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TAKING THE PULSE OF OUR PLANET FROM SPACE

EUMETSAT ECMWF EUSPA

REFRESHING THE USER PERSPECTIVE

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ESA

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Speaker Introduction

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Summary

i. Who we are: Context and Goals

ii. Refreshing the user perspective

iii. Lessons Learnt

iv. Key “take-aways”

v. Q & A

Who We Are – Common Services - Context

- Preparing future EO missions, EO systems and the overall European EO system architecture and ensuring coordination and collaboration with national missions and commercial/New Space.
- Continuing the delivery of Common Services in the domains of data archival, reprocessing, preservation, discovery and access for Earth Explorers, Copernicus Contributing Missions, Third Party Missions and Heritage Missions.
- Establishing timely, easy, seamless and integrated delivery of EO data, information and derived knowledge to society and expanding the uptake of EO data by a wider user community.
- Long term data preservation ensuring regular and sustained data set management and related operations.

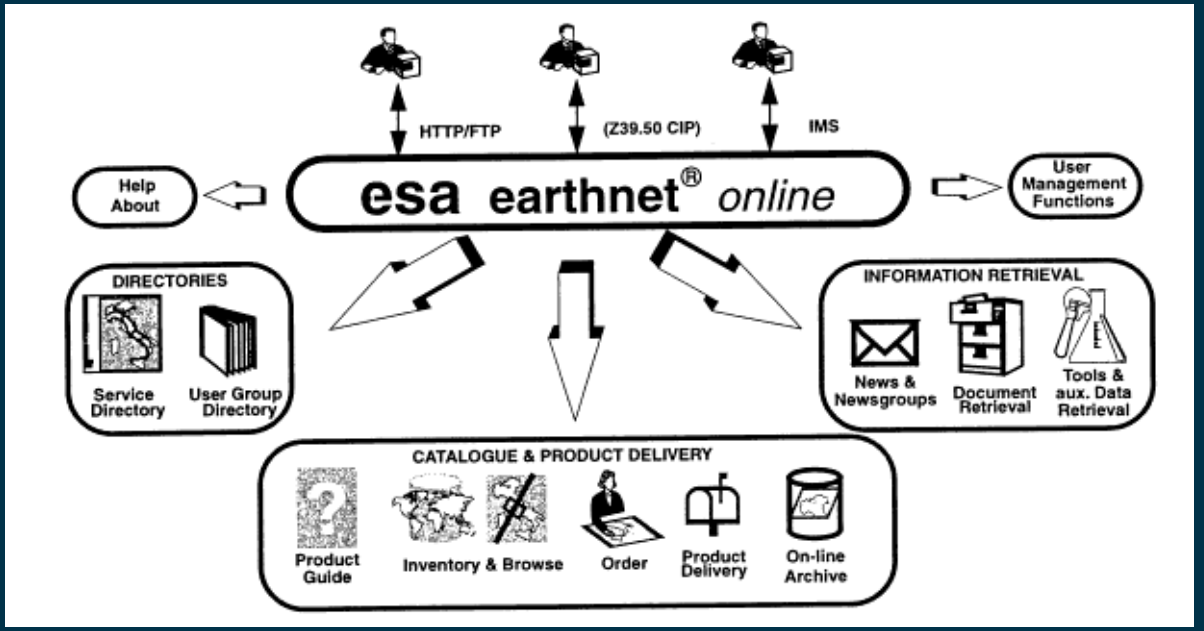
Who We Are – Common Services - Goals

- ✓ Support achievement of programmatic and mission objectives through deployment of common solutions of data archival, re-processing, preservation, discovery and access.
- ✓ Expand user data uptake and increase user satisfaction.
- ✓ Avoid duplication of project and service delivery teams, standardise processes and reduce management and procurement overhead.
- ✓ Take ownership of service objectives and accountability for service performance through defined indicators.
- ✓ Apply service innovation, evolution, scaling and risk mitigation for all supported programmes.

