



In a nutshell

Pedro Ferreira (CERN)

Why?



But...

- * Researchers are **isolated in service islands**, despite significant progress (e.g. OCM)
- * CS3 sites cannot benefit from **services developed elsewhere**
- * **Hard to develop for the community** when there are separate EFSS stacks
- * **Poor knowledge transfer** back to commercial and business environments

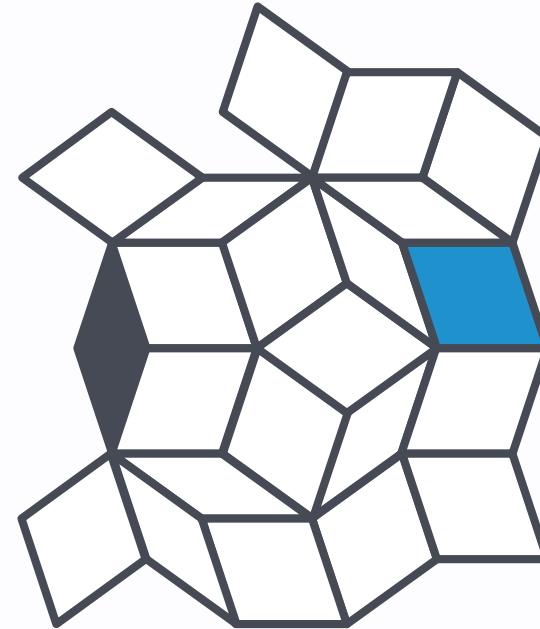
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[Link to talk](#)

The Idea

- **Decentralized** mesh of EFSS nodes
- Based on **Open Standards** and **Open Source**
- **Federated** environment for collaborative research
- **Application platform** for distributed collaboration



One year ago...

- 30-31 January 2020 -
Copenhagen 🇩🇰
- Started with 12 partners
 - **Trust-IT** joined in the meantime!
- Started engaging with **7 early adopters**
 - nice to see you again! 🙌
- **Very busy year** for the Project!

