D15.1. Service integration plans of the Data Spaces and EOSC Nodes

Complementary Annex

31/07/2024

Abstract

This document presents the complete set of annexes for the EOSC Beyond Deliverable 15.1.

Funded by the European Union

EOSC Beyond receives funding from the European Union's Horizon Europe research and innovation programme under grant agreement No. 101131875.

Document Description

D15.1 Service integration plans of the Data Spaces and EOSC Nodes - Complementary Annex			
Work Package number 15			
Due date	31/07/2024	**Actual delivery date:**	01/08/2024
Nature of document	Annex	**Version**	1
Dissemination level	Public		
Lead Partner	CYFRONET		
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Document link	https://documents.egi.eu/document/4159		
DOI	https://doi.org/10.5281/zenodo.12819857		

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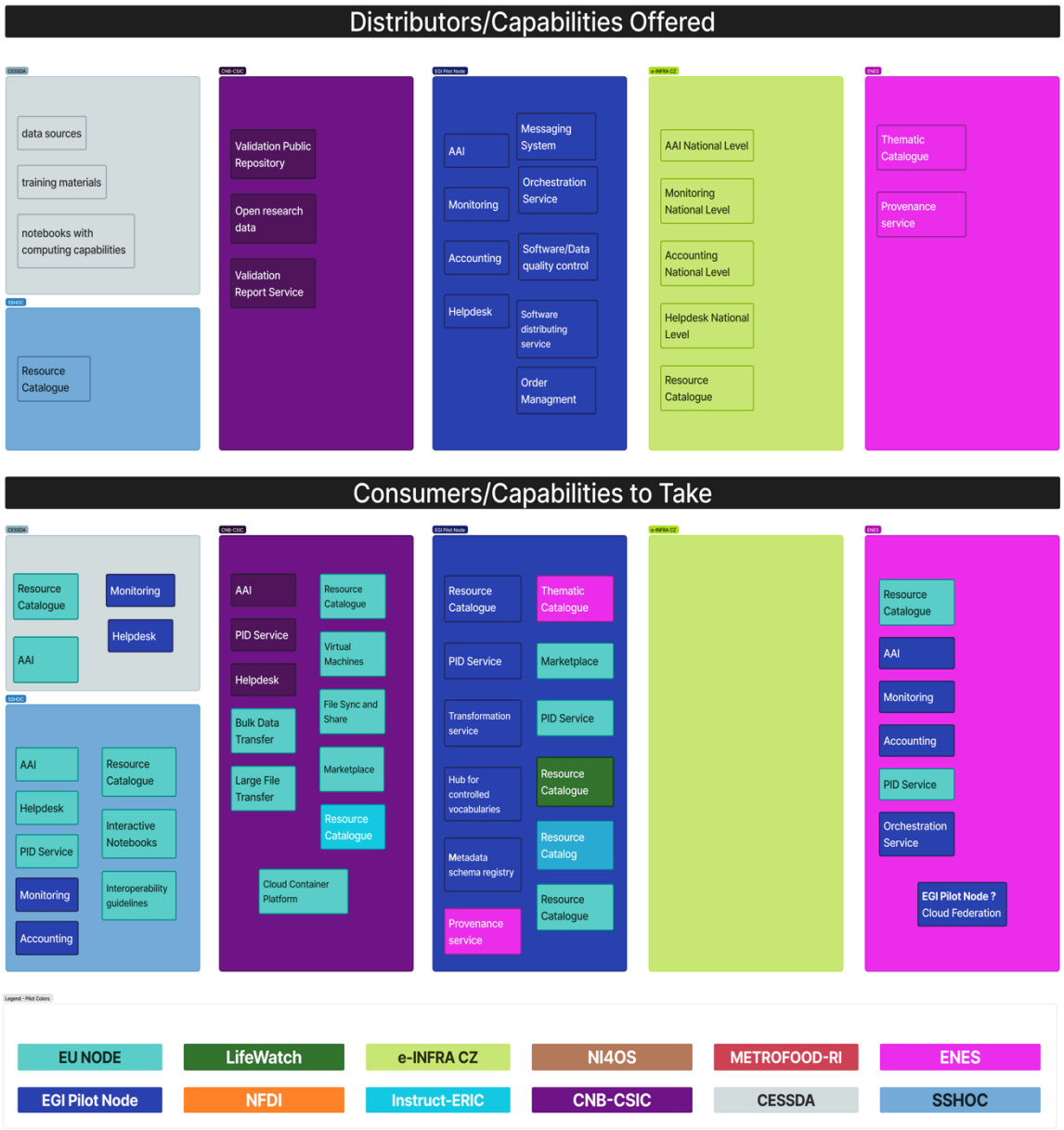

