DocMS: Scientific Document Management on the SciDocsCloud Platform

Ivan Sokolov*, Nikita Balashov

22 October 2026

Introduction

Scientists collaborate on articles, reports, presentations and other research materials

Key challenges in document management

Secure and structured storage

Keep documents and their metadata secure and organised

Version tracking

Track changes and access earlier versions

Access control

Control who can read and edit each document

Sharing within collaborations

Share documents with collaboration members

Many scientific projects produce a large number of documents (metadata + files)

Background and Motivation

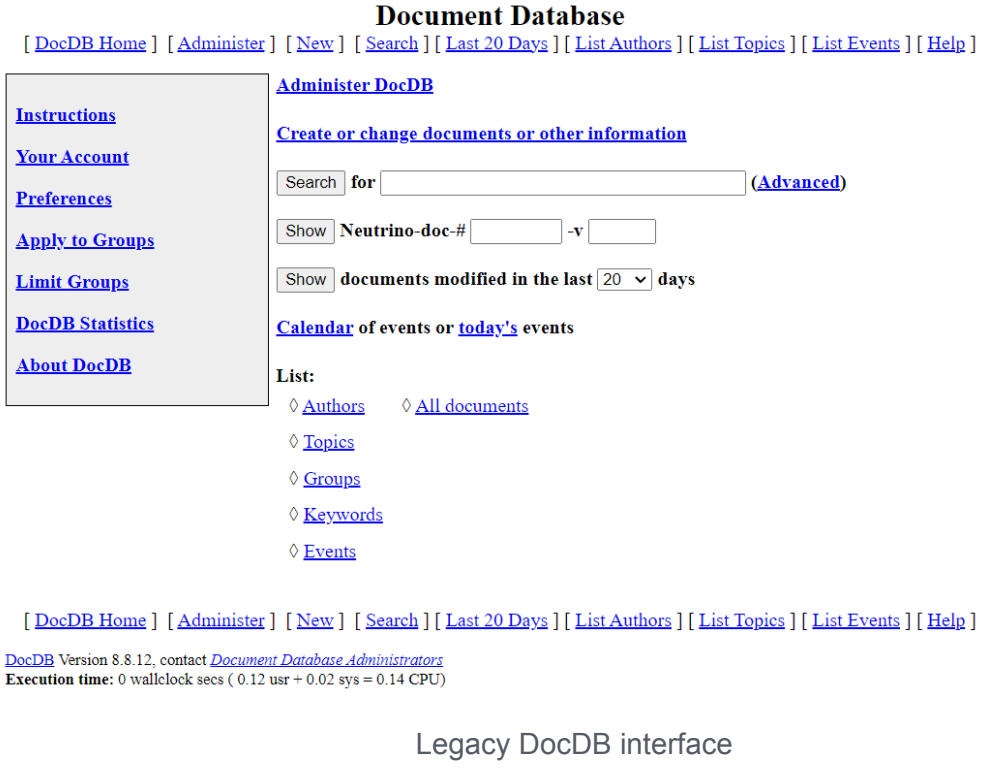
DocDB at JINR

Independent DocDB instances for

- BM@N and Baikal-GVD
- Neutrino projects
- Accelerator Division No. 1, VBLHEP

Key limitations of DocDB

- Limited functionality and flexibility
- Complex administration and maintenance
- Outdated technology slowing further development



Legacy DocDB interface

Project Overview

Provide a centralised service for scientific document management and collaboration

Document management

Implement core DocDB functionality
Support multiple scientific collaborations

Access and administration

Provide flexible, role-based access control
Centralise administration and maintenance

Development and integration

Use an extensible software architecture
Support integration with external services

Collaboration needs

Provide shared workspaces for research teams
Develop features requested by collaborations

SciDocsCloud Software Platform

A secure, reliable and feature-rich alternative to DocDB built with modern web technologies

File storage

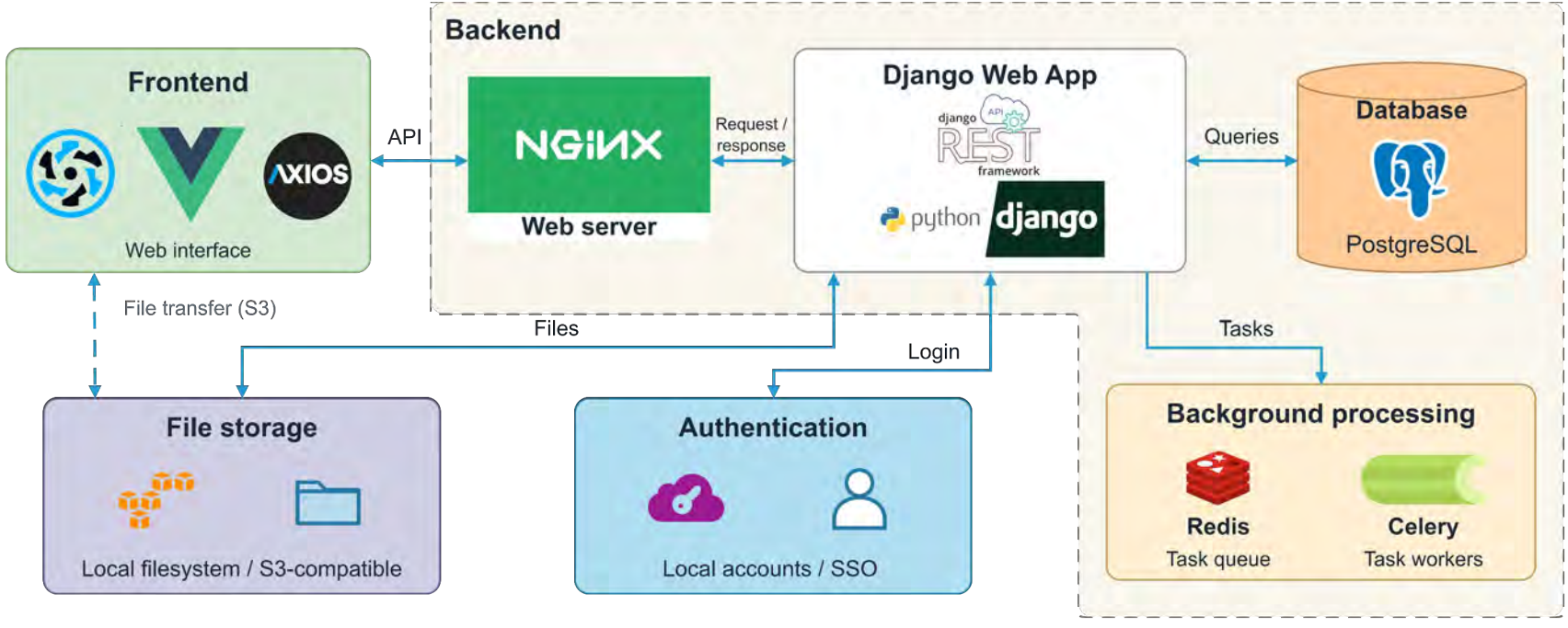
Local filesystem or S3-compatible storage

