



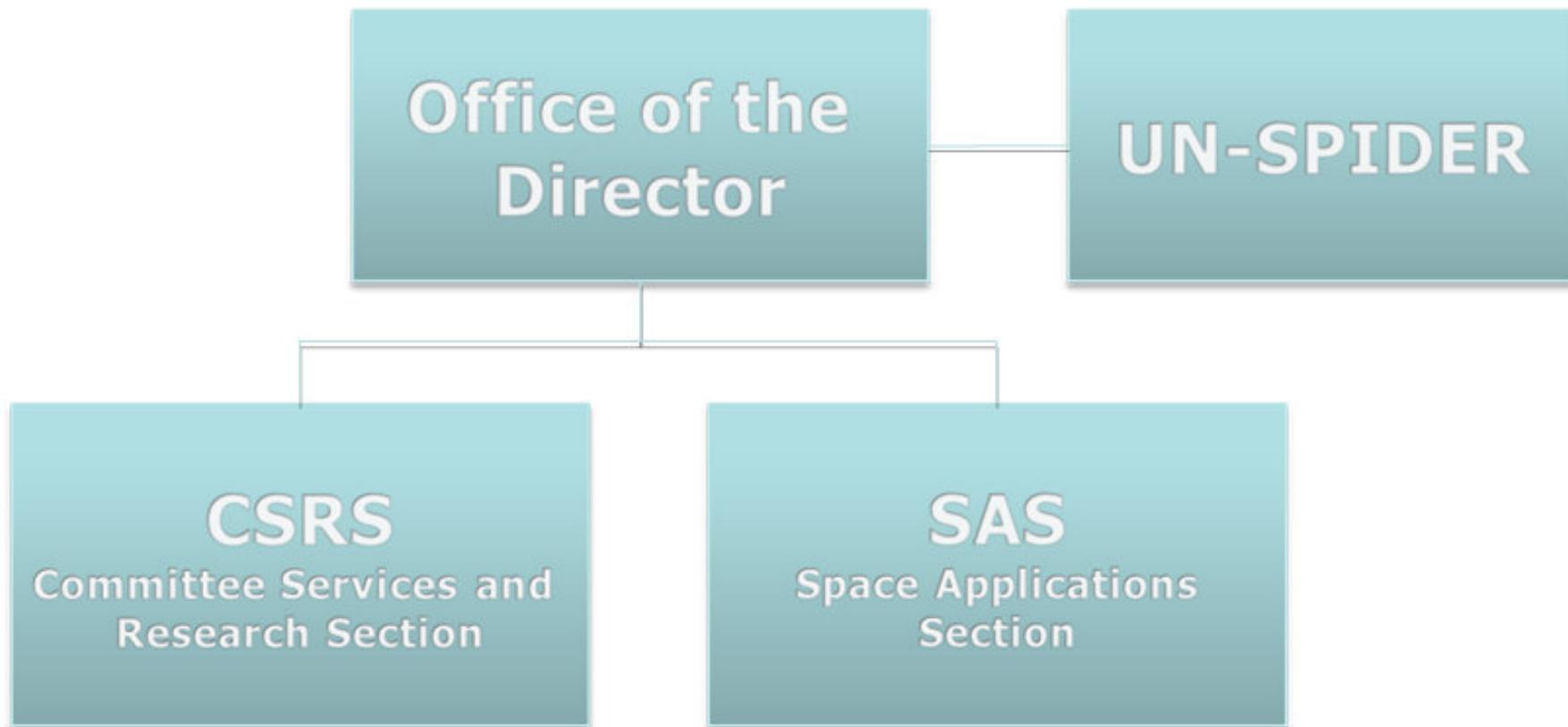
# Activities of UNOOSA

## For the Benefit of Africa





# UNOOSA





# United Nations Programme on Space Applications

## Emphasis on the following areas:

Providing support for education and training for capacity-building in developing countries through the regional centres for space science and technology education, affiliated to the United Nations, and by continuing the long-term fellowship programmes for training;

Promoting the use of and access to space-based technologies and information in the fields of climate change, mountainous regions, search and rescue, tele-health and basic space technology;

Increasing the awareness of knowledge-based themes, including in the fields of basic space science and space law, and conducting educational outreach activities for youth;

Providing technical advisory services, upon request, to Member States, bodies and specialized agencies of the United Nations system and relevant national and international organizations.



