



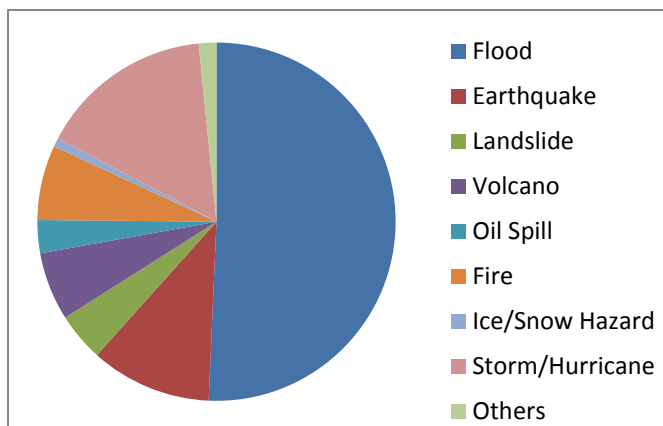
9 November 2016

Issue 14

500th Activation of the International Charter

On 1 August 2016, the International Charter 'Space and Major Disasters' was activated in response to flooding in Bangladesh. This marks the 500th activation of the Charter since it became operational in November 2000. The Charter was declared operational on 1 November 2000 and soon became a much used facility.

On 22 November 2000, the Charter was activated first for a flood and landslide disaster in Slovenia. After very heavy rain, a mass of morainic material and slope gravel began to move near the Mangart stream ravine near Bovec in the north-western part of Slovenia. Starting with only three initial members (ESA, CNES, and CSA), the Charter has grown to a group of 16 members. Each member agency has committed resources to support the provision of satellite images and derived information after major disasters in order to help mitigate the effects of major disasters on human life and property as well as the environment.



Breakdown of the first 503 Charter activations by disaster types.

Over the years the Charter has been activated for a diverse range of disaster types, e.g. the catastrophic Tsunami event in south-east Asia in 2004, earthquake and tsunami in Japan in 2011, the major earthquakes in Haiti 2010 and Nepal 2015, and the oil spill after the “Deepwater Horizon” accident in 2010. However, the most frequent cause of Charter activation is flooding. The 500th activation of the Charter covered extensive floods in Bangladesh.

Recent Activations

- [Typhoon Haima in the Philippines](#)
- [Flood in Panama](#)
- [Hurricane Matthew in United States](#)
- [Hurricane Matthew in the Bahamas](#)
- [Hurricane Matthew in Cuba](#)
- [Hurricane Matthew in the Dominican Republic](#)

