

Earth Observation Programmes Update

11 December 2018

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Our Mission



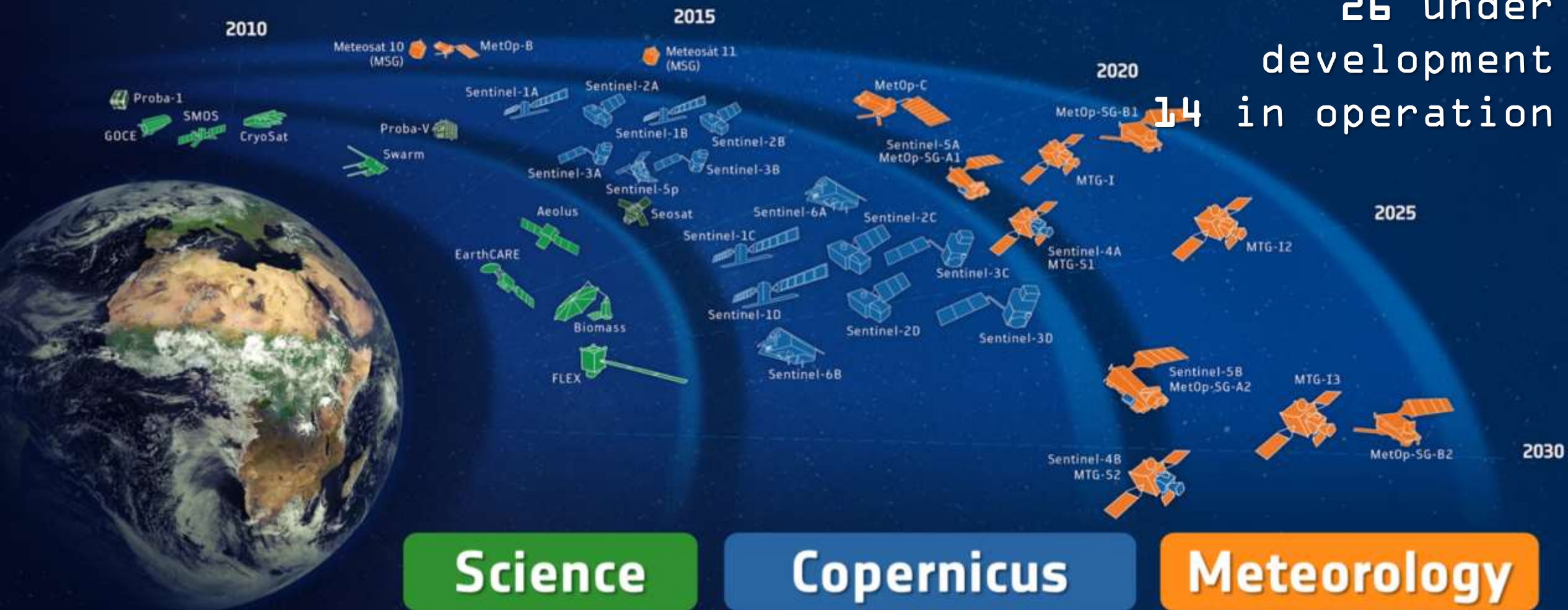
Develop world class Earth
Taking the
Observation systems
addressing scientific &
Pulse of
societal challenges
with European and global
our Planet
partners



ESA-DEVELOPED EARTH OBSERVATION MISSIONS



Satellites
26 under
development
n operation



The Big Data Revolution

Copernicus is the largest producer of EO data in the world



Copernicus Sentinel Status



S-1



Radar

A

3 Apr. 2014

B

25 Apr. 2016

C

2022/23

D

> 2022/23

S-2



High Res.
Optical

A

23 Jun. 2015

B

6 Mar. 2017

C

2022/23

D

> 2022/23

S-3



Medium
Res. Optical
& Altimetry

A

16 Feb. 2016

B

25 Apr. 2018

C

2023

D

> 2023

S-4



Atmospheric
Chemistry
(GEO)

