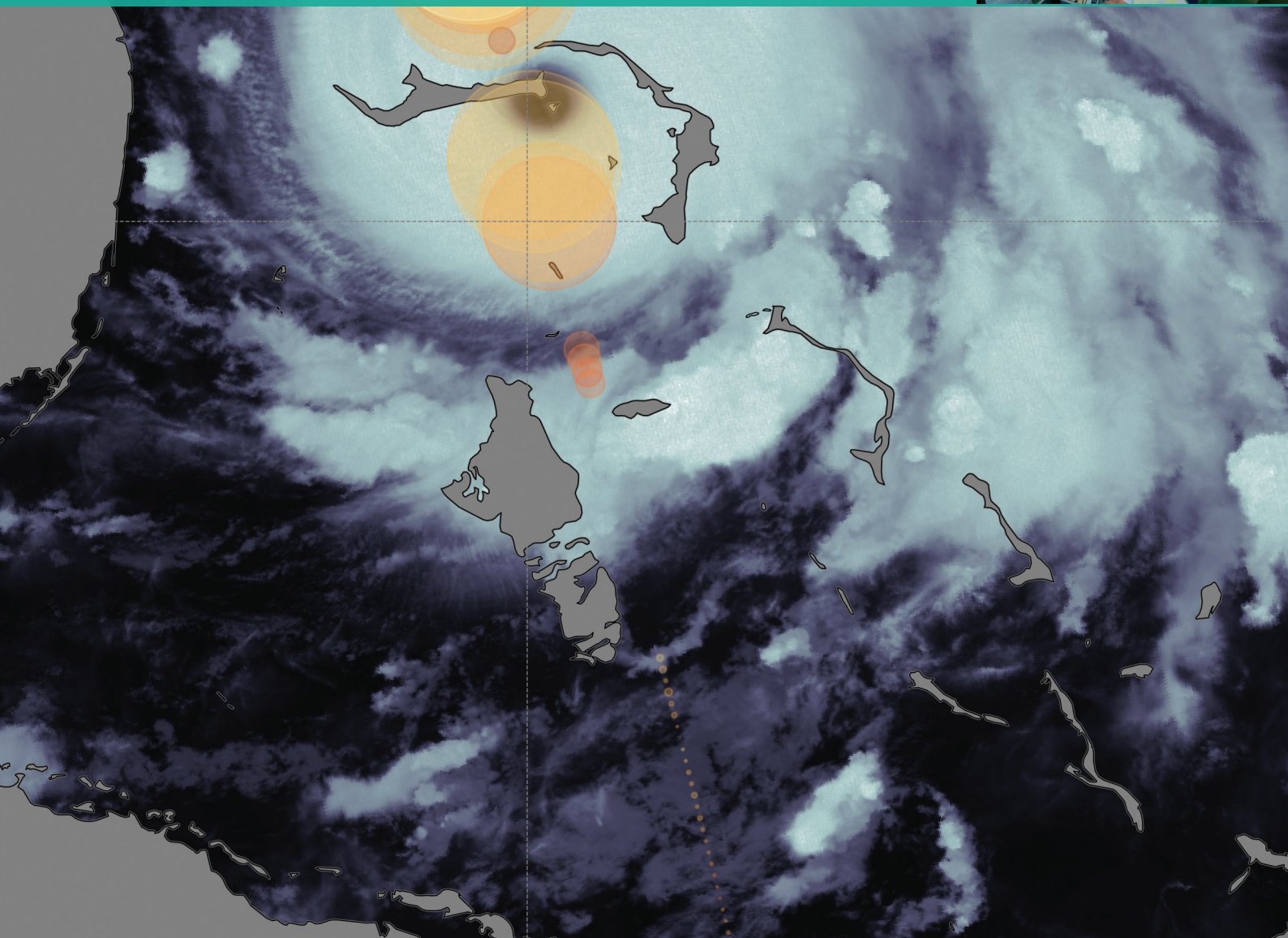


# COPERNICUS DATA USER UPTAKE

2019  
REPORT



# COPERNICUS AND EUMETSAT IN 2019

Data from the Copernicus programme offers a vast range of opportunities for operational agencies, researchers, businesses, and governments across Europe and around the world. Uptake of the data continues to grow and is supported at EUMETSAT by various data services, user support and training activities.

