Conference Report

UNITED NATIONS
Office for Outer Space Affairs

Ministry of Civil Affairs
of People's Republic of China

United Nations International Conference on Space-based Technologies for Disaster Risk Management "Best Practices for Risk Reduction and Rapid Response Mapping"

Organised by the

United Nations Office for Outer Space Affairs (UNOOSA/UN-SPIDER) and

Ministry of Civil Affairs of the People's Republic of China

22 – 25 November 2011

Beijing, CHINA

In collaboration with

The Department of Treaty and Law, Ministry of Foreign Affairs of the People's Republic of China

System Engineering Department, China National Space Administration (CNSA), China

National Disaster Reduction Center of China, Ministry of Civil Affairs of the People's Republic of China

Institute of Remote Sensing Applications, Chinese Academy of Sciences, China

Asia Pacific Space Cooperation Organisation (APSCO)

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Conference report: United Nations International Conference on Space-based Technologies for Disaster Risk Management - "Best Practices for Risk Reduction and Rapid Response mapping" 22-25 November 2011, Beijing, China

a) From 22 to 25 November, UN-SPIDER and the Ministry of Civil Affairs of the People's Republic of China successfully conducted this international Conference, in collaboration with the Ministry of Foreign Affairs of the People's Republic of China, the China National Space Administration (CNSA), the National Disaster Reduction Center of China of the Ministry of Civil Affairs of the People's Republic of China, the Institute of Remote Sensing Applications of the Chinese Academy of Sciences and the Asia Pacific Space Cooperation Organisation (APSCO). The conference benefitted from the sponsorship of DIGITALGLOBE and the Beijing Huadi Map Information Technology Co. Lt., China. The conference was officially opened by following distinguished delegates:

   Ms. Chai Mei, Deputy Director-general, Department of International Cooperation, Ministry of Civil Affairs of China

   Ms. Gillian Mellsop, Representative (Chair, Disaster Management Team), UNICEF, China

   Mr. Zhang Weixing, Director-general, Department of Disaster Relief/National Disaster Reduction Centre of China (NDRCC), Ministry of Civil Affairs of China

   Mr. Ma Xinmin, Counsellor, Department of Treaty and Law, Ministry of Foreign Affairs of China

   Mr. Li Guoping, Deputy Director-general, System Engineering Department, China National Space Administration

   Mr. David Stevens, Programme Coordinator, UNOOSA/UN-SPIDER

The key members involved in organising the conference were

   Mr. Shirish Ravan, UN-SPIDER, Beijing

   Mr. Li Suju, UN-SPIDER, Beijing

   Mr. Yang Siquan, National Disaster Reduction Centre of China (NDRCC), Beijing

   Mr. Xu Yu, Department of Treaty and Law, MoFA, P.R.C

   Ms. Yan Guan, National Disaster Reduction Centre of China (NDRCC), Beijing

   Ms. Luo Xin, International Cooperation Department, MoCA, P.R.C

b) The conference brought together 128 participants (32 female and 96 male) from 42 countries representing 93 organisations (national, regional and international organizations, non-government organizations, the private sector and Academia) from all the continents. Participants represented civil protection agencies, emergency management organizations, space agencies, remote sensing agencies, research institutions, ministries of environment and natural resources, science and technology bureaus, and other government and non-government agencies. In the context of the United Nations, the conference attracted the participation of representatives from ASEAN, OCHA, ECOWAS, ISPRS, IEEE, WHO, ESCAP, ECCAS, UNDP, WMO, and UNOOSA.

c) The conference included 7 plenary sessions that incorporated 36 presentations from the experts and users of the technology, 3 side meetings and 3 breakout discussion sessions. It

covered range topics from covering the advancement in technology, best practices disaster risk management, experiences in the rapid response mapping etc. The plenary session 7 of the conference provided insight of the technical advisory support offered by the UN-SPIDER to the member states. The presentations contained outcomes and impact of the recent UN-SPIDER technical advisory missions.

d) Please see **Annex 1 for summary of the side meetings and breakout discussions and Annex 2 for detailed agenda**.

e) Following were 7 plenary sessions:

1. Session 1: Global space based resources for disaster management
2. Session 2: Portals and platforms contributing to disaster risk management and emergency response
3. Session 3: Rapid Response Mapping
4. Session 4: International/regional rapid mapping initiatives/practices
5. Session 5: Initiatives promoting space-based information in Disaster Risk Management
6. Session 6: Opportunities to enhance national capacity
7. Session 7: Strengthening existing networks and capacities

f) The side meeting 1 focussed on the advisory to improve emergency response mapping in China. The side meeting 2 brought together participants from China and Africa to discuss Sino-African cooperation to strengthen the use of space-based information for disaster-risk reduction and emergency response. The side meeting 3 discussed the capacity building opportunities to the countries supported by UN-SPIDER in Asia and the Pacific, specially aimed at cooperation between UN-SPIDER, UNESCAP, APSCO and NDRCC to develop joint capacity building programmes.

g) The breakout discussion sessions allowed to carry forward the discussions on the topics that were presented during the plenary sessions. The discussion sessions provided opportunities to all the participants to share their experiences and provide valuable recommendations on following topics.

