



UNOSAT RAPID MAPPING SERVICE

: SATELLITE IMAGERY ANALYSIS IN SUPPORT OF HUMANITARIAN EMERGENCIES

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United Nations Institute for Training and Research [UNITAR]



- Innovative learning solutions to individuals, organizations and institutions to enhance global decision-making and support country-level action for shaping a better future
- Dedicated training arm of UN
- Established in 1963
- 2018-2021 strategy is aligned with the 2030
 Agenda guiding principle for our work organized
 around four out of five thematic pillars of the 2030
 Agenda (Peace, People, Planet and Prosperity)
- Cross-cutting nature of our work on strengthening multilateral diplomacy, and delivering applied research solutions through technology and data (UNOSAT)



UNOSAT OPERATIONAL PILLARS

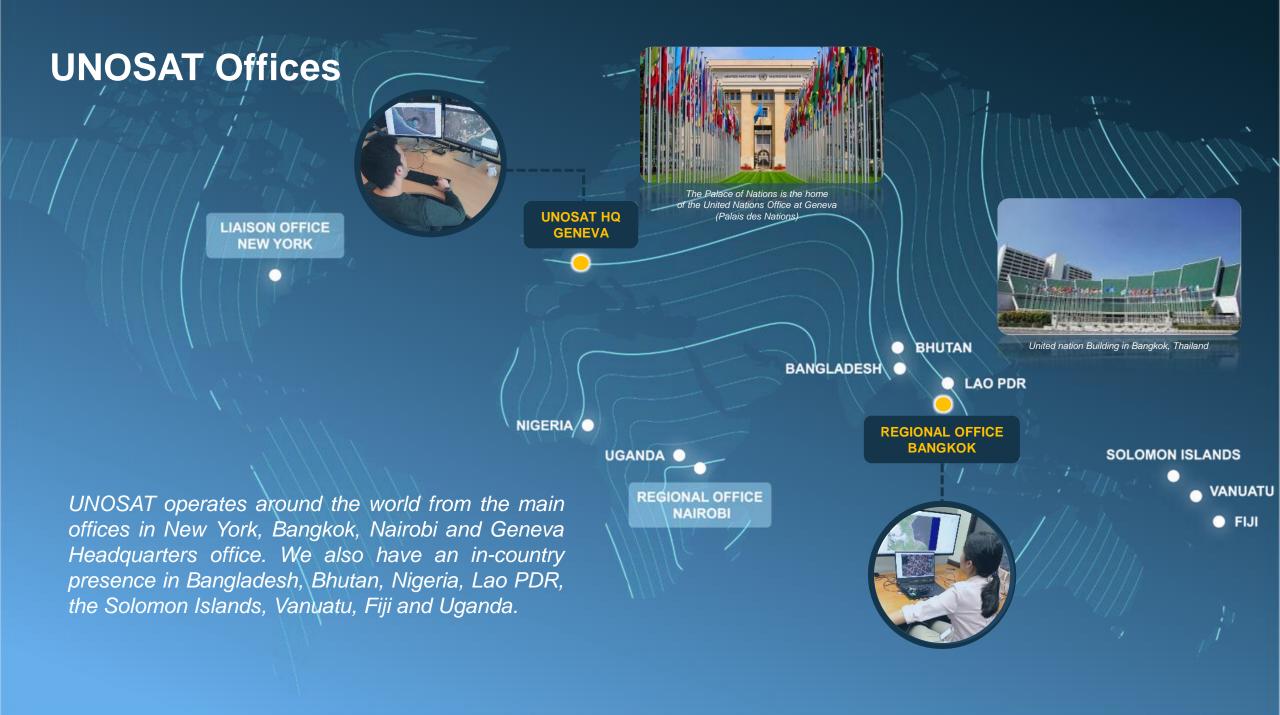
OPERATIONAL SINCE 2001, RECOGNIZED
AS THE UNITED NATIONS SATELLITE CENTRE IN JUNE 2021

Mandate: "provide United Nations funds, programs and specialized agencies with satellite analysis, training and capacity development, at their request, as well as to continue supporting Member States with satellite imagery analysis over their respective territories and to provide training and capacity development in the use of geospatial information technologies"





CATALOGUE OF AI MODELS







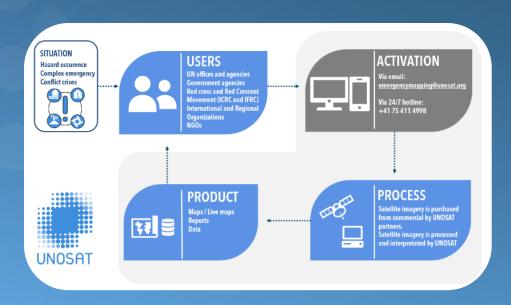
UNOSAT Rapid Mapping Service

SATELLITE IMAGERY ANALYSIS
IN SUPPORT OF HUMANITARIAN EMERGENCIES

UNOSAT Rapid Mapping Services



UNOSAT Rapid Mapping Services is a satellite-based analytical service designed for emergency response situations such as natural disasters or human conflicts. It delivers accurate information, maps and analyses to support governments and humanitarian organizations in decision-making, respond quickly and work together effectively.