Figure 1 – Pilots Shopping Mall part 1

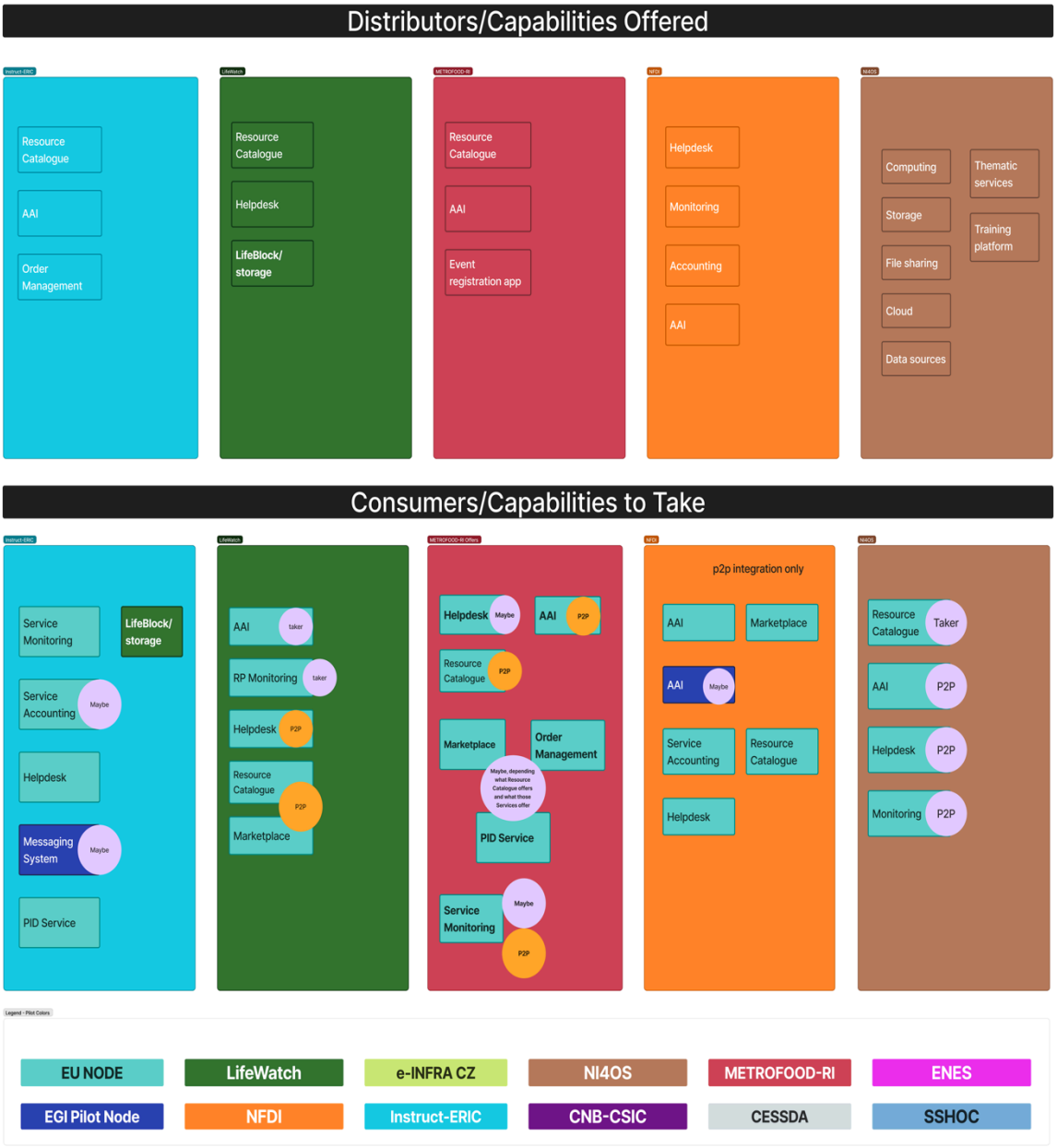

Figure 2 – Pilots Shopping Mall part 2

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EOSC Pilot Node Template	
Node legal entity name	**e-INFRA CZ**
Node legal representative/signing person	director of CESNET
Entity type (i.e. Research Infrastructure, National infrastructure, e-Infrastructure, Data Space, etc)	National Infrastructure
Countries building/delivering in the pilot Node (list the countries only)	Czech Republic
Entities participating in the EOSC Node - Institutional level list of entities (legal or non-legal)	e-INFRA consortia https://www.e-infra.cz/ • CESNET https://www.cesnet.cz/ • IT4Innovation, VSB https://www.it4i.cz/en • CERIT-SC, Masaryk university https://www.cerit-sc.cz/
Node type (i.e. thematic, national, regional, e-infra)	National
Scope of the Node (provide a solid description)	The node will provide access to services provided to Czech users. Services will cover compute services provided by e-infrastructure partners and data storage services developed by EOSC CZ NDI (Czech National Data Infrastructure) and should also provide access to scientific services provided by national research organizations
Scientific disciplines supported by the Node https://confluence.egi.eu/display/EGIG/Scientific+Disciplines ? Please use appropriate values from the standard above. In addition, list any other scientific discipline, if it's not included in the standard.	In general, all scientific domains should be supported. 1.3 Information sciences 1.5 Biology sciences 1.6 Physics sciences 1.7 Chemical sciences 2. Engineering and Technology
Support/Technical contact	e-INFRA CZ support technical contact support@metacentrum.cz organisational contact: info@e-infra.cz
Benefits/resources wished from the EOSC Federation (i.e. what the Node needs) Be precise. Try to include the technologies and capacities in the description Examples: e.g access to generic (e.g. PID) services benefits from pooling resources (with other services or nodes) What are the challenges that you are seeking solutions for via establishing a node	• integration of national AAI with EOSC AAI, to provide access to compute/data/science services provided by node • access to generic services provided in EOSC • integration with EOSC core services - helpdesk, monitoring, resource catalog