1. Discussion Group 1: Data access – open access database, data sharing- opportunities and challenges
2. Discussion Group 2: Decision making support from space based information for disaster risk management – Gaps and requirements
3. Discussion Group 3: Rapid mapping – Is it really making a way in decision making – Opportunities and challenges in the context of UN-SPIDER activities

h) Through this Conference UN-SPIDER gathered elements to re-define its Plan of Action to tailor its activities, especially in Asia, the Pacific and Africa. The conference helped to identify strategies to bridge gap between the space and the disaster management

communities and improved the communication and coordination among existing initiatives regarding use of space-based technologies for disaster-risk management. The conference provided recent updates on initiatives, portals and platforms contributing to disaster risk management, emergency response, rapid response mapping, capacity building opportunities and regional networks.

i) Several follow-up activities were initiated during the workshop:

1. Planning regional meetings in 2012 in collaboration with ASEAN for East Asian countries, ECCAS for the Central African region, OCHA ROWA and ECOWAS for West African States. The UN-SPIDER regional support office in Nigeria will play an important role in planning such meetings in Africa. These meetings are foreseen as the way to increase an outreach to the member states these organisation and entry point for planning further technical advisory support activities under the framework of UN-SPIDER programme.
2. Possibilities of an additional technical advisory missions to the countries in Asia (Vietnam, Philippines, Indonesia), the Pacific (Tonga, Soloman Islands), African countries (Tunisia, Mozambique).
3. Collection of scientific papers presented in the conference for publication in the new ISPRS International Journal of Geo-Information.
4. Follow-up activities based on the technical advisory missions carried out since 2009. Such follow-up activities includes organising the follow-up meetings in those countries and facilitating the capacity building activities.
5. Plan specific capacity building activities jointly with NDRCC, ESCAP and APSCO in Beijing in Asia and the Pacific region
6. Based on Sino-Africa side meeting, plan few activities specific to Africa drought monitoring.
7. Take a step forward in integrating contents of UN-SPIDER Knowledge Portal and Asia-Pacific Gateway of ESCAP.
8. Follow-up with IEEE for supporting infrastructure and capacity building activities in the countries working closely with the UN-SPIDER.
9. Explore the possibilities to enhance the rapid mapping product service capability through collaboration with NDRCC, the technical partner of UN-SPIDER

Annexes

1. Summary of side meetings and breakout discussions
2. Agenda
3. Updated list of participants

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Annex 1

Summary of Side Meetings and Breakout Discussions

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Summary of Side meeting 1
Technical Advisory on Rapid Mapping in China
Date: 23 November, 2011
Time: 14:00-16:40

Introduction:

The purpose of the side meeting is to give suggestions and find solutions to improve the rapid mapping capacity of China and to offer product services to other countries. Following discussions points were provided to the participants

1. Data access
2. Workflow for rapid mapping
3. Mapping standards, timeline etc. for rapid mapping
4. Data dissemination
5. Possibilities of cooperation with other organizations to improve rapid mapping services

Recommendations on the way forward:

The invited experts contributed the best practices in their country/organization on above topic through discussions and/or short presentations. The expert from National Disaster Reduction Center of China (NDRCC) of Ministry of Civil Affairs of P.R.C gave a detailed presentation on rapid mapping. The presentation covered the various aspects of rapid mapping in term of the existing data resource and access, work flow, series of map products vis-à-vis timeliness of these products etc.. The meeting also addressed challenges related to the access to high resolution imagery, product standards and collaboration with other agencies. Based on that the discussions, the experts provided few valuable recommendations.

Data access mainly consisted the access to earth observation imagery and geospatial data. There are several ways to facilitate access to the space based information and value added products, such as activating the International Charter, bilateral agreement and purchase of satellite images from the commercial sources of earth observation data (e.g. DigitalGlobe, GeoEye etc,). Access to geospatial data is mainly a national and bilateral issue between the countries. However, there are several global datasets which can be accessed through FAO, WFP, WMO and many other sources. It was suggested that, through collaboration with UN, NDRCC can also access the dataset for supporting emergency humanitarian relief efforts.

Product standards should focus on the contents, types and layout of the rapid response map. There is no universal standard existed now in the field of rapid mapping. The information conveyed by the product is more important than the layout template. The SAFER project has been able to standardize its product types and define the information content of each of the products offered by SAFER. The maps should present the information to cater requirements of the end user and it should be easily interpretable by the field persons. The issues related to georeferencing need to be addressed. Frequent awareness raising programmes are required

for Disaster Manager to provide them understanding about use the rapid response mapping products.

The experts recommended several ways to improve collaboration between China and other partners on rapid mapping:

- NDRCC can act as a technical provider under the framework of UN-SPIDER
- NDRCC can have a bilateral agreement for cooperation with other countries
- NDRCC can participate in other UN programme to provide technical support, such as participation in the activities related to climate change.