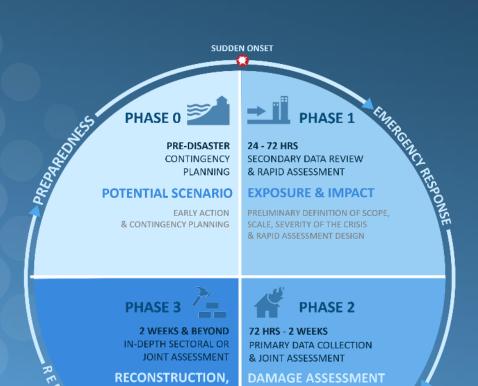




Disaster Phases and Different Satellite Derived Analysis



IMPACT ANALYSIS



ECONOMIC AND SOCIAL

Location /
Preliminary Situation Map



Situation Analysis updated / Impact and Preliminary Damage Analysis



Flood monitoring /
Cumulative flood extent /
Sectoral Assessment



24 HOURS

72 HOURS

2 WEEKS

PRE-CRISES



PHASE 0

Preliminary Situation Awareness PHASE 1

Rapid Impact Analysis PHASE 2

Impact/Damage Assessment PHASE 3

In-depth Sectroral Assessment

UNOSAT



RAPID MAPPING SERVICES PRODUCT FORMATS



Satellite derived map products







Preliminary satellite derived reports





UNOSAT Flood AI Dashboard





UNOSAT Live webmap - one stop service

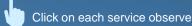




UNOSAT Comprehensive damage assessment report







Activation Statistics for 2023

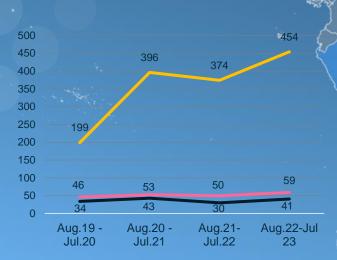
UNOSAT provides **satellite image analysis** during humanitarian emergencies for natural disasters and conflict-situations.

24/7 operational service: team of experienced analysts based in GVA and BKK ensure timely delivery of satellite imagery derived maps, reports and data according to needs of UN agencies and Humanitarian actors

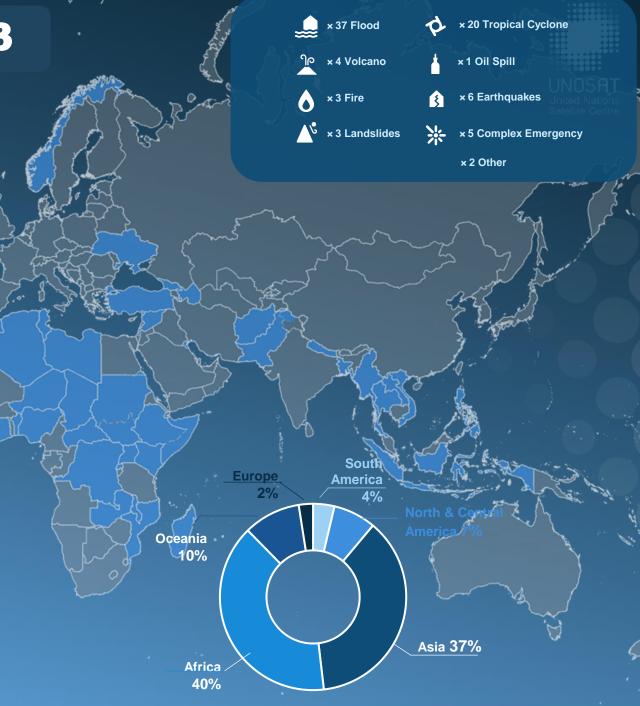
Sudden-onset disasters activations [Aug.22 – Jul. 2023]