Authentication

Local accounts and single sign-on

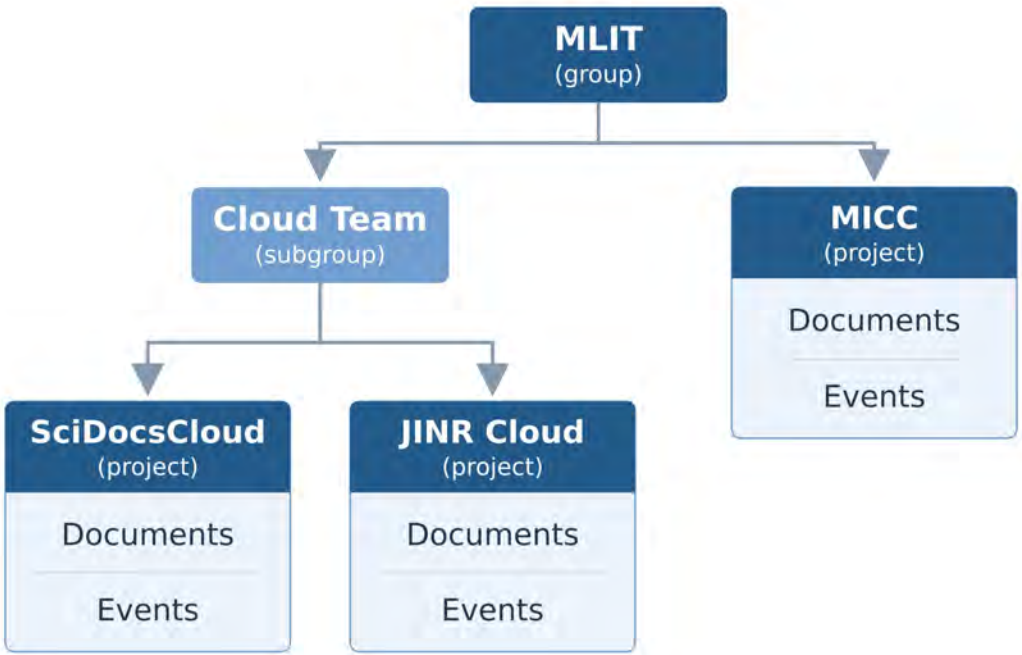
Open source

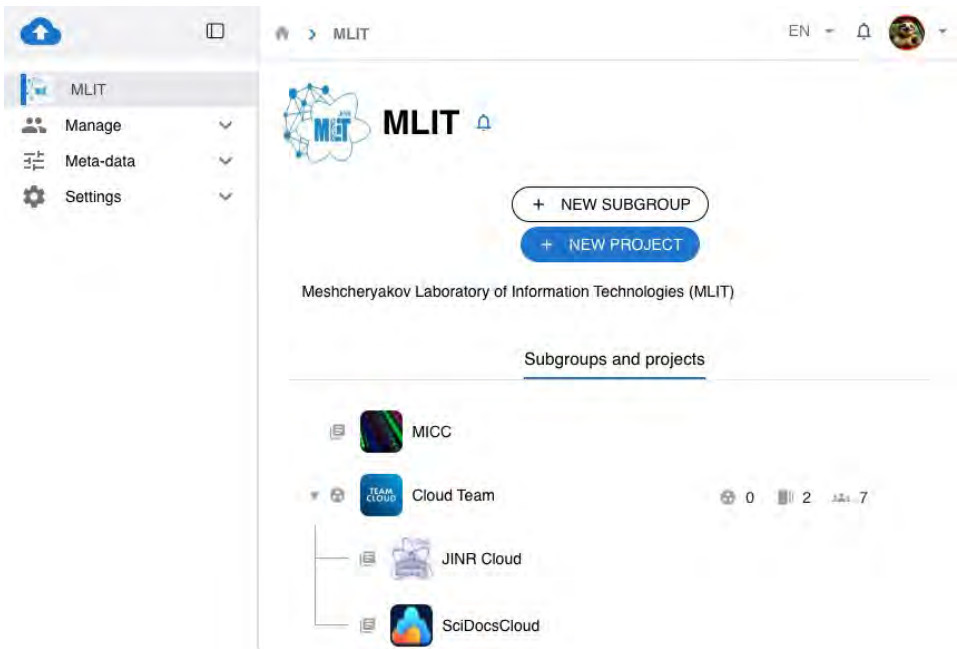
Independent deployment and customisation



Organisational Structure

Hierarchical organisation: groups can contain subgroups and projects
Each project belongs to a group or subgroup and contains documents and events

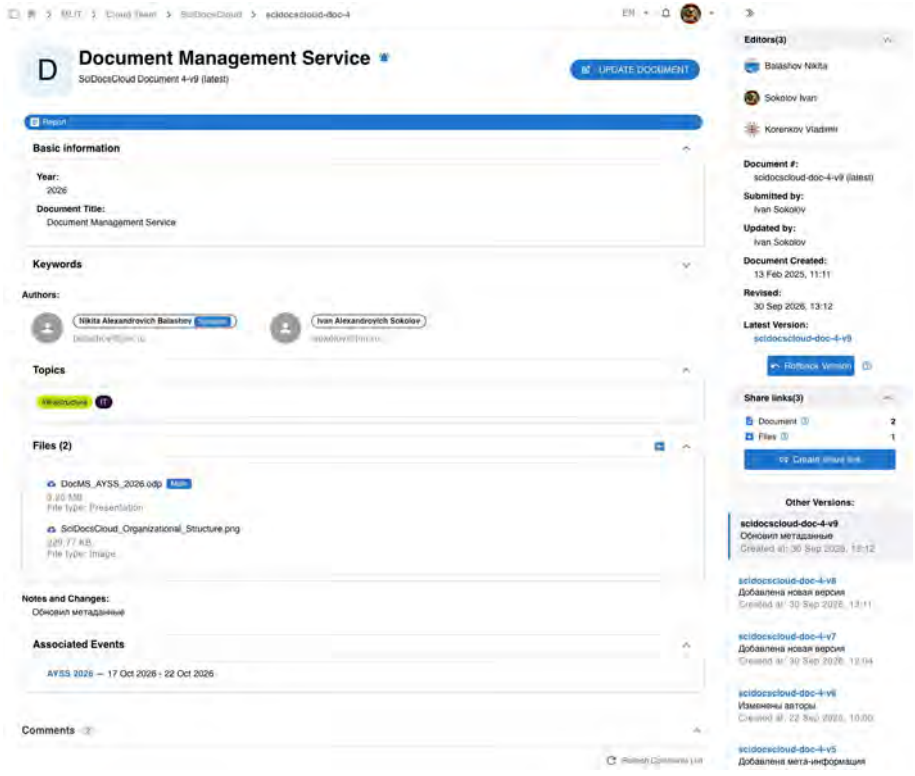




Documents in SciDocsCloud

A document combines metadata with associated files

- Metadata fields defined by a template
- Associated files
- Version history and rollback
- Assigned editors
- Comments
- Sharing via links
- Predefined templates
  Default, Article, Report



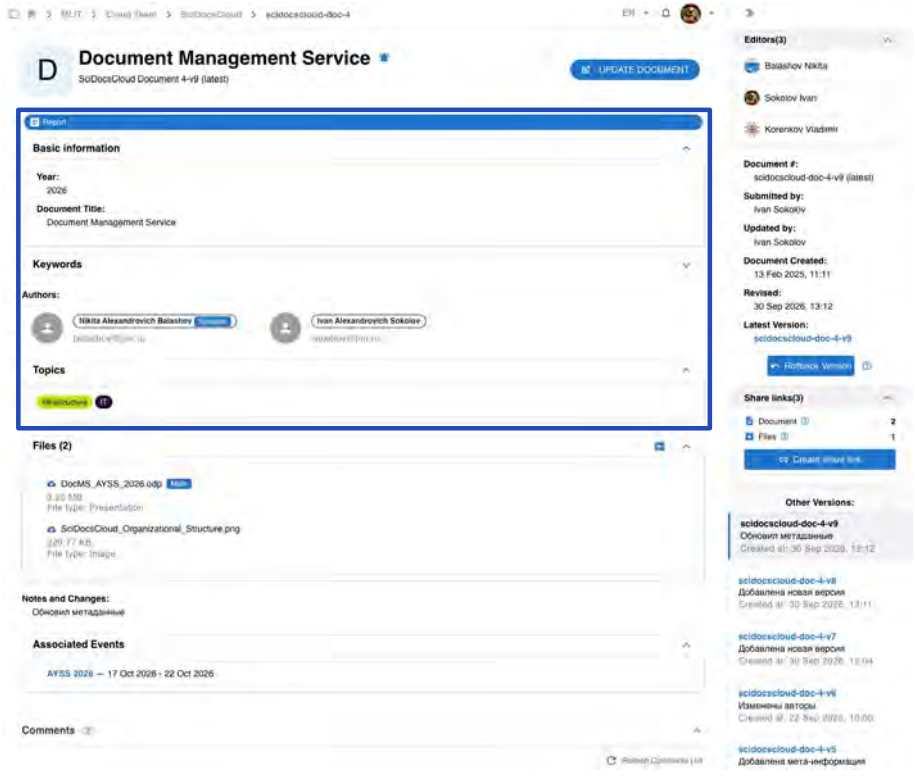
Document overview

Documents in SciDocsCloud

A document combines metadata with associated files

- **Metadata fields defined by a template**
- Associated files
- Version history and rollback
- Assigned editors
- Comments
- Sharing via links

- Predefined templates
  Default, Article, Report



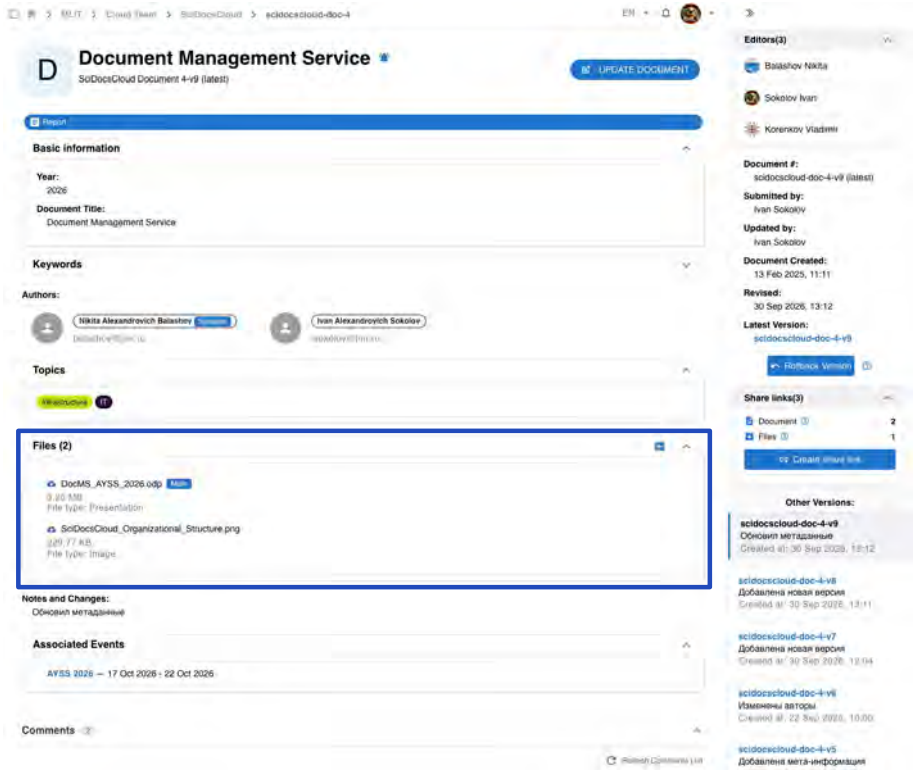
Document overview

Documents in SciDocsCloud

A document combines metadata with associated files

- Metadata fields defined by a template
- **Associated files**
- Version history and rollback
- Assigned editors
- Comments
- Sharing via links