Benefits/resources could be offered to the EOSC Federation (i.e. what the Node can offer to others) Be precise. In addition to high-level benefits, skill brought to the table, try also to include the technologies and capacities in the description. Focus on the benefits. Examples: physical infra but there are terms of providing the services (cost, in-kind)	• AAI service and AAI expertise • access to national computing and data services • access to selected scientific tools/services provided by infrastructure or research institutes
Stakeholders (Please provide tuples of <type, role/needs>) Stakeholder roles: consumer, provider (service/data/other resource), funder, governance Examples: researcher/consumer research institution/consumer node/consumer university/data provider university/data provider researcher/provider computing center/service provider	• researcher, consumer • researcher, data provider • research institution, consumer • research institution, (service/data) provider • university, consumer • data center, service provider • research center/university, funder • research center/university, governance
Communities to be served (i.e. PAN community, national (which country) researchers, etc.)	• Czech researchers (and their partners) • life-science RIs, especially ELIXIR
Scientific use cases (ideally, enabled in the EOSC Federation) Please mark, if a given scientific use case is possible to be fulfilled already within your Node only, or does it require resources from “the outside’	• data repositories • compute/storage infrastructure used by Czech researchers and their partners
Technical use cases (ideally, enabled in the EOSC Federation) Please mark, if a given technical use case is possible to be fulfilled already within your node only, or if it requires resources from “the outside`’. Please try to derive the technical use case from the scientific use cases above.	• current compute services: HTC and HPC clusters, IaaS cloud, PaaS Kubernetes • compute services: Galaxy and Jupyter Notebooks • data services: data transfer, data storage, object storage • data repositories, including repository platform and support services (PID service, metadata catalog)

Resources to be offered (via EOSC Exchange) EOSC Exchange user types: researchers students data managers data stewards service developers service providers citizens citizen scientists policymakers public administration business other (please specify) EOSC Exchange client types (how do you grant the access, on what level): single user scientific community scientific institution country scientific project other EOSC Node (please specify if possible) research infrastructure	Resources offered to researchers students, data managers and stewards, service providers, policymakers, citizen scientists Access granted to single users, scientific institution, scientific project

