



UNITED NATIONS
Office for Outer Space Affairs

“The United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER)”

“United Nations Regional UN-SPIDER Workshop: Building Upon Regional Space-based Solutions for Disaster Management and Emergency Response for the Pacific Region”

Holiday Inn, Suva, Fiji
16-19 September 2008



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First Image from Space ... 24 October 1946



United Nations Office for Outer Space Affairs



50 Years of Space Exploration - Over 800 Satellites Up There



Photo credit: NASA

- All began in 1957 with the launch of **Sputnik**
 - 45 countries have launched satellites
 - 800 satellites up there; 63 launches in 2006
 - Meteorological Satellites – Earth Observation Satellites – Communication Satellites – Global Navigation Satellite Systems

This is the working environment of the United Nations Office for Outer Space Affairs



Organisation of the Office for Outer Space Affairs

- Office of the Director (Mazlan Othman)
- Committee Services and Research Section (Niklas Hedman)
- Space Applications Section (SAS) (Alice Lee)
- UN-SPIDER Programme (David Stevens)

Staff of the Office for Outer Space Affairs

(based in Vienna, Austria and also the UN-SPIDER Office in Bonn)

- 20 Staff (scientists, lawyers, political scientists and administrative)
- 2 Senior Experts (NRLs)
- 3 Associate Experts (Austria, Italy, Republic of Korea)
- 2 interns/volunteers



