A hand is shown holding a glowing blue wireframe globe, which is superimposed over a laptop screen. The background is a blurred image of a person's arm and hand reaching towards the laptop. The text is overlaid on the left side of the image.

OPEN DATA & OPEN KNOWLEDGE Workshop



INTERNATIONAL CHARTER SPACE & MAJOR DISASTERS

SATELLITE DATA TO SUPPORT DISASTER RESPONSE WORLDWIDE

The International Charter 'Space and Major Disasters'

June 2023



Purpose

INTERNATIONAL CHARTER SPACE & MAJOR DISASTERS SATELLITE DATA TO SUPPORT DISASTER RESPONSE WORLDWIDE

An international agreement by Satellite Operators to provide priority access to satellite data in the event of Major Disasters.

Founded by Space Agencies in 1999 following UNISPACF III.

Declared operational November 1, 2000.

- Disaster response
- Multi-satellite - Free Data - fast access
- Satellite Tasking and Archive data
- Data processing to a pre-determined level

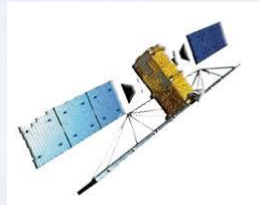
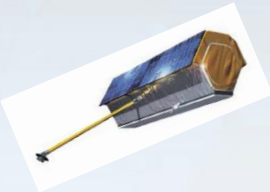




Charter Satellites



INTERNATIONAL CHARTER SPACE & MAJOR DISASTERS SATELLITE DATA TO SUPPORT DISASTER RESPONSE WORLDWIDE



ABAE	VRSS-2
CNES	PLEIADES, SPOT
CNSA	CBERS-4, GF-1, GF-2, GF-3, GF-4, FY-3C, Beijing-2, JILIN-01, OVS-1, OVS-2, OHS-2
CONAE	SAOCOM-1A, SAOCOM-1B
CSA	RADARSAT-2, RCM
DLR	TerraSAR-X/TanDEM-X
DMC	UK-DMC2, ALSAT-1B, VISION-1
ESA	Sentinel-1A/1B, Sentinel-2A/2B
EUMETSAT	Meteosat-9/10/11, Metop-B/C
ICEYE	ICEYE-X2, X4, X5, X7
ISRO	Cartosat-2, Resourcesat-2, Resourcesat-2A
INPE	CBERS-4, CBERS-4A, Amazonia-1
JAXA	ALOS-2, KIBO HDTV-EF
KARI	KOMPSAT-3, KOMPSAT-3A, KOMPSAT-5
NAS	BKA
NOAA	POES-18/19/20, SUOMI-NPP, GOES-13/16/17
PLANET	PlanetScope (~120 satellites)
ROSCOSMOS	RESURS-DK, METEOR-M, KANOPUS-V, KANOPUS-V-IK, RESURS-P
Satellogic	NewSat
UAESA	DubaiSat-2, KhalifaSat
USGS	Landsat-7, Landsat-8, WorldView-1/2/3, Geoeye

Typical Disaster Types

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Natural events:

Earthquakes

Fires

Floods

Ice Jams

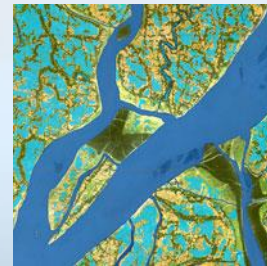
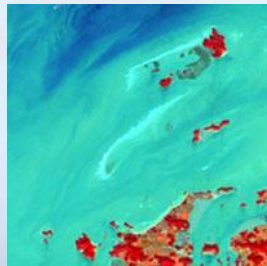
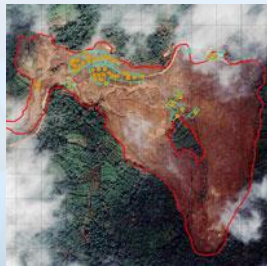
Landslides

Snow Hazards

Storms

Tsunamis

Volcanic Eruptions



Man-made events:

