



## MAY 2015 UPDATES

### UN-SPIDER at a glance

#### **United Nations/Germany International Conference on Earth Observation successfully concluded**

On 28 May 2015, UNOOSA and its co-organizers, the German Aerospace Center (DLR) and the German Federal Ministry for Economic Affairs and Energy (BMWi), successfully concluded the three day United Nations/Germany International Conference on Earth Observation in Bonn, Germany. The conference was supported by Secure World Foundation, the City of Bonn and Digital Globe. Under the theme of “Global Solutions for the Challenges of Sustainable Development in Societies at Risk”, 130 experts from more than 30 countries convened in Bonn to discuss the benefits of Earth observation for sustainable development, including climate change and disaster risk reduction. Specifically, the participants discussed how Earth observation can feed into the Sendai Framework for Disaster Risk Reduction, the Sustainable Development Goals and the 2015 climate change agreement. The overall aim is to enable countries to better become aware and use Earth observation to reach the goals outlined in these three agreements. The programme included a special talk by European Space Agency astronaut Alexander Gerst as well as a special session including a high level panel for UN-SPACE. All conference presentations as well as the technical report will be made available shortly.

Read more: [Knowledge Portal](#)

#### **UNOOSA becomes new chair of International Working Group on Satellite based Emergency Mapping**

On 29 May 2015, UNOOSA took up the annually rotating position of official Chair of the International Working Group on Satellite based Emergency Mapping (IWG-SEM) at the Group’s spring meeting in Bonn, Germany. The IWG-SEM is a voluntary group of organizations involved in satellite based emergency mapping which supports disaster response by improving international cooperation in such mapping activities. The Director of UNOOSA, Simonetta Di Pippo, said

she welcomed “this role that the Office, through UN-SPIDER, can play to strengthen cooperation with other specialized actors to help build better emergency mapping guidelines and to review technical standards. It will contribute to more effective crisis response due to higher data accuracy.”

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#### **New UN-SPIDER Newsletter available**

A new UN-SPIDER newsletter is now available. The latest issue focuses on the use of Earth observation for the post-2015 sustainable development agenda. 2015 is a milestone year for the United Nations. Not only is the organization celebrating its 70 years of existence, the year is also the starting point for major agreements and frameworks that will shape global sustainable development in the years to come. Nations worldwide will jointly embark on new paths to end poverty, promote prosperity and well-being for all, protect the environment, address climate change and reduce disaster risks.

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#### **Internship opportunities with UN-SPIDER**

UN-SPIDER currently offers three different internships at Bonn and Beijing offices. Applications are open until 10 June for “Space Technology and Disaster Management” in Beijing as well as for “Remote Sensing” in Bonn and until 24 June for “Information Management/Public Information” in Bonn. Eligible candidates are either enrolled in university or have graduated from university not longer than 12 months ago.

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#### **UN-SPIDER participates in the 36th International Symposium on Remote Sensing of the Environment**

The 36th International Symposium on Remote Sensing of the Environment (ISRSE) hosted by the German Aerospace





Center (DLR) took place from 11 to 15 May in Berlin. Stakeholders from around 65 countries discussed the importance of Earth observation and satellite data when dealing with natural disasters and crises, but also for daily information about weather and climate, biodiversity, sustainable agriculture or resource consumption, among other essential issues. UN-SPIDER participated in the

ISRSE Conference within the Session “DISA-1: International initiatives for Earth Observation-based Disaster and Risk Management.” The presentation held by an expert of the UN-SPIDER Bonn office was titled: “Bridging the science-practice gap: UN-SPIDER’s approach to recommended practices for disaster risk management.”

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## Data application of the month

In this section, the UN-SPIDER team presents every month a specific example of a satellite data application for disaster risk reduction or emergency response.

Access the full list [here](#).

### Landslides

Landslides are a geological hazard which can be geographically widespread and cause extreme damage and loss of life. Mapping of risk and monitoring of landslides can be conducted using satellite and airborne imagery. Remote sensing can contribute to the assessment of the probability of a particular mass movement event occurring in an area, or to the assessment of damage after an event. For the assessment of landslide risks and damage, pre- and post-event optical imagery, processed

using image analysis and change detection techniques, can be efficient and cost effective. Optical imagery can highlight land cover changes, while LiDAR-derived DEMs can indicate the volume of material moved by erosion processes. Differential interferometric synthetic aperture radar (DInSAR) can detect slow moving landslides, their extent, velocity, and areas susceptible to erosion.

