INTERNATIONAL CHARTER NEWSLETTER

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ROSCOSMOS Assumes Chairmanship of the International Charter 'Space and Major Disasters'

The 36th Board and Executive Secretariat Meetings of the International Charter 'Space and Major Disasters' were held in Moscow, Russia, from 18 to 21 October 2016.

Succeeding the Argentinean Comisión Nacional de Actividades Espaciales (CONAE), the Russian State Space Corporation (ROSCOSMOS) became the next Chair of the International Charter for the period from October 2016 to April 2017. This is the first chairmanship period of ROSCOSMOS since its ascension to the Charter in 2013.

More than 40 representatives from most of the sixteen Charter member agencies participated in the meeting and discussed various strategic, operational and organizational issues as well as the latest Charter activities and events.

Charter Emergency On-Call Officers (ECOs) and Communication Group representatives also had meetings in Moscow on 17 October 2016, where they discussed the operational procedures of ECOs, the update of the Charter Operational System (COS-2) as well as the latest communication and other issues.

Charter Board and Executive Secretariat meeting in Moscow, Russia
18-21 October 2016

Recent Activations

- 05/01/2017: Fire in Argentina
- 12/12/2016: Cyclone in India
- 12/07/2016: Earthquake in Indonesia
- 11/28/2016: Flood in Costa Rica
- 11/24/2016: Fire in Israel

Charter Members

- European Space Agency (ESA)
- Centre National d'Etudes Spatiales (CNES)
- Canadian Space Agency (CSA)
- Indian Space Research Organisation (ISRO)
- National Oceanic and Atmospheric Administration (NOAA)
- Argentina's Comisión Nacional de Actividades Espaciales (CONAE)
- Japan Aerospace Exploration Agency (JAXA)
- US Geological Survey (USGS)
- UK Space Agency (UKSA/DMC)
- China National Space Administration (CNSA)
- German Aerospace Center (DLR)
- Korea Aerospace Research Institute (KARI)
- National Institute for Space Research (INPE)
- European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT)
- State Space Corporation (ROSCOSMOS)
- Bolivarian Agency for Space Activities (ABAE)

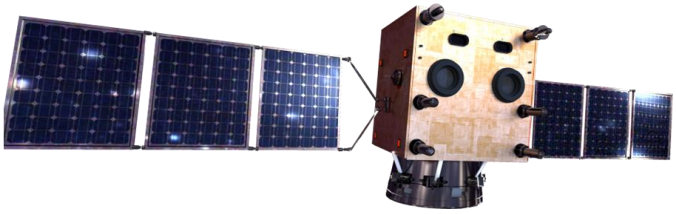
Bringing together new and efficient space technologies to support disaster management

Venezuelan ABAE Joins the Charter and Contributes to its Operations and Activities

During the 36th Charter meeting in Moscow, the Agencia Bolivariana para Actividades Espaciales (ABAE) officially joined the Charter as its newest member agency, bringing the total number of Charter Members to 16. During the formal signing ceremony, the President of ABAE Mr. Victor Cano signed the Application for Accession of ABAE to the Charter on Cooperation to Achieve the Coordinated Use of the Space Facilities in the Event of Natural or Technological Disasters. The resources of the new member agency will increase the Charter satellite orbital constellation and strengthen its capabilities. All the Charter agencies welcomed ABAE's ascension to the Charter team.

ABAE President Mr. Victor Cano signs the Application for Accession to the Charter in presence of the Charter Board members. Moscow, Russia, 20 October 2016

Established in 2008, ABAE is responsible for implementing technical and national policies and guidelines for using the outer space for peaceful purposes as well as for generating national space projects, programs and regulations. ABAE currently operates Venezuelan Remote Sensing Satellite VRSS-1 "Miranda Satellite" and plans to launch VRSS-2 "Sucre Satellite" in future.



The first Venezuelan remote sensing satellite VRSS-1 was launched on 29 September 2012. It provides satellite images to support decision-making processes at governmental level in urban and agricultural planning, resources surveying, environmental assessment, disaster management, risk mapping, energy, and other fields.

Satellite's main technical features are: resolution – 2.5 m (PAN) and 10.16 m (MS); swath width – 28.5 km and 57 km (PMC) and 369 km (WMC); orbit – sun-synchronous, 639 km; lifetime – 5 years.