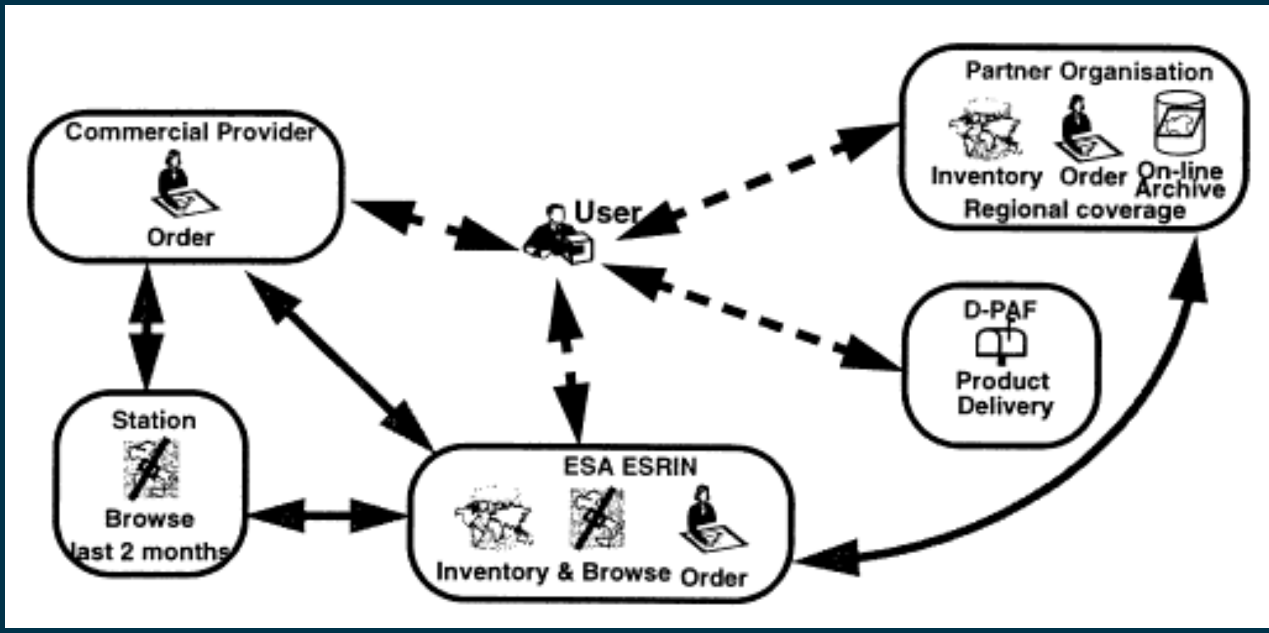
EOP-GES

PDGS Common Services

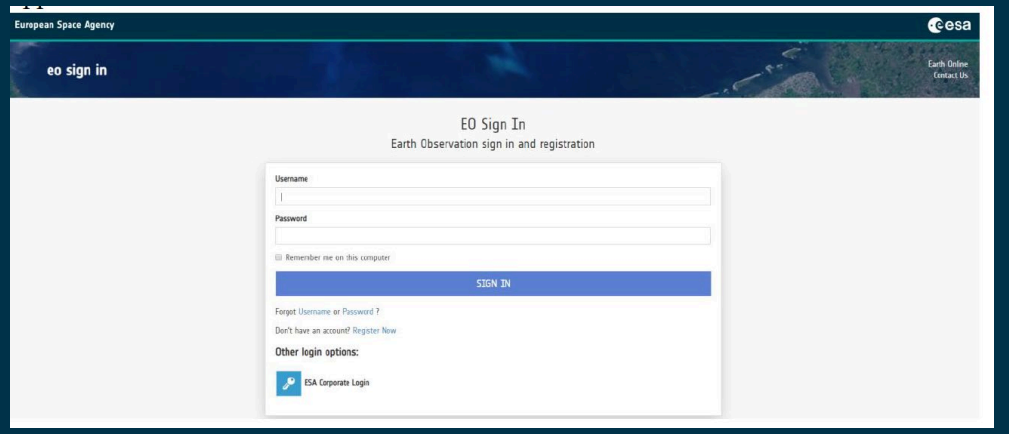
Refreshing the User Perspective - The Way We Were