## United Nations Programme on Space Applications

- ◆ United Nations/WHO/Burkina Faso/ESA/CNES Workshop on Using Space Technologies for Tele-health to Benefit Africa, Ouagadougou, Burkina Faso, May 5-9 2008



- ◆ United Nations/Kenya/ESA Regional Workshop on Integrated Space Technology Applications for Monitoring Climate Change Impact on Agricultural Development and Food Security, Nairobi, Kenya, 1-5 December 2008





# UNITED NATIONS Office for Outer Space Affairs





## Education and Capacity Building in the Use of GNSS Technologies: ICG 2009 Activities

### I. Use of GPS for space weather utilizing a ground-based world-wide instrument arrays (IHY2007)

- ◆ International Space Weather Initiative (ISWI)
  - ◆ *Aspects of the response of the mid- and low-latitude ionosphere to magnetic storms and their space weather effects, including in-situ and ground-based observations as well as modelling and theoretical studies, particularly using GPS*
  - ◆ *To complement the ground based data, huge amounts of data from space based missions on Earth and heliospheric phenomena, which are freely accessible, and the analysis and interpretation of this data will be carried out*

### II. Use of GNSS equipment in Africa for various disciplines (geodesy, geophysics, space weather and meteorology) and in attempt to coordinate and to facilitate scientists and organizers of networks of instruments – with a focus on GPS-based instruments (RegionalReferenceFrames)

- ◆ Satellite Navigation Science and Technology for Africa, 23 March – 09 April 2009, the Abdus Salam International Centre for Theoretical Physics, Trieste, Italy
  - ◆ *“Geo-science” instruments in Africa (GPS Africa): African Array, AFREF, IHY projects, atmospheric monitoring of water vapor, space weather observations*
  - ◆ *Standards, communication of data policies to maximize the benefits of the networks*
- ◆ *AFREF Steering Committee Meeting and Africa Array Meeting: Session on coordinating GPS and “Geo” instrumentation in Africa, 17 – 20 June 2008, Johannesburg, South Africa*



## Education and Capacity Building in the Use of GNSS Technologies: ICG 2009 activities

### III. Capacity building efforts in space science and technology (**Education Curriculum**)

- ◆ UN/ESA/USA Training Course on Satellite Navigation and Location Based Services, at the African Centre for Space Science and Technology – in French language (CRASTE- LF), 29 September – 24 October 2009, Rabat, Morocco
- ◆ UN/USA Training Course on Satellite Navigation and Location Based Services, at the Regional Centre for Space Science and Technology Education in Latin America and the Caribbean (CRECTEALC), Puebla, Mexico, the second half of 2009
  - ◆ *Initiating development of the GNSS Education Curriculum*
  - ◆ *ICG Information Centre: To foster a more structured approach to information exchange in order to fulfill the reciprocal expectations of a network between ICG and Regional Centres*