EUMETSAT is entrusted by the European Commission to operate satellite missions, deliver data, and provide support services to the Copernicus programme. EUMETSAT currently operates the Sentinel-3 mission with ESA and will soon operate the Sentinel-4, -5 and -6 missions. Jason-3 is operated in cooperation with CNES, NOAA and NASA. Additionally, data from EUMETSAT's own missions and data from third party missions is also made available to the Copernicus users and Copernicus Services.

A vast volume of data from these satellites is delivered to a wide variety of users all over the world, in operational timeframes. Data are delivered through a variety of mechanisms including the EUMETCast push service, and pull services online including the Copernicus Online Data Access (CODA) and data centre archive. As well as measurements from the satellites, the data provided include derived

marine and atmosphere geophysical products. These data also contribute to the Copernicus services and supply governments, businesses, scientists, and the public, with vital information about our planet. Adding to a chain that rapidly multiplies the value of the data.

Through communications, user support and training services, EUMETSAT is working with new and experienced users of Earth observation data, to maximise the impact and utility of the data made freely available through the Copernicus programme. The infographics and stories below aim to share how much data is being used, by whom, where, and for what in 2019. The year 2019 was the first year with both Sentinel-3A and B in full operational constellation, a reprocessing was completed for the Sentinel-3 surface topography mission, and preparations continued for the Sentinel-6 Michael Freilich mission, which is scheduled to launch in 2020.



98.8% Average timeliness for data delivery



53,357 TB Data delivered by EUMETCast push service



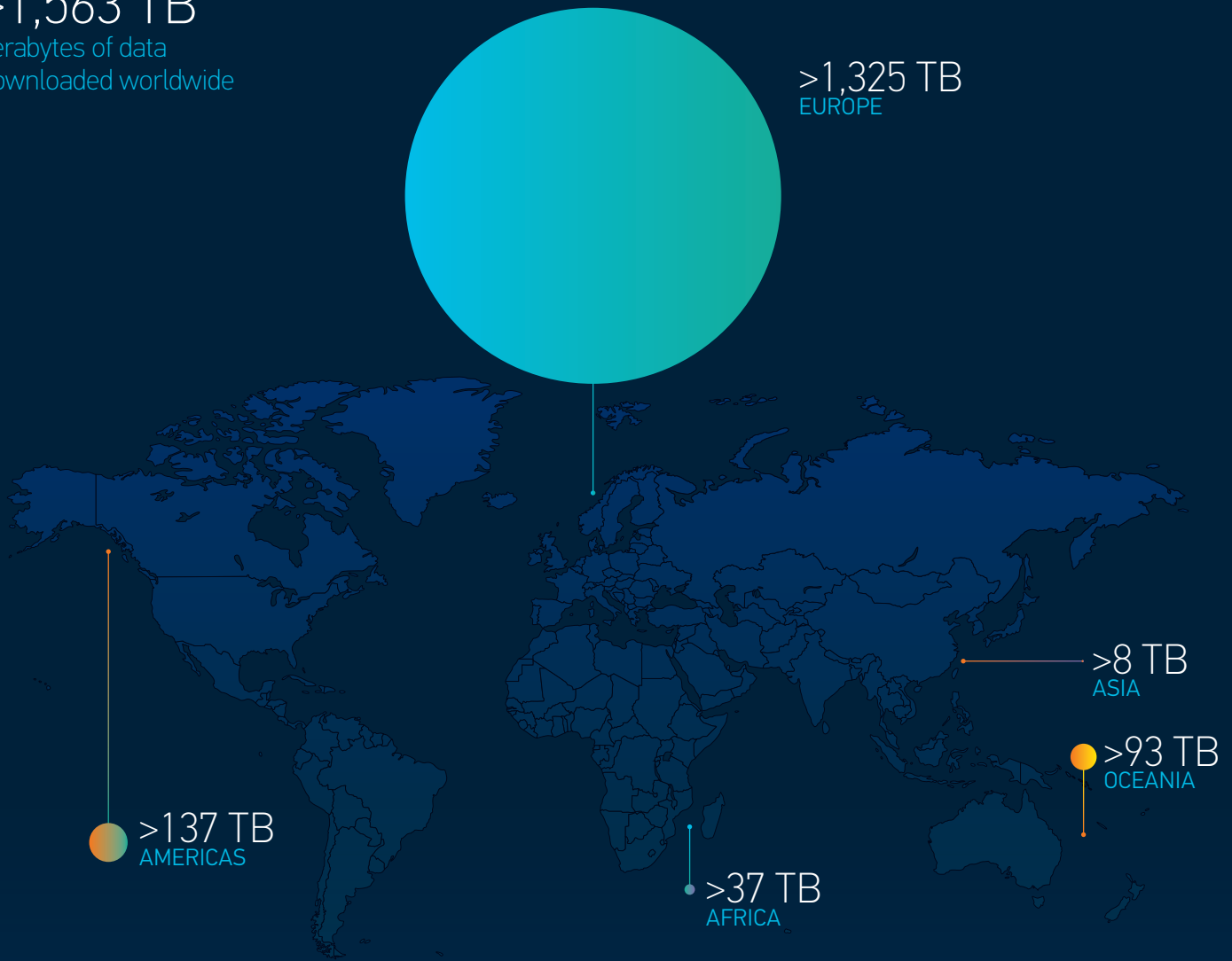
2,009 TB Total data downloaded from online pull services