Charter Members

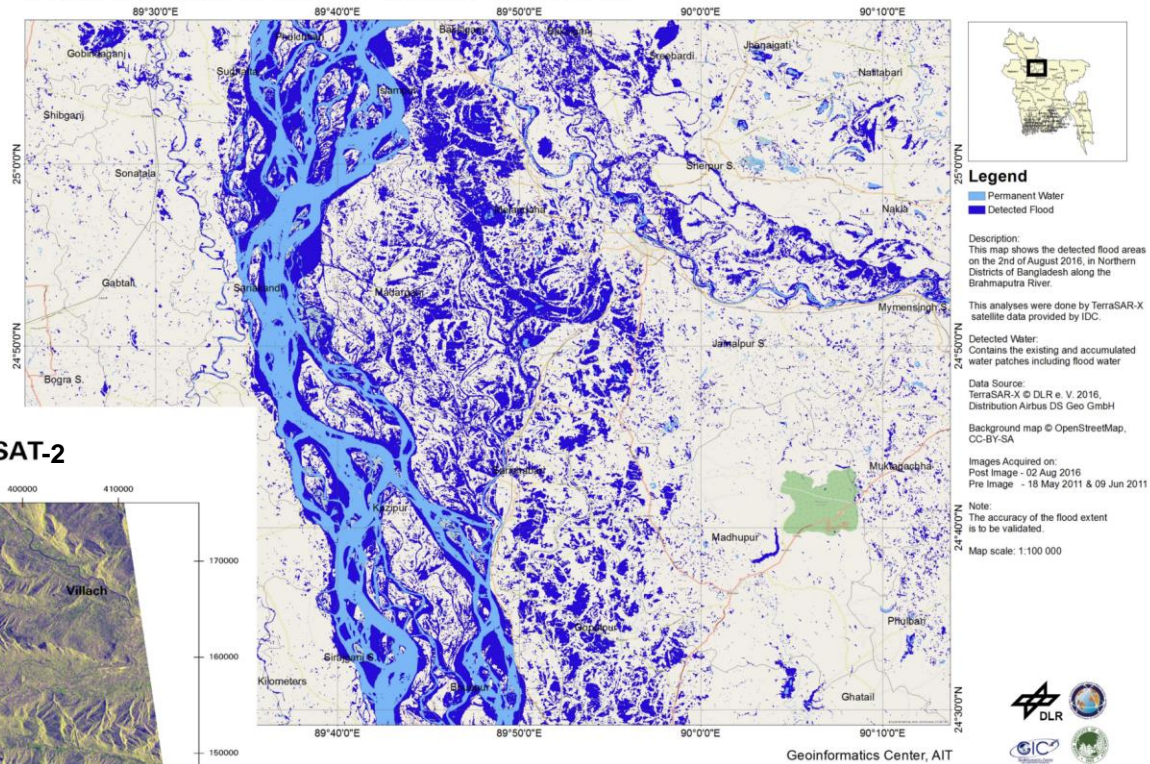
- [European Space Agency \(ESA\)](#)
- [Centre National d'Etudes Spatiales \(CNES\)](#)
- [Canadian Space Agency \(CSA\)](#)
- [Indian Space Research Organisation \(ISRO\)](#)
- [National Oceanic and Atmospheric Administration \(NOAA\)](#)
- [Comisión Nacional de Actividades Espaciales Argentina \(CONAE\)](#)
- [Japan Aerospace Exploration Agency \(JAXA\)](#)
- [US Geological Survey \(USGS\)](#)
- [DMC International Imaging \(DMC\)/UK Space Agency \(UKSA\)](#)
- [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 \(EUMETSAT\)](#)
- [The Russian Federal Space Agency \(ROSCOSMOS\)](#)
- [Bolivarian Agency for Space Activities \(ABAE\)](#)

Bringing together new and efficient space technologies to support disaster management

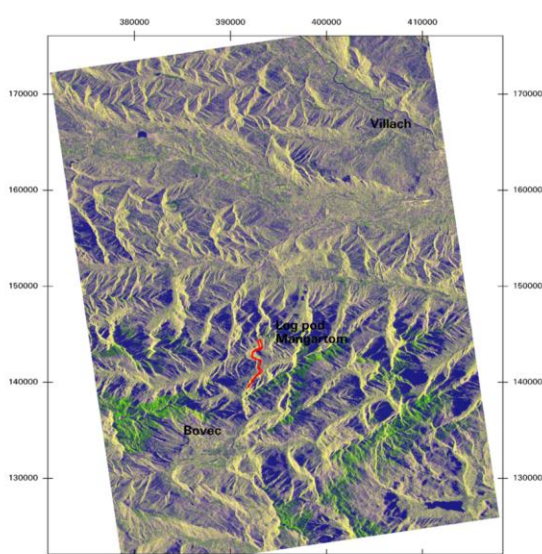


Torrential rain had affected Bangladesh and India and caused rivers to swell to very high levels. The floods of the Brahmaputra, Ganges (locally known as Padma) and Meghna - three of the largest rivers in Asia - came together in Bangladesh, affecting an estimated 1.5 million people. Several satellite-based flood maps have been published on the Charter Website www.disasterscharter.org.

FLOOD IN BANGLADESH IN NORTHERN DISTRICTS - Detected by TerraSAR-X on 02.08.16



RADARSAT-2



RADARSAT-2 Data and Products © MacDONALD, DETTWILER AND ASSOCIATES LTD. (1998-2000) – All Rights Reserved. RADARSAT is an official mark of the Canadian Space Agency.



