checkpoints, etc. Lots of things were found, but maybe the investigation went a little too far in looking for things beyond the immediate search areas. When the search was scaled back there was a big backlash from the volunteers who wanted to find more things like tanks. Consider the Kosovo page on Wikipedia—before the page was locked the changes were insane. There are edit wars: In Syria people renamed roads from an Assad regime name to honor the martyrs of the revolution. There is a naming process in OSM, e.g. for the islands between Japan and China. It uses the “on-the-ground” rule (who has control). But there isn’t necessarily a truth on the ground. Different people may call a street differently. Some questions can’t be resolved. Who gets to decide?

Q. What do communities want and what can they create? A. In many police stations they don’t have papers and pens. Volunteers brought pens and paper to the stations, but they disappeared. Now volunteers are working with communities to co-design products to circumvent practical constraints in Congo. It’s a reverse incubation. Put the design team in the place and engage the local people. Technology can be intensely iterative if used right.

Much attention has been focused on the videographer. We are trying to take the photographer out of it. Focus on the veracity of the information without gathering data on the collector or the user. The technology becomes the witness, like CCTV, vice the videographer. Q. Is there any existing jurisdiction that’s at the cutting edge? A. The international courts will be the first to use it.

Q. How do I decide where to spend my fund $? How could someone differentiate among presenters?

**11-8-14 “Deep Dive” Sessions and the Field Mapping Exercise**

Four Deep Dive Sessions were held, some in parallel:

* Benson Wilder: “Building Ecosystems Around OSM for Humanitarian Response and Development.”
* Jerri Husch: “Using Action Intelligence to Provide Insights into the Ebola Process.

“The first wisdom of sociology is: Things are not what they seem”--Peter Berger

How do we make sense and construct knowledge of something? Mapping lets us see things we’ve never seen before. This presentation looked at the sociology of Ebola in 2014.

There are 4 kinds of map information: Sociolinguistics, geospatial, time, political,

The goal is to uncover the inner workings of social patterns. However, the visualization of comparative statistical analysis, e.g. on the spread of Ebola, can lead to hysteria—disrupting order, since most who people see it think it’s reality. Put Ebola in perspective. The complexity is that the disease doesn’t exist in a vacuum but is in inter-related spheres: Anthrosphere (people), atmosphere, hydrosphere, etc.

Health and complexity: Need to communicate the situation at various layers: Structures & systems, community, institutions and organizations, down to the individual. The HSBC ad that presents crickets as pests, pets, or appetizers in different cultures reflects the complexity of the sociology.

A 1906 map was shown of tribal distributions in West Africa. However, in Sierra Leone the political borders developed by colonial powers are not the same as tribal boundaries. A very powerful image was shown of local citizens wearing traditional masks, which represent “devil spirits” and which have important meanings in the culture. The next image was of medical workers in protective suits from head-to-foot. We may not realize it, but those masks will have an impact on local citizens beyond just protective medical gear. Actions must be considered in cultural contexts.

The origin of the Ebola outbreak in Sierra Leone was in Gueckedou in Southern Guinea, near the Sierra Leone and Liberia borders, where three cultures come together around a river system. The river is the highway. What we might consider the land “highway” is a dirt road. The hospital has been closed. How can we make maps useful? [Anthony Robinson at PSU]

How to collaborate across cultures, countries, and sectors? How to align data when communities have different ways of making sense of data? How do we move **From Best Practice to Most Appropriate Practice?**

In order to map Ebola in dynamic social contexts, need to answer: What, where, when and especially WHY?

The “Action Intelligence” (AI) process is organized into a 3x5 format:.

Map categories such as Actors, Actions, and Artifacts against Place (y axis) and Time (x axis). Collect data, classify and code, make sense of it. The 3 X 5 format is:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Family | Economy | Education | Polity | Religion |
| Macro (institutions) |  |  |  |  |  |
| Meso (groups) |  |  |  |  |  |
| Micro (individuals) |  |  |  |  |  |

There are 5 basic building blocks, organized by culture (the columns): Derivative categories include things like: health, roads, etc. How do you handle people with different roles—need to identify the other links (which are fit it a 3 by X grouping).

Collect data from multiple sources. Assign codes for the values in the columns and put the data into software packages for automated analysis. There are several different kinds of analysis: Text/content analysis (does the World Health Organization (WHO) use the same language as other organizations?), spatial analysis, object relationships (social networks), time/trend analysis (link policy to action).