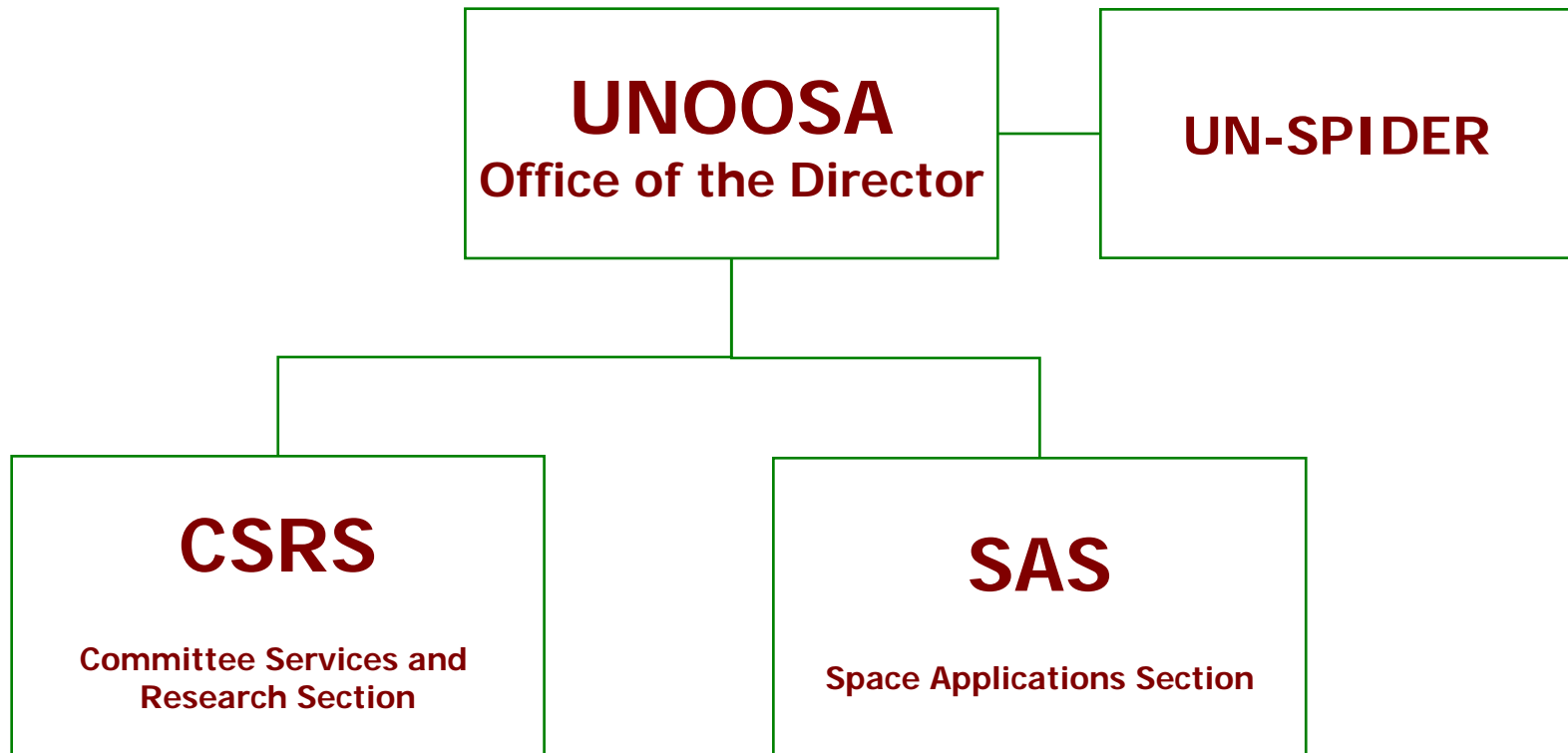
Main Activities of the Office

- Secretariat for the Committee on the Peaceful Uses of Outer Space (COPUOS) and its two Subcommittees (Establishment of a legal and regulatory framework governing space activities)
- Executive secretariat for the three United Nations Conferences on the Exploration and Peaceful Uses of Outer Space (UNISPACE, UNISPACE 82 and UNISPACE III)
- Implement the United Nations Programme on Space Applications
 - Promote international cooperation in the use of space technology for sustainable economic and social development and for the protection and management of the Earth's environment
 - To strengthen the capacity of developing countries to use space technology
 - To contribute to the implementation of the recommendations of United Nations global conferences
- Implement the United Nations Platform for Space-based Information for Disaster Management and Emergency Response - SPIDER
- Secretariat for the Inter-Agency Meeting on Outer Space Activities
- Treaty obligations



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UNOOSA





General Assembly A/RES/61/110

- 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 programme within the United Nations to provide universal access to all types of space-based information and services relevant to disaster management by:
 - being a **gateway** to space information for disaster management support;
 - serving as a **bridge** to connect the disaster management and space communities; and
 - being a **facilitator** of capacity-building and institutional strengthening.



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GETTY IMAGES



Space-based Solutions ...

Satellite communications help warn people who are at risk, especially in remote areas

They help connect a disaster zone to the outside world



Images from earth observing satellites help assess the damage caused by disasters like earthquakes, volcano eruptions, oil spills and floods.

Global navigation satellite systems enable us to obtain positional information on events that have to be mapped





Telemedicine Networks

Use of VSAT-based Communication and Telemedicine Networks for post-disaster relief in Andaman-Nicobars



