ERATOSTHENES Centre of Excellence (ECoE)

EXCELSIOR

ERATOSTHENES:
Excellence Research Centre for Earth Surveillance & Space-Based Monitoring of the Environment

1st virtual EXCELSIOR International Technical Workshop

15 July 2020

Copernicus SEA

@excelsior2020eu

Denis Bruckert & Marcello Moretti

European Union Satellite Centre

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CONSORTIUM

Cyprus University of Technology · DLR · TROPOS · DEC

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The EU SatCen

Who we are

- Agency of the EU Council
- HQ in Torrejón de Ardoz (ES)
- Primary User of EO Satellite Data
- Role of Service Provider
- GEOINT operational instrument

Our Mission

To support the decision making and actions of the EU in the field of the Common Foreign and Security Policy by providing products and services resulting from the exploitation of relevant space assets and collateral data

Our Current Engagements

Operations

Regional Conflicts

Piracy

Migration

Proliferation WMD

Humanitarian Aid

Sensors

EU Sensors
Sentinel-1
Sentinel-2
Sentinel-3
Governmental
Hélios II
COSMO SkyMed
SARLupe
Commercial
TerraSAR-X
Kompsat 3
TerraBella
Eros A-B
Deimos 2
Deimos 1
Spot 6-7
Spot 5
RapidEye
COSMO SkyMed
Pleiades
GeoEye
WV 1
WV 2
WV 3
WV 4

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Main Analysis Domains

Security Surveillance

- *Treaty verification*
- *Border control*
- *Global terrorism*
- *Piracy and coastal analysis*

Contingency Planning

- *Support to evacuation operations*
- *Rapid mapping*

Humanitarian Aid

- *Refugee camps / IDPs*
- *State failure and insurgency*
- *Man-made and natural disasters*

Critical Infrastructure

- *Elements-at-risk mapping*
- *Threat analysis and Vulnerability Assessment*

Military Capabilities

- *Analysis of military activity / deployed forces*
- *Battle Damage Assessment*

Weapons of Mass Destruction

- *Arms control and non-proliferation*
- *Chemical weapons*

Introduction – Copernicus Services

Copernicus Services

- Atmosphere Monitoring
- Maritime Environment Monitoring
- Land Monitoring
- Climate Change
- Emergency Management
- Security

Security:

- Border Surveillance
  - FRONTEX
  - SatCen
  - EMSA
- Maritime Surveillance
  - EMSA
- Support to EU External Action
  - SatCen

Copernicus – Security Services

- Synergies (services & agencies).
- Common view on development.
- Share future projection.
- User Access to services.

Involvement in Copernicus

	User	Provider	Involvement in Research and Innovation
Copernicus	Data Infrastructure	Support to EU External Action Border Surveillance (via FRONTEX)	Service Evolution for FRONTEX (Border Surveillance) and SEA (Support to EU External Action) Long term evolution taken into account in next MFF Expression of needs for Access to Data, New Sensors and New Processing Capabilities

Copernicus
Europe's eyes on Earth

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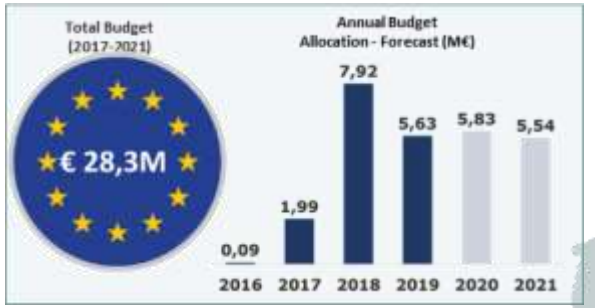
From R&I Projects to Operations

Introduction – Copernicus SEA

Security

The **EU Satellite Centre** is the Copernicus Entrusted Entity for the implementation of the Support to EU External Action Services.

Operations as from May 2017



17 October 2016
Ms. Lowri Evans (Director General – DG-GROW) and Mr. Pascal Legai (Executive Director – SATCEN) sign the Delegation Agreement

https://sea.security.copernicus.eu/

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Security

Application domains

The Copernicus SEA service finds application in a number of domains related to European policies in the external action field. These domains provide the context for specific use cases showing how the products can service various institutional levels to support strategic decision-making and planning, as well as operations and intervention.