Applying Action Intelligence to Ebola (or other problems):

* Gather data to integrate
* Show 4 W information across different units
* Explore potential unintended consequences
* Align policy and outcomes

Organizing Ebola data—industrial food production is destroying forests where Ebola begins, which attracts bats, which are key elements of the vector. Overviews like heat maps/Ushahidi displays are interesting, but deeper dives are needed to really understand what’s happening.

The dominant term in content analysis is “countries”—that is the level of macro policy. Where does the concept of “community” get introduced? Food security is focused at the meso level, but there are disconnects. A decrease in tourism leads to an increase in poaching, which endangers wildlife. Simple photos of Ebola actors usually are not helpful. It’s important to set up social network analyses—which person do I need to talk to and where are they? What language do they write/speak in? Be alert for emerging linkages as networks develop.

Ongoing and emerging narratives:

As one posts to the 3 x 5 AI structure, use medical as the 1st narrative. What beliefs, values and norms are involved? Social relations also are critical. This disease is disrupting society. As a result of Ebola deaths land use will be disrupted (who inherits the farm?) and family lineages will be distorted. Food security and safety are affected (bush meat has been banned as a food source in some areas, but it is important to many communities. WHO and WFP may have different objectives and impose different rules). Gender and family issues emerge. At what level should transport and travel (international and within countries) be entered—macro, meso or micro? Conspiracy theories must be considered (health workers have been killed in Africa, conspiracy theories about motives arise everywhere). How do Western faith-based medical groups engage with, and perceive, local “witch doctors” who are key parts of indigenous cultures?

AI tries to be as inclusive as possible.

Actors are placed on a large board representing the 3x5 matrix with blue post-it notes and fit into the various rows and columns. For example, DoD is a macro actor at the policy level, but deployed medical teams may be meso. Analysts also need to consider groups like “medical surplus recovery organizations” (there are many, e.g. Project Secure) [Could MMOWGLI help?].

Actions are shown in red cards: Travel (by foot micro, by bus, aircraft, etc.,). Funeral ceremonies may be meso when a group is engaged in a community ritual, while an individual burial would be micro.)

Participants asked: “How do you know when to stop?” “It seems infinite.” Jerri answered that the edges of the “frames” become clear quickly as data are posted, which is called triangulation. The frames lead to links. How do you avoid selection bias? The most time is spent in building the context.

Consider the Millennium Development Goals (MDG), which are enablers for social change. We act based on beliefs, but there was NOTHING in the MDGs about belief systems.

There was a long discussion about how to categorize AI variables. What variables allow us to focus on the situation—space and time? Depending in their roles, actors may be in several places.

Relations between nation and international actors are power relationships. Who gets to make the decisions?

Two other Deep Dives also were scheduled:

* Stephen Mather: “OpenDroneMap”
* ESRI: “Confident Communication with Maps”

**Field Mapping Exercise (using Union Square as a designated “hot zone of crisis”)**

Mathan Ratinam (Parsons School) set the stage for the exercise by asking: “What does Crisis Mapping offer the affected community?”

There was a significant diversity among the ICCM attendees—some were mappers, some technologists, some emergency managers, some social scientists, some health practitioners, etc. Union Square near the conference site was designated as the “hot zone of crisis” for this exercise--it’s a rich playground of human behaviors, with activities ranging from protests to chess games to farmers markets to pillow fights. The challenge in any situation is to do a deep reading of dynamic human interactions. What do you stand for, vice against?

During their time in Union Square, participants were asked to look at things like: How does money change hands? How does the pace of work change? What’s private and public? How does security work?

Participants were issued a mapping kit, asked to form self-organized teams, and head over to the square. Tools included: Google Earth/Maps. Field Papers, Ushahidi, cartodb (<http://cartodb.com/>) , pens, pictures, and tilemill (<https://www.mapbox.com/tilemill/>). A crash course was offered on Field Papers (which unfortunately was limited by a crash of the Field Papers server). Participants were asked to:

* Observe and have conversations with the “Humans of New York.” [A Whole Foods on the south side of the square has a 2nd floor window that offers a good spot to get an overview of the site.]
* Post on what you chose to focus on, how you went about mapping it, what it means for work in a crisis.

Key points: Play in the Union Square “sandbox”—There are lots of high quality people. Stay above ground, e.g. don’t try to do research in the subway.

* Don’t be boring--be awesome (but don’t get arrested)
* Talk to people in Union Square
* Give freely of your experience and expertise to other mappers
* Provide constructive feedback and adopt the voice of a mentor
* Today is a day for “rapid making” (maps and analysis are due this afternoon)
* Expand beyond just 2D maps to include reporting videos, photos, etc. There are many kinds of mapping.