A

2022

B

2027

S-5P



Atmospheric
Chemistry
(LEO)

A

13 Oct. 2017

S-5



Atmospheric
Chemistry
(LEO)

A

2021

B

2027

C

> 2027

S-6



Altimetry

A

2020

B

2025



Reference Web Sites & Public Dashboards



<https://mundiwebservices.com/>

<https://mundiwebservices.com/help/dashboard>

<https://mundiwebservices.com/help/monitoring>



<https://www.onda-dias.eu/>

<https://dashboard.onda-dias.eu/#/dashboard>



<https://sobloo.eu/>

<https://dashboard.sobloo.eu>



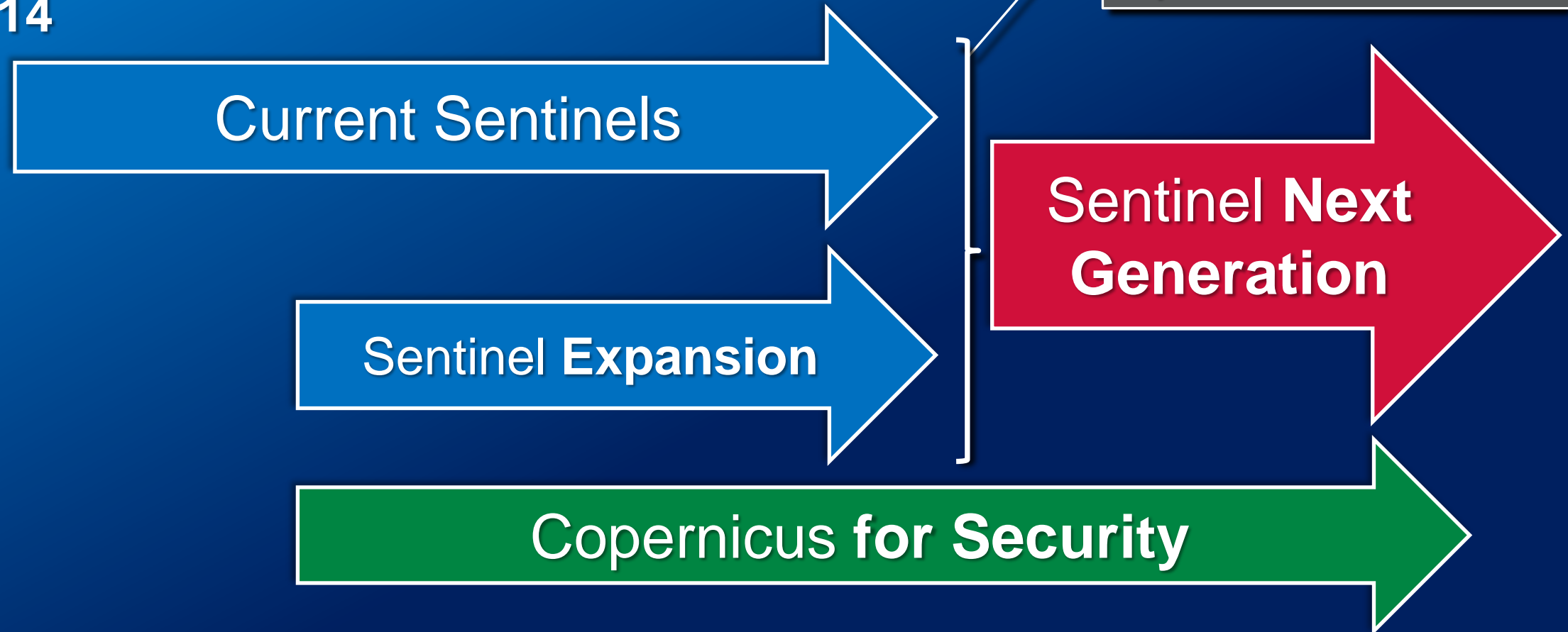
<https://creodias.eu/>

<https://creodias.eu/public-reporting-dashboards>

Copernicus Space Component Evolution



2014



→ EO SCIENCE FOR SOCIETY

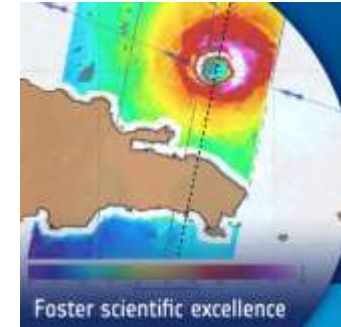
MED 2018 @ ESRIN

Yves-Louis Desnos, Olivier Arino, Gordon Campbell, Diego Fernandez,
Guenther Landgraf, et al.

Data Applications Division

OBJECTIVES

- Foster scientific excellence
- Pioneer new EO applications
- Stimulate downstream industry growth
- Support international responses to global societal challenges
- Develop platforms technical capabilities
- Build network of resources



Scientific
Exploitation

EO Exploitation
Platforms

EO for Sustainable
Development

Public Sector
Applications

Industry Growth
New Partners

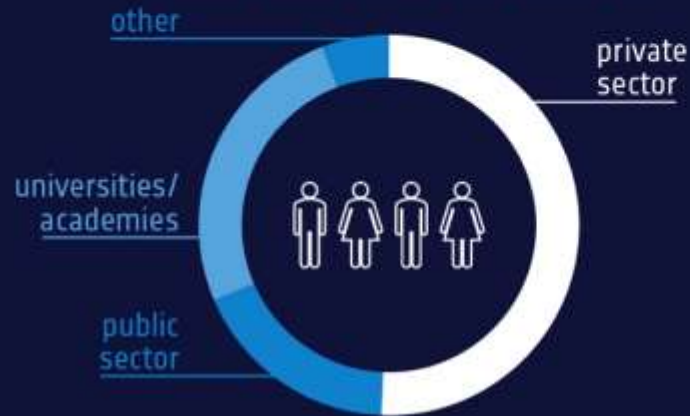
Federated Collaborative Platforms

New: Some 10% of the total budget will be assigned via **open calls** to support industry/users initiatives.

EOEP Block 4 dashboard



WHO WE WORK WITH



WHERE WE WORK

INNOVATION



43%

of EOEP contract address innovative new developments



OPEN CALL

36 industry led innovative projects per year

FOCUS ON SMES



