





**WORKING SESSION**

**Earth Observations and High Technology to Reduce Risks**

**Brief & Concept Note**

**Brief**

1. **Why is this topic important ?**

During the past decade there has been a growing recognition of the contribution of satellite-based data complemented with in-situ Earth observations, geospatial information, Information and Communication Technologies, and robotics to decision making in disaster risk reduction.

These technologies can be interconnected to support effective measures and operations in all phases of the disaster risk reduction cycle, providing risk information for effective disaster risk management, including prevention and preparedness, and enabling decision makers to quickly and fully understand the risk and possible impacts of disasters in order to make timely decisions and actions.

These technologies can significantly contribute to the achievement of the outcomes and goals stipulated in the post-2015 framework for disaster risk reduction.

1. **What gaps need to be filled?**

For these technologies to be fully utilized, they need to be easily accessible, user-friendly and have to be integrated into existing and planned disaster risk reduction procedures. In order to contribute to increasing local resilience, emphasis should be placed on “end-users”, including local governments, communities and residents, particularly those in urban areas where the vulnerabilities of human settlements and natural environment are rapidly growing. Coordinated approach to provide these technologies and services would also need to be enhanced.

1. **What (new) commitments are expected to be achieved?**

Partners involved in Earth observations technologies will present their voluntary commitment to launch an international partnership to respond to the requirements of a post-2015 framework for disaster risk reduction.

Representatives from geospatial information, Information and Communication Technologies, and robotics will also present successful practices, web portal and engagement from stakeholders as their voluntary commitment to support the implementation of a post-2015 framework for disaster risk reduction.