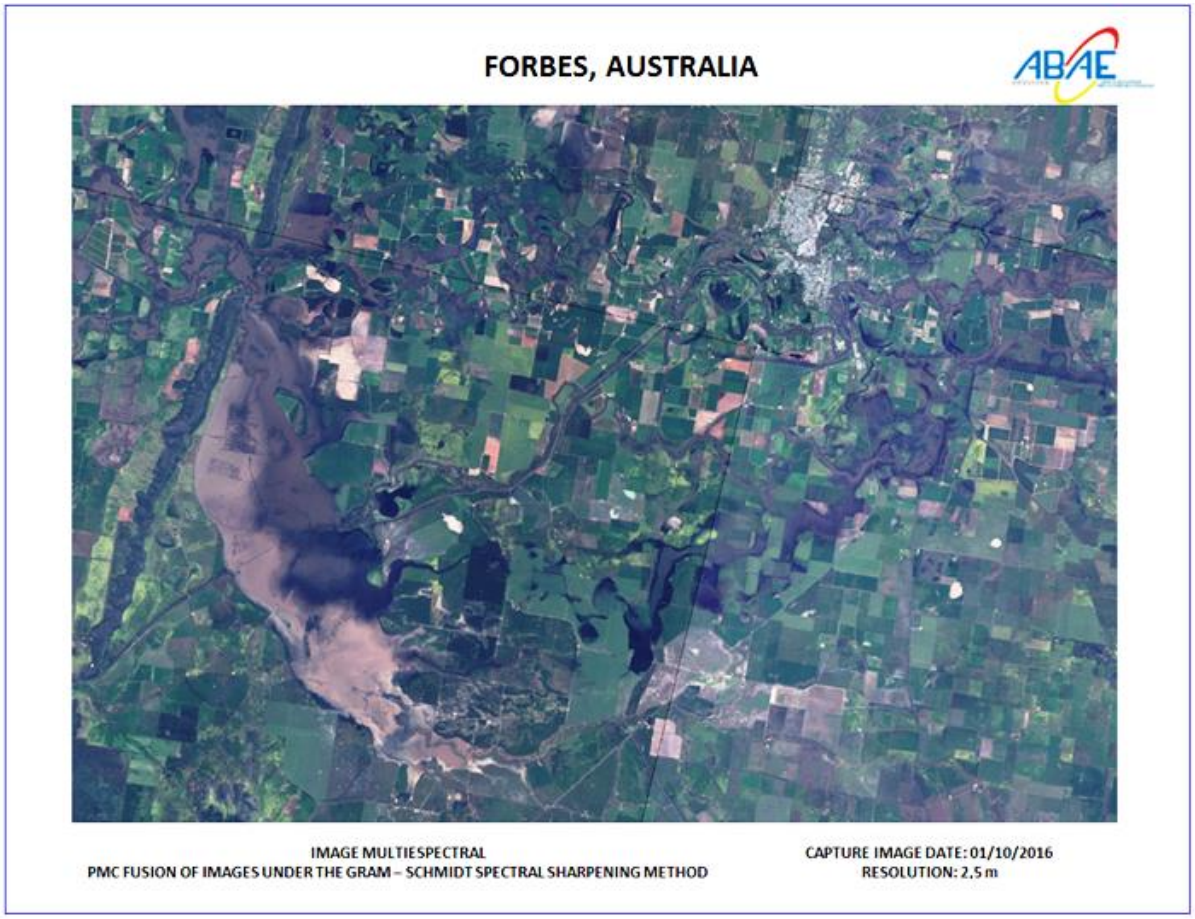


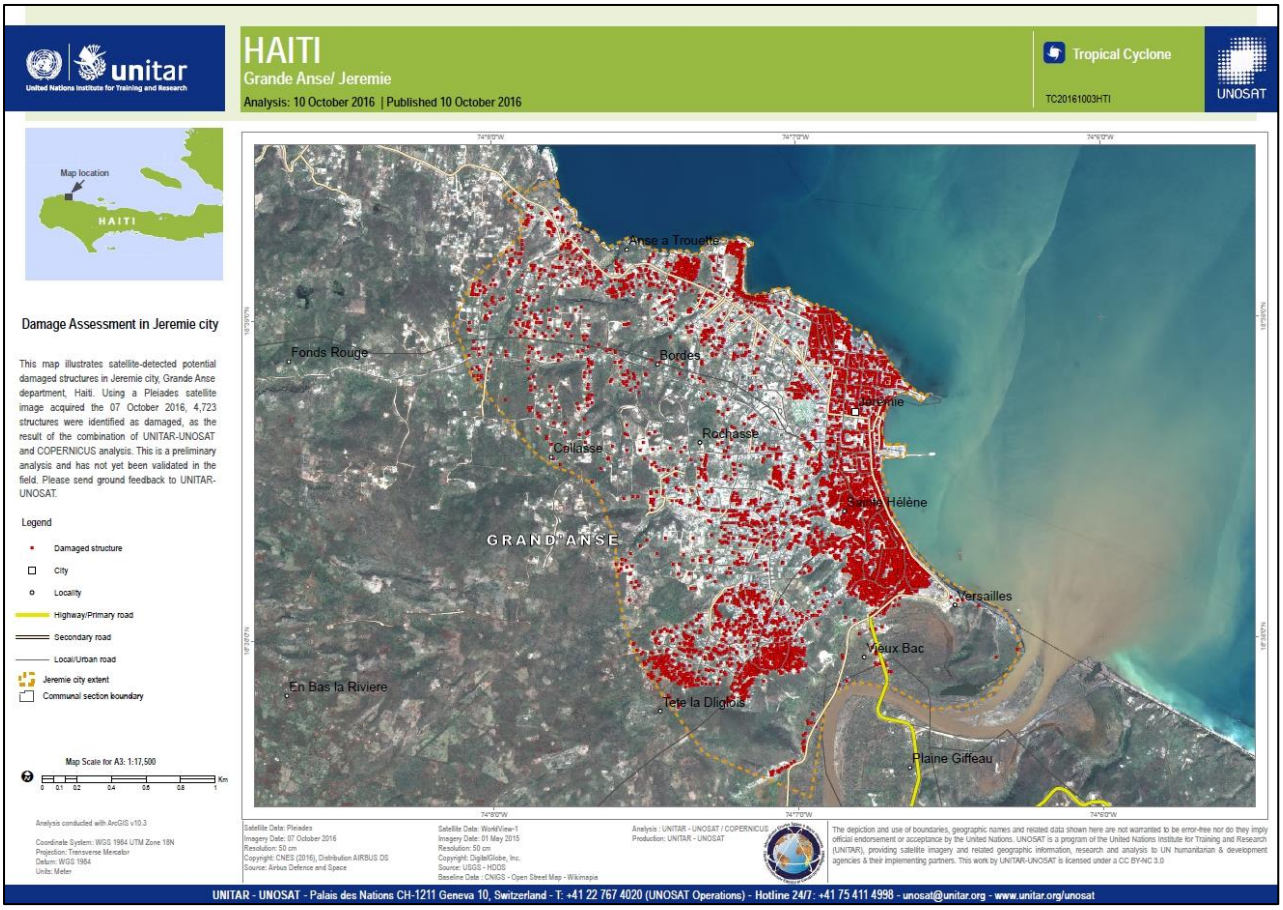
Image captured by Miranda Satellite for the Charter Activation on flooding in New South Wales (Australia), 01.10.2016

ABAE headquarters is located in Caracas; two Ground Control stations for VENESAT-1 and VRSS-1 TT&C missions are deployed in Guarico state; one back-up station for VENESAT-1 is situated in Bolivar state. The new Research and Development Center is currently under construction.

Since 2015, ABAE has contributed to seven Charter activations by providing Miranda Satellite high resolution data. 241 images were provided to the Charter for major earthquakes and floods monitoring.

Hurricane Matthew: Charter Activations in Five Countries

On 7 October 2016, an extremely destructive and long-lived hurricane made landfall over the United States east coast after barrelling through the Caribbean. The climatic monster brought widespread destruction and catastrophic loss of life during its journey across the Western Atlantic. The Charter was activated in five countries in response to this event.



