Netherlands in the Era of a Mature EOSC (2026–2035)

At the EOSC National Tripartite Event on 22 May 2024, the idea to form a Working Group on the Dutch contribution to the EOSC Federation and node(s) was proposed and supported. This support was confirmed at the BO-OSNL meeting on 3 June 2024. The Working Group, facilitated by SURF with participation from DANS, Netherlands eScience Center, Health-RI, OSNL and tDCC-NES, was tasked with exploring scenarios for setting up EOSC node(s), developing a sustainable business model, and identifying an appropriate governance model. This document is a first draft and presents the initial scenarios and steps for developing a governance and funding model.

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Executive summary

Purpose and context
The European Open Science Cloud (EOSC) offers the Netherlands a strategic opportunity to coordinate its fragmented research data landscape, strengthen competitiveness in data-driven and AI-enabled science, advance Open Science through data sharing and re-use, and protect digital sovereignty within a trusted European framework.

Recognised by the European Commission as a core driver of Europe's research and digital ambitions, EOSC underpins the ERA Policy Agenda, the European Strategy for Research Infrastructures, and the AI in Science initiative. Supporting EOSC is therefore a strategic policy choice that enables FAIR data, advanced digitalisation, and AI-ready research capabilities—far more than a technical investment.

EOSC and the Dutch opportunity
EOSC is evolving into a federated European data infrastructure that connects interoperable European, national and thematic Nodes. With the EOSC EU Node now operational, decisions taken in 2026 will shape the future architecture and governance of Europe's research data ecosystem. For the Netherlands, EOSC offers a timely opportunity to coordinate national research data efforts, align investments with European standards, and strengthen the availability and re-use of FAIR research data.

Dutch vision and strategy
By 2030, the Netherlands aims to be a co-leader in a trusted, sustainable EOSC Federation. The strategy focuses on:
- Establishing a Dutch National EOSC Node as the central access and coordination point;
- Developing thematic clusters, building on the TDCCs, to connect research communities and domain-specific services;
- Ensuring sustainable governance and funding for long-term operation and European engagement;
- Maximising interoperability with European Data Spaces, EuroHPC and AI Factories to support advanced, data-intensive and AI-enabled research.

Strategic benefits for the Netherlands
A coordinated Dutch presence in EOSC strengthens research quality through shared data access, boosts innovation and competitiveness via European partnerships, reinforces digital sovereignty within a trusted framework, creates economies of scale through shared services, and ensures the Netherlands has a strong role in shaping Europe's digital research infrastructure.

Recommended approach

Establish a Dutch National EOSC Node operated by SURF, develop thematic clusters under this Node, and avoid parallel institutional Nodes to prevent fragmentation.

Next steps for 2025–2026

Refine governance and the business model, launch participation calls, define the evolution of TDCCs, secure political and financial commitment, and take a formal go/no-go decision by end-2026.

1. Context

1.1 National Research Data Landscape

Since the National Programme Open Science (NPOS) report of 2020 ("*Exploring and optimizing the Dutch data landscape*"[1]), the Netherlands has made progress but continues to face several persistent challenges in the research data landscape:

- Research data infrastructures remain fragmented across institutions and science fields.
- Infrastructure readiness is relatively high, but national coordination is limited.
- Funding and governance of research data initiatives is fragmented, lacking coherence and long-term clarity.
- European engagement is strong in certain areas yet not strategically aligned at the national level.
- Resource use is often inefficient, with duplication of infrastructure and gaps in access procedures.

The NPOS report recommended a national approach to coordinate data infrastructure initiatives, build an inclusive governance framework, and ensure sustainable funding for FAIR data stewardship and related services. EOSC now offers a timely and scalable framework to implement these recommendations in the Netherlands within a European context.

1.2 European Open Science Cloud (EOSC)

EOSC sets out to enable researchers to find, share, and reuse FAIR data, tools and knowledge across disciplines and borders. In doing so, it advances data & AI driven science while applying the Open Science principles of openness, transparency and collaboration. This is in line with the European Research Area (ERA) Policy Agenda 2025-2027[2], which identifies EOSC as a key mechanism for enabling data sharing and re-use across Europe.

By offering the interoperability framework for high-level services developed through a broad range of research infrastructures, EOSC creates the foundation for an integrated European research and innovation environment where data is open by design and reused for maximum scientific and societal benefit. As a digital research infrastructure framework, EOSC supports the digital transformation of research in the ERA, offering an interoperability framework across research-performing organisations (RPOs) and research-supporting organisations (RSOs). The European Strategy on Research and Technology Infrastructures[3] further emphasises EOSC's role in maximizing the potential of digitalisation and AI for research infrastructures, while the European Strategy for AI in Science recognises EOSC as a cornerstone for pooling AI-ready data and linking to emerging AI Factories[4].

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[1] https://www.openscience.nl/sites/open_science/files/media-files/npos_eindrapport_verkenning_en_optimalisering_nationaal_datalandschap.pdf

[2] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C_202503593

[3] https://op.europa.eu/en/publication-detail/-/publication/ab01d60c-943f-11f0-97c8-01aa75ed71a1/language-en

[4] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52025DC0724&qid=1762332390557

As argued by the EOSC Steering Board (EOSC-SB)[5], the EOSC will significantly enhance the competitiveness of its participating countries while being firmly rooted in Open Science values such as transparency, collaboration, inclusiveness, and accessibility.