Mapping Results from Union Square. The diversity of results and the quality of the maps was quite exceptional, given that they all were done in about six hours. A link to the tumblr page of the mapping projects is at: [http://iccm2014.tumblr.com](http://iccm2014.tumblr.com/)

1. Perceptions of distance that people travelled to get to Union Square—how far, how long, perceptions of time. There are strong connections with people coming from Brooklyn. If a disaster happens in Union Square, Brooklyn will be affected.
2. Noodle Map (<http://geothings.tw/post/102121596720/noodle-map-for-iccmnyc>). Participatory map observations were used to tell park stories. Where are people eating noodles, drinking Red Bull, holding protests? Used GeoThings (<http://geothings.tw/>). Many people didn’t want their picture taken. People are using the Square in many ways. If something happened, locking it down would be hard.
3. Entertainment on the square, as of 1210 on Saturday: blue dots were placed for actors, red for actions, green for artifacts. A click on each dot led to details.
4. Did the stores nearby service tourists or locals? Stores on the west and north mainly served locals.
5. What is your weirdest story about Union Square? #WeirdUnionSq. The researchers attracted respondents with large signs that read “What is your weirdest Union Square story?” and rewarded people who spoke with them with Hershey’s kisses and smiles. There were some very interesting tales.
6. Union Square Pirate treasure. This was a “reverse” treasure hunt. The researcher’s young daughter left things around the park and numbered them. They then found random strangers with kids and gave them the “treasure” map and so they could play it on their own.
7. Food being sold in the farmers’ markets at Union Square. Where did it come from?
8. Union Square food. This was similar to the previous one. How far out is considered local? The researchers mapped every food stall. Vermont is considered “local” from the food source perspective. The Union Square food served as a proxy for the overall market, with lots of produce, etc. However, there are questions about how stable the supply is. What would happen to the supply if the region lost fuel?
9. Activity in Union Square. The focus was on what people do in Union Square: green economic activities, recreation, etc. Researchers asked people: “What brings you to Union Square?” They generated word clouds for the east and west sides of the square. There seemed to be more stability in the activities on the west than the east.
10. Mapping the invisible. Researchers walked around the perimeter and looked at homeless people, who were mainly male and not very mobile. They were just sitting, usually on corners. To learn more they interviewed someone. Homeless people are not allowed to sit in front of stores—hence they cluster on the corners. These invisible people wouldn’t be thought about in a disaster.
11. Mobile phones were used as a proxy for connectivity. Researchers used paper markups in the field. The research was divided into two parts—a large physical map and a digital one. The physical map induced people to come over and interact on the 5th floor of the New School where the maps were finalized after people came back from the square. The digital team allowed this info to be shared more broadly.
12. The current and potential Union Square. Homeless folks are among the most resourceful people there. They locate themselves where the sun hits. They see the fire department as their friend, vice the police. Speakers usually are on the north corner, and protests on the south. There is a Barnes and Noble on the north.
13. Union Square water access (done with a pen and paper). Water has to be shipped in for merchants, but farmers had special sources of water, some not publicized.
14. Union Square market source team. Where does food come from, how many customers are there, what do you do with unsold produce? Customers were asked: “Where do you come from, how many booths did you visit? One map layer was used for the source, one for the destination.

**11-9-14: Self-Organizing Sessions and Wrap-up**

**Self-Organizing Sessions**:

* Hillary Ervin/Romy Lacour/Kathryn Baughman: “Geographies of Sexual and Gendered Violence: Communications Advocacy & Dynamic Mapping for Practitioners.” Indicators, how to map, ethical issues, how is info used? Begin a Google or other discussion group around gender, security and violence in disaster
* Celina Agaton: “From Crisis to Community: Innovations from Typhoon Haiyan & Beyond.” Philippine programs built around mapping. Questions on data collection and needs assessment. She is working with the media, etc. In some Google searches Celina’s name now comes up along with the name of the disaster.
* Jirka Panek: “Selective Effective Participatory Mapping Platforms.” Advantages and disadvantages were discussed.
* Richard Tyson: “Open Data Collaboration.” HDX is an open data ecosystem. What to build on? What are the key things to deal with? 1. Trust in an open data ecosystem with both sensitive (perhaps classified) and unclassified data. 2. tools-learning and usability and evolution of the internet. What are the tool agendas? 3. How to set up to share Geodata better? 4. How do we imagine the path to a large self-organizing future? Forward design and lessons learned. What is the governance agenda? [Follow up with Fumi].
* Christian Webersik: “Towards an Integrated Approach to Emergency Management: Interdisciplinary Challenges for Research/Practice.” He is with the Center for Integrated Emergency Management (CIEM) at the University of Agder in Norway. Focus on interfaces with practitioners. Role of social media in emergency management. Come to ISCRAM 2015 (Info Systems for Crisis Response and Management) in Norway, probably in May. [link to Yuki]

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Center for Integrated Emergency Management <http://ciem.uia.no>

Participants included:

An emergency manager from Vancouver

A Fire Chief in Belgium, who also volunteers with the SBTF, and is part of ISCRAM

A recent German graduate an MS in Physics on complex network science, and an interest in helping in crisis and logistics.