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Summary of Side meeting 2
Sino-Africa Technical Meeting to strengthen cooperation and identify opportunities
Date: 24 November, 2011
Time: 14:00-16:40

Introduction:

The purpose of this side meeting was to discuss and identify the existing capacity, requirements and challenges in drought monitoring and risk assessment in Africa. The meeting was meant to strengthen the cooperation between China and African Countries through the promotion of the use of space-based information in drought monitoring and risk assessment. Chinese existing capacity in drought monitoring and risk assessment has been explored and it was appreciated by the participating African countries. The main Challenges for the Chinese institutions with African are the product communication and verification. The African experience was highlighted in the meeting and the need for capacity building at different stages was identified.

Drought was selected for discussion because it is common to both Africa and China. Furthermore, drought is a long term problem. As a result, African drought has been monitored in Africa by Chinese research organizations since 2007. But the challenge has always been who to send research findings to in Africa. Hence the need to discuss who the experts are in Africa and identify focal persons or institutions for collaboration.

Recommendations on the way forward

1. It was suggested that UN-SPIDER and UNISDR be funded to provide a platform in Africa for drought cooperation. This could be in the form of a workshop that will bring all stakeholders together in Africa.
2. Existing initiatives for drought management in Africa should be identified for collaboration instead of re-inventing the wheels. Such existing initiatives include ECOWAS, Agrymet, WHO eAtlas, ECCAS etc.
3. By making use of platform, China should provide technology support in terms of capacity building, including products service, technology training. In addition, China should provide expertise for this purpose.
4. Many African countries have access to drought data but do not make use of them. Hence what can be done differently to make this initiative sustainable is to involve Africans in the data collection and development process, thus adequate capacity development should be implemented.
5. Once results are available, an efficient way of communicating the findings to users should be established so that the final results are used for policy formulation and decision support.
6. The problems in each country should be identified and then prioritize for implementation. The UNSPIDER RSO or NFP may be asked to carry out a need assessment survey. A questionnaire can be circulated for this purpose.

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Summary of Breakout Session Group 1 (Day 2):
Data access – open access database, data sharing- opportunities and challenges opportunities
Date: 23 November, 2011
Time: 14:00-16:40

The group consisted of about 25 persons from various organisations, UN, NGO's and representatives of UN-SPIDER Regional Support Offices. A brainstorming on available open data sets, which are already used by the different organizations, resulted in a list which holds MODIS, meteorological satellites (GEONETCast), ASTER DEM, Landsat, Spot 5 through PlanetAction, NASA, AStrium TerraSAR-X data for Grand Comoros.

The general problem is again, that data is available, but a centralized repository recording datasets is not in place yet. UN-SPIDER is about to step into this gap and is currently developing a geodatabase for all kind of data, datasets, etc.

A further topic in the discussion were mechanisms like the International Charter Space and Major Disasters and SAFER/GMES. A strong call within the community goes towards preparedness. Questions arose about where these international mechanisms could help on this topic and what kind of data products or raw data they would be able to deliver to the user. Point of critic was the low usability of end products and strong limitations on licencing. UN-SPIDER should strengthen ability to share data once it is acquired for the disaster event.

The open question what is expected to be given from UN-SPIDER for data sharing and open access could be answered – the programme is currently developing a database which will hold information on various freely available datasets. UN-SPIDER relies heavily on the community to come up with a sophisticated list, carrying information about what end users are already using. Besides availability questions of remote sensing data, satellite communication and navigation information is needed to approach the full spectrum of satellite technology. Member states should be able to provide this information.

Specific training on imagery interpretation is desirable – UN-SPIDER could support capacity building through events or funding, or, as already prepared, to run a training database. Content is to be delivered by the community and/or RSO's. Latter should also strengthen interoperability, i.e. advertising data standards to the local/regional community.

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Summary of Breakout Session Group 2 (Day 2):
Decision making support from space based information for disaster risk management – Gaps and requirements
Date: 23 November, 2011
Time: 14:00-16:40

Current Situation

- (ASEAN) Asia has not been using space-based information much for DRR, rather for response planning and response.
- New ASEAN AHA Centre (JKT) will utilize space-based information more for DRR in addition to preparedness and response – will be better able to be end users
- Thailand is using space-based info currently for flood response
- Samoa has been using space-based technology since the 2009 tsunami – government is creating a national disaster office to manage. Currently using older maps and technology to make it easier for monitoring officers, decision-makers and other stakeholders regarding EWS and forecasting based on their current capacity.
- Asia Pacific IFRC has own GIS capacity but is not enough, currently just one person is working on GIS. The work is limited to providing maps. Analytical power of GIS is not yet used. Efforts underway to build organizational capacity and expertise in this area. Currently SOPAC is providing mapping services to the Pacific countries.
- India is well advanced in using this technology; many other countries in Asia are not using space-based technology, largely due to lack of capacity. Bangladesh does have a remote sensing office but the current DM office does not usually receive any information from them or other offices – lack of coordination across different departments is an issue. Flood, cyclone departments due issue warnings or have EWS, but the information does not always reach the needed communities.
- Nepal have no capacity to use space-based technology. They rely on meteorological department and do not have sophisticated systems or data. Nepal would like to be better able to obtain real-time data and would like to know what is the best way to obtain and analyse this data to better prepare for and respond to disasters.
- In Africa, imaging information is provided on a quarterly basis for certain types of disasters, e.g. floods, where member countries use these predictions for planning and preparedness. In Western Africa, geospatial information is used in monitoring cholera, to better plan response against the outbreaks.
- Mozambique seeks information from many sources, e.g. from WFP, and have technical staff to work with the data. With support of UN-SPIDER, the country is moving forward.
- In Pakistan, to better plan for the unexpected disaster, contingency planning has been more aggressively pursued. For example, recent flooding came from rain rather than

overflowing rivers. There is concern about information availability from the government due to bureaucratic constraints. It is important to see what is planned for versus what actually happens, which should be used as the learning from to improve contingency planning in future.

