



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

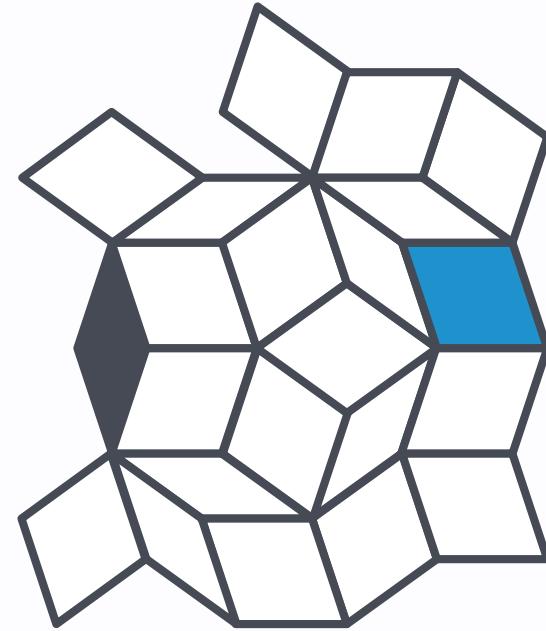
27/01/21

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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 the community
 - "Meet the CS3Mesh"
 - nice to see you again! 🙌
- **Very busy year** for the Project!