- Predefined templates
  Default, Article, Report



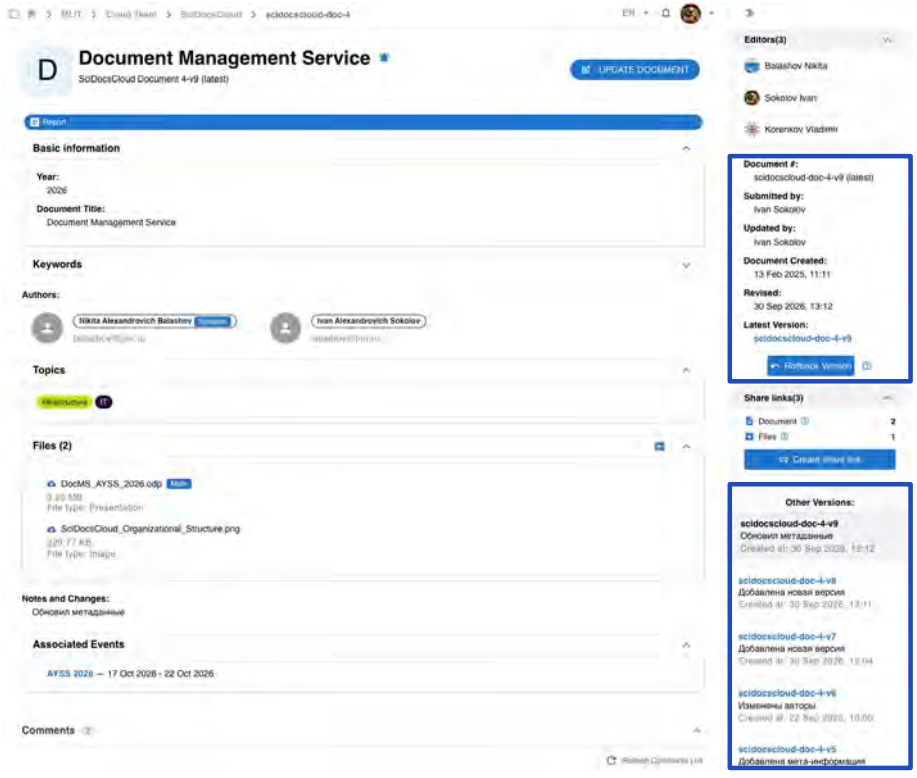
Document overview

Documents in SciDocsCloud

A document combines metadata with associated files

- Metadata fields defined by a template
- Associated files
- **Version history and rollback**
- Assigned editors
- Comments
- Sharing via links

- Predefined templates
  Default, Article, Report



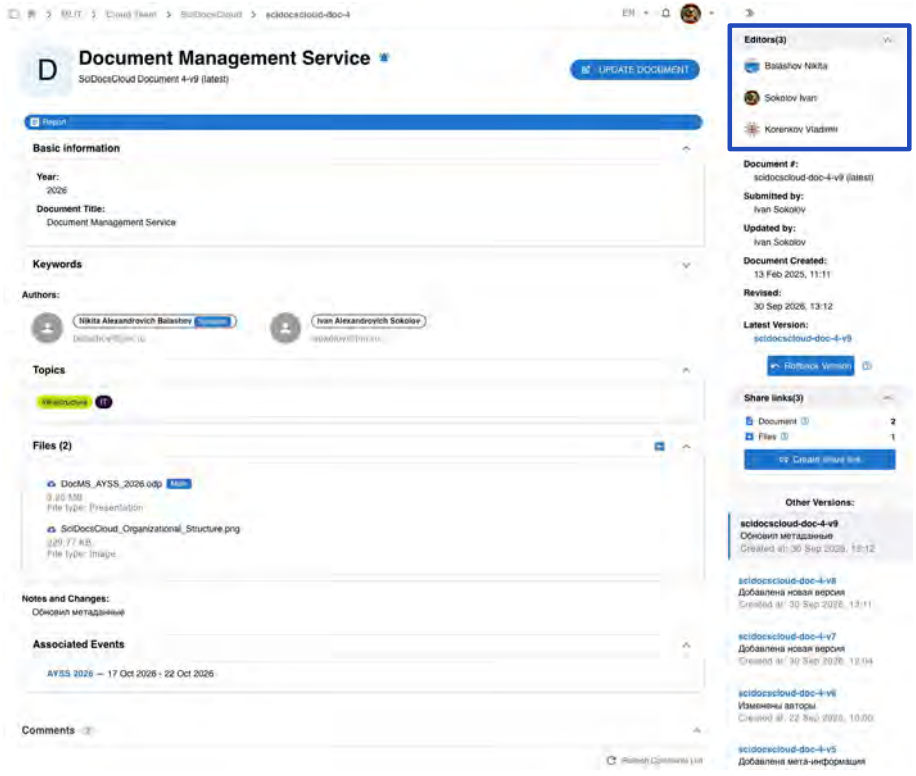
Document overview

Documents in SciDocsCloud

A document combines metadata with associated files

- Metadata fields defined by a template
- Associated files
- Version history and rollback
- **Assigned editors**
- Comments
- Sharing via links

- Predefined templates
  Default, Article, Report



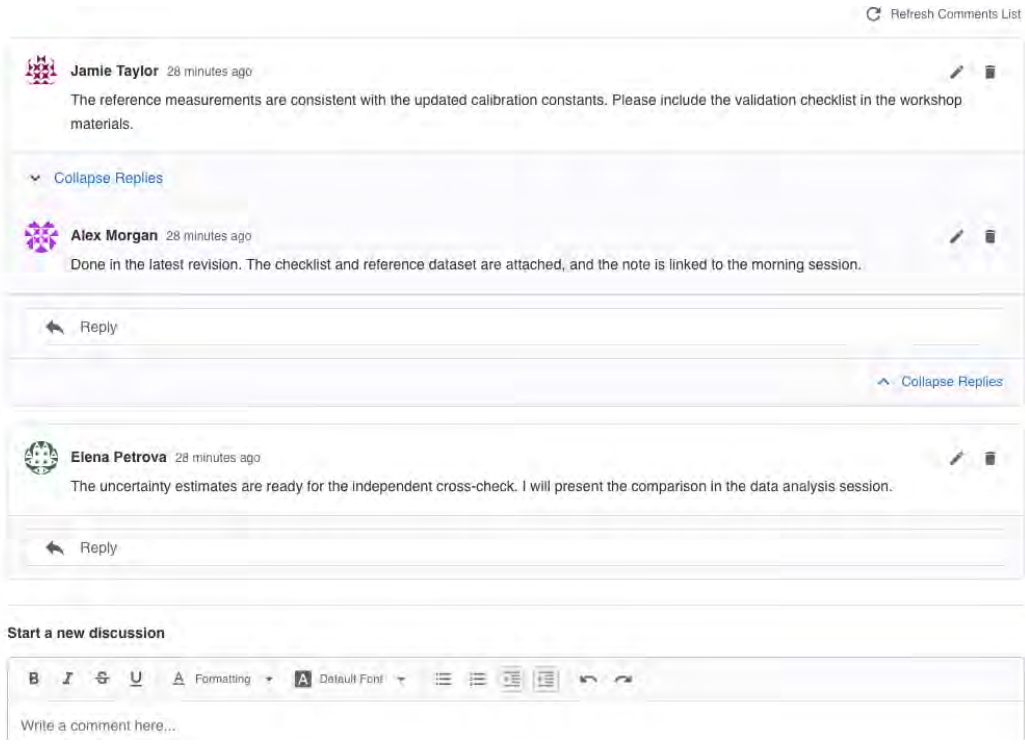
Document overview

Documents in SciDocsCloud

A document combines metadata with associated files

- Metadata fields defined by a template
- Associated files
- Version history and rollback
- Assigned editors
- **Comments**
- Sharing via links

- Predefined templates
  Default, Article, Report



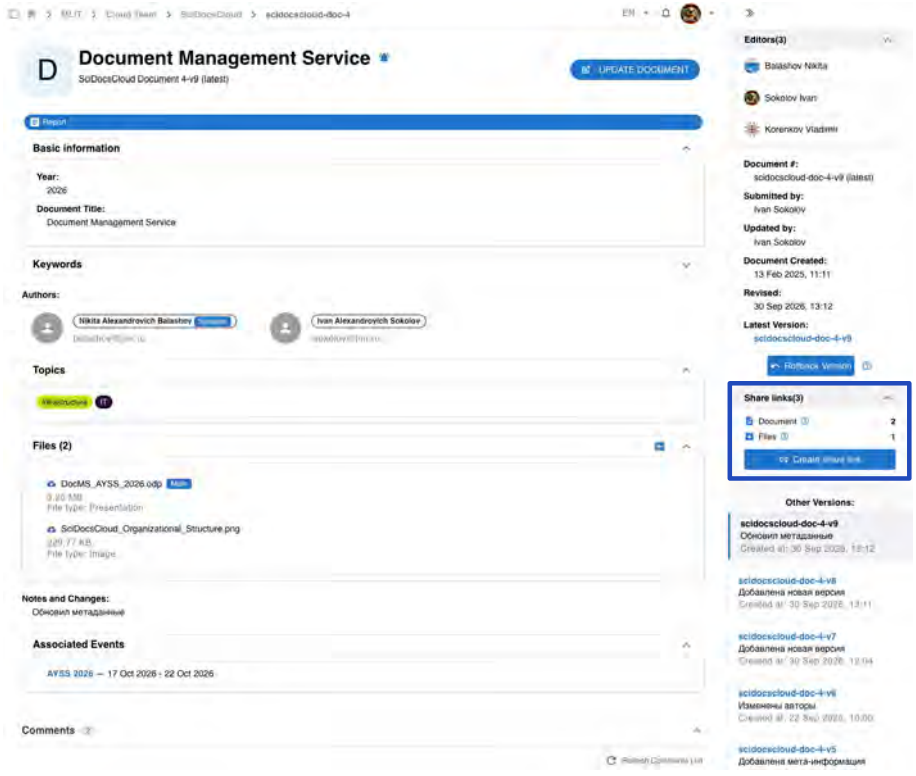
Discussion

Documents in SciDocsCloud

A document combines metadata with associated files

- Metadata fields defined by a template
- Associated files
- Version history and rollback
- Assigned editors
- Comments
- **Sharing via links**