454 59 41

Products Activations Countries



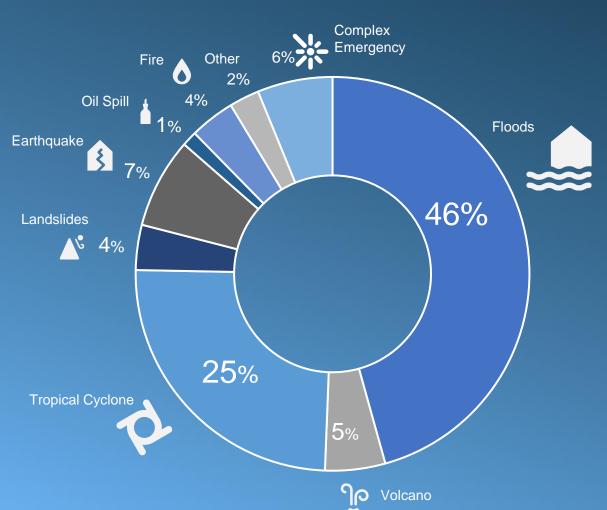




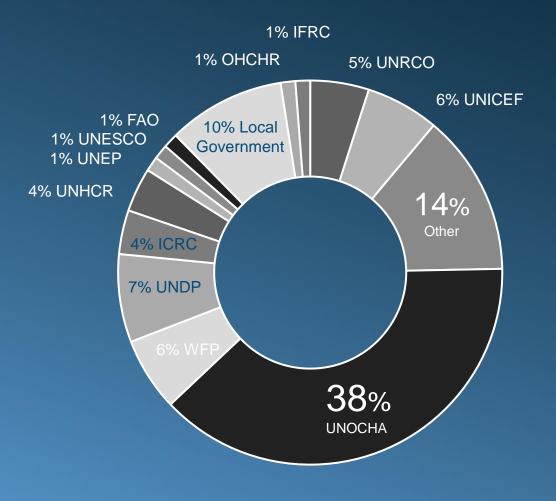
Type of Hazards and Requesting Organisation. (Aug. 2022 – Jul. 2023)







REQUESTING ORGANIZATION



UNOSAT Humanitarian Rapid Mapping Service



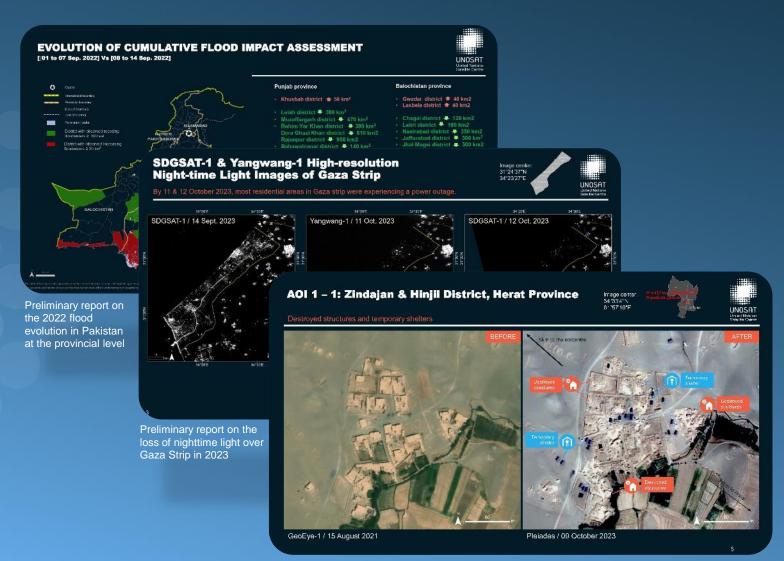


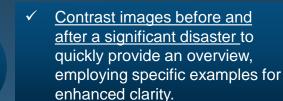


454 : Total of products delivered

UNOSAT Preliminary satellite derived reports









✓ Non-experts can easily understand the impact, even without a background in science or spatial analysis.



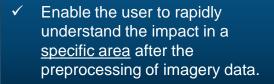
Preliminary report on the Afghanistan earthquake, representing pre- and post-event images to highlight the impact.

UNOSAT Satellite derived map products











 Can be printed and <u>utilized in</u> the field for emergency response in areas without internet access.



Raise awareness about potential hazards, evacuation procedures, and emergency contacts. This helps communities prepare for disasters and respond effectively when they occur.



UNOSAT Flood Al Dashboard



UNOSAT Flood AI Dashboard to monitoring flood situation over Thiland









Continuously monitor the flood situation throughout the entire country in the long term.



the system operates effectively even during the monsoon season when there is complete cloud cover, because of the ability to penetrate clouds of using SAR data.



UNOSAT Live webmap - one stop service









√ Summary statistics (Real-time) **Observation Updates)**



✓ Enable users to visualize, display and access wider coverage of analysis from all relate organizations in once.



✓ Sharing on social media / utilize for making decisions



UNOSAT Comprehensive damage assessment report















✓ Aggregate statistics on damage across all analysed regions, involving various mapping teams



✓ Visual representations, such as map, graphs and infographics.



✓ Access all relevant UNOSAT products simultaneously.