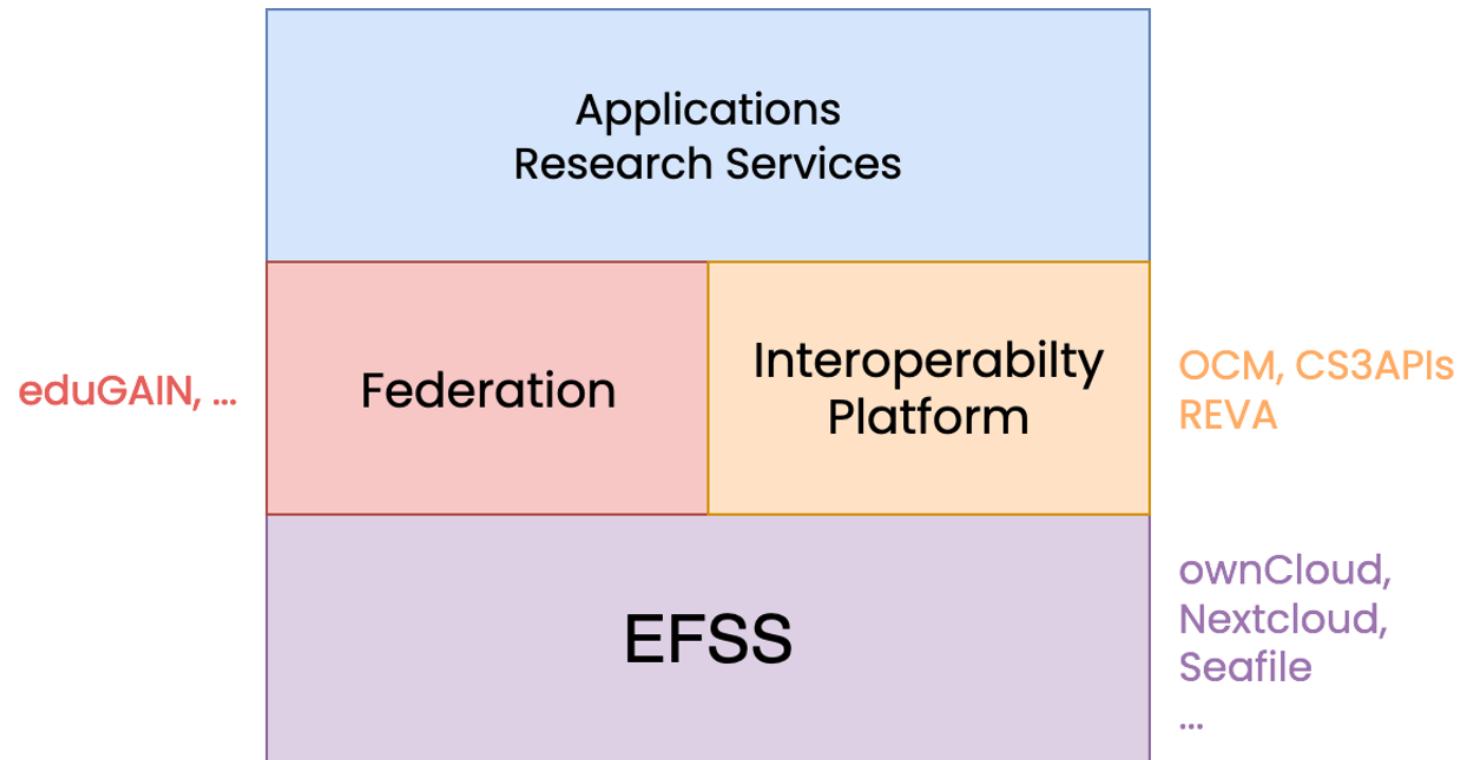


2020

(and why not everything was bad)