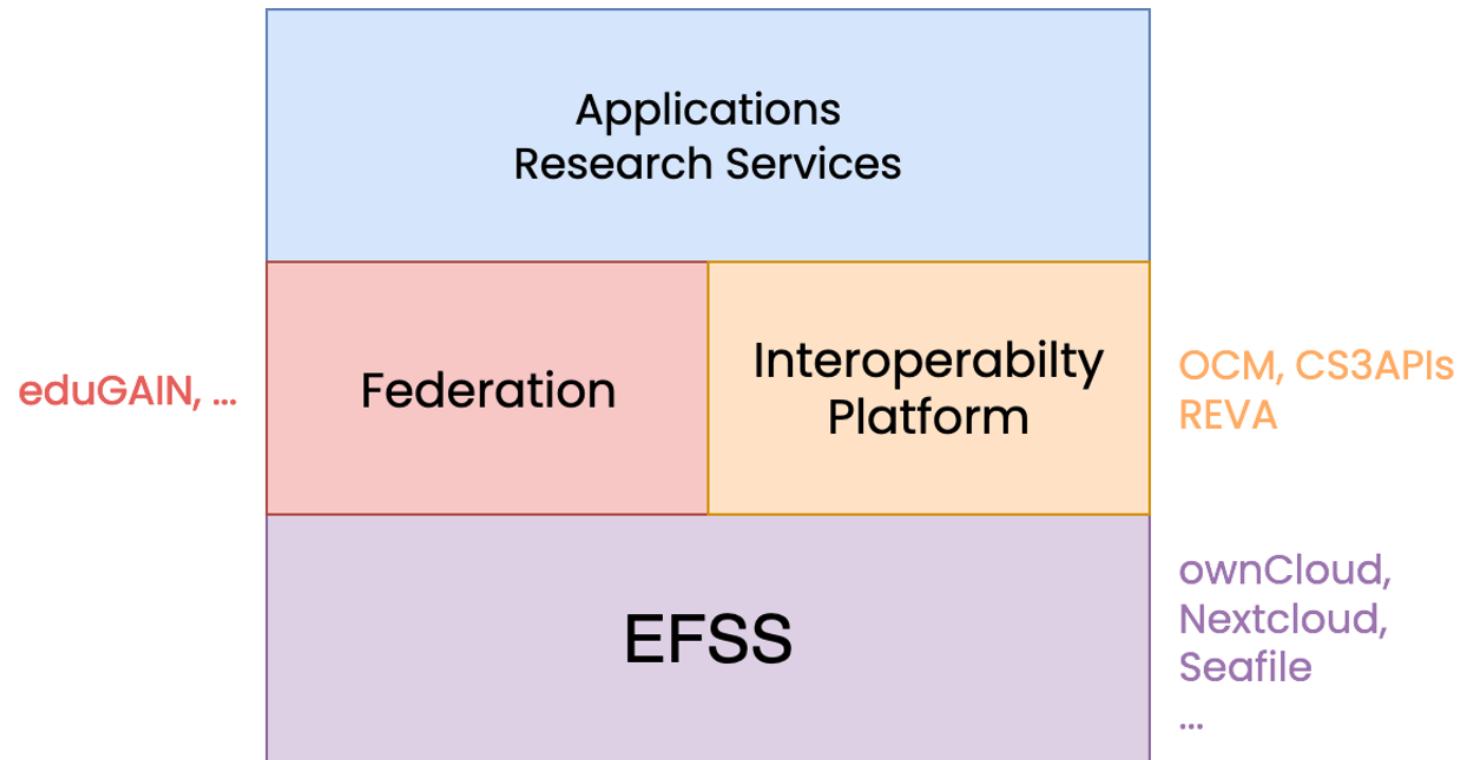


2020

(and why not everything was bad)