- Predefined templates
  Default, Article, Report



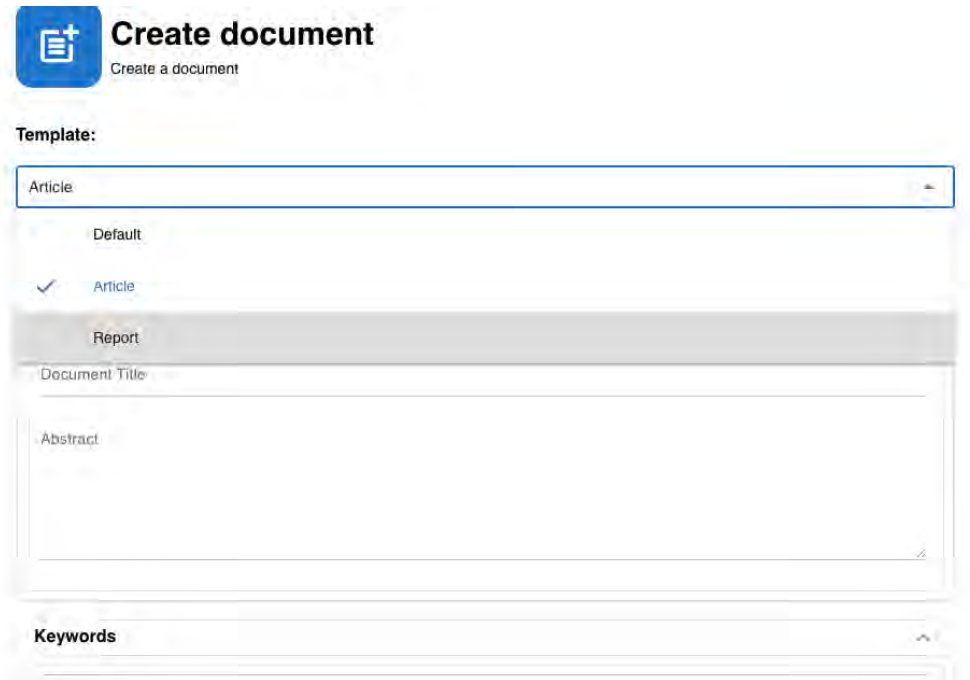
Document overview

Documents in SciDocsCloud

A document combines metadata with associated files

- Metadata fields defined by a template
- Associated files
- Version history and rollback
- Assigned editors
- Comments
- Sharing via links

- **Predefined templates**
  Default, Article, Report

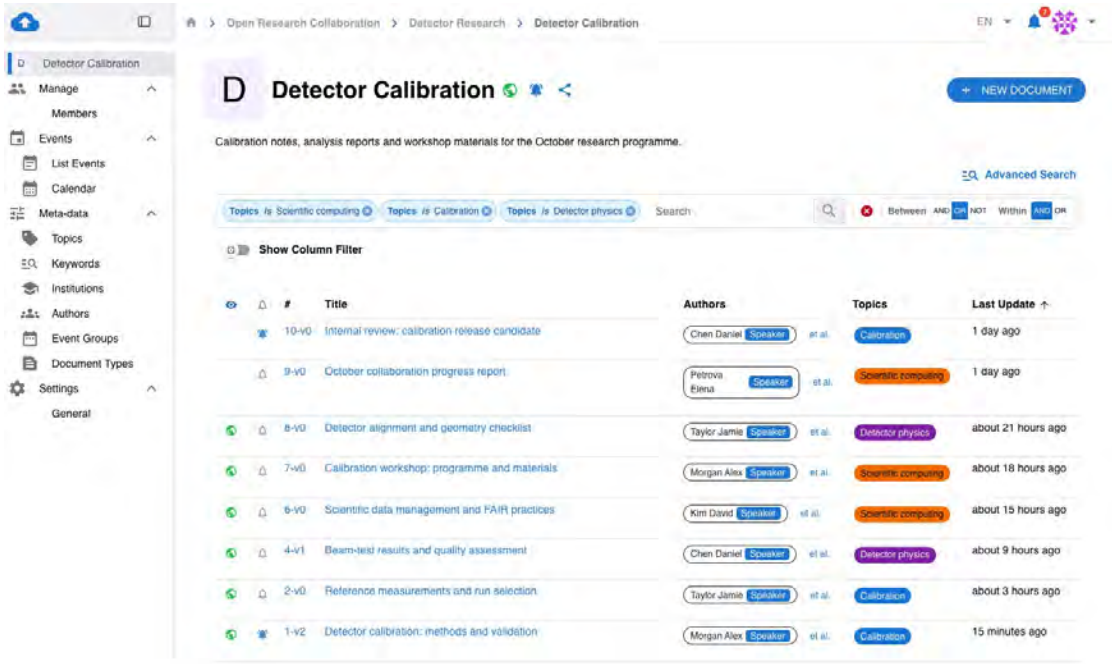


Document templates

Projects in SciDocsCloud

A project is a shared workspace for documents, collaboration and events

- Membership and role management
- Advanced document search and filtering
- Metadata management
- Events and calendar
- Groups and subgroups
  Every project belongs to a group or subgroup and inherits membership and roles from it



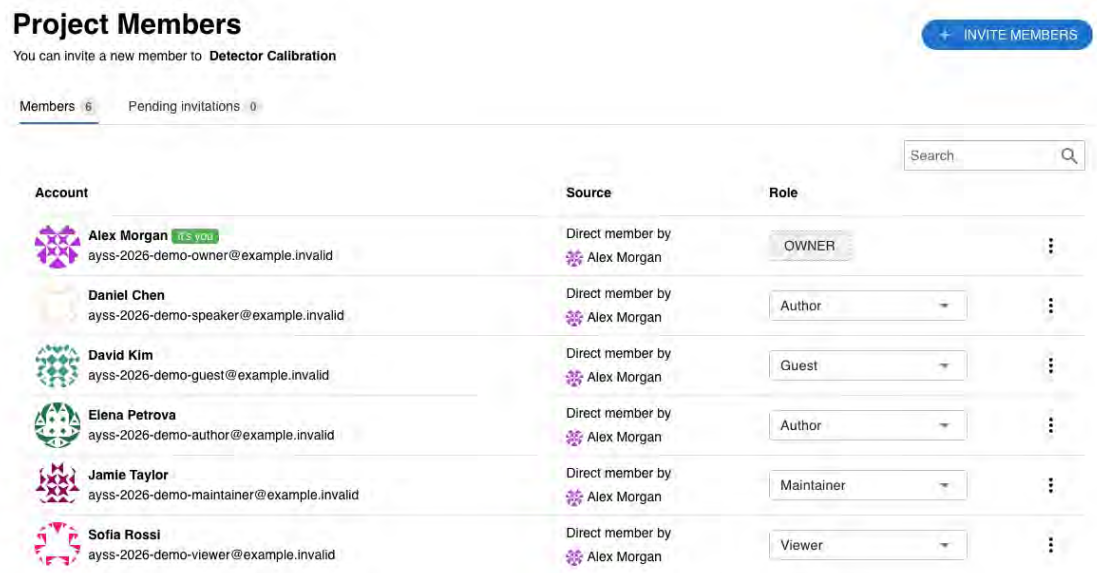
Project documents

Projects in SciDocsCloud

A project is a shared workspace for documents, collaboration and events

- **Membership and role management**
- Advanced document search and filtering
- Metadata management
- Events and calendar
- Groups and subgroups

  Every project belongs to a group or subgroup and inherits membership and roles from it