A student from the New School

A DoD professor with experience in ICT and emergency management

CIEM is a multi-disciplinary research center at Univ of Agder. It applied for Norwegian COE status and was well received, but not funded. Will re-apply in 2016. It focused first on developed countries and terrorism plus fires and flooding in Norway.

A focus is human-centered trends in emergency management. Mobile phones lead to **human-centered sensing** and actions (banking, alerts, etc.). There is great potential. The center is looking at the whole cycle of crisis management, including preparing for and working on climate change. It is interested in integrated operations. Use community workers for translation in inadequate literacy situations. The rate of change of tech is reflected in. **Koomey’s law, computations per joule doubles every 18 mo (**<http://www.infoworld.com/article/2620185/green-it/koomey-s-law--computing-efficiency-keeps-pace-with-moore-s-law.html>). Norway makes smarter decisions through integrated planning and operations, including socio-cultural aspects. Solutions need to work for local populations—cheap, simple, widely accessible. Put emergency management into context. Focus on vulnerability mapping--people will move to where jobs are, not necessarily to increase their of society’s resiliency. Research topics incluse the role of local structures, knowledge and perceptions (who do people trust and listen to?), political implications, how can ICT reduce vulnerability? Smart phones are spreading. Some ideas to examine: Self-organized networks (human-centered and opportunistic) in disasters. [tie to MIT Lincoln Lab’s ignite talk and Brian Steckler]. CIEM is working on 2 specific projects: SmartRescue (How to evacuate during a fire on a ferry) and SmartEmis [Emergency Management Information System] (analyzing tweets for disaster evacuation). [tie to TIDES apps for disaster, IVS, etc.] Funding is from a mix of government and Industry. How to sort out noise from fact? Link heat and noise sensors on cell phones to other data and use them across different rescue tasks. EMIS plans to map existing the ICT infrastructure near the University.

* Helen Campbell, Dennis King and Ian Gray: “Humanitarian Decision Making”. 1. Review of map use in recent crises, categorize info and meet with decision-makers, and 2. How can info be used by the affected community? A COI has been established.
* Andrew Mau: “How can we Design a Scalable, Distributed, Real-time Collaborative System for Live Crisis Mapping?” [tie to Paul Bartone and the distributed staffs team and GMU]. Learning about challenges for volunteers.
* Donna Weber and Leesa Astredo: “Disaster Detox: Your Personal Recovery from Online Disaster Work.” Approaches for volunteers who get over-taxed. [Tie to Tony Spinosa] Tools and preps are available: Skype windows, EM safespace. Write, journal, etc. Problems with community platform. Anyone with ideas for autonomous, anonymous platform please contact us.
* Kevin Dobbs. “Crowdsourcing and Crisis Mapping for Floods – Best Practices and Case Studies for Readiness, Response, and Recovery.“ What works and doesn’t? There are good international connections. There is a Global Flood Partnership, headed by Bob Breckenridge. Bring together data products. Didn’t hear much about crowdsourcing. [share with Andreas Karsten at BBK]

What cycle of the disaster are you working in? What do local people use? Are you a producer or a user?

DoD and FEMA are looking at a Storm Surge model

World Bank GFDRR (Global Facility for Disaster Reduction and Recovery-- <https://www.gfdrr.org/>) is using data from the Dartmouth Flood Observatory (<http://www.dartmouth.edu/~floods/>).

The Belgium fire service is a responder with a very high interest—many Belgian cities are below sea level. They use Google Maps to analyze and share info. There are good European storm surge projection tools.

Tom Gurtin: MapGive initiative from State. Learn more about flood mapping. Look at **INASAFE** open source tool (<http://www.gistimes.com/2014/announcements/disaster-management-with-inasafe-2-0/>) for flood mapping. A tutorial is at: <http://inasafe.linfiniti.com/en/tutorial-docs/tutorial.html> Elevation data is valuable. Looking forward to the worldwide release of SRTM (Shuttle Radar Topography Mission) data next year.

