CS3 MESH4 EOSC

Connecting European Data

Science Mesh for EFSS Providers

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Science Mesh workshop January 26th 2022

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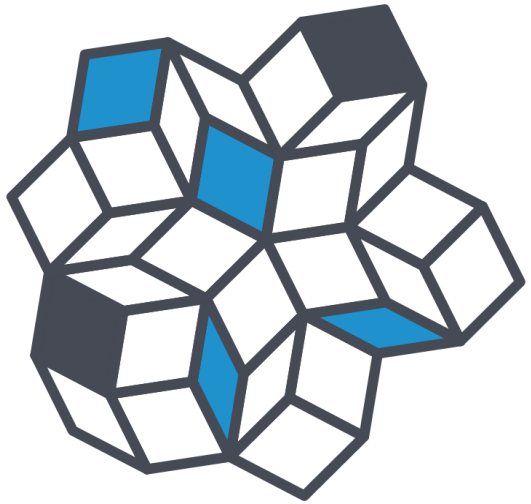
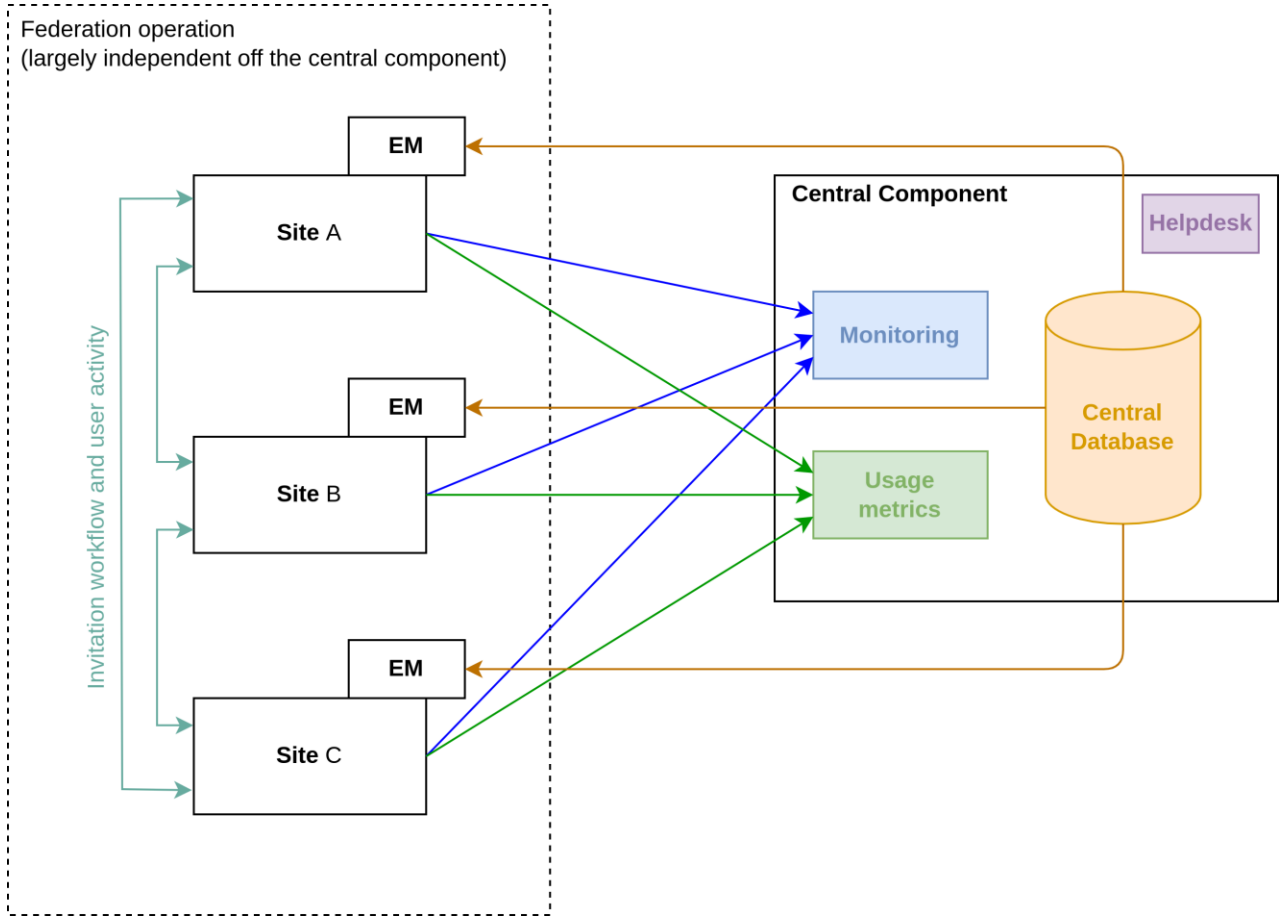