List of resources of a given type Services for providers and developers Service name target audience (Exchange user types) supported client types: list the possible clients of your service is the service offered differently depending on the client type EOSC Access and Use policy available to all EOSC users accessible in the federation under specific conditions. List relevant policies and rules. Services for end-users Service name service type (data source/computing/storage / generic data processing service/data transfer service/data management service / thematic service/training service / other (please specify) target audience (Exchange user types) supported client types: list the possible clients of your service is the service offered differently depending on the client type EOSC Access and Use policy available to all EOSC users accessible in the federation under specific conditions. List relevant policies and rules. Research Products Disclaimer: if you claim to offer research products in the EOSC Exchange, it would imply that the records of the research products will be available in the EOSC Federated Catalogue. Enabling merely a data source in EOSC Exchange that hosts these research products does not equal to publishing these research products in EOSC Federation Publications Y/N estimated number, if possible Data Y/N estimated number, if possible Software Y/N estimated number, if possible Other Y/N *Please specify what kind of other Research Products your Node brings to the federation Training Materials Y/N	Compute Services • computing infrastructure access - HPC clusters https://www.metacentrum.cz/en/ , IaaS cloud (OpenStack) https://docs.e-infra.cz/compute/openstack/ , PaaS Kubernetes https://docs.e-infra.cz/compute/containers/ • compute services - Jupyter Notebooks https://wiki.metacentrum.cz/wiki/Jupyter_for_MetaCentrum_users, Galaxy portal https://usegalaxy.cz/ • for all is service type computing+ generic data processing + training • for all is audience researchers + students • support client: Web GUI, relevant API (OpenStack, Kubernetes) • EOSC access and use policy: Czech users, their international partners, users of RIs after agreement with providers Data Sharing Services • sync-and-share (Owncloud) https://owncloud.cesnet.cz/i , file transfer, large file sharing (FileSender)https://filesender.cesnet.cz/ • for all is service types storage+ generic data processing + data sharing • for all is audience researchers + students • support client: Web GUI, relevant API • EOSC access and use policy: Czech users, their international partners, users of RIs after agreement with providers Data Storage Services • services provided by NDI https://www.eosc.cz - meta-data catalogue https://nma.eosc.cz/, data repositories https://data.narodni-repozitar.cz/ , PID service https://identifikatory.cz/en/, file transfer service • for all is service types storage + data management • for all is audience researchers + students • support client: Web GUI, relevant API (Invenio, DSpace) • EOSC access and use policy: Czech users, their international partners, and users of RIs after agreement with providers

What aspects do you consider, when deciding on access to your Node's resources? user type (Y/N) - you will grant the access differently (also capacity-wise) to the researcher than to the citizen scientist. Please provide the details if possible user nationality (Y/N) user affiliation - u grant for accepted institutions communities	User access is granted on nationality (Czech users) and research type of usage/affiliation to an academic institution (students and research from all universities and Academy of Science of Czech Republic), affiliation to a project led by a national representative, affiliation to national or international RI which has agreement with national node
Federated capabilities (in EOSC Core) Giver - enabling the capability to the others Taker - not having that capability, taking it from the federation (one of the givers) P2P - connecting your core service to the federation Resource Catalogue AAI Monitoring Accounting Helpdesk Order/Access Management Messaging system Other possible federating capabilities: What other federated capabilities can your node offer to other nodes Examples: PID service orchestration service conversion/transformation service (for units or metadata schemata) hub for controlled vocabularies metadata schema registry software/data quality control thematic catalogue Try to be as descriptive as possible	AAI - p2p for e-INFRA AAI, giver for LifeScience AAI Helpdesk - p2p Monitoring - probably p2p Accounting - possibly yes, p2p Resource Manager - taker or p2p, depending on implementation Other services: Cloud/Kubernetes/Notebooks computing services - giver, access for agreed RIs PID, Metadata catalog, Data repositories - giver, mainly on a national level, but also for partners and supported RIs
Supported standards What does the standard apply to?	
Supported APIs and protocols Please attach the capability/service connected to a given API/protocol. Try to attach the standard to the API if applicable	• AAI - OAuth2, OIDC, Saml • Monitoring - REST (to be specified) • Helpdesk - Zammad RT REST integration
Sustainability Statement Minimum - 3 years of the project. What happens after? Relate to the sustainability of the underlying infrastructure/community. State what it would take to make the Pilot Node sustainable longer. If possible, refer to the node life cycle (sustainability) but also to services provided by it (exchange, federating)	The node is based on e-INFRA CZ infrastructure, which is national RI, enlisted in the national roadmap document, with secured funding via national infrastructure project till 2028/2029. Data repositories are supported by national EOSC CZ projects with similar timespan and aspirations to build sustainable NDI (national data infrastructure).

Who can onboard resources to this Pilot Node? Would service and data providers have to be a "member" of the Node to have the right to onboard their services? The onboarding process should probably include various agreements: The onboard has the right to offer the resource transparent and complete disclosure of visibility/access/use policies, as well as specific SLAs for services If the service is a federating service, what is required? onboarder allows Node to act as its representative in any discussions about the Node's collective set of services and data – e.g. joining the Federation, sharing resource metadata with other nodes, etc. Practical info about contacts, escalation, issue management, etc.	At the beginning, services and resources will be provided by e-INFRA consortia partners (CESNET, IT4Innovation, CERIT-SC MU). This setup also covers research services provided by these partners for national and international partners (ELIXIR, LifeScience AAI).