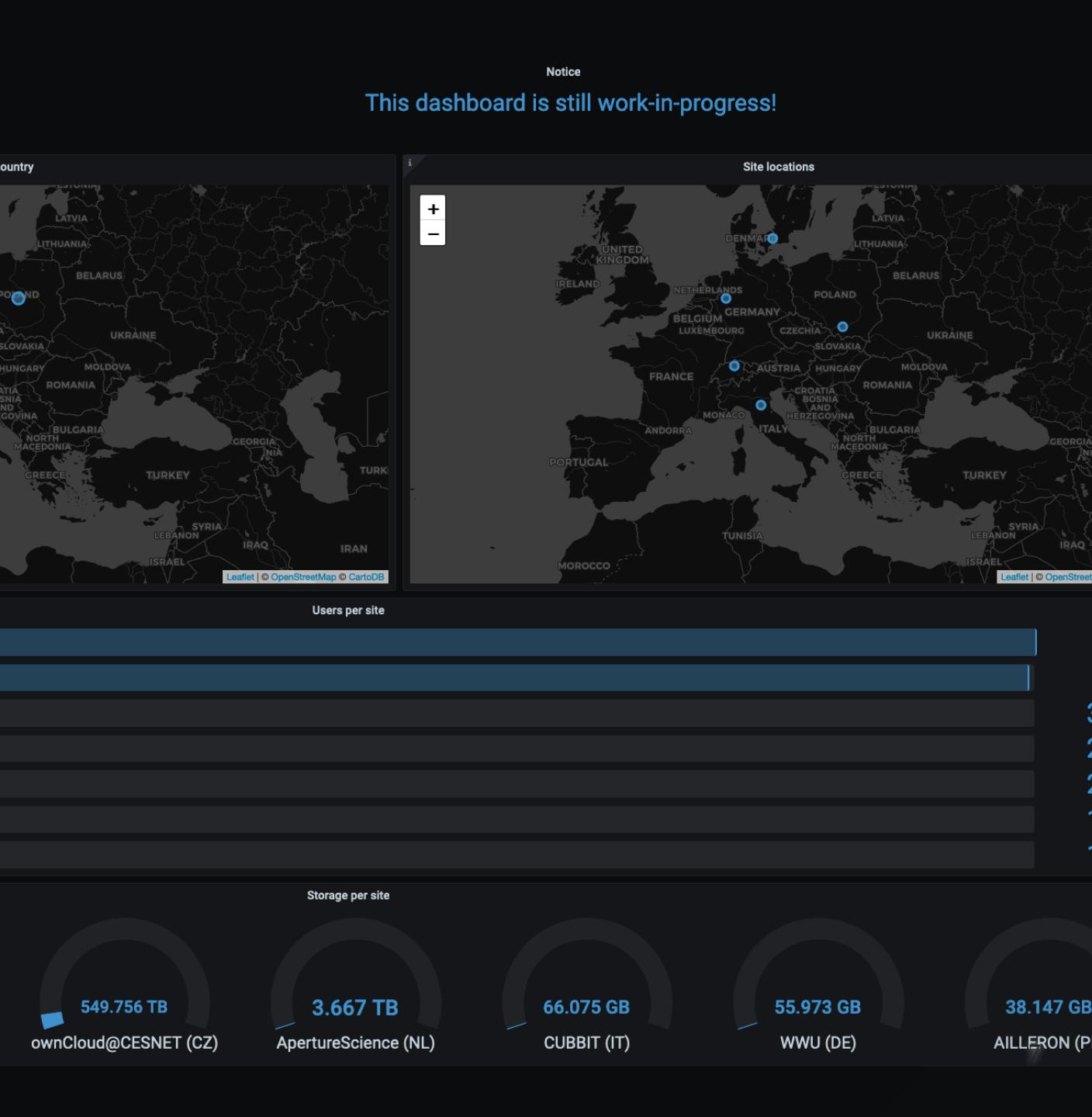


Science
Mesh



Federation

- Established Roadmap for Trust
- Federated Identity
- Registry (GOCDB, Mentix)
- Monitoring (Prometheus, Grafana)
- Security
- Up and running mid-2021!





IOP

- Established protocols and APIs
 - OCM
- Packaged distribution
- Set up at Partners (8 sites)
- Companion application for ownCloud and Nextcloud
- **You can already join the mesh!**

Photo by Riki Risnandar from [Pexels](#)

Applications

Photo by Markus Spiske from [Pexels](#)

A blurred background image of a computer screen displaying code in a terminal or code editor. The code appears to be in PHP, with syntax highlighting for various keywords and functions. A prominent red error message is visible in the center of the screen, reading: "Wrong wcf_wpp object. Base attribute is required", which corresponds to the question about the 'base' attribute in the slide content.

```
    $settings_function = null, $settings_file = null ) {  
        $settings_function, $settings_file );  
  
    }  
}  
  
    if ( !empty( $options ) ) {  
        if ( !empty( $options['base'] ) ) {  
            $options['base'] = 'Wrong wcf_wpp object. Base attribute is required';  
        }  
        $options['base'] = getattribute( 'base' );  
    }  
  
    if ( !empty( $options['base'] ) ) {  
        $options['base'] = 'Wrong wcf_wpp object. Base attribute is required';  
    }  
}  
}
```



