

Crisis Information Management Advisory Group (CiMAG) Retreat

23 – 24 June 2014

Glen Cove, New York

Report



Overview

Led by the UN's Office of Information and Communications Technology (OICT) and organised by the ICT4Peace Foundation, the 2014 Crisis Information Management Advisory Group (CiMAG) meeting was held on 23rd and 24th June in Glen Cove, New York. Representatives from OICT, OCHA, UNOCC, ICTD/DFS, UN Global Pulse, UNHCR, DPKO-DFS, UNDP/BCPR, UNICEF/ITSS, UNICEF/Innovation Unit, WFP, EOSG, UNDP/BCPR (Bureau for Crisis Prevention and Recovery) and DPA/EO/IMT participated along with, on the second day, representatives from Harvard Humanitarian Initiative, Amnesty International USA, The Resolve LRA Crisis Initiative, NYU and Storyful. UNHCHR and UNOSAT, who took part in the CiMAG retreat in 2013, sent regrets on their inability to participate on account of scheduling conflicts.

The agenda and list of participants are attached to the end of this report.

Overall observations

1. Interest in the UN CiMS process and CiMAG (A/65/491) remains high amongst the UN stakeholders. The retreat provides a space for key stakeholders in the United Nations system to openly discuss institutional investments in crisis information management as well as key challenges faced in this regard. Year after year, feedback from the UN participants strongly suggests opportunities for collaboration, coordination and harmonisation of efforts around CiMS, as a result of the face-to-face interactions and presentations at the retreat, are significant and deeply appreciated. In addition to this, the CiMAG retreat, because of its carefully curated format including participation of a select group of voices from the crisis mapping community, is now regarded as a space to pursue and explore ideas around cutting edge issues and technological developments in humanitarian aid, crisis information management and computational developments around big data.
2. There remains a substantial interest in, enthusiasm for and commitment to CiMS and the CiMAG process by its members and work together to jointly implement CiMS. A number of specific new commitments by the members of CiMAG (especially OCHA and DPKO/DFS) have been taken at this retreat again and are mentioned below.
3. The expansion of CiMAG membership to include the Department of Political Affairs (DPA) and by extension, discussion around crises that embrace complex political emergencies.
4. As was flagged in 2013, CiMAG members concurred that an annual retreat, no matter how useful, was insufficient to fully realise the potential of CiMS, across agencies and throughout the rest of the year. The importance of a small secretariat, ideally located at the OICT/CITO's office to oversee the CiM process was reiterated, supported by the UN system. In addition to the points flagged last year, participants valued independent insights and input into investments around crisis information management that could be generated from a small secretariat.

Day 1 (23rd June 2014) notes

In his framing of the retreat, ASG and UN CITO Ms. Atefeh Riazi flagged a number of developments and challenges around the use of information and communications technologies in general, their political, economic and social implications, risks and opportunities and the governance frameworks around their use. She also underscored the need for renewed cybersecurity related efforts to protect UN infrastructures. In her comments, she also reiterated her fullest support to the CiMS process and CiMAG, noting that her office was ready and willing to support its development "in any way". ASG Atefeh Riazi also flagged the importance of data driven decision, noting that there was still some way to go in fully opening up datasets in the UN to more fully support disaster response.

The Chairman of the ICT4Peace Foundation, Daniel Stauffacher, outlined key drivers of the CiMS process and the evolution of CiMAG, noting both how much had changed in a few years as well as the enduring challenges around timely, effective and efficient information sharing across the UN system and beyond. Daniel flagged the mission to MONUSCO, facilitated by DPKO/DFS earlier in the year, and underscored the need to incorporate CiM into regular and voluntary UN budgets. He also underscored the importance of monitoring CiM activities, including their evaluation as part of all crisis responses evaluations - with questions around how this could be done, and who should do it. Flagging the Foundation's work on cyber-security in the context of CiM, Daniel noted the need to look at information assurance and data security as inextricably entwined with operational mandate and mission effectiveness.

