

EVERSE Community Engagement Event

Aligning LUMEN with EVERSE for Research Software Quality and Sustainability

05 | 02 | 2026 by Julien Homo (Foxcub)



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the European Union**

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LUMEN – In a nutshell

A federated ecosystem to empower interdisciplinary data discovery and reuse within EOSC



20 partners and affiliated entities



From 9 EU countries (FR, BE, IT, DE, PT, AT, PL, SE, HR) and the UK



About 70 people involved



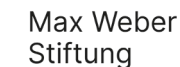
36 months project: 1st January 2025 - 31 December 2027



Project coordinator: CNRS



Budget: 7 million euros



LUMEN objectives and key contributions

Four strategic objectives to transform how communities discover, share, and reuse research outputs

Objectives

S01

Create a shared and collaborative cross-disciplinary knowledge and **data exchange space** for the next generation EOSC

S02

Enhance the qualitative discovery of research outputs by establishing an ecosystem of **innovative features**

S03

Support the production of **FAIR-by-design research outputs**

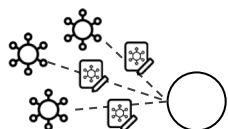
S04

Facilitate early stage of the research lifecycle by **enhancing specific tools and services**

Key contributions to EOSC



White-label discovery platforms



Data Mesh architectural framework



LUMIS: LUMEN Infrastructure for Semantics



AI-enhanced services



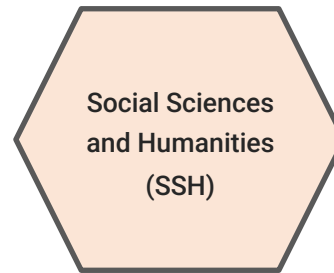
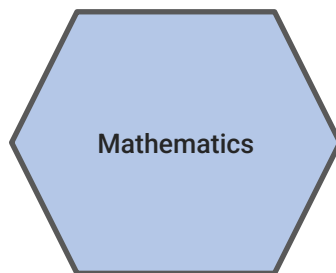
Progressive integration into the EOSC Federation

4 scientific domains at the heart of LUMEN

LUMEN is a federated collaboration of these scientific communities, leveraging their unique strengths, infrastructures, and expertise.

A fundamental discipline that provides rigorous methodologies and tools for complex problems.

- Climate modelling
- Cryptography
- Machine learning
- Optimization of supply chains
- Simulation of financial markets

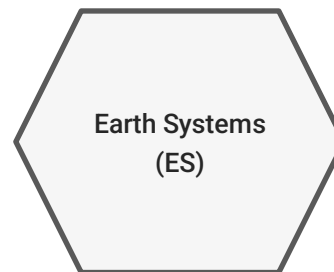
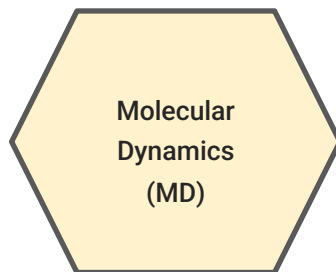


Focused on exploring the human dimensions of societies, including culture, language, and societal organization.

- Analysing social inequalities
- Developing public policy frameworks
- Examining ethical implications of AI
- Studying cultural diversity and multilingualism
- Evaluating the impact of technological adoption on societies

A branch of physical sciences that uses numerical simulations to predict molecular and atomic interactions.

- Drug design and discovery
- Development of advanced materials
- Chemical process optimization
- Understanding protein folding mechanisms
- Modelling nanotechnology devices



An integrated study of interactions between Earth's components to address global environmental challenges.

- Climate change projections
- Studying ocean circulation patterns
- Modelling natural disasters
- Monitoring biodiversity and ecosystems
- Evaluating the effects of deforestation