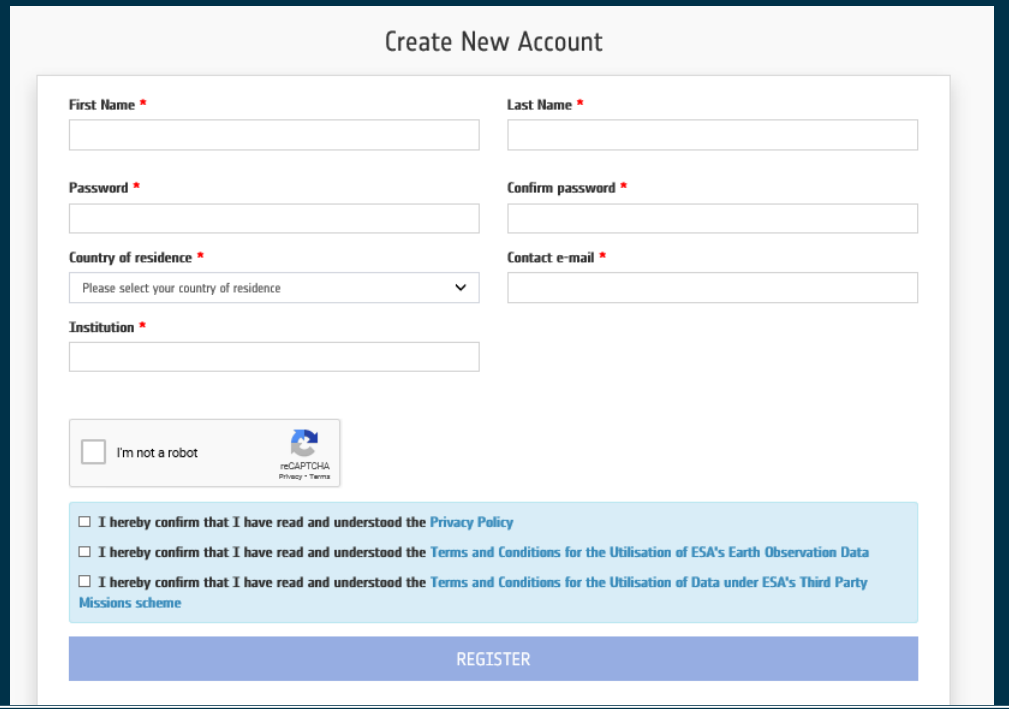


THE ESA EARTH OBSERVATION MULTI-MISSION USER INFORMATION SERVICES **1997**



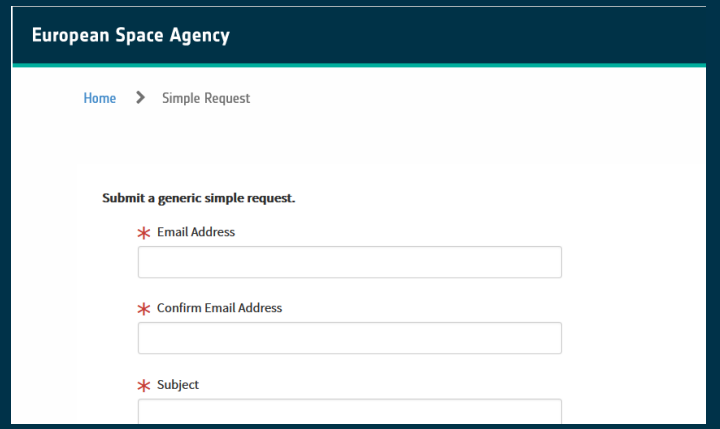
Refreshing the User Perspective - EO Sign In