Sanjana Hattotuwa, Special Advisor at the ICT4Peace Foundation and curator of the CiMAG retreat in his opening remarks flagged key developments over the past year, including discussions around big data at the International Crisis Mappers Conference in Nairobi, Kenya last year, the founding of UAViators.org, the world's first network of humanitarian UAV operators and the Flipboard magazine and timeline on big data curated by the Foundation. Aside from institutional output, Sanjana flagged how super typhoon Haiyan had tested the UN system's crisis information management and also brought to light new challenges. He underscored that it was no longer the technology (development) that was the challenge, but governance frameworks around information sharing, which in turn flagged the enduring need for high level leadership at the UN. Speaking of information management in a post-Snowden world with resulting and heightened concerns around data security (echoing Daniel's submission on cyber-security), Sanjana flagged the need to look at how, why, when and what information was shared, and with whom, not as personal proclivity but increasingly as part of a considered institutional approach to information sharing around crises.

Key points from the presentations made by the UN participants included,

- How big data, both user generated and generated by telecoms companies for example, were proving invaluable in asking questions early warning and effective response which could not be framed earlier. Using de-identified data from call data records, for example, as well as access to the Twitter firehose, participants were shown the variety of analytics and visualisations that could be generated to help the UN system as a whole respond more effectively to crises. The next big step in this regard was the datafication of broadcast radio in an African country. It was hoped the resulting data could help in identifying key trends in public perception based on the content and tone of the broadcasts.
- Another presentation underscored the enduring challenge around systemic interoperability, noting that though there was now a range of platforms around crisis information management, it wasn't always the case that these systems were able to exchange information with each other (in addition to challenges around information governance at senior leadership level).
- Several noted the lack of any institutional approach to cloud computing and storage - some agencies were open to and had already embraced cloud computing solutions like Microsoft Office 365 with individual level rights around sharing of content, others said these were simply not options for them even to consider, given political sensitivities around data security especially after the Snowden revelations.
- The unwillingness to share information was flagged by some, especially between the field and HQ in New York, as an impediment to more coherent and timely operational and situational awareness.
- Several flagged the challenges around embracing social media content (also called open source intelligence or OS-INT). All felt the need to engage with this material, but many were clearly overwhelmed by the sheer volume and velocity of content generation, along with the challenge of verifying content by unknown sources.
- When talking about big data, some said that it was easy to see what you wanted to see, but harder to determine trends and early warning around that which was outside analyst frameworks. There was talk about leveraging web intelligence for CiMs and several platforms and applications in this regard where showcased.
- Participants repeatedly underscored the importance of open source information management and platforms, as well as agile development - in other words, the development of CiMs platforms around users and needs, in a rapid cycle of iterations, instead of more traditional, top heavy development cycles that resulted in out-dated and outmoded platforms.
- Many participants showcased platforms and apps that were free and open for re-purposing by other agencies, and even entities outside the UN system. These included SMS applications as well as more sophisticated APIs and platforms around core institutional interests and foci of the UN.
- Agencies said that instead of trying to do everything in-house, they were now employing technology developers from outside the UN system, resulting in better more effective solutions. Others spoke of a complete revamp of their information management architectures, including their interactions with the crisis mapping community (also referred to as the Digital Humanitarian Network - DHN). Progress around the qualitative strengthening of the [COD/FOD datasets](#) was also mentioned as substantial progress from last year, in addition to projects like [HXL](#).
- Participants noted the Expert Panel on Technology and Innovation in Peacekeeping as a process that could benefit from the collective experience and knowledge of CiMAG. They also flagged the need for a more systematic approach around innovation within the UN system, including a culture where failure was shared more openly and non-judgementally. Some questioned what innovation meant in a world where so much was changing so rapidly, and yet underscored the need, for the UN, to lead by example.

