

living planet symposium BONN 23-27 May 2022

TAKING THE PULSE OF OUR PLANET FROM SPACE



EUMETSAT CECMWF



REFRESHING THE USER PERSPECTIVE

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Speaker Introduction





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European Space Agency



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.

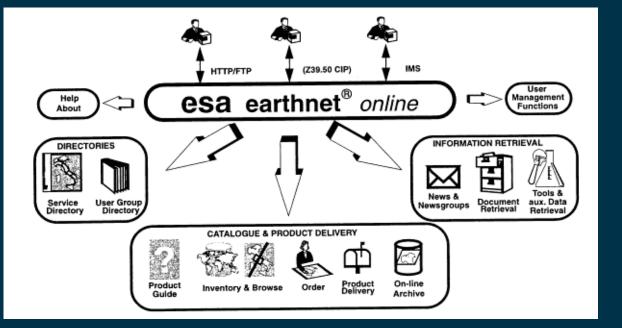


Apply service innovation, evolution, scaling and risk mitigation for all supported programmes.

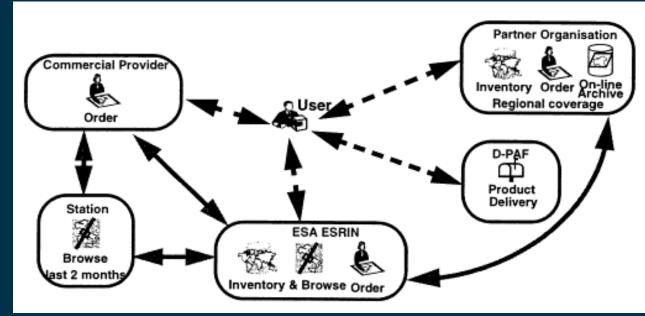
PDGS Common Services

Refreshing the User Perspective - The Way We Were





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



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Refreshing the User Perspective - EO Sign In



sign in		
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	Password	
	Remember me on this computer	SIGN IN
	Forgot Username or Password ?	אד אנדוב
	Don't have an account? Register Now	
	Other login options:	
	ESA Corporate Login	
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- 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

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Refreshing the User Perspective – ESA TellUS



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		SOFTWARE & TOOLS USER REGISTRATION	 about a year ago **** What do the error messages that I get from the The system is currently serving the granted requ 		How do I access the ALOS data services? ★★★★		
		Known Errors	total number of parallel downloads The number of about a year ago • ★★★★★		TellUS registration and login ★★★★		
		News TellUS	What is the ESA online On-The-Fly dissemination ESA's On-The-Fly processing and dissemination ()	L-OADS) service allows direct access to part	How can I manage my EO Sign In account? (for non-ESA EO data users) ★★★★★		
		News	of ESA's archives, including: Third Party Mission - about a year ago - Useful information about InSAR interferometry	is ESAR [Envisat + ERS 1-2] Products can be	How do I access the (A)SAR, ALOS, and TPM data services?		
		Nominal access to ESA EO data and services has resumed TPM-OADS Installation activity on 25	The product types suitable for InSAR application (both require the user's own processor) and SAR •		Most Viewed Articles		
		May 2022	What is the format for ERS and Envisat (A)SAR d The ERS SAR and Envisat ASAR data in On-The-F 'Envisat' format, so as to provide a coherent (A)S •	ly (OTF) collections are only available in	How to access ESA and Third Party Missions data available requiring a project proposal? 2191 Views		
			 Evy ago A transformation of the second second		How to access Earth Observation data distributed by ESA		

- Opened September 2015
- Main challenges:

So to Earth Onli

- 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

+ THE EUROPEAN SPACE AGENCY					eesa
earth online • MISSIONS • DATA • NEWS	; • EVENTS • TOOLS SEE ALL				Find something on Earth Online 🗸 🔍
	EARTH ONLINE	Earth Online presents news and information on E activities in the field of Earth adservation. The wi about ESA's fairh Ubservation date, and the sate instruments that acquire this data.	ebsite offers information		
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	Discover the latest news on the European Space Agence	y's Earth Observation activities. Learn all about new da	ata availability and how ESA's missions are perfo	orming.	
				NEWS	
	HOW ESA USES SPACE DATA TO EXPLORE DEEP EARTH 10 May 2022 As anthropogenic activities continue to unbalance our environment, scientists strive to fully understand the intricate interactions within E	VISION-1 DATA NOW OPEN TO USERS 17 May 2022 In the frame, EA is affering, for scientific research and application development, access to arch.	VISION-1 TO ENABLE (UTTING-EDGE SCIENCE AND SPUR INNOVATION 21 May 2022 Vision 1 – which is the result of a collaboration between Althas Detence and Space and Surry Statilite Technology Ltd. (SSTL) – provides su	UPDATED CRYOSAT MAGNETOMETER DATA NOW AVAILABLE WITH NEW BASELINE 0201 13 May 2022 An improved version of the fryvSet magnetic field data is now available on the Swarm Dissemination Sever with new baseline 0201.	

• Main challenges:

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- 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 g

Refreshing the User Perspective – Open Data Discovery



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noin all product

- 176 Discoverable Data Collection and ~20 Millions products:
 - ESA Earth Explorer Missions

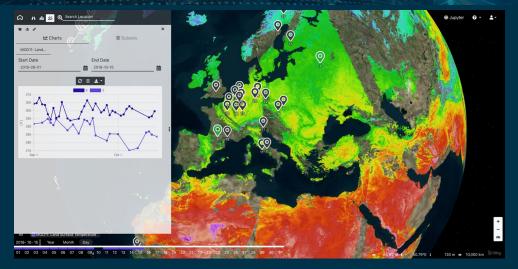
Data Services Area My account User Guide Contact U

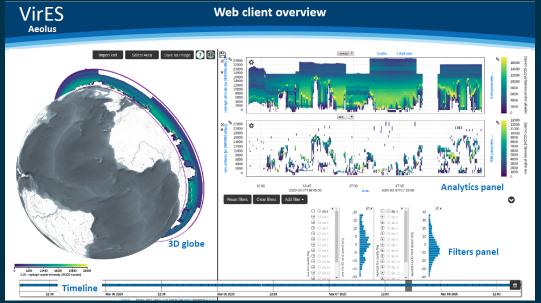
- Third Party Missions
- Heritage data
- >170 Instruments:
 - SAR, Optical, Interferometry, Altimeter, ...