Zab, conflict prevention, interrelationships. Have used Ushahidi and FrontlineSMS (<http://www.frontlinesms.com/>)

Eric, grad student in urban design. Looking at the flood plane in Red Hook, Brooklyn.

Steve from Google Crisis Response. Early warning—how to communicate.

Yves from Belgium near Antwerp. They have looked at many potential disasters—nuclear power and petrochemical, but storm surges and flooding are the main risks—the area was flooded for months in 1953. The Flemish Water Managers [www.waterinfo.be](http://www.waterinfo.be) are experimenting with social media reporting. Cell broadcasting is still in infancy. In flooding situations want to narrowcast.

LW2: Pursue solutions that are sustainable by local populations with their resources. In 2010 the Philippines held a national conference on “Engineering for Resilience.” The World Bank principle of Build Back Better (BBB) after disasters should be applied—don’t rebuild in the flood plane. There is a DoD project on helping decision makers deal with the Information Volume and Velocity (IV2) generated by social media and the 24x7 news cycle.

Project Fogg: inexpensive aerostat kit, built around tethered balloons. Maybe kites and balloons. Comms are critical. [Link to Denisa Scott]

American Red Cross: Participatory mapping of flood plains.

OpenDroneMap (<https://github.com/OpenDroneMap>) can get data quickly, but need 80% imagery overlap. One goal is to make a high resolution elevation product. The standard for FEMA is 18cm. There is a new LIDAR product that is the size of a hockey puck. Back out surface model from imagery. [Can Parjana ([http://www.parjana.com](http://www.parjana.com/) ) approach to land absorptivity scale?]

Google and Airbus are partnering on **Google Earth Engine** (12.5m elevation). In Mar 2016 JAXA (Japan Aerospace Exploration Agency) will provide global 5 meter elevation coverage, w 30m coverage free. SkyBox for Good also is coming on line: (<http://www.skyboximaging.com/blog/introducing-skybox-for-good>).

Data now are delayed a couple days, which isn’t very helpful. How to tie crowdsourcing to satellite imagery? Ask people? Jakarta gets flooded about 10x/year. Build interfaces with OSM buildings (<http://osmbuildings.org/?lat=52.52111&lon=13.40988&zoom=16>). Europe is trying to engage the public in sending data on avalanches and water. Ask people to send app for temp, snow moisture, tweet, etc. Another project is in storms—ask people to send pictures of skies and combine with 3D models. It all starts with elevation data. European governments have said they can’t ask for pictures of flood areas because it would show citizen vulnerabilities.

In applying the BBB principle—how does Belgium relocate people after disasters? The government acquires the flooded land and swaps it with owners for plots in less vulnerable places.

The COPERNICUS program (<http://www.copernicus.eu/>) in Europe has great data. [tie to MIIS Blue Economy]

Nadir vs. oblique imagery. For location accuracy, nadir is better, but for damage assessment oblique is better better.

Where are best practices: Netherlands/Belgium for storms, along the Mississippi for annual floods, but it’s critical to integrate the weather piece into predictions (amount of snow melt, when).

Europe’s GloFAS (Global Flood Awareness Systems--<http://www.globalfloods.eu/en/>) is an excellent resource on categories of floods: Storm surge, tsunami, flash floods, annual river flooding, etc. Who are best at what? Governments started with telling people not to build, now they are asking them to give land back to the water (converting property to wetlands, sea grass vs seawalls, etc.) The levee system in US relocates the floods.

Nigel Snoad led a discussion of the OSM team and Missing Maps. There are chances to share preparedness and response data. Google will engage. The CrisisMappers mailing list needs to be revised and updated. Be contentious in the mailing list—Why aren’t we doing…..? Be real. Don’t set up your own maps. Work to bring projects together.

Mathan Ratinam: What would success look like: How to stress test the CM community?

* The ICCM 2014 event showed several examples of agile practice and other innovation

.. The rapidity of setting up the Union Square hashtag

.. Adjusting when the Field Papers server down

.. Producing valuable results even though fewer than half of the ICCM participants were mappers

.. It was encouraging to see how much energetic talking was done with hands

.. The key was actually to make something. It was interesting to watch the change in tempo over the day, as well as the arc over the course of the conference.

Appreciate all the creativity and agility. Anticipate that the theme of ICCM 2015, in Boston in conjunction with the Harvard Humanitarian Initiative (HHI), will be: **How to put CrisisMapping in the shoes of survivors?** A goal will be to put user-based thinking at the heart of the efforts.

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