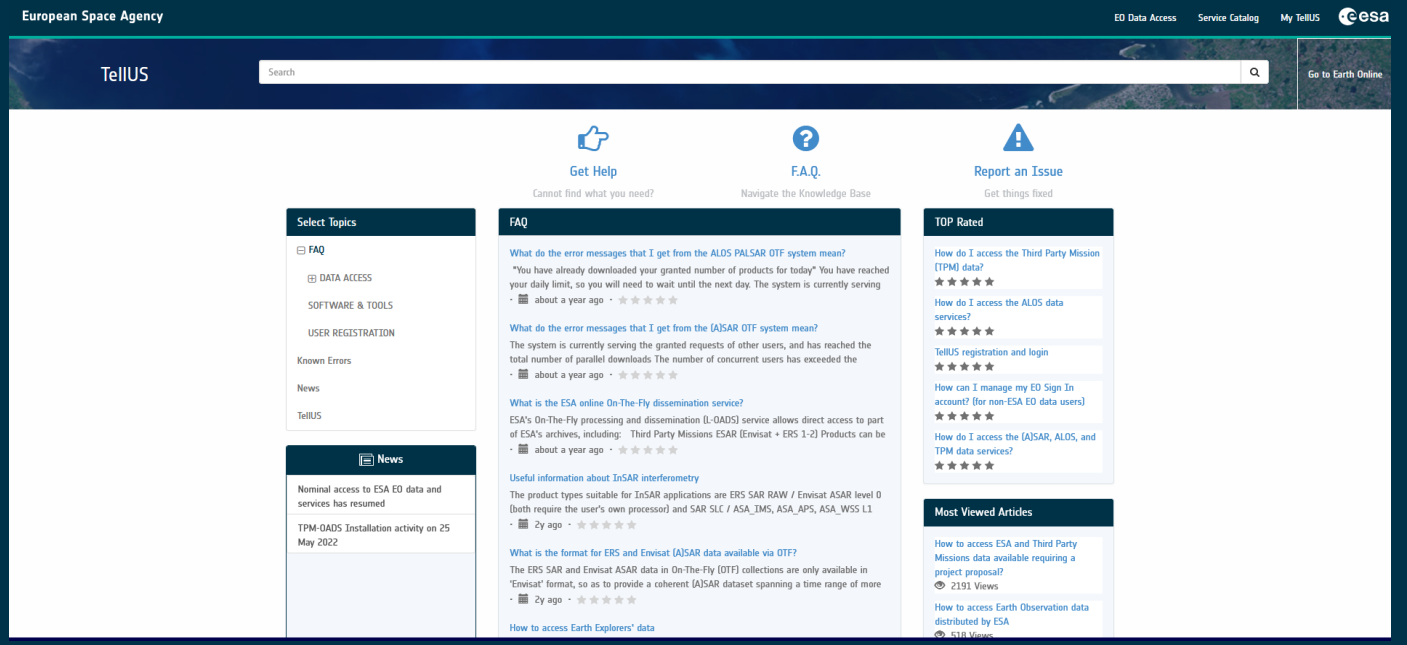




- Launched December 2020
- Main challenges:
  - User migration – database clean-up
  - Service provider integration
  - Federation with other identity management solutions
- Main achievements:
  - Improving the user experience when accessing data and related services
  - Compliant with personal data protection polices
  - Allowing implementation of federations and offering potential for extension and interoperability

