

BeGeo 2024

LA CONNEXION A L'ETAT PUR
DE ULTIEME CONNECTIE



The European Copernicus Emergency Management Service
for Civil Security in Belgium and beyond

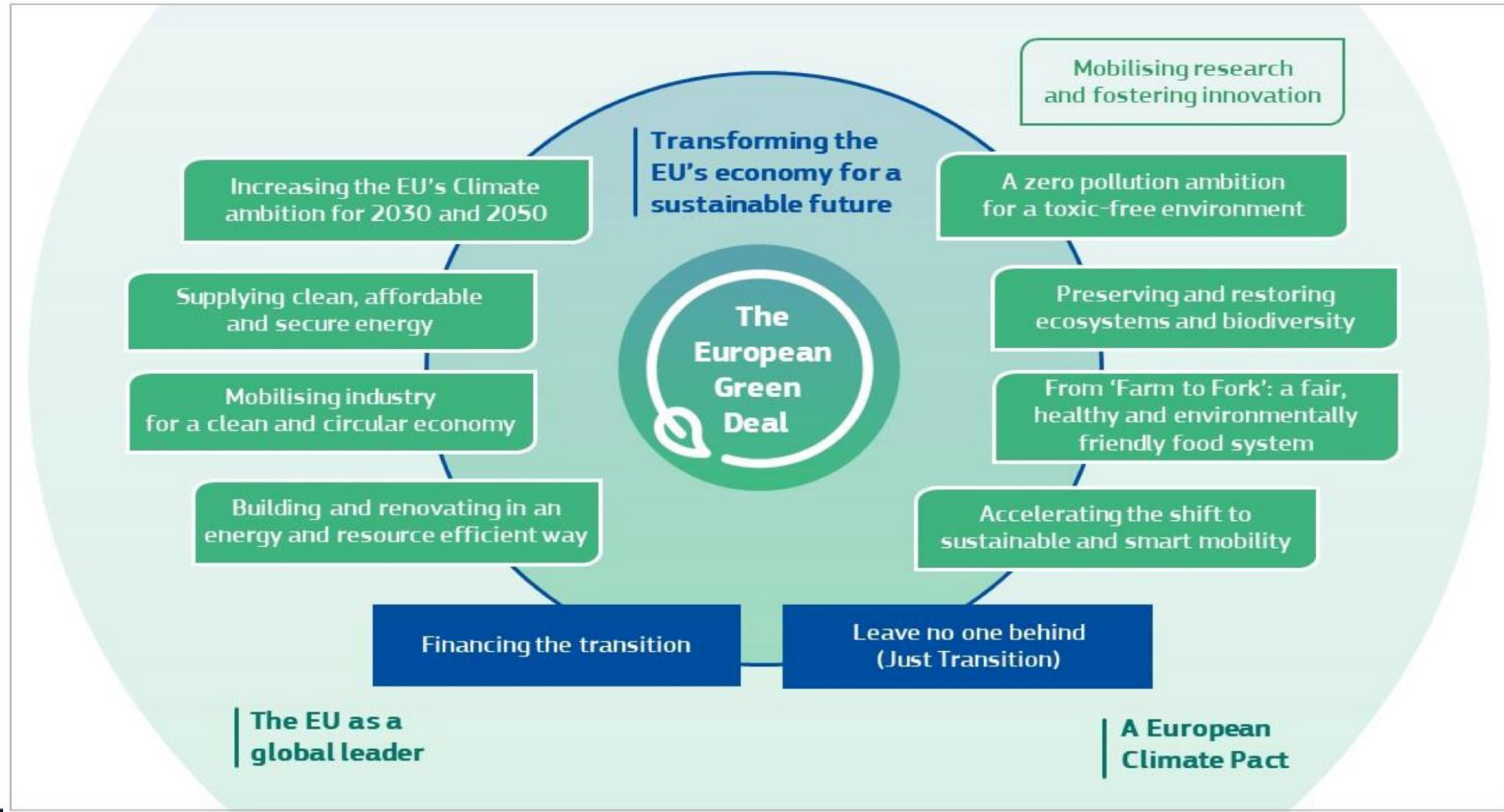
European Commission DG DEFIS

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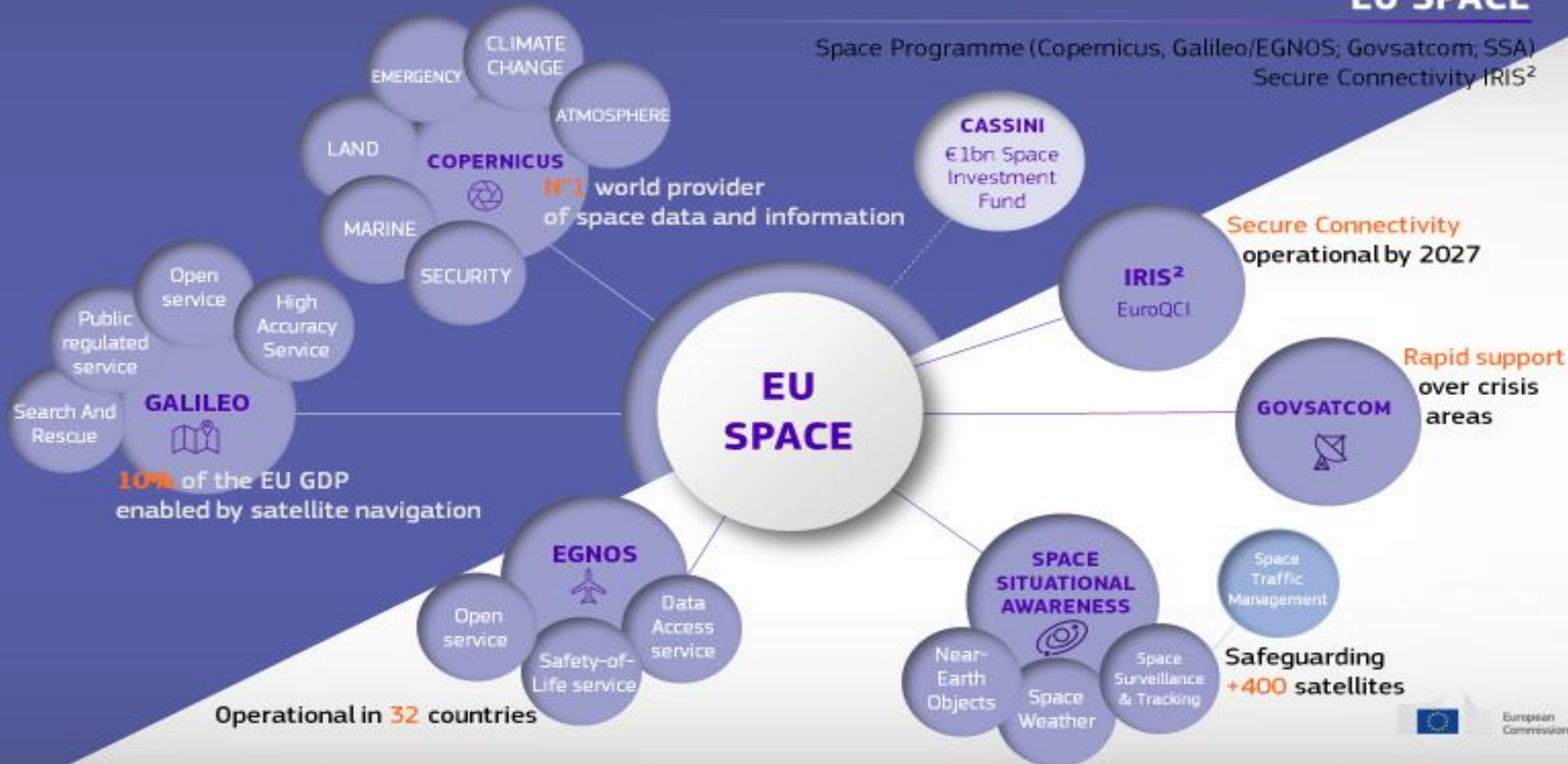


The EU Green Deal



EU SPACE

Space Programme (Copernicus, Galileo/EGNOS; Govsatcom; SSA)
Secure Connectivity IRIS²



Space in support of EU policies

Mapping of natural disturbances and weather-related challenges