Damage assessment of Jeremie city processed by UNITAR/UNOSAT for Charter Call 583 in Haiti

Originating in the Atlantic Ocean, Tropical Cyclone Matthew swept Martinique and Guadalupe islands during the night between 28 and 29 September 2016. Matthew weakened slightly while remaining a strong Category 4 hurricane as it made its first landfall over Haiti on 3 October 2016, then Cuba and the Bahamas on 5 October 2016. Major damage occurred in Haiti, killing hundreds of people there. The Charter was activated by three different Authorized Users for support to the Haitian response: USGS (United States Geological Survey) on behalf of the Pacific Disaster Center, COGIC (the French civil security) and the United Nations (UNITAR/UNOSAT) on behalf of UNOCHA (Office for the Coordination of Humanitarian Affairs).

The Charter was also activated in the Dominican Republic, Cuba, the Bahamas and the United States. The large number of activations involved tasking most of the satellites from the Charter constellation including:

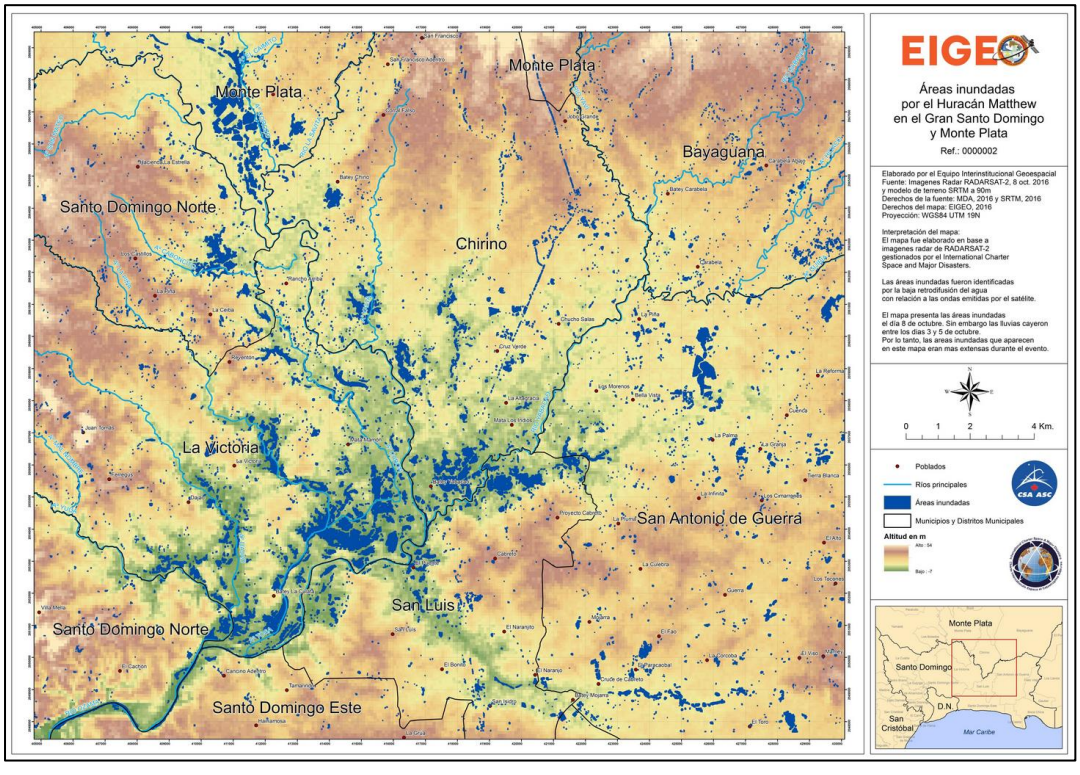
- Optical satellites for the identification of damages (houses and buildings, infrastructures, transportation, etc.);

- Radar satellites for identification of flooded areas due to the heavy rains that occurred.

More than 50 damage maps were provided to the End Users. Many of these were produced by the European Copernicus Emergency Management Service (Copernicus EMS), which provided rapid mapping services for the activations in the United States and in Haiti on request of USGS and COGIC respectively. The other providers were the Pacific Disaster Center (US), SERTIT (France), UNITAR/UNOSAT (UN), NTs OMZ (Russia), DLR/ZKI (Germany) and EIGEO (Dominican Republic).