### IV. Applications of GNSS (**GNSS Global Applications**)

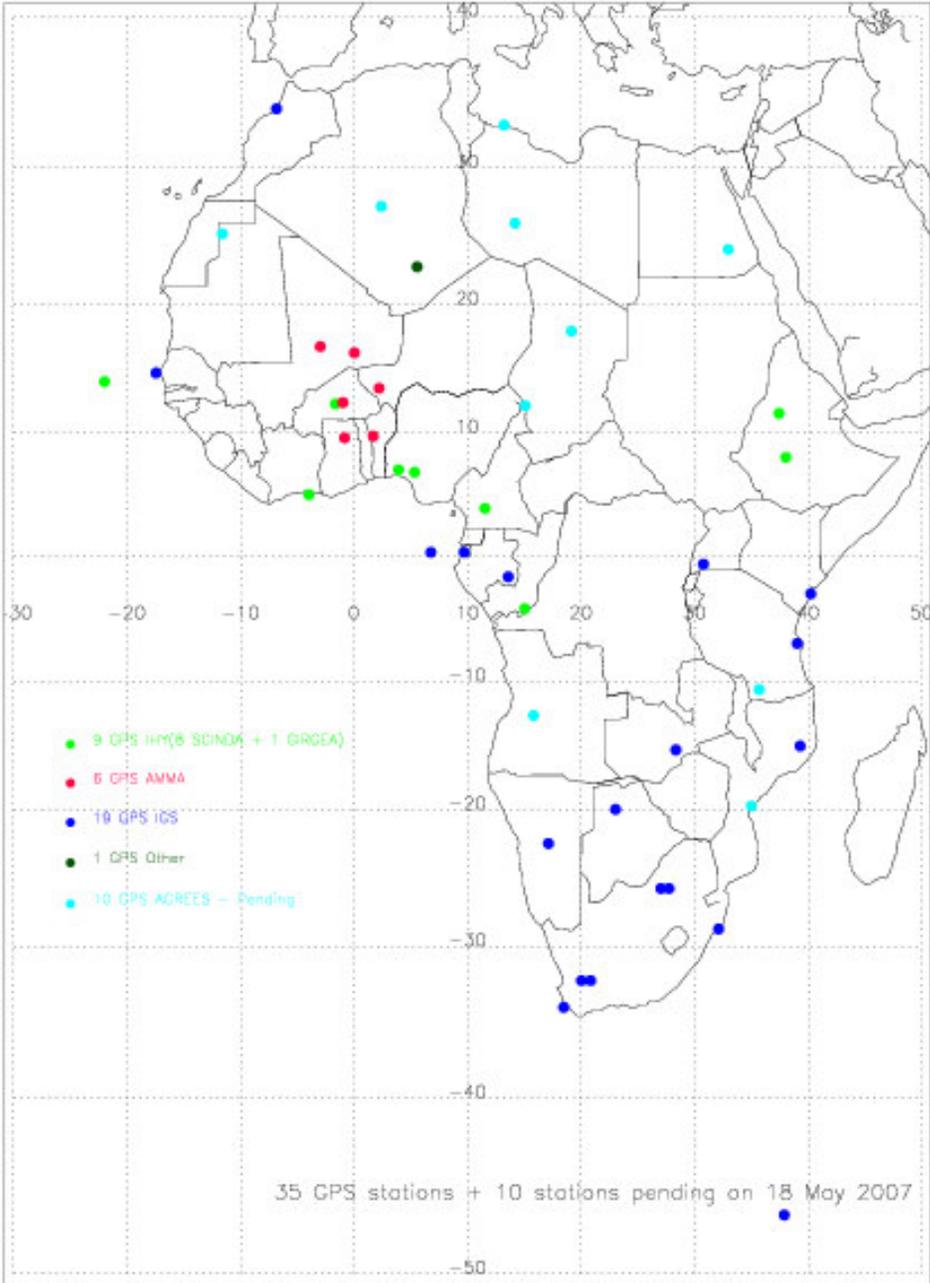
- ◆ UN/Azerbaijan/ESA/USA Workshop on the Applications of GNSS, 11 – 15 May 2009, Baku, Azerbaijan
  - ◆ *GNSS technology: Practical applications and scientific exploration perspective*
  - ◆ *Land-based and marine applications*
  - ◆ *Space weather monitoring*





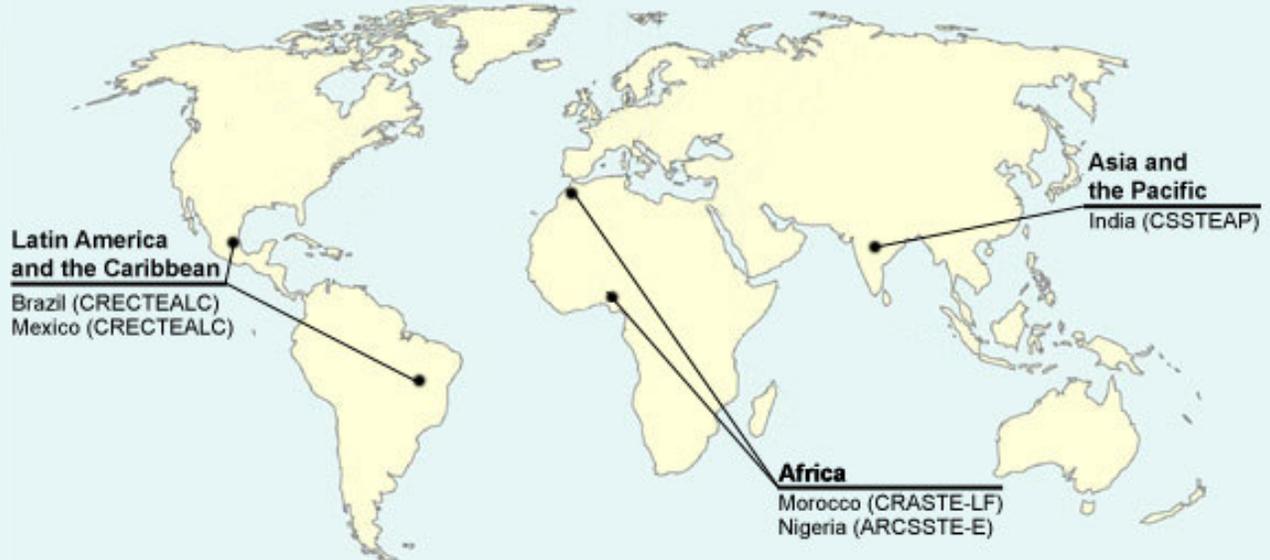
# UNITED NATIONS Office for Outer Space Affairs

