



**CS<sup>3</sup>  
MESH<sup>4</sup>  
EOSC**

**Connecting European Data**



# Science Mesh for EFSS Providers

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- # What is the Science Mesh?
- # Architecture
- # Authentication and Authorisation
  - # Invitation workflow
- # Monitoring and usage metrics
- # Operational procedures
- # Governance Structure
- # Security
- # More information
  - # How to join



# Science Mesh

## # What is the Science Mesh?

- # A community of sites running Enterprise File Sync-and-Share Services (EFSS)
- # Sites are autonomous but bound together by:
  - # Protocols
  - # Procedures
  - # Policies
- # Sites providing collaboration services allowing their existing users to share data and applications not only within their own service but also with users from other EFSS sites
- # Light-weight by design



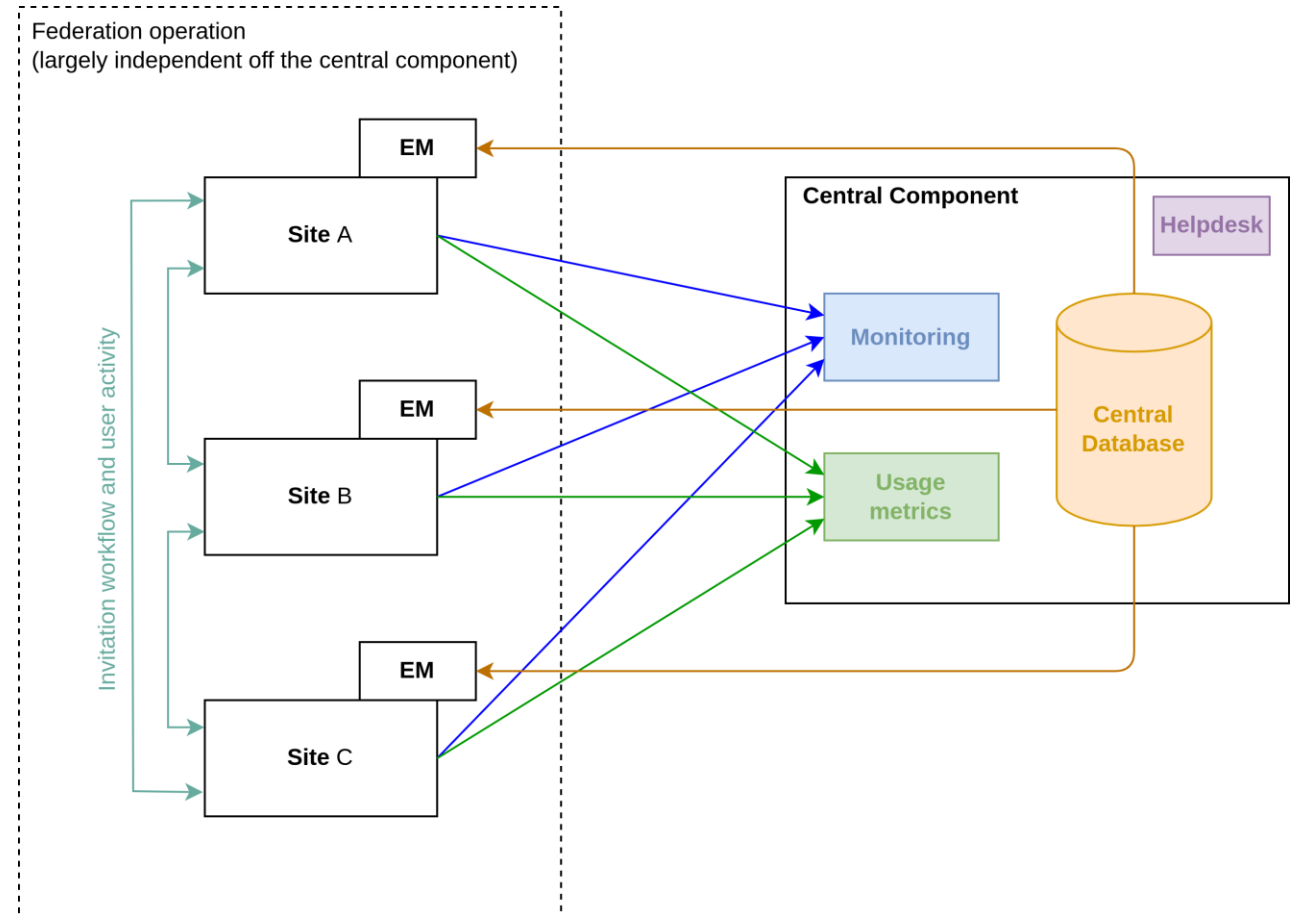
## # Central component

- # Availability monitoring
- # Usage metrics
- # Central database with mesh topology
- # Helpdesk for sites