1.3 EOSC Federation helping to connect resources in the Netherlands

Under the EOSC Federation label, the EOSC infrastructure currently takes shape as a 'European data space for science and innovation', a federated network of digital research services built within the research ecosystem across Europe.

The EOSC Federation offers a structure and mechanism at the National level in the Netherlands to connect the Dutch research field to EOSC through two complementary approaches:

1. Build a shared national services structure that supports scientists in the Netherlands to benefit maximally from the resources brought together in the EOSC Federation;
2. Offer a coordinated structure to make research resources and services developed by Dutch organisations available to European research communities by making them part of the EOSC Federation.

This mechanism and structure of shared service offering and service federation in the EOSC is called a Node.

The EOSC Federation is implemented as a network of EOSC Nodes that each serve as access points to diverse research services, providing offerings such as access to data repositories, computing facilities, software tools, and related support and training. Collectively, the EOSC network of Nodes makes all these resources and services available at scale for research communities across Europe and beyond.

Each EOSC Node must have the capacity to represent, coordinate, operate and maintain these resources within the EOSC Federation framework over the long term, providing essential functions including identity management, service catalogues, monitoring, and workflow support. To operate sustainably, a Node must be a legal entity with dedicated governance, technical, and security capacity, supported by stable funding for a minimum of five years.

An EOSC Node will be typically formed by multiple research institutes, universities, medical centres and other stakeholders with a common geographical (European, regional or national) and/or thematic scope. A Node may target a specific research domain or offer services to scientific communities at national, regional or pan-European level.

A viable costing and cost recovery mechanism for Node services will be developed at the Federation level, factoring in both usage costs and appropriate maintenance costs to sustain the federation and the Nodes.

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[5] https://european-research-area.ec.europa.eu/sites/default/files/documents/2025-03/EOSC-SB%20opinion%20paper%20on%20FP10.pdf

2. Strategic Context and Vision

2.1. Vision

By 2030, we envisage that the Netherlands plays a co-leading role in a fully operational, trusted and sustainable European Open Science Cloud, the cornerstone of Europe's Open Science ecosystem and a key instrument for opening and connecting research data infrastructures. Researchers, institutions, and citizens alike benefit from a secure, FAIR-enabled ecosystem that accelerates discovery, supports collaboration, and maximises societal value.

The national and European integrated environment provides seamless access to trusted third-party digital content, tools and services across Europe, supporting the growing impact of national and European research. Active national participation of the Dutch research infrastructures ensures resources are used effectively and efficiently. As the EOSC federates existing research infrastructures, it enhances the value of national investments in research infrastructures.

2.2. Strategy

To realise this vision, the Netherlands must:

- Connect Dutch research resources and services to EOSC in a coordinated way, federating digital resources and services of all involved stakeholders, and offering EOSC resources to Dutch scientists;
- Implement a common, sustainable funding and access model;
- Align national strategic investments with EOSC's evolving structure and priorities, and with implementation of other sector-specific data spaces.

2.3. Strategic Impact Areas for the Netherlands

The benefits of connecting to EOSC for Dutch researchers, research communities, digital infrastructures and the competitiveness of the Netherlands are multiple:

Research quality and efficiency
Researchers will have seamless, streamlined access to data, tools, and services, reducing time to discovery and improving reproducibility thanks to a common interoperability framework and aligned access policies. Open workflows and transparent methods enhance trust, reduce redundancy, and accelerate progress across disciplines. This will inspire participation in European research initiatives and enable access to large-scale research infrastructures operational in specific research domains.

Innovation and competitiveness
EOSC will strengthen the Dutch innovation ecosystem by fostering interdisciplinary collaboration, creating new opportunities for joint innovation initiatives at both national and European level, and attracting competitive funding. By aligning priorities and connecting to other European data spaces, the EOSC is well positioned to help reduce fragmentation and increase the impact of innovation investments.

Digital sovereignty
While participating in a trusted, federated European infrastructure, the Netherlands retains control over sensitive research data and services, ensuring alignment with national values, ethical frameworks, and regulations such as the GDPR.

Economy of scale
EOSC drives shared development and maintenance of digital infrastructure and services nationally and internationally, reducing duplication and lowering costs. In addition, Dutch scientists gain access to capabilities that would be unaffordable or inefficient to build alone.

Frontrunner positioning and influence
The Netherlands will be positioned to co-shape EOSC policies, governance, and technical standards, gaining first-mover advantages and influence in data-driven science across the European Research Area. Early investment and alignment grant the country influence, visibility, and partnership opportunities.

2.4. Current Developments and Dutch Strategic Window

The European Open Science Cloud is transitioning from vision to operational reality of federated research infrastructures. This creates a critical strategic window of opportunity for the Netherlands to shape its role and maximise benefits. The coming years will be pivotal for EOSC's future, with decisive choices to be made at European level that will determine the structure, governance, and sustainability of the federation for the next decade.