Table 1 – e-INFRA CZ

EOSC Pilot Node Template	
Node Name	**EGI Pilot Node**
Node legal entity name	Stichting EGI
Node legal representative/signing person	Director of Stichting EGI
Entity type (i.e. Research Infrastructure, National infrastructure, e-Infrastructure, Data Space, etc)	e-Infrastructure
Countries building/delivering in the pilot Node (list the countries only)	27 members of EGI Federation "NGI" organisations from 27 countries (e.g. Gauss Allianz, France Grilles, CSIC, CERN) See: https://www.egi.eu/egi-federation/
Entities participating in the EOSC Node - Institutional level list of entities (legal or non-legal)	
Node type (i.e. thematic, national, regional, e-infra)	e-Infrastructure
Scope of the Node (provide a solid description)	The EGI Federation aspires to be part of the EOSC Federation as a Node contributing EOSC-dedicated capacity, available for transnational access to services operated within the other EOSC Nodes (Services and Tools, Research Objects - ROs), and for international use cases directly served by the EGI EOSC Node. The capacity dedicated to the EGI EOSC Node would be contributed from selected compute-data centers of the EGI Federation.
Scientific disciplines supported by the Node https://confluence.egi.eu/display/EGIG/Scientific+Disciplines ? Please use appropriate values from the standard above. In addition, list any other scientific discipline, if it's not included in the standard.	There is no limitation on disciplines. Services offered are "horizontal" – potentially of interest and utility in any discipline. Details only accessible to EGI Foundation staff: https://confluence.egi.eu/display/EGIG/Scientific+Disciplines

Benefits/resources could be offered to the EOSC Federation (i.e. what the Node can offer to others) Be precise. In addition to high-level benefits, skills brought to the table, try also to include the technologies and capacities in the description. Focus on the benefits. Examples: physical infra but there are terms of providing the services (cost, in-kind)	**Coordination** Operations Coordination and Support Community Coordination ITSM Coordination Technical Coordination Project Management and Planning Security Coordination Communications Strategy and Policy Development Industry Engagement **Operations** Accounting Collaboration Tools Configuration Database Operational Tools Helpdesk Service Monitoring Validated Software and Repository **Security & Identity** Check-in Attribute Management **Horizontal Services** **Compute** Cloud Compute Cloud Container Compute High-Throughput Compute Software Distribution **Compute orchestration** Workload Manager Infrastructure Manager **Storage and Data** Online Storage Data Transfer DataHub **Security & Identity** Check-in Secrets Store
Stakeholders (Please provide tuples of <type, role/needs>) Stakeholder roles: consumer, provider (service/data/other resource), funder, governance Examples: researcher/consumer research institution/consumer node/consumer university/data provider university/data provider researcher/provider computing center/service provider	EGI Council at governance level (governance) EGI Federation members (providers) End users of the Node services (researchers and scientists) Policymakers
Communities to be served (i.e. PAN community, national (which country) researchers, etc.)	There is no limitation on community types.

Scientific use cases (ideally, enabled in the EOSC Federation) Please mark, if a given scientific use case is possible to be fulfilled already within your Node only, or does it require resources from "the outside'	• Execution of analysis algorithms (packaged as workflows, notebooks, etc.) on user's data in a certain format, delivering results to temporary storage. Orchestration/ scale-out of underlying compute resources is managed automatically, subject to the user's authorization attributes. Data movement is also handled automatically, ideally optimised for location, etc. • Appropriate storage of analysis results (this may bea movement to project storage, and/or publication/long-term preservation) • See additional use cases in Figma
Technical use cases (ideally, enabled in the EOSC Federation) Please mark, if a given technical use case is possible to be fulfilled already within your node only, or if it requires resources from "the outside`'. Please try to derive the technical use case from the scientific use cases above.	Technical readiness for "cross node" use case implementation varies.
Resources to be offered (via EOSC Exchange) EOSC Exchange user types: researchers students data managers data stewards service developers service providers citizens citizen scientists policymakers public administration business other (please specify) EOSC Exchange client types (how do you grant the access, on what level): single user scientific community scientific institution country scientific project other EOSC Node (please specify if possible) research infrastructure	**Horizontal Services** **Compute** Cloud Compute Cloud Container Compute High-Throughput Compute Software Distribution **Compute orchestration** Workload Manager Infrastructure Manager **Storage and Data** Online Storage Data Transfer DataHub **Security & Identity** Check-in Secrets Store Access: Access and use of horizontal services are typically controlled by the nationality and academic status of the user. Different partners of the EGI Federation use various of the following "user types" to assess access: Single user Scientific community Scientific institution Country Scientific project Other EOSC Node Research infrastructure

