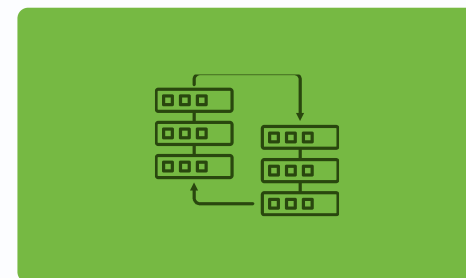


AquaINFRA promoting FAIR Aquatic Research in EOSC

*Development of a research data infrastructure
to help scientists generate new knowledge for
restoring healthy oceans, rivers, and lakes*

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Freshwater resources are in a critical state

- Extensive heat periods and water mismanagement
- Impacts on water security, quality, river connectivity and biodiversity

From a data and processing perspective

- How can we optimise and streamline research efforts?
- How can we support research communities with tools and workflows?



Le Monde

Menu

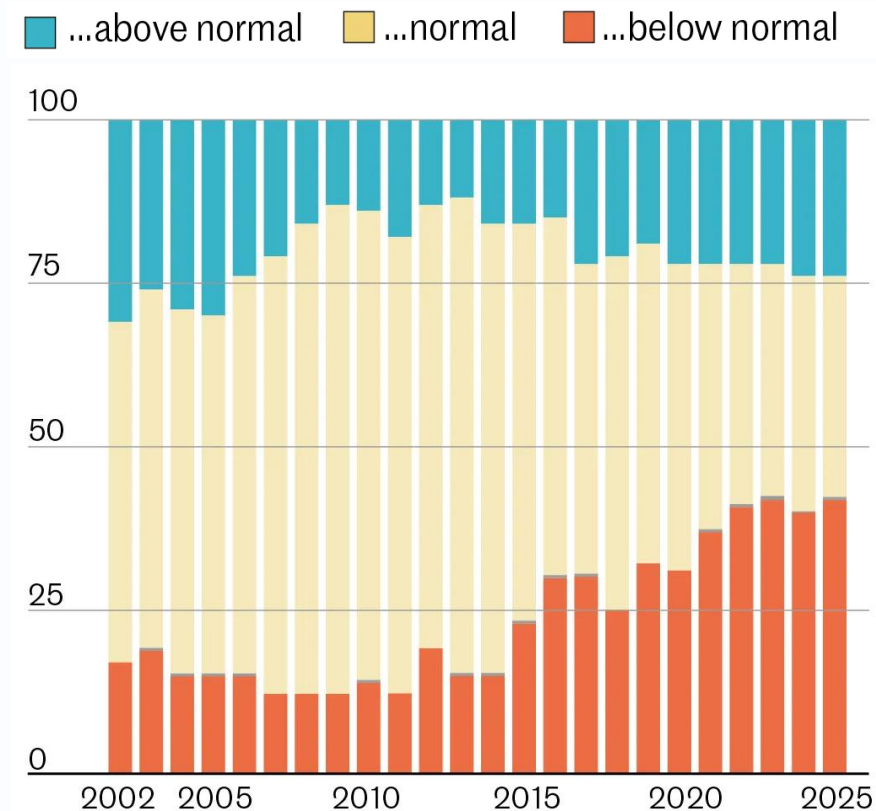
Environment > Our planet at 1.5°C The Paris Agreement turns 10 Europe turning grey Repairing the Earth PFAS

ENVIRONMENT • WATER

Decline of freshwater reserves has 'serious future implications,' UN body warns

Worldwide river flows in 2025 were among the driest in 35 years, according to the World Meteorological Organization's annual global report on the state of water resources.

