

## MISSION

- Create a democratised, low-barrier-of-entry approach to FAIR (Findable/Accessible/Interoperable/Reusable).
- Make FAIR-aware infrastructure simply available and get broad uptake.
  - Improve scientific collaboration across institutions through an interoperating federation of data stores.
- Bring FAIR tooling in front of a broad audience of research users (not just "FAIR literate" ones).
- Motivate, train and assist research communities with FAIR infrastructure.
- Improve metadata quality by relying on auto-provisioned schema and agreed ontologies.

## APPROACH

- Design, develop and deploy a platform and the required set of APIs to create a **Federated Science Cloud Mesh** that connects existing research clouds like Sciebo.
- Design, develop and provide tools to improve scientific collaboration across the entire mesh and make implementing FAIR principles as easy as possible for researchers, thus motivating them to actually do so.

*The Mesh already has several hundreds of thousands of users and tens of Petabytes of live data on it.*

## Sciebo RDS

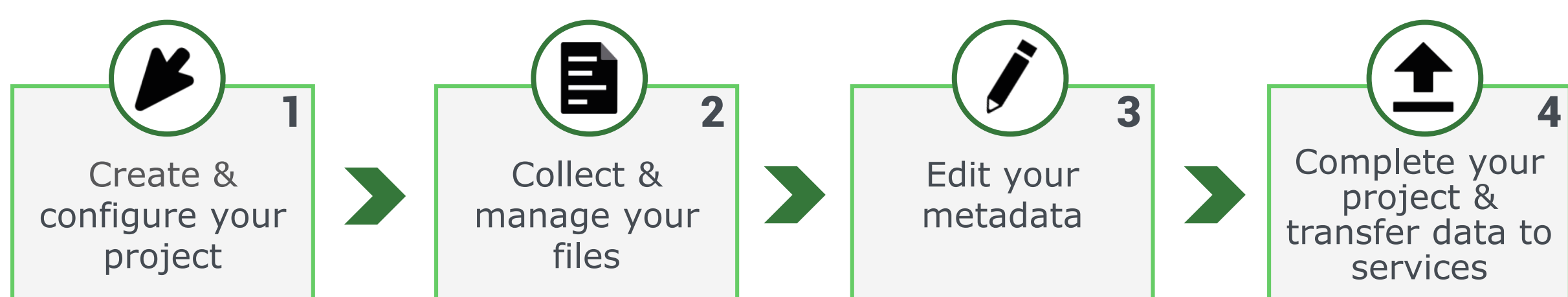
**Sciebo Research Data Services** allow researchers to create **FAIR Digital Object** packages from their own data and manage the deposition process through open access repository services (e.g. Zenodo and Dataverse) and the Open Science Framework ("OSF") science workflow portal. Multiple international Sync'n'Share providers like SURF (SURFdrive, NL) and Sunet (Sunet Drive, SV) are actively working on setting up Sciebo RDS for their users.



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 Deutsche  
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[www.research-data-services.org](http://www.research-data-services.org)

