



International Charter Space and Major Disasters

Status Report

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Current Lead of International Charter

(April 17-Oct 17)



Purpose of the Charter

An International agreement among some Space Agencies to offer satellite images and related services **at no cost** in support of emergencies caused by major disasters.

- **Disaster phase (2 weeks)**
 - Not prediction and recovery phases
- **Data acquisition across leading govt and commercial satellites**
 - Fast data turn-around – priority acquisition
- **Archival Comparisons**
- **Data processing at pre-determined level**
- **Space Agency contributions in image/data**



Disasters Types Supported

Natural events

Earthquakes

Fires

Floods

Ice jams

Landslides

Tsunamis

Ocean storms

Volcanic eruptions

Man-made events

Oil spills

Industrial accidents





Charter History and Current

- Following **UNISPACE III** in 1999, **ESA** and **CNES** initiated the International Charter.
- **CSA** (Canadian Space Agency) signed in 2000.
- Now composed of **16 members**.
- Charter declared operational in **2000** after formal rehearsals and qualification tests.
- **535** disasters covered to date in **119** countries worldwide.
- **UK** Chairs until Oct 2017 when **ESA** take the Chair.



Member Organisations – June 2017

CSA
Canada

*NOAA &
USGS*
USA

ABAE
Venezuela

INPE
Brazil

CONAE
Argentina

UKSA
UK

CNES
France

DLR
Germany

*ESA &
EUMETSAT*
Europe

ROSCOSMOS
Russia

ISRO
India

CNSA
China

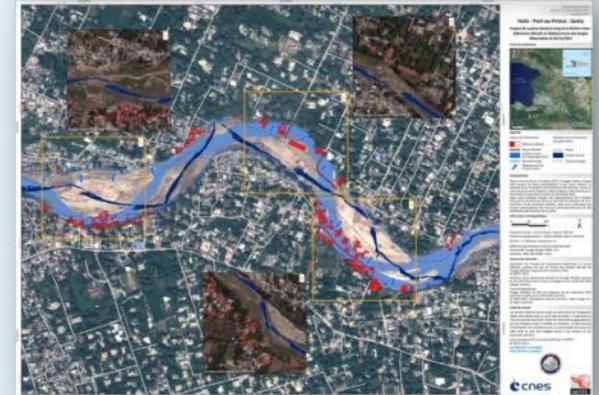
KARI
Korea

JAXA
Japan



Accessing Charter- Authorized Users

1. A **national disaster management authority** or its delegated agency in that country
2. Has the **capacity to download and use maps**
3. Able to **submit and pursue an activation request in English**





Registration – it's simple!

A registration form* (in English, French and Spanish) is available for national authorities to express interest in becoming a Charter Authorized User.

1. The candidate fills in the questionnaire providing all required information.
2. The questionnaire, *with an official cover letter from the organisation*, is then sent to: ExecutiveSecretariat@disasterscharter.org
3. The request is assessed by the Charter members.

*The form **may be downloaded** from the Charter website:

www.disasterscharter.org/web/guest/activating-the-charter

or www.disasterscharter.org/web/guest/home





Authorised Users—Room for more!





The Activation Cycle



A major disaster occurs

● The Charter is activated T0



Satellites are tasked

T0 + 3h



Satellite images are acquired

T0 + 24h



Damage maps are processed

T0 + 32h



The information is immediately transmitted to the rescue teams and Government authorities

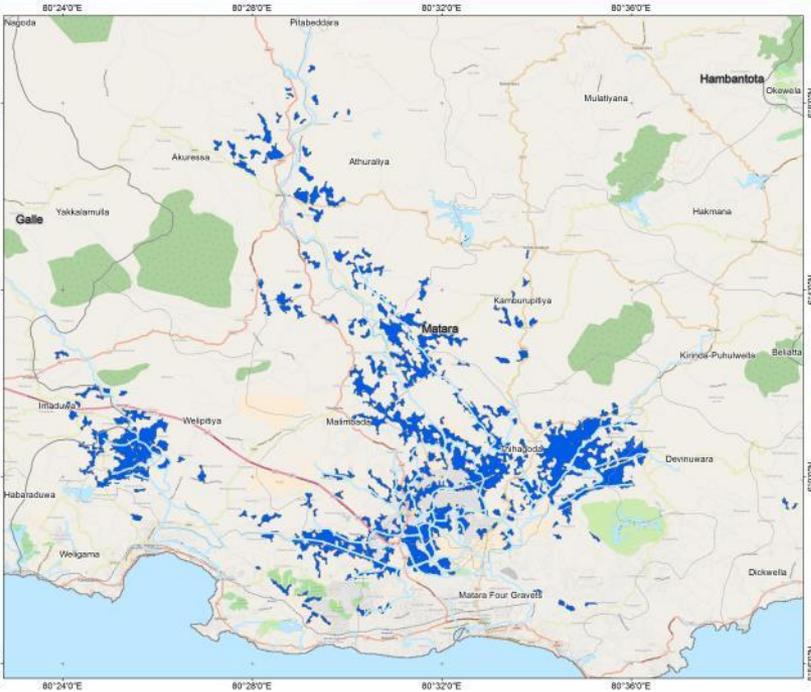
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Recent Examples: Sri Lanka and Bangladesh