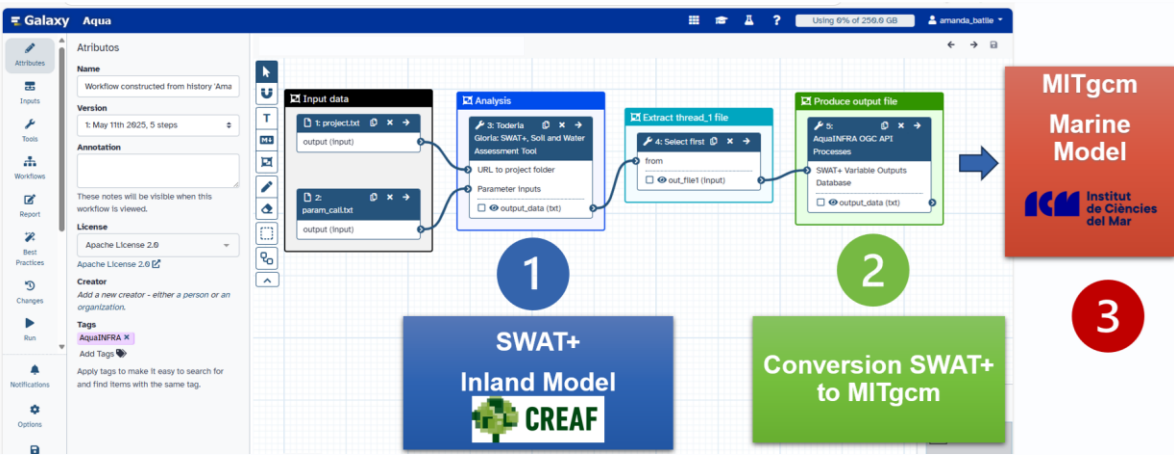
Global freshwater reserves, in %



Research question



Reusable workflow



Galaxy workflow

Use cases across Europe
e.g. Mediterranean use case

New knowledge

Published September 17, 2026 | Version v1

A Workflow for Soil and Water Assessment Tool (SWAT+) hydrological simulations with Land Use Land Cover Change scenario + Source-to-Sea interactions

Battle-Morera, Amanda (Producer)¹ ; Pesquer Mayos, Lluís (Producer)¹ ; Buurman, Mierret (Producer)² ; Konkol, Markus (Producer)³

Show affiliations

This workflow applies the Soil and Water Assessment Tool (SWAT+) to simulate streamflow and temperature variations under a Land Use and Land Cover (LULC) change scenario. The workflow outputs are specifically formatted to be directly connected as inputs to the **Marine Modelling System Workflow** in the AquaINFRA VRE.

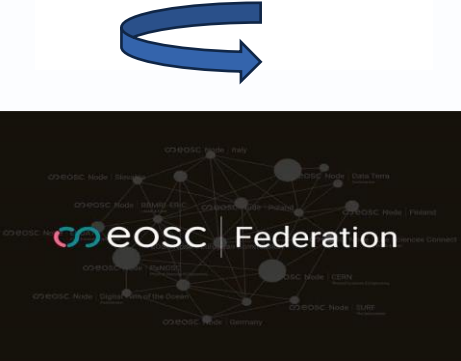
If there is no need to connect the outputs to the Marine Modelling System, or if you wish to replicate the workflow using other SWAT+ output variables (e.g., evapotranspiration, sediment load, or nutrients), please use the following alternative workflow, which provides more flexible output-processing tools: https://aqua.usegalaxy.eu/u/amanda_battle/w/aquainfra-la-tordera-spain-lulcc-scenario-qsliteimport. For SWAT2012 model please use: https://aqua.usegalaxy.eu/u/amanda_battle/w/aquainfra-swat2012-vantaanjoki-river-water-quality-simulation.

Designed for the AquaINFRA Mediterranean Use Case – Inland Model, the workflow ingests the TxtInOut directory from a calibrated SWAT+ model of the La Tordera Watershed (<https://doi.org/10.23728/b2share.am3bh-05a34>). It then performs two simulations: a baseline using the original LULC values for each Hydrological Response Unit (HRU), and a second with a LULC change scenario.