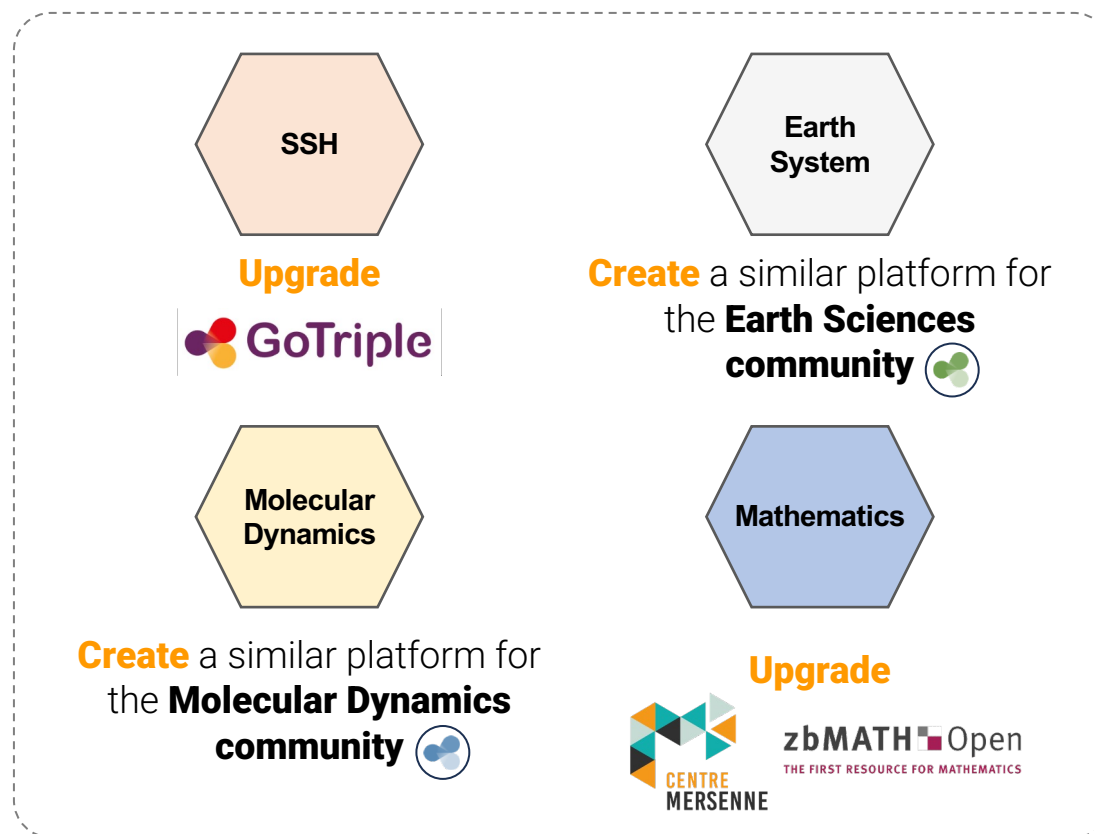
LUMEN – Genesis of a federated ecosystem

Building upon GoTriple to extend discovery across new scientific domains, organised through a data mesh approach



Multilingual discovery platform for the social sciences and humanities (SSH)

EU - project: 2019-2023



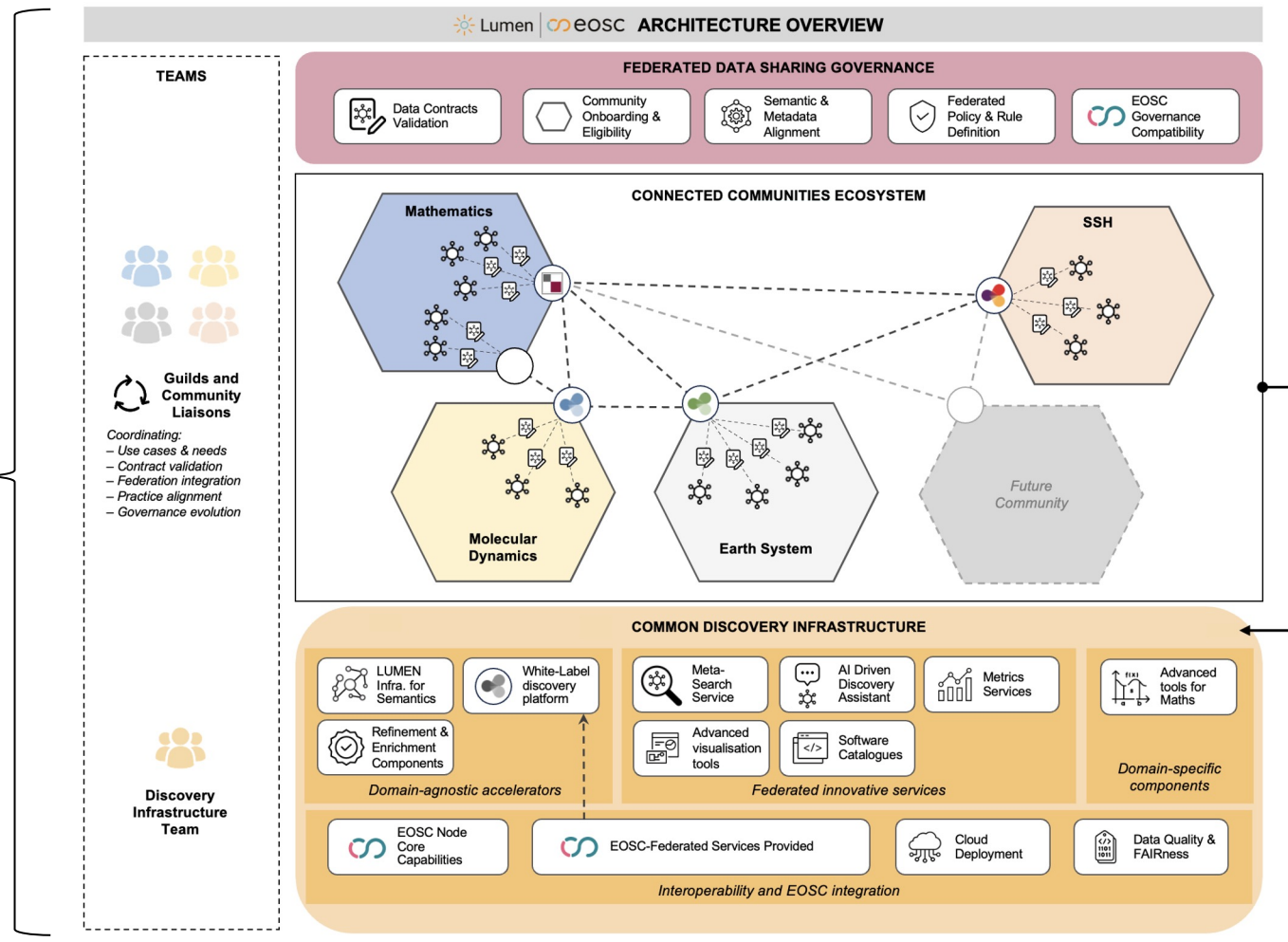
3 discovery platforms
(GoTriple, ES, MD)