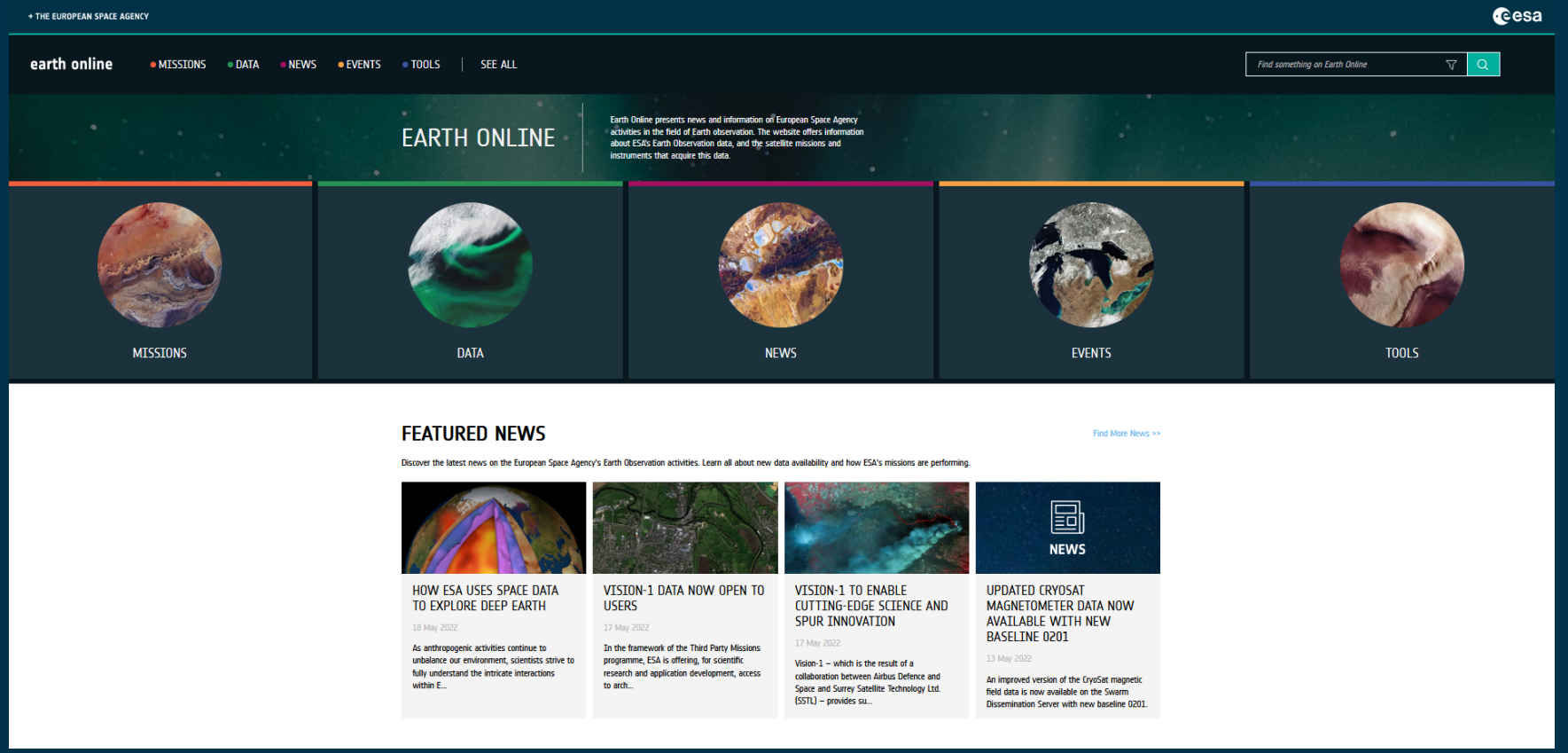
Refreshing the User Perspective – ESA TellUS