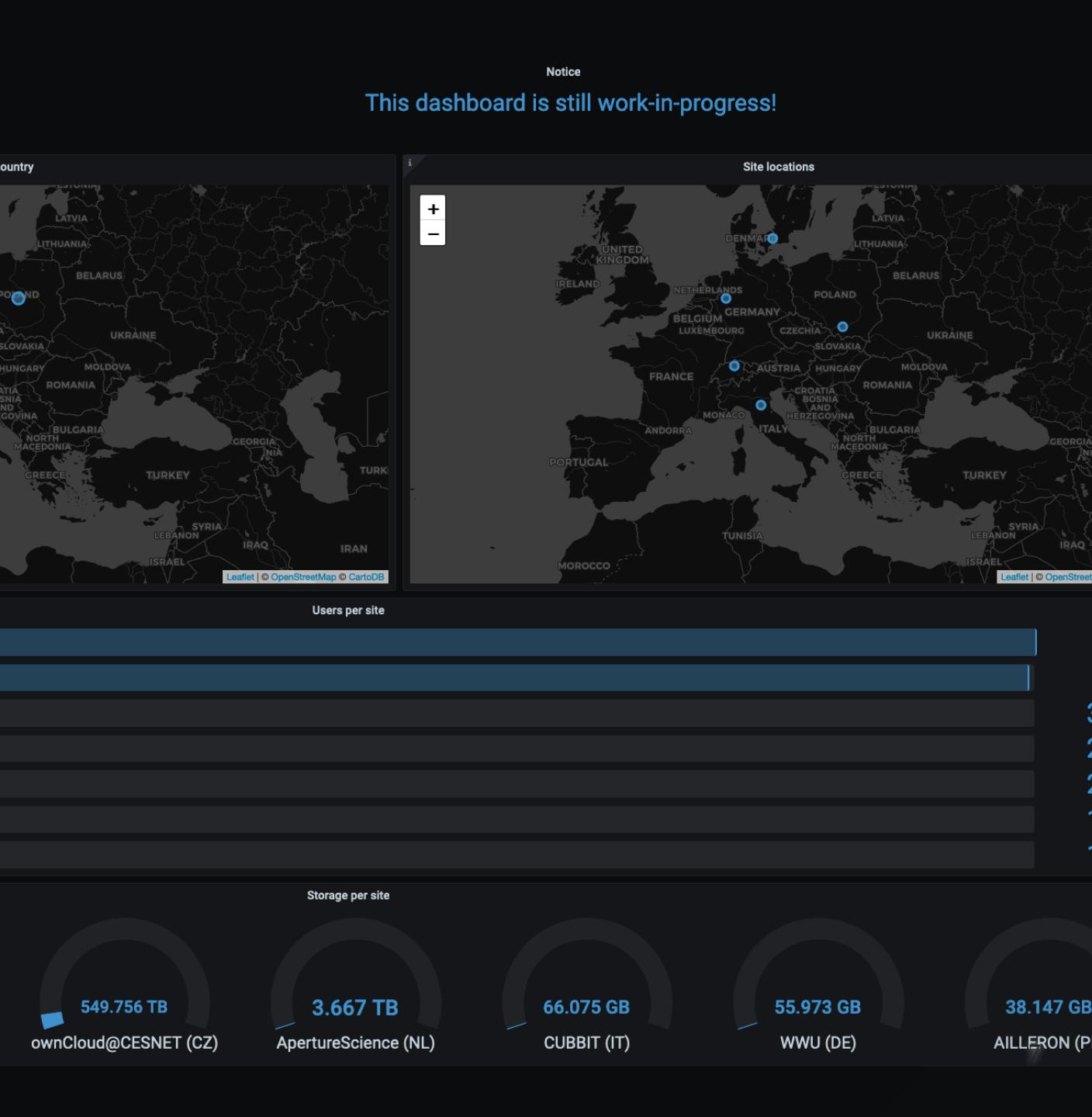


Science
Mesh



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!