>1,563 TB

Terabytes of data  
downloaded worldwide

>1,325 TB  
EUROPE

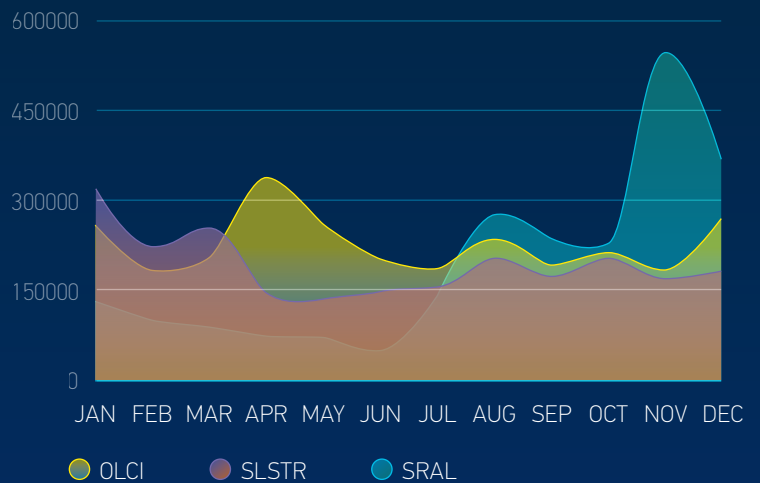


## NUMBER OF FILES DOWNLOADED FOR EACH SENSOR

### TOTAL FILES DOWNLOADED



Sentinel-3 has three instrument packages to observe ocean and land colour (OLCI), ocean and land temperature (SLSTR), and ocean surface topography (SRAL). Peaks in downloads typically correspond with enhanced use around events and during reprocessing campaigns by downstream providers such as the Copernicus Services.



# HELPING STARTUPS GROW

## USER STORY

Deep Blue Globe (DBG) is a startup developing Earth observation and artificial intelligence-based solutions for a sustainable maritime industry. DBG won the first Copernicus marine hackathon organised by EUMETSAT and was a recipient of funding from EUMETSAT's Copernicus Collaborative Exchange scheme where representatives worked with scientists at Plymouth Marine Laboratory to develop an application of Sentinel-3 altimetry data.



“ We are a company strongly driven by sustainability. ”

DEEP BLUE GLOBE

The free and open provision of Copernicus data, as well as the variety of user support initiatives across the programme, has helped many startups to grow new business ideas.

The Sentinel missions observe key environmental parameters that affect many industries, such as fishing and shipping, and represent key indicators of success in meeting sustainable development goals. Innovative data science, multiple data sources and cloud computing often need to be combined to provide information to solve challenges faced.

## THE CHALLENGE

To harness the potential of Copernicus data for a range of maritime challenges including reducing fuel consumption and CO<sub>2</sub> emissions, improving safety

at sea, tsunami verification, identification of sustainable fishing grounds to avoid overfishing, and an artificial intelligence-based marine litter aggregation forecast service.