- In Northern Africa, drought, flash flooding and displacements are key issues. With frequent flash flooding in Sudan, as an example, only conventional data and response is used. Satellite-generated data is used in some cases for forecasting. Early warning system for floods exist but precipitation forecast would improve reliability of such data. The concern is also about a lack of data sharing. Despite disaster management institution and remote sensing capacity exists, space-based information does not make a way in disaster management.
- In the Pacific, regional organization (e.g. SOPAC) have been using space-based information at the regional level, but not at any national level. There is no capacity at national levels to access or use satellite images, and it takes weeks to obtain needed information which is too late for the response window. UN-SPIDER is an opportunity to help provide expertise and help build national level capacity.
- In Cameroon, national level expertise is available but information is not shared. The information largely exists in the universities which is mainly it is used for other purposes than for disaster management. During the UN-SPIDER technical advisory mission in June 2011, experts were brought together that began to develop a platform to work together. A goal is to develop a unit to share space-based data in the Department of Civil Protection. Further capacity can be build by sending a staff for training in Nigeria, which have benefited from UN-SPIDER mission already.

Major gaps & challenges

- Human resources and capacity - Lack of technical expertise.
- Bureaucracy to make provision to obtain needed data.
- Lack of efficient coordination about who is doing what. The challenge is not only across technical communities, but also across political set-up. Authorities (bureaucrats and politicians) who are in power and in a position to help people affected by disaster, do not often know what the data means, much less how it can be used to create appropriate policies.
- Traditional methodologies and practices are not included in analysis
- Translating satellite info to laypeople, who can then use this in policy creation relevant for communities, is not sufficiently happening.
- It is hard to request and obtain funds for purchase of satellite images.

- Lack of awareness of GIS and its benefits – it is widely seen only as a tool for producing maps
- Data is not accessible due to complexities involved in sharing such as donors paying for it does not allow the data generated to be shared.
- ASEAN is embarking on regional risk assessment. A key focus area is data sharing policy in the ten member countries.
- The application of remotely sensed data for regional risk assessment is needed to translate to the ground level. The NDMOs often do not have the expertise to analyze and interpret space based information. Facilitating capacity building of NDMO is important.
- High resolution data is needed for risk transfer schemes and risk financing strategies.
- Retention of people trained in space technology in DM agencies if often a major challenge
- Out of date data and information at the community level: The community level planning is often done with historical data. The communities making their own disaster plans need up to date information to be able to develop their community-based disaster preparedness plans and EWS
- Satellite images should be translated to influence or help create appropriate policy for disaster management

Suggestions to address gaps and challenges: If we fail to prepare, we prepare to fail…

- Raising awareness of GIS benefits to stakeholders is imperative to build institutional capacity with respect to developing expertise, allotting funding, seeking support from policy makers.
- Geospatial data that feeds in GIS needs to be made public and shared
- Advocate for more investment in key areas such as getting reliable data (such as satellite images) to help countries forecast disasters more accurately and thus enable better preparedness and response activities
- Build on existing knowledge and experience of the communities and use this knowledge as part of the institutional planning.
- Consider benchmarking Bangladesh's Standing Order on Disaster (SOD) produced in 1997 that outlines roles and responsibilities of all government departments as well as NGOs and includes EWS and disaster management guidelines. SOD serves as a "rules of engagement" of all stakeholders in disaster management.
- Partnerships across different agencies is required, for example, ASEAN AHA Centre could become a regional support office of UN-SPIDER which could benefit ASEAN

member countries and at the same time, this may increase the presence of UN-SPIDER across the region.

- How to communicate risk? Using maps and other visual means – for many of us it is elementary, but for many people it is not at all. This complicated data needs to be simplified for a basic user to be able to understand and then act on.

How UN-SPIDER can make a difference

- Advocate and encourage local governments to translate satellite data to the end user (e.g. responder) then into national policy.
- Establish an infrastructure and platforms for information sharing. For example this very forum allowing participants to share and learn sharing from one another.
- Capacity building for especially for local governments
- ESCAP has a Space Application Division for space-related social and economic technology and development which can provide capacity building to member states in partnership with UN-SPIDER. Taking advantage of the programme, focus can be given on integrating DRR into development planning.
- Create UN-SPIDER satellite offices in countries that need the help. If this is not possible, UN-SPIDER may partner with relevant agencies in the country (e.g. other UN agencies such as UNDP) and/or UNISDR.
- UN-SPIDER can share the most successful outcomes of it's work which other countries can learn from. Sharing specific progress reports on regular basis would help.