Developing a high-value EOSC Federation and increasing its uptake is a core structural policy action within the European Research Area (ERA) for 2025–2027 (see note 2). Open Science is central to both ERA and Dutch science policy, and EOSC advances Open Science by enabling the sharing and re-use of research data. By federating infrastructures, data, and services, EOSC translates Open Science principles into practice and advances ERA goals for a more open, connected, and competitive research system. Financial support for EOSC is therefore not a technical expense but a strategic policy commitment: it ensures that the Netherlands helps shape, and fully benefits from, Europe's transition toward open and FAIR research.

EOSC has received a prominent place in the next Multiannual Financial Framework (MFF) 2028-2034[6] (including the Framework Programme 10 - FP10) and in the European Strategy on Research and Technology Infrastructures (see note 3), underlining its importance as a long-term investment in Europe's research and innovation capacity. These commitments translate into substantial European funding streams and policy priority that Dutch organisations can leverage.

The Netherlands is actively positioning itself within these developments:
- The Netherlands government endorsed the ERA structural policy action (see note 2): Enabling data-driven science via sharing and re-use of data;
- As active EOSC Association members/observers, Dutch stakeholders are contributing to the Tripartite Group discussions on the direction of EOSC beyond 2027, in preparation for key decisions foreseen in 2026;
- At the request of the Open Science NL Strategy Council (OSNL-BO), the EOSC Nodes and Governance Working Group has been tasked to formulate this strategic vision for

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[6] https://research-and-innovation.ec.europa.eu/news/all-research-and-innovation-news/horizon-europe-2028-2034-twice-bigger-simpler-faster-and-more-impactful-2025-07-16_en

the Dutch contribution to EOSC. This paper will serve as the starting point to develop a national implementation strategy on EOSC which shall ensure that national strengths and priorities are clearly articulated and embedded in the European context;
- The Netherlands already plays a leading role in the build-up phase through the SURF pilot node, and engagement with national stakeholders, including Thematic DCCs, demonstrating leadership and contributing tangible solutions;
- Several Dutch scientific communities are already actively engaged in European research infrastructures that are well positioned to establish thematic Nodes in the EOSC Federation.
- By participating in Horizon-EOSC calls, Dutch stakeholders secure additional funding to support further innovation in the development of the Dutch components of the technical infrastructure of the EOSC federation.

It will be important to take a pro-active position in the EOSC, and the window of opportunity is time limited. The 2026 decisions on EOSC's long-term structure will largely determine which countries take the leading role in shaping European research infrastructure policy and reaping the greatest benefits of the EOSC Federation of integrated research infrastructures. Countries that establish national Nodes early in the process will be at the forefront of data-driven and AI-enabled research innovation, able to influence Federation governance, shape emerging technical standards and service models, and position themselves to benefit from European funding opportunities. By acting now, the Netherlands can secure a place in the driving seat of this development – ensuring that the Dutch research community not only benefits from but also helps define the future European landscape for data-intensive and AI-enabled science.

Building on its longstanding leadership in Open Science, data infrastructures and initiatives to support data driven research and innovation, the Netherlands is exceptionally well positioned to contribute to and benefit from the EOSC Federation. Its maturity, experience, and strong collaborative culture can strengthen the European framework, while participation in the EOSC Federation will, in turn, accelerate national developments and bring Dutch digital research capabilities to the next level.

Taken together, these developments demonstrate both the urgency and the opportunity: by engaging strategically in EOSC with adequate national coordination and resources, the Netherlands can help shape the future of digital research infrastructures in Europe and consolidate its position at the forefront of data- and AI-driven science, enhancing the competitiveness of Dutch research and innovation.

3. Scenarios for connecting to EOSC

3.1. Context and Considerations

The Netherlands faces strategic choices in how to organise its participation in the European Open Science Cloud (EOSC) Federation. While the EOSC defines the technical and organisational model of "Nodes" at the European level, the Dutch task is to translate this model into a coherent national configuration that builds on existing assets, ensures efficient coordination, and maximises European influence.

The Netherlands already has strong foundations on which to build. SURF operates the Dutch Pilot EOSC Node, providing experience in federation principles, technical interoperability, and service onboarding. The Thematic Digital Competence Centres (TDCCs) create national coordination mechanisms across scientific domains, and initiatives such as Health-RI, CLARIAH, ODISSEI, ASTRON and Nikhef already connect Dutch infrastructures to European Research Infrastructures (ESFRIs). Together, these components offer a solid basis for a national EOSC architecture that combines shared governance with domain-specific expertise.

To design this architecture, it is important to understand the distinct types of Nodes recognised in the EOSC Federation and how they could function within the Dutch research landscape.

3.1.1. National EOSC Node

A Dutch National EOSC Node offers significant strategic opportunities. It would strengthen coordination and alignment between national data infrastructures, helping to identify and close service gaps, reduce duplication of efforts, and harmonies access conditions across domains. Acting as a single, united Dutch voice within the EOSC Federation, the Node could enhance national visibility and influence in European discussions, strengthen advocacy towards policymakers, and expand access to funding opportunities. A joint governance structure would foster collaboration, ensure inclusive decision-making, and promote shared responsibility among participating organisations. Moreover, by pooling resources and expertise, a national Node could achieve greater cost efficiency through shared operations and reduced administrative duplication, leading to a more sustainable national infrastructure landscape.