VSAT Communication Network

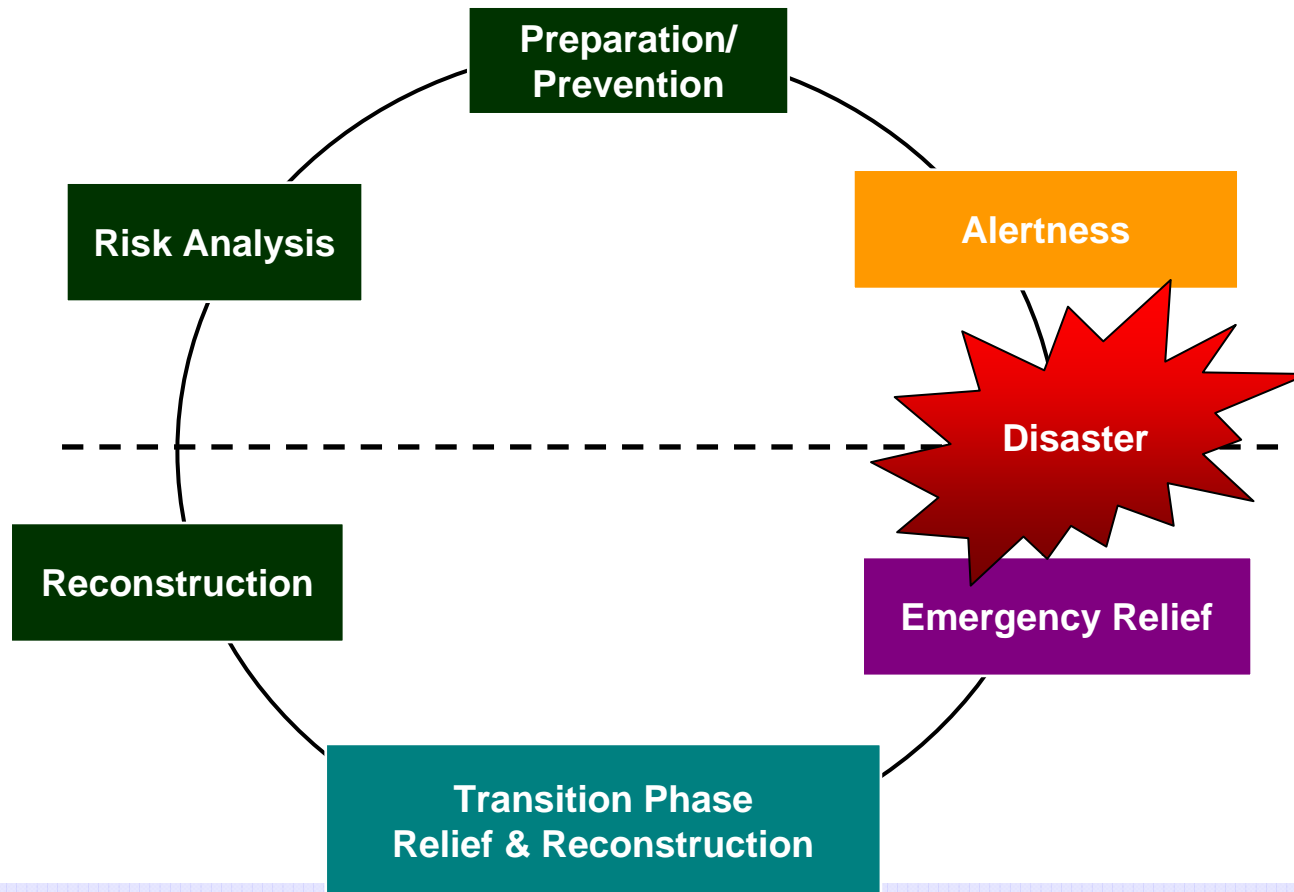


Telemedicine Connectivity



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”.





