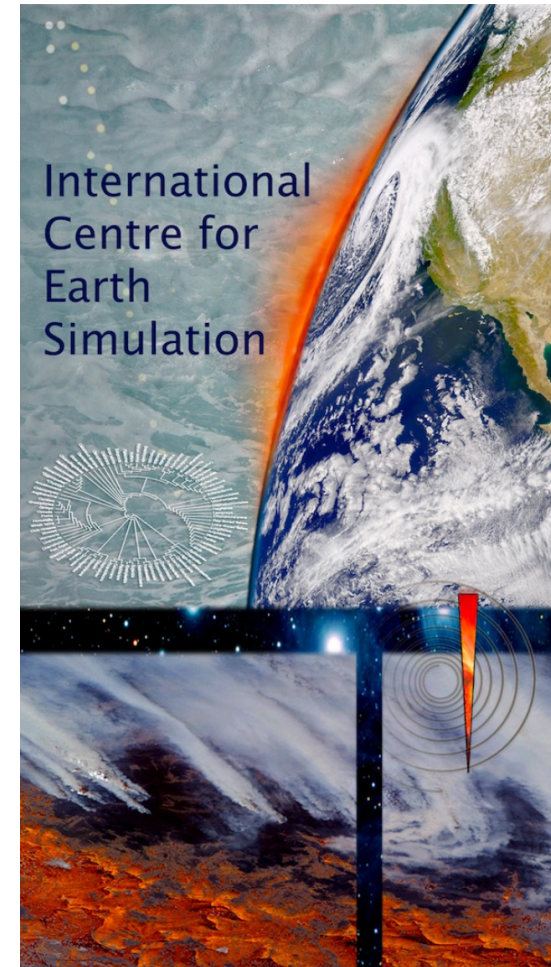


# ICES VI Biennial: Energy-Climate Computing

## Panel 6 Measuring Performance in Geoscientific Applications

**Claudia Frauen** - degree in applied mathematics, PhD in climate science. Has worked at the interface of climate science and HPC for more than 15 years. Joined the German Climate Computing Center in 2020, now the technical coordinator for the German national project WarmWorld, aiming to harness advances in information technology to compute and evaluate climate warming trajectories at unprecedented kilometer-scales.

**Thomas Ludwig** - professor for scientific computing at the Univ. Hamburg, Germany and director of the German Climate Computing Centre (DKRZ) in Hamburg. Doctoral degree from TU, Munich in 1992. 2001 professor at the Universität Heidelberg, Germany. Works in HPC since 1987 and has published as (co)author more than 180 papers. Research focus is on high performance storage systems and energy efficiency with HPC. Responsibility to provide the climate research community with high computational power, considerable storage space and sophisticated services..