Monitoring COP21 commitments and CO₂ emissions

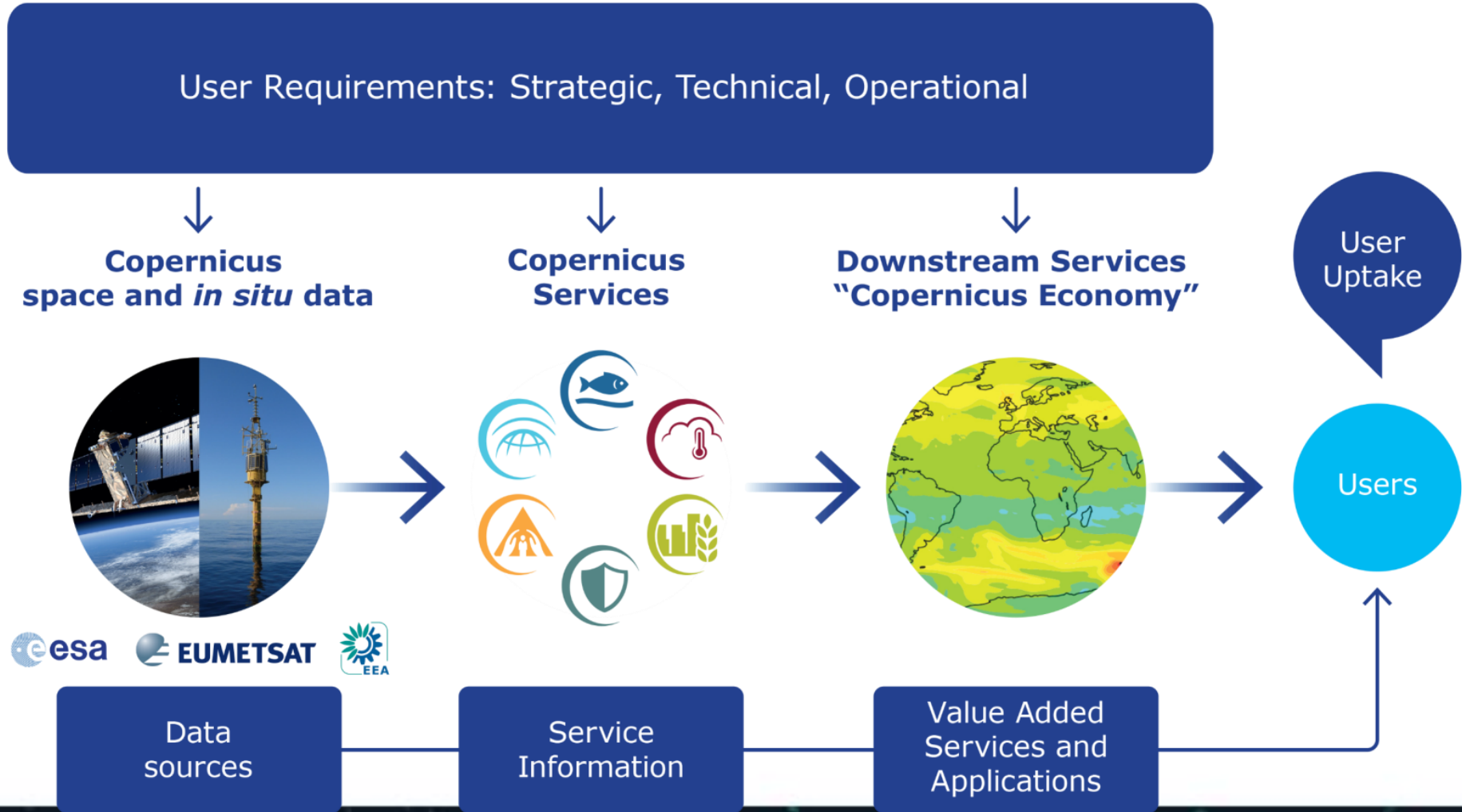
Better execution of CAP due to policy monitoring and precision farming

Enabling technologies in automotive, aviation and maritime sectors

Supporting civil protection thanks to Emergency Management Service

Aiding the digitalisation through space and satellite communication

COPERNICUS IS DRIVEN BY THE USERS



COPERNICUS SERVICES

Monitoring the State of the Earth System Environment ...