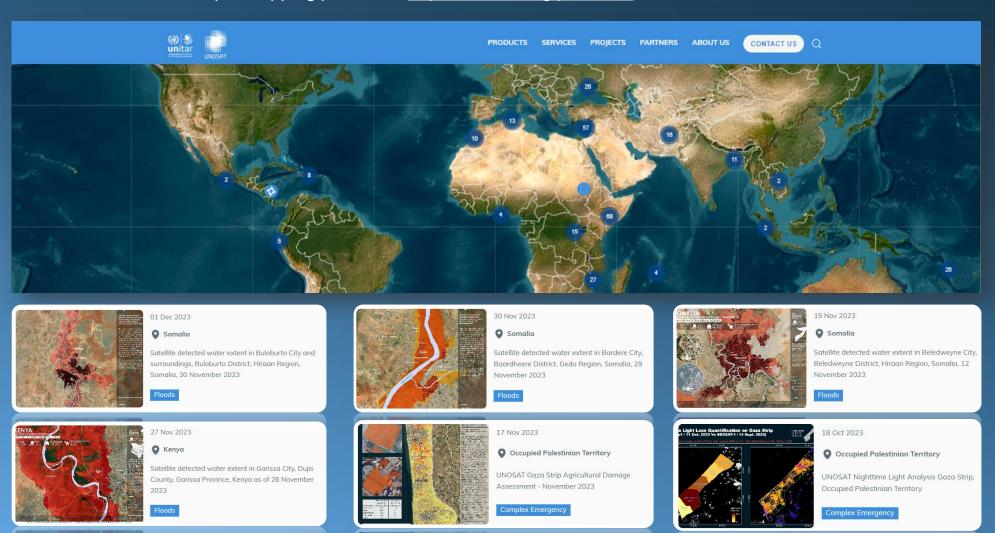
✓ Comprehend the overall situational overview and Utilize the information for post-disaster reconstruction or recovery efforts.



UNOSAT Product



Visit here to access all UNOSAT rapid mapping products : https://unosat.org/products/



2022 GROUP ON EARTH OBSERVATIONS (GEO) SUSTAINABLE DEVELOPMENT GOAL (SDG) AWARD



On November 3, 2022, UNOSAT received the GEO Participating Organization Award at GEO Week 2022 for its Emergency Mapping service, recognized for its outstanding use of Earth observations in supporting sustainable development.

The award acknowledges UNOSAT's impact on the 17 Sustainable Development Goals (SDGs) set by the United Nations.





HOW TO ACTIVATE RAPID MAPPING SERVICE?



SEND A REQUEST

What type of disaster? What is the geographic area?



We will assess your request and get back to you with a plan for product delivery within the next few hours

PRODUCTION & FOLLOW UP

We start the analysis and notify you about product delivery

DELIVERY









REPORTS













United Nations Satellite Centre (UNOSAT)

7 bis Avenue de la Paix, CH-1202 Geneva 2, Switzerland

T: +41 22 917 4720 (UNOSAT Operations)

Hotline 24/7: +41 75 411 4998

UNOSAT uses publicly available satellite imagery from commercial vendors, in-kind contributions, free and open sources and is a partner of the International Charter Space and Major Disasters.

International Charter Space and Major Disasters

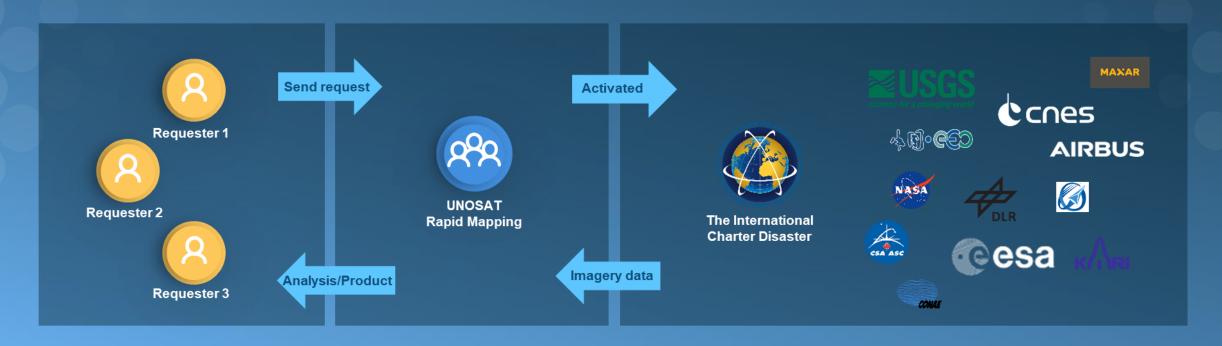
https://disasterscharter.org/

International Cooperation Initiatives and mechanisms to request and, or access satellite-imagery derived analysis following major disasters

How to activate the Charter for the UN and humanitarian agencies user?

The Charter has established a partnership with UNOSAT to offer assistance to both UN agencies and humanitarian organizations. Requests on behalf of users from these entities can be submitted to the Charter by UNOSAT.