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## News from our Regional Support Offices

### IGAC: Monitoring mining areas in Colombia

The Agustín Codazzi Geographic Institute (IGAC) through its Research and Development in Geographic Information - CIAF, is developing a methodology to support the identification of illegal areas of opencast mining activities in the north-east of Antioquia Department, Colombia, by using remote sensing and geographic information systems. The methodological design of the approach is based on the processing of remote sensing images such as RapidEye, Ultra CAMD and LDCM Landsat 8, visual interpretation, Object-Oriented Image Processing and radar interferometry.

Read more: [Knowledge Portal](#)

### SRI Ukraine provides preliminary forecast for winter wheat

The Space Research Institute (SRI/NAS) in Ukraine and

SSA Ukraine in cooperation with the UN-SPIDER Regional Support Office in Ukraine and Integration-Plus Ltd. have used satellite data to deliver geoinformation services for agriculture needs, including winter wheat yield preliminary forecast for 2015. According to this preliminary yield forecast, based on satellite data as of 28 April 2015, significantly lower wheat yield compared to 2014 are expected in 2015.

Read more: [Knowledge Portal](#)

### IWMI: Training on Earth observation for flood risk mapping

UN-SPIDER’s Regional Support Office in Sri Lanka, the International Water Management Institute IWMI, conducted a training course on “Earth Observation Technologies for Flood-risk Mapping and Forecast Rating Curve for Flood Recession Agriculture in Nigeria”. At the same occasion,





the participants were briefed on the findings of a recent research project on “Turning tragedy into an opportunity: water management solutions for flood recession and dry season agriculture in Nigeria” supported by Federal Ministry of Agriculture and Rural Development (FMARD). The workshop and training took place from 5 to 7 May 2015 and were organized jointly by IWMI, FMARD and UN-SPIDER’s Regional Support Office in Nigeria, NASRDA.

Read more: [Knowledge Portal](#)

### **IGAC: Preparing for the 2015 International Geomatic Week**

IGAC, the Agustín Codazzi Geographic Institute, UN-SPIDER’s Regional Support Office in Colombia, as part of the celebration of its 80 year anniversary, is presenting the sixth edition of the International Geomatics Week. This time the event will take place between 10 and 14 August of 2015 at the Wyndham Hotel Bogota, Colombia. International Geomatic Week 2015 will focus on “Geospatial information for building peace” and include conferences, workshops, poster sessions, panels and trade shows, all focusing on technological innovations related to Geomatics technologies. The event will include the observation of the International Year of Soils and the Forum of Colombian Spatial Data Infrastructure - ICDE, with a special programme.

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### **ROSA announced prizes of ESNC Regional Competition in Romania**

UN-SPIDER’s Regional Support Office in Romania, the Romanian Space Agency (ROSA), announced the prizes

of the European Satellite Navigation Competition - ESNC 2015 – Romania Challenge. The competition will award the best ideas for innovative applications in satellite navigation, offering winners the necessary support and advice to open or develop a business based on their competition ideas. ROSA became the regional partner with Anwendungszentrum GmbH Oberpfaffenhofen (AZO) for the ESNC 2015. It will be the first national edition in Romania. The prizes consist, among other things, of 1,000 EUR cash (with UTCB & RARTEL each contributing half) for the winner of the competition.

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### **ICIMOD provides resources and expertise to support earthquake relief efforts in Nepal**

UN-SPIDER’s Regional Support Office in Nepal, the International Centre for Integrated Mountain Development in the Hindu Kush Himalayas (ICIMOD), formed a team of GIS and remote sensing experts to support relief efforts after the 7.8 earthquake that hit Nepal on 25 April 2015. The team is coordinated by the Ministry of Home Affairs of the Government of Nepal. They’re processing and analysing the latest satellite imagery being provided to ICIMOD from space agencies around the globe. The team mapped pockets of settlements in affected districts and creating profiles of affected areas to inform relief and recovery operations. ICIMOD has set up a dedicated webpage to provide the latest maps, data, and information about the situation in Nepal ([www.icimod.org/nepalearthquake2015](http://www.icimod.org/nepalearthquake2015)), including links to other relevant sites.