Science Mesh

- 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

Architecture

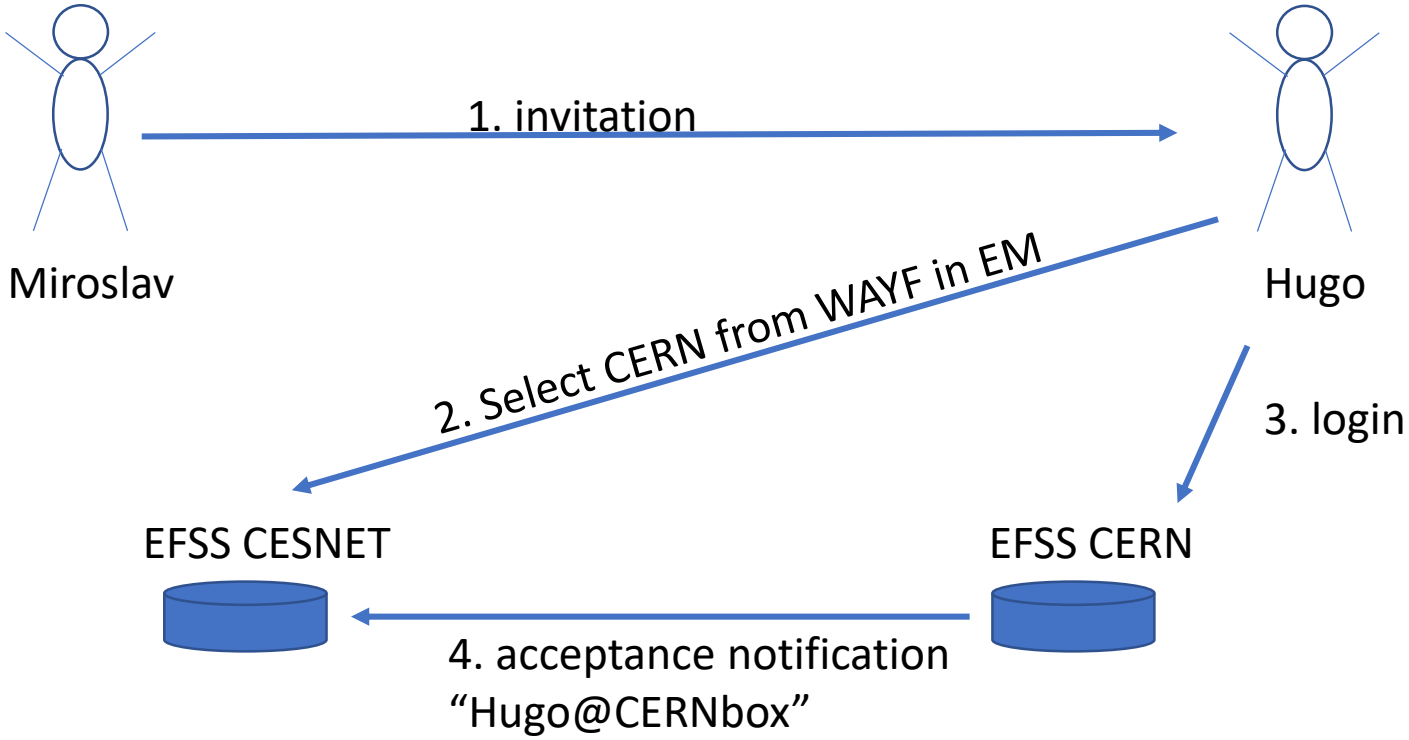
- Central component
  - Availability monitoring
  - Usage metrics
  - Central database with mesh topology
  - Helpdesk for sites
- Executive Module (EM)
  - Service discovery interface
  - Where Are You From (WAYF)
  - Enforce local sharing policies
  - Establish trust between users and sharing resources
- Sites can run autonomously