Furthermore, UNOSAT will facilitate for UN agencies and humanitarian organizations in the analysis of satellite data obtained through the Charter. UNOSAT will ensure the timely delivery of products either through the Charter system or directly to the user's email.



GDACS - Satellite Mapping Coordination System (SMCS)



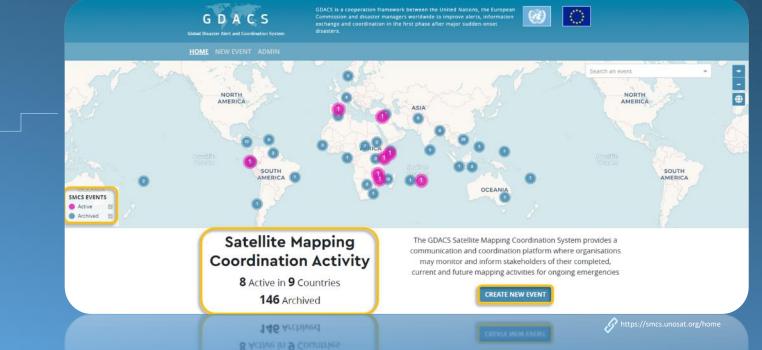


https://smcs.unosat.org/

- GDACS SMCS is a web-based tool to facilitate the coordination between satellite mapping organizations during a major disaster event.
- GDACS users will be able to see which satellite images are collected where and which entity is working on what type of satellite derived analysis.
- SMCS is targeted to GDACS user community who can access information about satellite derived products during emergencies as well as to Satellite Mapping Groups who can inform about their satellite imagery analysis plan during major disaster events.

• GDACS-SMCS has been developed by UNOSAT and it is operational since 2013-2014 and has since 2021 been fully operational and

embedded on the GDACS website.



GDACS-SMCS

- Hazard extent, The Hazard extent is imported from GDACS.
- Area of interest (filtered by analysis status), users will be able to see which satellite images are collected where and which entity is working on what type of satellite derived analysis.
- Map products by organizations, users will be able to access product from dot appears with a link to the site where the product is released.

https://smcs-unosat.web.cern.ch/



UN-ASIGN APPLICATION

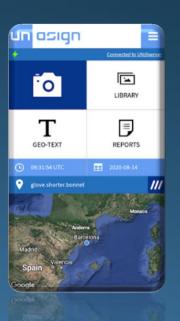


UN-ASIGN was developed for the United Nations as a disaster management tool to help volunteers and the general public provide observations during an emergency or crisis. Geotagged images uploaded onto the UN-ASIGN application allow the UN to improve situational awareness and help agencies working in a disaster or emergency evaluate a crisis. Additionally, complimentary imagery to satellite earth observations can deliver a comprehensive and in-depth overview of a situation.

The UN-ASIGN app is combined with the UN live mapping tool to support the emergency decision making process, particularly in the critical early stages following a disaster. The image inputs are integrated into the online mapping tool, which is publicly available and displays geospatial data from various sources. As a UN Information Management tool, the application has the added value of being configured to work under challenging communication conditions to deliver accurate and vital information as soon as possible. The imagery and information inputted with UN-ASIGN can often provide information that cannot be identified through usual satellite imagery analysis, such as the extent of building damage on a structure covered by roofing structures or vegetation The UN-ASIGN app can