- 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



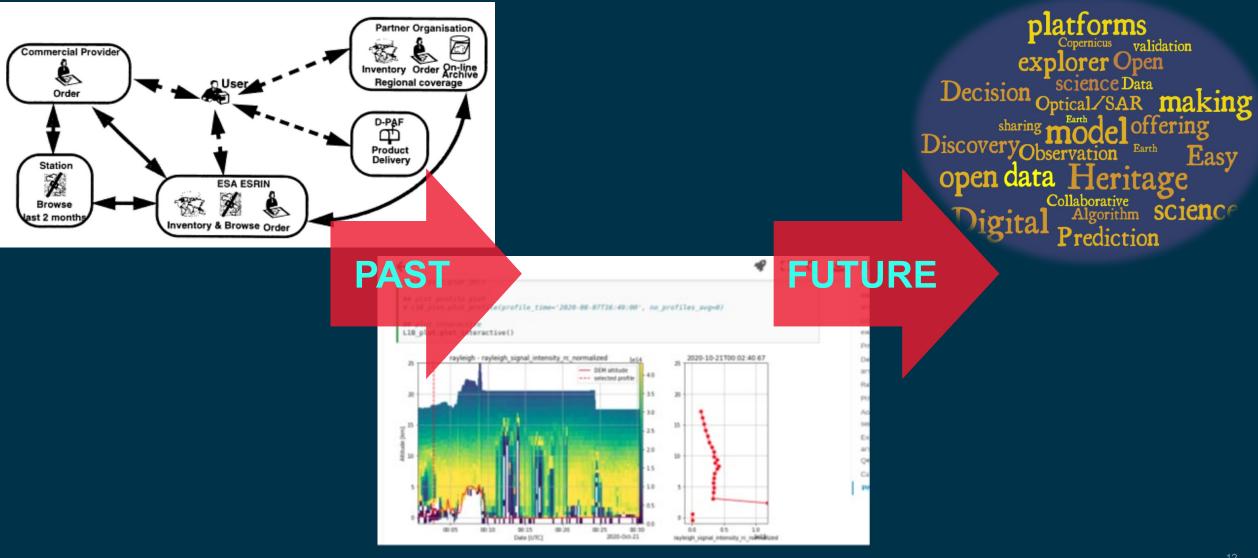




- Opened:
 - September 2020 (EO Datacube)
 - Early 2022 (VRE)
- Main challenges:
 - Keep satisfactory performance in accessing data in original format
 - Security
 - Coexistence of services for product download, pixel based access and algorithm validation against single copy of data
- Main achievements:
 - 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





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Lessons Learnt – Emerging technologies





emerging

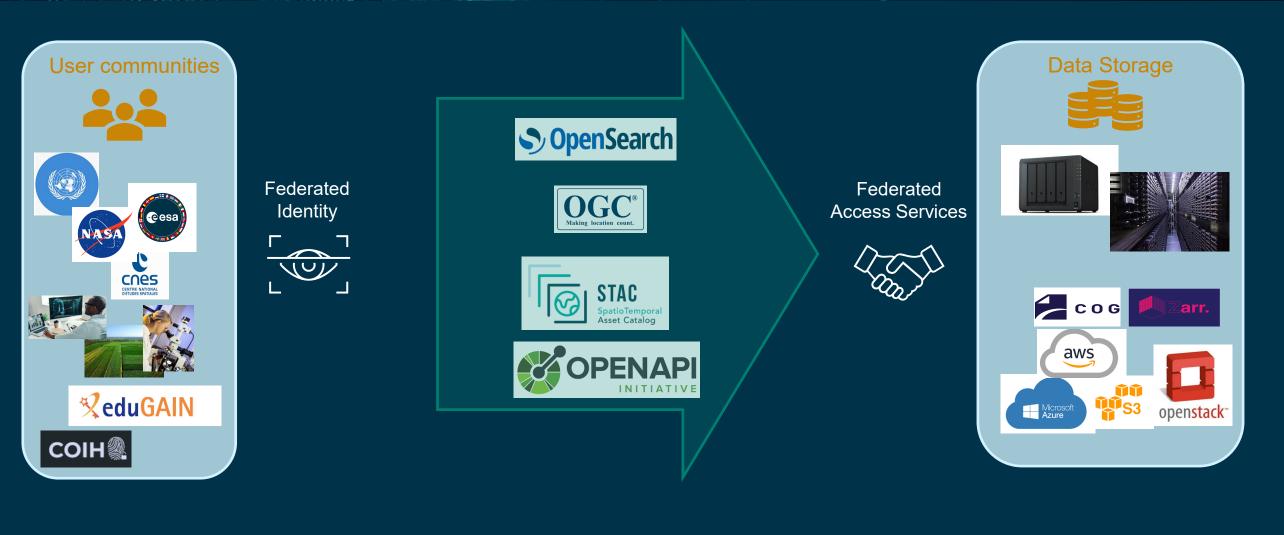
Things that are *emerging* are just being born — or they're reaching an adult state. The important thing is they're growing and developing.

> Python Scalability Storage Hybrid Jupyter Dockerise Cloud Storage COGAPIOGC Python Metadata-modelling WCAG Cloud ZARR Computing-power Kubernetes

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Lessons Learnt – Match the two





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)