FLOODING IN MATARA DISTRICT, SRI LANKA

As observed by TerraSAR-X image on 28 May 2017



Flood

Map Information

MAP SCALE 1:50,000 at A1 PRINT
 Coordinate System: GCS WGS 84
 Datum: D WGS 84
 Unit: Degree

Legend

- District Boundary
- Division Boundary
- Existing Water Bodies
- Detected Floodwater

Data Sources

SATELLITE IMAGERY
 Satellite Sensor: TerraSAR-X
 Acquisition Date: 28 May 2017
 Copyright: TerraSAR-X © DLR e. V. 2017, Distribution: Airbus DS Geo GmbH

GIS DATA
 River, Water bodies © OSM 2017
 Administrative boundary © GADM
 Service Layer Credits © OpenStreetMap (and) contributors, CC-BY-SA

Description

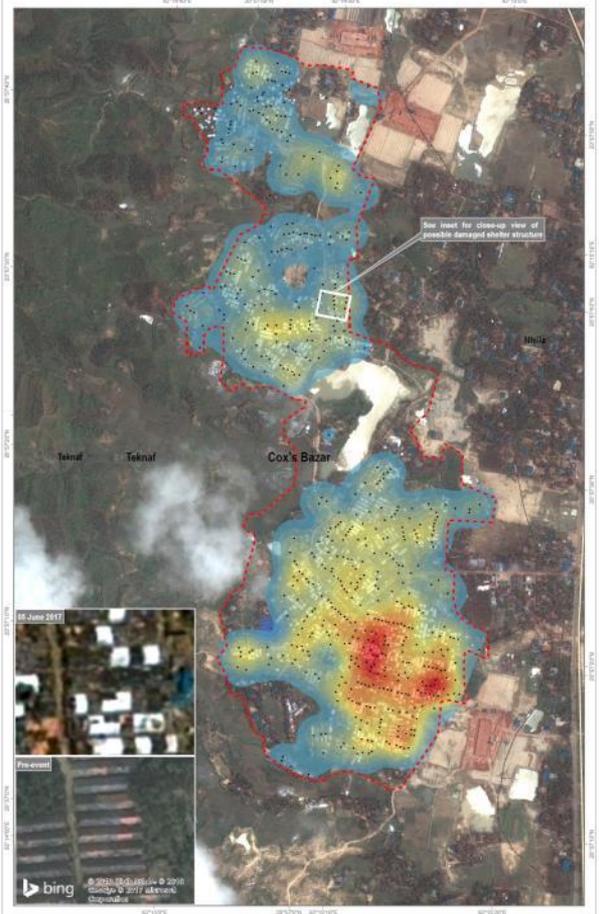
This map shows satellite-detected floodwater which has affected several divisions in Mataru district, including Akuressa, Athuraliya, Devinuwara, Kamburupiya, Malmabacka, Malara Four Gravels, and Welipiya. Note that the floodwater may also include water in paddy areas.

Map product made by GIC-AIT (v1.0).
 Disclaimer: The accuracy of this product is not validated.

Data provider:

BANGLADESH
 Teknaf Union/Cox's Bazar District /Chittagong Division
 Imagery analysis: 05 June 2017 | Published 6 June 2017 | Version 1.0

Tropical Cyclone



Damage Assessment in Nayapara Refugee Camp, Teknaf Union, Bangladesh

This map illustrates satellite-detected potentially affected shelters in Nayapara refugee camp in Teknaf Union, Cox's Bazar District, and Chittagong Division of Bangladesh. About 12,500 people are registered in this camp. The UNHCR-UNOSAT analysis used a Pleiades satellite image acquired the 05th of June 2017 and could identify 160 possible damaged shelter structures within the extent of the camp. Kindly note that the number of damaged shelters could have been underestimated as some groups of shelter structures might be identified as one structure. This is a preliminary analysis and has not yet been validated in the field. Please send ground feedback to UNHCR - UNOSAT.