**

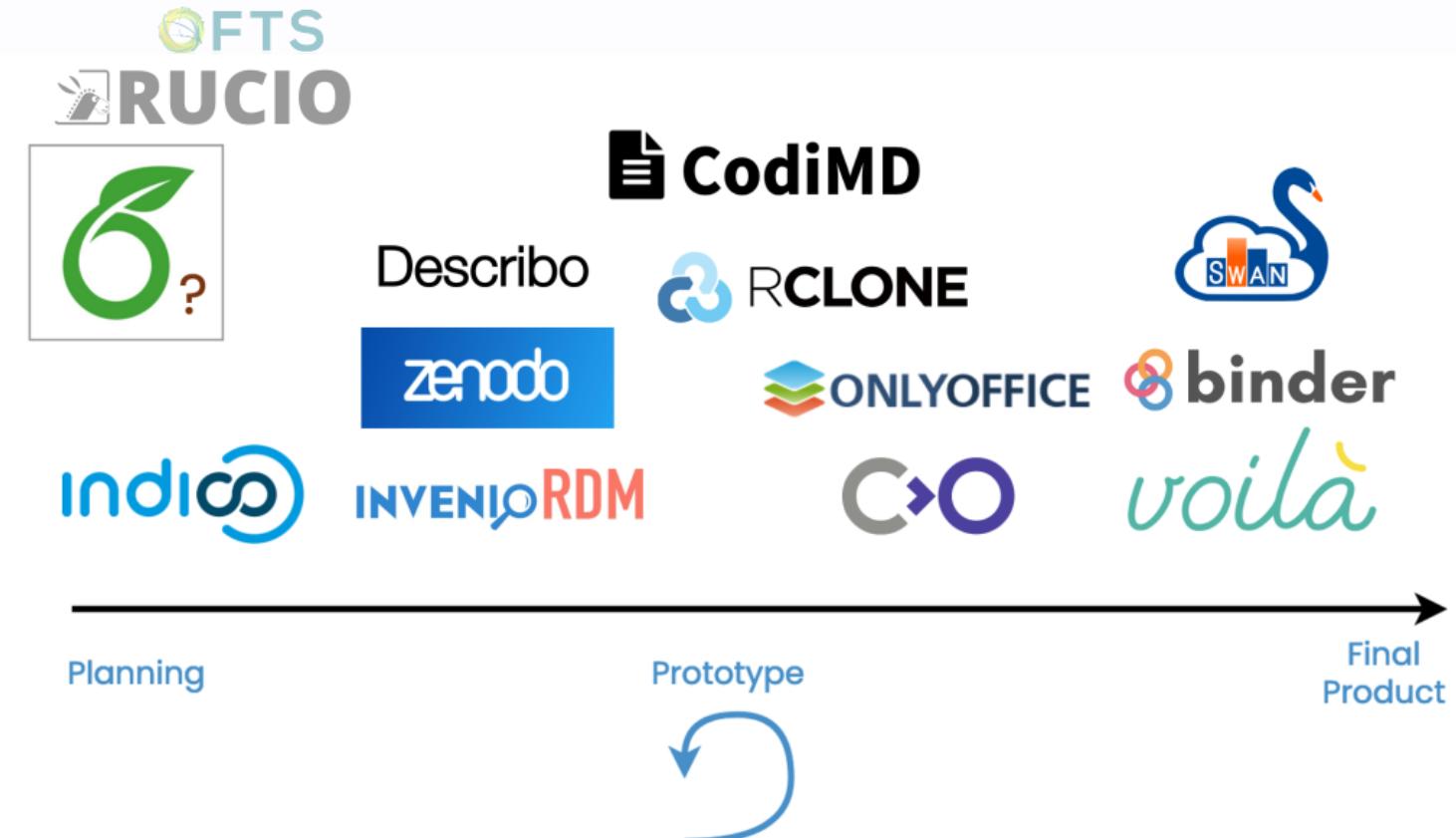
Photo by Riki Risnandar from [Pexels](#)