Multitemporal RADARSAT satellite image set. Images acquired on December 1st, 2000, October 25th, 1998, and their difference are shown as red, green and blue respectively. Landslide position and damage area are shown as vector overlays.

Processing and map production Scientific Research Centre of the Slovenian Academy of Sciences and Arts

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Top: Product of the 500th Charter Activation in 2016: Map produced by Geoinformatics Center, Asian Institute of Technology, based on pre- and post-disaster TerraSAR-X data. **Bottom:** Product of the first Charter Activation in 2001: RADARSAT-based analysis of pre- and post-disaster situation in the disaster area in Slovenia.

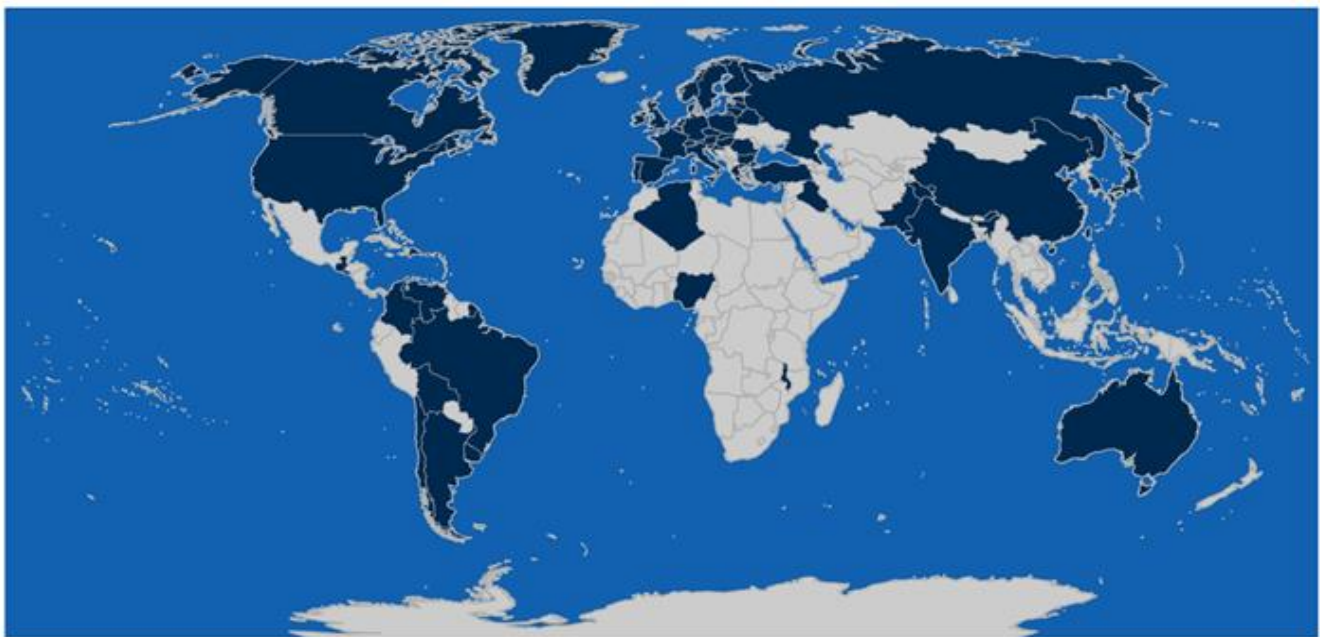


New Charter Users in Latin America

After a decade of making satellite data available for disaster response, the International Charter has adopted the principle of Universal Access (UA) to further strengthen the Charter's contribution to disaster management worldwide. Since then, an active campaign has been implemented to promote UA. Organizations from 12 countries have already completed the process of becoming Authorized User since UA was launched in September 2012. In particular in the Latin American region, the Charter member CONAE from Argentina has been collaborating with the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) in order to encourage civil protection agencies from countries in Latin America to register with and get direct access to the Charter.