## # Executive Module (EM)

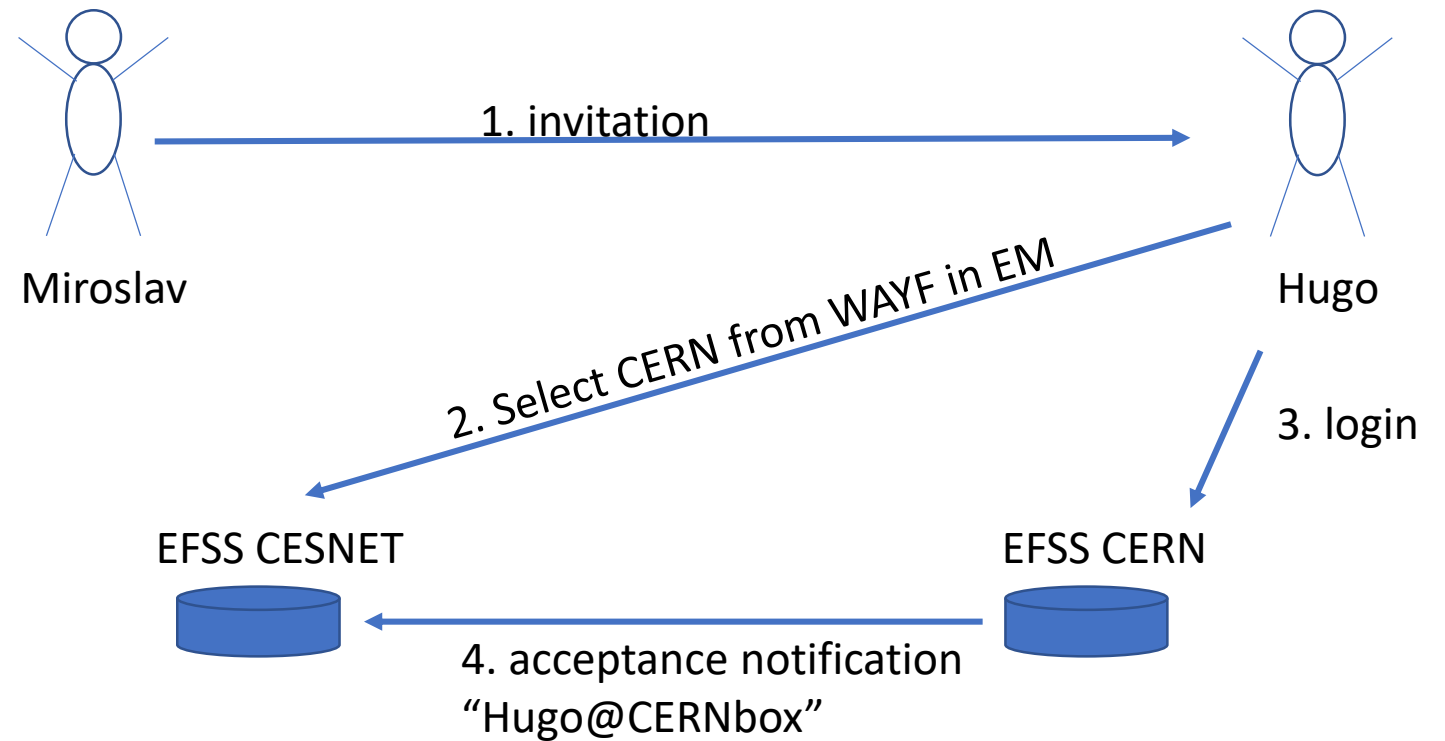
- # Service discovery interface
- # Where Are You From (WAYF)
- # Enforce local sharing policies
- # Establish trust between users and sharing resources