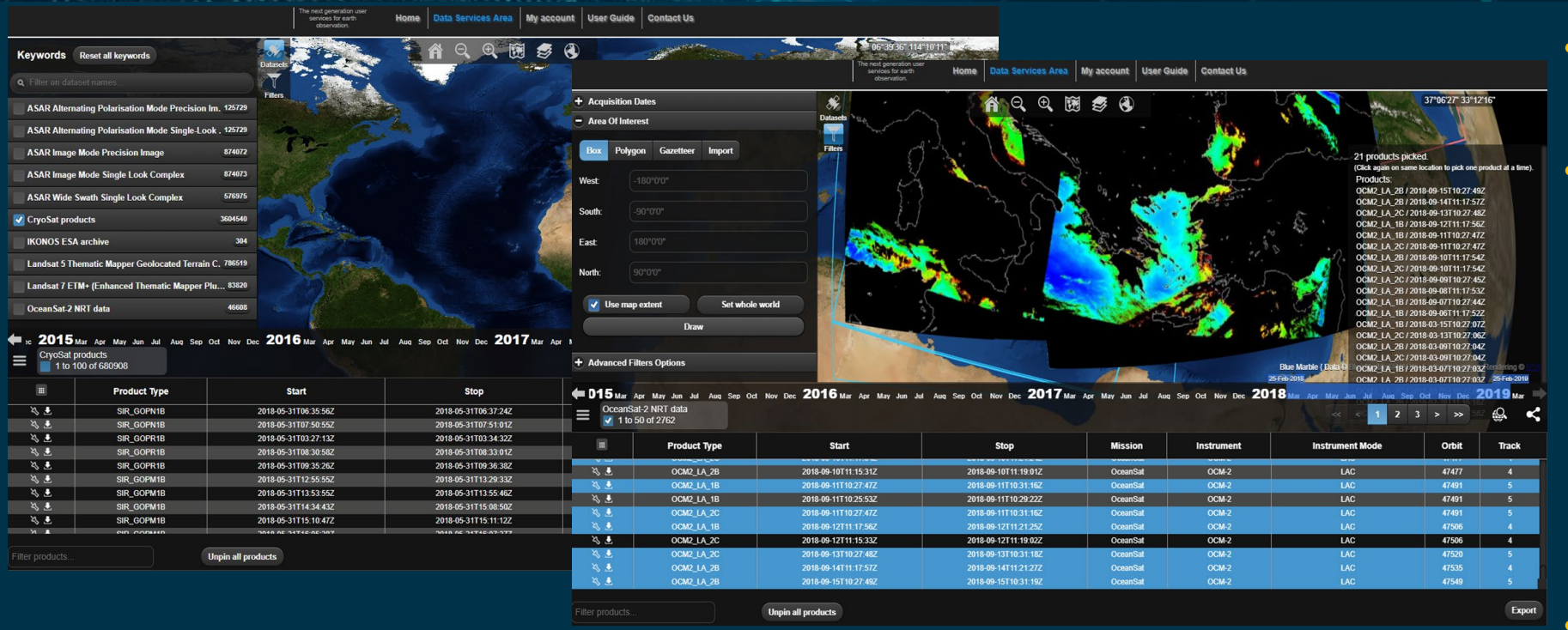
- Opened September 2015
- Main challenges:
  - Replacing several in-house developed portals
  - Establishing common processes along the integrated service chain
  - Establishing a single source of service records
- Main achievements:
  - In-house managed solution preserving knowledge over service transition
  - Established single point of contact for all service users and stakeholders
  - Continuous expansion and evolution of covered services

Refreshing the User Perspective - Earth Online



- Launched: April 2020
- Main challenges:
  - Wide variation in mission requirements
  - Large amount of content
  - Many stakeholders
- Main achievements:
  - Improved user experience
  - Increased web traffic
  - Easily discoverable content
  - Mobile support
  - SEO, GDPR, WCAG, ESA Graphics compliant
  - Clear processes for content preparation & publication

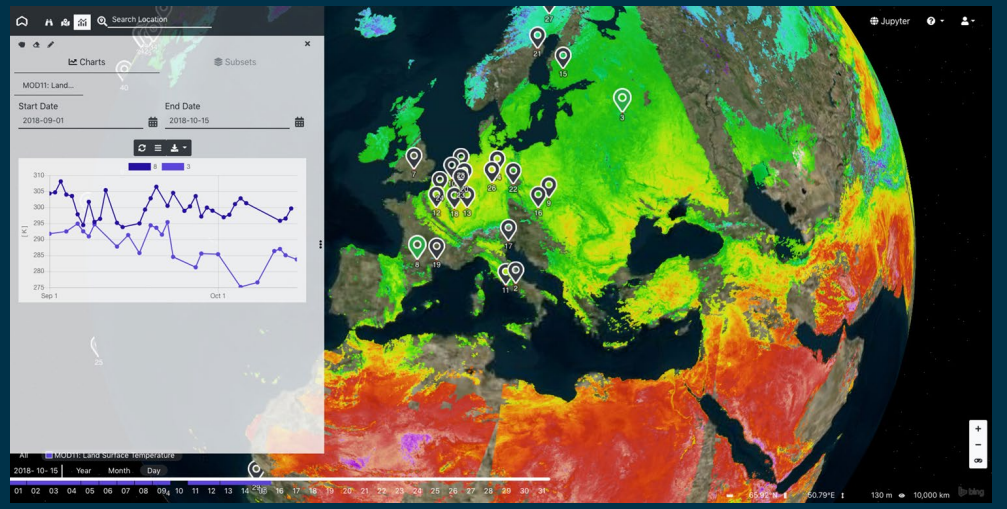
Refreshing the User Perspective – Open Data Discovery