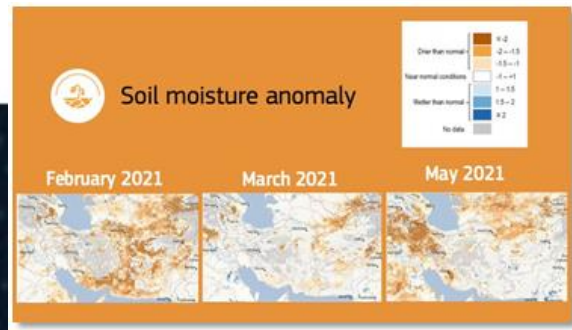
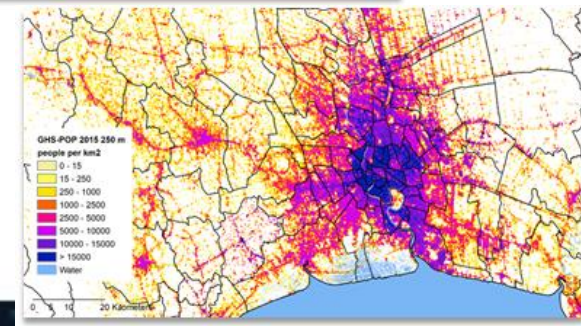
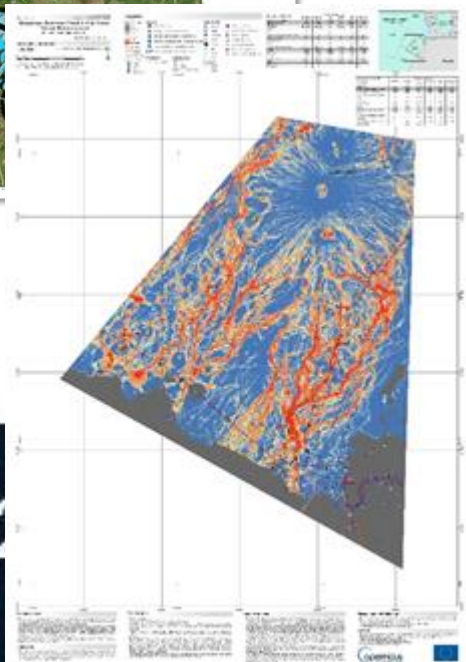
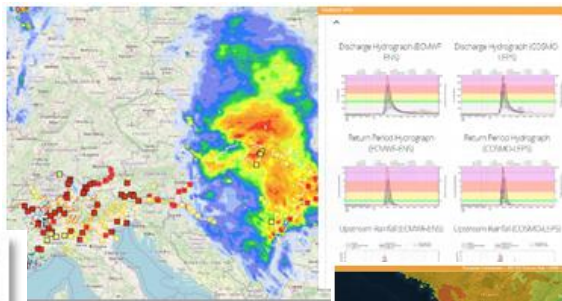
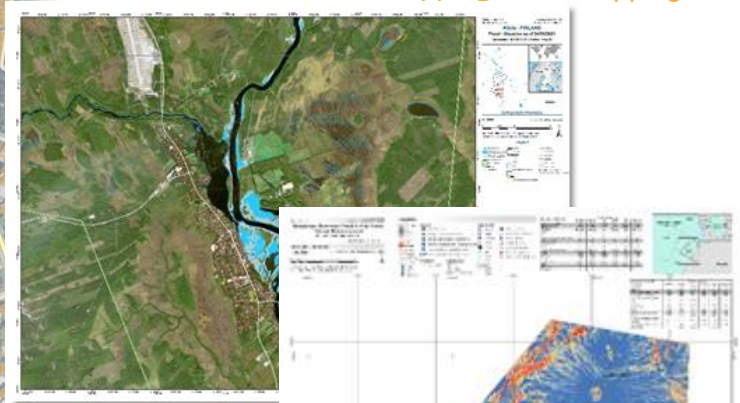
... Six cross-cutting Thematic Services



Emergency Management

Overview of CEMS

THE COPERNICUS EMERGENCY MANAGEMENT SERVICE



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19/03/2024 - Brussels Expo

Copernicus EMS



Copernicus Emergency Management Service (CEMS)

On-demand Mapping in the last 11 years

- Over **880 activations**
- More than **8000 products** released
- More than **10000 images** analyzed
- In more than **130 different countries**