## # Sites can run autonomously

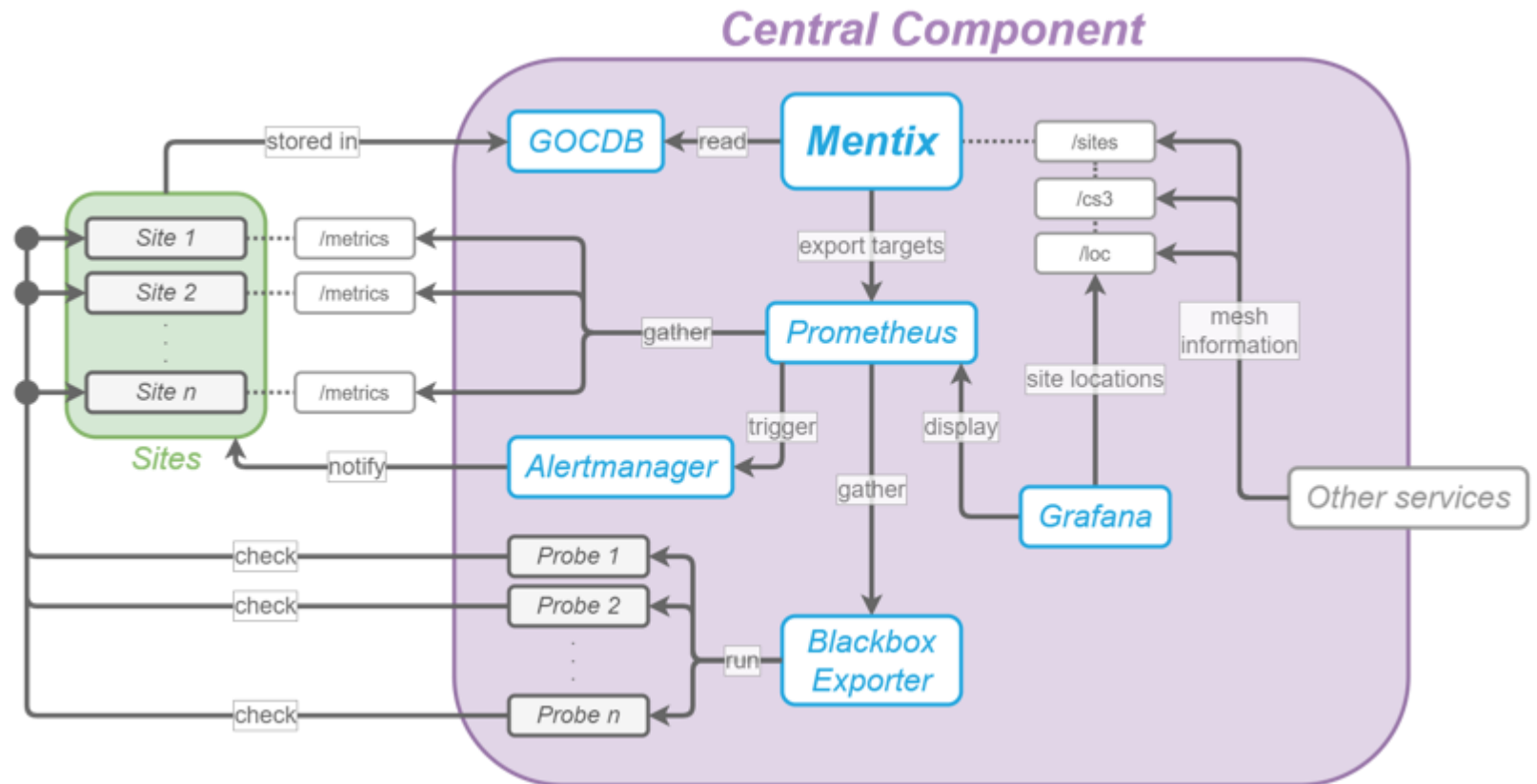


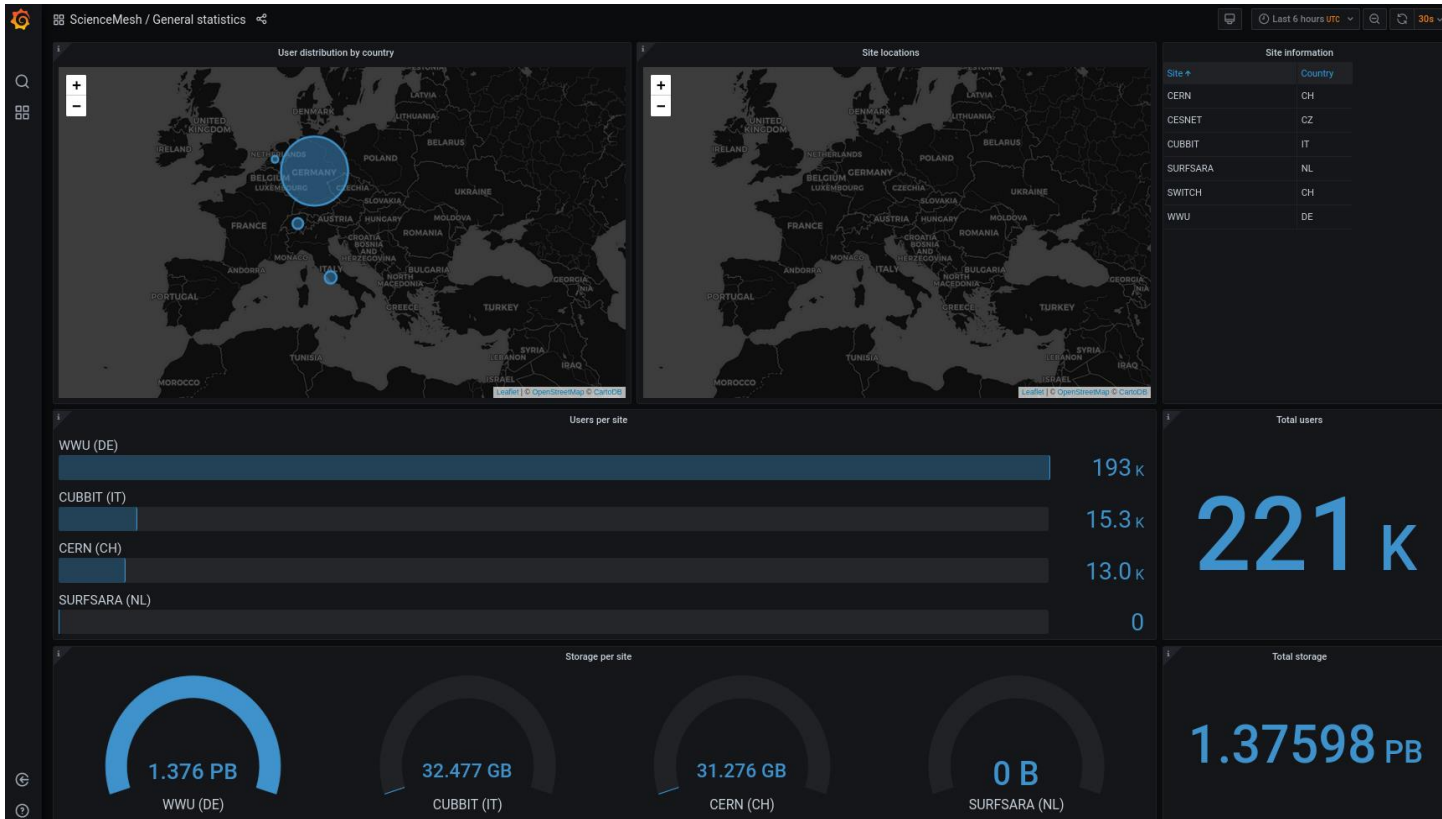


- # Federated AAI can be used but is not needed. Your own favorite AAI system is fine too.
- # Building trust based on an invitation workflow
  - # Collecting the name of the target EFSS as well as the target users' identity
- # See [Milan's talk](#)



- # GOCdb
  - # Central database
- # Prometheus
  - # Collects information from various sources
- # Blackbox exporter
  - # Runs probes to test services
- # Alert manager
  - # Informs sites about issues