GPS Africa





**Regional Centres for Space Science and Technology Education  
(affiliated to the United Nations)**





## **UN-affiliated Regional Centres for Space Science and Technology Education**

The goal of the Centres is to develop, through in-depth education, an indigenous capability for research and applications in the core disciplines:

- Remote Sensing and Geographical Information Systems,
- Satellite Communications,
- Satellite Meteorology and Global Climate, and
- Space and Atmospheric Sciences as well as data management

Two further model curricula are currently being developed:

- Global Navigation Satellite Systems
- Space Law



## **UN-affiliated Regional Centres for Space Science and Technology Education : CASTRE-LF**

- ◆ **CRASTE-LF is located at the Mohammadia School of Engineers at the University Mohamed V in Rabat.**





# UNITED NATIONS Office for Outer Space Affairs



Main entrance to the Centre



PGD course participants attending stakeholders' workshop on GEO-FORMIN, Abuja (2006)



A training session



Participants of the postgraduate programmes training in the field





## UN-SPIDER Mission Statement

**“Ensure that all countries and international and regional organisations have access to and develop the capacity to use all types of space-based Information to support the full disaster management cycle”**

OOSA/Staff in Vienna



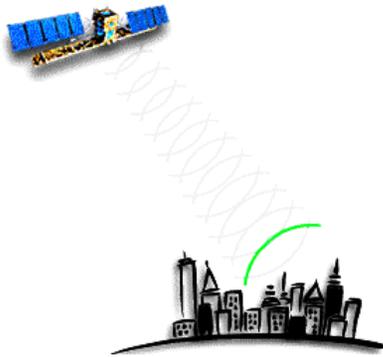
UN-SPIDER Beijing Office



UN-SPIDER Bonn Office



Network of Regional Support Offices



or Space-based Information for Disaster Management and Emergency Response (UN-SPIDER)



## Technical Advisory Mission to Burkina Faso

### Mission team:

- Said Benali (Agence Spatiale Algérienne)
- Mario Hucteau (Centre National d'Etudes Spatiales, France)
- Catherine Lefebvre UNOCHA Regional Office West Africa)
- Joerg Szarzynski (UN-SPIDER)
- Martin Raithelhuber (UN-SPIDER)

National counterpart:

- SP/CONEDD  
(Min. of Environment)





## Technical Advisory Support to Namibia

- Support access to Charter mechanism during emergency
- Provide expert advice on suitable imagery for flood situation under cloud cover
- Facilitate link to non-Charter image providers
- Receive and evaluate user feedback
- Support development of training course based on user needs assessment
- Conduct technical advisory mission with field visit and training course

ers and jobs  
people across 22  
Africa countries.

The abrupt termination of services has left Namibian investors in GTV Namibia "absolutely devastated".

ers say they feel betrayed by the process of liquidation, especially that they have not been in the loop until Friday. The shareholders are in discussions with their legal team to secure the rights and interests of

Namibian subscribers and creditors. GTV Namibian director, Josephat Mwatotele, said although they are mindful of the liquidation process in the UK, GTV Namibia's first priority is to ensure that

the closure of GTV Namibia is done according to Namibian laws and constitution. GTV came to Africa in 2007, starting with Kenya and ending with Namibia, attracting a growing following thanks to the

### Namibia Seeks to Enhance Floods Management

By Petronella Sibeena

WINDHOEK – Namibia has appealed to the International Charter "Space and Major Disasters" for support so that the country can receive satellite images to help respond timeously to floods, especially in the northern parts of the country.

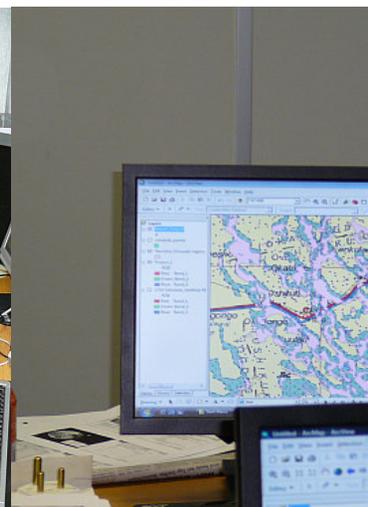
A year after floods

devastated regions in the northern parts, namely Oshana, Oshikoto, Omdangwa and Oshana, Namibia still lacks modern equipment crucial in providing data that can be used to avert floods and the devastating consequences. Satellite images will enable relevant authorities to quickly gauge the magnitude of such disasters in future.

The satellite images will not only provide authorities a synthetic view of the flood over a wide part of the prone areas, but will also help in assessing prevention and response plans.