**Concept Note**

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| **Schedule** | Sunday 15 March 2015 from 12:00 to 13:30 |
| **Room and Venue** | Exhibition Hall 1, Sendai International Centre |
| **Organizing team** | Governments:  Japan: Cabinet Office, MIC, MEXT, GSI, JAXA;  Germany: DLR;  China: NDRCC;  Dominican Republic: CNE - EIGEO  Bangladesh: MoDMR;  Sri Lanka: DMC.  International and Regional Organizations\*:  UNOOSA/ UN-SPIDER, UNESCAP, UNSD, UN-GGIM, UNITAR/UNOSAT, FAO, ITU, GEO, CEOS, GFDRR, ESA, ADRC, ICIMOD, ISCGM, IEEE RAS, IAEE, IMWI, CAS-TWAE-SDIM , IRS, CRASAR.  Academia: IRIDEeS, Tohoku University, Japan  \*. Annex “A” presents the full name of each of these institutions. |
| **UNISDR Focal Point** | Pedro Basabe |
| **Background and Rationale** | During the past decade there has been a growing recognition of the contribution of satellite-based data complemented with in-situ Earth observations (EO), geospatial information, Information and Communication Technologies (ICT) and robotics to decision making in disaster risk reduction (DRR).  Earth observation data are now increasingly available and provide unique information for all scales from global to local and particularly in trans-boundary areas. They are used to monitor many types of hazards day and night and virtually under all weather conditions. Geospatial information technology has introduced innovative information platforms for location-based data acquisition, compilation, integration, analysis and display; enhancing the understanding of disaster risks. ICTs, including smart phones, now provide means to deliver data and information to decision makers and to local people and vice versa. Robotics and remote sensing technologies can be used in hazardous environments contributing to local surveillance, information gathering, and recovery of actual and potential damage with improved efficiency before, during and after disasters.  These technologies can be interconnected to support effective measures and operations in all phases of the disaster risk reduction cycle, providing risk information for better disaster risk management, including prevention and preparedness, and enabling decision makers to quickly and fully understand the risk and impacts of disasters in order to make timely decisions for prompt responses.  These technologies will significantly contribute to the achievement of the outcomes and goals stipulated in the post-2015 framework for disaster risk reduction. For these technologies to be fully utilized, they need to be easily accessible, user-friendly and have to be integrated into existing and planned DRR procedures. In order to contribute to increasing local resilience, emphasis should be placed on “end-users”, including local governments, communities and residents, particularly those in urban areas where the vulnerabilities of human settlements and natural environment are rapidly increasing. |
| **Session Objectives** | This session aims to discuss the roles of EO, geospatial information, ICT and robotics in disaster risk reduction, and their contribution to quantitatively monitoring the progress in the implementation of the post-2015 framework for DRR. The session will:   * Showcase how these technologies have contributed to HFA key priority areas and how they are actually used at national and regional levels (success stories/best practices) and identify the areas for improvement; * Identify the areas where these technologies will be able to further contribute to the post-2015 framework for DRR. Especially, providing the DRR community with relevant data and knowledge, including geospatial information, to monitor the implementation of the post-2015 framework; * Present and discuss voluntary commitments proposed by the EO, geospatial information, ICT and robotics communities; including partnerships in some of these technologies as a way to materialize those voluntary commitments. |
| **Discussion agenda and structure** | 1. Introduction and welcome remarks (5 minutes); 2. Presentations (30 minutes, 4 speakers, one from each technology).   Speakers will draw attention to good practices and lessons learned from the use of these four technologies in the last decade (HFA), on the potential and usefulness of these technologies and on novel applications of these technologies to be promoted in the coming years, as well and on voluntary commitments for the post 2015 framework.   1. Panel Discussion (30 minutes, 5 panelists + 20 minutes discussion).   Panelists will address voluntary commitments on behalf of regional and international organizations and specific member States. Panelists representing end-users like civil disaster disk reduction or civil protection agencies and the private sector, will comment on how they envision the implementation of these technologies and innovations and on how they will contribute to facilitating access to and use of such technologies as well as to capacity building efforts.   1. Wrap up and conclusions (5 minutes). |
| **Expected outcomes** | Participants in this session, particularly the potential users of these technologies including member states and relevant international and regional organizations, will be informed how these technologies have contributed to HFA key priority areas and will contribute to reducing risks and increasing resilience of societies around the world, especially in urban areas where the vulnerabilities of human settlements and natural environment are rapidly increasing.  The participants will also be briefed how these technologies will contribute to the implementation of a post 2015 framework for disaster risk reduction and the monitoring system which could be used to track its implementation through the specific voluntary commitments presented during the session.  In addition, the session will be used by the organizers to gather feedback from the participants on the background papers provided by the organizers including the: i) White Paper “Earth observations in support of national strategies for disaster-risk management”, ii) “Geospatial Information Technology”, iii ) “Smart Sustainable Development Model Initiative” and iv) “Priority Issues of Disaster Robotics in Japan” document. |
| **Commitment / special announcement in support of a post-2015 framework for DRR** | A number of partners involved in EO technologies will present their voluntary commitment to launch an international partnership to respond to the requirements of the global DRR community which have been addressed in a post-2015 framework for disaster risk reduction. Through this partnership, they will commit to:   * Continue facilitating the dialogue among stakeholders in EO, satellite-based technologies and the global community of experts and policy makers; * Serve as a collective source and repository of information on efforts carried out worldwide by the EO and the satellite-based technology communities, including surveys and guidelines to improve the applications of existing and emerging technology to monitor hazards, exposure and risks; * Generate policy-relevant advice to contribute to the integration of EO and satellite-based technologies into development process and public policies; * Facilitate the use of EO and related satellite-based technology to monitor progress in the implementation of the post-2015 framework for disaster risk reduction.   Representatives from the ICTs will present the voluntary commitment regarding the aim of institutions involved in ICTs to prepare a list of best practice regarding the deployment and use of ICT and to encourage the adoption of the best practices. The ICT community will convene workshops targeting all relevant stakeholders to develop or to update existing ICT development plans and national disaster management plans consistent with the Smart Sustainable Development Model proposed by ITU.  Institutions promoting the use of geospatial information will present the following voluntary commitment:   * To launch a web portal of urban hazard maps of major cities in the world and to update it regularly to monitor the progress of their development conducted by the Member States and other relevant organizations as a potential indicator for a post-2015 framework in order to reduce risks in rapidly expanding urban areas.   Institutions involved in robotics and on the promotion of the use of robotics in disaster risk reduction, preparedness and emergency response, will state the following voluntary commitment:   * The establishment of a committee of all relevant stakeholders as a way to accelerate the implementation of robotics and ICT for national disaster management plans and national regulations synchronizing with rapid technology revolution. |
| **Expected number of participants** | 400  ff |
| **Background documents** | * Smart Sustainable Development Model Initiative(ITU). * White Paper: "Earth observations in support of national strategies for disaster-risk management" on the voluntary commitments to be presented by the Earth observation community. * Background Paper for WS22 on Geospatial Information Technology: Annex-1: Five Private Sector Visions for a Resilient Future; Annex-2: Monitoring Sustainable Development: Contribution of Geospatial Information to the Rio+20 Processes. * Satoshi Tadokoro, Shuji Seki, Hajime Asama, Priority Issues of Disaster Robotics in Japan, IEEE Region 10 Humanitarian Technology Conference, pp. 41-46, 2013. * ImPACT Program “Tough Robotics Challenge”. * Robin Murphy, Disaster Robotics, MIT Press, 2014. |