Applications

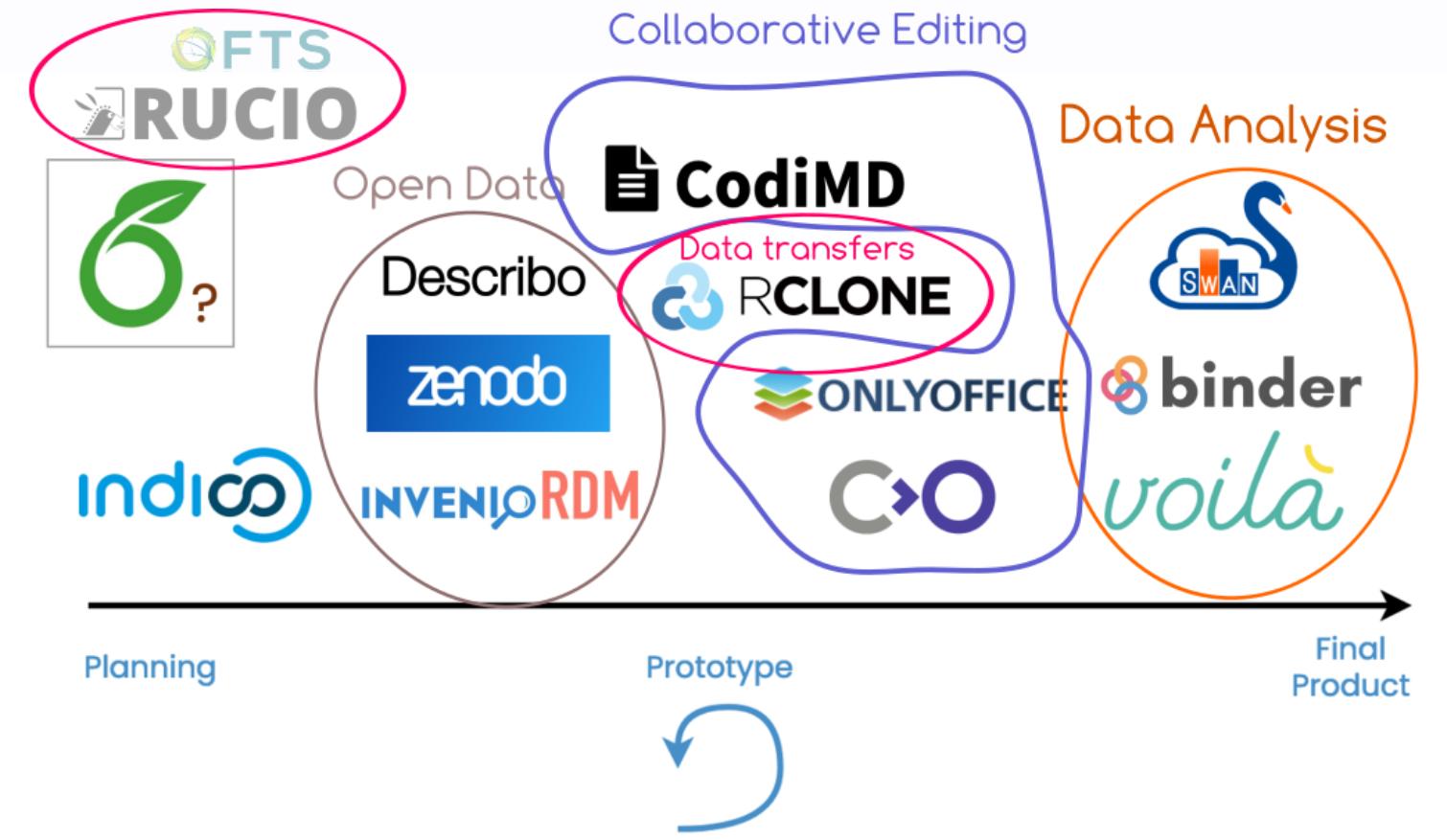
Photo by Markus Spiske from [Pexels](#)

