CS3 MESH4 EOSC

Connecting European Data

ScienceMesh: The Final Countdown

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Annual EGI Conference, June 2023

CS3MESH4EOSC has received funding from the European Union's Horizon 2020 Research and Innovation programme under Grant Agreement No. 863353.

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- **ScienceMesh: Interactive and Agile/Responsive Mesh of Storage, Data and Applications for EOSC**
  - *Prototyping new and innovative services for EOSC*
  - EU Horizon 2020 Project: Excellent Science
- January 2020 - June 2023 (42 months)
- 13 Partners

cs3mesh4eosc.eu
sciencemesh.io

The Problem we are addressing - The WHAT

- **Reduce fragmentation and data silos of the European Research**
  - **Easier collaboration on data products** between researchers, scientists and users across existing boundaries (institution, infrastructure, country,…)
  - **More productive workflows** interconnecting storage, compute and applications, encourage data reuse, sharing and FAIR metadata practices during the entire data lifecycle
- **Prototype a service that could be offered as a part of global EOSC platform**
  - No need to export or move data to access functionality
  - No need to resort to hyper scalers for a common service stratum between organisations

The Problem we are addressing — The HOW

- **Capture the momentum generated by community work on innovative services based on Sync&Share storage**
  - **Sync**: data available on all devices, inside and outside of the data center
  - **Share**: data accessible between users and user groups
- European EFSS **Industry** (Enterprise File Sync and Share)
  - Owncloud, Nextcloud, …
- Research and Edu **Community**
  - CS3 (cs3community.org)
  - EGI, WLCG, HIFIS, cluster projects (ESCAPE,…)

ScienceMesh approach

- **Innovate *and* re-use and leverage on the existing elements as much as possible**
  - Interoperability protocols, EFSS products, research services,…
- **Beyond prototyping…**
  - **Sustainability** in mind from day one
  - Include application elements in **production early on**
  - Push federation layer to pre-production stage and create the basis to move on to production as a part of the steady-state activity beyond the project's end
- **Test drive with user communities**
  - High-Energy Physics, Earth Observation, Social Sciences, Research & Classroom, Astrophysics, …