Current Science Mesh Testbed

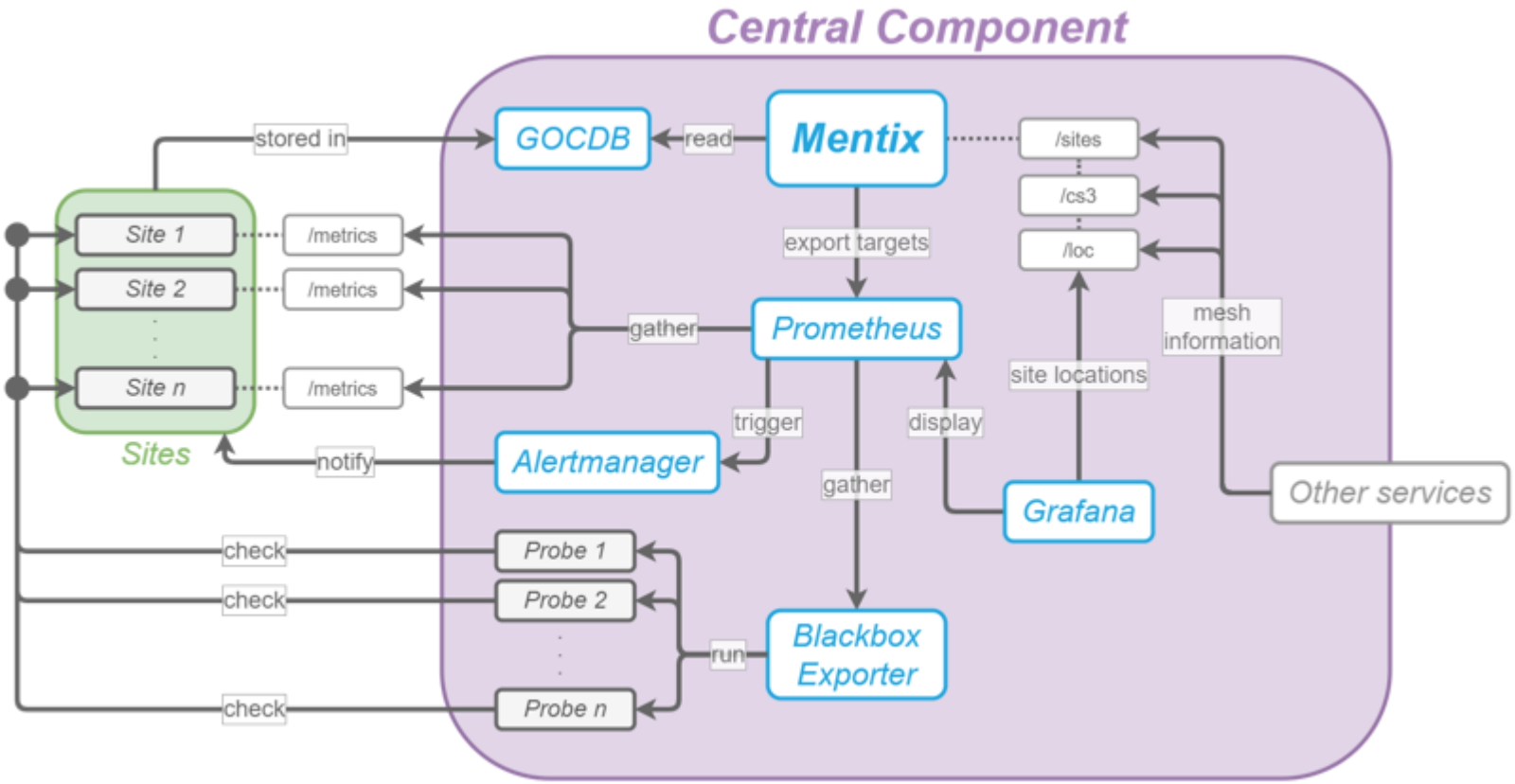
Authentication and authorisation

- 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