List of resources of a given type Services for providers and developers Service name target audience (Exchange user types) supported client types: list the possible clients of your service is the service offered differently depending on the client type EOSC Access and Use policy available to all EOSC users accessible in the federation under specific conditions. List relevant policies and rules. Services for end-users Service name service type (data source/computing/storage / generic data processing service/data transfer service/data management service / thematic service/training service / other (please specify) target audience (Exchange user types) supported client types: list the possible clients of your service is the service offered differently depending on the client type EOSC Access and Use policy available to all EOSC users accessible in the federation under specific conditions. List relevant policies and rules. Research Products Disclaimer: if you claim to offer research products in the EOSC Exchange, it would imply that the records of the research products will be available in the EOSC Federated Catalogue. Enabling merely a data source in EOSC Exchange that hosts these research products does not equal to publishing these research products in EOSC Federation Publications Y/N estimated number, if possible Data Y/N estimated number, if possible Software Y/N estimated number, if possible Other Y/N *Please specify what kind of other Research Products your Node brings to the federation Training Materials Y/N	**Services for providers and developers**: All EGI Federation services (listed above) are available to providers and developers. Access and use to Federation services are typically controlled by strategic interests and nationality of direct providers within the EGI Federation. **Services for end-users: All EGI Horizontal services (listed above) are available to providers and developers.** Access and use of horizontal services are typically controlled by the nationality and academic status of the user. **Research Products** Planned with Federation partners through the EGI Node. **Training Materials** Yes, specifically for the services offered by EGI (both federation and horizontal)
What aspects do you consider, when deciding on access to your Node's resources? user type (Y/N) - you will grant the access differently (also capacity-wise) to the researcher than to the citizen scientist. Please provide the details if possible user nationality (Y/N) user affiliation - u grant for accepted institutions communities	**User type**: **Yes** - you will grant access differently (also capacity-wise) to the researcher than to the citizen scientist. **User nationality: Yes** **User affiliation: may be considered case-by-case** depending on specific provider from within EGI Federation. EGI would be interested in creating standardised (through ontologies or vocabularies) access and use policy metadata that could allow for automated resource authorisation.

Federated capabilities (in EOSC Core) Giver - enabling the capability to the others Taker - not having that capability, taking it from the federation (one of the givers) P2P - connecting your core service to the federation Resource Catalogue AAI Monitoring Accounting Helpdesk Order/Access Management Messaging system Other possible federating capabilities: What other federated capabilities can your node offer to other nodes Examples: PID service orchestration service conversion/transformation service (for units or metadata schemata) hub for controlled vocabularies metadata schema registry software/data quality control thematic catalogue Try to be as descriptive as possible	**Resource Catalogue**: **taker** **AAI**: **giver** – EGI provides Check-In service which is federated through EOSC Federated AAI **Monitoring**: **giver** **Accounting**: **giver** **Research Product accounting: taker** **Helpdesk**: **giver** **Order/Access Management**: **giver** but interested in other solutions **Messaging system**: **giver but not directly** **Other possible federating capabilities:** What kind of federating capabilities can your node offer to other nodes **PID service: taker** **orchestration service**: **giver** **conversion/transformation service** (for units or metadata schemata): **possibly take**r **hub for controlled vocabularies**: **possibly taker** **metadata schema registry**: **possibly taker** **software/data quality control**: **giver** **thematic catalogue**: **no** **Software distribution service**: **giver** (see above)
Supported standards What does the standard apply to?	EGI Federation has selected a large number of standards to govern the interoperation and federation of its offered services. The list is long but well-documented.
Supported APIs and protocols Please attach the capability/service connected to a given API/protocol. Try to attach the standard to the API if applicable	EGI Federation has selected a large number of standards to govern the interoperation and federation of its offered services. The list is long but well documented.
Sustainability Statement Minimum - 3 years of the project. What happens after? Relate to the sustainability of the underlying infrastructure/community. State what it would take to make the Pilot Node sustainable longer. If possible, refer to the node life cycle (sustainability) but also to services provided by it (exchange, federating)	Beyond Beyond: EGI Pilot Node would be operated by EGI Federation, which has a sustainable, collaborative business model among EGI Federation members, based on membership fees as well as pay per use for certain services and certain kinds of users. Both the node (if a proposal is approved by EGI Council, and enrolment is accepted by EOSC Tripartite) and the related services would be operated with such a sustainable business model.

Who can onboard resources to this Pilot Node? Would service and data providers have to be a “member” of the Node to have the right to onboard their services? The onboarding process should probably include various agreements: The onboard has the right to offer the resource transparent and complete disclosure of visibility/access/use policies, as well as specific SLAs for services If the service is a federating service, what is required? onboarder allows Node to act as its representative in any discussions about the Node’s collective set of services and data – e.g. joining the Federation, sharing resource metadata with other nodes, etc. Practical info about contacts, escalation, issue management, etc.	