3 Dimensions

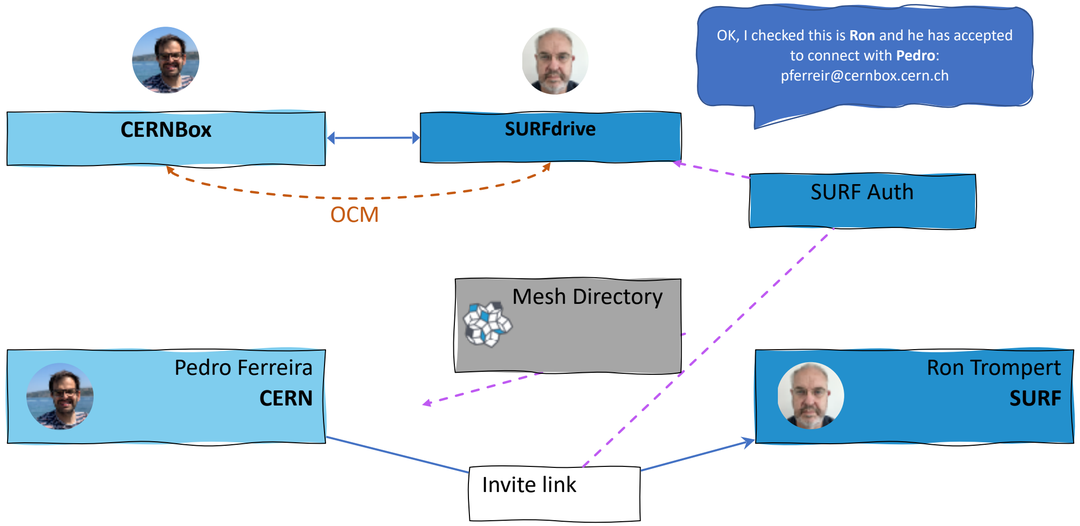
Trust-based federation

Application Platform

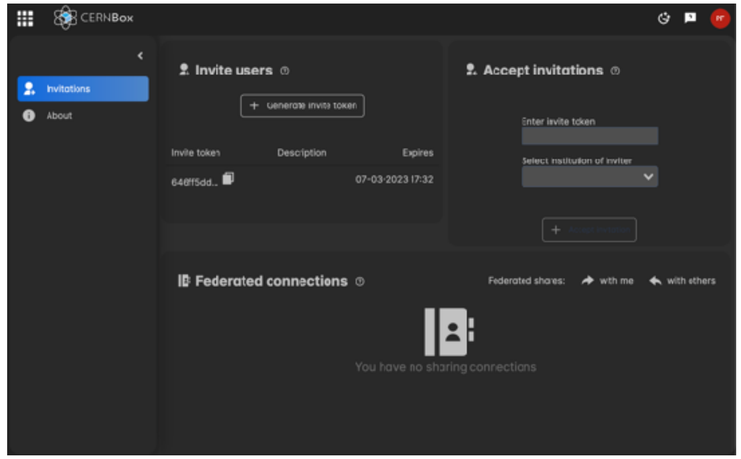
Connector of infrastructures

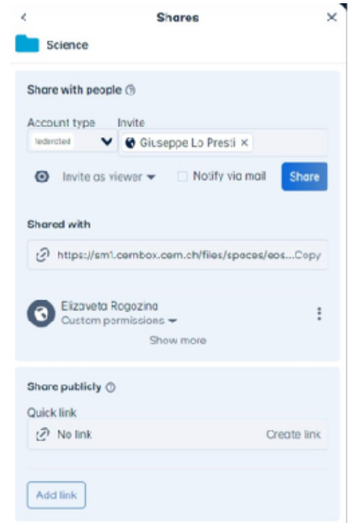