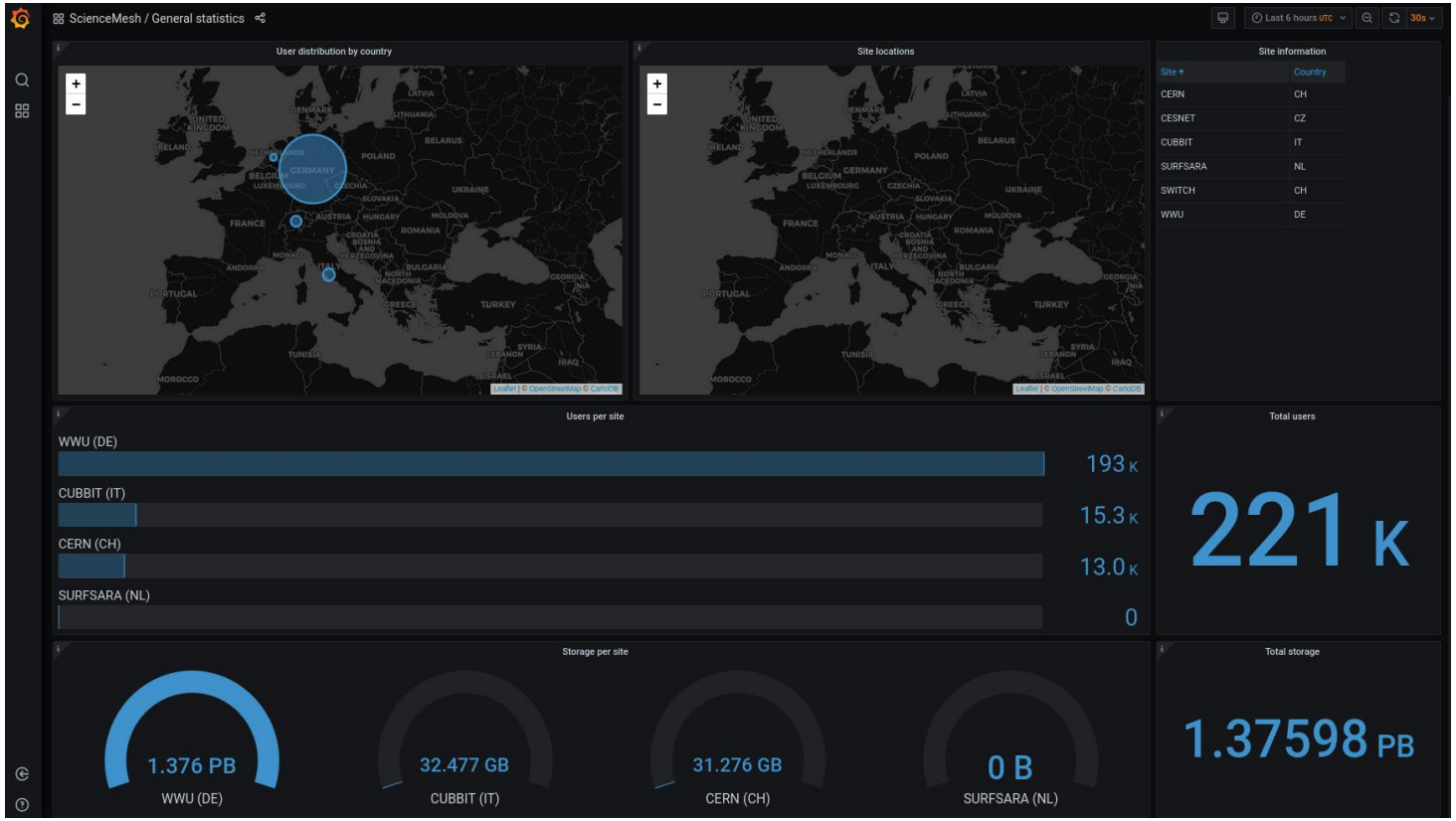


Monitoring and usage metrics

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

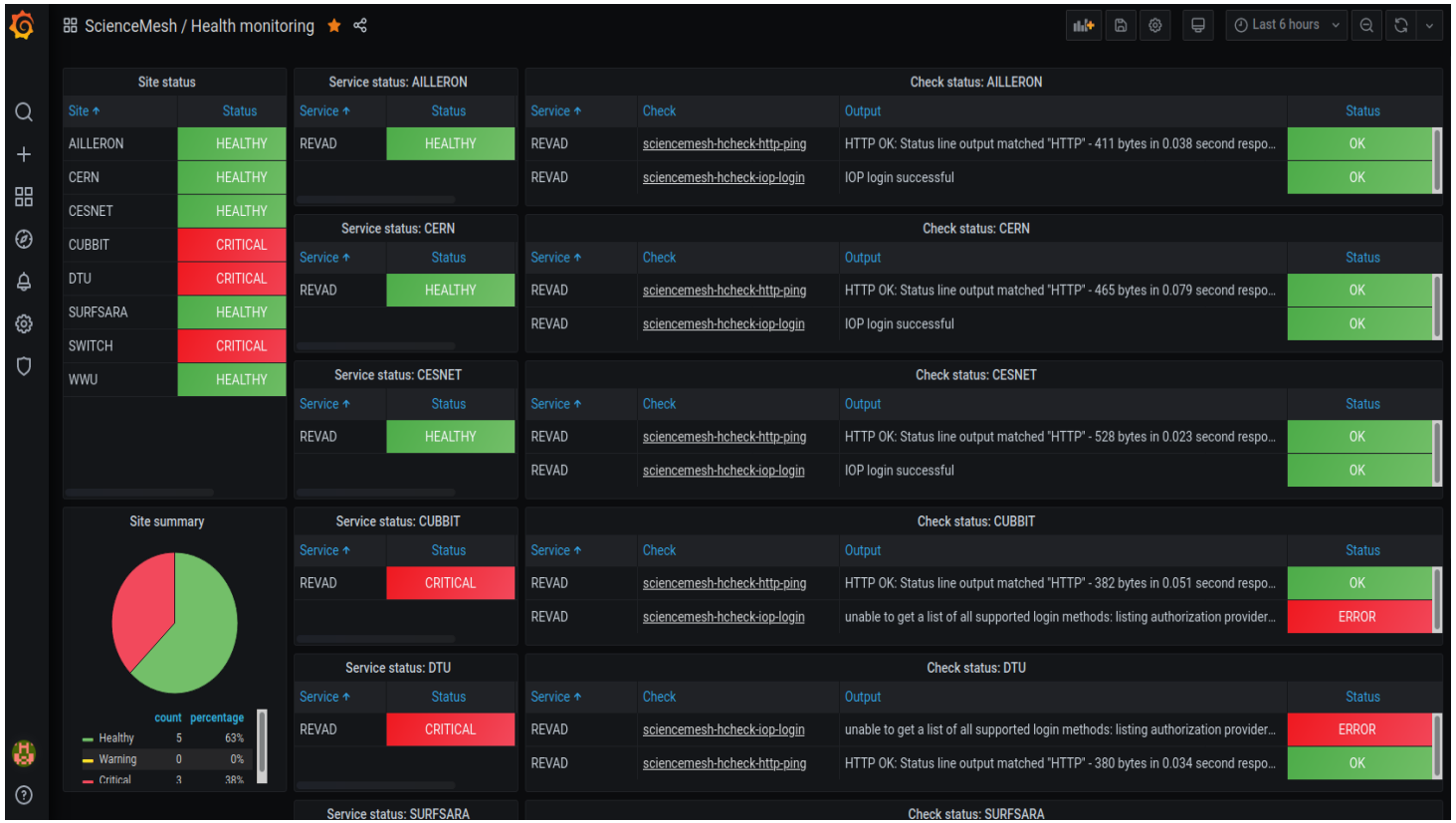


Monitoring and usage metrics



- Grafana dashboard displaying the Science Mesh sites
- Metrics
  - Number of users
  - Amount of data stored
  - .....