Support to humanitarian aid

Rule of law

Stability and resilience for development

Security of EU citizens abroad

Crisis, conflict and critical assets

Cultural heritage

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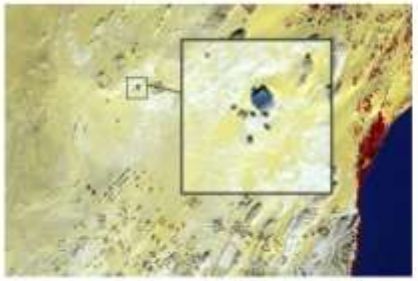
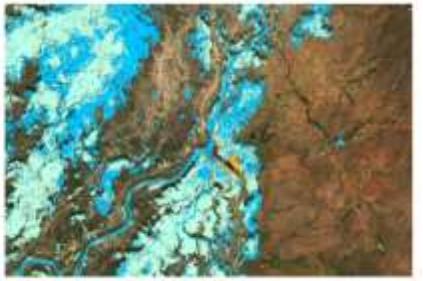
The Copernicus SEA Categories

The Copernicus SEA is conceived as a responsive, customizable service, in which user needs are evaluated by an expert team which recommends a solution based on geoinformation products. The products showcased in the following pages represent some common categories of user needs, and provide insight into the range and flexibility of the service's capabilities.


Activity Report

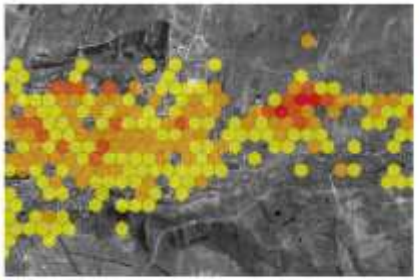
Support to Evacuation Plan

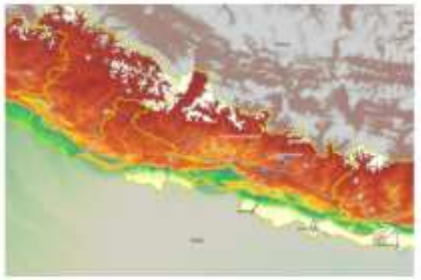

Road Network Status Assessment

Camp Analysis

Critical Infrastructure Analysis

Non-EU Border Map


Conflict Damage Assessment


Crisis Situation Picture

Reference Map

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EXAMPLES

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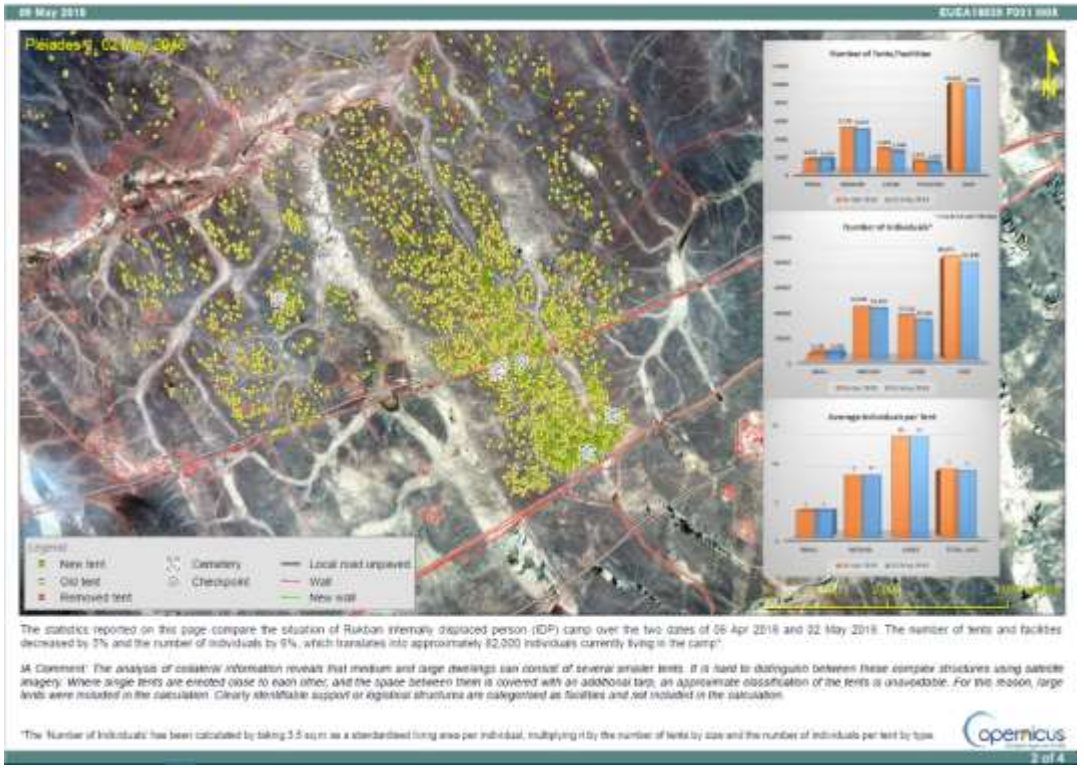
Intelligence Analysis