40% of industrial contractors are SMEs

64% of all industrial spend with SMEs

PARTNERSHIPS



On average, each contract involves and

3.4 countries and **4.7** partners

EO Science for Society Open call for proposals



The graphic features a blue background with a glowing globe in the center, surrounded by a network of blue dots and lines. The ESA logo is in the top right corner. The text '→ OPEN CALL' is prominently displayed, followed by 'EO Science for Society permanent call for proposals.' At the bottom left, it says 'Build network of resources' and at the bottom right, '#EO4society'.

→ **OPEN CALL**
EO Science for Society
permanent call
for proposals.

Build network of resources

#EO4society

- Permanently open call
- Framework to rapidly respond to new innovative ideas from bidders.
- Submission deadline for the fourth batch of proposals:
1st January 2019

- Applications:
<http://emits.sso.esa.int/>





#EO4society – Consultations



Thematic Exploitation Platforms

A unique environment to cover different aspects of coastal environment.

→ COASTAL TEP



A unique set of tools to address the challenges of monitoring tectonic areas, earthquakes, volcanic eruptions and landslides

→ GEOHAZARDS TEP



Supporting sustainable food production from space

→ TEP FOOD SECURITY



The easier options for processing large volumes of EO data for the polar regions

→ POLAR TEP



Forestry remote sensing services for the academic and commercial sectors.

→ FORESTRY TEP



Ready-to-use data, innovative and actionable information generation supporting the realization of sustainable cities and communities.