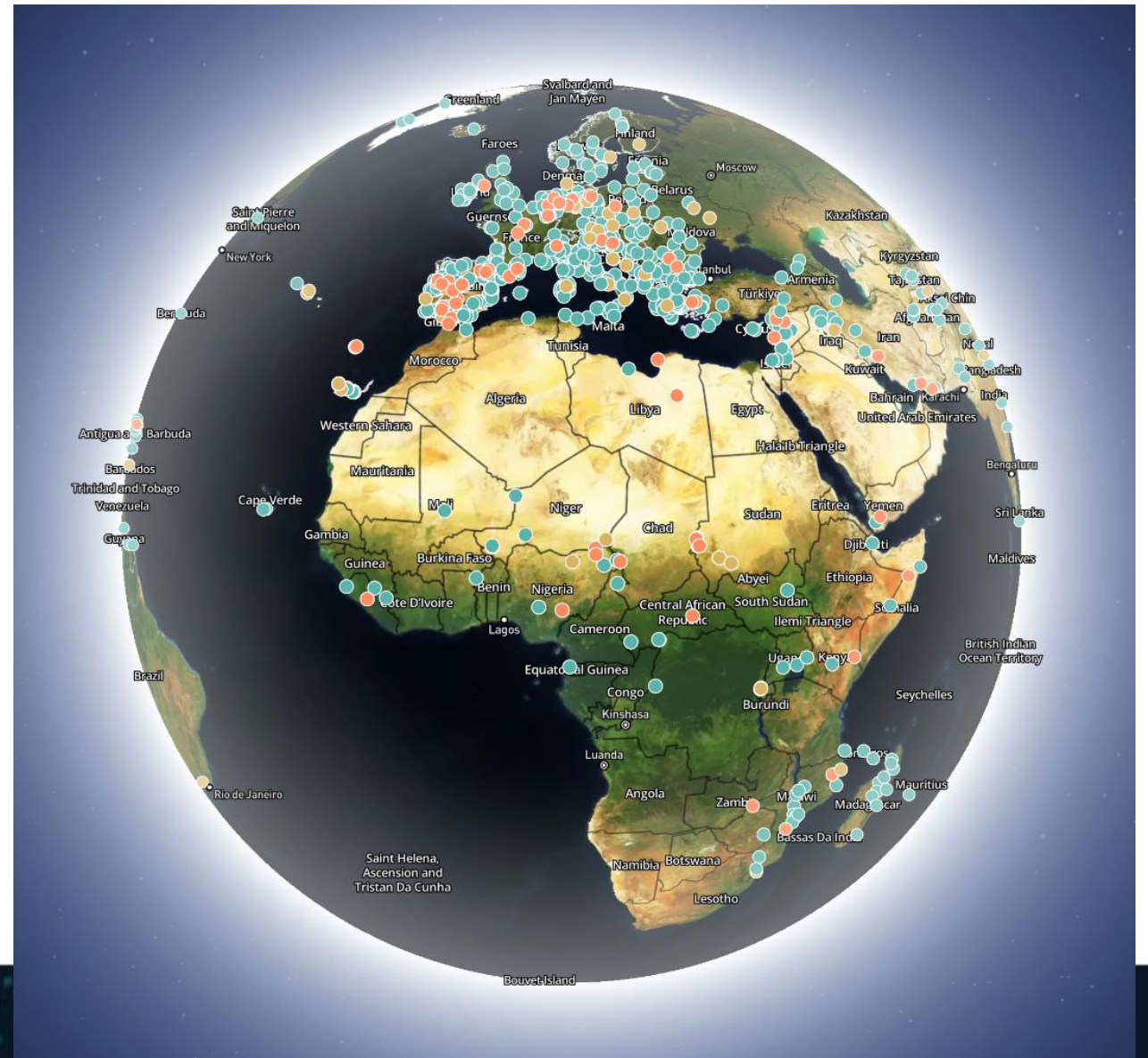
2023:

➤ **Emergency Response:**

➤ **69 activations**

➤ **Preparedness and Recovery:**

➤ **38 activations**





Support for Emergency Response



Flood in Greece (October 2023)

© Thanassis Kalliaras/Eurokinisi via REUTERS



Earthquake in Morocco and Afghanistan (Oct-Nov 2023)

© IFRC



Landslide in Slovenia (August 2023)

© Slovenian Army



Fire in Spain (August 2023)

© REUTERS/Borja Suarez

EMSR708

Flood in Belgium

Example:

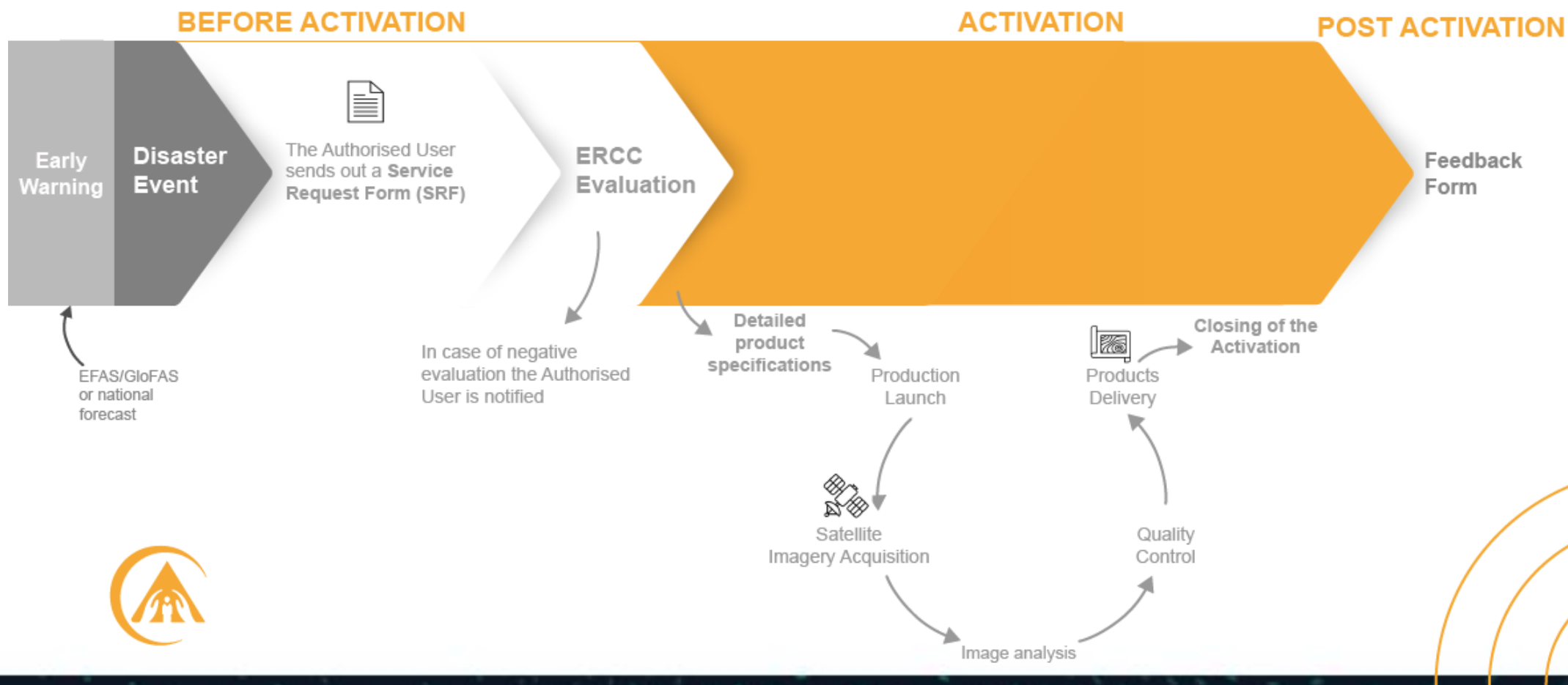
15/11 (21:44) - Delineation
Monitoring product Delivery