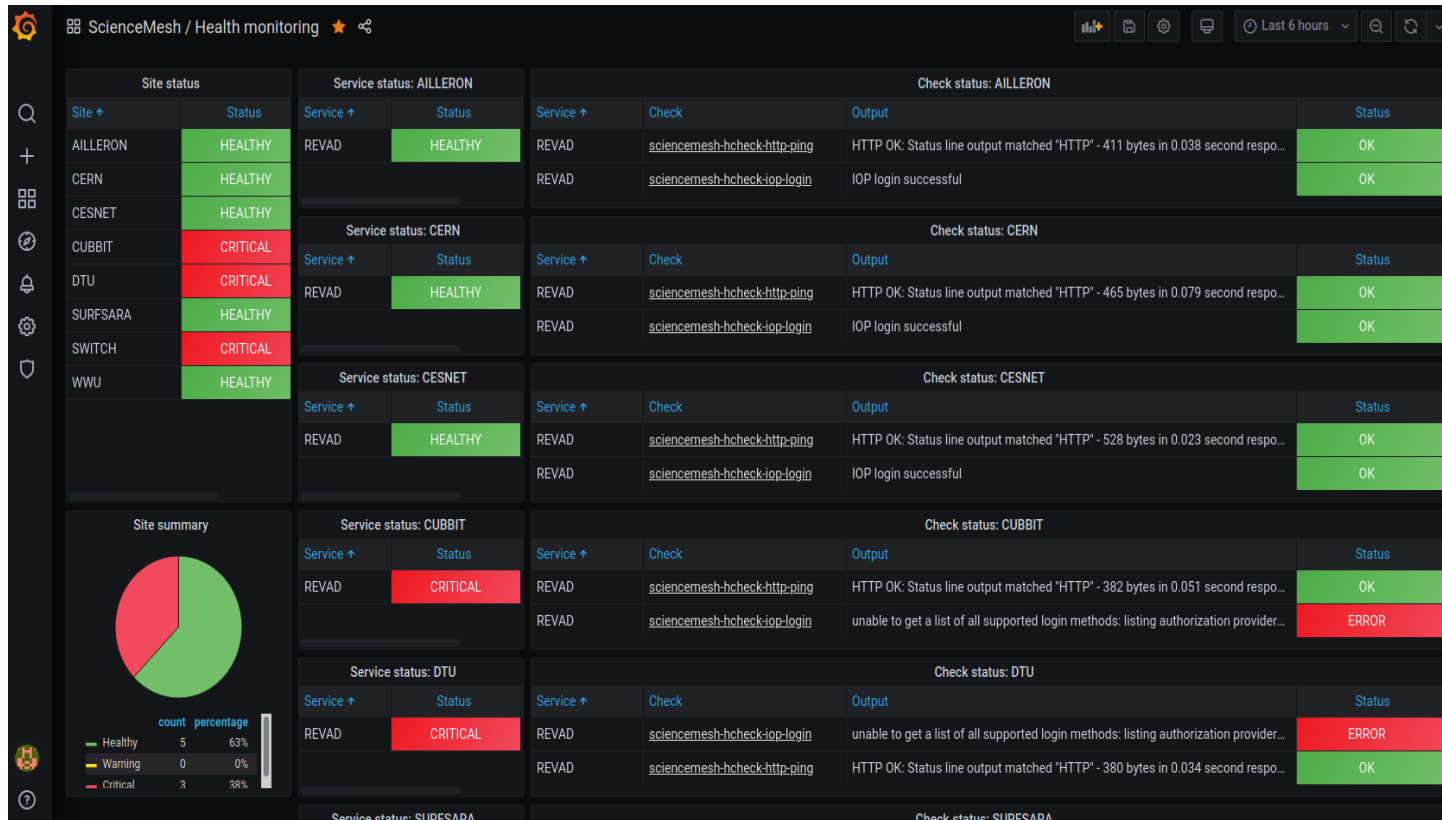


# Grafana dashboard displaying the Science Mesh sites

# Metrics

- # Number of users
- # Amount of data stored
- # .....





- # Internal monitoring tool
- # Shows the latest results of availability tests
- # Tests run periodically to check the proper functioning of the Science Mesh

## # Operational procedures

- # Describing steps undertaken for admission, leaving or suspension from the Science Mesh

### # Site Admission Procedure

- # Technical requirements

### # Site Exit Procedure

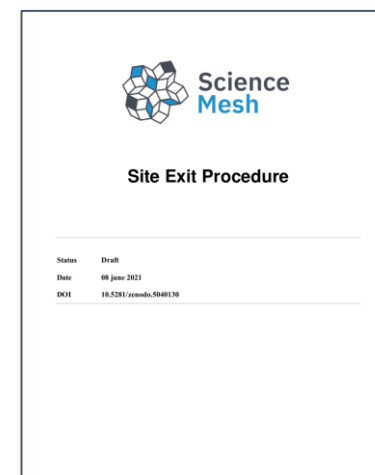
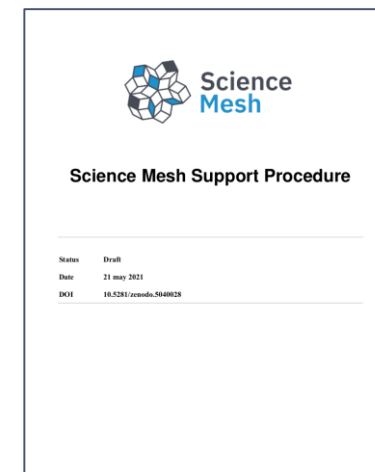
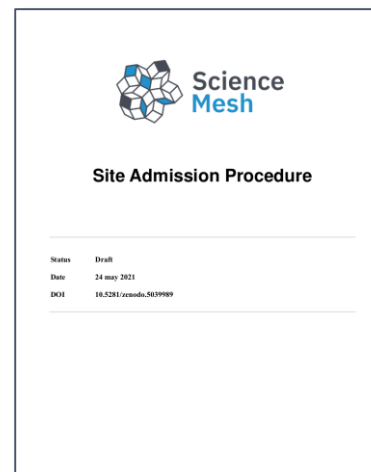
- # Consequences of leaving the Science Mesh

### # Site Suspension Procedure

- # Consequences of being suspended
- # Lifting suspension
- # Permanent disqualification

## # Support

- # Central Helpdesk only for sites for scalability reasons
- # Users go to the helpdesk of their own EFSS
- # Community support though informal communication channels