Oil Spills

Industrial Accidents

Charter can not be activated for:

War or Armed Conflicts

Slow-onset Disasters (Ex. Drought)

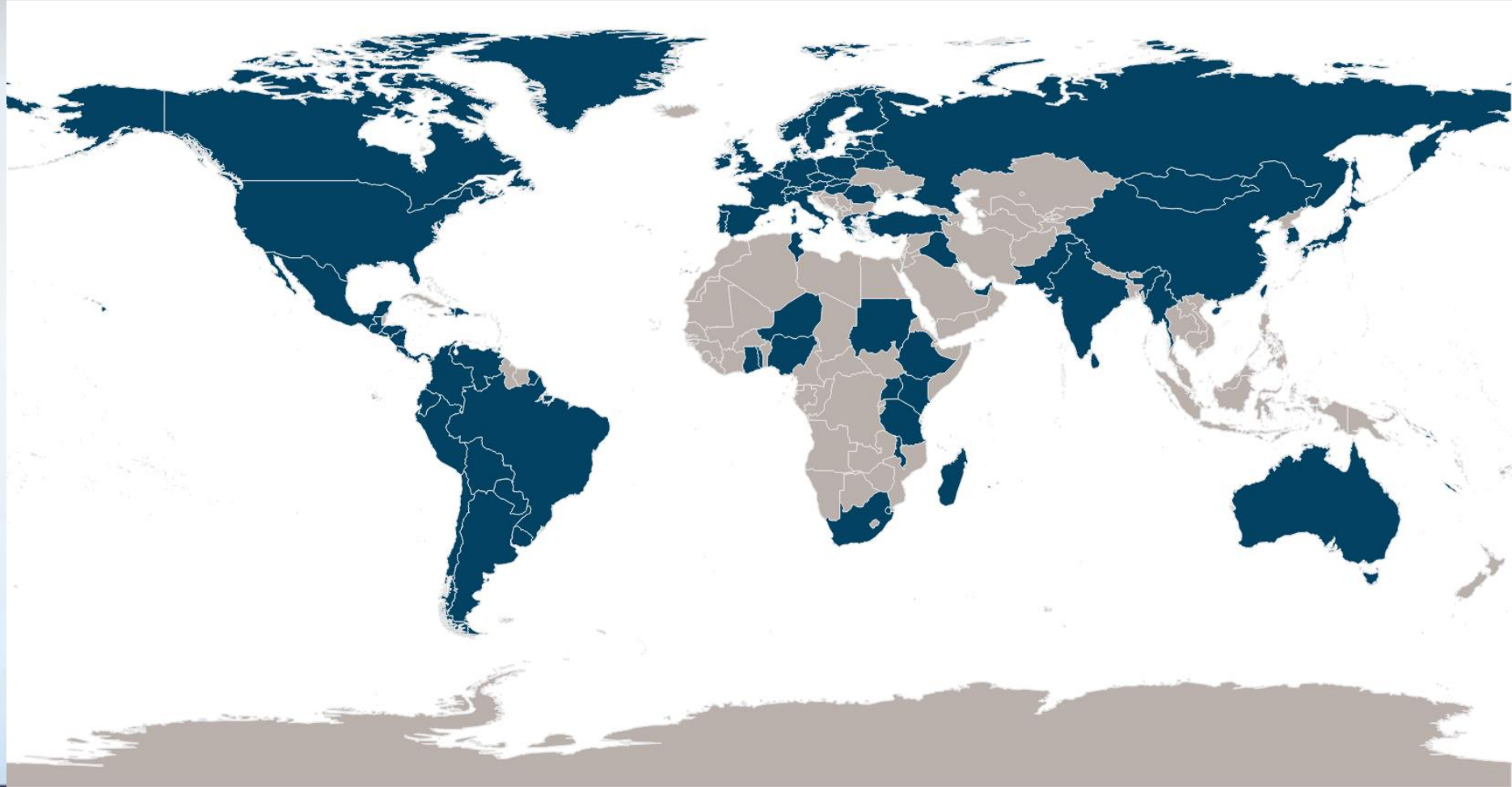


Activating the Charter: Authorized Users



INTERNATIONAL CHARTER SPACE & MAJOR DISASTERS SATELLITE DATA TO SUPPORT DISASTER RESPONSE WORLDWIDE

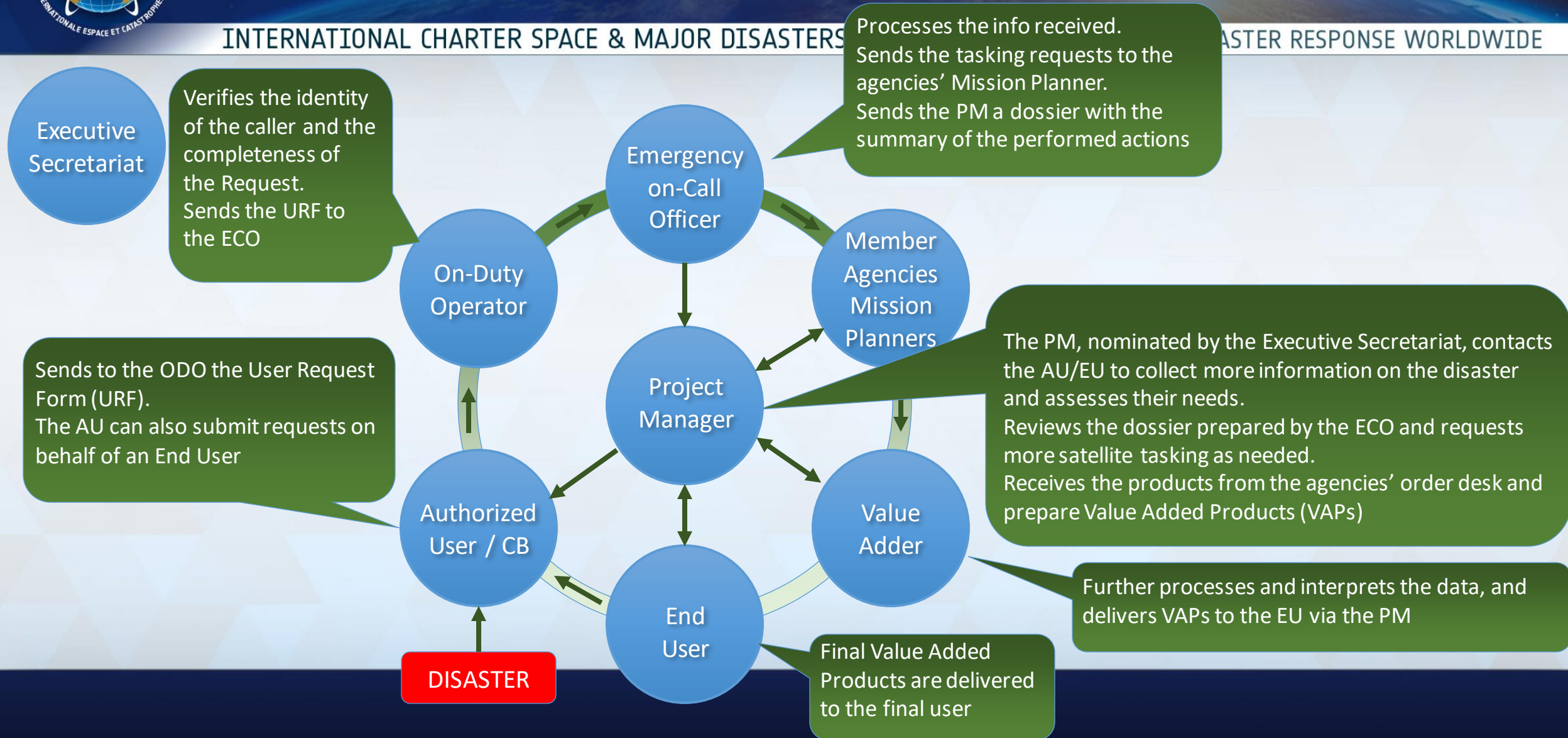
- The only bodies authorized to **directly** request the Charter to be activated are **Authorized Users** (typically civil protection agencies, governmental relief organizations, or other authorities with a mandate related to disaster management) and the **Cooperating Bodies** (United Nations and Sentinel Asia).
- As of February 2023, there are **94 Authorized Users** in **85 countries** and the EU