CodiMD

Describo

 RCLONE



 zenodo

 ONLYOFFICE

 binder

 indico

 INVENIO RDM

 C2O

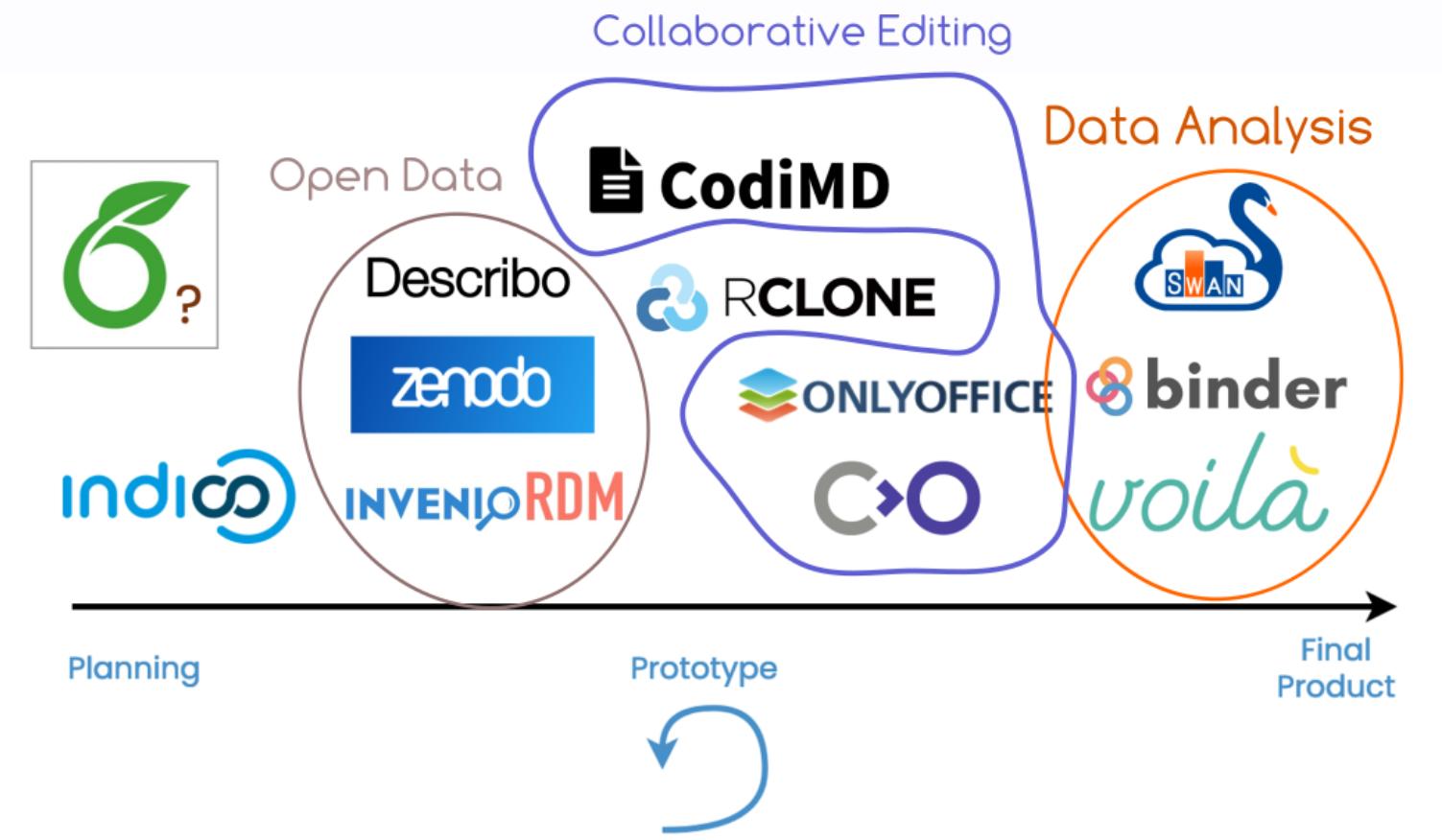
 voila

Planning

Prototype

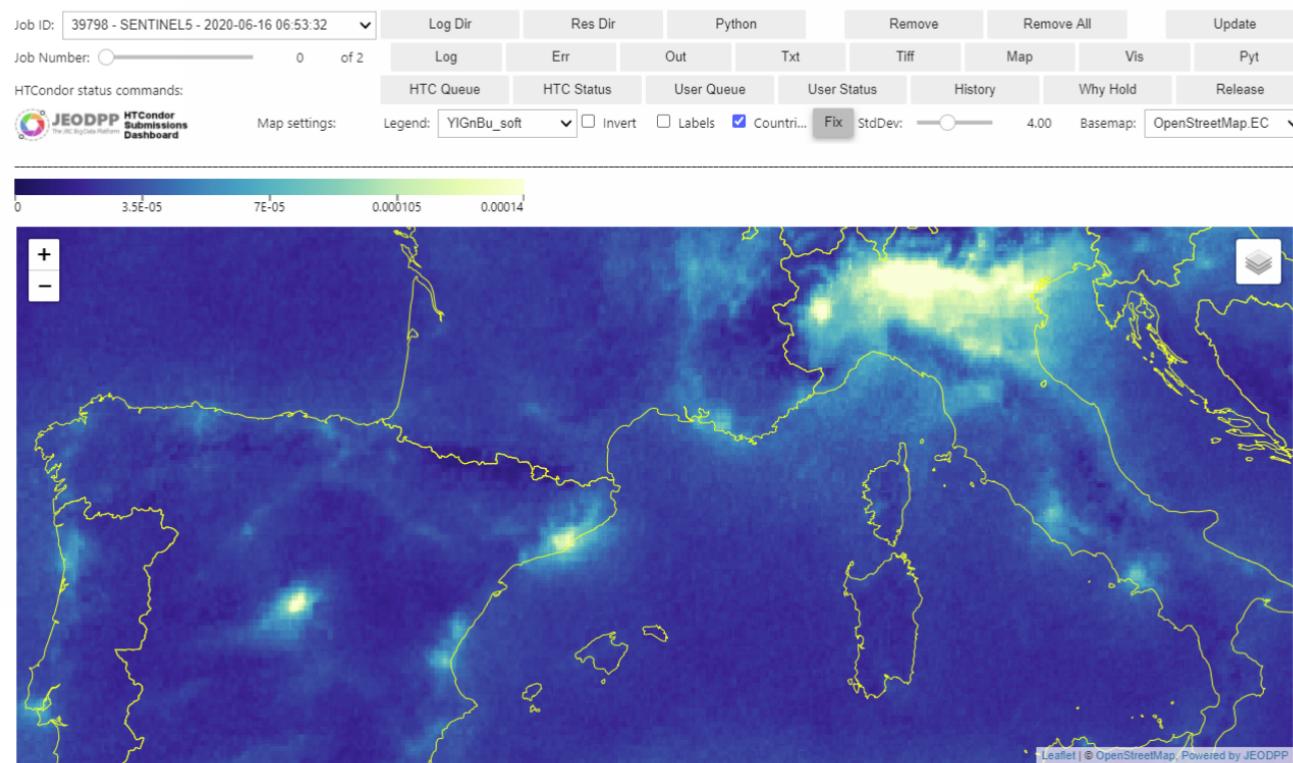
Final
Product





Logos are property of the respective projects

Example: effects of Covid19 lockdown measures on air quality



Davide De Marchi - JupyterLab for Earth Observation applications with HTCondor scaling and Voilà dashboarding

ScienceMesh
CS3MESH4EOSC project

Cloud inter-operability platform

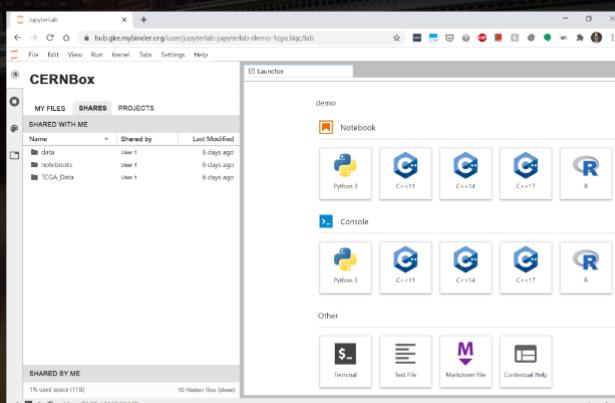
cloud-native

Distributed Data Science environments

JupyterLab extension (CS3 APIS)

EU flag

- **Leading tasks on**
 - Reference inter-operability platform
 - Distributed Data Science environments
- ScienceMesh Inter-operability platform
 - make cloud storage and application providers inter-operable, via the CS3 APIS
- JupyterLab extension (Cs3Api4Lab)
 - Integration with ScienceMesh IOP (CS3 APIS)
 - replaces the default file manager
 - new UI elements for share functionalities



Marcin Sieprawski - **Science Mesh beyond science -- perspectives for adoption in a wider business context.**

Context and motivation

- CERNBox is the central storage for user data at CERN and evolves as the Apps Hub
 - Collabora, DrawIO, MS Office, OnlyOffice, SWAN, ...
- Clear need for a proper Markdown editor in CERNBox, as well as for the **ScienceMesh** infrastructure
 - Quite a popular format, close to 1M .md files in CERNBox at CERN
 - Compares with 3.6M Office files and 2.8M LaTeX files
 - CodiMD ([HackMD.io's open source edition](#)) already piloted at CERN and well received