A blurred background image of a computer screen displaying code in a dark-themed IDE. 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_pnp 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 );  
  
    }  
}  
  
    protected function __construct( $base ) {  
        parent::__construct( $base );  
        if ( ! $base ) {  
            throw new WcfException( 'Wrong wcf_pnp object. Base attribute is required', 'ja_composer' );  
        }  
    }  
  
    public function &getAttributes() {  
        return $this->parent->getAttributes();  
    }  
  
    public function &getChildren() {  
        return $this->parent->getChildren();  
    }  
}
```

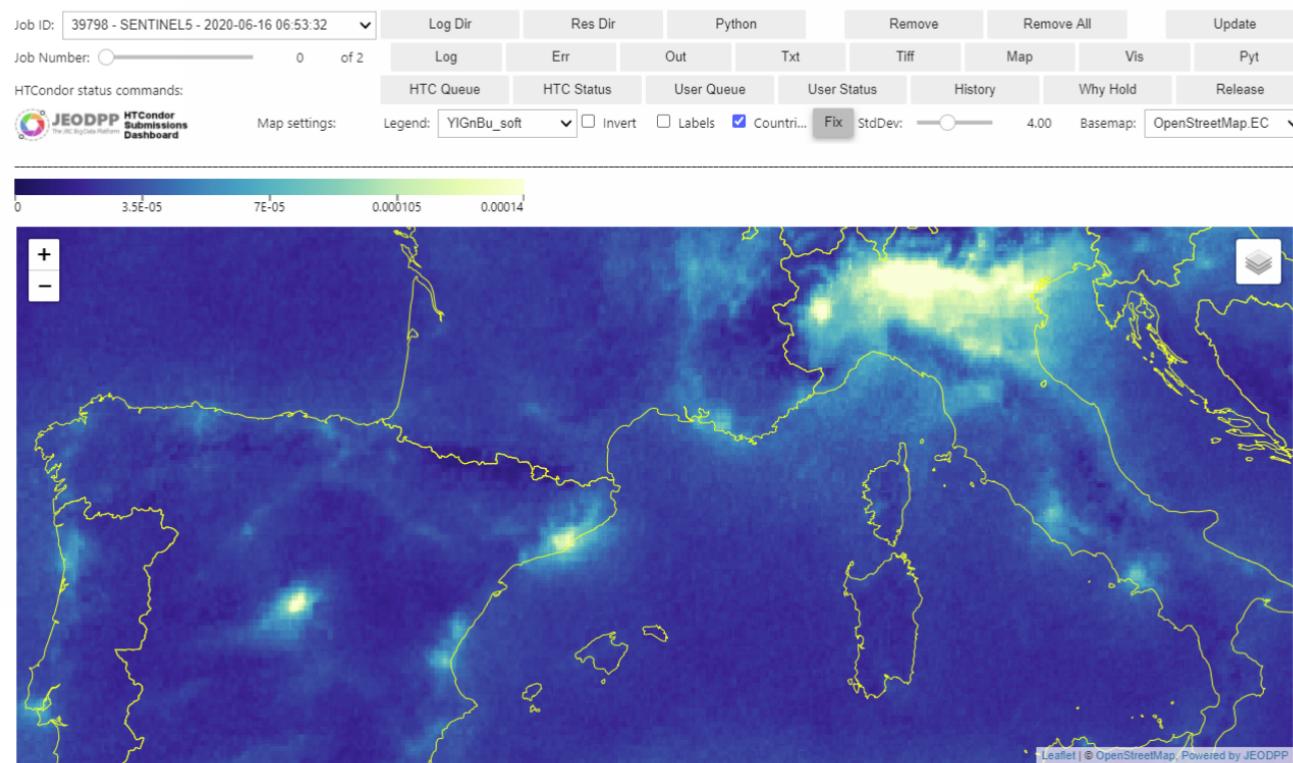


Logos are property of the respective projects

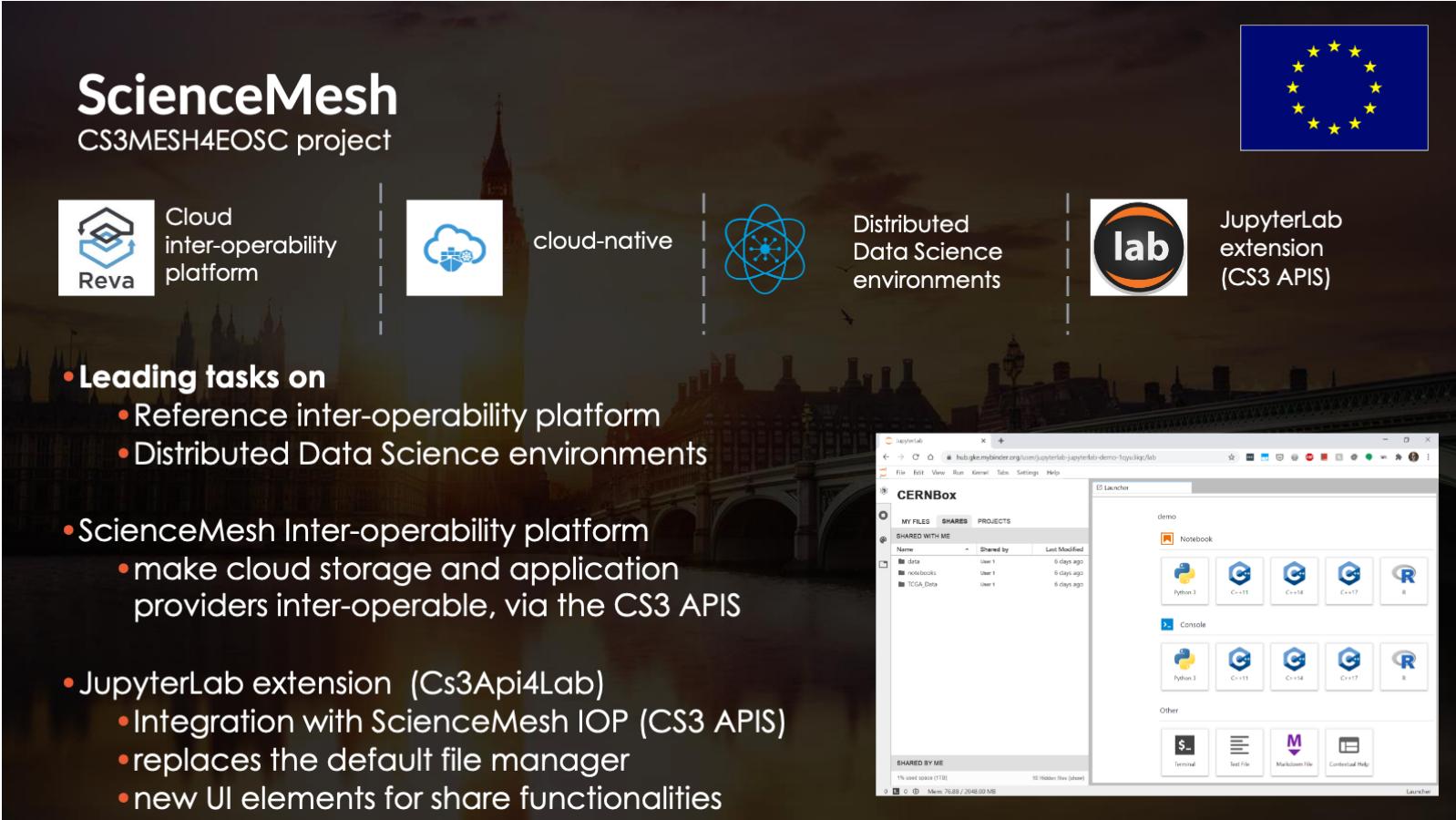


Logos are property of the respective projects

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