Charter Operational Loop

INTERNATIONAL CHARTER SPACE & MAJOR DISASTERS

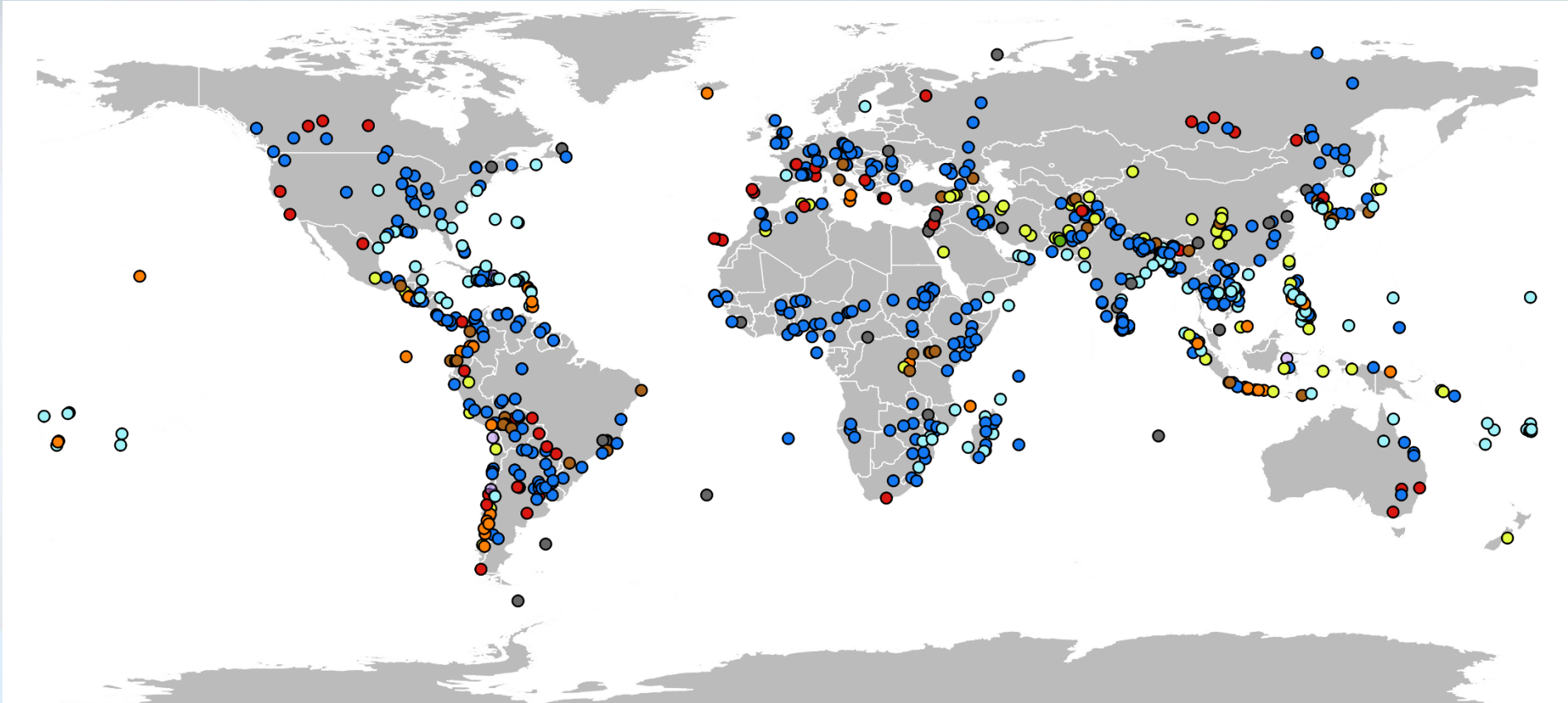
DISASTER RESPONSE WORLDWIDE





Charter Activations (by distribution)

