



**CS³
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Connecting European Data



ScienceMesh: an interoperable platform to easily sync&share, and deploy applications and software components

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- * How to share data or collaboratively edit some documents between independently operated Sync&Share systems
 - * With reasonable access control
- * Example: researcher from CZ wants to obtain data from his project colleague from CERN—now is possible only with workarounds, e.g. public link, creating a user account there, ...
- * ScienceMesh enables sharing resources directly from one Sync&Share system to another
 - * Builds an infrastructure to make its management scalable
 - * Provides user and service discovery for end users
 - * Designed for the real world: does not rely on a centralised AAI

- * Federated infrastructure to enable data and application sharing across various types of Sync&Share systems (ownCloud, Nextcloud, Seafile)
- * “Before the Mesh:” we had an API (OCM) for peer-to-peer sharing
 - * Needs 1:1 configuration -> not scalable
 - * Requires users to know each other’s identities -> not suitable for general public
- * We built a federation out of independently operated Sync&Share systems

- * Federated infrastructure: ScienceMesh metadata (incl. services), monitoring, accounting, policies&governance, ...
 - * Sync&Share systems serve as the source of user identities
 - * As the only common denominator
- * Invitation workflow, user discovery
 - * Users can invite colleagues to share resources regardless of what end system they use
 - * Users can be invited by mail/chat/... = something the users know and use regularly
 - * Identity resolution = similar to WAYF in standard federations
- * Resources&services that can be shared
 - * File and folder access
 - * Access to applications
 - * Data transfers

- * Easy data sharing between users from different Sync&Share system
- * Sharing applications, e.g. Jupyter notebooks, Office Applications, ...
- * Collaborative tools—collaborative editing
- * On-demand data transfers for large data sets
- * Data Repositories with FAIR principles
- * ScienceMesh as a lightweight identity provider for other communities (selected services), current cooperation with EGI



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