In the discussions that ensued, participants spoke of the need to strengthen - using all what was demonstrated and now possible within the UN system - a common operating picture around any given context and geo-location. In this regard, it was repeatedly mentioned how just seeing various mission actors on a map had changed perceptions of many SRSG's around CiMs and information governance. Some still wanted an overarching collaboration tool, whereas others said part of the challenge now was that information was decentralised too much. Many agreed that funding and donor priorities were also important to consider around CiMs, and given their fickle nature, the challenge around longer-term investments in CiMs.

The Foundation flagged several points, including how even the best predictive (algorithmic and human intelligence based) analysis was often hostage to a lack of political will to act in a timely manner, the difference between coordination and collaboration, how it was more important to have a coherent and institutional data governance architecture over and before any large scale collaboration platform, the varying need of technology depending on what was being studied (e.g. sudden onset disaster vs. complex political emergency over the longer term), the need to establish and the challenges around the establishment of baselines in order to ascertain significant variations in for example content generation on social media that could mark important events, how the inward looking nature of a lot of the platforms needed to change to a more institutional and outward orientation in design and governance, the need to look at engaging corporate bodies around getting the data they controlled for UN purposes and the need to look at how high level (or HQ centric) data analysis and visualisation leads to more concrete ideation around empowering disaster affected communities (as agents of their own decision making around disaster mitigation and response).

The discussions also flagged the need to look at decision modelling over, or with as much emphasis, as predictive modelling - the reason being that once early warning was received, institutions needed to know how to respond, and in what manner. Participants speaking to the debate on cloud storage of UN information noted that it was arguably the case that information on Amazon's cloud for example was secured to a much greater degree than information within the UN system, given the capabilities of surveillance agencies. In response, others said that it was a question of politics and optics over technical aspects that governed these debates. Speaking to engagements with telecoms companies around the data they had (data philanthropy), some said that it could be possible to develop applications around sensor data, user generated content and trusted UN data that could approximate a weather app on a mobile - an indication around context that changed depending on inputs, giving actors an indication of what to plan for.

Speaking on innovation, many said the issue was scaling up apps and platforms, and underscored the need to set up labs to strengthen innovation, creative ideation and innovative practices within the UN. Participants also asked for a more concrete rationalisation of open data - a return of investment argument, giving concrete examples of how and when open data helped crisis information management. Some also noted the need to maintain a 'public record' of decisions, and what fed into them, in an information environment that was rapidly changing. Participants who were recipients of pre-packaged information spoke of how inadequate some reporting was. Participants responsible for up-stream reporting spoke of how demands around reporting led to confusion and resistance to sharing. Responding to this, others said that information sharing wasn't about sharing everything or nothing, and that what was needed was a more nuanced framework.

Many spoke about the lack of any institutional guidance on information sharing, flagging that different agencies and department had different guidelines in this regard, making inter-agency coordination and collaboration challenging. Others openly said that the use of Skype, Google Docs and Dropbox, for example, had changed the way they worked especially with communities outside the UN system - in other words, where needs based adoption of technology led to practices that eventually fed into institutional governance around information sharing.

Flagging the dangers of allowing corporate actors into the traditional mandate of the UN, participants noted an example where child protection was put at risk because their information was shared openly, after a disaster, on a well-known missing persons platform. Ironically, some even went as far as to say that without looking at any other use case or need, what CiMs really needed to address was better email communication, given how archaic some systems were at the UN (also in light of the growing need for encrypted email communications).

There were commitments from the UN actors present to share relevant information with the UNOCC (esp. humanitarian information), for peacekeeping actors to look more closely at COD/FOD data, for agencies to release new datasets around the location of offices, refugee camps and movements in the public domain, the use of HXL to exchange key information between humanitarian and development agencies, distance learning modules around IM and more comprehensive admin and road datasets. Other commitments included,

- *Collaboration on Humanitarian Data Exchange (HDX).* OCHA to meet with DPKO/DFS to discuss sharing data on crisis countries where we are both present. DPKO are looking to make their datasets available through HDX, and OCHA is looking to share relevant crisis data with DPKO. OCHA to also meet with UNDP-BCPR around the use of HXL for data exchange and UNDP-BCPR's own programming.
- DPKO/DFS will continue to roll out CiM Platforms (for better Situational Awareness) in Peace-Keeping Missions worldwide (based on ITEM/SAGE) and build appropriate Data Governance/Architecture for Situational Awareness within the PK Missions (with the military/police/civilian components). On a pilot

basis the data governance structure will be expanded in the field to the UN Country Teams. OCHA committed to cooperate with DPKO/DFS in this regards.