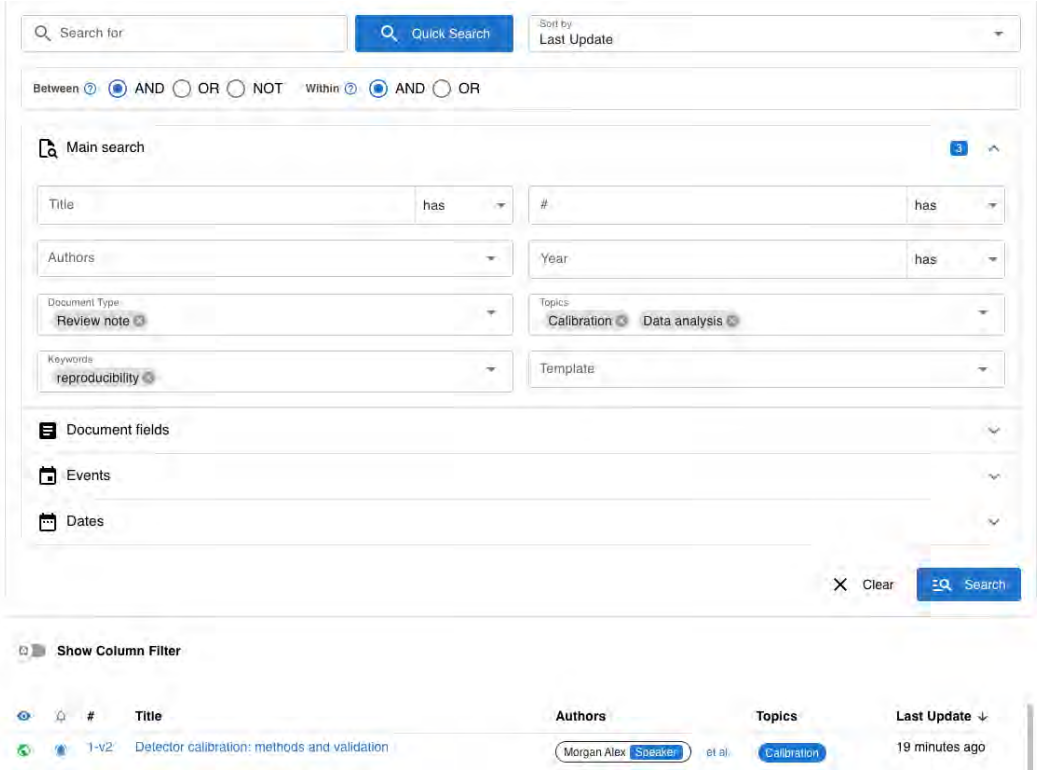
Project members and roles

Projects in SciDocsCloud

A project is a shared workspace for documents, collaboration and events

- Membership and role management
- **Advanced document search and filtering**
- Metadata management
- Events and calendar
- Groups and subgroups

  Every project belongs to a group or subgroup and inherits membership and roles from it

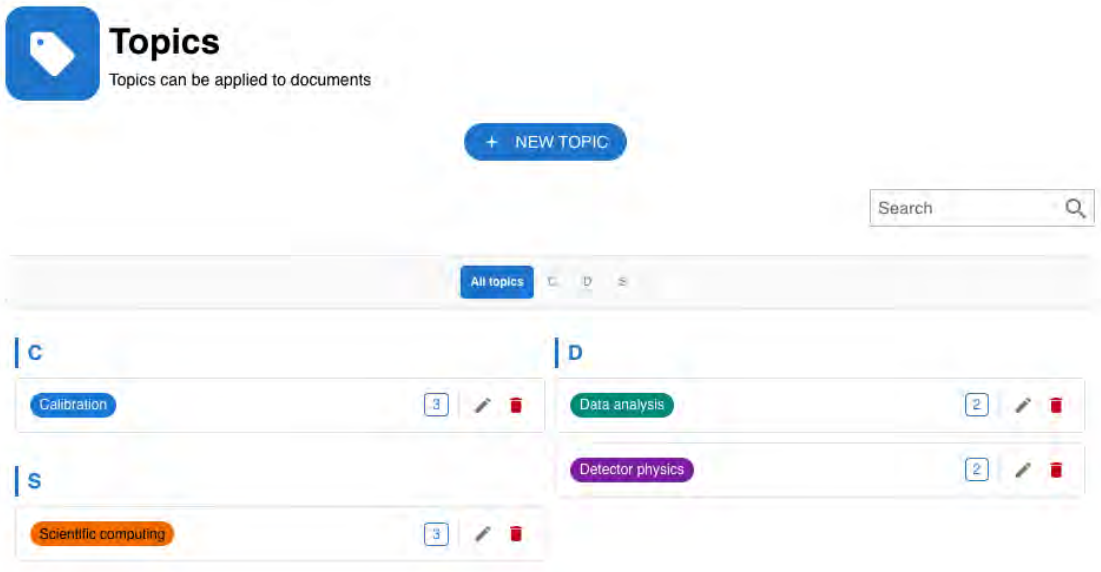


Advanced document search

Projects in SciDocsCloud

A project is a shared workspace for documents, collaboration and events

- Membership and role management
- Advanced document search and filtering
- **Metadata management**
- Events and calendar
- Groups and subgroups
  Every project belongs to a group or subgroup and inherits membership and roles from it



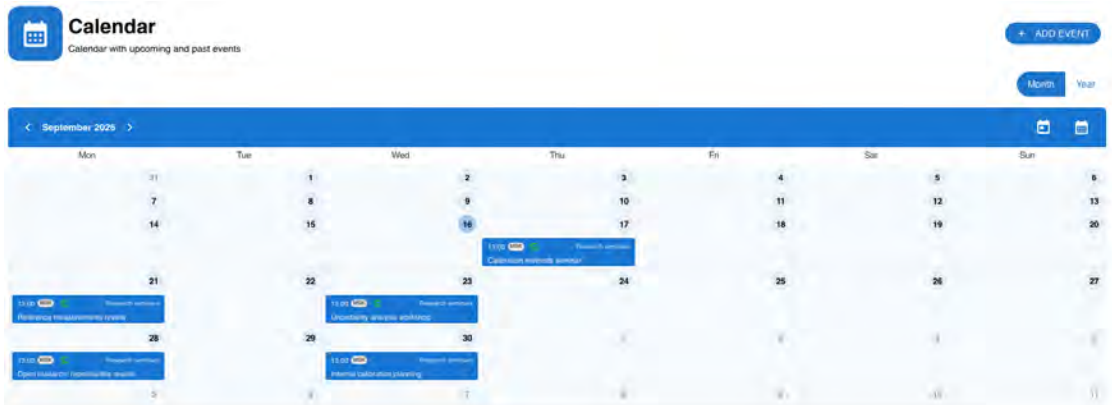
Metadata management: topics

Projects in SciDocsCloud

A project is a shared workspace for documents, collaboration and events

- Membership and role management
- Advanced document search and filtering
- Metadata management
- **Events and calendar**
- Groups and subgroups

  Every project belongs to a group or subgroup and inherits membership and roles from it

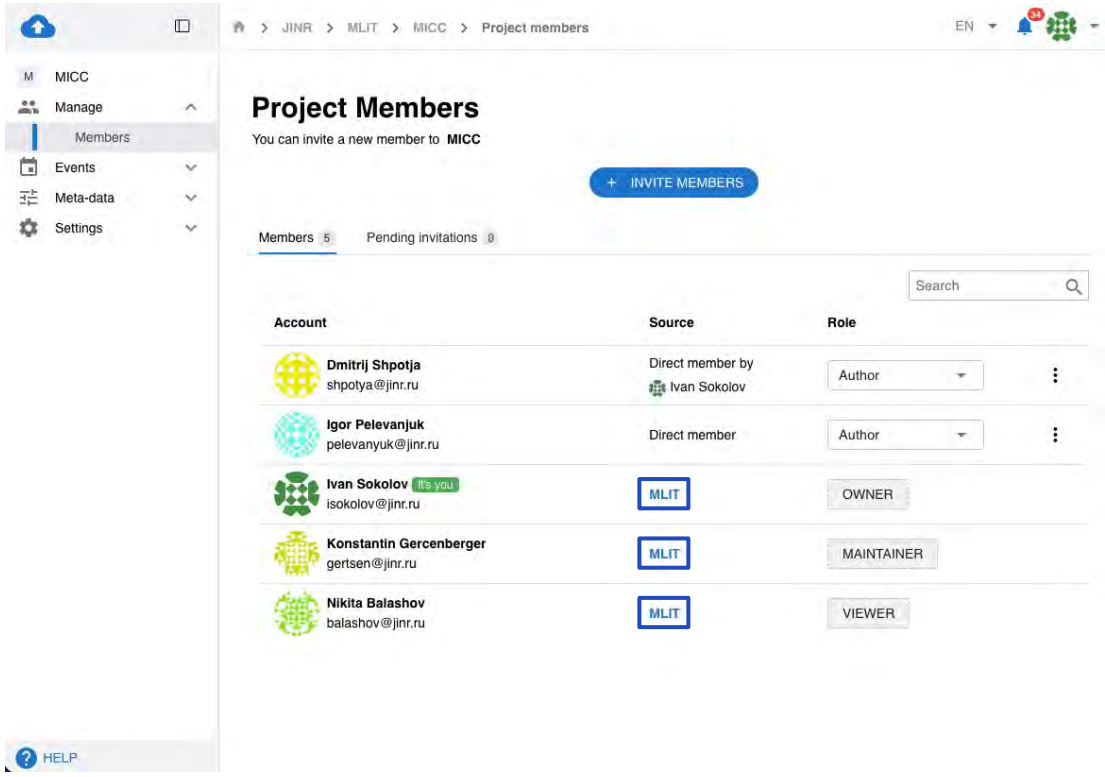


Monthly calendar

Projects in SciDocsCloud

A project is a shared workspace for documents, collaboration and events

- Membership and role management
- Advanced document search and filtering
- Metadata management
- Events and calendar
- **Groups and subgroups**
  Every project belongs to a group or subgroup and inherits membership and roles from it