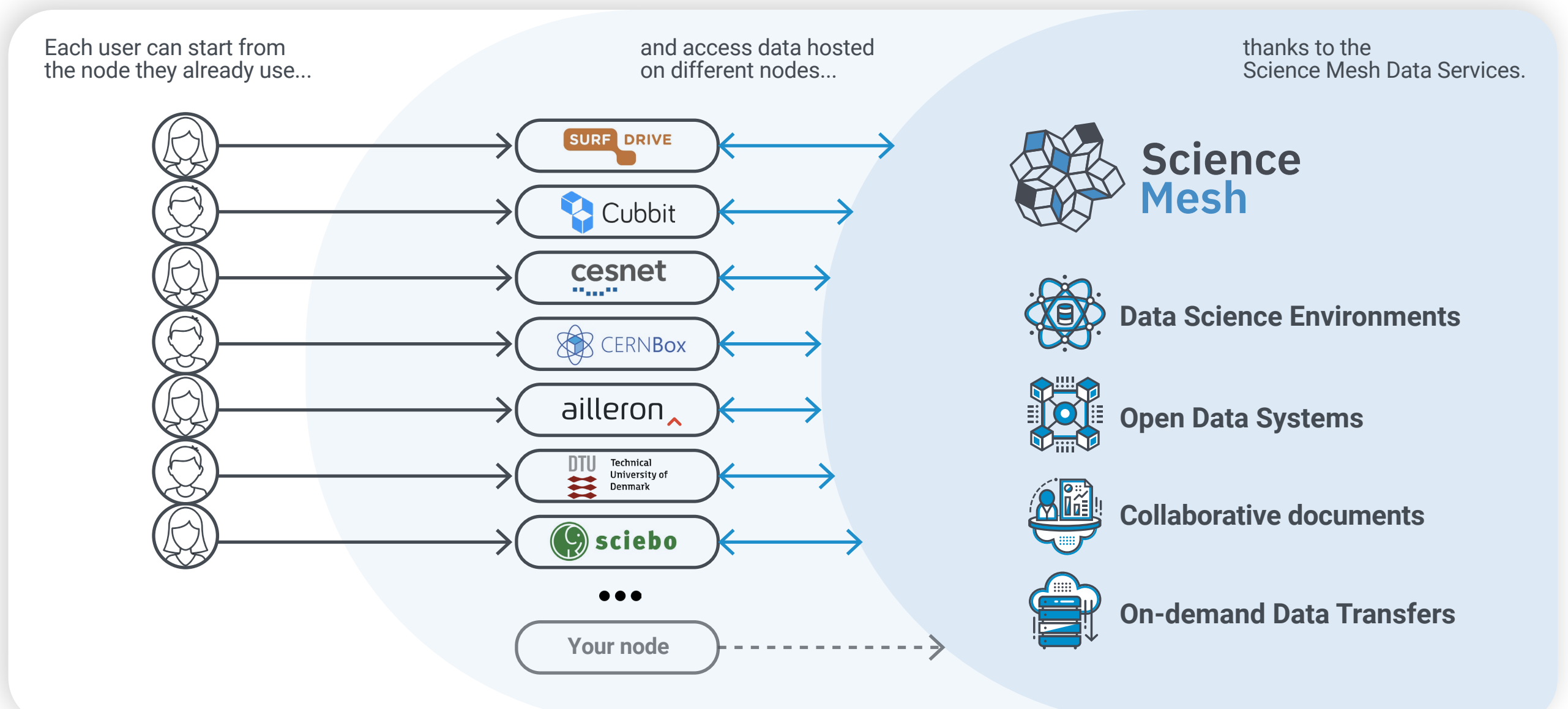
## WORKFLOW

1. Create a Project, name it, choose a folder on EFSS storage & a data repository.
2. Collect research data to be published in corresponding EFSS folder.
3. Enrich research data with metadata.
4. Publish resulting FDO directly from EFSS to data repository.