4 702.7 ha flooded, ~2 400
potentially affected population.





Support for Emergency Response

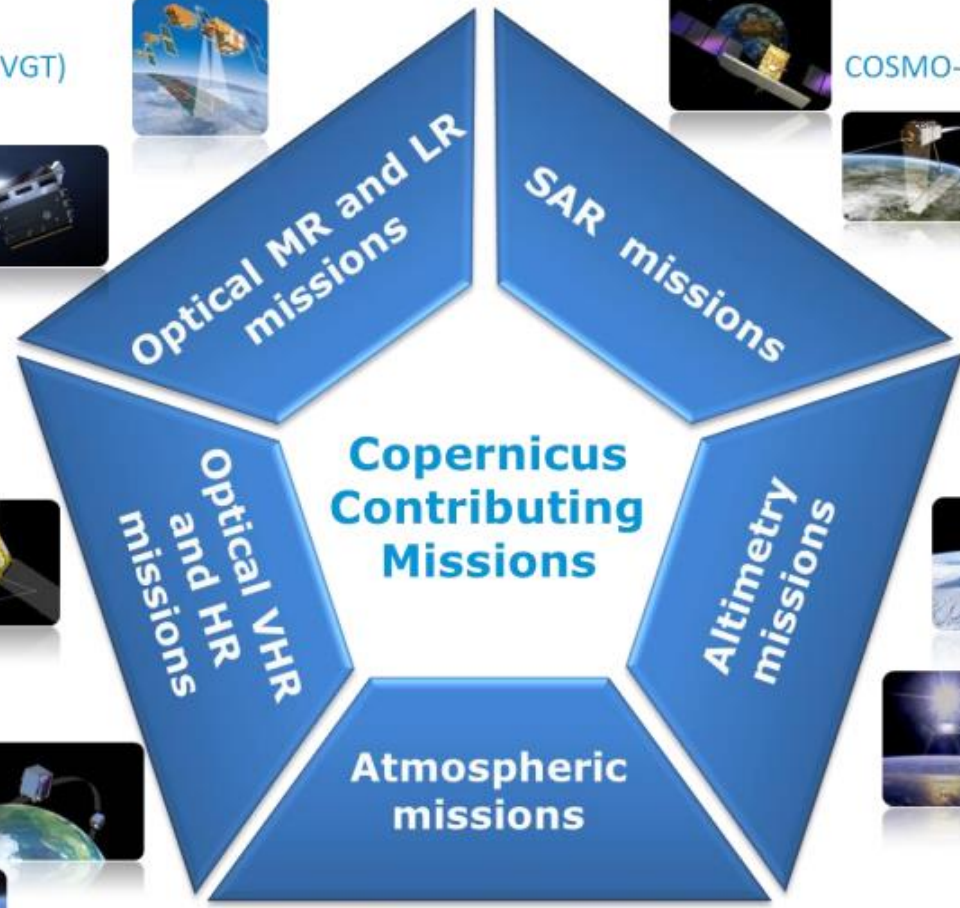




Space Component

THE CONTRIBUTING MISSIONS

This offer complements the SENTINELS



SPOT (VGT)



COSMO-SkyMed



TerraSAR-X
Tandem-X



Radarsat



Cryosat



Jason



CEMS – Aerial Component

Planes

Drones



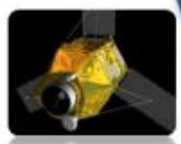
PROBA-V



DMC



Pléiades



Deimos-2



RapidEye



SPOT (HRS)



Atmospheric missions

MetOp



Meteosat 2nd Generation





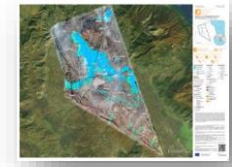

**Production
 Launch**



**Satellite
 Imagery Acquisition**




**Products
 Delivery**



➤ **To the Requester of the Activation**
 (e.g. National Focal Points in EU Member States)

**Quality
 Control**

Image analysis

➤ **In 2 to 10 hours**
 by the CEMS Mapping Service Providers
 (consortiums of private companies)