+ 8 innovative tools

Organised through a data mesh

LUMEN in 2 core concepts

A federated data mesh connecting communities, powered by shared discovery tools



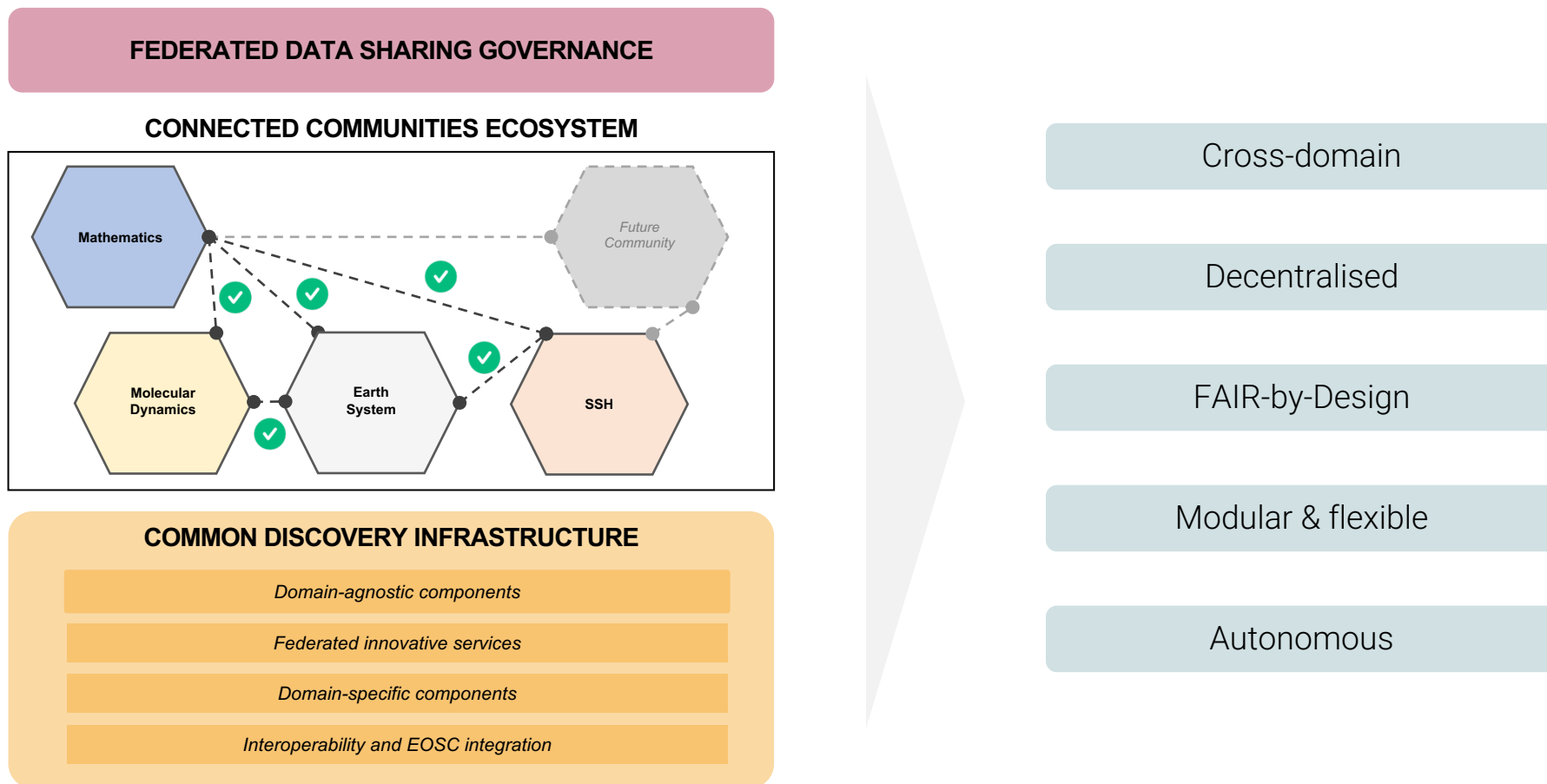
A **data mesh** as a data exchange space among the communities