Dominican Republic Benefits from Charter Activation after Hurricane Matthew

On 4 October 2016 the extreme hurricane “Matthew” passed over the island of Hispaniola. While some provinces of Haiti experienced extreme devastation, the Dominican Republic was mainly affected by serious flooding due to heavy rain brought by the hurricane. The National Emergency Commission (CNE) of the Dominican Republic, which had received the status of a Charter Authorised User in 2015, triggered an activation of the Charter on 5 October 2016.



Areas flooded by Hurricane Matthew in Gran Santo Domingo and Monte Plata – map produced by EIGEO based on a RADARSAT-2 image provided by the Canadian Space Agency CSA.

In the following days, both optical and radar satellite imagery were acquired by the Charter agencies. The German Aerospace Center (DLR) took the Project Management for the activation. The Project Manager (PM) is the central interface between the Charter and the user(s) aiming at making data and information available in the most suitable form and quantity. Hendrik Zwenzner, the PM of the activation, learned that in the Dominican Republic, a specialist group for the analysis of geospatial information for emergencies had recently been formed and trained in the use of remote sensing data. This group, called EIGEO, with the strong support of CNE's president, Major General Rafel Emilio de Luna Pichirilo, performed the value adding, i.e. several maps of the flooded areas were produced based on the Charter data and superimposed with topographic information. DLR's Center for Satellite-based Crisis Information (DLR-ZKI) also contributed two flood extent maps. These maps were used for several purposes, such as identifying priority areas for a coordinated emergency response, distinguishing roads which were flooded from those not affected, identifying schools that were needed as shelters for people who had to leave their homes, and a quick assessment of estimated crop losses due to the disaster.

Xavier Rodriguez, the Charter's point of contact at CNE, afterwards reported that the Charter activation was altogether very useful, and that delegates from several ministries of the Dominican Republic well received its results. Mr. Zwenzner affirmed that the collaboration with the EIGEO group was more than helpful, and that the establishment of such an expert group in parallel with becoming an Authorized User of the Charter could serve as a good example for other countries.

The Dominican Republic is one of several Latin American countries that gained Authorized User status after consultations organized by the Argentinian space agency CONAE and the UN-SPIDER program (compare the article in Newsletter #14). The Charter's principle of "Universal Access" allows disaster management authorities from all countries to become Charter users.

Charter Participation and Universal Access Promotion at Inter-governmental Consultative Committee (ICC)

Twelve countries and two international organisations participated in the 20th Session of the Intergovernmental Consultative Committee (ICC) on the Regional Space Applications Programme for Sustainable Development for Asia and the Pacific (RESAP) during 31 October – 1 November 2016 at New Delhi, India. These include representatives of SPARSSO (Bangladesh), NLC (Bhutan), ISRO (India), LAPAN (Indonesia), JAXA (Japan), IRIMHE (Mongolia), DMH (Myanmar), DFRS (Nepal), ACCIMT (Sri Lanka), GISTDA (Thailand), VMGDMCC (Vanuatu), VAS (Vietnam), WMO, International Charter and UNESCAP. This meeting was organised by UNESCAP jointly with ISRO and held as a pre-cursor to Asian Ministerial Conference on Disaster Risk Reduction (AMCDRR) – 2016 held at New Delhi, India.

The Charter Executive Secretariat Member from ISRO, Mr. GS Rao, representing the International Charter 'Space and Major Disasters', made a comprehensive presentation on the importance of satellite data during disaster response, and how the International Charter can assist in providing access to satellite data. Further, the advantage of becoming the Authorized User of International Charter, under Universal Access Framework, was explained. With respect to the Charter, ICC requested the UNESCAP Secretariat to

promote the use of the International Charter on Space and Major Disasters among Asia-Pacific countries. The Committee also recommended that the Secretariat encourages countries to become Authorized Users of the Disaster Charter under the Universal Access Framework and advocated collaboration with other UN agencies to ensure good coordination in the Asia-Pacific region for the purpose of effective disaster response. The same was presented during the Space Leaders Forum (SLF) on 2 November 2016 at New Delhi, India.

20th Session of the Intergovernmental Consultative Committee (ICC) on the Regional Space Applications Programme for Sustainable Development for Asia and the Pacific (RESAP), 31 October – 1 November 2016 at New Delhi, India.