



# UN-SPIDER NEWSLETTER

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## Network

### UN-SPIDER office in Beijing opened

On 10 November 2010 the UN-SPIDER office in Beijing was opened. The inauguration ceremony took place at Zhongmin Plaza where the National Disaster Reduction Center of China (NDRCC) is hosted. The ceremony was graced by the attendance of Mr. Luo Pingfei, Vice Minister of Civil Affairs (MoCA) of P.R. China, Mr. Xu Hong, Deputy Director-General of the Department of Treaty and Law of the

Ministry of Foreign Affairs of P.R. China, Mr. Hu Yafeng, Standing Deputy Director of the Committee for International Coordination of China National Space Administration, Ms. Mazlan Othman, Deputy Director-General of the UN Office at Vienna and Director of the Office for Outer Space Affairs (UNOOSA), Ms. Anthea Webb, Director of the World Food Programme, Beijing Office, and Mr. Zhang Weixing, Director-General of the Department of Disaster Relief, MoCA. About 70 persons from government institutions, international organizations, universities, and scientific institutions attended the ceremony, when the funding agreement was signed by Mr. Zhang Weixing and Ms. Mazlan Othman (photos).

support in the use of and access to space-based information, such as satellite imagery, for disaster risk management and emergency response. This type of information was used in emergencies like the tsunami that hit Southeast Asia, the volcanic eruption in Indonesia and the Typhoon Megi that impacted the Philippines.

While NDRCC offered to host the UN-SPIDER Beijing office, the China National Space Administration (CNSA) offered full support to implement the Programme. The Asia Pacific Space Cooperation Organization (APSCO) assured close working relations with UN-SPIDER. They described the office as the first global UN Office hosted by the Chinese Government. ■

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„The opening of the Beijing office is a landmark in the development of UN-SPIDER. The Programme is at the centre of an ever increasing use of space-based technologies in support of disaster management“, Ms. Mazlan Othman said.

With a global mandate and a strong focus on the Asia-Pacific region, the UN-SPIDER Beijing office will contribute to the implementation of the UN-SPIDER Programme by connecting the disaster management and space communities in the region. This includes raising awareness and supporting Governments and international and regional organizations through the provision of technical advisory



Mr. Shirish Ravan will lead the new office.



## Technical Advisory Mission to Guatemala

UN-SPIDER carried out a Technical Advisory Mission (TAM) to Guatemala from 22 to 26 November 2010. Requested by the Presidential Secretariat for Planning and Programming (SEGEPLAN), UN-SPIDER assembled a team of experts from CATHALAC-SERVIR which is a UN-SPIDER Regional Support Office, the Comisión Nacional de Actividades Espaciales (CONAE) of Argentina, the Centro Regional de Enseñanza de Ciencia y Tecnología del Espacio para América Latina y el Caribe (CRETEALC), and the Organization of American States (OAS).

The TAM to Guatemala included visits to several government institutions and universities, as well as a workshop with the goal of identifying strengths and weaknesses regarding access to and use of space-based information in all phases of the disaster management cycle. Through a review of existing institutional policies, strategies, and past and ongoing activities conducted by these institutions, the team of experts was able to deduce a set of recommendations that will allow Guatemala to further institutionalize its capacity to use space-based information to respond to disasters provoked by floods, hurricanes, droughts, volcanic eruptions, and earthquakes and other hazards.

### Findings

The mission took note of institutional strengths regarding the use of Geographic Information Systems (GIS). For example, SEGEPLAN makes use of these systems to analyze needs in all geographic areas of the country as a means to elaborate the territorial and sectorial development plans. The National Coordinating Agency for Disaster Reduction (CONRED) works with GIS to elaborate different types of maps presenting information about hazards and risks in various regions of the country. The Ministry of Agriculture (MAGA)

has combined GIS with Earth observation to elaborate land-use maps.

The mission team also took note of examples for the use of space-based information for a variety of applications. The use of this type of information is already well institutionalized in some institutes and ministries, particularly for weather monitoring, for tracking deforestation and the advance of the agricultural frontier, as well as monitoring particular events such as the outbreak of cyano-bacteria in Lake Atitlan in 2009 with the support of CATHALAC-SERVIR. Earth observation is also used to track hotspots and forest-fire scars, and for soil moisture monitoring.

The mission team was made aware about offers from Taiwan, PRC, and Argentina to support the Government of Guatemala in its recovery from tropical storm Agatha. Taiwan, PRC, has offered to donate imagery for a number of applications on a periodic basis and Argentina is assessing how best to support government agencies as well.