→ URBAN TEP

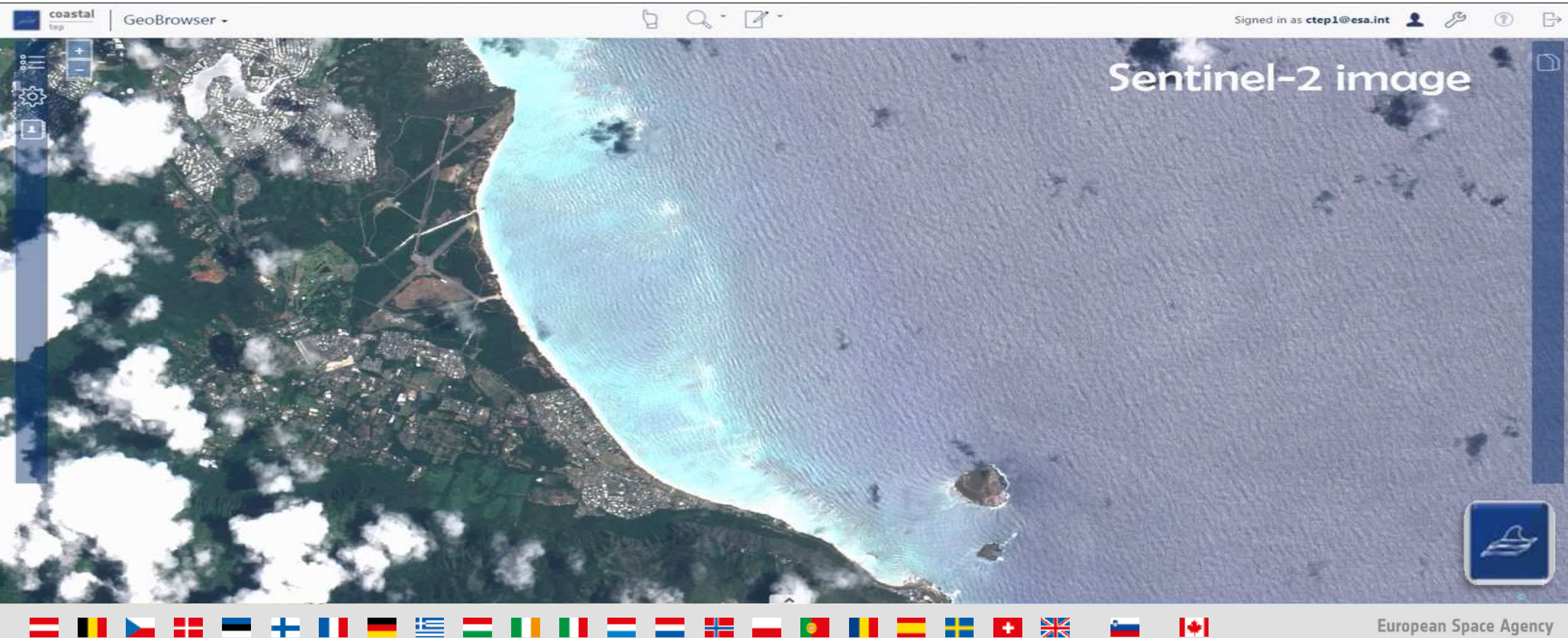


A powerful community platform to generate and share your own water information from earth observation solutions.

→ HYDROLOGY TEP



Satellite data can provide **bathymetry maps** over large areas in a very short time. The processing involved is mastered only by a handful of experts today. This service is available as a “contributed” processor in the Coastal TEP catalogue. All users are able to obtain **bathymetry results in their area of interest** with an easy interface.