## # Constitution

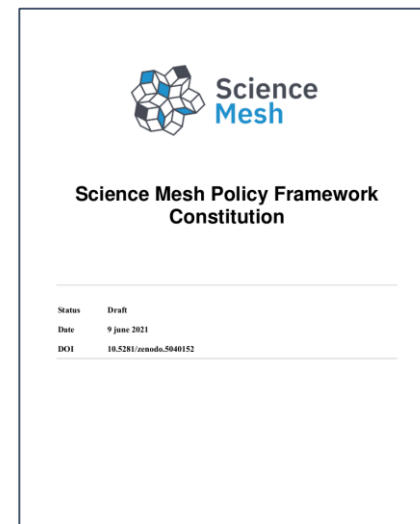
### # Governance bodies

- # Science Mesh Steering Group
  - # Representatives of each site
  - # Decides on policy changes by majority vote
- # Science Mesh Executive Board
  - # Representatives of Sponsors of the Central Services
  - # Ratifies decisions by Science Mesh Steering Group
- # Operational Team
  - # Operations
  - # Support
  - # Reviewing and approving memberships of new sites
  - # .....

### # Administrative requirements for joining the Science Mesh

## # Declaration

- # Needs to be signed by the site that wants to join the Science Mesh
- # Responsibilities
  - # Provide information and keeping it up to date
  - # Having “Terms and Conditions” and a “Privacy Policy” in place
  - # .....



- # Light weight central security overhead
- # Lean heavily on local security expertise
- # Central security procedures based on the [AARC Policy Development Kit](#)
  - # Incident Report Procedure
  - # Service Operations Security Policies
- # Pentesting

# Still in a draft state:

- # Governance
- # Operational procedures
- # Helpdesk
- # Security

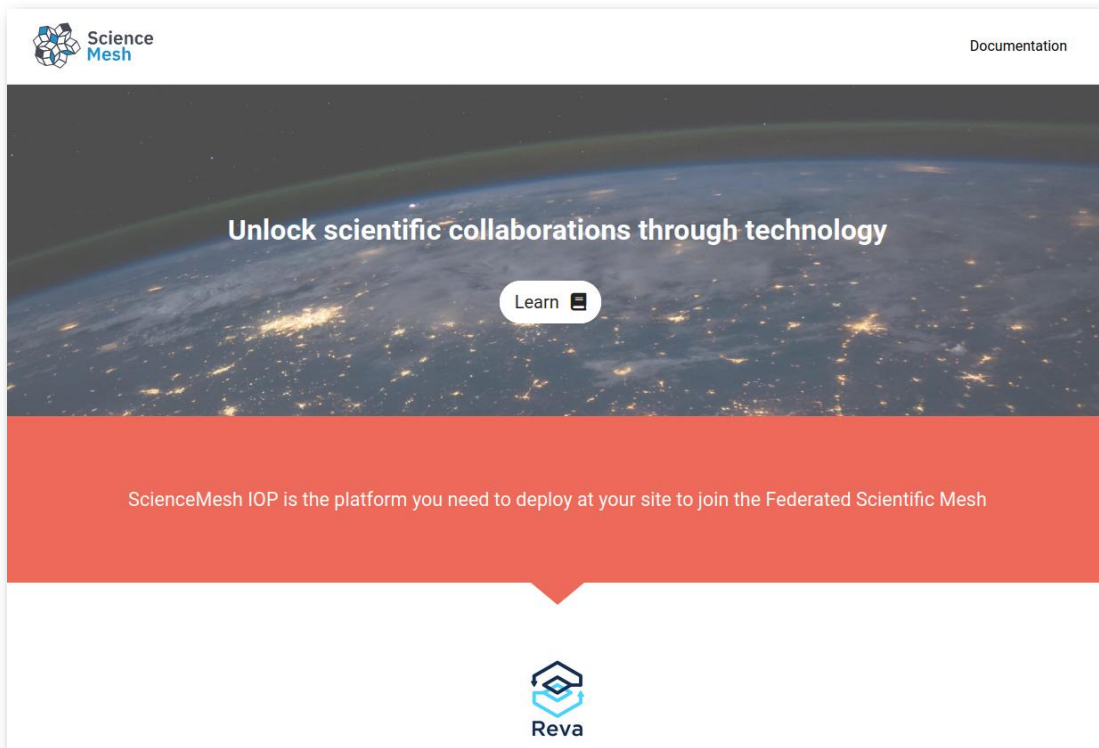
# Your input is very welcome



working on it...