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Summary of Breakout Session Group 3 (Day 3):
Rapid mapping – Is it really making a way in decision making – Opportunities and challenges in the context of UN-SPIDER activities

Date: 23 November, 2011
Time: 14:00-16:40

There are some best practices/lessons learned:

- Preparedness – having baseline data and base maps prepared beforehand is important.
- Technical agencies (i.e. national mapping agencies, space agencies) are involved in the disaster management structure. It is important to have a common platform in the country for data providers and data users to understand precise requirements
- National actors are aware of international resources (the international charter, UN-SPIDER Regional Support offices, SOPAC, etc.)

Gaps and Challenges:

- Different countries and agencies do not follow the same standard. For example at the national level there is often a national datum/coordinate system. Different datum and projections make data interoperability more difficult at international level.
- Even within the same country different agencies use different data structures that poses challenges in data sharing and interoperability.
- Although large number of maps and products are available, it is quite common for National Disaster Management Offices (NDMOs) to not make use of them. Decisions are made without taking space-based information or spatial data (or any data management) into consideration.
- Satellite imagery provided from international sources often comes as PDF and JPEG file and not in the form of digital data that can be used for analysis/interpretation.
- There are sometimes issues of timeliness in countries that do not have their own receiving station to download satellite images.
- Data sharing is easier said than done. Organizations that promise data in workshops often do not follow up in actual practice.
- Information supported or generated by space based technology is not reaching the ground level.

Suggestions and Recommendations for UN-SPIDER and the rest of us

- UN-SPIDER can offer a platform at the international level in developing and promoting standards in data formats, datum, etc. For example, as a member countries can agree that countries can use whatever national datum they choose, but when making data available for others, they must use international standards.

- To accomplish the point above UN-SPIDER can convene an expert meeting to make recommendations for endorsement by the member states in the appropriate forum.
- Involvement of UN-SPIDER Regional Support Offices (RSOs) can be seen as the key player in the region.
- At the national level problems with different data structures and formats can be addressed through a National Spatial Data Infrastructure (SDI).
- Exchange of best practices from various regions is essential. For example Asia, Middle East, Africa, and the Pacific can follow the example of Latin America that has been able to agree upon common data standards.
- Bearing in mind the voluntary nature of the RSOs, UN-SPIDER should encourage minimum standards of activities, training, and data sharing for the RSOs.
- It would be helpful for remote sensing papers and case studies to more readily available (for free) to the community. UN-SPIDER's knowledge portal can collect and disseminate these activities.

Throughout the discussion, it became clear that there is plenty of room for UN-SPIDER's RSOs to play a strong and active role in maximizing the use of space-based technology in their respective regions. Perhaps next year's meeting can involve RSOs and representatives from countries in their region. The focus could be on discussing what role and support RSOs can and should provide. An outcome could be a statement of practice (or similar) which becomes a sort of ToR for RSOs.

Annex 2

Conference Agenda

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Overview

	Tuesday 22 November	Wednesday 23 November	Thursday 24 November	Friday 25 November
Morning	**08:30 Registration** **09:30 Opening Session** **11:00 Plenary Session 1**	**09:00 Plenary Session 4** **11:00 Plenary Session 5**	**09:00 Plenary Session 6** **11:00 Plenary Session 7**	**Closed meeting of the UN-SPIDER and close partner (TAM countries, Regional Support Offices and partner organisations**
Lunch	**12:40-14:00**	**12:40-14:00**	**12:40-14:00**	**12:40-14:00**
Afternoon	**14:00 Plenary Session 2** **16:00 Plenary Session 3**	**14:00** **Side Meeting 1** (Technical Advisory for China on Rapid Mapping) **Breakout Discussion** **16:30** **Summary from side meeting 1 and breakout discussion**	**14:00** **Side Meeting 2** (Sino-Africa technical meeting) **Breakout Discussion** **15:40** **Side Meeting 3** **(Capacity building opportunities)** **Breakout Discussion** **16:30** **Summary from side meeting 2 and breakout discussion** **17:30 Closing Session**	**Technical Advisory Visit to NDRCC**
Evening	**18:00 Icebreaker by the Ministry of Civil Affairs**	**18:00 Reception by DigitalGlobe**		

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Day 1 (22 November 2011): Pre-lunch Session (Venue: Plenary Hall on 3rd Floor)