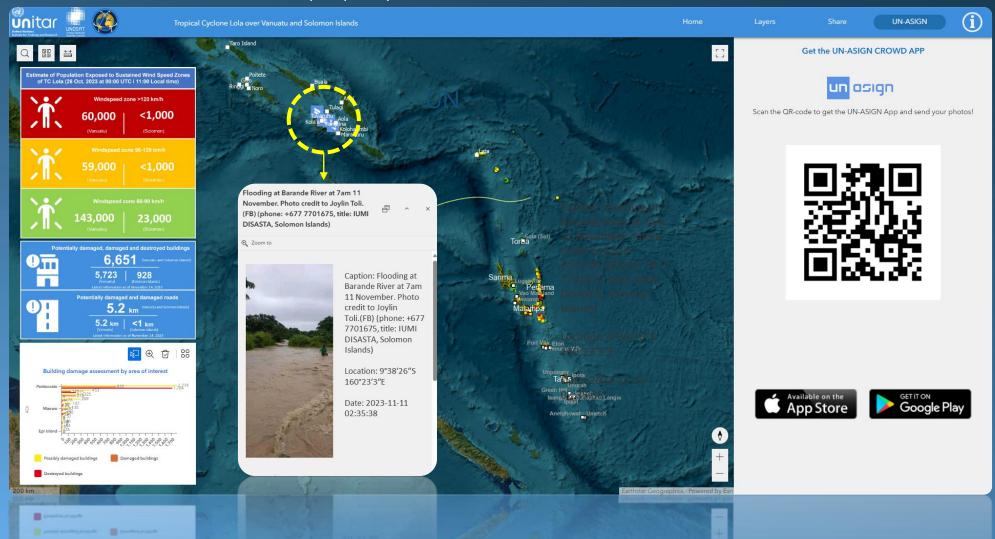




UN-ASIGN APPLICATION

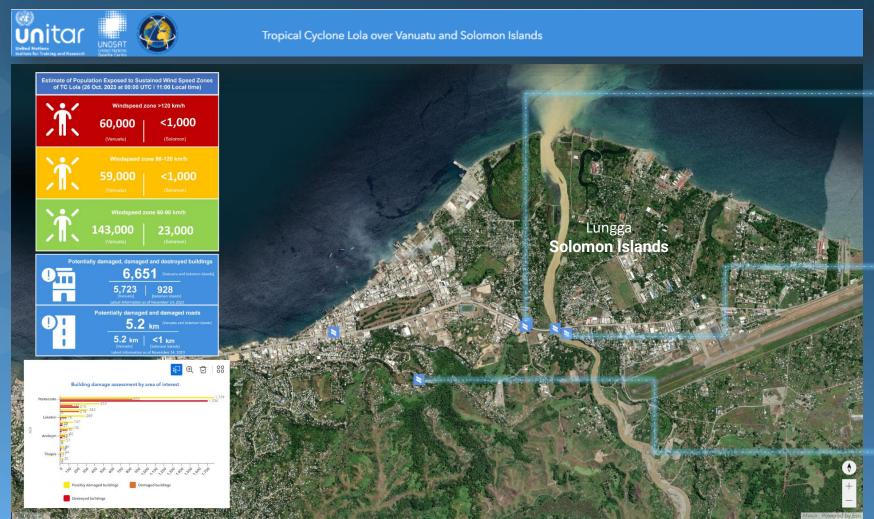


UNOSAT Live Webmap-Tropical Cyclone Lola over Vanuatu and Solomon Islands- in October 2023