Legend

- Possible damaged shelter structure
- Secondary road
- Union boundary
- Nayapara camp extent
- High damage density
- Low damage density

Map Scale for A3: 1:5,000

Analysis conducted with ArcGIS 10.4.1
 Coordinate System: GCS WGS 1984 Zone 49E
 Projection: Transverse Mercator
 Datum: WGS 1984
 Unit: Meter

Copyright: Bing
 Source: Microsoft
 Product: TerraSAR-X
 Other Data: UNOSAT, UNOSAT, NASA, NOAA, etc.
 Imagery: UNOSAT, UNOSAT
 Analysis: UNOSAT, UNOSAT
 Production: UNOSAT, UNOSAT

The location and use of boundaries, geographic names and related data shown here are not warranted to be error free nor do they imply endorsement or acceptance by the United Nations. UNOSAT is a program of the United Nations Institute for Training and Research (UNITAR), providing satellite imagery and related geographic information, research and analysis to UN humanitarian & development agencies & their cooperating partners. This work by UNOSAT-UNOSAT is licensed under a CC BY-NC 4.0.



Mechanisms to Activate the Charter

- **Direct activation: By Authorised Users**

- These are typically civil protection agencies, governmental relief organizations, or other authorities with a mandate related to disaster management.

- **Activation via an Authorized User on behalf of a user from another country without AU**

- Authorized Users can access the Charter to request support for a disaster in another country with which they cooperate for relief purposes.

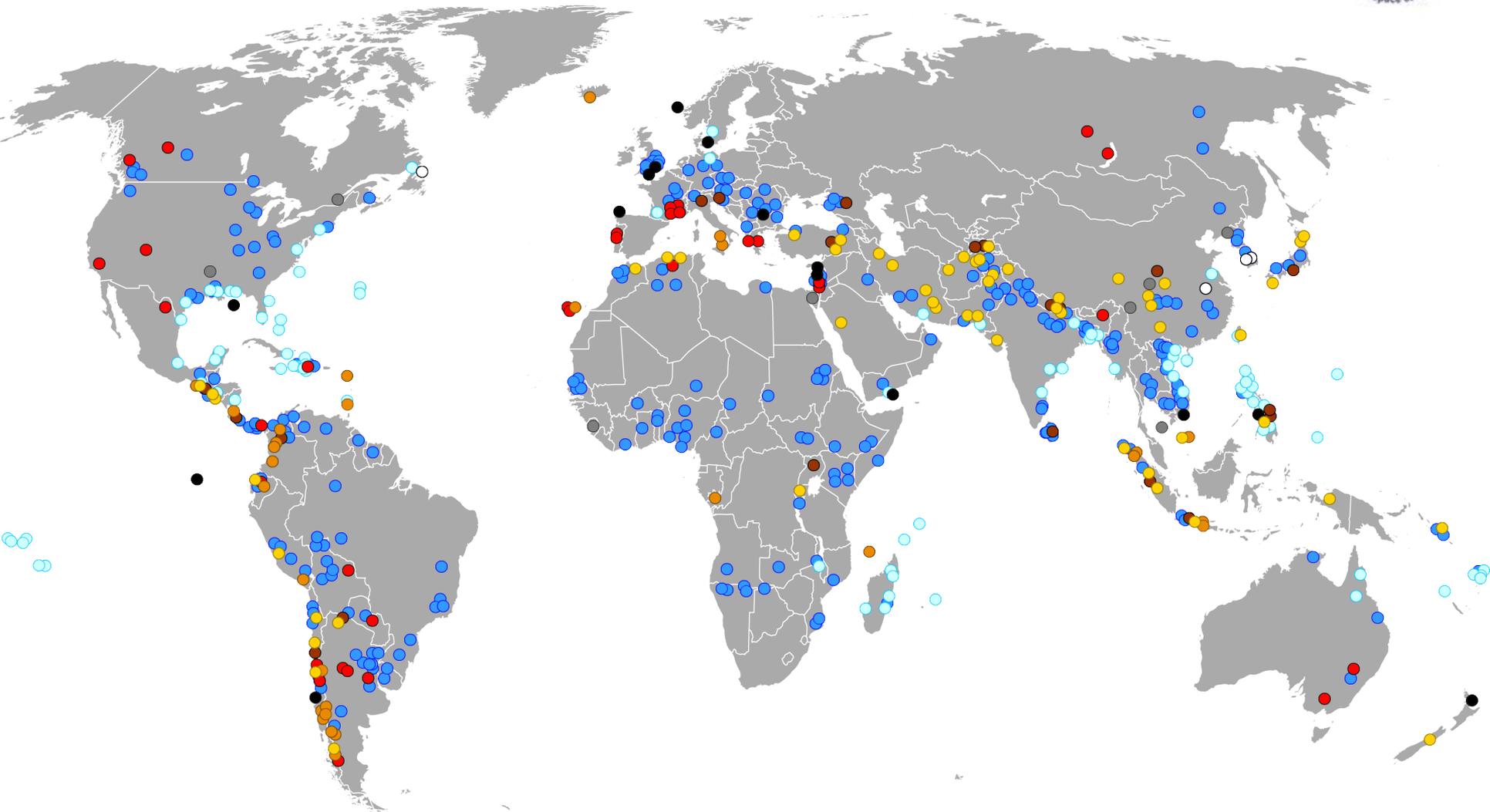
- **Activation via the UN for UN users**