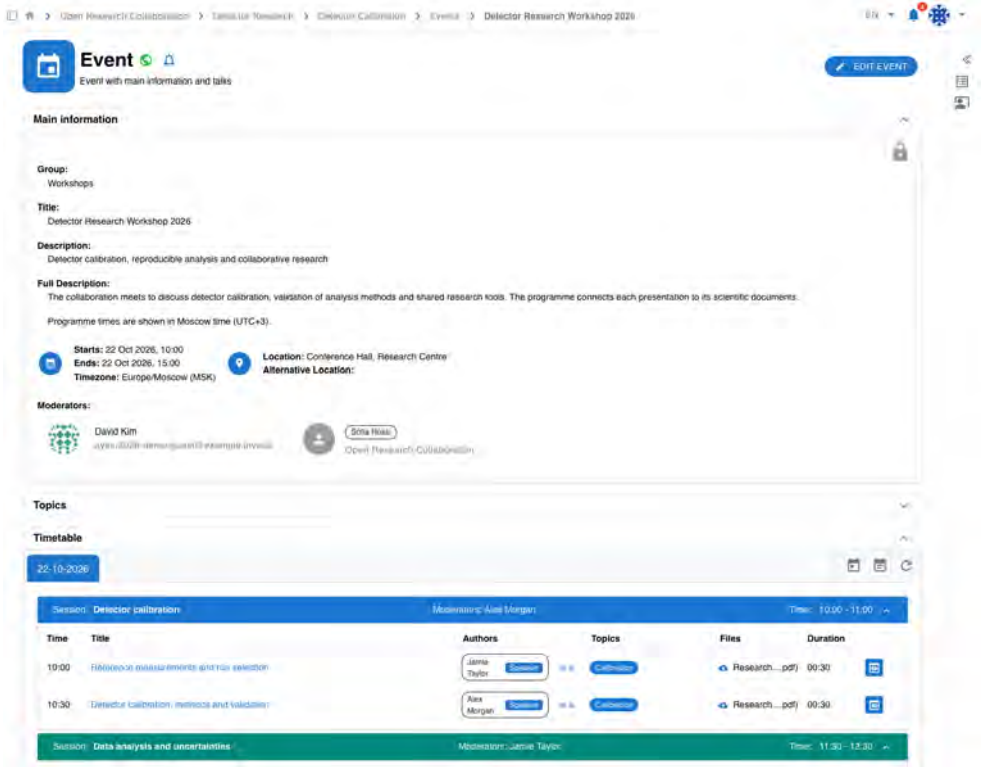


Direct and inherited project membership

Events and Calendar

An event brings together a programme and related documents within a project

- **Event programme**
  Sessions and talks with scheduled times
- **Linked documents**
  Documents linked to events and individual talks
- **Collaborative management**
  Event moderation and optional talk management by project members
- **Calendar views**
  Month and year views of project events



Event page

Events and Calendar

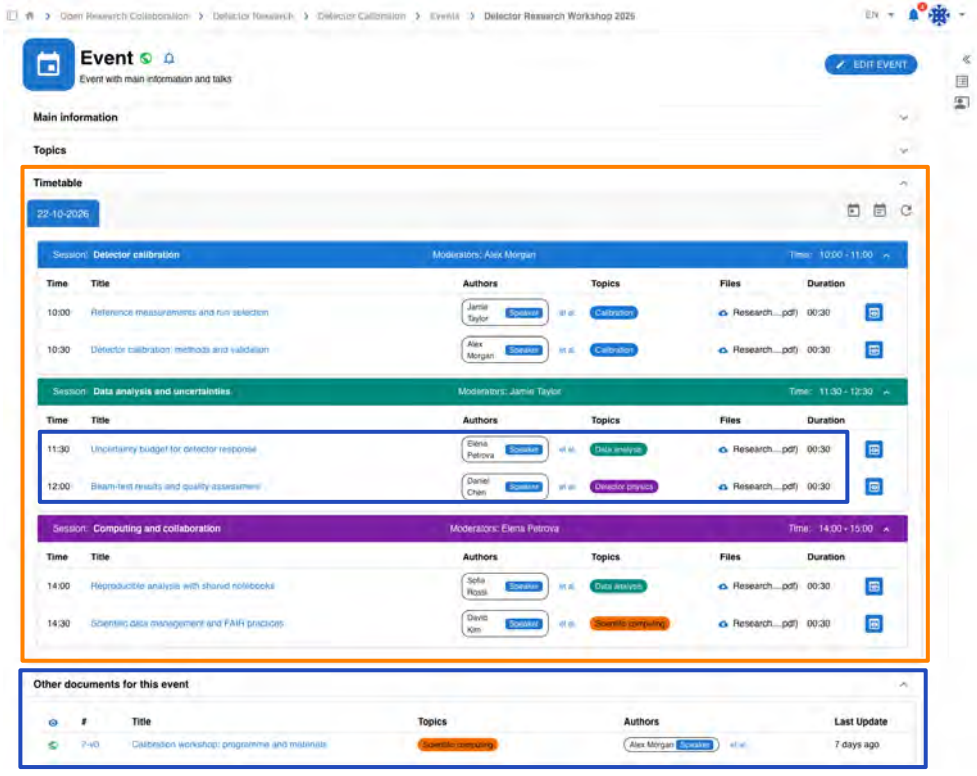
An event brings together a programme and related documents within a project

Event programme
Sessions and talks with scheduled times

Linked documents
Documents linked to events and individual talks

Collaborative management
Event moderation and optional talk management by project members

Calendar views
Month and year views of project events

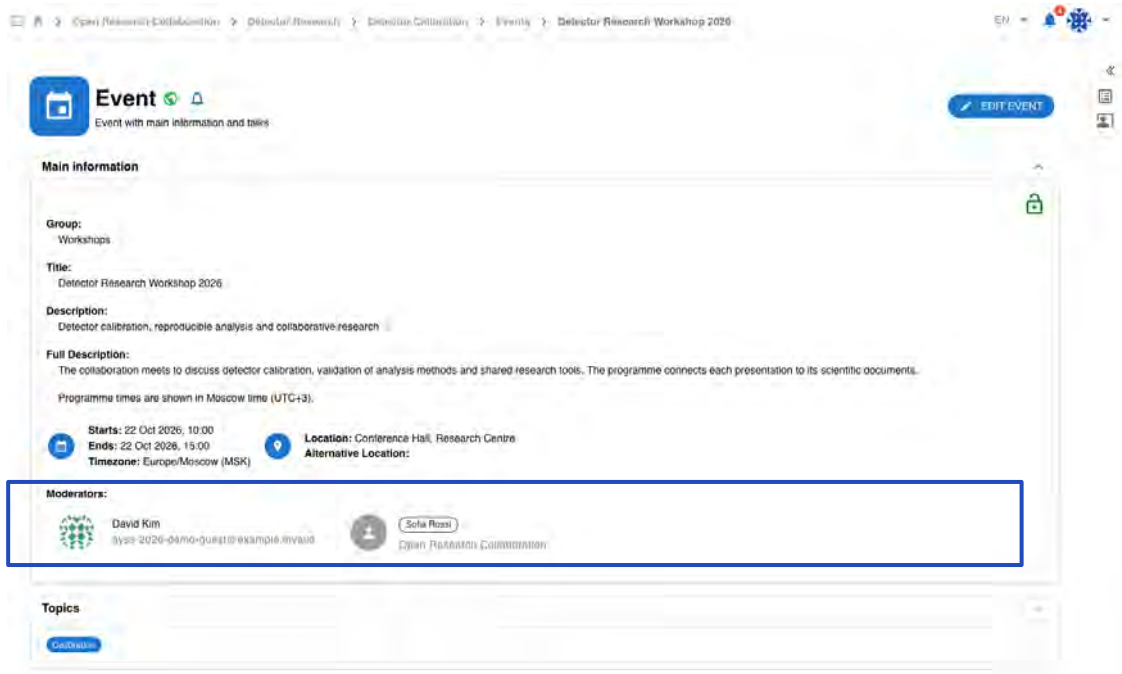


Event programme and materials

Events and Calendar

An event brings together a programme and related documents within a project

- **Event programme**
  Sessions and talks with scheduled times
- **Linked documents**
  Documents linked to events and individual talks
- **Collaborative management**
  Event moderation and optional talk management by project members
- **Calendar views**
  Month and year views of project events



Event moderators

Events and Calendar

An event brings together a programme and related documents within a project

Event programme

Sessions and talks with scheduled times

Linked documents

Documents linked to events and individual talks

Collaborative management

Event moderation and optional talk management by project members

Calendar views

Month and year views of project events



Project Events calendar

Role-based Access Model

Roles define what members can do within a group or project

Role	Main purpose
Owner	Administer the workspace and its members
Maintainer	Manage project content and activities
Author	Create documents and participate in discussions and events
Viewer	View documents and events
Guest	Limited access to the workspace structure