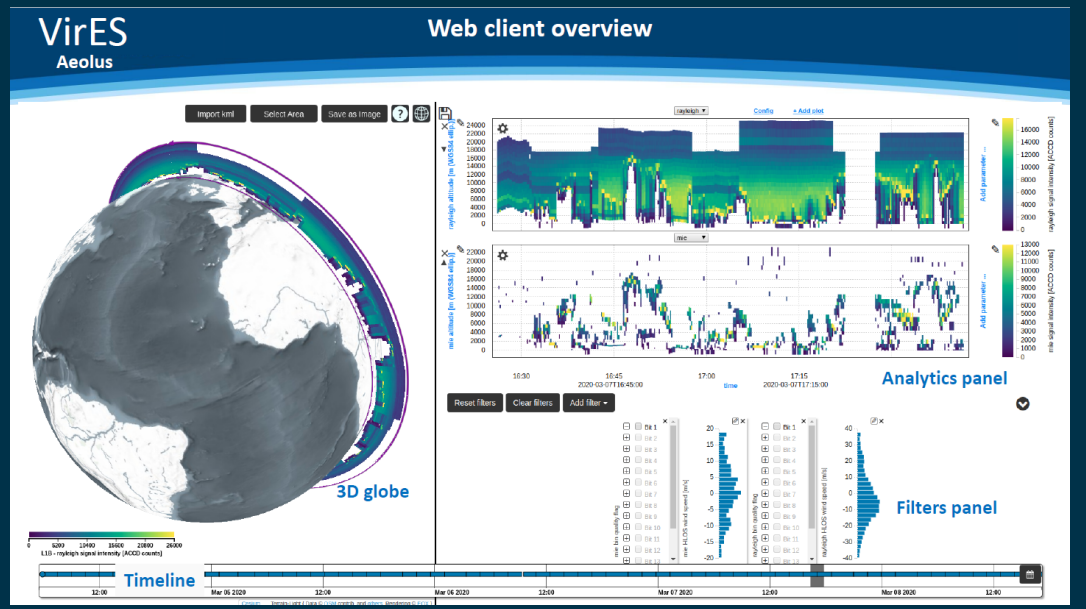


- 176 Discoverable Data Collection and ~20 Millions products:
  - ESA Earth Explorer Missions
  - Third Party Missions
  - Heritage data
- >170 Instruments:
  - SAR, Optical, Interferometry, Altimeter, …

- Launched: December 2019
- Main challenges:
  - Centralized catalogue for EO Data from different sources
  - Decoupling data visualisation from metadata repository
- Main achievements:
  - User friendly access to search and retrieval
  - Modular and scalable architecture
  - Based on standard opensearch interface

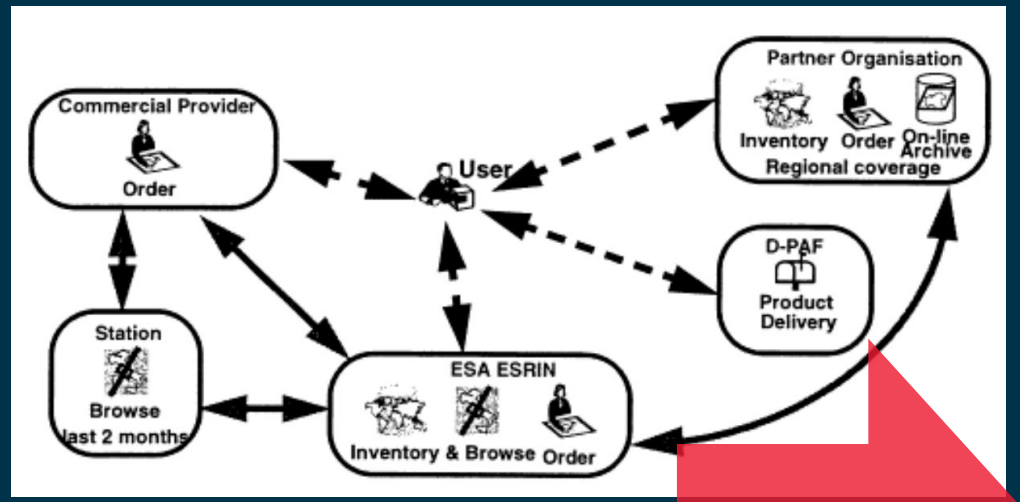
Refreshing the User Perspective - EO Access Platforms