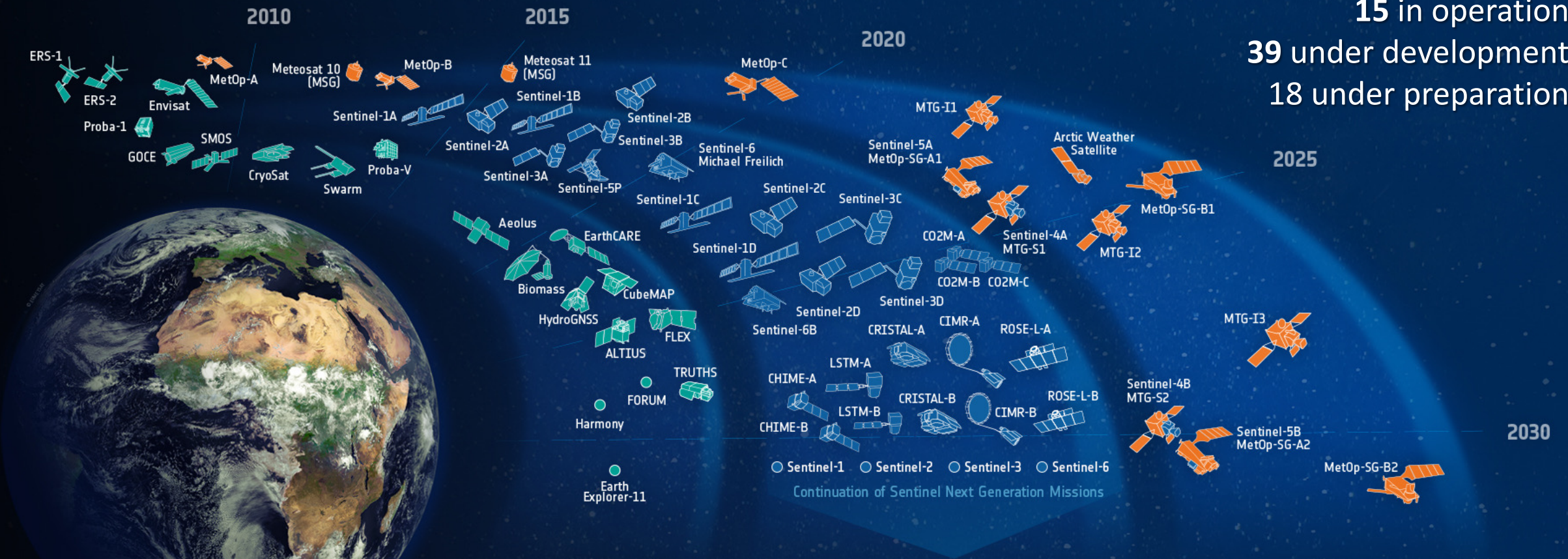


International  
Centre for  
Earth  
Simulation

# Earth Observation missions/ systems with European and global partners to address scientific & societal challenges

## Satellites

15 in operation  
39 under development  
18 under preparation



Science 

Copernicus 

Meteorology 



**Copernicus is the largest producer of EO data in the world**

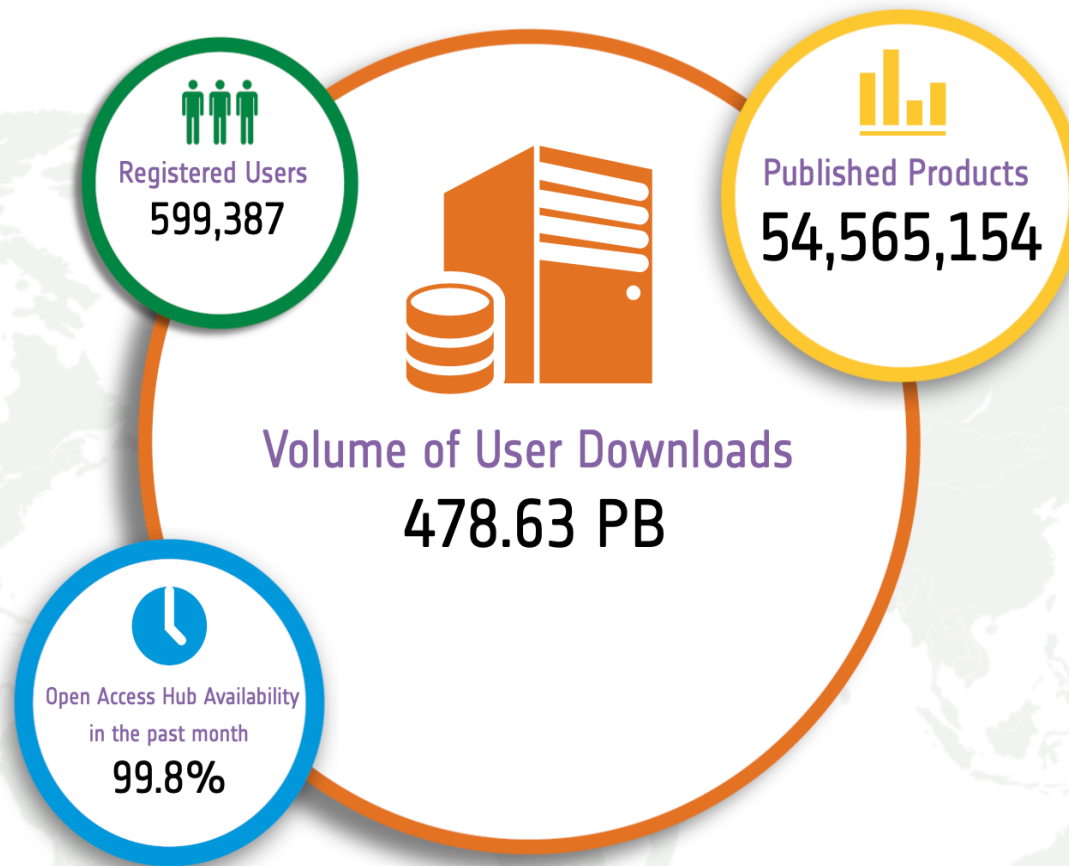
1

**All** global landmass is observed every 5 days at 10m resolution

**25 TB of Daily Data Production by Sentinels**

**300 TB of Daily Sentinel Products Disseminated for Services to Society**

2



## 7 years

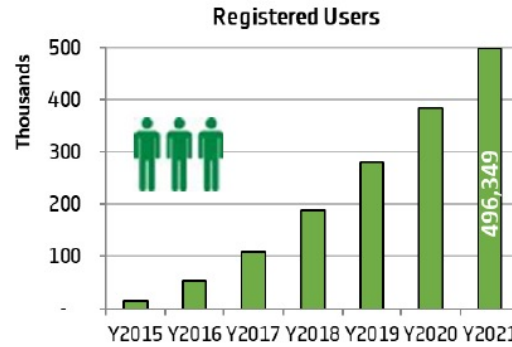
of Sentinel data hubs operations

## 54 Million

Published data products since start of Sentinel operations (published data volume: ~32 PiB)

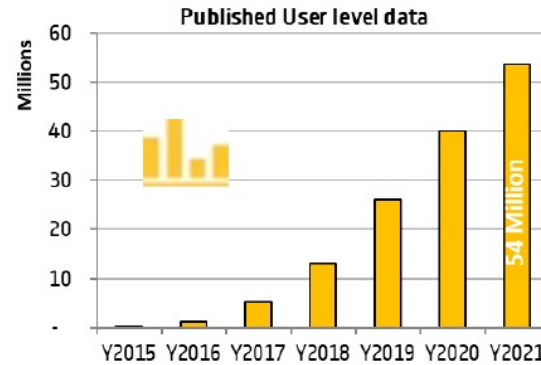
## 320 PiB

Total downloaded volume since start of Sentinel operations



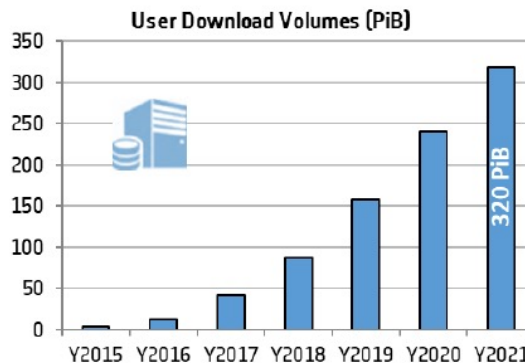
## 496,349

Total registered users on ESA open access hub by end 2021



## 37,025

New data products published per day in 2021



## 203.5 TiB

Average downloaded volume per day (in November 2021)