Time	Activity	Country/Organisation	Speaker
08:30-09:30	**Registration**		
09:30-10:30	**Opening Remarks (5 min)** Chair: MoCA	Ministry of Civil Affairs, China	Mei Chai
	UNDMT (10 minutes)	UNICEF, China	Ms. Gillian Mellsop
	MoCA(10 minutes)	MoCA, China	Mr. Weixing Zhang
	MoFA (10 minutes)	MoFA, China	Mr. Xinmin Ma
	CNSA (10 minutes)	CNSA, China	Mr. Guoping Li
	Keynote presentation by UNOOSA (15 minutes)	UN-SPIDER, Austria	David Stevens
10:30-11:00	**Group photo & Coffee Break**		
11:00-12:40	**Session 1: Global space based resource for disaster management**		**Chair: Jun Chen**
11:00-11:15	1. Collaborative Geo-Information Service for Disaster Management	Secretary General of ISPRS, China	Jun Chen
11:15-11:30	2. Capacity of CEODE for Remote Sensing Data Sharing and Service	CEODE, China	Wanchang Zhang
11:30-11:45	3. GeoMetWatch-STORM: The Next-Generation Global Space-based Disaster Information Observatories	Cooperative Institute for Meteorological Satellite Studies (CIMSS), USA	Hung Lung Allen Huang
11:45-12:00	4. GIS and Remote Sensing for natural disaster support: emergency and planning actions	University of Sao Paulo, Brazil	Luiz Augusto Manfré
12:00-12:15	5. Seconds to Anywhere (Emergency Response)	DigitalGlobe, Singapore	Abhineet Jain
12:15-12:40	Discussions		
12:40-14:00	**Lunch (Venue: 2nd Floor)**		

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Day 1 (22 November 2011): Post-lunch Session (Venue: Plenary Hall on 3rd Floor)

Time	Activity	Country/Organisation	Speaker
14:00-15:40	**Session 2: Portals and platforms contributing to disaster risk management and emergency response**		**Chair: Jinnian Wang, IRSA**
14:00-14:15	6. Earth Observation System and its application to disaster management and emergency response in China	Institute of Remote Sensing Applications (IRSA), CAS, China	Qingyan Meng
14:15-14:30	7. Global Data Sources and Data Preparedness	OCHA Bangkok, Thailand	John E. Marinos
14:30-14:45	8. Cartography and GIS in Non-Standard Situations	University of Vienna, Austria	Wolfgang Kainz
14:45-15:00	9. UN-SPIDER Knowledge Portal	UN-SPIDER, Bonn, Germany	Peter Stumpf
15:00-15:15	10. Emerging Markets Communications Inc. Miami, USA	Emerging Markets Communications (EMC), USA	Jan Erik Kjaer
15:15-15:40	Discussions		
15:40-16:00	**Coffee break**		
16:00-17:40	**Session 3: Rapid Response Mapping**		**Chair: Siquan Yang, NDRCC**
16:00-16:15	11. Rapid Response Systems for Volcanic risk support developed for Italy and in the GMES core services	I.N.G.V. - Istituto Nazionale di Geofisica e Vulcanologia, Italy	Massimo Musacchio and Maria Fabrizia Buongiorno
16:15-16:30	12. Application of GIS in Rapid Mapping -the Vulnerability and Risk Mapping in China	IGSNRR, China	Yingjie Wang
16:30-16:45	13. PASCO's approach mitigating disasters from the spaceborne information in special reference to The Great East Japan Earthquake 2011	PASCO, Japan	Tadashi Sasagawa
16:45-17:00	14. The use of satellite data and geospatial intelligence for flood risk assessment at UN-SPIDER RSO in Ukraine	Space Research Institute NASU-NSAU, Ukraine	Sergii Skakun
17:00-17:15	15. Risk Warning and Crisis Management for Dust Storm Effects along Western border of Iran	Iranian Space Agency	Mohammad Morabbi
17:15-17:40	Discussions		
18:00-19:30	**Icebreaker hosted by Ministry of Civil Affairs (2nd Floor)**		Mr. Peng Kang

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Day 2 (23 November 2011): Pre-lunch session (Venue: Plenary Hall on 3rd Floor)

Time	Activity	Country/Organisation	Expert
09:00-10:40	**Session 4: International/regional rapid mapping initiatives/practices**		**Chair: Giorgio Sartori, WFP**
09:00-09:15	16. SAFER and the GMES Emergency Response Service: WFP experience	WFP, Italy	Giorgio Sartori
09:15-09:30	17. Role of geo-information in emergency management in West & Central Africa.	UNOCHA/ROWCA, Senegal	Abdoulaye Dieye
09:30-09:45	18. Space-Tech Application in DM In China	NDRCC, China	Siquan Yang
09:45-10:00	19. Collaborative Using the International Cooperation Space-based Initiatives for Disaster Management	UN-SPIDER, China	Suju Li
10:00-10:15	20. Activities of ADRC in the Sentinel Asia, and the effectivity of satellite images on the Great East Japan Earthquake	Asian Disaster Reduction Centre (ADRC), Japan	Masami Sugiura
10:15-10:40	Discussions		
10:40-11:00	**Coffee break**		
11:00-12:40	**Session 5: Initiatives promoting space-based information in Disaster Risk Management**		**Chair: Maqbool Ahmad Chaudhry**
11:00-11:15	21. Role of APSCO in Space Cooperation in the Asia Pacific Region	APSCO, China	Maqbool Ahmad Chaudhry
11:15-11:30	22. MappingNew Remote Sensing Technologies for groundwater emergency situationsThe WATEX SystemBeijing	Radar Technologies International, France	Alain Gachet
11:30-11:45	23. Towards a rapid, multi-scale assessment of earthquake vulnerability based on satellite remote sensing and omnidirectional imaging.	Centre Potsdam GFZ German Research Centre for Geosciences, Germany	Marc Wieland
11:45-12:00	24. Introduction of CRSCloud (China Remote Sensing Cloud Compuing Platform)	Beijing Huadi map Information Technology Co. Lt., China	Nanxiang Fu
12:15-12:40	Discussions		
12:40-14:00	**Lunch**		