- *Global Pulse and OCHA collaboration.* Having been discussed for a while, 2014's CIMAG was a platform to concretely discuss a pilot project which is essentially a scoping exercise on Syria, where Global Pulse will explore how it can help OCHA's analysis of the humanitarian situation there, using social media and data.
- *Storyful.* OCHA is considering a pilot subscription with Storyful, and may do this in conjunction with DPKO and SitCen. We see this as potentially benefiting a) OCHA's own analysis of crisis situations (this component we may do in collaboration with DPKO/SitCen), and b) look at Storyful as a new stream of content that can be integrated into ReliefWeb as a public service. As the ICT4Peace Foundation suggested, CiMAG members should perhaps approach Storyful to see if there were interested in a partnership here.
- *Email and Integrated Microsoft Suite.* One issue that did come up in the 'futures' discussion on the first day of the retreat was the state of the UN Secretariat's internal messaging systems, email architectures etc. While it was to the mirth of many to focus on email, the discussion nevertheless underscored the critical importance of getting the foundations of information exchange and management right, with email as a basic and essential building block of any CiM strategy that despite its mission critical nature, still suffers from incompatibilities and outages. OCHA was interested in working in collaboration with OICT to address this issue.
- CiMAG to support the efforts of the DPKO/DFS High-Level Panel on Technology and Innovation for Peacekeeping.

Day 2 (24th June 2014) notes

Day 2's presentations began with an overview of the crisis mapping community by Sanjana, including technology developments like Sahana Eden and CrisisMap API by Ushahidi. Sanjana also flagged that big data didn't mean the same kind of data in all contexts and that in places like the Central African Republic (CAR) and South Sudan it was still extremely challenging to find out through social media the context on the ground, in addition to the challenge of verification. Sanjana noted that those invited to participate on the second day were carefully selected from the crisis mapping community to reflect current concerns and challenges within CiMAG as well as issues, ideas and developments they should be looking at, and would be dealing with, in the future.

Harvard Humanitarian Initiative, Amnesty International USA, The Resolve LRA Crisis Initiative, NYU and Storyful each gave thought provoking presentations, after which there was a discussion with the larger CiMAG group.

Key questions and concerns in this regard were anchored to how entities like Storyful could on an institutional level help verification needs of a number of actors at HQ and field level within the UN. There was also discussion around the ethical and rights based frameworks of some of what was showcased, including how best to ensure the communities at risk benefitted from the information available to those at the UN. Others flagged the issue of liability and how the UN needed to rethink liability when dealing with information outside its traditional reporting procedures and trusted sources. When dealing with UAVs, participants questioned the need to look at relevant laws and issues around sovereignty, plus how the democratisation of such technologies on platforms like Pirate Bay would play out. UAViators.org was flagged as a key platform in this regard to anchor on-going debates around the use of UAVs for humanitarian and non-lethal purposes, and CiMAG participants were invited to contribute to the code of conduct on the site. Prefiguring the working group on UAVs, many participants spoke of the need to regulate professional and amateur operations after a disaster, the need for collision detection and avoidance mechanisms, and above all, their operation in communities that are traumatised on account of the nature of the disaster, or because of lethal or offensive drone operations.

Working groups discussions (Day 2, 24th June 2014)

Originally planned to be held as parallel sessions, the 'breakout' sessions on Day 2 were actually held back to back with the entire group, given the interest of many in the room to be present in more than one discussion. The discussion around data science and big data focussed around the ethical, rights based challenges around big data generation and use, as well as the governance frameworks around big data generation and use in analysis. There was also discussion around how bias fed into and informed big data analytics, no matter how algorithmically complex predicative modelling was.