Table 2- EGI Pilot Node

EOSC Pilot Node Template	
Node Name	**Instruct-ERIC**
Node legal entity name	Instruct-ERIC
Node legal representative/signing person	director of Instruct ERIC
Entity type (i.e. Research Infrastructure, National infrastructure, e-Infrastructure, Data Space, etc)	Research Infrastructure
Countries building/delivering in the pilot Node (list the countries only)	Belgium, Czech Republic, Finland, France, Germany, Greece, Israel, Italy, Latvia, Lithuania, Netherlands, Portugal, Slovakia, Slovenia, Spain, UK
Entities participating in the EOSC Node - Institutional level list of entities (legal or non-legal)	• Researchers • Instruct Facilities • Instruct member countries/institutions
Node type (i.e. thematic, national, regional, e-infra)	Thematic
Scope of the Node (provide a solid description)	To provide supporting services to the Structural Biology community and Instruct member countries.
Scientific disciplines supported by the Node https://confluence.egi.eu/display/EGIG/Scientific+Disciplines ? Please use appropriate values from the standard above. In addition, list any other scientific discipline, if it’s not included in the standard.	1.5.24 Structural biology
Support/Technical contact	helpdesk@instruct-eric.org

Benefits/resources wished from the EOSC Federation (i.e. what the Node needs) Be precise. Try to include the technologies and capacities in the description Examples: e.g access to generic (e.g. PID) services benefits from pooling resources (with other services or nodes) What are the challenges that you are seeking solutions for via establishing a node	• PID services to identify and track digital objects • Long term (min 5 years) federated storage for medium to large data sets, brokered and made available based on agreed terms and conditions • Metadata/data transfer between other life science community nodes • Compute resource to conduct validation processing (CNB-CSIC use case)

Benefits/resources could be offered to the EOSC Federation (i.e. what the Node can offer to others) Be precise. In addition to high-level benefits, skill brought to the table, try also to include the technologies and capacities in the description. Focus on the benefits.
 	
Examples:
physical infra but there are terms of providing the services (cost, in-kind)
	• Structural biology data / metadata from numerous technologies (EM / NMR / Mass spec, etc)
	• Access to physical services
	  o Sample preparation
	  o Molecular analysis
	• Access to compute services
	  o Structural analysis
	• Expertise and access to a software platform (ARIA) for providing access and data management
	
	All depend on terms of service and cost considerations.

Stakeholders (Please provide tuples of <type, role/needs> Stakeholder roles: consumer, provider (service/data/other resource), funder, governance Examples: researcher/consumer research institution/consumer node/consumer university/data provider university/data provider researcher/provider computing center/service provider	• researcher, consumer • researcher, provider • RI, consumer • RI, provider • Member Country, funder • Member Country, governance • Instruct Executive, governance • Instruct Hub, funder • Instruct Hub, governance
Communities to be served (i.e. PAN community, national (which country) researchers, etc.)	Structural biology community, Instruct member countries
Scientific use cases (ideally, enabled in the EOSC Federation) Please mark, if a given scientific use case is possible to be fulfilled already within your Node only, or does it require resources from “the outside’	• Storage brokering for long term data storage for user data generated at smaller facilities as part of the Federated Instruct Cloud • Publication and reuse of user generated data (post embargo) facilitated by EOSC data federation • Sharing of data between adjacent data spaces facilitated by EOSC market place

Technical use cases (ideally, enabled in the EOSC Federation) Please mark, if a given technical use case is possible to be fulfilled already within your node only, or if it requires resources from “the outside`’. Please try to derive the technical use case from the scientific use cases above.	• Construction of the federated instruct cloud will take advantage of storage already present at the facilities, and link them together via Instruct’s access and data management platform (ARIA). Smaller facilities do not have the storage resources to comply with data retention strategy. This could be helped by plugging in brokered storage options (under agreed on t&cs) from providers from which Instruct has agreements established. A mechanism to perform this brokering, and make it available through ARIA will be required. • Post embargo data sets will need to be made available on the user’s behalf. These will already exist in Instruct’s catalog, however these need to also be made available to the wider community, either directly or via a link to Instruct’s access management platform. This will require feed syndication to the EOSC marketplace, as well as access to PID services in order to identify data sets and components of the workflow.

