

Geospatial World Forum 2021

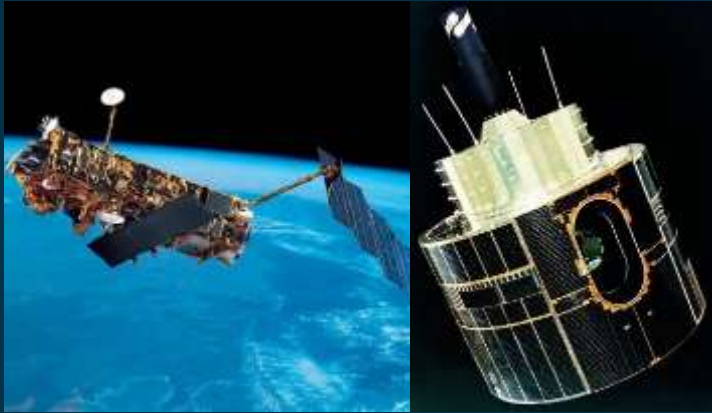
Integrated Space Services: The Future of Space Economy

“The ESA Perspective”

Dr. Nicolaus Hanowski
European Space Agency EOP-G
Amsterdam, The Netherlands -- 21-22 October 2021

European Earth Observation – the Space Assets

The Past (10 years ago)



Big individual satellites for a few types of measurements for specific communities

- ERS, ENVISAT
- Meteo-Satellites
- Groups of commercial VHR satellites

Now



Families of big and small satellites / constellations for a wide range of measurements and communities

- Copernicus Sentinels
- Earth Explorers
- Scout Missions
- Phi-Sats
- Meteo-Satellites

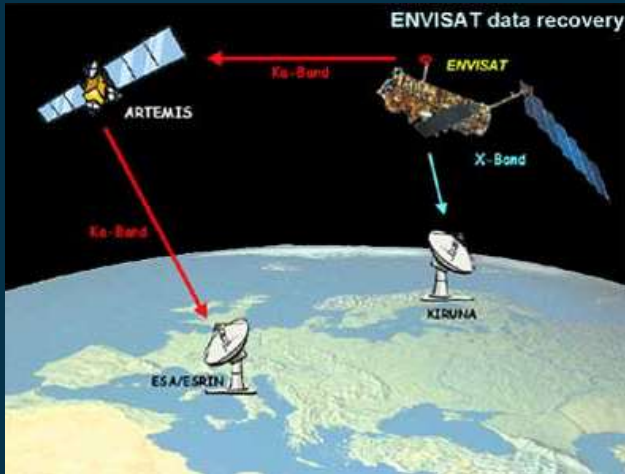
>40 satellites in preparation at ESA

+ National Missions
+ Commercial Missions

→ Services, Science, Technology,
→ Commercial Applications

European Earth Obs

The Past (10 years ago)



- Small Data (e.g 1Pbyte/10
- Few Users – 100s / 1000s
- Specialist Users
- No fusion with Data Industry
- Dedicated Data Infrastructure

Challenges:

Bring the **User to the data** !
Efficient transformation of the

1 day of ESA EO data dissemination on HD discs.



us 1Pbyte/day / 50 Mio products)
00000s / >10000000s
Specialist Users
ty of the Data Industry
tware as Services
& Commercial Data

ormation !

Intensified Integration of EO Services through:

New and more Flexible Data Policies

- Free & open
- Smart licensing
- Anchor customer services
- More focus on info than data



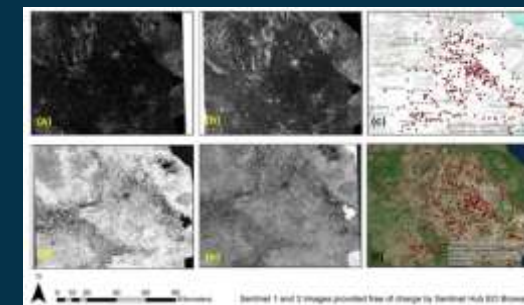
New Domains for EO Data Integration

- Applications Tools
- Social and Public Media
- Industrial Service Products
- Trusted Operational Services



New and extensive EO Data Fusion

- Expanded data content
- Data quality synergies
- More complete data record
- Incentives for operator interaction



Challenges: data authenticity and data integrity !

Intensified Integration of EO Services through:

Progress toward “Predictive Earth Observation”

- Follow the weather & climate community
- Using EO data for simulations & modelling
- Mutual stimulation of digital and EO world
- Integrating infrastructures: Cloud, HPC, N/W, etc.
- Continental, regional & local scale



Challenge: Integration of EO and IT value chain !

Destination Earth

Destination Earth (DestinE) aims to develop a high precision digital model of the Earth to monitor and simulate natural and human activity.

DestinE will contribute to the [European Commission's Green Deal](#) and digital strategy. It will unlock the potential of the digital modelling of the Earth's physical resources and related phenomena. For example, modelling climate change, water and marine environments, polar areas, and the cryosphere (parts of the Earth's surface where water is found in solid form).

DestinE models are made on a global scale and can speed up the green transition and help predict major environmental degradation and disasters. By opening up access to public datasets across Europe, it will also represent a key component of the [European strategy for data](#).