The team of experts was also made aware of ongoing efforts conducted by SEGEPLAN to facilitate the sharing of information by government agencies through the establishment of the National Spatial Database Infrastructure (IDE-G). In addition, the response efforts to the tropical storm Agatha in June 2010 led to the establishment of an ad-hoc group on earth observations to support disaster response operations.

### Recommendations

Becoming aware of these advances, as well as inputs from other agencies, the mission team made several recommendations such as:

- The ad-hoc remote sensing group to be institutionalized through an inter-institutional memorandum or agreement, so that it can support not only the Committee of Emergency Operations (COE) but



also other agencies. This will also allow other government agencies to designate members from its staff to become part of this group.

- The National Geographic Institute (IGN) to serve as repository of satellite imagery and to enhance the skills and knowledge of staff in government agencies and academia through training programmes.
- SEGEPLAN to act as coordinator of the remote sensing group, and to provide technical support in providing the group with a portal to display the information generated. Furthermore to provide institutional support when needed in case of agreements and projects of the group with national, regional, or international organizations.
- Universities to contribute to the generation of information through applied research programmes or projects.

The mission concluded with a briefing to the Lady Director of SEGEPLAN, the Director of Territorial Planning and the Director of the National Territorial Information System SINIT. The team of experts used the opportunity to propose recommendations regarding policies, strategies, and actions to further institutionalize the use of space-based information in Guatemala.

To read more about this and other UN-SPIDER TAMs go to [www.un-spider.org](http://www.un-spider.org)

## Network

### University of West Indies hosts tenth Regional Support Office

On 8 October 2010 the University of the West Indies (UWI) and the UN Office of Outer Space Affairs signed the cooperation agreement that established the tenth UN-SPIDER Regional Support Office (RSO). UWI is the first university to host an RSO and to contribute its experience and capabilities to the UN-SPIDER programme in this role. The Disaster Risk Reduction Centre at the University of the West Indies, which hosts the UN-SPIDER RSO, reports to the Department of Geomatics Engineering and Land. It is a multi-disciplinary Centre of Excellence in the field of disaster risk reduction and disaster manage-

ment in the Caribbean and globally, especially in Small Island States. The particular strength of the Centre and its new role as an RSO lies in its capacity-building facilities, namely its GIS and photogrammetry laboratory and its short-courses in all areas of geoinformatics. The university also offers a BSc in Geomatics and an MSc in Geoinformatics. It has faculty members and technical staff in remote sensing, GIS, and GPS, and disposes of the respective soft- and hardware infrastructure, and of base data, DEM, and Landsat imagery of most of the Caribbean countries.

# The German Aerospace Center about its accession to the International Charter and about enhancing global cooperation in satellite-based emergency mapping

The German Aerospace Center (DLR) joined the International Charter Space and Major Disasters in October 2010, adding valuable resources to this international mechanism. Shortly thereafter, during the Fourth UN-SPIDER Bonn Workshop, Mr. Stefan Voigt, DLR, presented a significant idea: he suggested the elaboration of global rules of engagement for the generation of geo-information products during major emergencies to improve the service to the response teams. In this interview Mr. Johann Dietrich Wörner (Chairman of the Executive Board of DLR), Mr. Hans-Peter Lüttenberg (Head of Earth Observation, DLR Space Agency) and Mr. Stefan Dech (Director of DLR's German Remote Sensing Data Center DFD) talk about the German contribution to the International Charter and about the perspective of better coordinating response efforts in the future.

**UN-SPIDER:** DLR is a member of the International Charter Space and Major Disasters since October 2010. What is DLR's added value to this mechanism, and how does this commitment benefit the end users?

**Wörner:** DLR generally contributes with its long term experience in using space assets for disaster management support, especially in the domain of satellite-based rapid mapping. Our "Center for Satellite Based Crisis Information (ZKI)" with its 24/7 service and its project management experience is one of the leading centres for emergency mapping world-wide. In addition, and most importantly, DLR will contribute significant amounts of Radar satellite imagery from the two German SAR-Satellites TerraSAR-X and TanDEM-X. We are convinced that the users of the Charter will benefit from this additional capacity and that it will help to make the Charter's response faster and more flexible.

**Lüttenberg:** It is also considered to contribute data from the high-resolution optical RapidEye satellites in the future. Concerning TerraSAR-X and TanDEM-X, their data especially serves the observation of floods. Active radar satellites "look through" the clouds and can distinguish between water and

other surfaces. This is important if you take into account that about 50% of the Charter calls are due to floods.