The joint activity started in 2014. Civil protection agencies were contacted and the International Charter system and benefits were explained to them. Several videoconferences were organized to give further information about the way the Charter works with "Authorized Users" and how to become one. Many of the countries which were contacted showed great interest. They sent a Registration Form (to be found at www.disasterscharter.org/web/guest/activating-the-charter) to the Charter and received training. They also participated in a simulation exercise, i.e. they activated the Charter for a fictive disaster in their country and experienced how the Charter responds to a user's call.

The offer was well received and raised much interest in the region. Authorities from seven Latin-American countries have become Authorized Users under the UA process: Chile, Bolivia, Colombia, the Dominican Republic, El Salvador, Guatemala, and Uruguay. More countries are currently in the process. The International Charter greatly appreciates the good collaboration with UN-SPIDER to achieve "Universal Access" to the Charter in Latin America.



 Countries with Authorized Users (September 2016). Today 63 AUs from 54 countries and the European Commission.



Flooding in Sudan

On August 9, 2016 the International Charter 'Space and Major Disasters' was activated by UNITER / UNOSAT on behalf of UN OCHA following heavy rainfall that caused flash floods in 13 of 18 states across Sudan, with the states of Kassala and Sennar being the hardest hit. While flooding in Sudan is common during the rainy season, rainfall in July 2016 was 2.5 times higher than in the same month in 2015, and the Nile River was reported to be at its highest level in over 100 years.

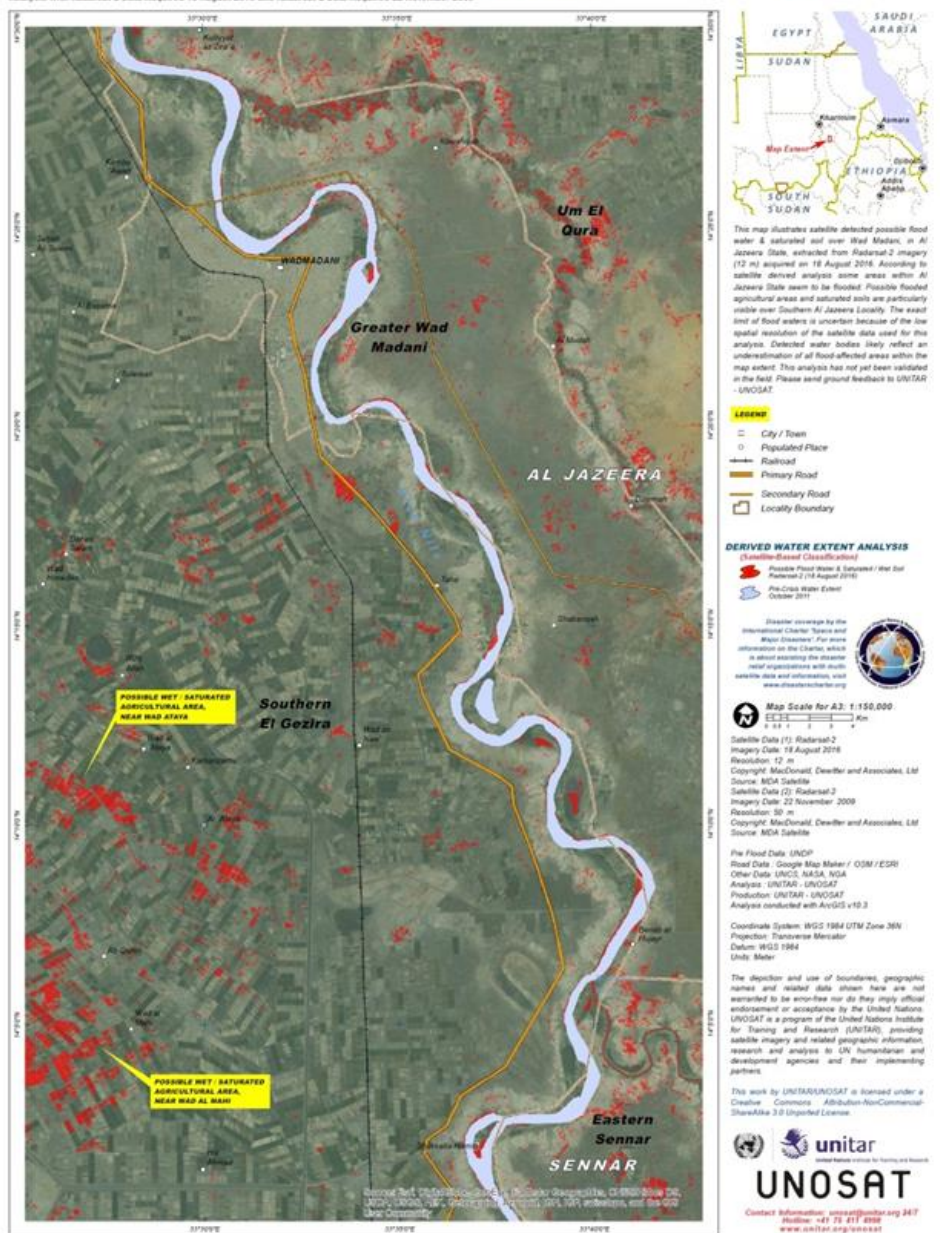
According to UN OCHA's [August 2016 Situational Analysis Report](#), there have been 114 deaths, more than 161,700 people affected, 14,700 houses destroyed and another 10,800 houses damaged nationwide.