The slide features a dark background with a faint image of a bridge over water. At the top, there are four vertical dashed lines separating the project name from its components. Below each component is a small icon: Reva (a cloud with a gear), a cloud with a gear, an atom symbol, and a JupyterLab logo. To the right of the JupyterLab logo is the European Union flag. The bottom half of the slide contains a bulleted list of tasks, with the last item showing a screenshot of a JupyterLab interface integrated with CERNBox.

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

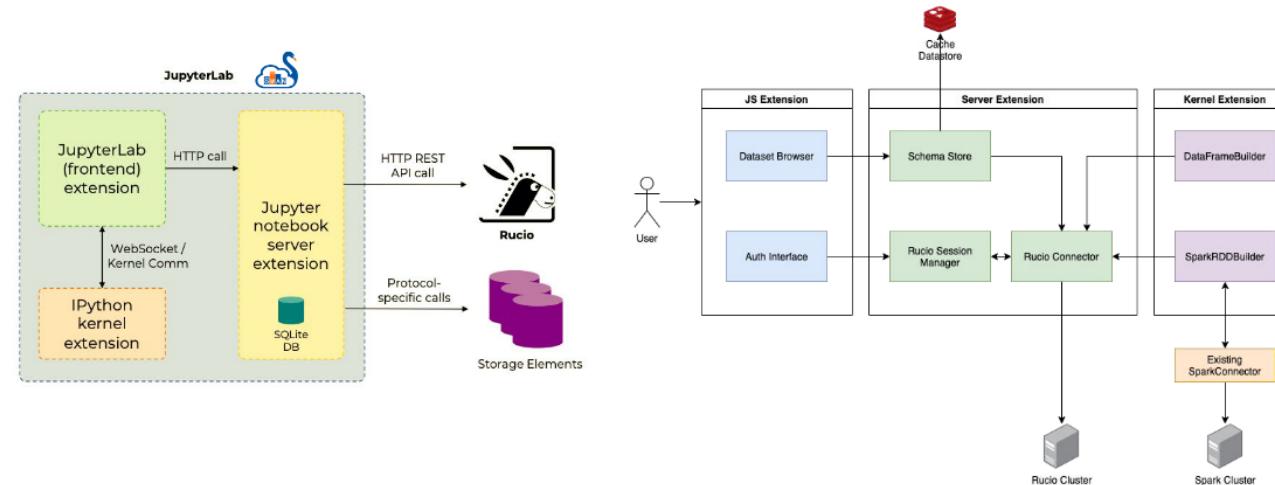
Context and motivation

- 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

Plugin architecture overview



2021-01-26

CS3 :: Mario Lassnig :: SWAN, Rucio, and Jupyter

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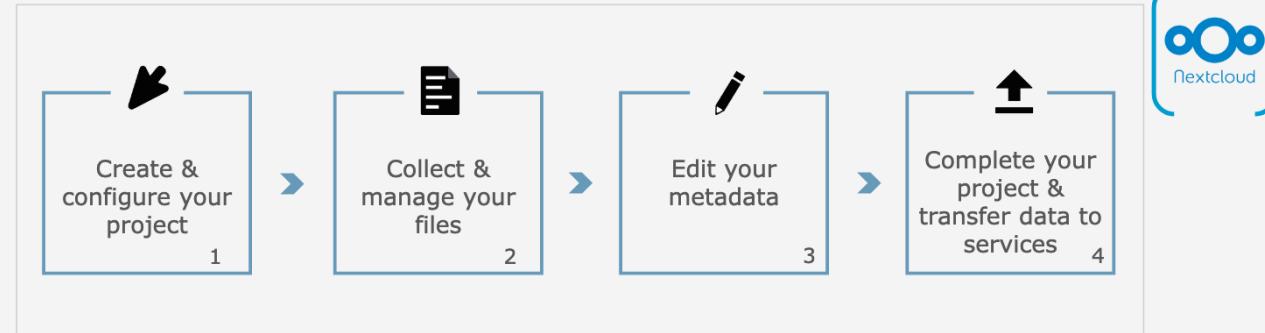
Mario Lassnig - SWAN, Rucio, and Jupyter

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 screenshot displays three windows from the Describo Desktop application:

- Author Window:** Shows an "Author" entity with a "Person" type. It includes buttons for saving, adding a person, adding an organization, and deleting the item. The person listed is "John Public".
- Dataset Connection Window:** A yellow-highlighted box shows a connection between the current item and a dataset named "my crate". The connection is defined by the property "@type: RootDataset → hasPart" and the value "name: my crate".
- Edit Dataset - data Window:** Shows the "Edit: Dataset - data" interface. It lists properties like name, description, license, and hasPart. Under "hasPart", there are three items: "DT1-214-A.mp3", "NT1-20003-002.jpg", and "NT5-TokelauOf-vid.mp4". It also shows author, publisher, and funder fields.

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*





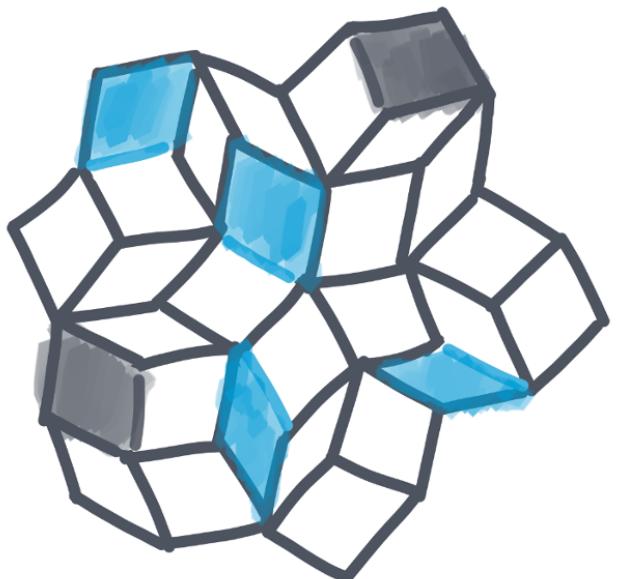
unlock scientific collaboration through technology.

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!**