Liaison Office in Geneva



Staff in Vienna



UN-SPIDER Beijing Office

< UN-SPIDER Bonn Office



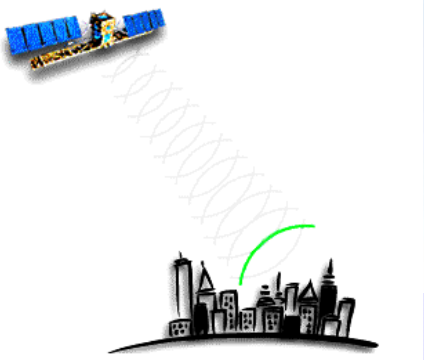
RSO Algeria

RSO I.R. Iran



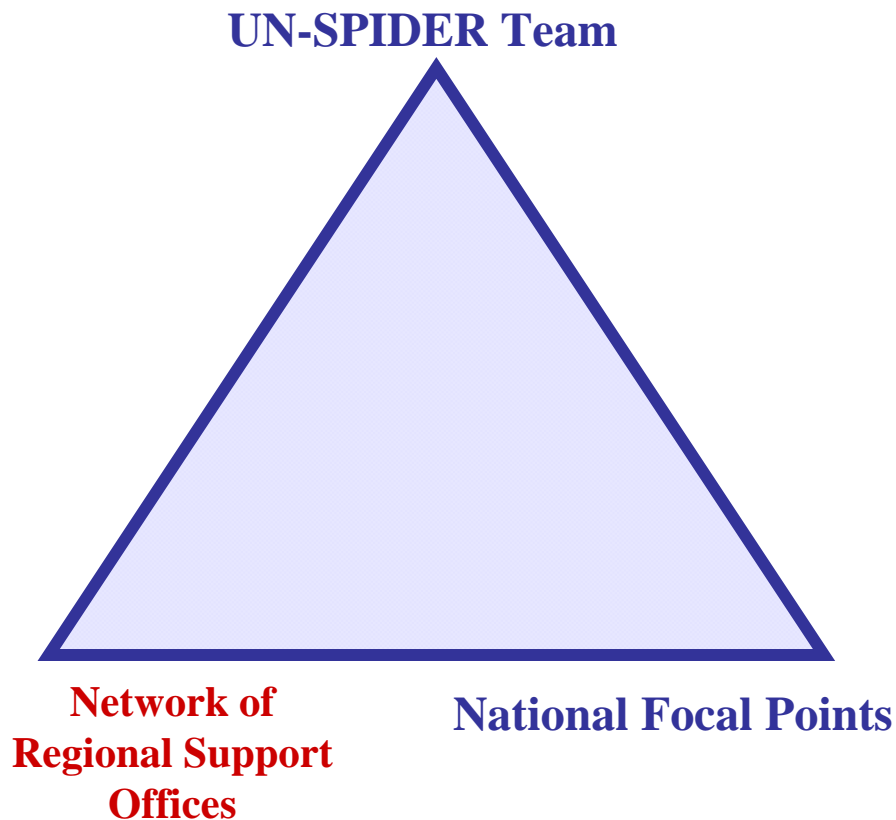
RSO Nigeria

Network of Regional Support Offices 





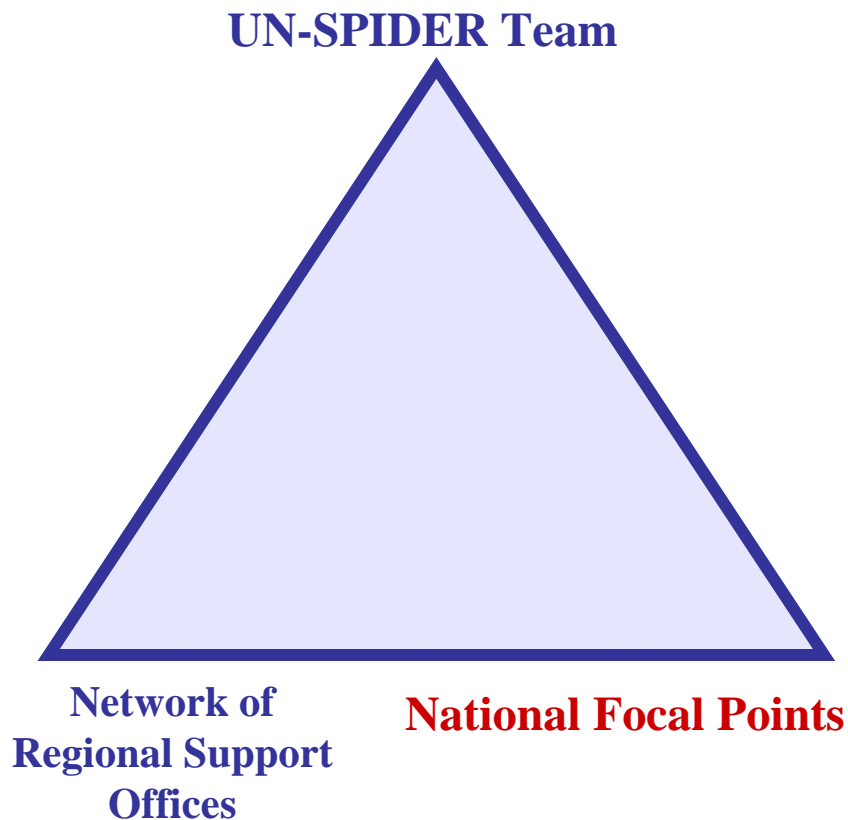
UN-SPIDER Cornerstones



Network of Regional Support Offices - Regional and national centres of expertise in the use of space technology in disaster management which agree to form a network for implementing the activities of the programme in their respective regions in a coordinated manner. These Regional Support Offices should be leading national or regional institutions with notable expertise in the use of space technology for disaster management.



UN-SPIDER Cornerstones



National Focal Points – the national institutions representing the disaster management and/or space application communities that are nominated by their respective government to work with UN-SPIDER to strengthen national disaster management planning and policies and in the implementation of specific national activities that incorporate space-based technology solutions to support disaster management.