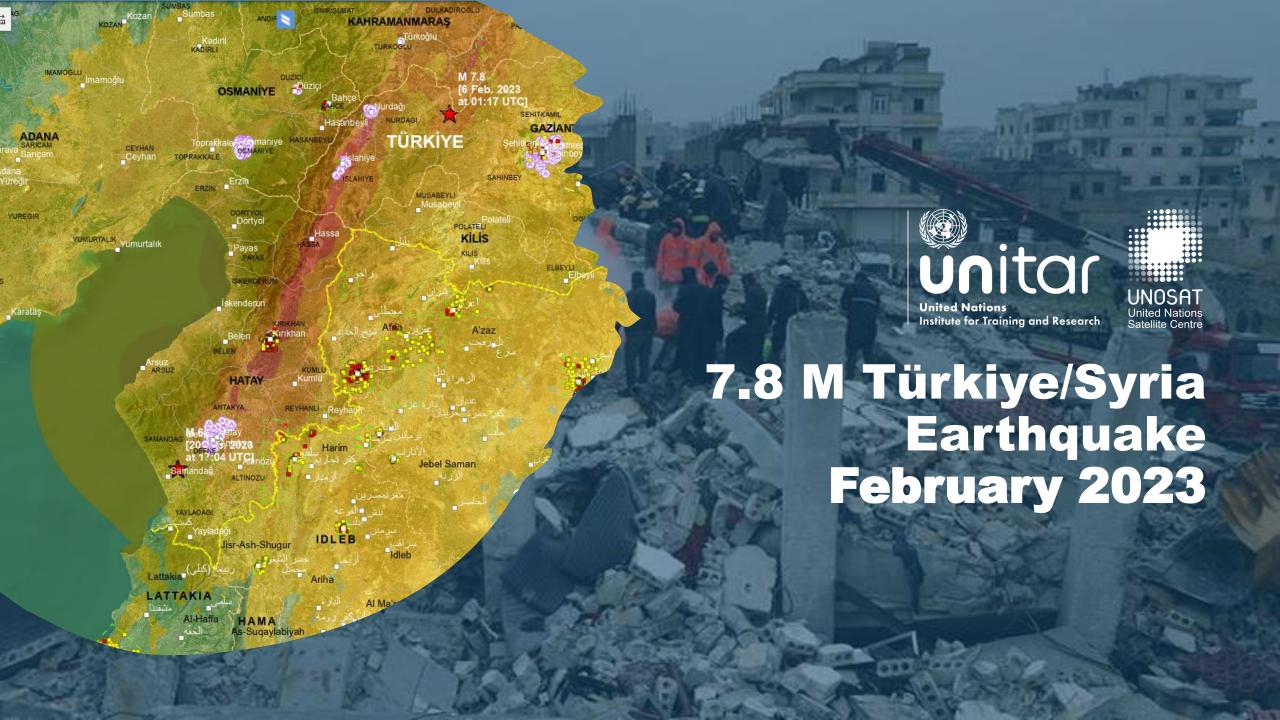


UN ASIGN APPLICATION







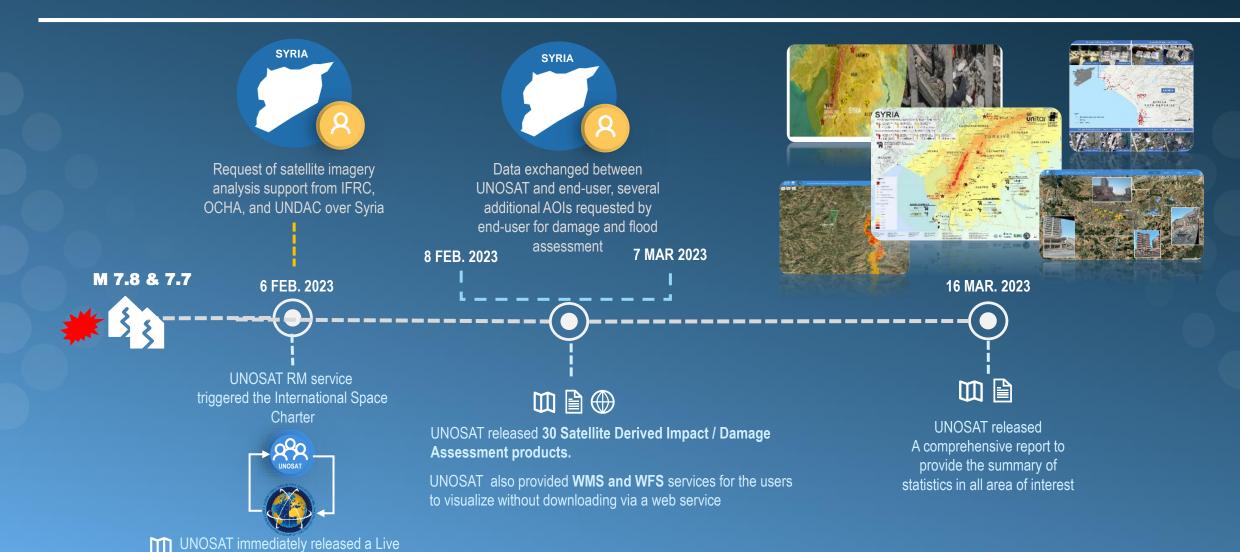


Timeline: M 7.8 Marash/Antep (Kehramanmarash) Earthquake

Web map to visualize info available and initial analysis







UNOSAT Products: Türkiye/Syria Earthquake (Feb. 2023)





Türkiye/Syria EQ, Feb. 2023

Preliminary situation assessment reports

Impact / Damage assessment maps (Syria)

Damage assessment dashboard

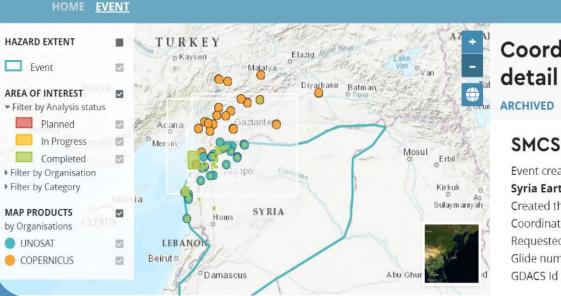
Comprehensive damage assessment report (Syria) The SMCS of the Türkiye/Syria Earthquake (Feb. 2023) event was utilized by UNOSAT to coordinate and collaborate with other organizations during the emergency context.



GDACS is a cooperation framework between the United Nations, the European Commission and disaster managers worldwide to improve alerts, information exchange and coordination in the first phase after major sudden-onset







Coordination



SMCS info

Event created from GDACS alert: Earthquake in Türkiye

Syria Earthquake

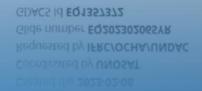
Created the 2023-02-06

Coordinated by UNOSAT

Requested by IFRC/OCHA/UNDAC

Glide number EQ20230206SYR

GDACS Id **EQ1357372**



UNOSAT Products: Türkiye/Syria Earthquake (Feb. 2023)