Membership and roles are inherited from parent groups

Direct membership grants Guest access to parent groups for navigation

Public Access and Sharing

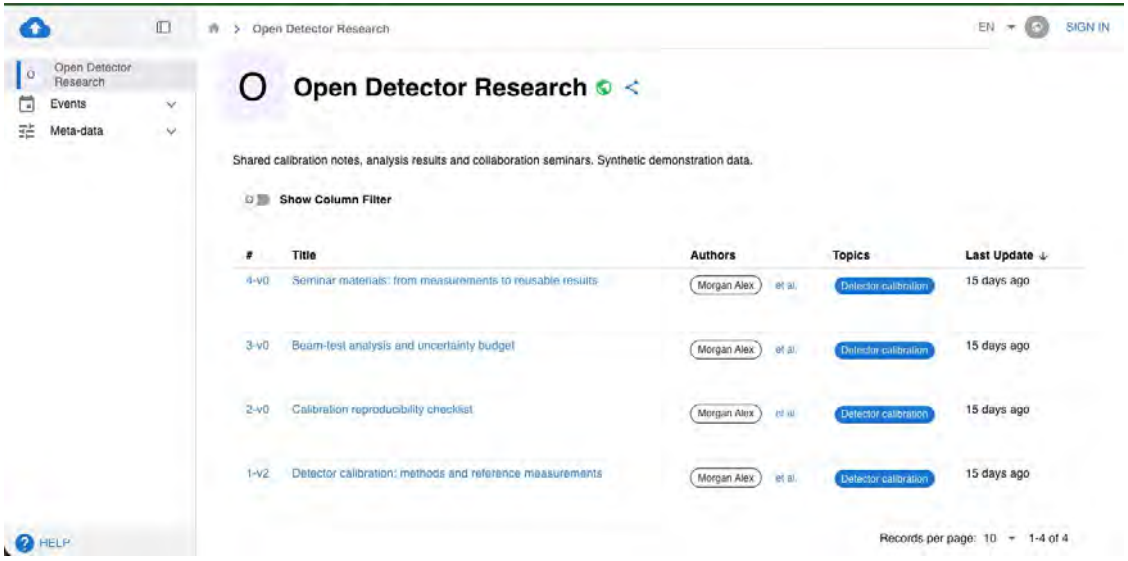
Selected materials can be accessed without signing in or membership

Public projects

- Publish selected documents and events
- Keep other materials private

Shared links

- Share private documents or files via links
- Document links open the latest version



Public project view

Public Access and Sharing

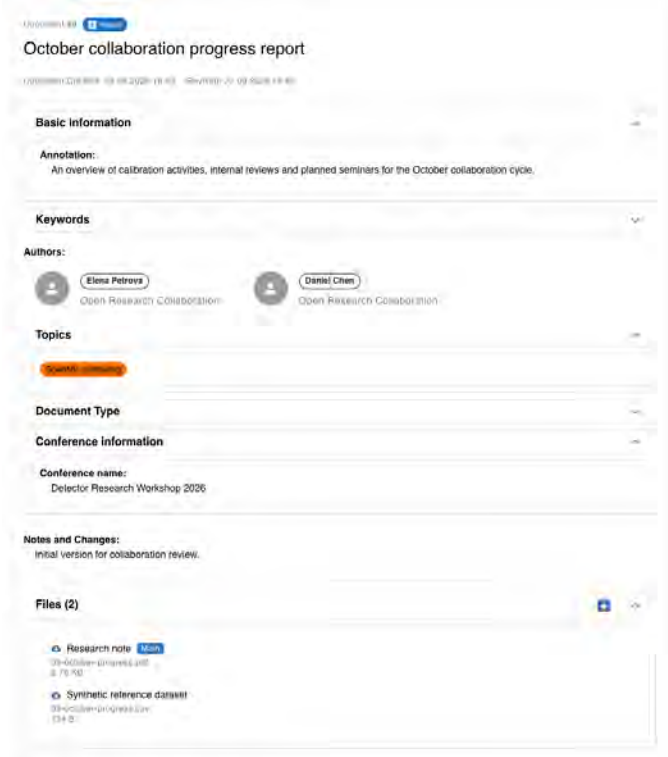
Selected materials can be accessed without signing in or membership

Public projects

- Publish selected documents and events
- Keep other materials private

Shared links

- Share private documents or files via links
- Document links open the latest version



Document shared via a link

Notifications and Subscriptions

Stay informed about changes relevant to your work

Activity notifications

Updates on documents, comments, events and membership

Notification inbox

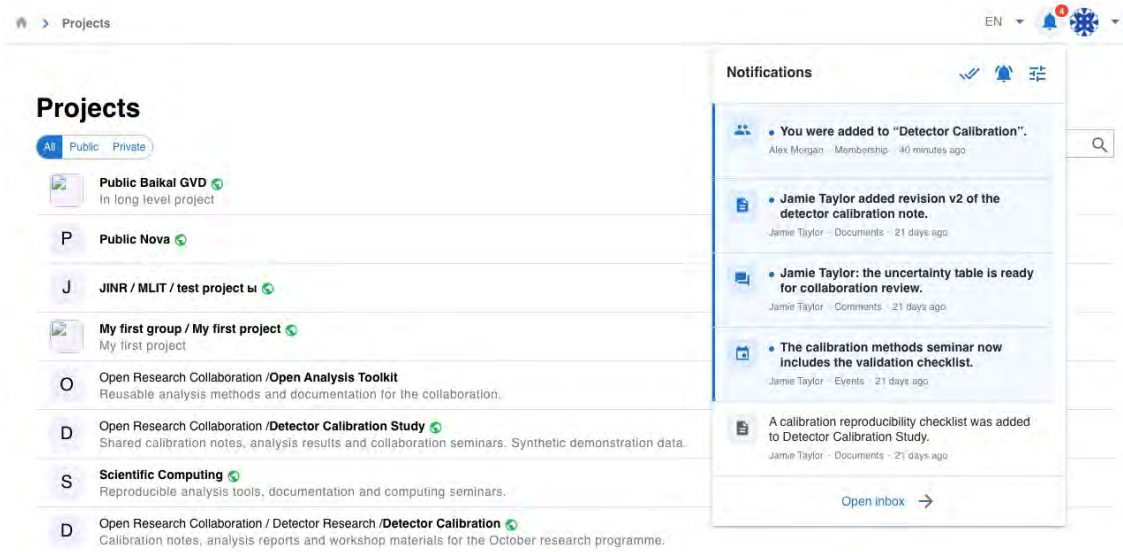
Read/unread status, search, filters and direct links

Subscriptions

Follow selected groups, projects, documents and events

Notification settings

Choose which notification categories to receive

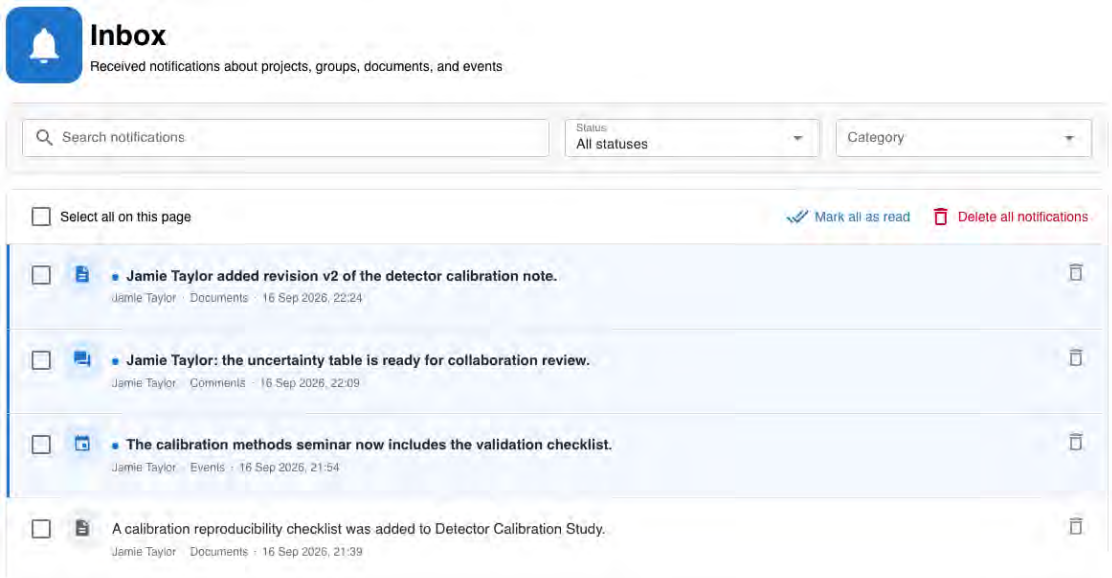


In-app notifications

Notifications and Subscriptions

Stay informed about changes relevant to your work

- **Activity notifications**
  Updates on documents, comments, events and membership
- **Notification inbox**
  Read/unread status, search, filters and direct links
- **Subscriptions**
  Follow selected groups, projects, documents and events
- **Notification settings**
  Choose which notification categories to receive