The discussion on the use of UAVs for humanitarian aid and non-lethal purposes by the UN dovetailed with the discussions just after the presentation on modular drones earlier in the day, noting that the UN needed to deal with the challenge of reclaiming a space (and popular imagination) captured by the US military and CIA. Participants noted that the FAA's approach to civilian flights of UAVs, including for non-lethal purposes, would be looked upon by others in the world as a template for their own civil aviation authorities to regulate drone usage. Others noted the risk of conflating military objectives with civilian and non-lethal objectives just by the mere introduction of UAVs in certain operational contexts, leading to even greater challenges to the humanitarian community. Speaking of the need for regulation, participants said there was also a danger of over regulation. Other flagged key developments in this area over the next year, including the development of Centres of Excellence in UAV use outside the usual concert of UN and Western actors. Many spoke of the need for leadership by the UN in this area, but there was no real agreement on how and who that could be. There was mention of some agencies that could take the lead in this regard, including UNHAS and UNOSAT. There was also discussion around the community level access to imagery by UAVs, and what implications this would have on agencies of the UN that provided this content. Looking forward, participants looked at how drone free zones could be a part of urban planning in the future - around which there was a very rich discussion around the legal and ethical challenges around increasing UAV use. Some use cases for non-lethal UAV uses were,

- Rapid assessment of disaster damage to building infrastructure
- Rapid assessment of power lines and other electricity infrastructure
- Identify usable roads and transportation infrastructure
- Identify useful areas for humanitarians to set up base camp
- Aerial support for road clearance activities
- Estimate population displacement
- Identify temporary shelters
- Identify best locations to set up new temporary shelters
- Survey impact of disaster on agriculture, farmland
- Search and Rescue
- Identifying whether radio transmitters/assessment of communications on the ground still work

The conversation around verification focussed around the challenge of ascertaining the veracity of information produced outside the UN's traditional reporting sources, and also demonstrated some of what was possible with the technology today.

Sanjana Hattotuwa, ICT4Peace

Daniel Stauffacher, ICT4Peace

13 July 2014

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23 – 24 June 2014

Glen Cove, New York

Agenda

22nd June, Sunday

- 17.30 Departure from UN HQ for UN/Day 1 participants, Visitors Entrance
19.00 Welcome dinner at venue

23rd June, Monday

- 07.30 – 08.30 Breakfast
- 08.30 – 08.45 Welcome and comments by Ms. Atefeh Riazi, Assistant Secretary-General, Chief Information Technology Officer, Office of Information and Communications Technology (OICT)
- 08.45 – 09.00 Welcome and comments by Mr. Daniel Stauffacher, Chairman, ICT4Peace Foundation
- 09.00 – 10.30 Ten-minute flash presentations on progress around the CiM strategy and framework over 2013 by, *inter alia*,
1. UNOCC
 2. UNDP
 3. UNICEF
 4. OICT
 5. OCHA
 6. DPKO / DFS
 7. UNHCR
 8. UNOSAT
 9. UN GlobalPulse
- 10.30 – 10.45 Coffee break
- 11.00 – 12.00 Comments and outcome oriented responses to presentations and updates by CiMAG members, including specific issues and projects not covered in presentations. (Chaired by Daniel Stauffacher and moderated by Sanjana Hattotuwa, ICT4Peace Foundation)
- 12.00 – 13.00 Lunch break
- 13.30 – 14.30 Discussion around Hurricane Haiyan preparation, response and recovery. Participants will discuss if and how technology and platform developments since Haiti's earthquake in 2010 contributed to different outcomes in coordination, collaboration and information sharing. What are enduring challenges and needs? (Moderated by Sanjana Hattotuwa, ICT4Peace Foundation)
- 15.00 – 15.15 Coffee break
- 15.15 – 17.00 What's on the horizon? Commitments and tangible outcomes to push forward CIM strategy, anchored to, *inter alia* peacekeeping missions, UNOCC's work, Open and Big Data, data science, digital humanitarians/V&TC community engagement, the development of HXL, mapping and verification.