Science Mesh

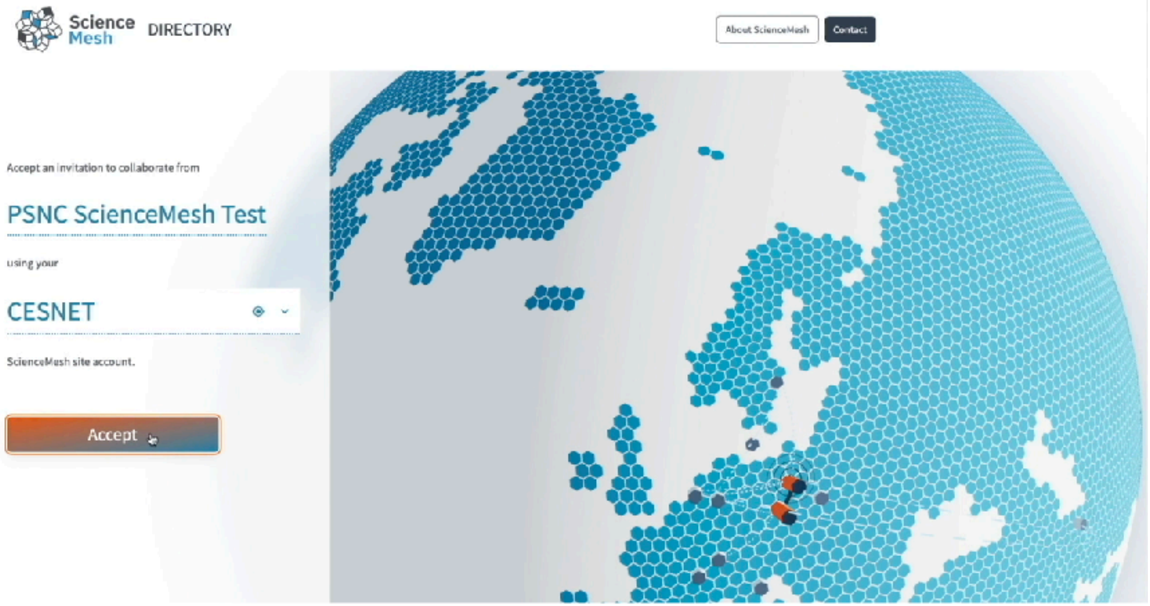
Trust-based federation



Nextcloud
ownCloud 10
OCIS

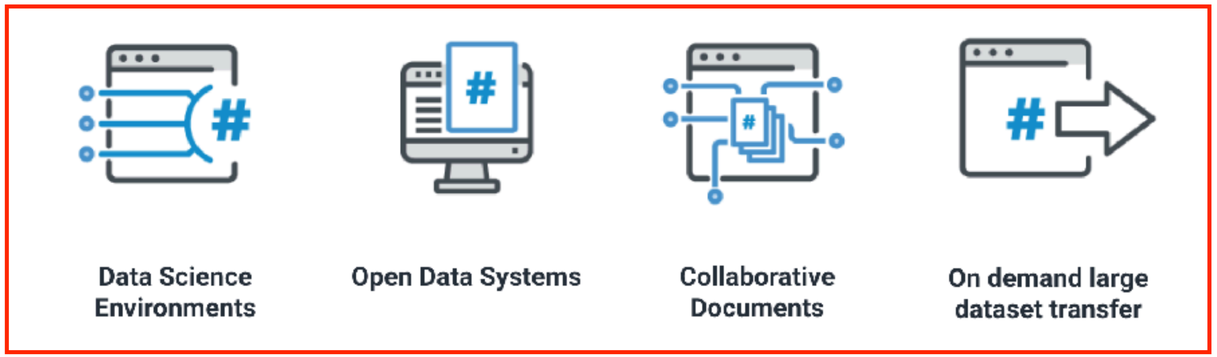


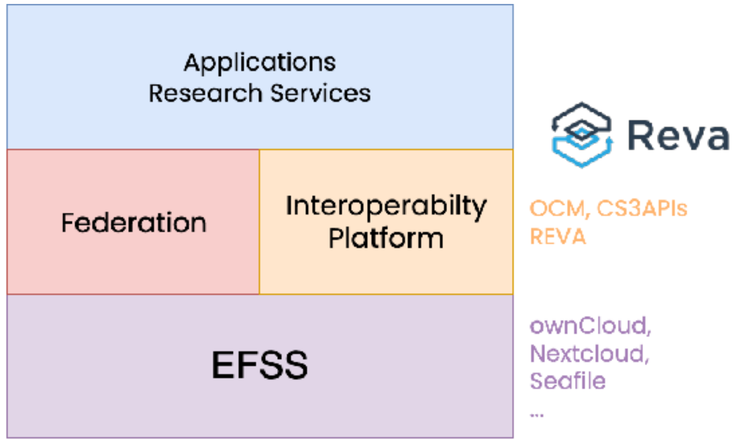