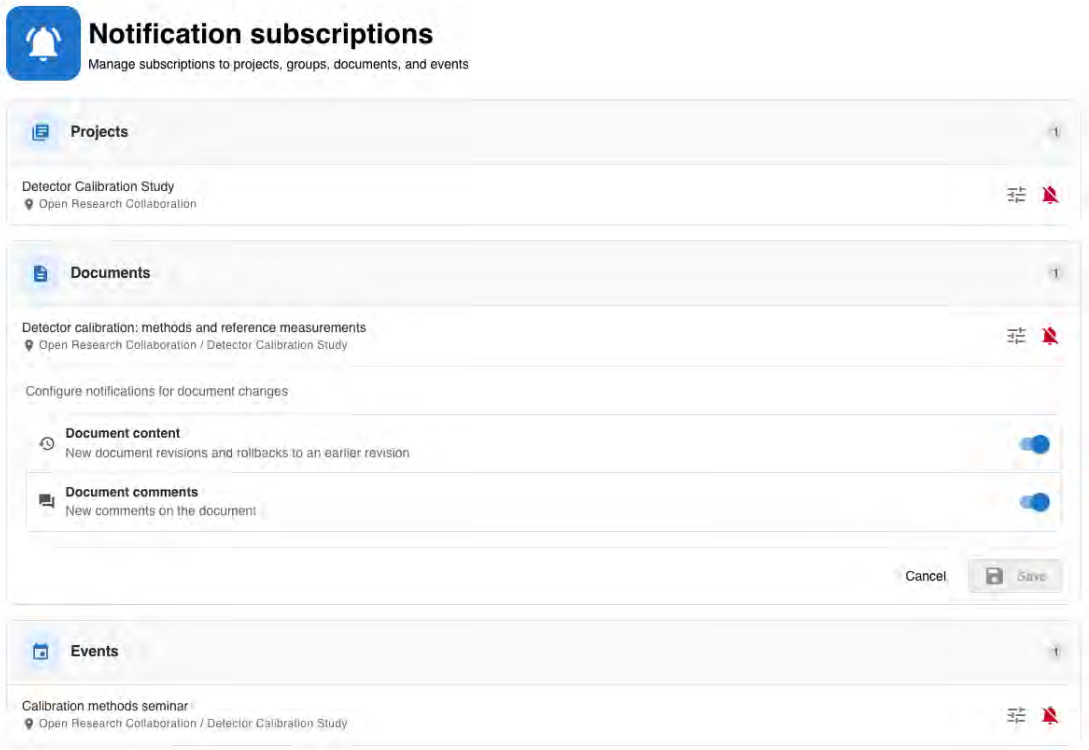


Notification inbox

Notifications and Subscriptions

Stay informed about changes relevant to your work

- **Activity notifications**
  Updates on documents, comments, events and membership
- **Notification inbox**
  Read/unread status, search, filters and direct links
- **Subscriptions**
  Follow selected groups, projects, documents and events
- **Notification settings**
  Choose which notification categories to receive



Subscription management

Notifications and Subscriptions

Stay informed about changes relevant to your work

Activity notifications

Updates on documents, comments, events and membership

Notification inbox

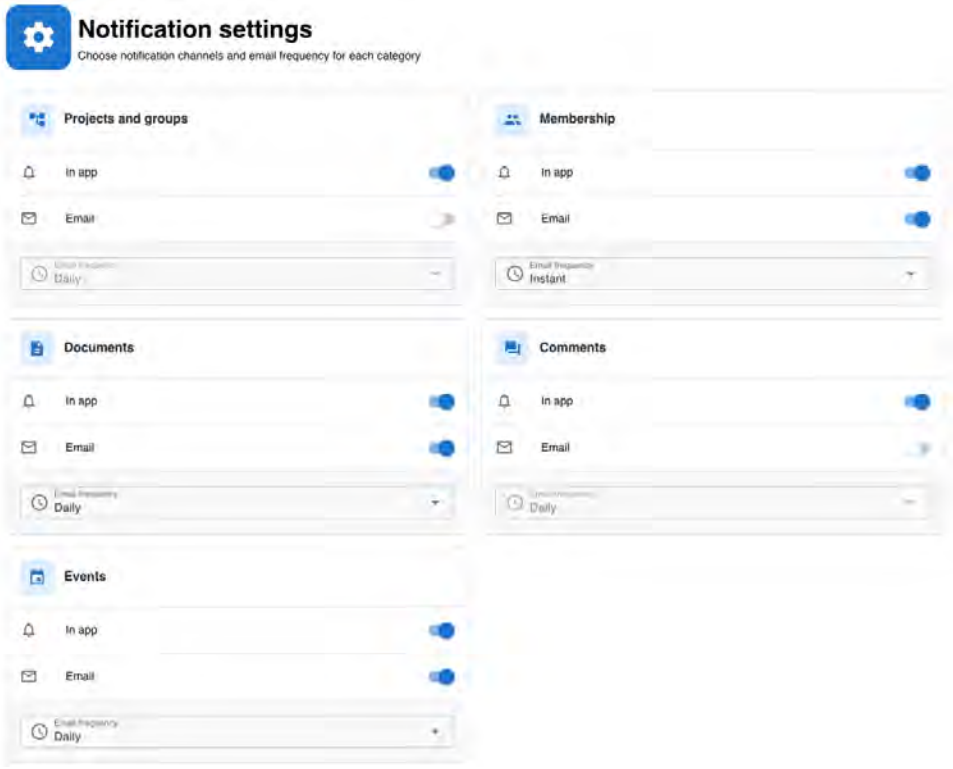
Read/unread status, search, filters and direct links

Subscriptions

Follow selected groups, projects, documents and events

Notification settings

Choose which notification categories to receive



Notification settings

DocMS Deployment at JINR

DocMS is the JINR document management service based on SciDocsCloud

JINR Ceph storage

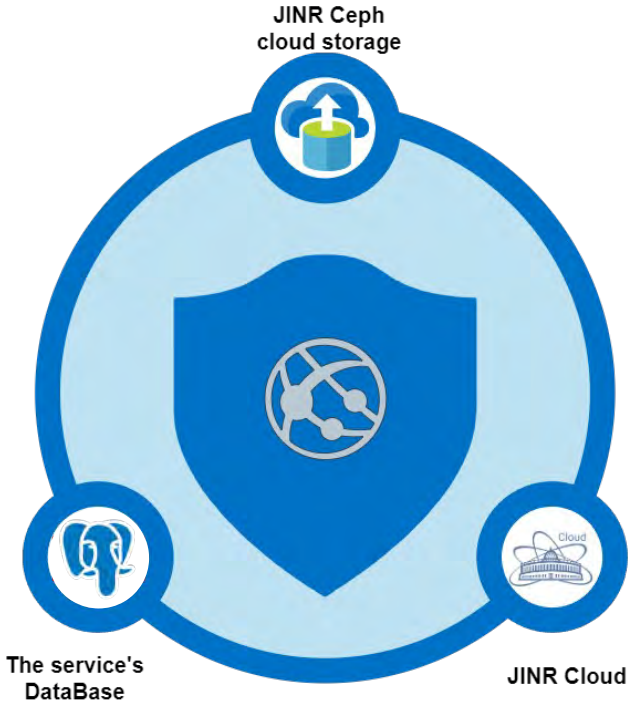
Replicated, scalable storage for document files

Database backups

Nightly backups of metadata and access settings

JINR Cloud deployment

Virtual machines hosting the service



DocMS at JINR: Current Status

A production service for JINR employees and scientific collaborations

335
Registered users

2,916
Documents

As of October 2026

329
Events created

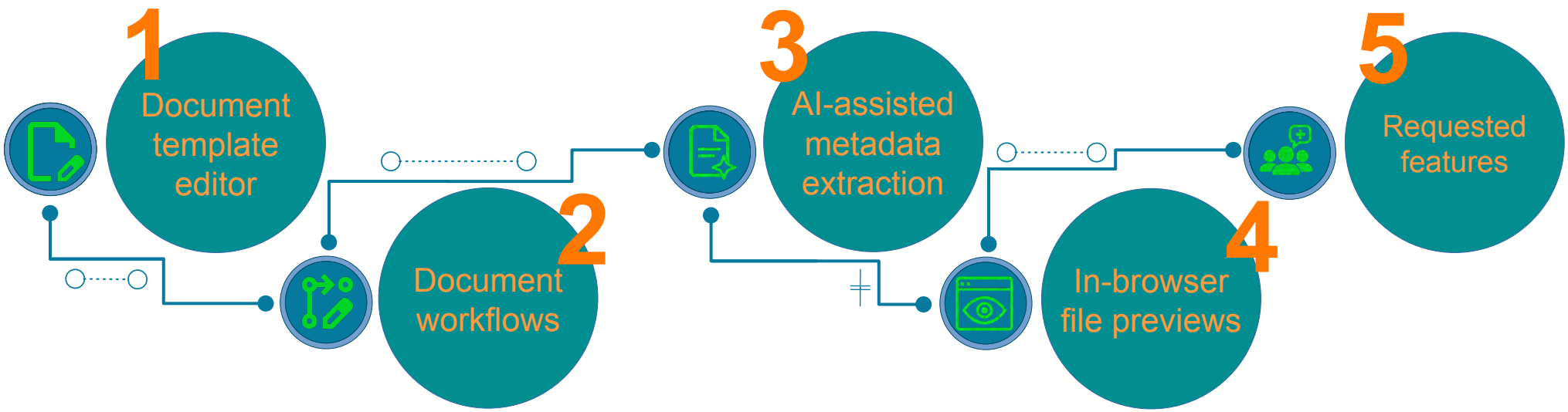
Integrated with JINR services

Available through the JINR Digital Ecosystem with single sign-on

Migration completed

All legacy DocDB instances at JINR have been migrated to DocMS

Future Development



Conclusions and Feedback

SciDocsCloud

An open-source platform for scientific document management and collaboration

DocMS at JINR

A production service for research groups and collaborations

Migration completed

All legacy DocDB instances at JINR have been migrated to DocMS

Ongoing development

New features and improvements based on user feedback

docs.jinr.ru

Feedback and support: docs@jinr.ru