Establishing a Dutch National EOSC Node will require substantial coordination and commitment. Participating organisations will need to reach agreements on legal, technical, financial, and policy matters, and to entrust the entity representing the Node with a clear mandate to act on their behalf within the EOSC Federation. Importantly, these alignments will be necessary in any case to advance the Dutch research data landscape; doing so collectively through the Node, rather than at the level of individual institutions, will enable greater coherence, efficiency, and speed. An effective governance model that balances inclusiveness with agility will be essential. Initial setup and coordination costs may be significant, necessitating the design of a fair and transparent cost-recovery mechanism.

Conclusion
Despite some challenges, the long-term opportunities, greater alignment, stronger influence, and improved sustainability, make this effort both timely and worthwhile. SURF, as the Dutch EOSC Mandated Organisation, already operates the Pilot EOSC Node and is well positioned to act as the future Node Operator under the collective mandate of a Member Assembly. This continuity will help anticipate and mitigate challenges while ensuring the Netherlands remains an influential and trusted partner within the EOSC Federation.

3.1.2. Thematic EOSC Nodes and Clusters

Thematic EOSC Nodes are being established at the European level, typically based on existing European Research Infrastructures (ESFRIs) that organise services, data, and expertise within specific research domains. These Nodes aim to standardise practices, enhance interoperability, and align access policies across Europe.

For the Netherlands, the opportunity lies not in establishing new thematic Nodes nationally, but in connecting national resources, infrastructures, and communities to these European thematic Nodes in a coordinated and visible way. This can be achieved by aligning domain-level activities and ensuring that Dutch services and expertise are interoperable and recognisable within the European landscape.

In this configuration, thematic services and datasets would appear in the catalogue of the Dutch National EOSC Node, while domain-level coordination would be organised through national thematic clusters, such as the Thematic Digital Competence Centres (TDCCs), which link Dutch domain services and communities to their European counterparts. Together, the national Node and the thematic clusters form an incubator for thematic services, helping emerging initiatives mature into fully interoperable contributions to EOSC.

The Life and Health sciences domain offers a clear example. Health-RI and the TDCC for Life Sciences and Health (TDCC-LSH) are connecting national infrastructures and ESFRI Nodes (e.g. BBMRI, ELIXIR, Euro-BioImaging, EATRIS) to develop shared data and AI strategies aligned with both the EOSC and the European Health Data Space (EHDS). A similar dynamic exists in the Social Sciences and Humanities (SSH) domain, where CLARIAH, ODISSEI, and the TDCC-SSH coordinate Dutch infrastructures and data services linked to European frameworks such as CESSDA, DARIAH, and ERICs. And, for the TDCC for the Natural and Engineering Sciences (TDCC-NES), which is working to stimulate knowledge exchange and development of shared data standards, between Dutch NES-domain infrastructure organisations, such as ASTRON, Ruisdael, KNMI, and Nikhef. These organisations each, independently, have connections to relevant ESFRIs but miss national coordination and exchange of best practice, when it comes to data sharing. These examples demonstrate that structured national coordination provides a direct, efficient interface with European thematic Nodes while ensuring coherence and national visibility.

Conclusion
Thematic EOSC Nodes are, by definition, European-level structures, but the Netherlands can play a leading role in them by organizing coherent national contributions. Combining a Dutch National EOSC Node with national thematic coordination clusters provides a practical and scalable model that supports interoperability, strengthens Dutch influence, and ensures that domain communities contribute effectively to, and benefit from, the EOSC Federation. Through this coordinated approach, the Netherlands consolidates its position as a frontrunner in open, data-driven, and AI-enabled research.

3.1.3. Institutional Node

An institutional EOSC Node, operated by a single organisation, would enable direct participation in the EOSC Federation but offer limited strategic value for the Netherlands as a whole. Functioning in isolation, such Nodes would lack the scale, interoperability, and collective representation needed to influence European policy or benefit from coordinated national investment.

Each institution would bear full responsibility for meeting legal, technical, and financial requirements, including compliance, cybersecurity, and sustainability, without the advantages of shared governance or cost-sharing. A proliferation of institutional Nodes would fragment the Dutch research data landscape, increase duplication, and weaken national coherence.

Conclusion

Institutional Nodes should therefore be discouraged. Dutch organisations are better served by participating through the Dutch National EOSC Node or, where appropriate, via national thematic clusters that connect to European thematic Nodes. This ensures efficiency, alignment, and stronger collective influence within the EOSC Federation.

3.2. Logic Models and Scenarios

Having defined the Node types, the next step is to determine how these could be organised in practice within the Netherlands. Two main logic models emerge, reflecting different levels of centralisation and thematic autonomy.