Science Mesh

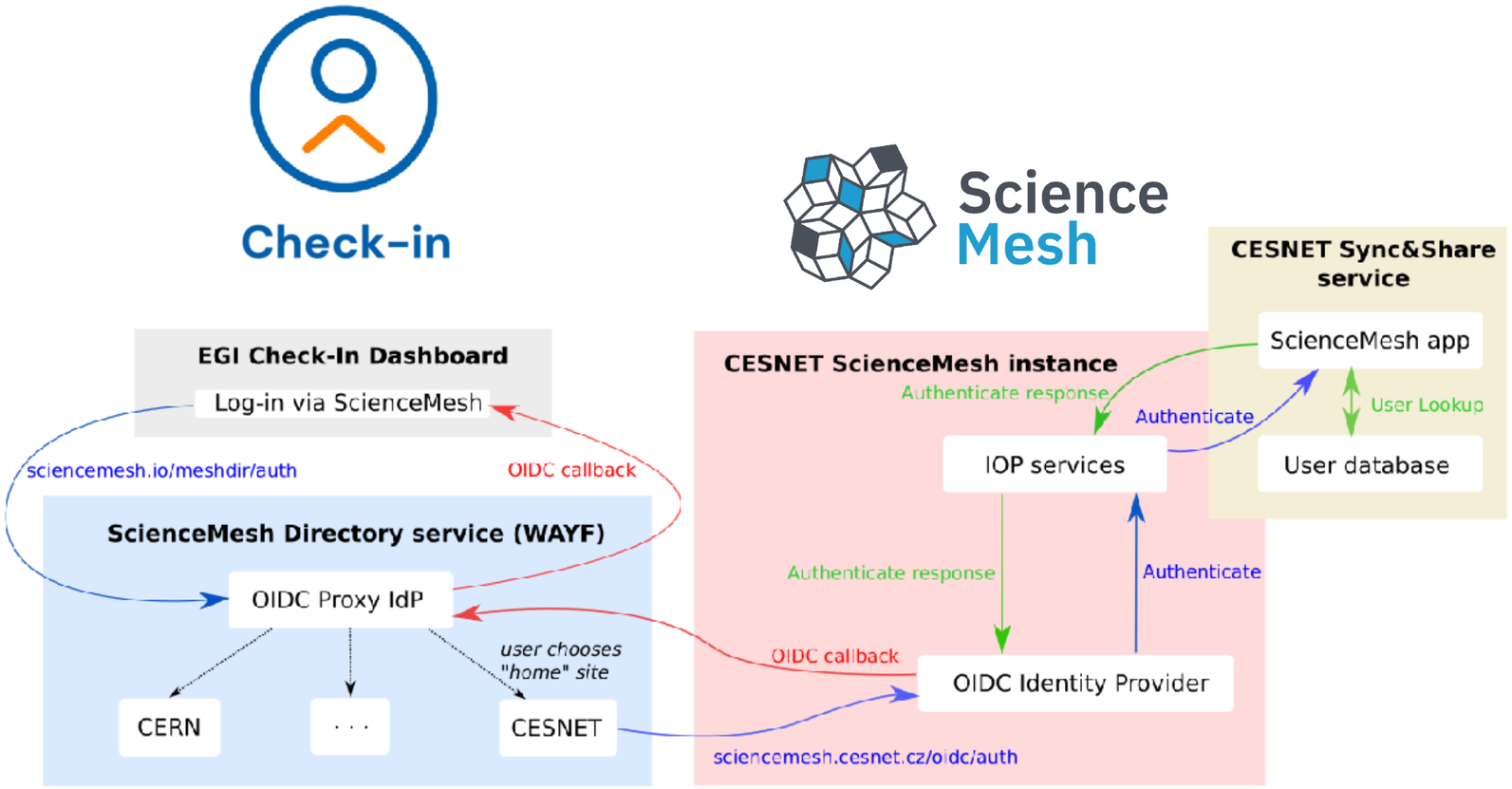
Application Platform

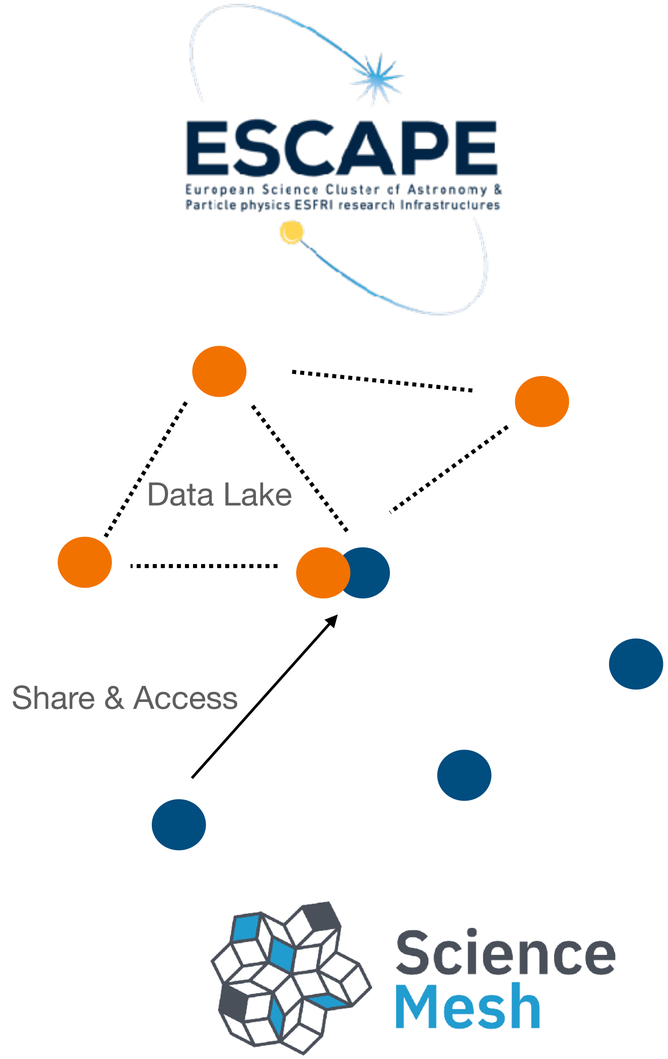




Science Mesh

Connector of the federations





Let’s see this in more detail…

Science Mesh