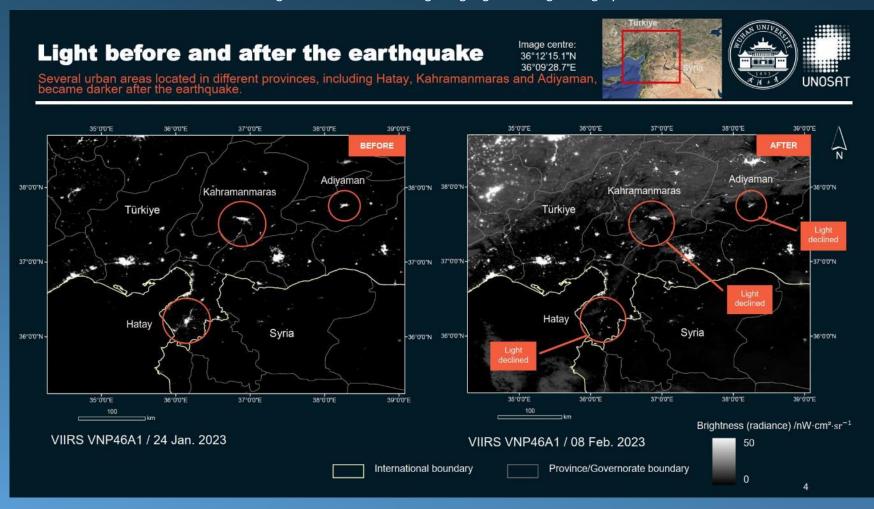
Tureky/Syria EQ, Feb. 2023

Preliminary situation assessment reports

Impact / Damage assessment maps (Syria)

Damage assessment dashboard

Comprehensive damage assessment report (Syria) Light Loss Assessment using using Night-time Light Imagery



UNOSAT Products: Türkiye/Syria Earthquake (Feb. 2023)





Tureky/Syria EQ, Feb. 2023

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Preliminary situation assessment reports

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Impact / Damage assessment maps (Syria)

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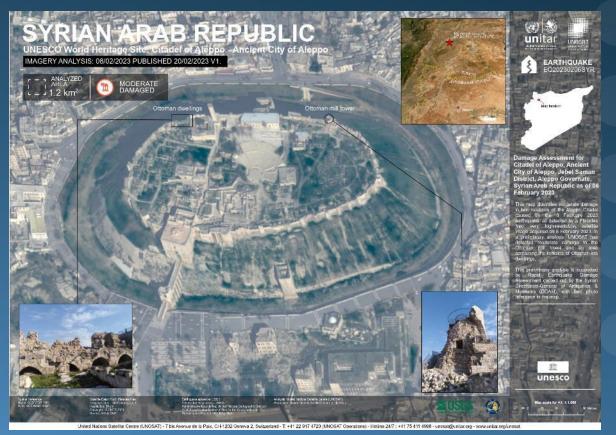
Damage assessment dashboard

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Comprehensive damage assessment report (Syria)



Flood impact analysis along the border of Türkiye and Syria



Damage assessment for Citadel of Aleppo, Ancient City of Aleppo, Jebel Saman District, Aleppo Governate, Syria as of 8 Feb. 2023

UNOSAT Products: Türkiye/Syria Earthquake (Feb. 2023)





Türkiye/Syria EQ, Feb. 2023

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Preliminary situation assessment reports

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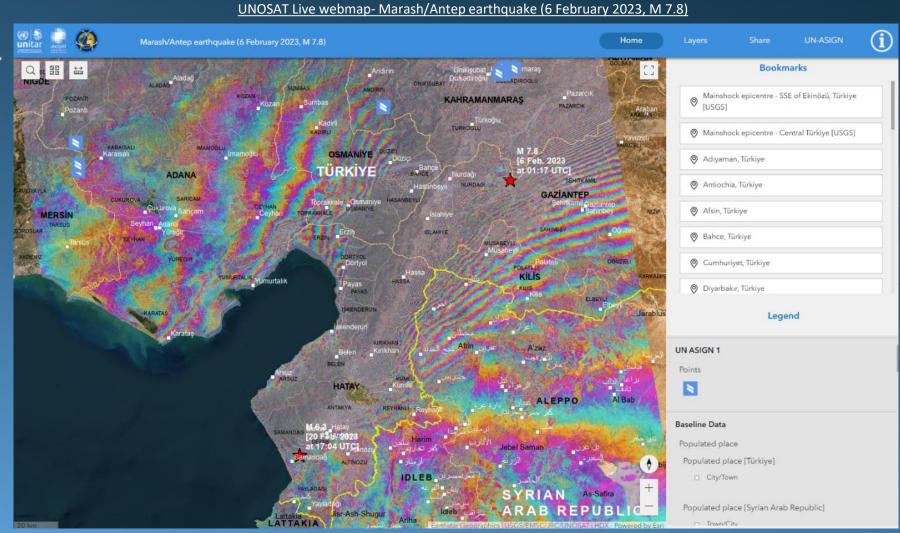
Impact / Damage assessment maps (Syria)

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Damage assessment dashboard

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Comprehensive damage assessment report (Syria)









Thank you!

Visit our website www.unosat.org/products





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