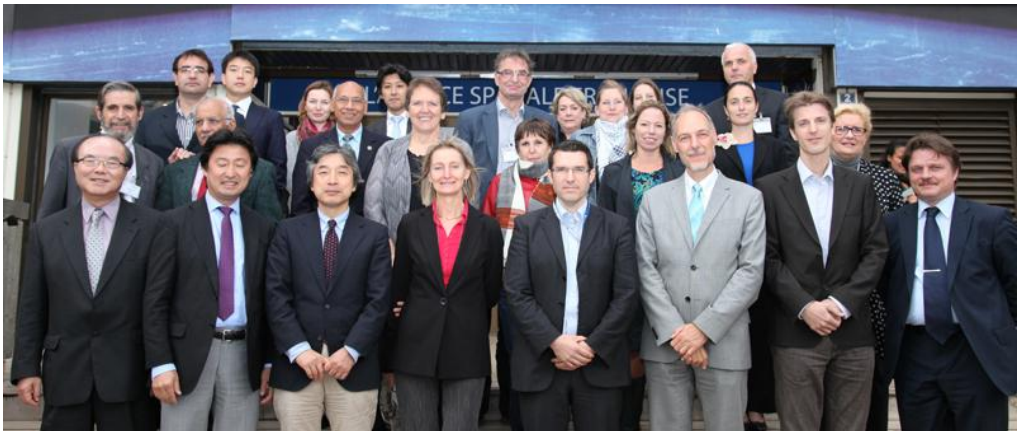
INTERNATIONAL CHARTER NEWSLETTER

21 December 2012 Issue 4

28th Board Meeting in Paris: CNES takes over chairmanship of International Charter 'Space and Major Disasters'

On 9 October, the Centre National d'Études Spatiales (CNES) took over the rotating chair of the International Charter 'Space and Major Disasters', succeeding the Japan Aerospace Exploration Agency (JAXA) for the next six months.



Charter members gathered in front of CNES Head office in Paris, 12 October 2012. © CNES/S. Charrier

Global generosity
by Jacques Arnould (CNES Ethics Adviser)

At the start of the sixties, Marshall McLuhan made himself the apostle of the global, planetary village; in *The Gutenberg Galaxy* (1962), he wrote: "The new electronic independence re-creates the world in the image of a global village." I do not believe that it was a mere observation, even less a fear, but rather a warning and a hope. In the perspective developed by McLuhan, the challenge for the next generations – i.e. our generations of digital immigrants and digital natives – is to measure disadvantages and benefits of these new technologies. The negative effects of saturation, standardization and centralization of decisions are real, but there are also positive effects: reinforcement and rediscovery of identities and common awareness.

Over the past fifty years, space technology and policy have contributed significantly to this antagonistic development of globalisation: space has been considered potentially both as "a sea of peace" as well as "a new terrifying theatre of war" (John Kennedy, 1962). The International Charter 'Space and Major Disasters' is a magnificent example of how space can help us, inhabitants of the planet Earth, rise above our everyday needs inspired by nobler objectives; it confirms Aristotle's thoughts when the Greek philosopher suggested that our technical capacity must be motivated by a generous spirit. The use of space capacities without generosity would be at risk of becoming dehumanized, while generosity without space capacities would be missing out on a valuable new perspective, clipping its own wings.

Recent Activations

- Cyclone in Fiji Islands
- Cyclone in Wallis and Futuna
- Cyclone in Samoa
- Typhoon in the Philippines
- Typhoon in Palau
- Flood in England
- Earthquake in Guatemala
- Hurricane Sandy in New York and New Jersey
- Hurricane Sandy in Haiti

Charter Members

- European Space Agency (ESA)
- Centre National d'Études Spatiales (CNES)
- Canadian Space Agency (CSA)
- Indian Space Research Organisation (ISRO)
- National Oceanic and Atmospheric Administration (NOAA)
- Argentina's Comision Nacional de Actividades Espaciales (CONAE)
- Japan Aerospace Exploration Agency (JAXA)
- US Geological Survey (USGS)
- DMC International Imaging (DMCii)
- China National Space Administration (CNSA)
- German Aerospace Centre (DLR)
- Korea Aerospace Research Institute (KARI)
- National Institute for Space Research (INPE)
- European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT)