Products for Emergency Response

REFERENCE



Quick knowledge on the assets prior to the emergency

FIRST ESTIMATE



Fast assessment of most affected locations

DELINEATION



More detailed assessment of the event impact

GRADING



Damage grade, its spatial distribution and extent

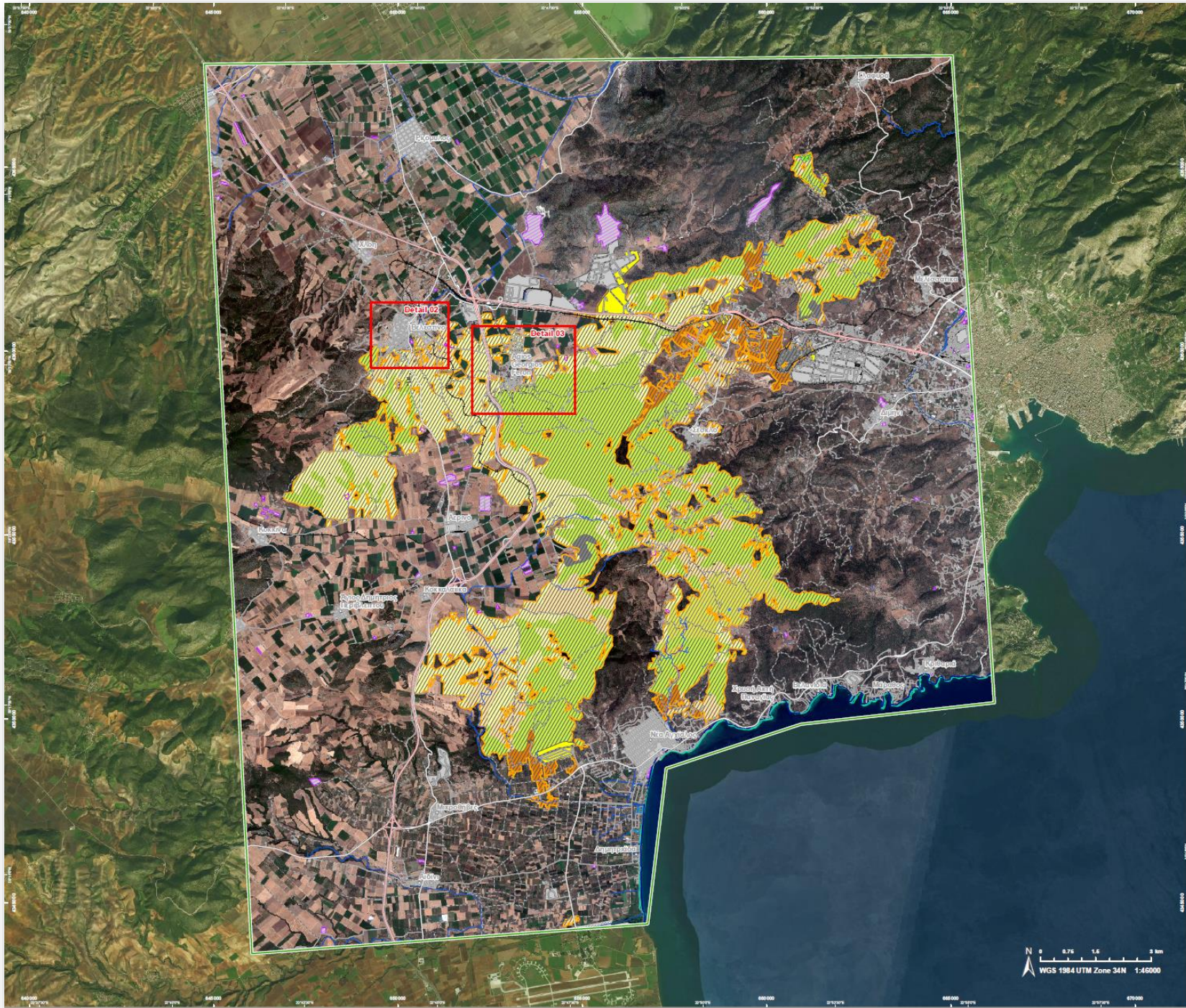
NEW

SITUATIONAL REPORTING

March 2023



- Centralize the information
 - Display information from the activation, but not only ...
 - Combine text, interactive maps, graphs, photographs, videos, swipe on pre/post-event satellite image, and more....
- Easy to access (one single webpage available online)
- Continuous update



SLIDE number: N/A
Int. Charter Act. ID: N/A
GDACS ID: N/A
Product version: 1

EMSR679 - A0101
Wildfire in Greece
AGIOSGEORGIOSEFERON

Situation as of 29/07/2023 09:30 UTC
Grading - Overview map 01



Burnt area 6,264.2 ha
Potentially affected population ~ 1300

Affected Built-up and Transports
Built-Up 164.2 ha
Road 1.3 km

- | | | |
|--|---|---|
| Crisis Information | Facilities Grading | Permanent crops |
| Burnt Area | Destroyed | Pastures |
| Built-Up Grading | Possibly damaged | Heterogeneous agricultural areas |
| Non-residential Building, Not analysed | Not Analysed | Forest |
| Residential Building, Possibly damaged | Main road, No visible damage | Shrub and/or herbaceous vegetation associations |
| Residential Building, Damaged | Track, No visible damage | Other |
| Residential Building, Not analysed | Local road, No visible damage | General Information |
| Non-residential Building, Possibly damaged | Road, Possibly damaged | Area of Interest |
| Non-residential Building, Damaged | Railway, No visible damage | Detail map |
| Non-residential Building, Destroyed | Highway, No visible damage | Placenames |
| | Transportation Grading | Hydrography |
| | Airfield and Helipport, No visible damage | Coastline |
| | Affected Land Use-Cover | River |
| | Arable land | Stream |
| | | Lake |
| | | Land Subject to Inundation |
| | | Open Water |

Event: On 26 July 2023 at 10:30 UTC, a wildfire took place in an agricultural area near Agios Georgios Feron village in Thessaly region, Greece. The fire is ongoing and it is burning forest and agricultural areas. Residents of the villages Falouri, Dimi, Melissata, Kribaria, Maratho, Vasilada, Panagia and Chrysi Ani were ordered to evacuate. The industrial area of the city of Volos was also evacuated. According to the Hellenic Fire Service, 72 firefighters are currently operating in the area, assisted by 1 ground force group, 38 vehicles, 5 water-bombing aircraft and 2 helicopters. Volunteers and municipality staff are helping out during the emergency as well. Copernicus EMS Rapid Mapping is requested to provide initial rough estimation, wildfire extent, and the damage assessment emergency mapping. Copernicus EMS Rapid Mapping is requested to provide an initial rough estimation, wildfire extent, and damage assessment emergency mapping.