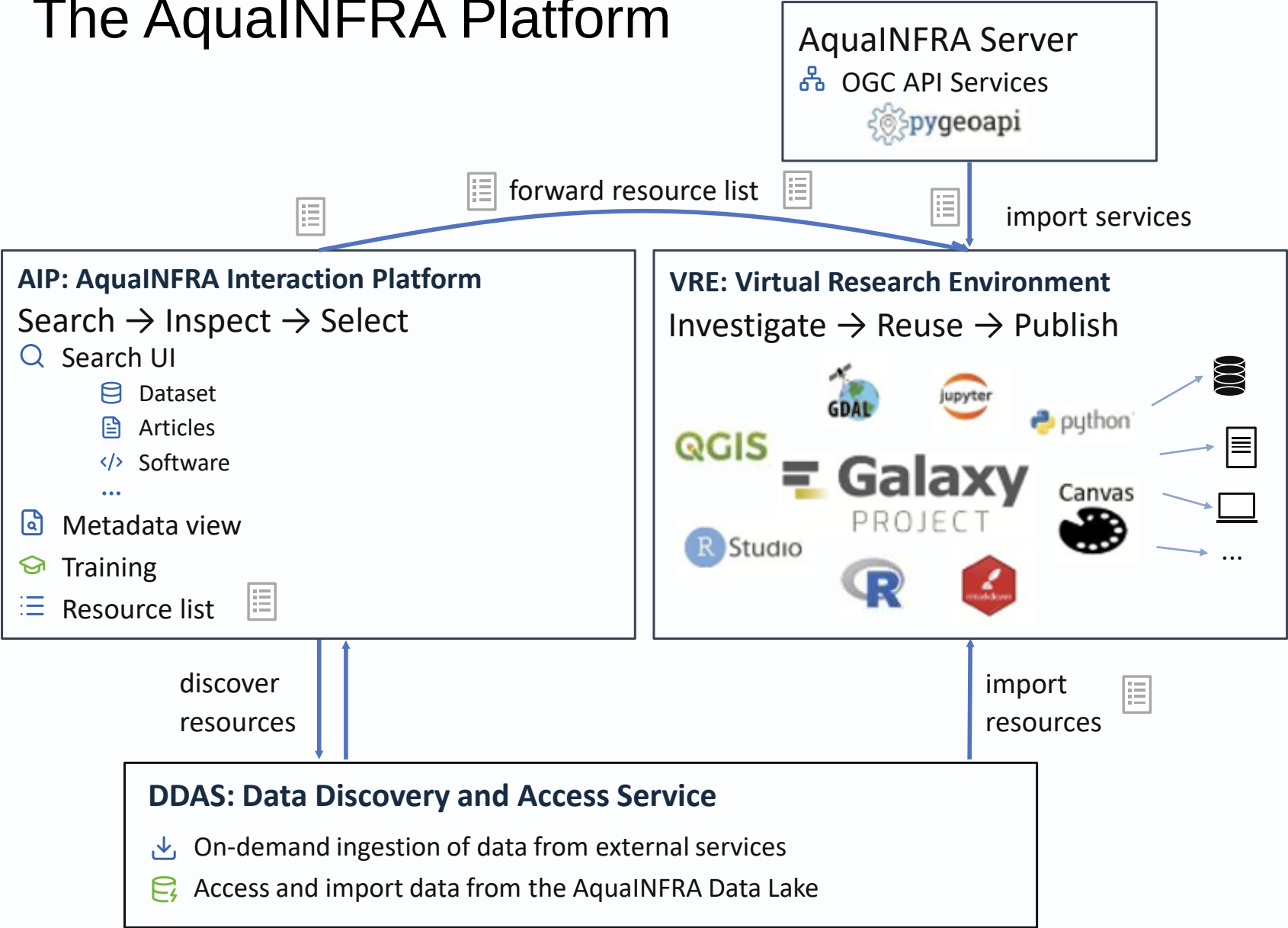
∞ Sustainable use
beyond project lifetime