Bringing together new and efficient space technologies to support disaster management

The International Charter 'Space and Major Disasters' promotes Universal Access and the Charter

The European Space Solutions Conference in London connected businesses and public sector users of space data with the software and technologies that enable their work. Eleven different sessions covered a variety of critical sectors, including emergency services and disaster recovery.
Adina Gillespie, DMC International Imaging (DMCii) member of the Executive Secretariat, presented the Charter to the audience, covering its capabilities, structure and past successes.

- EUMETSAT, 5 November, at the Coordination Group on Meteorological Satellites Plenary Session
- JAXA and KARI, 14 November, at the JPTM2012
- CNES, 22 November, at the GEO Plenary meeting
- UKSA, 3 December, at the European Space Solution

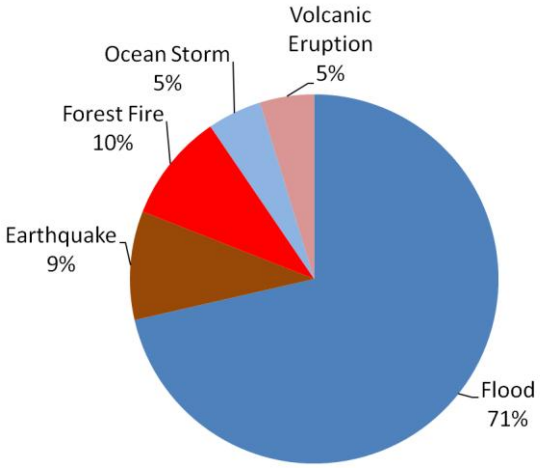
JAXA leadership for the Charter from April to October 2012

JAXA played the role of lead agency for the International Charter from April 2012 to October 2012, succeeding the Canadian Space Agency (CSA) which was the lead from October 2011 to April 2012.
During this period, there were 22 calls for Charter activation, which were merged into 21 activations.
Twenty-one activations across a six month period is roughly average, but 15 of them converged into the two months of August and September.

Apart from usual operations, the most significant result during JAXA's lead period was the roll out of Universal Access, which enables every country and region to request Charter activation when they need satellite observation products for disaster management. Universal Access was one of the main topics of the Charter evolution discussion, aimed at encouraging best practices for improved operations, better accessibility, etc.

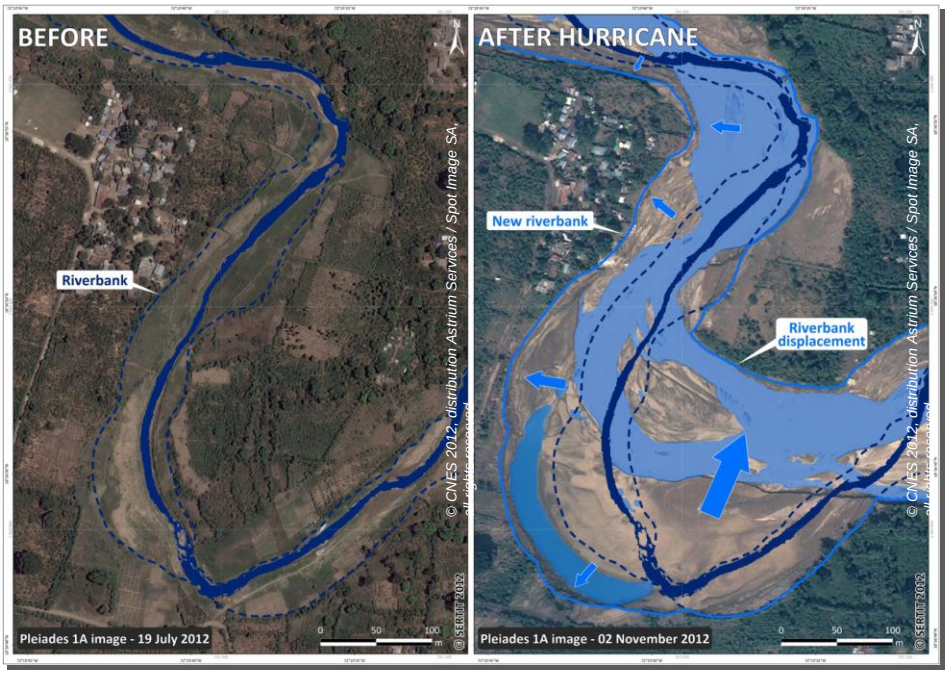
Also during JAXA's chairmanship a Charter membership application was formally approved. The European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) officially became a member, with a signing ceremony on 5 July 2012. EUMETSAT is expected to provide their meteorological satellites imagery as well as to contribute through the use of EUMETcast for dissemination of the satellite products.