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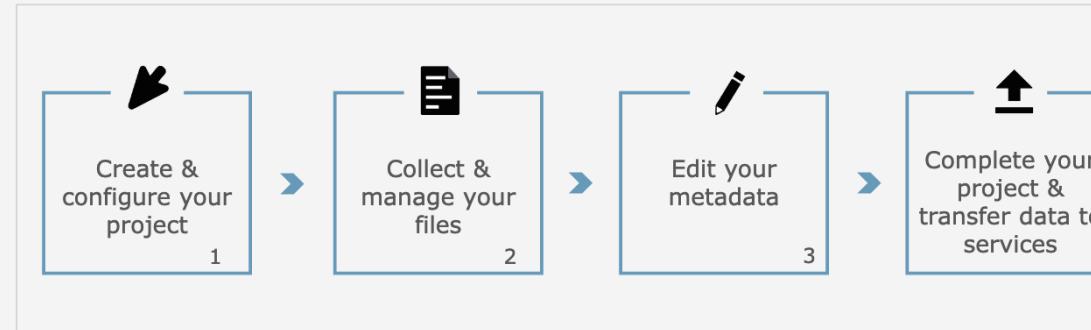
Giuseppe Lo Presti - CodiMD in CERNBox: leveraging the WOPI protocol to provide collaborative markdown editing

Synergies

- Conversations with several vendors about new features and integrations
 - e.g. sponsoring developments in **Rclone**
- Open Data partnership involving UTS, PARADISEC (AU), Zenodo
 - Based on WWU's **Sciebo RDS** and UTS's **Describo**



sciebo RDS – Our Current Workflow



OSF zenodo

...

Lennart Hofeditz

27/01/2021

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Peter Heiss, Lennart Hofeditz - Progress of Sciebo Research Data Services

Describo Desktop - define and link entities

The image shows three windows from the Describo Desktop application:

- Author Entity Window:** A modal window titled "Author" with a "Person" icon. It contains a "Person" button and a "John Public" entry. Below it is a green box containing the text: "This item is connected to: @type: RootDataset → hasPart name: my crate".
- Dataset Data Editor:** A window titled "Edit: Dataset - data" showing dataset metadata fields like "name", "description", "license", and "hasPart". The "hasPart" field lists files: DT1-214-A.mp3, NT1-20003-002.jpg, and NT5-TokelauOf-vid.mp4.
- Dataset Connection Editor:** A window titled "Edit: Dataset - connections" showing connections to other datasets. It lists "author", "publisher", and "funder" fields, each with a "Person" button. At the bottom, it shows a connection to "my crate".

Marco La Rosa, Peter Sefton - Describo and RO-Crate - the FAIR data research helpers

You app could be the next one!

Cubbit

- CS3Mesh on a physical device!
- Integration with CS3APIs/IOP

*Gianluca Granero - Cubbit Hive:
the private distributed cloud*





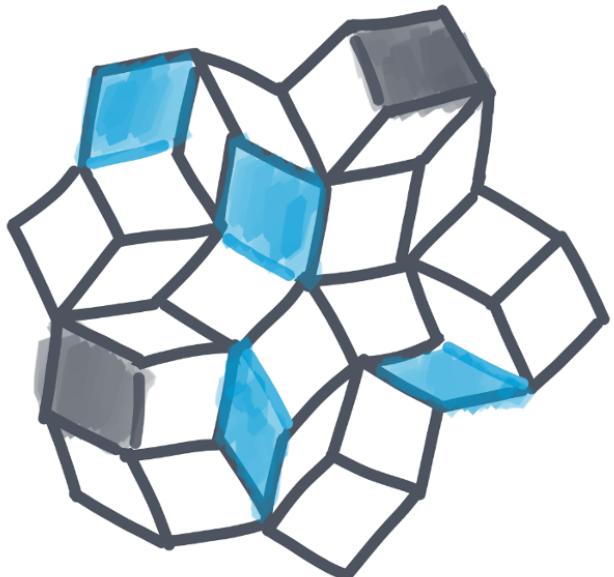
unlock scientific collaboration through technology.

ScienceMesh is a rich ecosystem for frictionless scientific collaboration and access to research services.



Communications

- Project website and branding
 - Newsletters, [@cs3org](#) and others
- ScienceMesh website and branding
 - Documentation on how to join
- Events such as this one!



Roadmap

1. **mid-2021** - Consolidation of Proof of Concept (user sharing)
2. **early 2022** - Second prototype - sharing with groups of users
3. **late 2022** - Production infrastructure, applications fully integrated

Conclusion

- Lots of things for you to **discover**
- ... but it's also about **your** ideas
- **We hope you will like the workshop!**