**UN-SPIDER:** ZKI has been involved in Charter calls even before DLR formally became a member. How does the accession affect the work of ZKI and of DLR as a whole?

**Dech:** Indeed we have been providing project management and value adding support for Charter activations in Germany, Europe and worldwide for eight years already. Since the launch of TerraSAR-X we also have been contributing imagery to individual Charter calls on a case-by-case basis. Now we are implementing the full-scale Charter contribution. The respective procedures at ZKI are implemented and the training of our staff is being completed in order to take over full responsibility for Charter operations.

**Lüttenberg:** One major difference is that DLR is now involved in the programmatic discussions and decision processes of the mechanism. As a member of the Charter Board, we are involved in its development and further improvement. And with the official membership we can build upon more solid resources with a formalized access to the national missions, particularly TerraSAR-X and TanDEM-X.

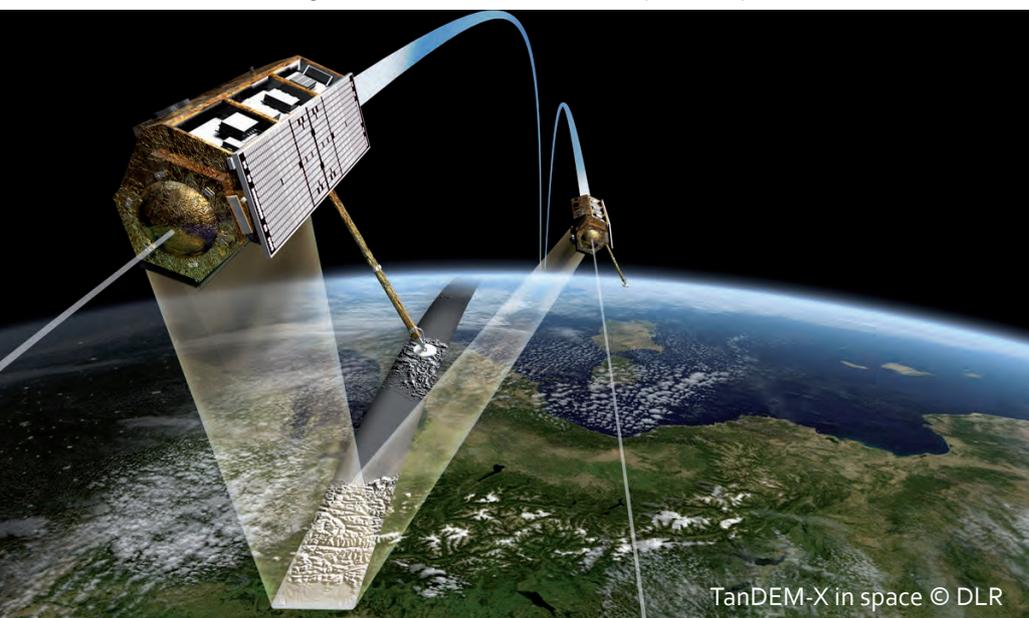
**UN-SPIDER:** What are the latest developments and future plans at DFD, and ZKI in particular?

**Dech:** In the past months we established the DLR Earth Observation Center (EOC). New ZKI analysis facilities have been allocated along with other user services in a dedicated EOC Service Lab. From there we realize the operational processing, analysis and mapping tasks of ZKI and this is also where the Charter operations, including respective data administration and management are handled. Beyond the Charter work, we are of course continuing our research activities and service development in the domain of civil crisis information generation and risk assessment. We will continue, and at some point extend, our work with international actors like the UN-SPIDER network, GEO/GEOSS and other activities in this domain.

**UN-SPIDER:** Do these developments indicate a growing importance of humanitarian aspects in the work of DLR?

**Lüttenberg:** DLR is not a humanitarian actor as such. However, DLR in its function as Germany's space agency, together with the German Government, shapes and implements both the national space program and Germany's participation in international space-related activities. Certainly, there is a national interest to contribute to international mechanisms, and to support humanitarian organizations in their important work.

**Wörner:** I can only confirm this. Generally, DLR engages in exploring opportunities to bring forward the usage of space for our societies in everyday life and for the benefit of humanitarian relief and disaster management support. We are operating ZKI since 2004, where we provide rapid emergency mapping, carry out dedicated research, and train experts and relief workers on how to use satellite information for disaster management.



Thus, the goals and spirit of the Charter perfectly fit into our philosophy and daily endeavours at DLR.