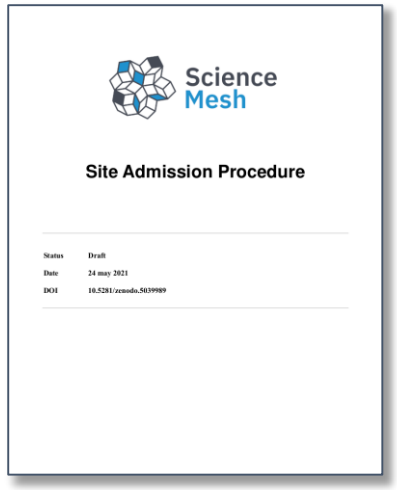
Monitoring and usage metrics

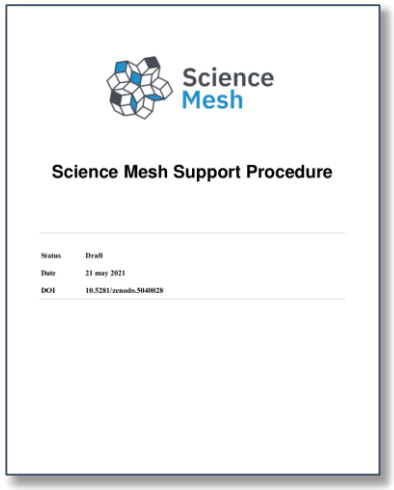


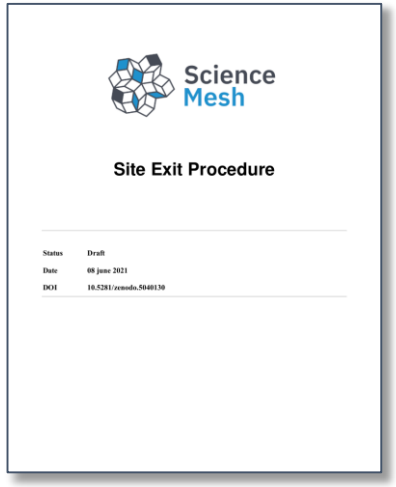
- Internal monitoring tool
- Shows the latest results of availability tests
- Tests run periodically to check the proper functioning of the Science Mesh

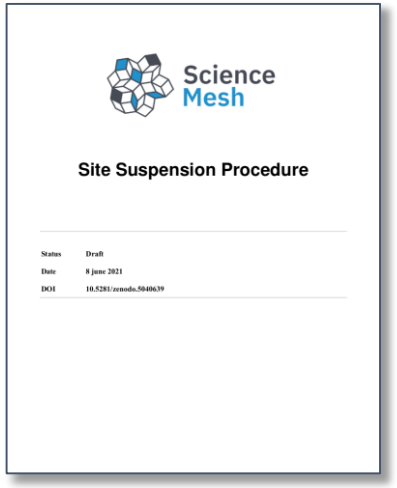
Operational procedures

- 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



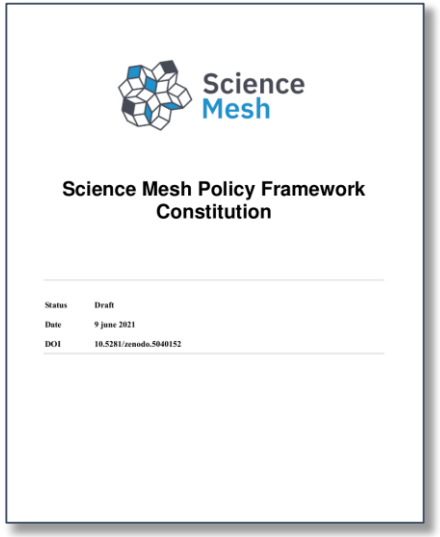


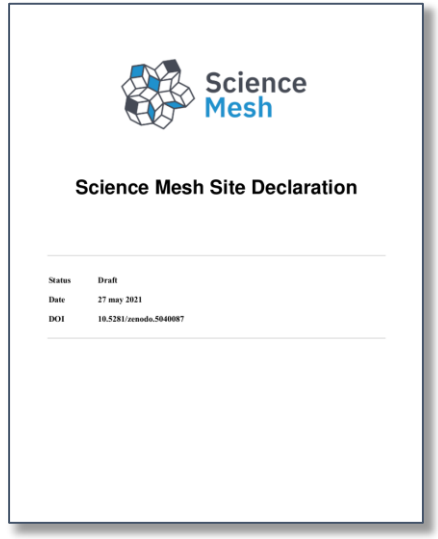




Governance

- 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
    - …….