As previously mentioned, the leadership was transferred from JAXA to CNES in October 2012.



Number of Charter activations by hazard type (end of April – beginning of October)

Hurricane Sandy in Haiti



Before it approached the East Coast of the United States on 29 October, Hurricane Sandy crossed the Caribbean and wreaked devastation in Haiti, leaving 51 people dead and around 15 missing.
The heavy rainfall that accompanied Hurricane Sandy in Haiti caused most of the island's rivers to flood, particularly the Rivière Grise (Grise River) that runs through the Haitian capital. The Charter was activated on 29 October by UNITAR/UNOSAT on behalf of UNOCHA and the operation was managed by SERTIT (the French Regional Image Processing and Remote Sensing Service in Strasbourg, France), which also jointly analysed Charter data with UNOSAT.

This image enabled shifts in the river banks to be accurately mapped, and, in particular, areas swept away by the river to be outlined. A comprehensive inventory was then made of all the buildings engulfed – more than 150.

Super Typhoon Bopha in the Philippines

Between the 3rd and 5th of December, Mindanao Island, south of the Philippines archipelago, was hit by one of the strongest typhoons it has ever experienced.
The Charter was activated by UNOOSA on behalf of UNOCHA and then by ADRC (Asia Disaster Reduction Center) on behalf of Manila Observatory. A Project Manager (PM) from AIT (Asian Institute of Technology) Bangkok was nominated by JAXA.
Ten days after the event, officials report over 900 dead with hundreds still missing.

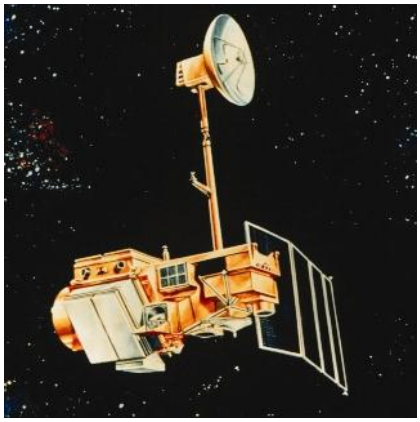
On this image from the Pléiades satellite, a damage assessment is shown over the Baganga area on the east Mindanao coast. With gusts of wind reaching 260 kmph, Typhoon Bopha devastated between 70% and 80% of Mindanao's plantations. Nearly 2000 localities have been entirely or partially destroyed by flooding or landslides.

This before/after Bopha view shows the completely destroyed Baganga sawmill and tree windfall.
To know more: Super Typhoon in Southern Philippines

Philippines - Mindanao Island, Typhoon Bopha Damage

Launched in 1984 and designed to last three years, Landsat 5 has proven to be an important 'workhorse', providing global data ever since

The Landsat 5 Earth-observing satellite has recorded land-surface conditions around the world for 28 years, but the time has arrived to plan a decommission of this remarkable spacecraft. The Department of the Interior's United States Geological Survey (USGS), operator of the Landsat 5 and Landsat 7 satellites, will be responsible for the decommissioning decision, anticipated in early 2013.
Since October 2008, all Landsat data in the U.S. archive, dating back to 1972, are available at no cost through the USGS. Currently, data are not being collected by Landsat 5, but over its lifetime, the spacecraft has provided an important body of observations of the land mass of the planet. Data over Kuwaiti oil fires, Chernobyl, rain-forest depletion, major wildfires and floods were all recorded by Landsat 5 sensors. Repetitive coverage has allowed the global science community to study the natural and man-made changes before, during and after events.