Read more: [Knowledge Portal](#)

## News from our Community

### **Landsat 8 imagery accessible to non-profit organizations**

Researchers will have easier access to Landsat 8 satellite imagery thanks to a new tool made available by Blackbridge Networks and Cybera. Canadian non-profit organizations such as academic institutions or research networks using geospatial information will be able to access thousands of Landsat 8 Level 1T terrain-corrected, multi-spectral images that are immediately available for selected regions of Canada, the United States, Brazil, Australia, and Western Europe. The catalogue of Landsat 8 imagery can be accessed via

BlackBridge’s self-service Representational State Transfer Application Programming Interface (REST API), a tool built to help discovering and accessing large satellite imagery catalogues. Cybera provides a high-speed, unmetered research and education network infrastructure allowing the existence of this tool.

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### **Satellite technology to combat droughts in India**

The state government of India is using satellite technology to keep an eye on the progress of water conservation schemes





across more than 30,000 sites of Jalyukta Shivar Scheme in Maharashtra. 'Jalyukta Shivar Abhiyan' is the flagship programme of Chief Minister Devendra Fadnavis who has set a target to rid Maharashtra of drought within a period of five years. All projects are supervised by the Maharashtra Remote Sensing Application Center (MRSAC), whose office is in Nagpur. The state is monitoring the progress in order to complete the work before monsoon sets in.

Read more: [Knowledge Portal](#)

### **NASA Soil Moisture Mission begins science operations**

NASA's new Soil Moisture Active Passive (SMAP) mission has begun science operations. SMAP investigates global soil moisture and detect whether soils are frozen or thawed. This information help scientist understand links among Earth's water, energy and carbon cycles. In addition, map global soil moisture can help to monitor and predict natural hazards like floods and droughts. SMAP was launched on 31 January of this year into orbit. Together, SMAP's two instruments, which share a common antenna, produce the highest-resolution, most accurate soil moisture maps ever obtained from space.

Read more: [Knowledge Portal](#)

### **Viet Nam and India cooperate in remote sensing technology**

The Vietnamese Ministry of Natural Resources and Environment and the Indian Department of Space will promote cooperation in remote sensing and outer space technology via joint projects in human resources training and in applying remote sensing technology. The two countries preparing for establishing a centre for satellite tracking, data reception and processing for the Association of Southeast Asian Nations (ASEAN). The center will be located in Vietnam where Vietnamese personnel will be trained to operate the center. India will pay for the installation and operation costs for the project in the first five years, and supply remote sensing images free of charge to ASEAN member states for five years.

Read more: [Knowledge Portal](#)

### **Supercomputer K: An ally to reduce disaster risks**

The Tohoku University and Fujitsu Laboratories jointly developed a real-time flood analysis system with the help of the Fujitsu's supercomputer, K. The new system automatically predicts and simulates models of tectonic shifts and sea surface deformation at the time of earthquakes, using relevant data. Then, it performs parallel computations

using the supercomputer K to thoroughly estimate the tsunami's effects on areas. The K is capable of 10-quadrillion computations per second. It can figure out how far inland will be affected within 10 minutes of an earthquake. Thanks to the real-time analysis system people could be faster warned about disasters and are enabled to evacuate immediately.

Read more: [Knowledge Portal](#)

### **New Copernicus Earth observation mission by ESA and Airbus Defence**

The development and production contract for the Jason-CS/Sentinel-6A satellite has been signed by the European Space Agency (ESA) and Airbus Defence and Space, the world's second largest space company, at the 36th International Symposium on Remote Sensing of Environment in Berlin. Jason-CS/Sentinel-6 is a mission allowing to measure ocean surface topography with high-precision and to create a global map. The cycle of observations is repeated every 10 days with an accuracy of few centimetres from the oceans'surface. The Jason-CS/Sentinel-6 satellites will ensure that measurements are carried out on a continuous basis from the years 2020 and 2026 respectively.