Security

- 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

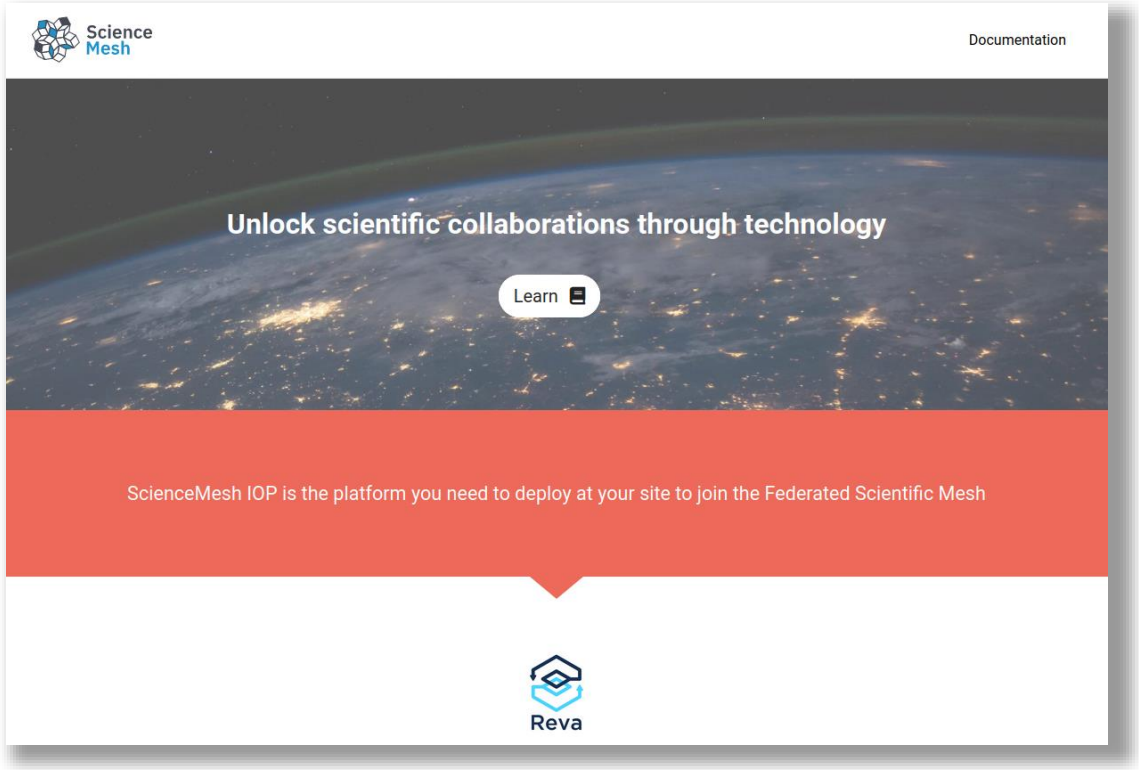
Disclaimer

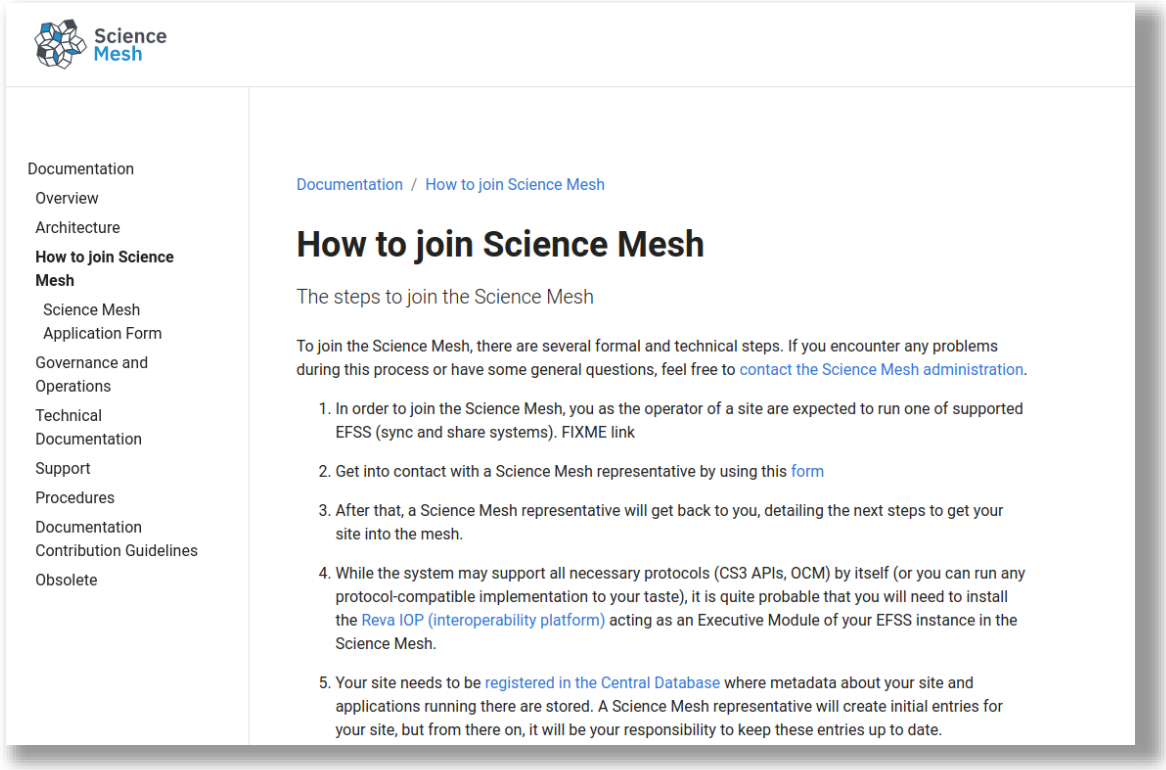
- Still in a draft state:
  - Governance
  - Operational procedures
  - Helpdesk
  - Security