LUMEN Data Mesh
Architecture Framework, June 2025
<https://zenodo.org/records/15752126>

A **white-label discovery platform** for 3 communities + **8 innovative tools** to ease data discovery

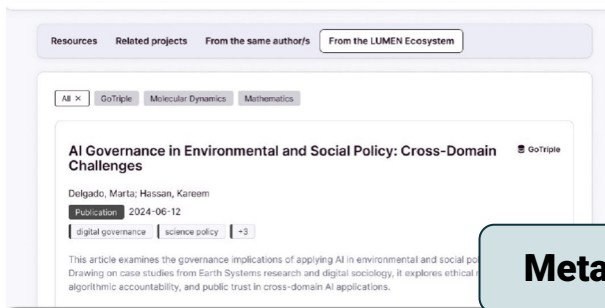
LUMEN data mesh for interdisciplinarity

Connecting autonomous communities through a federated and FAIR-by-design framework

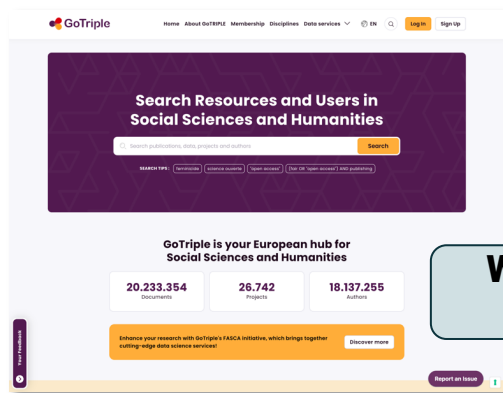


1 white-label platform and 8 innovative tools to allow data discovery

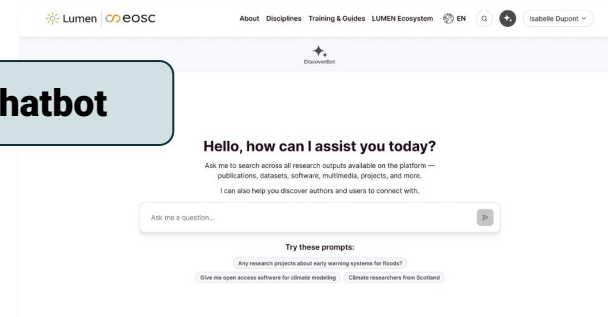
From semantic alignment to intelligent exploration: a shared toolbox for the LUMEN ecosystem