UN-SPIDER Activities (A/AC.105/894)

A Gateway to Space-based Information for Disaster Management Support

1. Compilation of Information
2. Access to Information
3. Awareness Raising
4. Outreach Activities
5. Regional and Country Profiles

A Bridge to Connect the Disaster Management and Space Communities

6. Support to Communities of Practice (CoP)
7. Knowledge Management and Transfer
8. Platform for Fostering Alliances

A Facilitator of Capacity Building and Institutional Strengthening

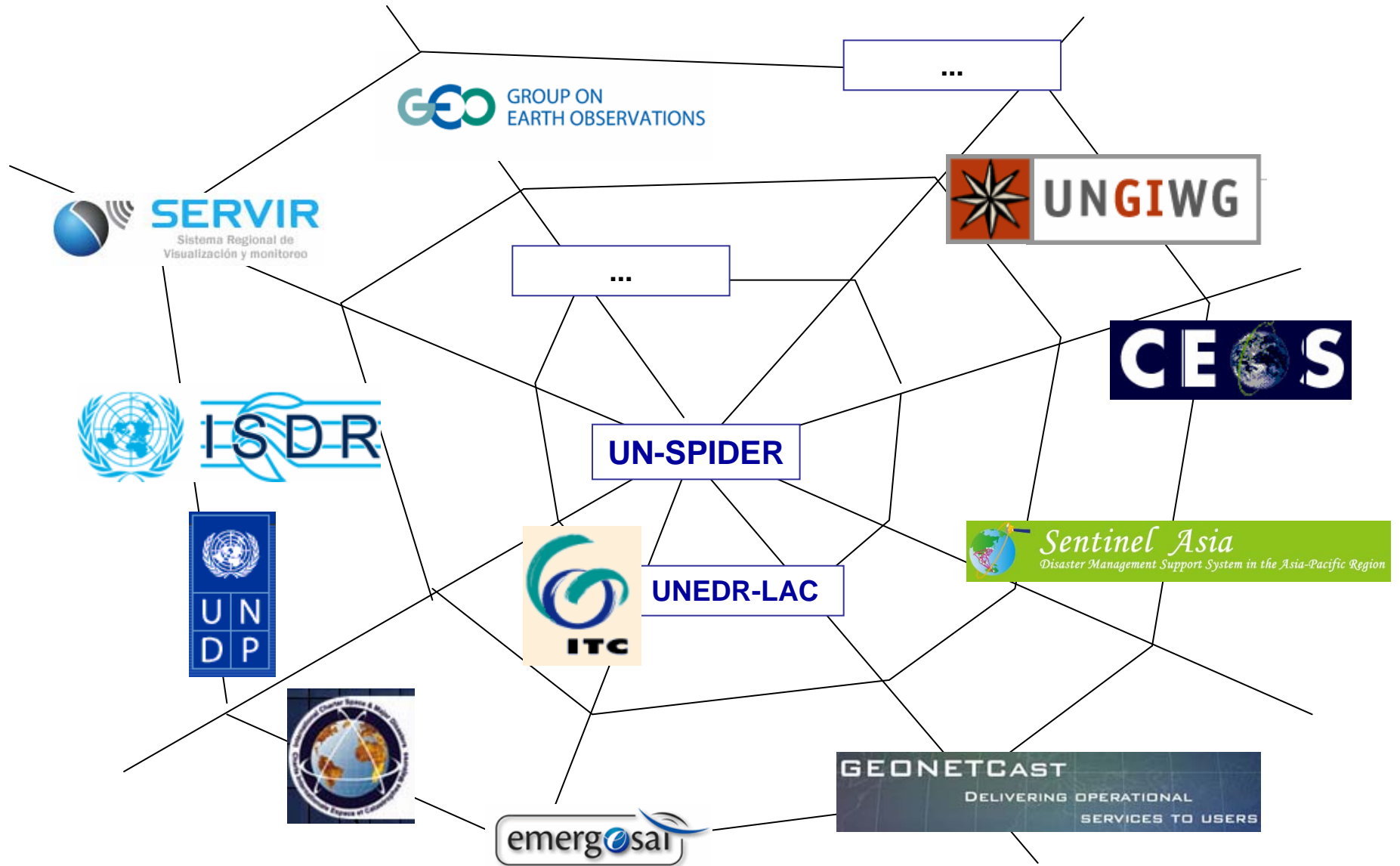
9. Support to National Activities
10. Support to Establishing National Planning and Policies
11. Support to Capacity Building