INTERNATIONAL CHARTER SPACE & MAJOR DISASTERS SATELLITE DATA TO SUPPORT DISASTER RESPONSE WORLDWIDE



Legend

- Cyclone
- Earthquake
- Fire
- Flood
- Landslide
- Ocean wave
- Oil spill
- Other
- Snow hazard
- Volcano

November 2000 to 1 June 2023:
823 Charter Activations



The ESA Charter Mapper: overview



INTERNATIONAL CHARTER SPACE & MAJOR DISASTERS SATELLITE DATA TO SUPPORT DISASTER RESPONSE WORLDWIDE

- To support the Charter PM and the VA in the context of activations, the Charter system has been augmented with a **processing environment to access EO data on-line** and perform visual analysis and basic EO processing

ESA Charter Mapper

Welcome to the Charter Processing Environment implemented under the responsibility of the European Space Agency. It is built and integrated in COS-2 to support operations with on-line services to access and visualize EO data.

Latest activations

- [Act-740/Call-892] Flooding in the Federated States of Micronesia
- [Act-739/Call-895] Eruption of Mount Semeru volcano in Indonesia
- [Act-737/Call-948] Flooding in Sri Lanka
- [Act-734/Call-944] Flood in Thailand

ESA Charter Mapper [Act-734/Call-944] Flood in Thailand

Filter Criteria: Act, Satellite, Sensor type

Time Range: Resolution

Combined Datasets

Results for search [Act-734/Call-944] Flood in Thailand

Acquisitions Datasets VA Products My Results TEST_ESA_Micronesia

EVERSIS AIRBUS TERRAUE TAITUS SOFTWARE DATASPACE LIST

Concept of the Charter Mapper:

INTERNATIONAL CHARTER SPACE & MAJOR DISASTERS SATELLITE DATA TO SUPPORT DISASTER RESPONSE WORLDWIDE

- Imagery received from COS-2 is ingested and **transformed automatically** in full resolution, irrespective of the original format, so as the user logs in, all available EO data can be viewed online
- The PM / VA can browse imagery online, select the EO data of interest, analyze and process them online with **EO services and toolboxes** to generate geo-information products.





EO Data in the Charter

INTERNATIONAL CHARTER SPACE & MAJOR DISASTERS SATELLITE DATA TO SUPPORT DISASTER RESPONSE WORLDWIDE

- Charter members and the Contributing Missions (like Planet, IceEye, Satellogic, BlackSky) provide satellite data for free for the usage in the Charter activation.
- The Project Managers and the Value Adders Providers may be requested to accept (on-line) an EULA.
- Some data are open and free, therefore can be used later on also outside the scope of the Charter activation. For the others, the user shall request directly to the data provider if they can use furthermore the data
- All the Value Added Products derived from the satellite data are freely available and can be reused (only condition: mention the copyrights)



Charter Summary



INTERNATIONAL CHARTER SPACE & MAJOR DISASTERS SATELLITE DATA TO SUPPORT DISASTER RESPONSE WORLDWIDE

- Space technologies can deliver key information that brings benefit to the definition, planning, implementation, monitoring, and assessment of disaster relief operations.
- The Charter is focused on helping national disaster management centres and the International Humanitarian community (e.g. UN) during the immediate response phase of a disaster.
- 823 disasters (As of June 1st, 2023) covered since 2000 in more than 130 countries worldwide.
- Universal Access allows for disaster management authorities in countries which are not Charter members to become authorized users and activate the Charter independently following a disaster. Several countries are gaining AU status through Universal Access each year.
- The ESA Charter Mapper is evolving and now has approximately 100 users. Version 1.6 was released in November 2022 which included 5 new processing services and new auxiliary datasets.



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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

helpdesk@disasterscharter.org