## DATA ACCESS

DBG accesses a wide range of data via Copernicus Online Data Access and has been an early adopter of the WEKEO DIAS. This supplements further data from the Copernicus Marine Environment Monitoring Service (CMEMS).

## PROCESS

DBG design customised processing workflows for its projects. Data are ingested in to a variety of processors that use artificial intelligence methods.

## DISTRIBUTION

Outcomes are delivered to partner stakeholders in industry in line with their needs – this has included web application services and REST APIs.

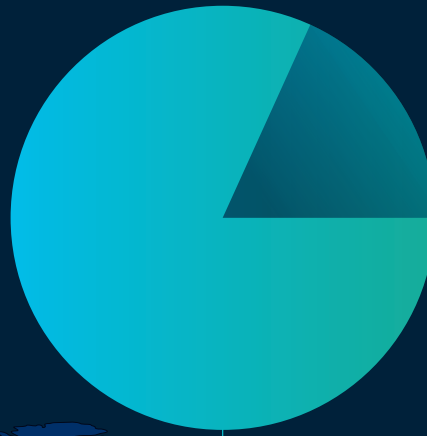
## VALUE

Leveraging Copernicus data to prove that sustainable businesses can be developed around them and that those businesses can be profitable while keeping the focus on helping people to accomplish the sustainable development goals.



# 3,617

Worldwide Users  
(institutions and individuals)



2,245  
EUROPE

1,836  
EUROPEAN UNION

409  
REST OF EUROPE

### EUROPEAN UNION

ITALY	299
GERMANY	275
FRANCE	259
SPAIN	171
GREECE	129
POLAND	106
NETHERLANDS	86
PORTUGAL	67
BELGIUM	66
DENMARK	46
OTHER	332



## USER SECTORS



- PRIVATE INDIVIDUAL 33.50%
- NATIONAL INSTITUTION 20.56%
- RESEARCHER 16.25%
- EDUCATION 14.29%
- COMMERCIAL SME 9.55%
- COMMERCIAL NON-SME 4.00%
- INTERNATIONAL ORGANISATION 1.85%

# FLEXIBLE ACCESS TO DATA

## USER STORY

Leveraging its expertise in ocean colour, the team at CSIR contributes to a number of national and pan-African projects including GMES&Africa. CSIR is a member of the Sentinel-3 Validation Team and collaborated with EUMETSAT on an African Expert Exchange in 2017, and a co-organised training course in 2019.



[We are] empowering marine industry to make informed decisions based on environmental information.

CSIR MARINE EARTH  
OBSERVATION GROUP



With multiple satellites and instruments collecting information, and a variety of data dissemination platforms, the Copernicus programme supports decision making in government and industry.

Multiple data access services including EUMETCast and online services (like EUMETSAT's Copernicus Online Data Access (CODA)) provide flexibility and reliability, allowing intermediate users to develop downstream processing chains of their own, delivering regionalised added-value products to a diverse range of end users.

## THE CHALLENGE

Help aquaculture and fisheries sectors manage water quality-related issues and meet national objectives for growing the blue economy.

## DATA ACCESS

Operational delivery of the data through CODA and EUMETCast systems provides the input for a range of added-value products.

## PROCESS

Taking advantage of the optimal spatial and spectral information from OLCI, the CSIR team developed regional indicators of harmful algal blooms, supplemented by information on the physical environment through derived fronts from SLSTR.

## DISTRIBUTION

Products are delivered through different mechanisms requested by the user communities: web support tools for government managers, whatsapp for artisanal fishers, emails for aquaculture farms, and tumblr to provide interesting new cases and examples of products.

## VALUE

Decision support - empowering marine industry to make informed decisions based on relevant environmental information.





1,288 Active users  
each month



562 Sentinel-3 users  
from EUMETCast



1,556 WEkEO  
users



21,375 YouTube  
views



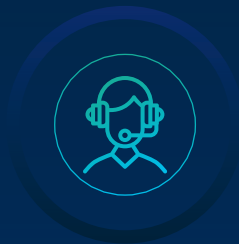
922,496 Twitter  
impressions



13,559 Website  
views



404 Users trained  
to date



43 Help desk  
queries answered



54 New scientific publications  
using Sentinel-3 data

# USER OUTREACH

Outreach activities and events are important channels for engaging with our users. Through these activities we are able to inform and educate about the Copernicus programme and to challenge those who will use the data to identify innovative application areas.