3.2.1. Scenario 1: One National EOSC Node with Embedded Thematic Coordination Roles

The Dutch National EOSC Node, operated by SURF, would act as the central entry point and formal interface to the EOSC Federation. Thematic coordination would be embedded within the Node through cooperation with the TDCCs and major national research infrastructures (e.g., Health-RI, CLARIAH, ODISSEI, DANS, NWO institutes). These bodies would connect Dutch domain services and communities to relevant European thematic EOSC Nodes.
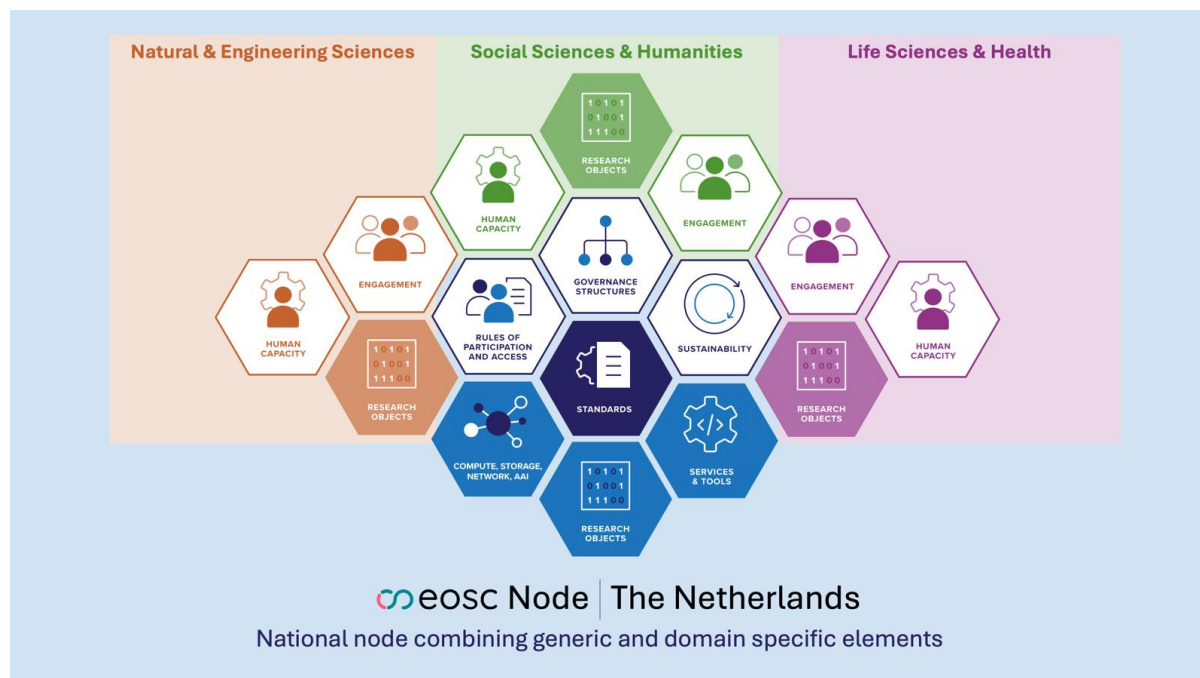
The National Node would provide shared governance, identity and access management, compliance, and representation, while thematic partners contribute domain expertise, user engagement, and service alignment. This model builds on existing coordination structures, ensuring one national voice, clear accountability, and efficient use of resources. It is scalable, allowing thematic domains to evolve into more formal Nodes over time as maturity increases.

3.2.2. Scenario 2: A Hybrid Model – One Generic National EOSC Node plus Several National Thematic Nodes

A central Dutch EOSC Node would provide the generic federative layer for governance, policy, and representation. In addition, three national thematic Nodes (LSH, SSH and NES) would be established as independent entities, each fulfilling full Node responsibilities. These Nodes would manage their own legal, technical, and financial frameworks and connect both to the National Node and to the corresponding European thematic EOSC Nodes.

Four independent nodes. One national and three thematic nodes.
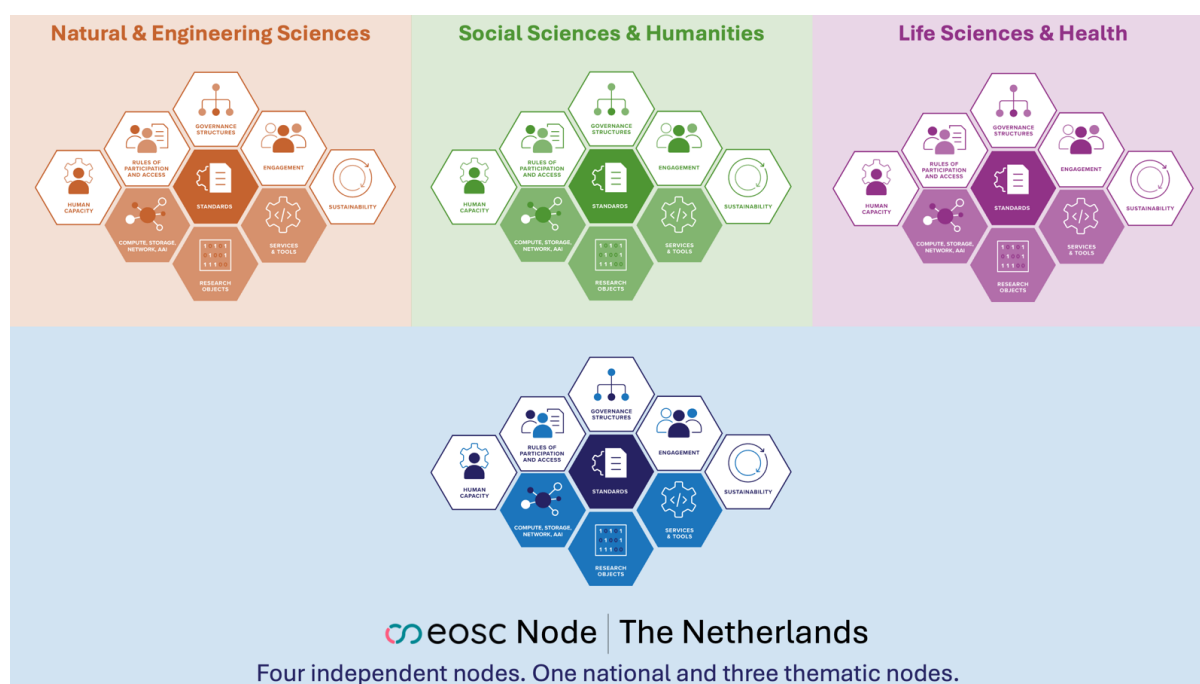
While this model provides stronger domain autonomy and visibility, it also multiplies governance and funding complexity, requiring each Node to maintain compliance, cybersecurity, and cost-recovery mechanisms individually.