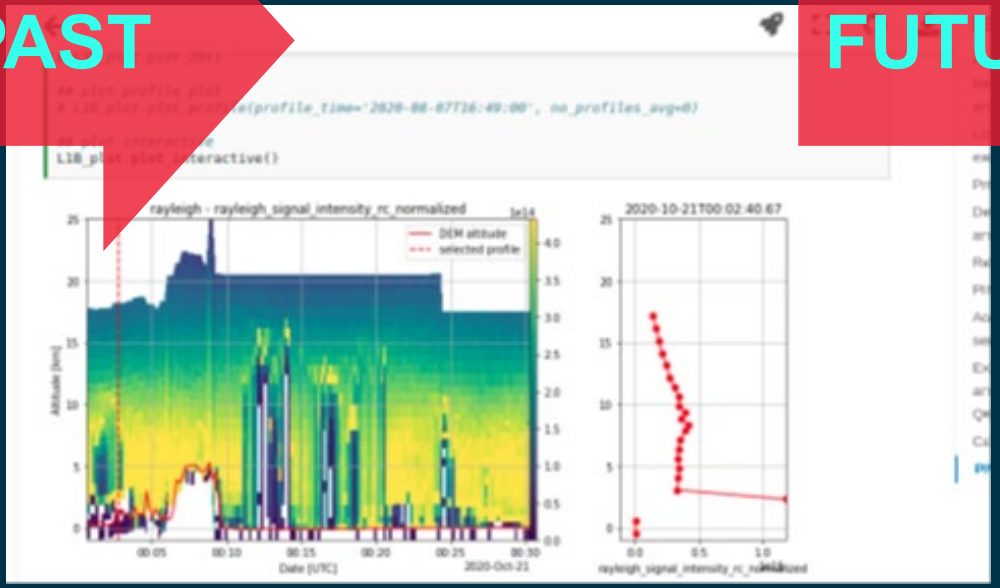


- Opened:
  - September 2020 (EO Datacube)
  - Early 2022 (VRE)
- Main challenges:
  - Keep satisfactory performance in accessing data in original format
  - Security
  - Coexistence of services for product download, pixel based access and algorithm validation against single copy of data
- Main achievements:
  - Access to data from different sensors
  - Upload and sharing of algorithm (Jupyter)
  - Fusion of data
  - Reduced transfer of data
  - Time series at pixel level

Lessons Learnt – Understanding the User perspective



PAST



FUTURE

Lessons Learnt – Emerging technologies

emerging

Things that are *emerging* are just being born — or they're reaching an adult state. The important thing is they're growing and developing.

Lessons Learnt – Match the two

User communities

eduGAIN

COIH

Federated Identity

OpenSearch

OGC Making location count.

STAC SpatioTemporal Asset Catalog

OPENAPI INITIATIVE

Federated Access Services

Data Storage

COG

Zarr.

aws

Microsoft Azure

S3

openstack

Key “Take-Aways”

- Users do not need to be aware of internal processes
- Emerging technologies are by definition not mature yet
- Work in a project context – remain agile

Questions, Answers, Discussion

Any other feedback?

Please help us by visiting our survey:
Earth Observation Data Access and User Services: User Satisfaction Survey 2022 (terrasigna.io)