Data sources and analysis: Pre-event image: ESRI World Imagery (2022) (acquired on 07/06/2022, resolution 3.46 m). Post-event image: GeoEye © Maxar Technologies, Inc. (2023), (acquired on 29/07/2023 at 09:30 UTC, resolution 2.0 m). This image is used as background image. All images are provided under COPERNICUS by the European Union and ESA, at rights reserved.

Base vector layers: OpenStreetMap © OpenStreetMap contributors (2023), Wikimedia.org, Seachem 2018, Copie Land Cover (GLC) 2018, EuroBirdsMap 2017 © EuroGeographics, Inset maps: JRC 2019, GISC 2019 © EuroGeographics, Natura Earth 2012, COM River DB © EURLRC2007, Seachem 2018.

Population data: GHS Population (Geo © European Commission, 2022) (https://ghs.jrc.ec.europa.eu/ghs_popup2022.php)

The thematic layer has been derived from post-event satellite image using a semi-automatic approach.

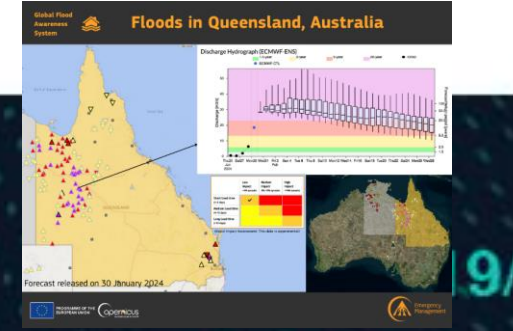
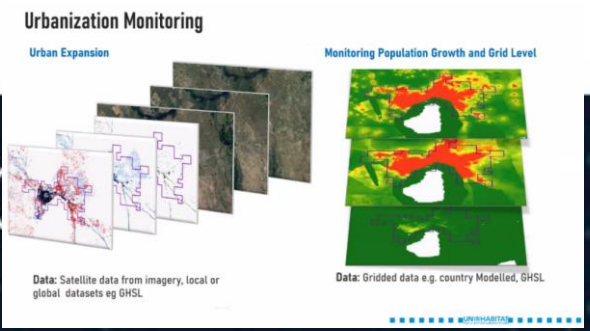
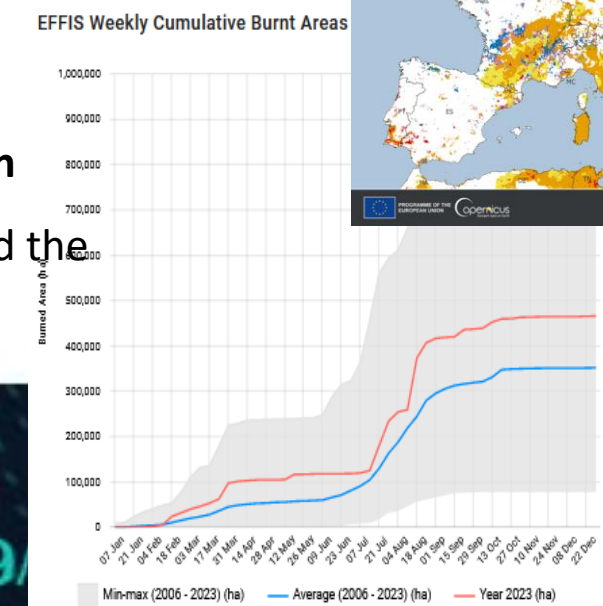
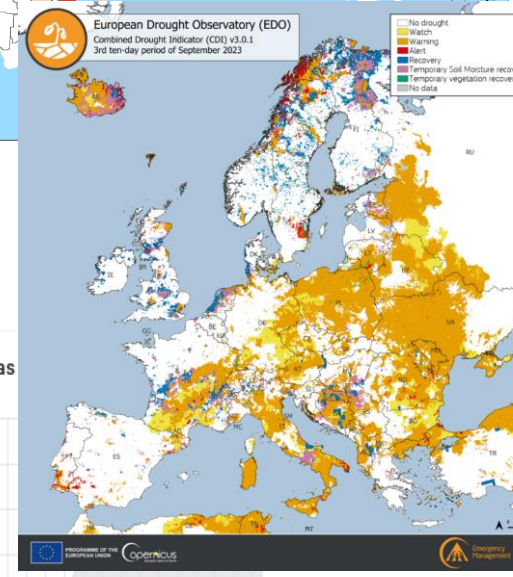
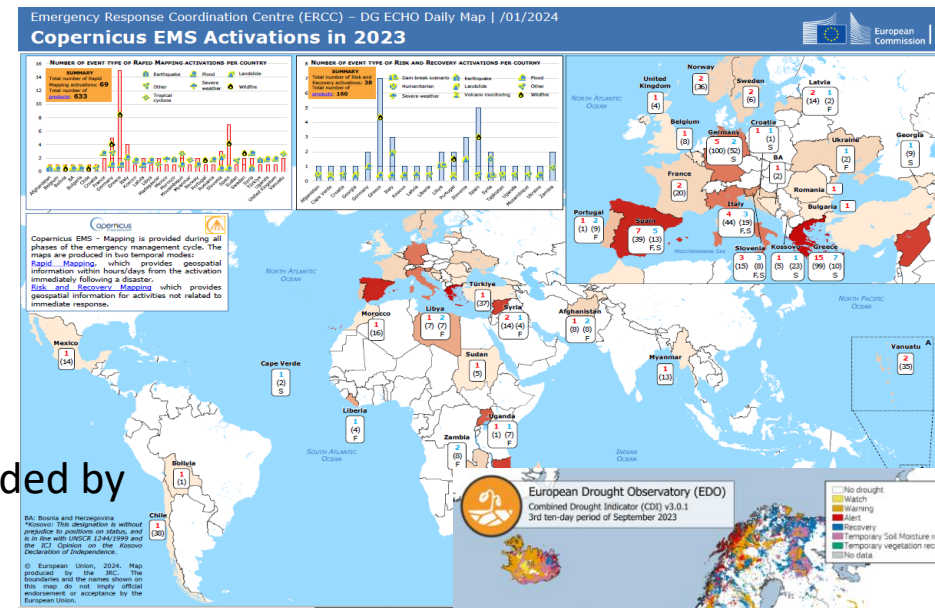
Disclaimer: Full disclaimer and other helpful information available in the online manual: <https://emergency.copernicus.eu/maoing/emergency-manual-rapid-mapping/products>.