3.2.3. Assessment and Recommendation

Scenario 1 aligns more closely with the Dutch governance culture of coordinated collaboration through shared frameworks and distributed responsibilities. It leverages SURF's operational maturity while embedding thematic leadership where it already exists, in the TDCCs and national infrastructures. Scenario 2 offers more visibility for separate domains but would substantially increase operating costs and administrative overhead and fragmentation at this early stage of EOSC maturity.

Recommendation
The Netherlands should pursue Scenario 1: a single Dutch National EOSC Node operated by SURF, with embedded thematic coordination roles implemented through the TDCCs and major national research infrastructures. This ensures a single national interface to the EOSC Federation, integrates existing thematic expertise, and provides flexibility to evolve toward multiple thematic Nodes in the longer term if justified by maturity and demand.

By adopting this model, the Netherlands can ensure that its EOSC engagement remains coherent, efficient, and forward-looking, strengthening national alignment while maximizing its influence within the European EOSC Federation.

To ensure that the Netherlands enters the EOSC Federation with a strong and functional presence, the immediate goal should be to establish a Minimal Viable Dutch EOSC Node.

3.2.4. Defining the Minimal Viable Dutch EOSC Node

The minimal viable Dutch EOSC Node refers to a Node that has achieved sufficient operational maturity to function effectively within the EOSC Federation. Specifically, this means a Node that:

1. Has implemented essential EOSC federative capabilities, including Authentication and Authorisation Infrastructure (AAI) and basic interoperability functions;
2. Is technically and organisationally capable of onboarding services from participating organisations;
3. Has at least two participating organisations (in addition to SURF) that have successfully onboarded their services;
4. Has established interim-governance, participation, and engagement mechanisms that enable effective coordination among members and representation within the EOSC Federation.

Achieving this minimal viable state is the primary objective of the next phase, demonstrating that the Dutch Node can deliver value to both Dutch researchers and the broader EOSC Federation. From this foundation, the Node can grow in membership, service portfolio, and strategic impact.

3.3. Governance Model for the Dutch EOSC Node

A robust and transparent governance model is essential to ensure that the Dutch EOSC Node operates effectively, represents the collective interests of the national research and data community, and remains aligned with both national and European strategic objectives. The governance framework should balance broad representation with operational efficiency, allowing the Node to act decisively while maintaining legitimacy and accountability. As the Node evolves from its build-up phase to full operational maturity, its governance structure should be periodically reviewed and adapted to reflect changing scope, membership, and responsibilities.

The governance framework should also accommodate embedded thematic coordination roles, ensuring structured engagement with national thematic clusters such as the TDCCs and national research infrastructures that link domain-specific activities to the European thematic EOSC Nodes.

3.3.1. Guiding Principles

The governance of the Dutch EOSC Node will be guided by the following principles:

- **Transparency**: open decision-making processes and regular reporting,
- **Accountability**: clear responsibilities and oversight,
- **Inclusiveness**: fair representation of member interests,
- **Efficiency**: streamlined decisions enabling operational effectiveness,

- **Adaptability**: structures should evolve as the Node's scope, membership, and functions expand.

3.3.2. Governance Design Considerations

The design of the governance model should take into account the following core elements:

- **Representation and Mandate**: Establish a representative body responsible for strategy and oversight, and define a clear mandate for the Node Operator to represent the Netherlands within the EOSC Federation. SURF, as the Dutch EOSC Mandated Organisation, currently operates the Pilot EOSC Node and is well positioned to serve as the future EOSC Node Operator, acting under the mandate of the Member Assembly.
- **Decision-Making and Coordination**: Combine participatory governance with agile operational management. Advisory functions covering users, technology, and policy should provide expert input and maintain alignment with evolving national and European priorities.
- A**ccountability and Alignment**: Ensure transparent performance and financial reporting, independent audits, and coherence with frameworks such as Open Science NL, the Permanent Committee for Large-Scale Research Infrastructures (PC-GWI), the Digitalisation Research Advisory Committee (CDO), as well as with European initiatives on Data Spaces and AI governance.
- **Scalability and Evolution**: Begin with a light governance model for the build-up phase, progressing to a more formal structure (e.g., steering or executive committee) as membership and budget increase. Include transparent mechanisms for engaging national thematic clusters and, where relevant, onboarding additional participating organisations as the Node grows.