Read more: [Knowledge Portal](#)

### **Cuba promotes use of satellite remote scanning and detecting**

At the Cuban Convention on Earth Sciences, the country presented "A Look to the Outer Space" which promotes the use of satellite remote scanning and detecting to be used for the country's economy. Dr. Manuel Iturralde, president of the Cuban Society of Geology, said that satellite technology has many applications in everyday life and social practice of Cuba. He went on to say that there are many groups working on issues involving the use of satellite pictures in their research and everyday practice in Cuba, and that is working on the creation of a national remote sensing center, which favors the work between those who work related to this specialty in the country.

Read more: [Knowledge Portal](#)

### **New study warns: Loss of rainfall satellites will hamper flood management**

Currently, there are 10 satellites dedicated to monitoring rainfall, but soon this number is likely to fall: four satellites have already passed their design life and others will follow soon. This will strongly affect flood management globally, shows a study published at Environmental Research Letter. Space-





based rainfall observation give high-value opportunities for globally coordinated data services regarding rainfall and resulted floods. Rainfall satellite data provides a good understanding of high-intensity events like monsoon rains.

Read more: [Knowledge Portal](#)

### **Volunteers mapped Nepal's Earthquake within 48 hours**

The same day a 7.8 magnitude earthquake hit Nepal, digital volunteers from all over the world began to map the affected areas. Based on data and satellite imagery they created maps to help first responders, before they even hit the ground, on search, rescue and relief operations. In the beginning the focus was on completing simple based maps looking at the most affected areas. Also first hour support came from DigitalGlobe who tasked the WorldView-3 satellite, its newest model orbiting at 617km above Earth, to start capturing

the region. Using these maps, the teams could identify for example open spaces likely to be used to setup camps for displaced persons.

Read more: [Knowledge Portal](#)

### **International Charter activated twice in May 2015**

The International Charter: Space and Major Disasters was activated twice this month to provide free of charge satellite maps. The cause of the first activation was the typhoon Dolphin that passed over the Northern Mariana Islands on 15 May. On 20 May, the mechanism was activated for the second time due to a landslide in Colombia that left almost 80 people dead and hundreds injured. This time the Charter requestor was USGS on behalf of UNGR. The satellite-based products are available from the International Charter's website.

Read more: [International Charter](#)

## Upcoming events

### **1-5 June 2015, Hangzhou, China: East Asia Summit (EAS) workshop on Application of Space Information Technology in Major Natural Disaster Monitoring and Assessment and 2nd ASEAN workshop on "Development of mechanisms for acquisition and utilisation of space-based information during emergency response"**

The EAS workshop aims to offer a forum for disaster management communities and experts to share experiences on applications of space-based information in major natural disaster monitoring and assessment between EAS member countries, strengthen their capabilities and exchange the progress of advanced applications of remote sensing technology in disaster risk reduction. The 2nd ASEAN workshop on "Development of mechanisms for acquisition and utilisation of space-based information during emergency response" is being organised back-to-back with the EAS workshop. The ASEAN workshop aims to advocate the mechanisms and standard operating procedures for utilisation of space-based information during emergency response for ASEAN member states.

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### **9-10 June 2015, Beijing, China: International Workshop on Supporting Future Earth with Global Geo-Information**

Future Earth is a global research platform aiming to provide knowledge and supporting to accelerate our transformations

to a sustainable world. Dynamic Planet, Global Development and Transformations towards Sustainability are its three research themes. These depend critically on the availability and utilization of reliable information at both local and global scale. This joint workshop by UN-SPIDER, the National Geomatics Center of China (NGCC), the Chinese National Committee for Future Earth (CNC-FE), the Chinese National Administration of Surveying, Mapping and Geoinformation (NASG), LIESMARS, and Wuhan University will present the latest development of global spatial data production and sharing, exchange successful application experiences of global geo-information, examine up-to-date user requirements and key gaps, and identify major challenges. It aims at promoting the multi-disciplinary collaboration towards providing reliable global geo-information to support Future Earth.