**UN-SPIDER:** How is the Charter embedded in the international landscape of emergency response mechanisms working with geospatial information products?

**Wörner:** Geospatial information and satellite data are becoming more and more available, and many public entities, universities, and industries are increasingly working with this imagery. The Charter is a pioneer as well as a key player in facilitating the fast generation of up to date satellite information for disaster management. We consider the Charter to be quite well embedded in the international relief community. On top of this, we see the Charter as the leading mechanism at a global scale to orchestrate international satellite capacities for disaster response.

**Lüttenberg:** UN organizations such as UN OCHA often use data provided by the Charter for their humanitarian work. Both UNOOSA and UNITAR cooperate with the Charter by activating it for users within the UN. There is also cooperation with Sentinel Asia, for example, which can activate the Charter for disasters in its region, and close communication with SAFER, the European emergency response project, to avoid duplication of efforts. Through GEO, the Group on Earth Observations, the Charter intends to improve access to its services for a wider group of countries. Disaster related GEO Tasks might also provide a suitable platform to further improve the links between international actors, like the UN, regional organizations and mechanisms, and the Charter.

And even though all these links exist, I think that there is still room for improvement regarding collaboration within the international landscape of disaster response.

**UN-SPIDER:** At the Fourth UN-SPIDER Bonn Workshop in October last year your colleague Stefan Voigt talked about the way forward for optimizing the international response to major disasters. He elaborated on potential rules of engagement for geospatial

information providers and processing organizations and articulated a need for better coordination among international networks and organizations. How do you picture this kind of coordination?

**Lüttenberg:** Best possible coordination of disaster-related activities would be clearly desirable. The Charter works fine and is a very useful mechanism, but there is always room for improvement: most importantly, we need to improve the usability of the information for those in the field. This comprises a number of issues, such as clear and transparent mechanisms, improvements on quality assurance, building capacity and networks at the user level, and the interlinkages between disaster preparedness and response. I think both UN-SPIDER and GEO should be used more effectively to enhance cooperation and to address the issues mentioned before. However, international coordination is not easy to achieve, and all relevant organizations need to be in-



Stefan Dech

involved to improve it and to achieve a better and even more efficient division of work.

**Dech:** If you look at the response to the Haiti earthquake, hundreds or even thousands of mapping products were generated and published by a large variety of mechanisms and entities worldwide. Some of these satellite maps were showing controversial information, which in various cases confused those users we actually wanted to help with our mapping activities. It is true that in extreme events like the Haiti earthquake or the Pakistan floods last year, the different mechanisms and actors like the Charter, Europe's GMES, GEO/GEOSS, Sentinel Asia but also industry, academia, UN entities, NGOs, internet networks, etc. would have benefitted from common rules of engagement. A code of con-

duct and common guidelines would have helped to harmonize the satellite mapping efforts. We are convinced that the establishment of international guidelines and best practices will allow better coordination between the different mechanisms.

**UN-SPIDER:** Don't you think this approach might face some difficulties, taking into account that "no one likes to be coordinated"?

**Dech:** I am not worried at all and it is very simple: all major actors and delegations will be part of the coordination mechanism. In that sense, nobody will be coordinated from an external body, but all major emergency mapping actors will establish a common and internationally accepted and approved collaboration scheme. So we are actually talking about self-regulation. Simple rules are expected to enhance global cooperation, just as we see it in the domain of the in-field relief workers, for example. The different organizations will - this is one suggestion that is on the table - take turn in coordinating the activities for individual disaster situations. The coordination will be very slim and basic. Guidelines and rules of engagement will be exercised at the international level, and common web tools will be used to coordinate the joint efforts better in the future.

**UN-SPIDER:** In your opinion, what is the added value of UN-SPIDER to this approach?

**Dech:** UN-SPIDER is assumed to be a key element of this effort, as it provides an excellent platform and network to facilitate this global collaboration and establishment of basic guidelines for satellite-based emergency mapping. UN-SPIDER could serve as the secretary to a mandated working group in the UN COPUOS frame elaborating these rules and guidelines in the near future. It is important to elaborate the rules jointly with all delegations and main organizations involved in a bottom up approach and not to impose anything on the community from top down.