3.3.3. Recommendation

It is recommended that the Dutch EOSC Node adopts a phased and principle-based governance approach, initially anchored by SURF as the Node Operator under the collective mandate of a representative Member Assembly. This model provides the agility required during the formative years while laying the foundation for a mature, inclusive, and accountable governance framework.

Over time, the governance structure should evolve to integrate the roles of national thematic clusters more formally, ensuring sustained alignment with national Open Science, digital, and AI strategies, while maintaining a clear single national representation within the EOSC Federation.

3.4. Business Model for the Dutch EOSC Node

To operate sustainably within the EOSC Federation, the Dutch EOSC Node requires a robust and flexible business model that ensures long-term financial stability and strategic alignment with both national and European objectives. The model should recognise two key financial conditions:

1. Dutch participation in the EOSC Federation depends on an initial national government contribution, consistent with future FP10 commitments;
2. The Node's ongoing operations will require structural support through national funding strategy to guarantee continuity and impact.

In its initial phase, the business model should support the Minimal Viable Dutch EOSC Node, covering core federative functions and establishing mechanisms for participation and cost-sharing across national thematic clusters and participating organisations.

3.4.1. Guiding Principles

- **Shared responsibility**: Fair cost distribution among beneficiaries.
- **Transparency:** Clear rules for access, contributions, and cost recovery mechanism.
- **Scalability:** Enables growth from pilot to full operation.
- **European alignment:** Compatible with EOSC Federation sustainability models.
- **Adaptability**: ability to adjust to changing policy, technology, and AI-driven research needs.

3.4.2. Value Proposition

The Dutch EOSC Node will deliver value to key stakeholder groups as follows:

- **Researchers**: streamlined access to European data, tools, and compute resources, enabling faster discovery and stronger collaboration.
- **Institutions**: shared national infrastructure that lowers costs, avoids duplication, and enhances interoperability.
- **The Netherlands**: strengthened research competitiveness, digital sovereignty, and influence within European research and AI ecosystems.

3.4.3. Financial Model Design

A sustainable financial model should be built on diversified and complementary funding streams, including:

- **Core Government Funding**: baseline structural funding from the Dutch government covering essential Node operations such as coordination, representation in the EOSC Federation, and basic federative services.
- **Membership Contributions**: annual contributions from participating organisations, reflecting their level of engagement and benefit.
- **European Funding**: participation in Horizon Europe, Digital Europe, and EOSC-related initiatives to support innovation and alignment with European programmes.
- **Service-Based Revenue**: cost recovery mechanism for premium or cross-border services, including advanced computing, specialised storage, training, and consultancy.

Costs should be structured across three categories: **fixed** (governance and coordination), **variable** (usage-based services and training), and **investment** (pilots, new services, and technological upgrades).

3.4.5. Sustainability & Risk Mitigation

Long-term sustainability requires financial resilience, operational efficiency, and alignment with both national priorities and European EOSC policies. The Dutch EOSC Node will follow a phased growth model (Pilot → Growth → Maturity), evolving from a Minimal Viable Node to a mature federative structure with stable participation from thematic clusters and research infrastructures.

A diversified funding mix—government baseline, member contributions, European programmes, and service-based income—will underpin financial stability, supported by shared services and economies of scale.

Key risks include funding fluctuations, limited adoption, cost overruns, and uncertainty around cross-border cost-recovery mechanisms. These will be mitigated through phased growth, transparent cost tracking, and active participation in shaping European EOSC policies on sustainable access and cost recovery, ensuring that Dutch investments remain effective and competitive within the European framework.

4.0 Next steps

4.1 The build-up phase of the EOSC Federation

The ongoing build-up phase (started March 2025) is the first phase of development of an operational EOSC Federation. The concept of interoperable EOSC Nodes is being tested with two waves of Pilot Nodes. SURF is one of the Pilot Nodes. Guidelines and requirements for EOSC Nodes will be finalised at the end of this phase.

For connecting the EOSC pilot Node to the EOSC Federation, activities are needed in the element Standards.

4.2. Recommendations for next steps

4.2.1 National Stakeholder Engagement

- Present EOSC Federation developments and this advice at the National Tripartite Event (NTE) 2025 on 8 December 2025.
- Gather feedback to refine the Dutch vision and implementation strategy.
- Identify founding organisations that wish to participate in the Dutch EOSC Node as service providers, users, or both.
- Secure preliminary commitment from SURF to continue as Node Operator during the build-up phase.

4.2.2. Open Call for Participation

- Launch an open call for additional Dutch organisations interested in participating in the EOSC Federation through the Dutch national Node;
- Clearly communicate different participation models: federating services, utilizing infrastructure, or both;
- Allow sufficient time for organisations to assess strategic fit and secure internal commitment.