Drawing of Landsat 5

The USGS hopes to operate Landsat 7, now eight years beyond its five-year design life, in conjunction with Landsat 8 following its launch by NASA, currently scheduled for February 2013.

Pleiades 1b satellite successfully launched by Soyuz rocket from French Guiana

The Russian Soyuz launcher carried the 2nd satellite of the Pléiades Earth-observation system developed by CNES into orbit on 2 December from French Guiana. Pléiades-1B joins its twin Pléiades-1A, placed in the same 694-km orbit just one year ago. The two satellites will be phased opposite one another to enable daily revisits to any point on the globe.

The Pleiades satellites acquire images with a resolution of 70 cm, resampled to 50 cm on the ground. This is an ideal level of detail for mapping the densest urban areas and for other precision applications (monitoring disaster areas, mining or oil exploration, maritime surveillance, agriculture, etc.). Their exceptional agility, which helps avoid programming conflicts, and their multiple acquisition modes (stereo, mosaic, corridor, etc.) mean that the constellation is particularly flexible when it comes to satisfying specific user needs.

CNES, on 7 December, released Pleiades-1B's first image, showing the city and bay of Lorient in France's Brittany region. The Pléiades system, with its two satellites in orbit, should be fully operational by the 2nd quarter of 2013.

A selection of extracts from high resolution Pleiades 1B images can be viewed at the following address: http://www.cnes-multimedia.fr/pleiades/pleiades1B/premieres_images.zip

Training Course on International Charter at ESA's ESRIN facility with Chinese delegates

The European Space Agency (ESA) hosted a training course on the International Charter 'Space and Major Disasters' at the European Space Research Institute (ESRIN) on 22-25 October 2012. A total of nine Chinese delegates attended the training course with participants from the Chinese National Space Administration (CNSA), the National Space Science Center, the China Centre for Resources Satellite Data & Applications (CRESDA), the Chinese Society of Astronautics, the Beijing Institute of Control Engineering, the China Meteorological Administration and the National satellite Meteorological Center.
The training course began with an overview of ESA activities including presentations on ESA and ESRIN, Earth Observation, the Global Monitoring for Environment and Security (GMES) programme and the GMES Emergency Satellite Tasking system. The Charter Training course comprised of various presentations on Earth Observation capabilities for Crisis mapping as well as practical exercise sessions focussing on flood mapping, oil spill mapping, fire detection and burnt area mapping.

Participants also took part in charter tutorials on the history of the Charter and its management structure, as well as an overview of operational roles and procedures. Additional presentations were made on Universal Access and ESA's collaboration with China on the Dragon programme.

USGS PM Training Course in Russia

A team from USGS provided training to the National Emergency Management Center (EMERCOM), the Russian Federal Space Agency (ROSCOSMOS) and Russian Space Systems (RSS) at the end of September, with a general overview of the Charter for management staff, as well as Project Manager (PM) training for technical staff.
The training was delivered to introduce the Charter to Russia and to develop PMs to support Russian Charter activations. A general overview provided high level information on the Charter policies and workflows, and the benefits it can bring to the emergency response community. EMERCOM management and staff were very interested in the types of support that the Charter can provide for various types of disasters.

This training provided the necessary information for technical staff to act as PM for any activations requested by the Russian government. It introduced them to the Charter, its member agencies, its operations, its assets, and the reporting functions that must be fulfilled by the PM at the completion of an activation. The two Russian Charter activations from this year were reviewed and a mock activation exercise was completed by the participating staff.

ROSCOSMOS, EMERCOM and RSS now have the information required to successfully request and manage a Charter activation, and should be ready to handle the next Russian event with little or no assistance from other Charter members.