**UN-SPIDER:** Thank you very much for this interview! We are looking forward to making satellite-based disaster response more efficient and working together in this important field in the future! ■



Johann-Dietrich Wörner



Hans-Peter Lüttenberg

## Regional workshop and national seminars with the risk and disaster management communities in Madagascar and Malawi

**Background:** In 2008, the European Commission - Humanitarian Aid & Civil Protection (ECHO) started its first Disaster Preparedness programme in the South East African and South West Indian Ocean - the first DIPECHO programme aiming at promoting the preparedness and resilience of local communities in this region. The programme targeted 4 countries: Madagascar, Mozambique, Comoros and Malawi. Among the NGOs granted was COOPERAZIONE INTERNAZIONALE – COOPI. COOPI implemented a series of activities in Malawi including the use of GIS and EO for DRR. At the end of the programme, in March 2010, it became clear to provide further technical support in relation to GIS and EO to the various agencies in the region implementing DRR projects. During the preparation of the second DIPECHO programme in early 2010, COOPI proposed a GIS and EO technical programme to support all NGOs in the above mentioned four countries to adopt innovative technologies. The project was granted in July 2010 for a duration of 15 months. Official project partners of COOPI are the Geoinformatic Centre from

the University of Salzburg (Z-GIS) and the United Nations Office for Outer Space Affairs (UNOOSA/UN-SPIDER). The title of the action that addresses local institutions, authorities and communities is: Providing Geographic Information Systems (GIS) technical support for disaster risk reduction programs implemented by DIPECHO partners in the South East African and South West Indian Ocean region. Prior to technical trainings with stakeholders in the different regions all the DIPECHO partners and their local national and sub-national counterparts have been invited to participate in regional seminars. Main goal of these meetings is three-folded, namely to 1.) provide an overview and general introduction to GIS and space-based information for risk and disaster management and emergency response, 2.) to explain the role of UN-SPIDER and 3.) to describe the cooperation with existing international mechanisms such as the International Charter Space and Major Disasters and comparable mechanisms such as SAFER in the framework of the European GMES programme.



**Seminars:** The regional workshop, co-organised by CARE Madagascar, the Food and Agriculture Organization (FAO), and with the collaboration of COOPI, took place from 9 to 11 November in Antananarivo, Madagascar, bringing together delegations from each country involved in the project, which are Madagascar, Mozambique, Comoros Island and Malawi. It was attended by about 60 delegates. The first national seminar took place on 12 November in Antananarivo, Madagascar, bringing together delegations from Madagascar and the Comoros. A group of 54 persons attended, representing national ministries, other national institutions, the European Union, the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), six NGOs, and six UN organizations.

The second national seminar in frame of this DIPECHO programme took place on 16 November in Lilongwe, Malawi. A group of 55 persons attended this meeting, including representatives of two national ministries, three other national institutions, the EU and the GTZ, eight NGOs, and four UN organizations.

The participants attended to present and to gather information on the technical capacity available particularly in their respective country and in the region. On behalf of the project consortium the country director of COOPI, Mr. Alexandre Castellano, and UN-SPIDER Senior Expert, Mr. Joerg Szarzynski, presented a sequence of presentations and lectures in order to help identify potential areas where space-

based technology and information could play a greater role, and to propose recommendations on how to improve the countries' access to and use of space-based technology and information. A specific presentation was given on behalf of the International Charter Space and Major Disasters directly provided by the Charter secretariat. The UN-SPIDER activities in African countries were mentioned, including the Technical Advisory Missions, support to disaster response activities through the SpaceAid Framework, and the National Focal Points and Regional Support Offices.

After the sequence of presentations, different working groups were established to consider the specific questions related to the situation in each of the countries, focusing on communication, coordination and dissemination, on needs for data, technology and training, and on formulating long term perspectives. The results from the breakout groups significantly describe the user requirements in this region. The needs and recommendations from the groups are summarized in the report of the event and can be found online on the UN-SPIDER Knowledge Portal ([www.un-spider.org](http://www.un-spider.org)).

With its active participation and support to these events, UN-SPIDER reaffirms the Programme's commitment to African countries to further support the use of space technology for risk and disaster management, and the willingness to contribute to this partnership within projects between the European Union and the African Union.

## VALID: a new joint project by JBGIS and UNOOSA

In July 2010, the Joint Board of Geospatial Information Societies (JBGIS) and UNOOSA published „Geoinformation for Disaster and Risk Management – Examples and Best Practices“, a compilation of case studies that provides information on what can be done with geoinformation in support of disaster and risk management – methods, systems, applications, experiences. As a next logical step it is planned to provide information on what is the value of geoinformation – an evaluation of benefits. The working title of this publication project is „The Value of Geoinformation for Disaster and Risk Management (VALID) - Benefit Analysis and Stakeholder Assessment“. A publication to that end would further help to raise awareness in the political and programmatic envi-

ronment and to set priorities in research and development.