First Impression Report

MONITORING OF MIGRATION ACTIVITIES

IDPs CAMPS ANALYSIS AND MONITORING



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Non – EU Border Monitoring

Activity Report

Intelligence Analysis

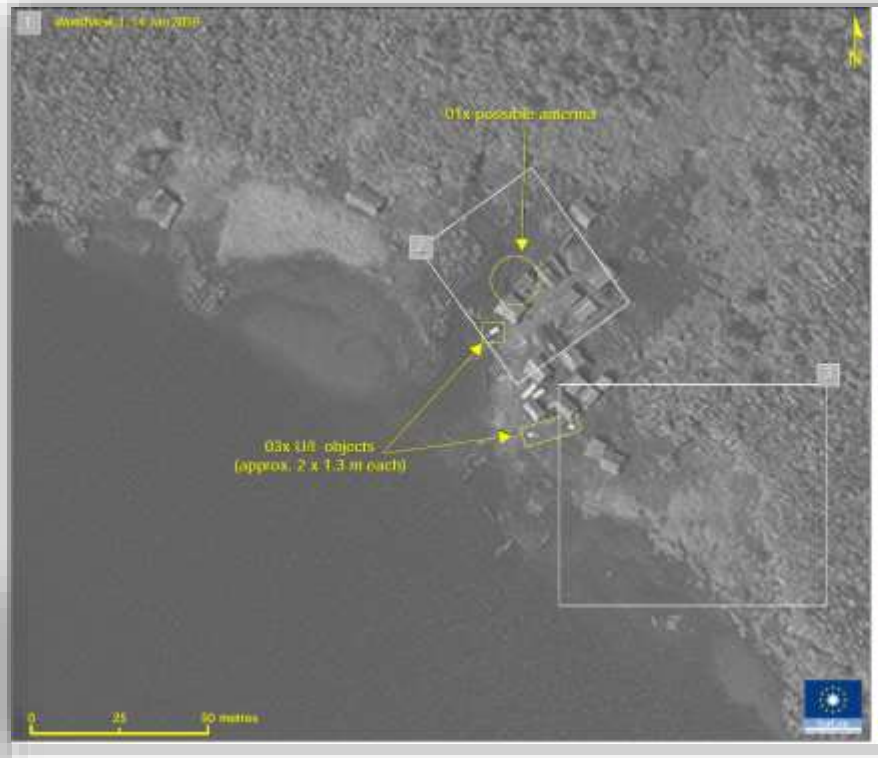
Non EU borders

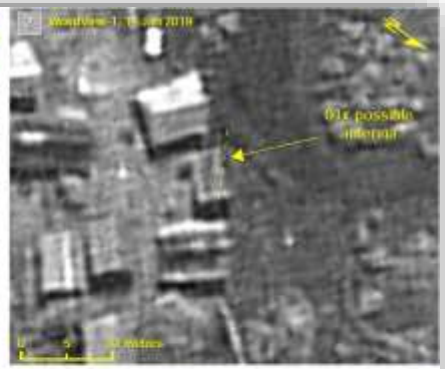
Security

Activity Report

Intelligence Analysis

Law enforcement





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Activity Analysis BN

Cultural Heritage. Keriya Mosque destruction , Xinjian,CHINA

Activity Report

Intelligence Analysis

Cultural Heritage

20 Nov 2002

09 Apr 2019

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Security analysis of Italian Civil protection PMA

Support activities conducted by the EU civil protection mechanism

Activity Report

Intelligence Analysis

Post event:
Security situation
Damage assessment

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Geospatial support for the preparation of evacuation plans

Support to evacuation plans

Thematic maps to support civilian operations

Evacuation route between RP1 and Khartoum International Airport

Starting point: **RP1 on 33rd Avenue East**
Destination: **Khartoum International Airport**
Total Distance: **1.7 km**
Estimated minimum driving time: **5 minutes**

1. Head east on 33th Avenue East (40 m)
2. Turn left at the 1st cross street (150 m)
3. Turn right onto Africa Road (120 m)
4. At the roundabout, take the 1st exit onto Africa Road
5. Continue on Africa Road for 860 m and keep left
6. Turn left onto Airport Departure Street (540 m)
7. Destination is in front.