UN-SPIDER Deliverables

Activity	UN-SPIDER Deliverables
Information – identifying relevant information and making it easily accessible.	Compilation of information; knowledge portal; 24/7 access
Awareness Raising – building awareness on the potential benefits of space-based solutions for disaster management.	Prepare campaigns – regional and national focusing on specific target groups
Capacity Building – strengthening of individuals, institutions and infrastructures	Curriculum. E-learning. Database of opportunities. Support to Centres of Excellence in carrying out capacity building.
Space Assets and space-based data – satellites, ground-based infrastructure, devices, satellite imagery and geospatial data	Will contribute to defining user requirements. Co-chairing GEO Task DI-06-09. Ensure accessibility. Advice on SDI
Services – Space-based Applications – maps, surveys, specific studies.	Help identify needs. Technical advisory.
National Disaster Management Planning and Policies and National Activities – advisory services	Technical Advisory Missions 5 countries in 2008 and 10 countries in 2009

Need to ensure that all countries can access all opportunities to support their disaster management activities ?






International Charter Space and Major Disasters

- An International agreement among Space Agencies to support with space-based data and information relief efforts in the event of emergencies caused by major disasters.
 - ✦ **Disaster response**
 - ✦ **Multi-satellite data acquisition planning**
 - Fast data turn-around – priority acquisition
 - ✦ **Archive retrievals and spacecraft tasking**
 - ✦ **Data processing at pre-determined level**
 - ✦ **Space Agency contribution in image/data**
 - ✦ **Space Agency initiative for value-added-data fusion**





Five Years UNOOSA as a Cooperating Body

- In March 2003 UNOOSA was accepted as a **Cooperating Body to the Charter** (8th Meeting of the Charter Board). Available to UN agencies responding to an emergency, within the specific Charter rules.
- UNOOSA has set up a **24/7 hotline**. 
- **Over 50 UN activations 'till today**: 3 in 2003; 10 in 2004; 9 in 2005; 11 in 2006; 10 in 2007, 8 so far in 2008 (including the recent Myanmar cyclone).
- Four **UN-wide meetings** (24 June 2003; 15 October 2004; 20 March 2006, all in Geneva and 27 November 2007 in Bangkok).
- **Common Vision** -> defines how we work together
- **List [SPACEAID]** – over 200 members from over 20 UN agencies and UN partners.



Two Disasters – Two Outcomes



Peru Earthquake - 15 Aug 2007

International Charter
Space and Major Disasters

- Main
- Recent Activations
- The Charter
- Activating the Charter
- The Charter in Action
- Agencies - Resources
- News - Announcements
- The Charter for Schools

Earthquake in Peru

Type of Event:	Earthquake
Location of Event:	Pisco city, Peru
Date of Charter Activation:	16/08/2007 18:15:29
Charter Requestor:	SIFEM
Project Management:	INDECI (Civil Protection Agency from Peru)



Uganda Floods – Sep/Oct 2007



Two Disasters – Two Outcomes

Myanmar Nargis Cyclone

Geospatial support triggered by international aid agencies

United Nations (OCHA) activated the Charter

UN-SPIDER ensured additional opportunities for Myanmar

UN-SPIDER is working with national institutions to ensure that they build their own capacity.



UN-SPIDER Support Team made available by NDRCC discussing the analysis being done by the NDRCC Expert on the Tangjiashan quake-formed lake (7 June 2008). Back row: Mr. Liu San Chao, Ms. Li Suju (Head of the UN-SPIDER Support Team) and Mr. Wei Wu.

China Earthquake

National Disaster Reduction Centre of China took the lead. Over 1300 images made available from 22 satellite sensors provided by 11 countries and one regional space agency (ESA).

UN-SPIDER facilitated initial expertise which helped NDRCC structure themselves to do all the work: 40 additional experts were mobilised as volunteers or contributions from the private sector.

Just over 10% of the images were made available by the Charter. There are many more opportunities available and the challenge today is to be able to take advantage of all opportunities.