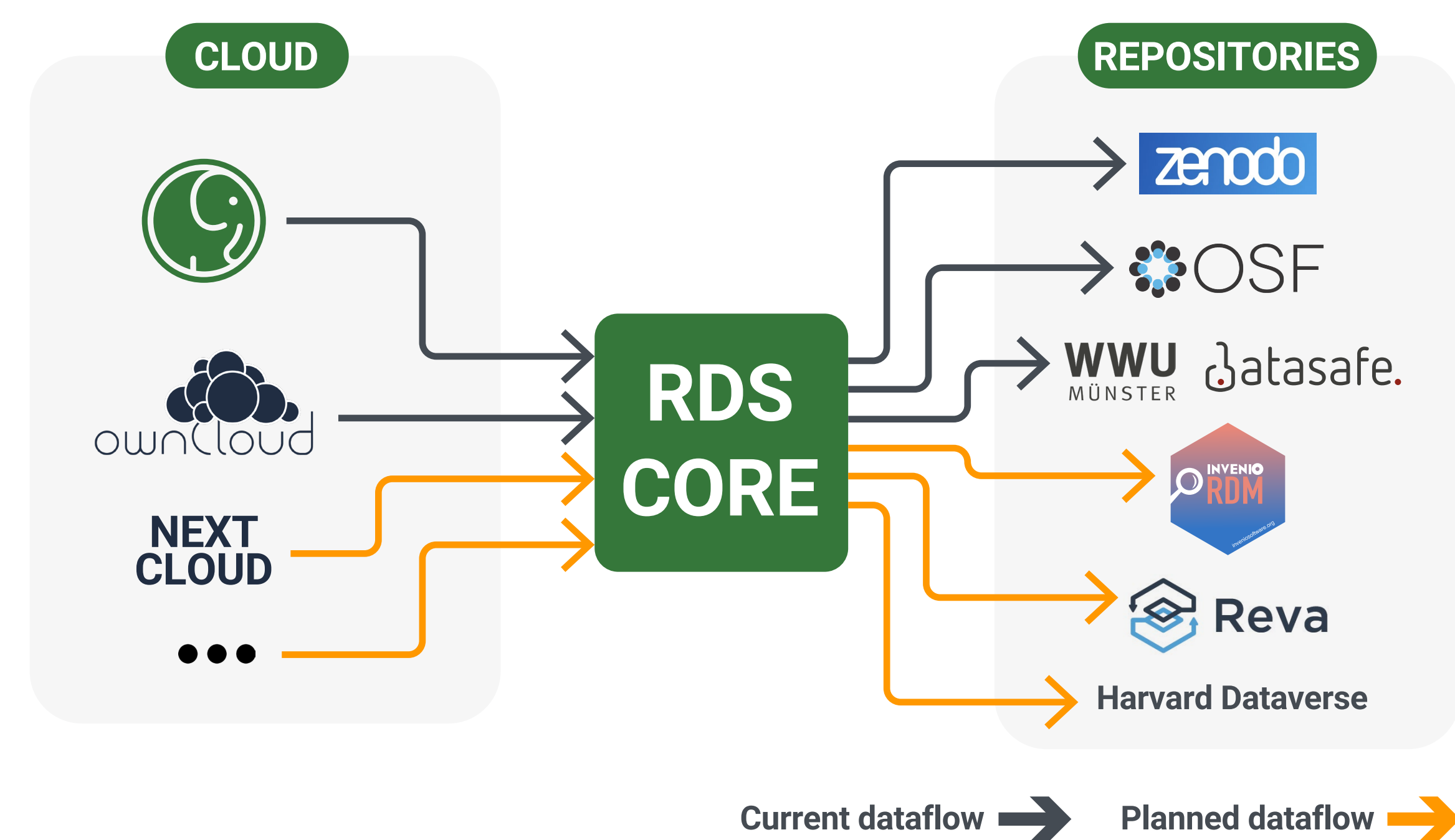
## BACKGROUND

- The ScienceMesh is implemented by CS3MESH4EOSC, a 3-year EU-funded project in the EOSC context.
- Initially, 7 major data services, with hundreds of thousands of users (researchers, engineers, students & staff), will be combined into ScienceMesh.
  - SURFdrive (NL), PSNCBox (PL), CloudStor (AU), Sciebo (DE), owncloud@CESNET (CZ), SWITCHdrive (CH) and ScienceData (DK), as well as domain data stores at CERN (CERNBox) and the EU's own Joint Research Centre's Copernicus (earth observation) datastore.



## CONCEPT

- Software system acting as an interoperability layer between EFSS (Enterprise File Sync & Share) service and data repositories.
  - Provides bridge to publish data directly from EFSS to data repository.
- Provides convenient way to enrich research data with metadata, thus generating low-barrier **Fair Data Objects**.
- Integrates into the EFSS service as e.g. an Owncloud plugin.



## TECH

- Uses JSON-LD based RO-Crate as metadata format ([www.researchobject.org/ro-crate](http://www.researchobject.org/ro-crate)) and embeds RO-Crate reference implementation Describo ([github.com/Arkisto-Platform/describo-online](https://github.com/Arkisto-Platform/describo-online)) to collect metadata.
- Each data repository connector is implemented as it's own microservice, thus the ecosystem being highly extendable to support additional repositories.
- Kubernetes-ready, Helm charts are available.

## OPEN SOURCE

-  **Sciebo-RDS GitHub**
- Developed and maintained by the University of Münster ([uni-muenster.de](http://uni-muenster.de)).
  - Additional components in development at multiple international institutions to match their ecosystem needs (e.g. Nextcloud Plugin, Harvard Dataverse connector).
  - Contributions welcome, Github discussions and Gitter chat are available.

## THE COMMUNITY

CS3MESH4EOSC grew out of the grassroots "CS3" community, a diverse group of infrastructure builders and providers from the academic sector who look after rapidly growing datastores of the "synch-n'-share" paradigm.

Join the CS3MESH4EOSC Community!

To become a Science Mesh early adopter and get privileged access to a global platform providing services for data-driven science & research collaboration

[cs3mesh4eosc.eu](http://cs3mesh4eosc.eu)

[@cs3org](https://twitter.com/cs3org)

[company/cs3mesh4eosc](https://www.linkedin.com/company/cs3mesh4eosc)

[zenodo Communities > cs3mesh4eosc](https://zenodo.org/communities/cs3mesh4eosc)

[CS3MESH4EOSC Project](https://www.youtube.com/CS3MESH4EOSC)

[anchor.fm/cs3mesh4eosc](https://anchor.fm/cs3mesh4eosc)