The intention is to produce evidence of the economic, humanitarian and organizational benefits which can be realized by applying geoinformation to disaster management. Two methods will be applied in this project to ensure a holistic view on the benefits of geoinformation for disaster management and best possible coverage of the disaster management cycle: a socio-economic benefit analysis of representative cases and a stakeholder assessment of reference geoinformation products.

A call for papers and for participation in the expert stakeholder assessment will be issued around midyear 2011. To read more about the planned publication go to [www.un-spider.org/publications/valid](http://www.un-spider.org/publications/valid) ■

## Tackling the 4C – Challenge at the Fourth UN-SPIDER Bonn Workshop

In October 2010, the Fourth United Nations International UN-SPIDER Bonn Workshop on Disaster Management and Space Technology: “The 4C – Challenge: Communication – Coordination – Cooperation – Capacity Development” took place at the UN premises in Bonn, Germany. A total of 119 participants from 40 countries attended the workshop. UN organizations such as the Office for the Coordination of Humanitarian Affairs (UNOCHA), United Nations Framework Convention on Climate Change (UNFCCC), United Nations Development Programme (UNDP), and the World Food Programme (WFP) were represented, as well as national space agencies from Germany, Nigeria, Turkey and Ukraine. Additionally, numerous national disaster management organizations, universities, and private companies such as Turksat (Turkey), T-Systems (Germany), and ESRI (USA) were present. Altogether 82 organizations, institutions, and companies participated in the three-day event.

Four thematic sessions provided participants with the opportunity to learn how space-based information and solutions could be used in disaster management and humanitarian relief work. The sessions covered the following topics: 1. International support mechanisms and the SpaceAid Framework, 2. Satellite communication for disaster management, 3. Earth observation and geospatial information in support of risk and disaster management, and 4. The UN-SPIDER Network and its activities. Presentations gave accounts of existing and planned projects and highlighted the need for a coordinating entity

at the global level.

The topic that repeatedly emerged during all four sessions was the need for coordination between existing services and mechanisms that provide access to satellite-based data and information. In the same context, interoperability, standards and Standard Operating Procedures (SOP), and access capacities were discussed within several sessions. Additionally, it was pointed out that in case of emergencies, local actors should be supported by regional partners and that the overall coordination must benefit the development of the affected country. It was illustrated that the Regional Support Offices play an important role in the strengthening of regional capacities and in fulfilling the mandate of UN-SPIDER.

For the first time in a UN-SPIDER Workshop, satellite communications was a topic of its own. The session dedicated to this technology revealed the fact that there is a lack of coordination between different actors to optimize the deployment and use of satellite communications solutions for international development and emergency response. Possibly, a coordination mechanism similar to those focusing on EO would also be beneficial for the telecommunication community.

UN-SPIDER will continue these lines of discussion with interested entities on the international level. The recommendations made by the workshop participants will be taken into account and will accompany the work of UN-SPIDER in 2011.

The very nature of UN-SPIDER as a facilitating and coordinating entity make the Programme



dependant on the broad support of both the space- and the disaster management community. It will therefore be one of the core tasks of the Programme staff to create an understanding that UN-SPIDER belongs to the people, initiatives and organisations that contribute to and use the programme. During the course of the workshop, participants managed to develop a sense of ownership of the Programme, and the wish to continue contributing to its success was strongly noticeable. The outcome of the Fourth International Bonn Workshop gave valuable orientation and guidance on the further implementation of the UN-SPIDER Programme, especially in terms of coordinative and cooperative activities. UN-SPIDER will continue to ensure that the merits of the whole range of space-based solutions for the entire disaster management cycle are not only being recognised but also fully integrated into national policies and programmes.

The workshop agenda, presentations, and the full report are available at [www.un-spider.org/workshop-bonn-2010](http://www.un-spider.org/workshop-bonn-2010) ■



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On 14 December 2006 the United Nations General Assembly agreed to establish the “United Nations Platform for Space-based Information for Disaster Management and Emergency Response - UN-SPIDER” as a new United Nations programme to be implemented by UNOOSA. UN-SPIDER is the first programme of its kind to focus on the need to ensure access to and use of space-based solutions during all phases of the disaster management cycle, including the risk reduction phase which will significantly contribute to the reduction in the loss of lives and property. UN-SPIDER Newsletter, Volume 1/11, January 2011. © United Nations Office for Outer Space Affairs.