- The Charter has an agreement with UNOOSA (Vienna) and UNITAR/UNOSAT (Geneva) to provide support to UN agencies. UNOOSA and UNITAR/UNOSAT may submit requests on behalf of users from the United Nations.

- **Activation for Asia Pacific users via Sentinel Asia**

- Sentinel Asia is a regional collaboration for satellite based emergency response in Asia Pacific. Since 2009 the Charter has allowed the Asian Disaster Reduction Centre to submit activation requests on behalf of national users of Sentinel Asia.

Activation Distribution



Legend: ● Earthquake ● Landslide ● Volcano ● Storm/hurricane ● Flood/ocean wave ○ Ice/snow hazard ● Fire ● Oil spill ● Other

As of December 21, 2016 – 517 Charter Activations



Outreach and UNISPACE+50



INTERNATIONAL CHARTER « SPACE AND MAJOR DISASTERS »

SATELLITES TO THE RESCUE OF VICTIMS OF DISASTERS



All

Floods

Cyclones

Ocean waves

Earthquakes

Landslides

Volcanic eruptions

Fires

Oil spills

Others

All

2017

2016

2015

2014

2013

Before



535 activations since 2000

FLOODS

30/05/2017

Flood in Bangladesh

Activation 534



© EPA

Cyclone Mora struck the eastern coast of Bangladesh on 30 May.

The Category 1 hurricane brought powerful winds and torrential rain and has left at least five people dead so far.

Hundreds of homes have been damaged.

The storm formed in the Bay of Bengal following a weather system that brought devastating floods to Sri Lanka.

The coastal areas of Bangladesh were put on the highest alert in advance of the

The Charter

Activation's mechanism

Examples of activation

HURRICANE
HAITI

FLOODS
GERMANY

EARTHQUAKE
NEPAL

The Charter satellites

Partners

The logo for the International Charter Space & Major Disasters is circular. It features a globe in the center with a white satellite orbiting it. The text 'International Charter Space & Major Disasters' is written around the top inner edge, and 'Charte Internationale Espace et Catastrophes Majeures' is written around the bottom inner edge.

Summary

- The Charter is a real success for UNISPACE III. It can improve further through UNISPACE 50 and offers significant outreach
- Demonstrates how space technologies can save lives - delivering key information for disaster relief operations.
- It is growing in usefulness: 535 disasters covered since 2000 in 119 countries worldwide. Now activated once a week on average.
- It can grow further. New actors (commercial satellites, new Agencies) will play key roles.
- **HOWEVER:** More **Authorised Users** would broaden the speed and reach of any response. The process to become an AU is simple – contact the myself or the Charter team for more information.



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Newsletter

Contact the Charter Webmaster at
webmaster@disasterscharter.org





International Charter Space and Major Disasters

www.disasterscharter.org

Emergency enquiries from users requiring direct access to Charter resources should be addressed to:

ExecutiveSecretariat@disasterscharter.org

General requests for information should be addressed to

webmaster@disasterscharter.org