## WEKEO-FOCUSED ACTIVITIES



**EGU** 7-12 April  
Vienna, Austria

**EYES ON  
EARTH  
ROADSHOW** 12-13 June  
Darmstadt, Germany  
24-25 September  
Rotterdam, Netherlands  
3-4 October  
Tallinn, Estonia

**HACKATHON  
& CLIMATHON** 26-27 October  
Toulouse, France

## EYES ON EARTH ROADSHOW, DARMSTADT



3,115,991 Twitter impressions



140 Participants



50+ Breakthrough Ideas



200 Satellite technologies and applications



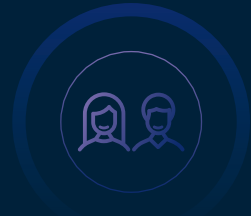


## COPERNICUS OCEANHACK HACKATHON

Copernicus OceanHack Hackathon on 22-24 November, in Tallinn, Estonia was preceded by two pre-hack events (one at the Copernicus Eyes on Earth Roadshow in Tallinn) to help people develop projects. In total, 65 people attended the weekend event and worked in 10 project teams to develop new apps or services using Copernicus data. The event attracted media from the national TV broadcaster and it appeared on the evening news across Estonia. More than 2,000 people watched the livestream of the opening and closing sessions.



65 Participants working in 10 project teams

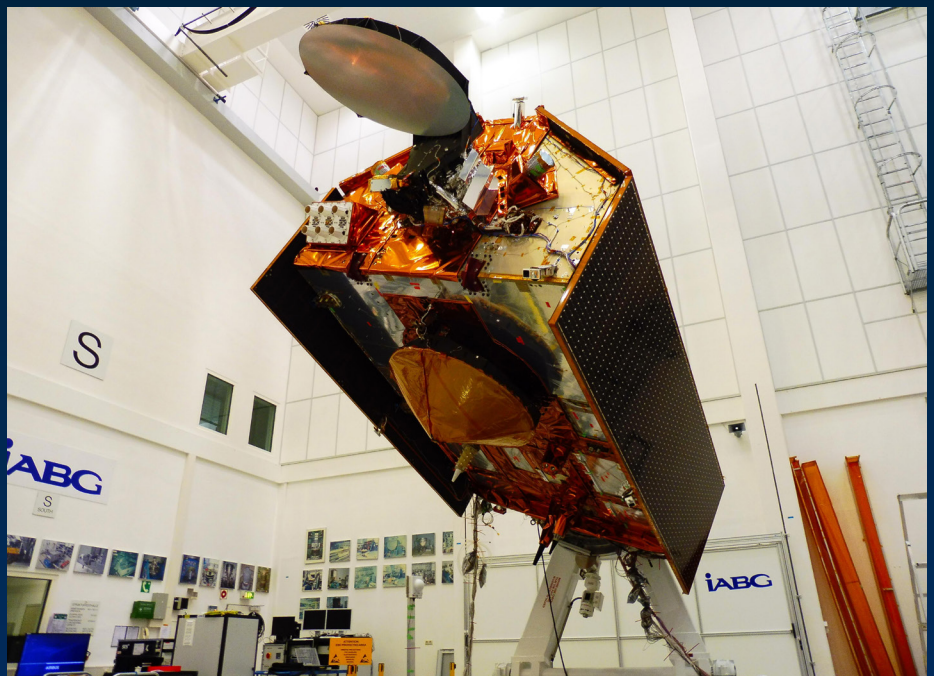


2,000+ Livestream viewers

## SENTINEL-6 CLEAN ROOM VISIT



41,865 Twitter impressions



The Sentinel-6 clean room visit was attended by 22 journalists and fared well on social media: the seven tweets about the visit generated 41,865 impressions and 352 engagements.



22 Journalists, six of whom were sponsored by EUMETSAT

MEMBER STATES









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EUMETSAT also has established cooperation agreements with organisations involved in meteorological satellite activities, including the National Meteorological Services of Canada, China, India, Japan, Russia, South Korea and USA

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