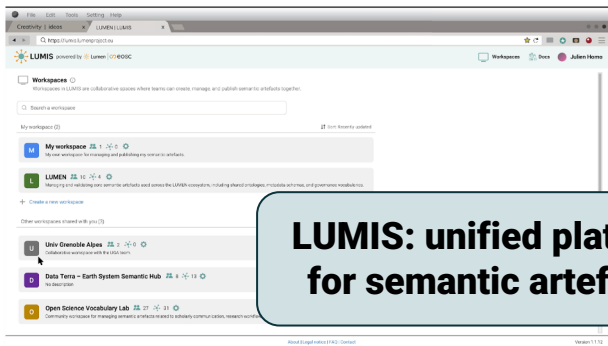
Metasearch



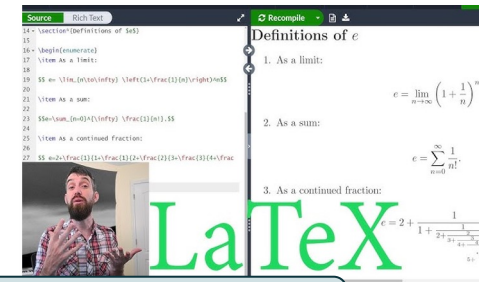
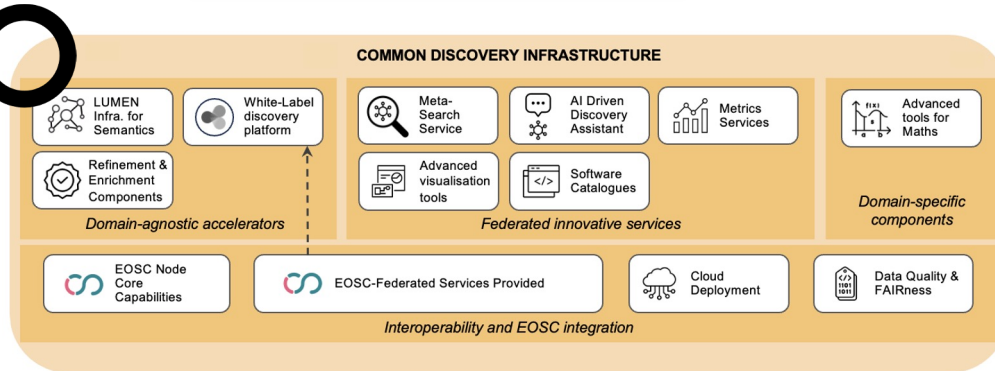
White-label platform



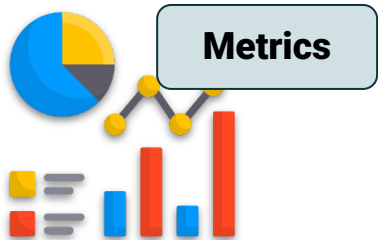
Chatbot



LUMIS: unified platform for semantic artefacts



Modular LaTeX tool



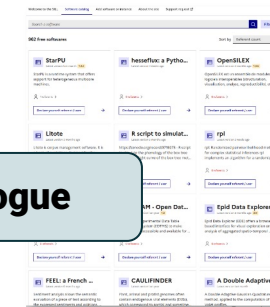
Metrics



Data visualisation tools

LUMEN Data Mesh Architecture Framework, June 2025
<https://zenodo.org/records/15752126>

Software catalogue



Why EVERSE matters to LUMEN

LUMEN's services and catalogues depend on research software quality, FAIR-by-design practices, and sustainable delivery, this is exactly what EVERSE operationalises.



Turning software catalogues into trusted, reusable EOSC assets

- LUMEN exposes software and services to EOSC users
→ they need clear quality signals (tests, docs, maintenance, licensing, provenance)
- Multi-partner, federated ecosystem
→ shared development guidelines are needed to reduce fragmentation
- Discovery is not only “findability”
→ it’s findability + trust + reusability
- EVERSE provides community-driven frameworks (RSQKit / indicators) to support this.

So we align: LUMEN as a catalogue & discovery layer, EVERSE as a quality framework & toolkit.

LUMEN × EVERSE: what we will do

Concrete alignment points for 2026 and 2027 (MoU)

Integrate quality in the LUMEN Software Catalogue (WP6/T6.5)

- Add software quality indicators/metrics inspired by EVERSE as metadata in LUMEN catalogue entries
- Integrate selected EVERSE tools/resources into the LUMEN catalogue workflow
- Exchange on indicators/metrics and keep alignment with latest EVERSE developments

Raise software quality across LUMEN

- Define project-wide development guidelines for LUMEN (inspired by EVERSE approaches)
- Use RSQKit as an assessment lens to improve FAIRness + quality of LUMEN components
- Improve software descriptions (metadata completeness, sustainability information)

Interoperability & cross-domain discovery

- Explore synergies between LUMEN metasearch and research software registries
- Promote shared standards (CodeMeta, FAIR Software Indicators) for interoperability across EOSC

**LUMEN operationalises discovery at EOSC scale,
EVERSE strengthens the quality signals that make research software trustworthy and reusable.**

Thank you!



<https://lumenproject.eu>



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