Starting point: **Khartoum International Airport**
Destination: **RP1 on 33rd Avenue East**
Total Distance: **2.2 km**
Estimated minimum driving time: **8 minutes**

1. Head northwest (240 m)
2. Turn left onto Africa Road (530 m)
3. Turn right onto Africa Road (670 m)
4. Make a turn onto Africa Road (270 m)
5. Turn right onto Avenue 39 (180 m)
6. Turn right onto 33th Avenue East (270 m)
9. Destination is on the left.

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PILOT PROJECT – Illegal Waste

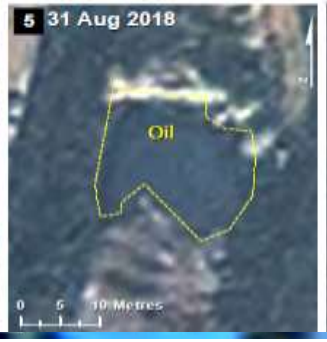
Security

Waste Types - Examples

This page depicts a detail of Area 1.

In the inset from 1 to 5 show a visual example of the four waste types and soil identified during the monitoring period has been reported.

The image shows a ground view of the "storage or hazardous waste disposal area" where is possible to identify the four main types of waste material.



Area 1 Area 2 Area 3

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User Community

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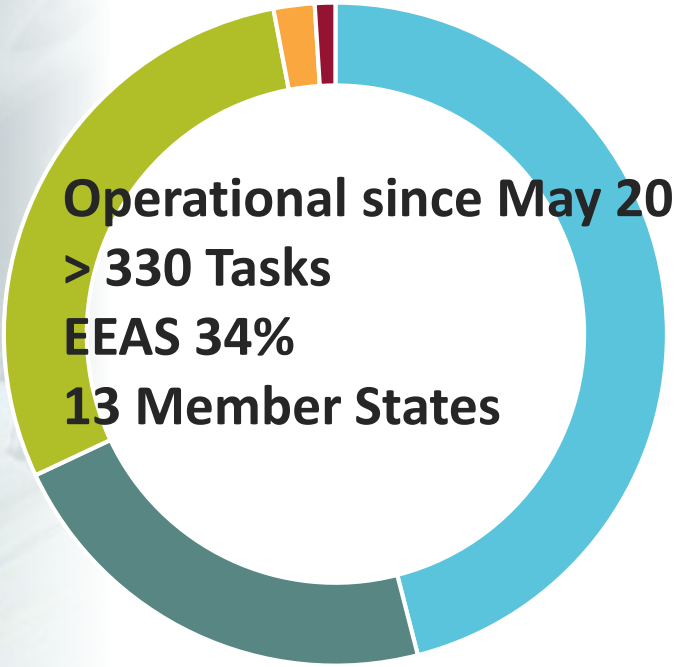

Operational since May 2017
> 330 Tasks
EEAS 34%
13 Member States

Extending the User Base

(in coordination with EC)

Increased interest of use
in Peacekeeping Missions

User Workshops
Awareness Campaign to Member States

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Copernicus SEA Service Evolution

Security

Copernicus SEA Service Evolution
The Service Evolution activity aims at improving all components of the service by implementing projects for **direct-to-operations** actions.

Better User Experience
e.g Web GIS product delivery platform for visualization on-line

New Products and Services
e.g. Environmental Crime
Pilot Project for the to identify illegal waste management activities

Production Improvements
e.g. New Product templates
New templates for SatCen product to ease production and improve user experience

State of the Art
e.g. Hovering Horizon Bimonthly publication with up-to-date R&D results and upcoming events.

Pilot Projects
Operational Demonstrations on controlled environment with the participation of users.

Involvement of EU Space Industry through ITT

https://sea.security.copernicus.eu/news-events/

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SEA Service Management Infrastructure

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Task Building

Entry point to the Service for the end-users, allowing placement and tracking of task requests

Business Intelligence

Monitoring, analysis and forecast of Service performance

Document Management

Organization, discovery and exchange of documents

Workflow Management

Management and tracking of task execution

Data Storage

Repository of all geo and non-geo data

Product Delivery

Perpectives

Security

- **Copernicus SEA Infrastructure** beginning 2021
- **Enlargement of User's community** (new users from Police forces, Fisheries, Commissions DGs, Environment compliance, etc)
- Fulfilment of a **wider range of needs** (pilot services, enlargement of portfolio),
- Preparing future engagements (Copernicus 2.0).
- **Synergies with EU Space Programme** (Galileo, GovsatCom, etc) and **Inter-Agencies Cooperation (SatCen, EMSA, FRONTEX, EFCA)**
- Copernicus SEA provides opportunities to support the **Security in the Eastern Med area.**

SatCen

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THANK YOU FOR YOUR ATTENTION

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Proposal acronym: EXCELSIOR

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