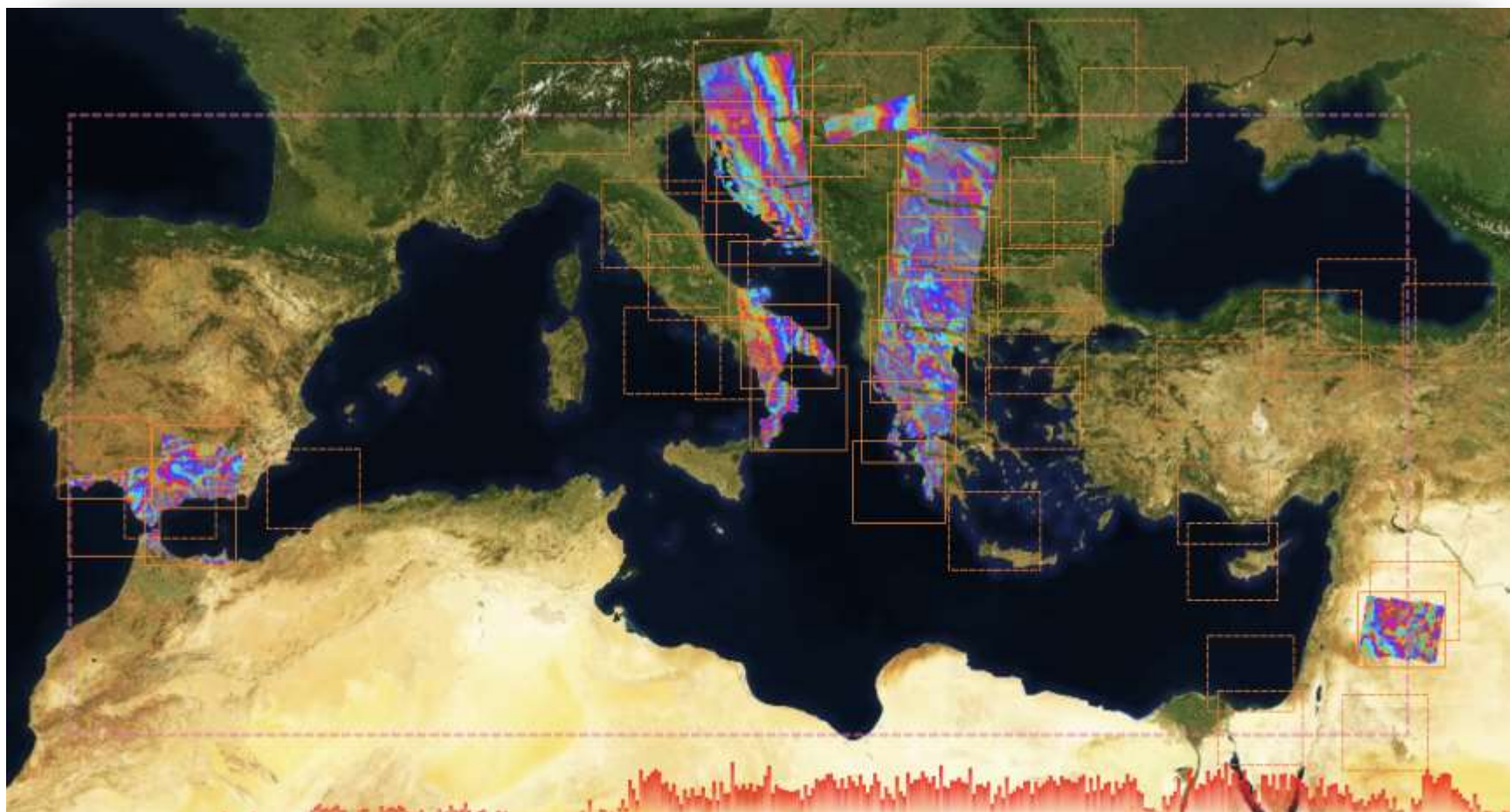


coastal tep | GeoBrowser -

Signed in as ctep1@esa.int

Sentinel-2 image

European Space Agency



The Geohazards platform is meant to allow users to easily exploit EO data resources by combining **fast data access, processing facilities** and flexibility for the **user's own data analysis**.