UNITAR-UNOSAT used satellite imagery to assess the potential impact on population and agricultural areas over a zone equal to 4% of the total area of Sudan.

RADARSAT-2 imagery (12 m) acquired on August 18, 2016, was used to produce this map of possible flood water & saturated soil over Wad Madani in Al Jazeera State. Possible flooded agricultural areas and saturated soils are particularly visible over Southern Al Jazeera. The precise extent of flood waters is uncertain because of the low spatial resolution of the satellite data used for this analysis.

POSSIBLE FLOOD WATER & SATURATED SOIL OVER WAD MADANI, AL JAZEERA STATE, SUDAN

Analysis with Radarsat-2 Data Acquired 18 August 2016 and Radarsat-2 Data Acquired 22 November 2009





New Charter Project Managers Trained in July and September 2016

Colombia's capital city of Bogotá was the site of a training workshop this past summer for another group of new Charter Project Managers. On July 12-13, U.S. Geological Survey (USGS) Executive Secretariat member Brenda Jones, with support from National Aeronautics and Space Administration (NASA) scientist and Project Manager Donald Sullivan, guided approximately 21 attendees through the process of becoming certified Project Managers. The workshop venue was the Unidad Nacional para la Gestión del Riesgo de Desastres (NGRD), which is the Colombian organization that directs, guides, and coordinates disaster risk management in that country.

While the majority of the attendees were from Colombian agencies involved in emergency response and remote sensing, three participants represented the government of Belarus. Both Colombia and Belarus recently completed the training required to have their own Authorized Users, and were encouraged as part of that process to acquire trained Project Managers who will be able to handle their respective country's Charter activations.

Comprising the agenda for the two-day training class were overviews of the Charter and its history, Charter functions and interfaces, partner agencies and their assets, roles and responsibilities of Project Managers, Charter tools, and hands-on, tabletop exercises. With the completion of the Bogotá workshop, the number of Charter Project Managers rose to 184.



Attendees and instructors gather for a group photo at the close of the July 2016 Charter Project Manager training in Bogotá.



In Jakarta, Indonesia, another Charter PM training was held on September 15. Indonesian National Institute of Aeronautics and Space (LAPAN), and Japan Aerospace Exploration Agency (JAXA) organized the training under the scheme of Sentinel Asia, an Asia-Pacific initiative led by the APRSAF (Asia-Pacific Regional Space Agency Forum) to support disaster management activity in the Asia-Pacific region.

Nine Indonesian trainees from LAPAN, Agency for the Assessment and Application of Technology, and National Disaster Management Authority attended the training. The European Space Agency also assisted with the remote training of the Charter Operation System 2 (COS-2). The trainees will be available as Charter PM soon.



Participants of the Charter Project Manager training held on September 2016 in Jakarta.