# <https://development.sciencemesh.io>



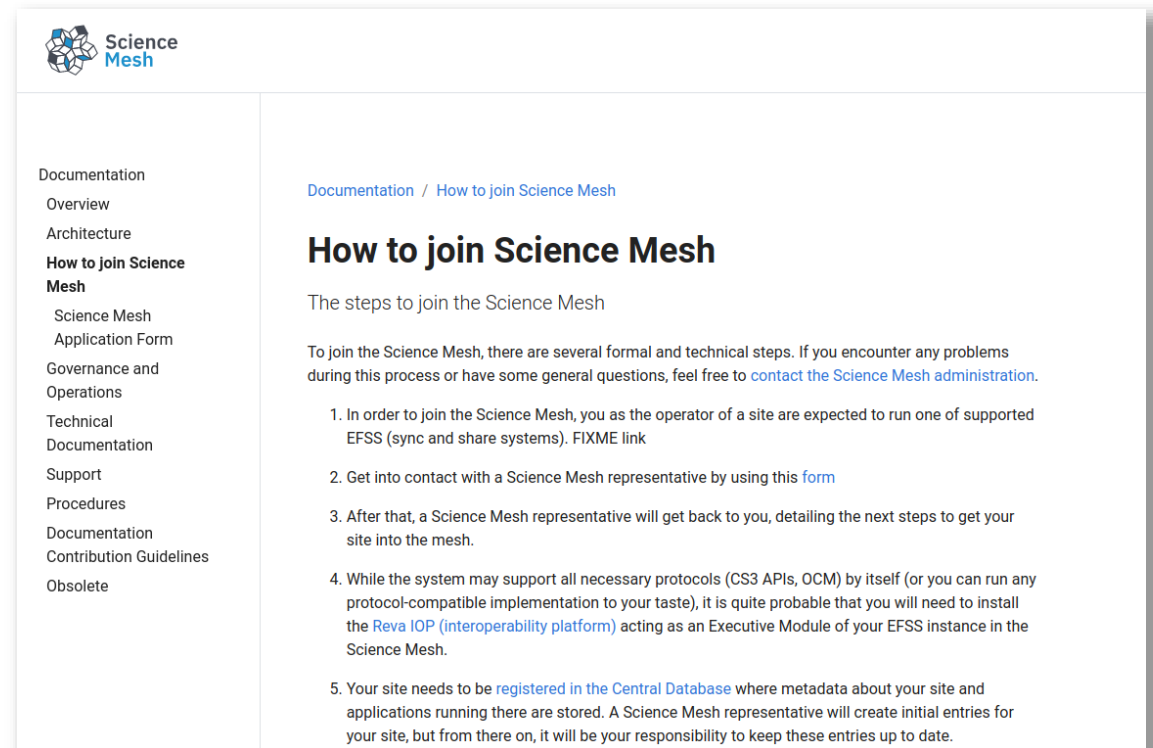
Science Mesh Documentation

Unlock scientific collaborations through technology

Learn

ScienceMesh IOP is the platform you need to deploy at your site to join the Federated Scientific Mesh

Reva



Science Mesh

Documentation / [How to join Science Mesh](#)

## How to join Science Mesh

The steps to join the Science Mesh

To join the Science Mesh, there are several formal and technical steps. If you encounter any problems during this process or have some general questions, feel free to [contact the Science Mesh administration](#).

1. In order to join the Science Mesh, you as the operator of a site are expected to run one of supported EFSS (sync and share systems). [FIXME link](#)
2. Get into contact with a Science Mesh representative by using this [form](#)
3. After that, a Science Mesh representative will get back to you, detailing the next steps to get your site into the mesh.
4. While the system may support all necessary protocols (CS3 APIs, OCM) by itself (or you can run any protocol-compatible implementation to your taste), it is quite probable that you will need to install the [Reva IOP \(interoperability platform\)](#) acting as an Executive Module of your EFSS instance in the Science Mesh.
5. Your site needs to be [registered in the Central Database](#) where metadata about your site and applications running there are stored. A Science Mesh representative will create initial entries for your site, but from there on, it will be your responsibility to keep these entries up to date.