Map produced by GMV released by e-GEOS on the 29/07/2023.
Details on this activation and service conditions available through the QR code or at the link: <https://emergency.copernicus.eu/EMSR679>



CEMS in numbers 2023

- **69** On-Demand mapping activations
- **10 analytical reports** on severe droughts in Europe, Africa, and Asia
- **2023 wildfire season** in Europe was the **3rd worst** since data started being recorded by the CEMS European Forest Fire Information System (EFFIS)
- CEMS Flood Early Warning and Monitoring **evolution with the increase in spatial resolution** for EFAS (v5.0) and GloFAS (v4.0)
- Integration of **aerial component** for the On-Demand Mapping
- Improvement of the exposure mapping in 2023 with a **major release of Global Human Settlement (GHS) data**, including new products such as the built-up volume layers and the building typology layer

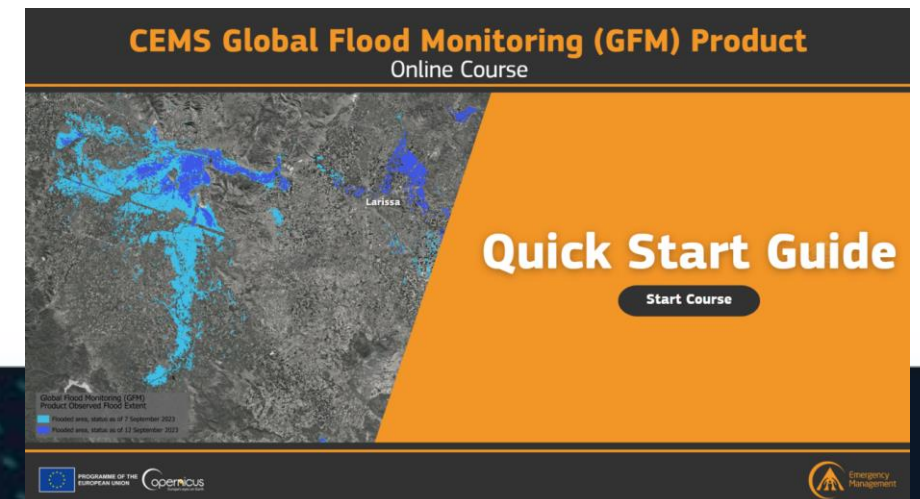
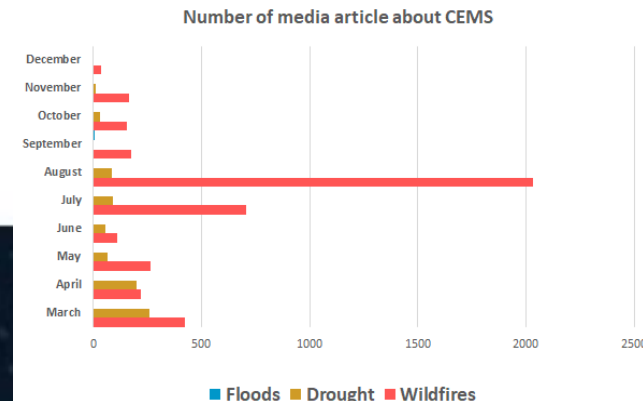
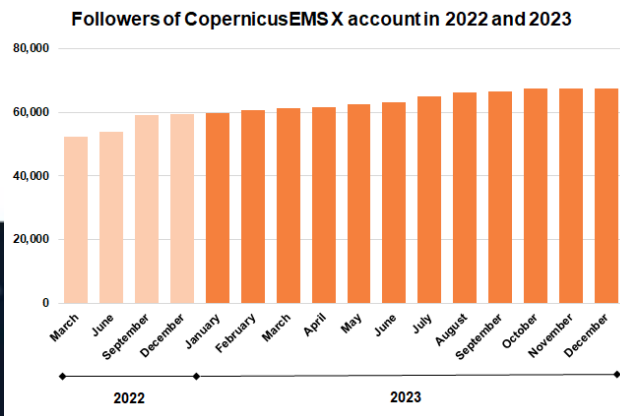


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Expo

CEMS User Uptake & Communication 2023


- **CEMS Annual Conference** on 13 October 2023
- 8 CEMS specific **user workshops** covering all CEMS components
- More than **70 events** in 2023 with CEMS participation/presentation
- 10 **trainings** on specific CEMS components
- High number of **media articles** in particular for forest fires and droughts in 2023
- High visibility on **social media** and increase in **website visitors** (22%)



19/03/2024 - Brussels Expo



Copernicus Emergency Management Service

 emergency.copernicus.eu

 @CopernicusEMS



The background is a satellite map showing a river valley with urban areas and agricultural fields. A circular diagram on the left illustrates the Copernicus Emergency Management Service cycle: Preparedness, Response, Recovery, and Preparedness. Below this, a horizontal bar contains seven icons representing different services: Rapid Mapping, Risk & Recovery Mapping, Floods, Fires, Droughts, Population, and Built-up areas.

Preparedness
Response
Recovery

Rapid Mapping **Risk & Recovery Mapping** **Floods** **Fires** **Droughts** **Population** **Built-up areas**



PROGRAMME OF THE
EUROPEAN UNION