- Your input is very welcome

More information

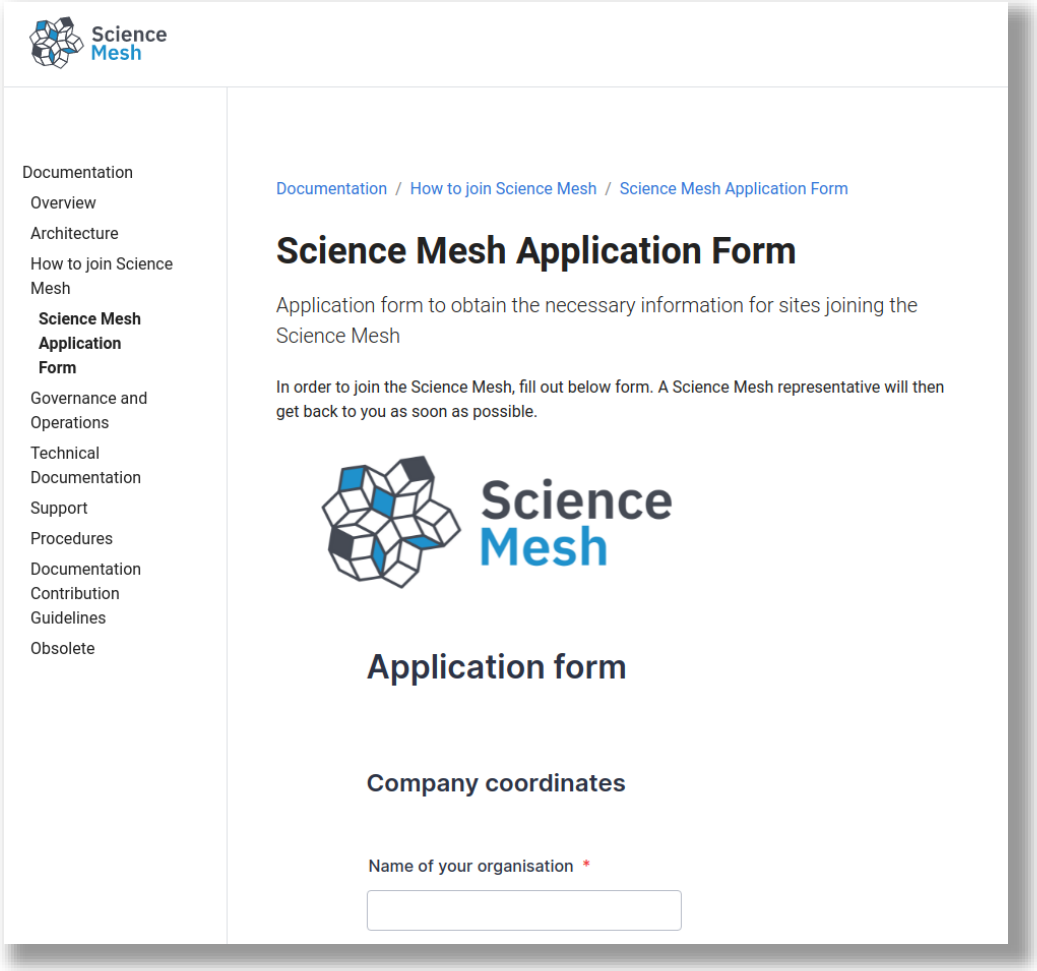
- https://development.sciencemesh.io





More information

- 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



Links

- 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

CS3 MESH4 EOSC

Connecting European Data

Thank you!

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CS3MESH4EOSC Project

https://www.youtube.com/channel/UCHKcZEkMqXjCvc3MLFjFxbw

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