(Moderated by Sanjana Hattotuwa, ICT4Peace Foundation)

- 17.00 – 17:15 Concluding remarks by OICT & ICT4Peace Foundation
- 18.30 Cocktail for all participants (including those attending 24th June sessions)
- 19.30 Dinner for all participants

24th June, Tuesday

- 07.30 – 08.30 Breakfast
- 08.30 – 08.45 Welcome and comments by Amb. Daniel Stauffacher, ICT4Peace Foundation
- 08.45 – 09.15 Welcome and comments by Sanjana Hattotuwa, ICT4Peace Foundation followed by topline presentation of first day's discussions and challenges
- 09.15 – 10.30 10 – 12 minute presentations on key private sector platforms, civil society output and research focussing on use cases and potential for humanitarian response, peacekeeping and situational awareness,
1. Storyful
 2. Harvard Humanitarian Initiative
 3. Amnesty International USA
 4. New York University (NYU) drone research
 5. The Resolve LRA Crisis Initiative
- 10.30 – 10.45 Coffee break
- 10.45 – 12.00 Comments and discussion around the presentations by UN CiMAG members (Moderated by ICT4Peace Foundation)
- 12.00 – 13.30 Lunch break
- 13.30 – 15.00 Parallel breakout group discussions on,

1. Moving from Big Data to Data Science: Challenges and Opportunities

Big Data today is today a catch-all phrase often paraded without a clear understanding over the implications of using large scale datasets in humanitarian relief and aid operations. While it is true that over a short span of time, big data's usefulness in aid and relief efforts have been empirically tested, much of what is discussed is garbed in academic overtones, but is really the language of marketing. Data science offers a different perspective on big data, suggesting that independent of the volume of data, institutions and key stakeholders need to develop strong analytical capabilities, or be interested enough in data driven analytics to outsource this research. The shift to analysis and, in tandem, data visualisation, shifts the focus away from the dataset size to what can be done with it, and the implications of using actionable information generated by a combination of algorithmic and human curation. This breakout group will focus on the implications of mainstreaming data science in humanitarian organisations, associated challenges including governance models around generation, retention and dissemination of information, and a rights based perspective around analytical output, reflecting concerns that downstream analysis can affect individuals who are part of datasets already at risk or stigma, marginalisation or violence.

Led by Patrick Vinck, Harvard Humanitarian Initiative (HHI)

2. Drones and disasters: Managing fears with opportunities

The UN and other actors in peacekeeping and humanitarian scenarios are already using drones, and it is likely this will grow in the years ahead. The novelty of using drones at present is also likely to wane in the future, with UAVs becoming increasingly mainstreamed into humanitarian response operations, peacekeeping oversight missions, conflict early warning and post-disaster needs and damage assessments, in addition to other field based operational scenarios. And yet, a number of concerns remain around their use, including, but not limited to,

- *Issues of spectrum management, so as to avoid mid-air collisions and radio frequency interference that in high density operations, can lead to inadvertent harm to operators and others in and around flight paths,*
- *The pre-dominant need for ethical frameworks to govern the use of UAVs in humanitarian domains and contexts, and a rights based approach to their introduction, including the information collected as a consequence of their operation.*
- *The need to differentiate (in terms of operational ceiling but also based on intent) UAV operations in humanitarian contexts with UAVs that provide Internet access, for example, as mooted by several companies to date.*
- *How UAV derived imagery could be used to crowd-source and expedite analysis. How higher frequency of image gathering along with better resolution, the greater possibility of community ownership of and access to UAV acquired information, far lower operational costs in comparison to satellite image acquisition and analysis, faster capture to delivery mechanisms and other factors position UAV imagery as that which can complement (not replace) traditional satellite imagery based analysis and responses around disasters.*
- *The challenge of regulating or governing UAV use around disasters, and despite these challenges, the need for some sort of regulation and governance around their use via a Code of Conduct and other enabling legislation on international and domestic levels*
- *The need to proactively generate ideas and critically analyse use cases around UAV use in non-lethal contexts, so that best practices can be drawn up from their increasing use globally*

This breakout group will address some of these issues, and using the experience and knowledge of those present, ideate best practices around the use of drones in humanitarian emergencies.