On Friday, officials from relevant government ministries, the United Nations Office for Outer Space Affairs and the German Aerospace Centre met in the

FLOODS Page 2





## Namibia: March 2008

### Severe flooding, starting in January

- peak floods in March throughout central and northern regions, affecting and displacing thousands of people
- emergency state declaration by the Namibian government, facing a crisis with unprecedented proportions
- UNOOSA activated the *CHARTER*
- assistance to the Hydrological Services through UNDP and UN-SPIDER:
  - requesting satellite data of flooded areas
  - guidance of assistance received from ZKI



Photo Credit: Guido Van Langenhove



# UN-SPIDER Newsletter

October 2008 Vol. 2/08

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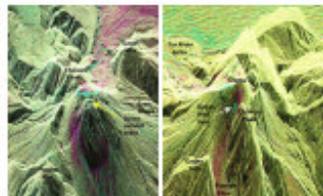
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## UN-SPIDER Connects Disaster Managers with Satellite Imagery Providers

*Assists Satellite Imagery Acquisition for Volcanic Activities in Montserrat and Flooding in Southeast Nepal/Indian Bihar*

ON 26 JULY 2008, seismic activity at the Soufriere Hills Volcano started to increase in Montserrat, a British Overseas Territory in the Caribbean. This volcano has been intermittently active for 13 years. On 28 July, an explosion took place on the west side of a large lava dome at the summit. The dome partially collapsed, and there was a strong possibility that the explosion had caused instability in the rest of the dome, with the possibility to cause further collapses and endanger inhabited areas of the island.

The Montserrat Volcano Observatory (MVO) is part of Montserrat's disaster management system and plays an important role in providing early warning to the authorities of a possible eruption of the volcano. Staff at the MVO, however, were not able to make any assessment of the sta-



Before-and-after false-colour satellite radar images of the volcanic dome

bility of the dome this time, due to persistent clouds obscuring the volcano. Aerial surveys or optical satellite imagery could not penetrate the clouds. An additional challenge was to obtain a set of comparable before-after images that would allow the staff to analyse the terrain and determine the extent of change in the volcanic dome.

(see "Satellite Imagery" on page 3)

## UN-SPIDER Readies Technical Mission to Burkina Faso

*Will Advise Policymakers and Practitioners on the Use of Space-Based Information for Disaster Management*

AT THE UNITED Nations Committee on the Peaceful Uses of Outer Space (COPUOS) meeting in Vienna in June



UN-SPIDER preparatory visit to a disaster management office in Ouagadougou, Burkina Faso

2008, the government of Burkina Faso made an official request to UN-SPIDER for a Technical Advisory Mission. The Mission, taking place from 12 to 21 November 2008, will assess Burkina Faso's existing use of space-based information for disaster management, identify potential areas where such information could play a greater role, and propose recommendations on how to improve Burkina Faso's utilization of this information.

The vulnerability of Western African countries such as Burkina Faso to climate and environmental change is likely to increase as demands on resources continue to rise in tandem with rapidly growing populations. The disaster management agencies in the region have to adapt to the increasing number of natural disasters, ranging between the poles of drought and flood. Additional impacts triggered by environ-

(see "Advisory Mission" on page 4)

12000 subscribers





## 2008 Outreach Activities Carried Out





# UNITED NATIONS Office for Outer Space Affairs



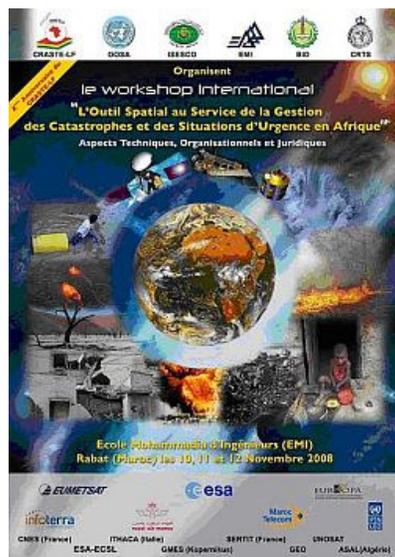


## Meetings supported by UN-SPIDER in Africa



- West African regional workshop on UN-SPIDER and the role of the International Charter on Space and Major Disasters, held in **Nigeria** on 21 and 22 May 2008;

- Workshop on the technical, organizational and legal aspects of using space technology for disaster management and emergency response, held in **Morocco** from 10 to 12 November 2008.







# UNITED NATIONS Office for Outer Space Affairs



## United Nations Office for Outer Space Affairs

[www.unoosa.org](http://www.unoosa.org)

THANK-YOU