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Day 2 (23 November 2011): Post-lunch session

14:00-15:40	Side Meetings and Breakout Sessions	Venue	Panel
	Side Meeting 1 (upon invitation only) Technical Advisory for China to discuss Rapid Mapping (Please refer separate Agenda)	13th Floor Conference Room	Chair: David Stevens, UN-SPIDER
	Breakout Session Group 1: Data access – open access database, data sharing- opportunities and challenges (Please refer concept note)	Plenary Hall	Chair: Wenjian Zhang, WMO Rapporteur: Peter Stumpf, UN-SPIDER
	Breakout Session Group 2: Decision making support from space based information for disaster risk management – Gaps and requirements (Please refer concept note)	Side room on 2nd floor	Chair: Achoka Aloyce Luduba, OCHA Rapporteur: Christine Davis, World Vision International
15:40-16:00	**Coffee Break**		
16:00-16:30	Side meeting and break out discussion continues….		
16:30-17:30	Presentations from break out session and discussions Summary of from side session and discussions	Plenary Hall	
18:00-19:30	**Reception hosted by DigitalGlobe (2nd Floor)**		

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Day 3 (24 November 2011): Pre-lunch session (Venue: Plenary Hall on 3rd Floor)

Time	Activity	Country/Organisation	Expert
09:00-10:40	**Session 6: Opportunities to enhance national capacity**		**Chair: Antony Milne**
09:00-09:15	25. Earth observation and deriving spatial information for disasters and hazards	IEEE Geoscience and Remote Sensing Society, Australia	Anthony Kinnaird Milne
09:15-09:30	26. GIS technical support for Disaster Risk Reduction programs implemented by DIPECHO partners	OOPERAZIONE INTERNAZIONALE, Malawi	Arnaud RAULIN
09:30-09:45	27. Overview of WMO Disaster Risk Reduction Programme progress, and implementation plan for 2012-2015	WMO, Suisse	Zhang Wenjian
09:45-10:00	28. Application of low-cost geo-informatics for disaster risk assessments with focus on coastal regions	University of Portsmouth, United Kingdom	Mathias Leidig
10:00-10:15	29. UAV-based Risk Reduction and Rapid Response System	Academy of Opto-Electronics (AOE) of Chinese, China	Chuanrong LI
10:15-10:40	Discussions		
10:40-11:00	**Coffee break**		
11:00-12:40	**Session 7: Strengthening existing networks and capacities**		**Chair: Shirish Ravan**
11:00-11:10	30. Space Technologies Role in Disaster Management and Mitigation	Space Research Institute KACST	Mohamed Ahmed Tarabzouni
11:10-11:20	31. ESCAP activities in disaster risk management and way forward with international partners	UN ESCAP, Bangkok, Thailand	Wang Keran
11:20-11:30	32. UN-SPIDER Technical Advisory Support: Lessons learned, Challenges and Opportunities	UN-SPIDER, Beijing, China	Shirish Ravan
11:30-11:40	33. UNSPIDER interventions to strengthen disaster management in Sri Lanka	Disaster Management Centre, Sri Lanka	Srimal Samansiri
11:40-11:50	34. Matters Arising from the UN-SPIDER Technical Advisory Mission to Nigeria	NARSDA, Nigeria	James Godstime
11:50-12:00	35. UN-SPIDER TAM Review on Use of Space-based Technology for DRR in Bangladesh - Challenges and Way Forward	Ministry of Food and Disaster Management, Bangladesh	Mohammad Abdul Wazed

Time	Activity	Country/Organisation	Expert
12:00-12:10	36. SUPARCO and its role in monitoring natural disaster in Pakistan	SUPARCO,Pakistan	Ijaz Ahmad
12:10-12:40	Discussions		
12:40-14:00	**Lunch**		

Day 3 (24 November 2011): Post-lunch session

14:00-15:40	Side Meetings and Breakout Sessions	Venue	Panel
	Side Meeting 2 (upon invitation only) Sino-Africa Technical Meeting to strengthen cooperation and identify opportunities (Please refer separate Agenda)	13th Floor Conference Room	Chair: Amna Hamid, Remote Sensing Centre, Sudan Co-chair: James Godstime, NARSDA, Nigeria
	Breakout Session Group 3: Rapid mapping – Is it really making a way in decision making – Opportunities and challenges (Please refer concept note); Feedback and recommendations - UN-SPIDER activities (Please refer concept note)	Plenary Hall	Chair: Mohamed Ahmed Tarabzouni, KSA Rapporteur: John Marinos, UN OCHA
15:40-16:00	**Coffee Break**		
16:00-16:30	Side meeting and break out discussion continues….		
16:30-17:30	Presentations from break out session and discussions Summary of from side session and discussions	Plenary Hall	
17:30-18:00	Concluding remark and conference closing		Chair: Shirish Ravan

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Side meeting 1 – Concept Note

23 November 2011
Time: 14:00 to 16:30

Technical Advisory for China to discuss Rapid Mapping

Venue: 13th Floor Conference Room

Chair: National Disaster Reduction Centre of China (NDRCC)

Description:
The purpose of this side meeting is to seek suggestions about rapid mapping using space-based information for China.
Discussions will mainly address following points

1. Data access
2. Workflow for rapid mapping
3. Mapping standards, timeline etc. for rapid mapping
4. Data dissemination
5. Possibilities of cooperation with other organizations to improve rapid mapping services

The invited experts are expected to contribute the best practices in their country/organization on above topic through discussions and/or short presentations.