Moderated by Sanjana Hattotuwa, ICT4Peace Foundation

3. Verification of crowd-sourced information: Trust beyond the known

Emergent real time verification platforms, tools, methodologies, apps, conceptual design and thinking are reshaping the way we engage with the tsunami of information around a humanitarian crisis or even a complex political emergency. And yet, the state of the art in real time verification has hitherto escaped key actors in the UN system, who are still struggling to cope with the information deluge. This breakout group, led by one of the world's leading groups in social media verification, will look at ways to strengthen models of cooperation and collaboration when dealing with real time information in order to generate actionable intelligence and output.

Moderated by Storyful

Coffee will be served in working groups

15.00 – 16.00 Reporting back to plenary and discussion

16.00 – 16.15 Concluding remarks by organisers

16.00 Departure to UN in New York (Visitors Entrance)

- Suggested attire: Informal
- All discussions and presentations, amongst all participants, on all the days, whether in-session or informal, will be under Chatham House Rule, unless otherwise explicitly noted.
- Coordinators: Content and structure by Sanjana Hattotuwa (sanjanahattotuwa@ict4peace.org) | Logistics by Edzel Crispino, OIC

Participants at CiMAG retreat

Name	Designation	Institution
Daniel Stauffacher	President, ICT4 Peace	ICT4Peace Foundation
Sanjana Hattotuwa	Special Advisor, ICT4 Peace	ICT4Peace Foundation
Atefeh Riaz	UN ASG CITO	OICT
Gudrun Fosse	Special Assistant to CITO	OICT
Edzel Crispino	OICT	OICT
Lambert Hogenhout	Knowledge Management Service, OICT	OICT
Craig Williams	Chief, Field Information Services	OCHA
Mark Dalton	OCHA	OCHA
Rajkumar Cheney Krishnan	UNOCC	UNOCC
Paula Simas-Magalhaes	UNOCC	UNOCC
Suzanne Shanahan	Sr IT Officer	ICTD/DFS

Guillaume Criloux	Chief, Geo-Operations Unit, UN Cartographic Section	DFS
Robert Kirkpatrick	Director, Global Pulse	UN Global Pulse
Andrew Alspach	UNHCR	UNHCR
Christina Goodness	Chief, Peacekeeping Information Management Unit, DPKO/DFS	DPKO-DFS
Tala Hussein	Information Technology Analyst, Bureau for Crises Prevention and Recovery	UNDP/BCPR
Karim Ghalaini	Senior Architect, Connectivity Communications and Collaboration	UNICEF/ITSS
Mac Glovinsky	Lead, Innovation in Humanitarian Action	UNICEF/Innovation Unit
Rashid Kashif	Senior GIS Advisor	WFP
Yvonne Knoepfel	EOSG	EOSG
Emmanuelle Bernard	Early Warning Consultant	UNDP/BCPR (Bureau for Crisis Prevention and Recovery)
Alejandro Caruso	Team Leader	DPA/EO/IMT
Philip Helmingier	Political Affairs Officer	DPA

Patrick Vinck	Director, Program on Vulnerable Populations	Harvard Humanitarian Initiative
Christoph Koettl	Emergency Response Manager, Crisis Prevention and Response Unit	Amnesty International USA
Paul Ronan	Co-founder & Executive Director	The Resolve LRA Crisis Initiative
Pilar Zaragoza	NYU / UNICEF	NYU / UNICEF
Malachy Browne	News Editor	Storyful

Notes