A unique set of tools to forge new applications globally and to address the challenges of monitoring **tectonic areas, earthquakes, volcanic eruptions and landslides**.



Higher-processing level baseline products of the spectral (optical data) or backscatter-related (SAR) properties over a defined period of time

Human settlements pattern in urban and rural environments

Data analytics

Urban TEP web-based platform allows users to effectively utilize **Earth Observation** (EO) imagery and existing auxiliary data (e.g., **geo-data, statistics**) to measure and assess **key properties of the urban environment** and monitor the past and future spatiotemporal **development of settlements.**



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Author | ESRIN | 18/10/2016 | Slide 19



European Space Agency

living planet symposium

MILAN
13–17 May
2019

UNDERSTANDING THE EARTH SYSTEM

SPACE 4.0 AND EARTH OBSERVATION

BENEFITS FOR A RESILIENT SOCIETY

PUBLIC AND PRIVATE SECTOR INTERACTIONS



Deadlines

Session Proposals
17 June 2018

Abstracts
11 November 2018

Registration
April 2019

lps19.esa.int

→ ATLANTIC FROM SPACE WORKSHOP

23–25 January 2019
National Oceanographic Center
Southampton, UK

www.esa.int

European Space Agency

Future EO-1 Block 4 content at Space19+

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Future EO - 1

Earth Science for Society

- Fostering scientific excellence (incl. ESA-EC/RTD Initiative)
- Innovating EO Applications
- Stimulating European downstream EO industry
- Developing platforms with AI
- Bring EO solutions to SDGs and climate adaptation & mitigation
- Consolidating the Regional Initiatives (focus user needs)

Platforms & AI



Earth System Science



Regional Initiatives



SDGs Indicators



Adaptation & Mitigation



→ MED 2018

11–12 December 2018
ESA–ESRIN | Frascati (Rome), Italy



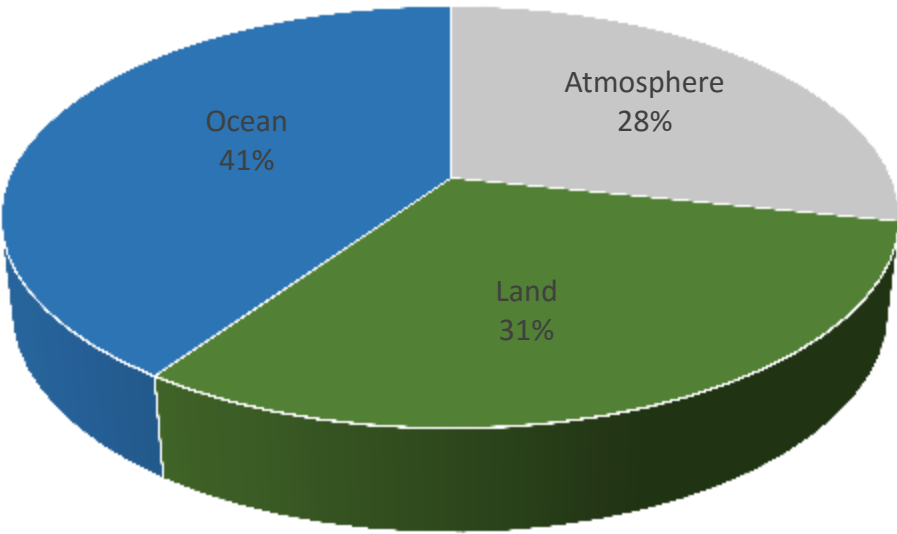
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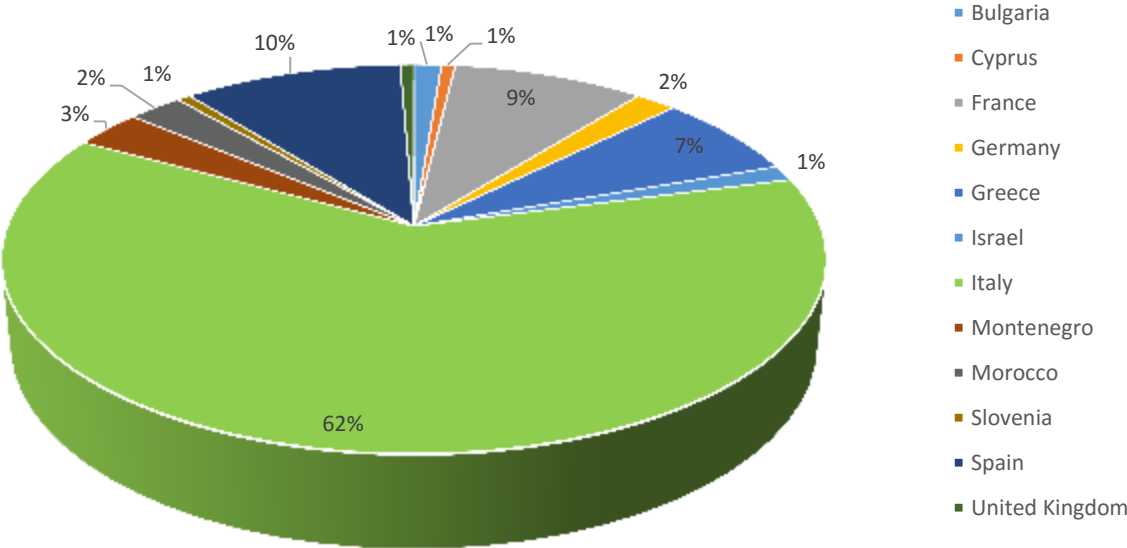
Review and discuss existing **scientific knowledge gaps** and **application priorities areas in the Mediterranean Basin where EO may contribute** for the next decade.