🔍 Resources discoverable
over time
by a broader community

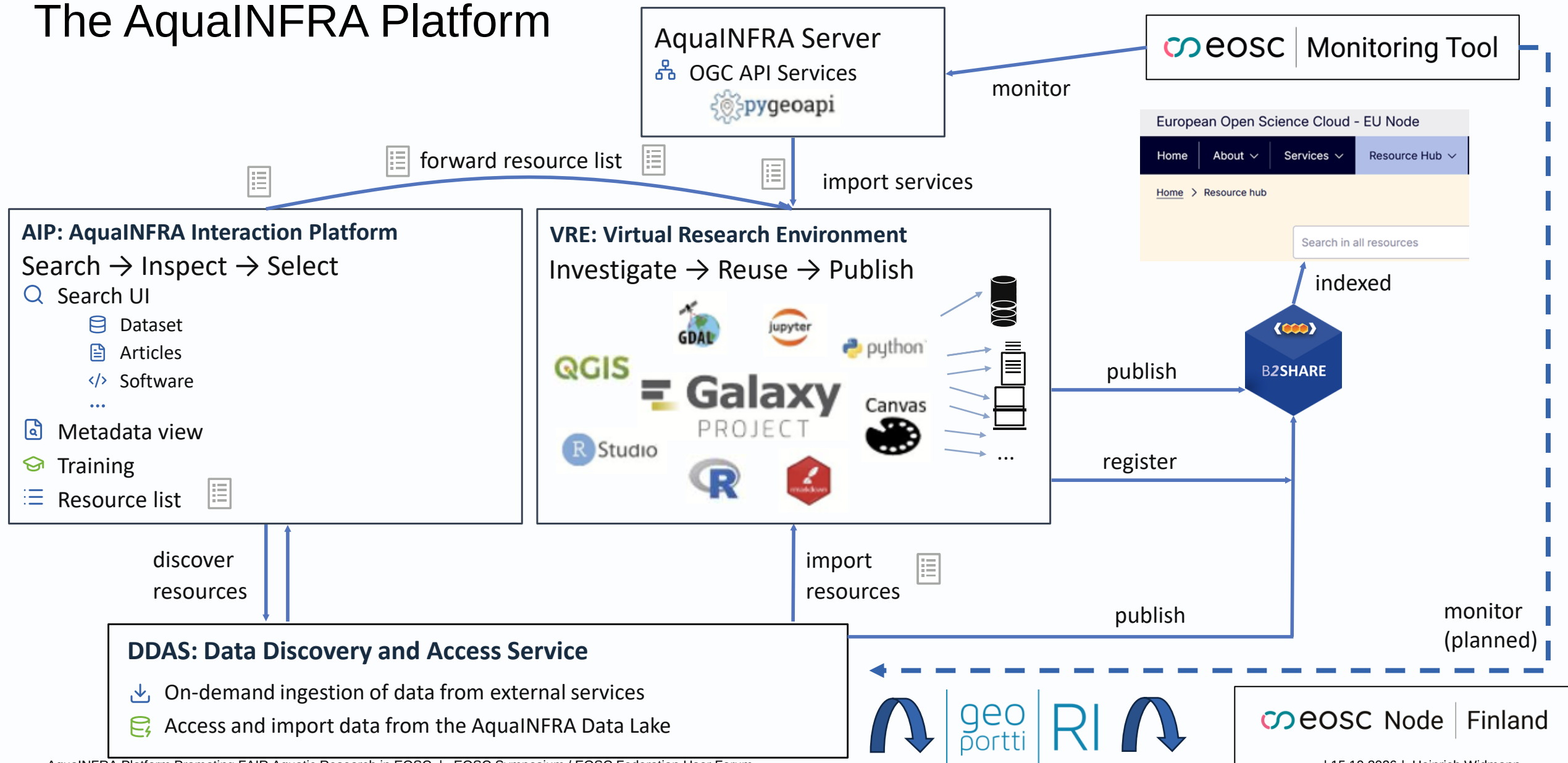
⚙️ Sustainable operation
of services



The AquaINFRA Platform



The AquaINFRA Platform



Long-term operation: progress and open questions

Component / Service	Progress / continuity plan	Open question
 DDAS	Integration into Geoportti; route to EOSC Node Finland	Leads to increased re-use of AqualNFRA resources by a wider community
 Data and workflows	Publishing through EUDAT B2SHARE	
 VRE	Migration to other e-Infrastrucure (CLAAUDIA at AAU) planned	Concrete EOSC node route
 EOSC Monitoring	Processing services monitored through EOSC Monitoring tool	Continuity after EOSC Beyond; DDAS extension planned

Expectations from EOSC

-  Access to aquatic research resources beyond project lifetime
-  Reliable service onboarding and sustainable operation

EOSC Federation User Forum

-  Exchange integration experiences and solutions across users, projects and communities
-  Find funding and support for sustainable services and environments
-  Report integration experiences, needs and issues to EOSC Federation boards

Lessons learned

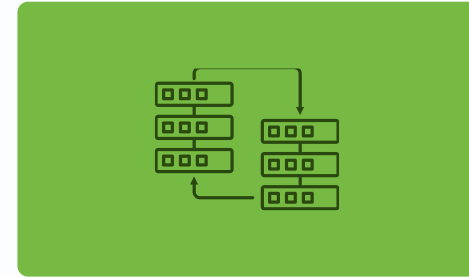
-  FAIR resources need infrastructure that operates services beyond project end
-  EOSC can help make project results discoverable and accessible

Thank You

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