4.2.3. National Node Working Group

- Establish an implementation working group of committed organisations to co-develop:
  o The vision and value proposition for the Dutch EOSC Node;
  o Governance and membership structure;
  o A sustainable business model including detailed costing, fee structures, and growth scenarios;
  o The design of the minimal viable Node and its phased evolution to 2030.
- Keep the OSNL-BO, PC-GWI, and CDO informed of progress.
- SURF, as the designated Node Operator, leads this process with active participation from founding members representing all major stakeholder categories.

4.2.4. Thematic Clusters

- Initiate a national discussion on how the existing Thematic Digital Competence Centres (TDCCs) can evolve into thematic clusters operating under the Dutch EOSC Node.
- Define the expected roles, governance relationships, and coordination mechanisms between the Dutch EOSC Node and these thematic clusters.
- Once this model is established, determine how these thematic clusters can perform the functions outlined in section 3.1.2, such as linking Dutch domain services and communities to relevant European thematic EOSC Nodes.

- Ensure continuous alignment and information exchange between the Node and the clusters to maintain coherence and visibility within the EOSC Federation.

4.2.5. European Coordination

- Align Dutch Node development with the evolving EOSC Federation framework.
- Inform the EOSC Association about Dutch organisations seeking cooperation at the thematic level and request coordination support.
- Participate actively in EOSC Federation build-up phase activities (calls, projects, etc.).

4.2.6. Governance and Political Alignment

- Maintain regular dialogue with Dutch representatives in the EOSC Steering Board and with relevant ministries.
- Secure political endorsement and structural funding commitment from the ministries and funders by the end of 2026.
- This commitment is essential to anchor EOSC nationally and reduce the fragmentation of research infrastructures.

4.2.7. Decision Gate (2026)

- Review outcomes of stakeholder engagement and working-group deliverables.
- Assess whether organisational commitment, political support, and sustainable funding are sufficient to proceed.
- Take a formal go/no-go decision on establishing the Dutch EOSC Node.
- A positive decision confirms the Netherlands' formal participation in the EOSC Federation and its strategic commitment to the ERA.

5. Conclusions

The European Open Science Cloud represents a transformational opportunity for the Netherlands to strengthen its position at the forefront of data-driven and AI-enabled research while addressing long-standing fragmentation in the national research data landscape. EOSC advances Open Science by applying principles of openness, transparency and collaboration into operational reality, in line with the European Research Area (ERA) Policy Agenda 2025-2027 (see note 2), which identifies EOSC as the key mechanism for enabling data sharing and re-use across Europe

By establishing a coordinated national presence through a Dutch EOSC Node, supported by thematic clusters that link domain communities and services to European developments, the Netherlands can achieve multiple strategic objectives: enhanced research quality and efficiency, stronger innovation and competitiveness, digital sovereignty within a trusted European framework, and greater influence in shaping Europe's research infrastructure future.

The 2026 decisions on EOSC's long-term structure will determine which countries secure leadership within the Federation. Early establishment of a Dutch National Node positions the Netherlands to influence governance, shape technical standards, and ensure that Dutch researchers fully benefit from European investments in open and FAIR research. Delay or fragmented participation risks marginalizing Dutch influence and limiting access to these benefits.

The Netherlands has exceptional foundations for success: SURF's leadership in the build-up phase provides operational experience and credibility; the TDCCs offer a strong basis for thematic clusters and community engagement; and the country's established leadership in Open Science ensures visibility, trust, and policy alignment. What remains is decisive national coordination, sustainable funding, and political commitment to translate these assets into lasting impact.

This advice therefore calls upon Dutch policymakers, research institutions, and funding agencies to:

- Endorse the establishment of a Dutch National EOSC Node with SURF as Node Operator;
- Commit structural baseline funding to ensure sustainability and credibility;
- Support active stakeholder engagement in defining governance and business models;
- Facilitate the development of thematic clusters within a coherent national framework;
- Ensure political and financial alignment by the end of 2026 to enable the formal Node launch.

Supporting EOSC financially is not simply an infrastructural investment—it is a strategic commitment to the future of data science and AI-driven innovation in the Netherlands and in Europe. By acting decisively now, the Netherlands can help shape the European research landscape of the coming decade, ensuring that its researchers, institutions, and citizens lead and benefit from the transition toward open, FAIR, and collaborative science.

Acronyms and Abbreviations

AAI - Authentication and Authorisation Infrastructure
CDO - Digitalisation Research Advisory Committee (Commissie Digitalisering Onderzoek)
EOSC - European Open Science Cloud
EOSC-A - EOSC Association
ERA - European Research Area
ESFRI - European Strategy Forum on Research Infrastructures
FAIR - Findable, Accessible, Interoperable, Reusable
FP10 - Framework Programme 10
GDPR - General Data Protection Regulation
GORC - Global Open Research Commons
MFF - Multiannual Financial Framework
NPOS - National Programme Open Science
NTE - National Tripartite Event
NWO - Dutch Research Council (Nederlandse Organisatie voor Wetenschappelijk Onderzoek)
OCW - Ministry of Education, Culture and Science
OSNL-BO - Open Science NL Strategy Council (Bestuurlijk Overleg)
PC-GWI - Permanent Committee for Large-Scale Research Infrastructures
RPO - Research Performing Organisation
RSO - Research Supporting Organisation
TDCC - Thematic Digital Competence Centre
TDCC-LSH - Thematic Digital Competence Centre for Life Sciences and Health