The outcome of the meeting and its conclusions will support the definition of a **number of scientific and applicative activities** in support of the **Mediterranean basin EO research and applications communities**.

Abstracts by Theme



160 Registered Participants



Day-1 11 December 2018

08:30:00	09:00:00	<i>Registration</i>
09:00:00	10:00:00	<i>Opening</i>
10:00:00	10:30:00	<i>Coffee break</i>
10:30:00	12:30:00	<i>Land 1</i>
12:30:00	13:30:00	<i>Lunch break</i>
13:30:00	15:30:00	<i>Land 2</i>
15:30:00	15:50:00	<i>Round Table land</i>
15:50:00	16:20:00	<i>Coffee break</i>
16:20:00	18:00:00	<i>Sea 1</i>
18:00:00	19:30:00	<i>Networking Ice-breaker & Posters</i>

Day-2 12 December 2018

09:00:00	10:40:00	<i>Sea 2</i>
10:40:00	11:00:00	<i>Round Table sea</i>
11:00:00	11:30:00	<i>Coffee break</i>
11:30:00	12:50:00	<i>Atmosphere 1</i>
12:50:00	13:50:00	<i>Lunch break</i>
13:50:00	14:30:00	<i>Atmosphere 2</i>
14:30:00	14:50:00	<i>Round Table atmosphere</i>
14:50:00	15:00:00	<i>Coffee Break</i>
15:00:00	16:00:00	<i>Requirements and activities in Cyprus, Montenegro and Morocco</i>
16:00:00	16:30:00	<i>Land, Sea and Atmosphere Conclusions</i>

Proposed Seed Questions



Chairs are free to improve them, based on the detailed discussions held during the session

Q1

Who are the **users** to be addressed and **how to involve them as stakeholders?**

Q2

What are the **key scientific gaps, application areas** and **data exploitation infrastructures** to be considered and addressed?

Q3

What large scientific/applicative **projects** can **support the initiative?**

Q4

Would a Mediterranean **Regional Office** help in **structuring, managing and supporting** the various ideas, projects and stakeholders?