### # How to join

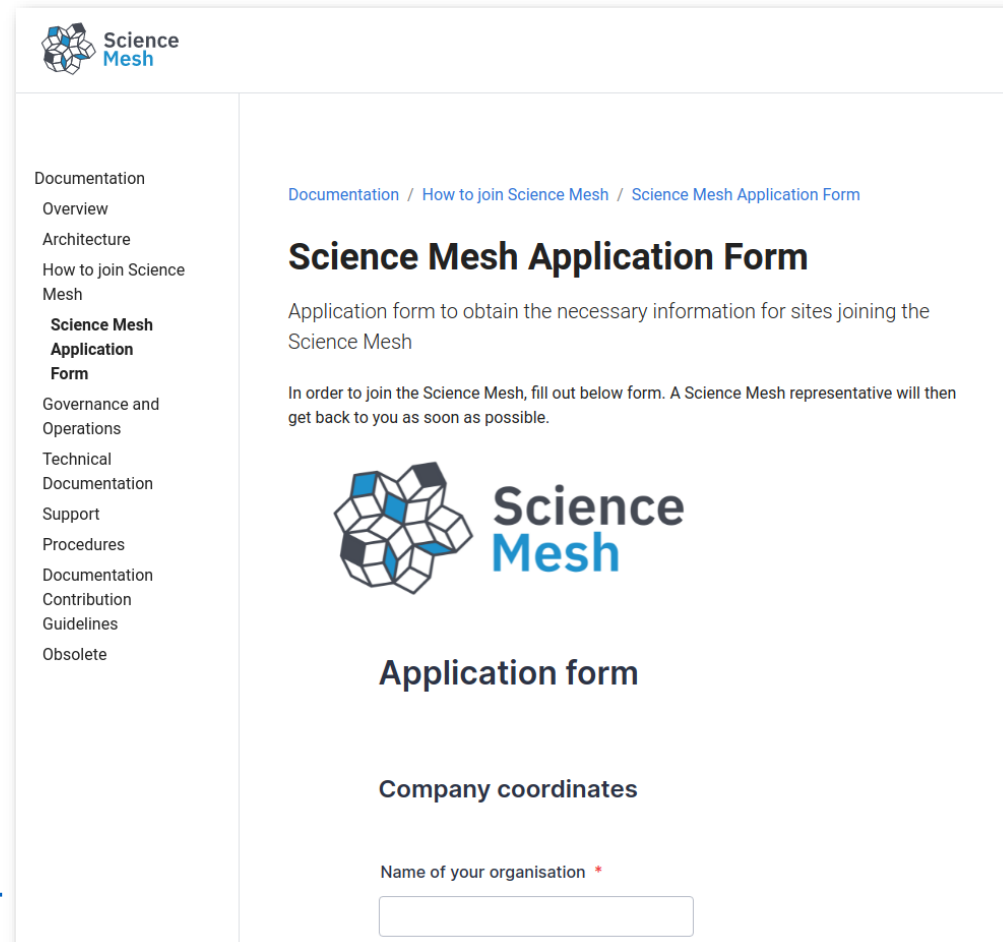
#### # Necessary steps

- # Need a supported EFSS
  - # Nextcloud, Owncloud, Seafile (under development)
- # Get in touch with us by filling out a form
- # Install the Inter Operability Platform (REVA)
- # Register in the central database
- # Setup monitoring and metrics collection
- # Formal paperwork (can be skipped for now since things are not finalized yet)

### # Contact us:

- # Email address and helpdesk are in preparation but for now you can reach us at gitter:  
<https://gitter.im/sciencemesh/community>

- # Keep an eye on <https://development.sciencemesh.io> in order to keep yourself posted on our progress



The screenshot shows the Science Mesh website interface. On the left is a navigation menu with items: Documentation, Overview, Architecture, How to join Science Mesh, **Science Mesh Application Form**, Governance and Operations, Technical Documentation, Support, Procedures, Documentation Contribution Guidelines, and Obsolete. The main content area has a breadcrumb trail: [Documentation](#) / [How to join Science Mesh](#) / [Science Mesh Application Form](#). The title is **Science Mesh Application Form**. Below the title is the text: "Application form to obtain the necessary information for sites joining the Science Mesh". A paragraph follows: "In order to join the Science Mesh, fill out below form. A Science Mesh representative will then get back to you as soon as possible." There is a Science Mesh logo and the text "Science Mesh". Below that is the heading "Application form" and "Company coordinates". At the bottom, there is a form field labeled "Name of your organisation \*" with a red asterisk and a small red dot.

## # About Science Mesh

- # <https://sciencemesh.io> (General info)
- # <https://developer.sciencemesh.io> (More detailed technical info)

## # Governance

- # <https://doi.org/10.5281/zenodo.5040152> (Science Mesh Policy Framework Constitution)
- # <https://doi.org/10.5281/zenodo.5040087> (Science Mesh Site Declaration)

## # Operational procedures

- # <https://doi.org/10.5281/zenodo.5039988> (Site Admission Procedure)
- # <https://doi.org/10.5281/zenodo.5040129> (Site Exit Procedure)
- # <https://doi.org/10.5281/zenodo.5040638> (Site Suspension Procedure)
- # <https://doi.org/10.5281/zenodo.5040027> (Support Procedure)

## # Glossary

- # <https://doi.org/10.5281/zenodo.5038662>





**Thank you!**  
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 [CS3MESH4EOSC Project](https://www.youtube.com/channel/UCHKcZEKmqXjCvc3MLFjFxbw)  
<https://www.youtube.com/channel/UCHKcZEKmqXjCvc3MLFjFxbw>



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