Read more: [Knowledge Portal](#)

### **Apply now: 1-4 September 2015, Cape Town, South Africa: United Nations/South Africa Symposium on Basic Space Technology "Small Satellite Missions for Scientific and Technological Advancement"**

The Symposium will focus on capacity building in basic space technology development, in particular the development and use of small satellites (<150 kg) for scientific and technological advancement. It will also discuss relevant legal and regulatory issues, including national and international space law,



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frequency allocation and space debris mitigation measures for the long-term sustainability of outer space activities. The objectives of the UN/South Africa Symposium include, inter alia, the review the status of capacity building in basic space technology for small satellites including lessons learned from the past and on-going development activities with a focus on regional and international collaboration opportunities, in particular for countries in Africa and examine issues relevant to the implementation of small satellite programmes, such as organizational capacity building, development and testing infrastructure and launch opportunities. The symposium is open for applications until 21 June 2015.

Read more: [UNOOSA](#)

### **Extended deadline: 7-10 September 2015, Graz, Austria: United Nations/Austria Symposium for Integrated Space Technology Applications for Climate Change**

Satellites offer a unique point of view to observe climate change-related variables and features at the global level such as sea-level rise, deforestation trends or carbon emissions; and to measure on a permanent basis other parameters which may be too difficult or costly to observe from the ground such as changes in polar ice-caps and glaciers, and social trends such as increasing exposition of vulnerable communities to phenomena related to Climate Change. Among other goals, this symposium aims to discuss ways in which countries affected by climate change can make better use of space applications to assess vulnerability to climate change and to identify potential alternatives in the context of mitigation and adaption to climate change. The deadline for application has been extended until 20 June 2015.

Read more: [UNOOSA](#)

### **Apply now! 14-16 September 2015, Beijing, China: United Nations International Conference on Space-based Technologies for Disaster Management - "A consolidating role in the implementation of the Sendai Framework on Disaster Risk Reduction: 2015-2030"**

The conference focuses on the consolidating role of Earth observation technologies in the implementation of the "Sendai Framework on Disaster Risk Reduction: 2015-2030". Efforts need to be taken to promote use of space-based information to help assess potential risks and hazards before disaster occur and contribute to risk-based developmental planning. The conference will synthesize experiences and lessons learnt by the experts and end users involved in using Earth observation in all stages of disaster management. The aim of the conference is to produce an

outcome document with guidelines to Member States to integrate Earth observation and geospatial technologies in implementing the Sendai Framework for Disaster Risk Reduction. The Conference is now open for applications. The final deadline for registration is 19 July 2015. Online registration is mandatory for all participants.

Read more: [Knowledge Portal](#)

### **Apply now: 26-30 September 2015, Tehran, Islamic Republic of Iran: United Nations/Iran Workshop on Space Technology Applications for Dust Storm and Drought Monitoring**

The workshop will discuss how space technologies, applications, information and services can contribute into sustainable economic and social development by supporting efficient monitoring of drought conditions and related hazardous phenomena, primarily in developing countries. Its objectives include to enhance capabilities of countries in the use of space-related technologies, applications, services and information for dust storm and drought monitoring, to examine low-cost space-related technologies and information resources available for addressing such monitoring needs in developing countries, and to strengthen international and regional cooperation in these domains by improving synergies among space agencies and specialized monitoring agencies. The workshop is open for applications until 10 June 2015.

Read more: [UNOOSA](#)

### **Apply now: 9-11 October 2015, Jerusalem, Israel: United Nations/International Astronautical Federation Workshop on Space Technology for Socio-Economic Benefits "Water Resources Management"**

The United Nations through its Programme on Space Applications implemented by the United Nations Office for Outer Space Affairs (UNOOSA) and the International Astronautical Federation (IAF) are jointly organizing a Workshop on Space Technology for Socio-Economic Benefits on the theme "Water Resources Management" to promote the use of space technology for the benefit of Member States. The Workshop will be the 25 th in a series of Workshops jointly organised by the Office for Outer Space Affairs and by the International Astronautical Federation. The Workshop will discuss space science, technologies and applications in support of economic, social and environmental sustainable development with a focus on water resources management, in particularly also in the developing countries. The workshop is open for applications until 12 July 2015.

Read more: [UNOOSA](#)