Mechanisms in Place Before Disaster

Need Met for Emergency Response

Access to pre-disaster geospatial data

- National SDIs (Spatial Data Infrastructure)
- UN SDI
- Vulnerability and Hazard Maps
- Archived satellite data (e.g. GEO Data Policy)

Immediate access to existing data

Access to post-disaster satellite data

- International Charter Space and Major Disasters
- Sentinel Asia
- GMES - Respond

Access to real time data

Access to value-added services/capacity

- National capacity
- UN-SPIDER Regional Support Office

Production of value-added products

Transfer of geospatial data and use of value added products

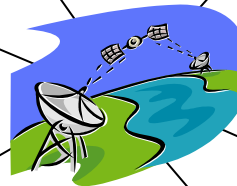
- Regional and Local GEONETCast Station in disaster zone configured into emergency mode giving priority to disaster relevant data
- Standards of products produced (End user requirements)

Products delivered in the format required and asap

Policies and plans

- National Disaster Response Plans that include consideration for space-based solutions
- Ratification of Tampere Convention
- Key players identified before disaster

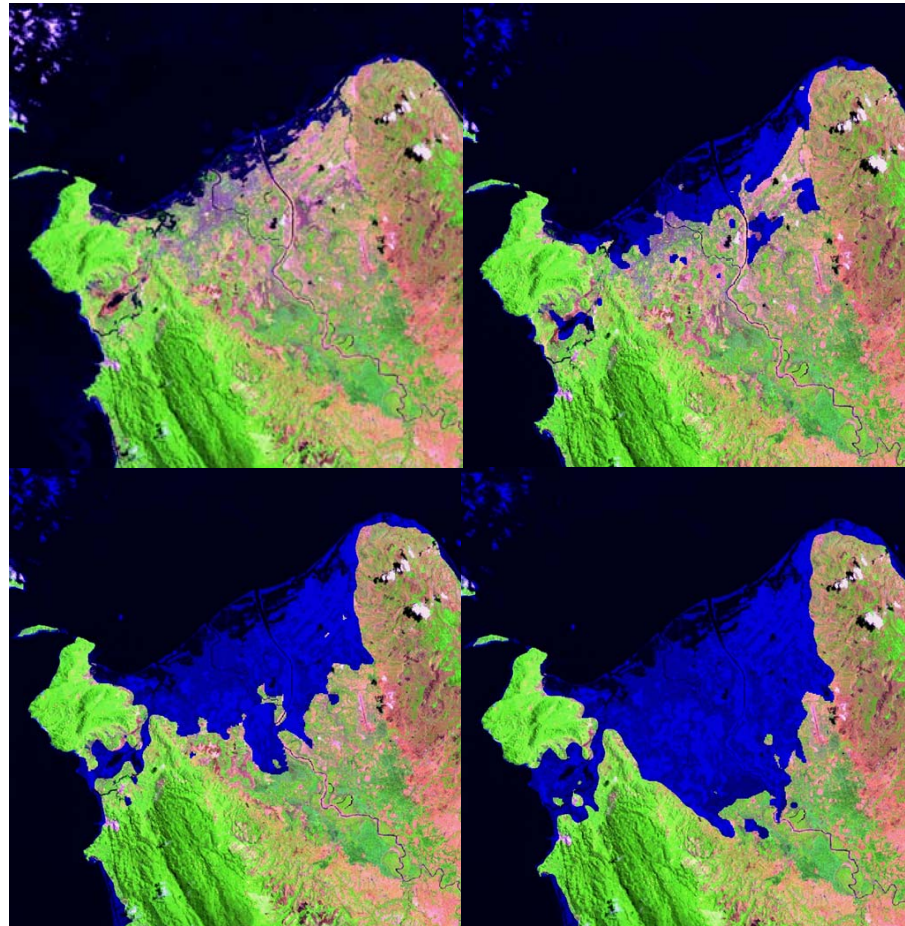
Everyone knows what to do





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Simulation of Inundated Area in Banda Aceh



United Nations Office for Outer Space Affairs



What to achieve in this workshop

- Understanding of the needs and opportunities (specifically regarding space-based solutions and information)
- Build a common understanding on how existing opportunities should be accessed.
- Identify opportunities to develop together.
- Identify synergies that have to be built
- Develop a Framework that can be used by NDMO to access and use space-based information



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UN-SPIDER**

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THANK-YOU

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