The detailed agenda is provided on the following page.

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Side meeting 1 - Agenda

23 November 2011

Time	Activity	Country/Organisation	Speaker
14:00-14:20	Disaster management in China 1. Disasters in China 2. Disaster management system 3. Information technology support for disaster management	MoCA	To be decided
14:20-14:50	Introduction – Rapid mapping capacity in China 1. Data resources and access 2. Work flow 3. Rapid mapping products 4. Gaps/challenges/opportunities	NDRCC	Yang Siquan
14:50-15:40	Presentations and Discussions by the experts		
15:40-16:00	**Coffee Break**		
16:00-16:30	Side meeting continues….		
16:30-17:30	Summary from the side meeting (along with summary presentation from breakout discussions)	Plenary Hall	

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Side meeting 2 – Concept Note

24 November 2011
Time: 14:00 to 16:30

Sino-Africa Technical Meeting to strengthen cooperation and identify opportunities

Venue: 13th Floor Conference Room

Chair: Amna Hamid, Remote Sensing Centre, Sudan
Co-chair: James Godstime, NARSDA, Nigeria
Co-Chair: International Centre for Drought Risk Reduction (ICDRR), China

Description:
The purpose of this side meeting is to discuss and identify the existing capacity, requirements and challenges in drought monitoring and risk assessment. The meeting will strengthen the cooperation between China and African Countries for promoting use of space-based information in drought monitoring and risk assessment.
Discussions will mainly address following points

1. Existing capacity in drought monitoring and risk assessment in China
2. Existing capacity, requirements, challenges and in Africa
3. Cooperation opportunities

The invited experts are expected to contribute the on above topic through discussions and/or short presentations.
Proposed participants: Participants from African countries, Experts from China, UN and other inter-governmental organisations

The detailed agenda is provided on following page.

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Side meeting 2 – Agenda

24 November 2011

Time	Activity	Country/Organisation	Speaker
14:00-14:20	Existing capacity in drought monitoring and risk assessment in China Disasters in China	NDRCC	To be decided
14:20-15:40	Existing capacity, requirements, challenges and in Africa - Short presentations and discussions	Nigeria, Sudan, Mozambique, Cameroon, ….	
15:40-16:00	**Coffee Break**		
16:00-16:30	Side meeting (discussions) continues….		
16:30-17:30	Summary from the side meeting (along with summary presentation from breakout discussions)	Plenary Hall	

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Side Meeting 3 – Concept Note

24 November 2011
Time: 15:40-16:40

Capacity building opportunities to the countries supported by UN-SPIDER in Asia Pacific region

Venue: 11th UN-SPIDER Beijing office (room no. 1151)

Participants: UN-SPIDER, ESCAP, APSCO, NDRCC and TAM countries (Bangladesh, Sri Lanka, Tonga, Soloman Island)

Discussion points:

1. Training course plan proposed by NDRCC. The plan will cover training objectives, target group, training curriculum, supporting experts/organizations, timeline and technical details like training data, software and hardware.
2. Training activities in 2012 proposed by UN-SPIDER. This should cover the countries to be supported, participants, suitable dates and training venue, funding arrangements in collaboration with other organizations in the Asia and Pacific area.

Conference report: United Nations International Conference on Space-based Technologies for Disaster Risk Management - "Best Practices for Risk Reduction and Rapid Response mapping" 22-25 November 2011, Beijing, China

Annex 3

List of Participants

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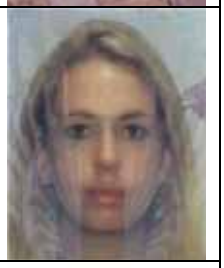
Emma Lovell	ESCAP Emma Lovell/BKK/UNO@ESCAP	
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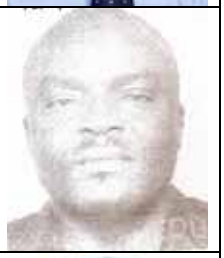
Kuitsouc Dominique	Economic Community of Central Africa States (ECCAS), Gabon dkuitsouc61@gmail.com	
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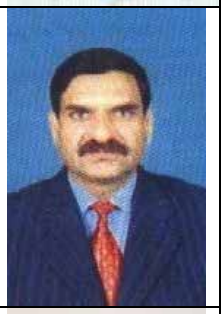
Maqbool Ahmad Chaudhry	Asia Pacific Space Cooperation Organization (APSCO) maqbool@apsco.int	
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