Resources to be offered (via EOSC Exchange)
EOSC Exchange user types:
researchers
students
data managers
data stewards
service developers
service providers
citizens
citizen scientists
policymakers
public administration
business
other (please specify)
 	
EOSC Exchange client types (how do you grant the access, on what level):
single user
scientific community
scientific institution
country
scientific project
other EOSC Node (please specify if possible)
research infrastructure
	• Researcher from Instruct member country (funded access)
	  o full access
	• Researcher from non-member country / self funded access
	  o full access
	• scientific community
	  o access to instruct funded research post embargo

List of resources of a given type Services for providers and developers Service name target audience (Exchange user types) supported client types: list the possible clients of your service is the service offered differently depending on the client type EOSC Access and Use policy available to all EOSC users accessible in the federation under specific conditions. List relevant policies and rules. Services for end-users Service name service type (data source/computing/storage / generic data processing service/data transfer service/data management service / thematic service/training service / other (please specify) target audience (Exchange user types) supported client types: list the possible clients of your service is the service offered differently depending on the client type EOSC Access and Use policy available to all EOSC users accessible in the federation under specific conditions. List relevant policies and rules. Research Products Disclaimer: if you claim to offer research products in the EOSC Exchange, it would imply that the records of the research products will be available in the EOSC Federated Catalogue. Enabling merely a data source in EOSC Exchange that hosts these research products does not equal to publishing these research products in EOSC Federation Publications Y/N estimated number, if possible Data Y/N estimated number, if possible Software Y/N estimated number, if possible Other Y/N *Please specify what kind of other Research Products your Node brings to the federation Training Materials Y/N	
What aspects do you consider, when deciding on access to your Node's resources? user type (Y/N) - you will grant the access differently (also capacity-wise) to the researcher than to the citizen scientist. Please provide the details if possible user nationality (Y/N) user affiliation - u grant for accepted institutions communities	

Federated capabilities (in EOSC Core) Giver - enabling the capability to the others Taker - not having that capability, taking it from the federation (one of the givers) P2P - connecting your core service to the federation Resource Catalogue AAI Monitoring Accounting Helpdesk Order/Access Management Messaging system Other possible federating capabilities: What other federated capabilities can your node offer to other nodes Examples: PID service orchestration service conversion/transformation service (for units or metadata schemata) hub for controlled vocabularies metadata schema registry software/data quality control thematic catalogue Try to be as descriptive as possible	• Resource Catalogue - p2p - Instruct maintains its own catalogue of services (and data), which could be syndicated • AAI - p2p - Instruct has its own IDSS, integrates with LS Login • Monitoring - taker - Estate monitoring for IDS • Accounting - ? - Maybe from individual member facilities, but not from Instruct hub • Helpdesk - ? - Instruct has own helpdesk • Order/Access Management - Giver - Instruct has its own access management platform, which can be made available to the community based on agreement. Non-instruct projects already do this • PID services - taker/p2p - Minting of pids, ideally directly under Instruct control. Graphing of PIDs to provide federation / discovery • Messaging system - taker **Other possible federating capabilities:** • Thematic catalog - access to our service catalog via syndication feed • Access to ARIA platform (access / project / data management) based on agreed to terms / costs
Supported standards What does the standard apply to?	
Supported APIs and protocols Please attach the capability/service connected to a given API/protocol. Try to attach the standard to the API if applicable	
Sustainability Statement Minimum - 3 years of the project. What happens after? Relate to the sustainability of the underlying infrastructure/community. State what it would take to make the Pilot Node sustainable longer. If possible, refer to the node life cycle (sustainability) but also to services provided by it (exchange, federating)	Minimum support during the lifetime of the project (3 years). If pilot node is accepted, Instruct operated services will be supported via Instruct-ERIC as part of Instruct Digital Services, and will therefore be sustained directly from core budget.

Who can onboard resources to this Pilot Node? Would service and data providers must be a "member" of the Node to have the right to onboard their services? The onboarding process should probably include various agreements: The onboard has the right to offer the resource transparent and complete disclosure of visibility/access/use policies, as well as specific SLAs for services If the service is a federating service, what is required? onboarder allows Node to act as its representative in any discussions about the Node's collective set of services and data – e.g. joining the Federation, sharing resource metadata with other nodes, etc. Practical info about contacts, escalation, issue management, etc.	Instruct is providing services to both member countries and non-member countries, as well as member institutions at present and, will continuously operate this way as a Node.

Table 3- INSTRUCT – ERIC

EOSC Pilot Node Template	
Node Name	**LifeWatch ERIC**
Node legal entity name	LifeWatch ERIC
Node legal representative/signing person	LifeWatch ERIC/ LifeWatch ERIC CEO
Entity type (i.e. Research Infrastructure, National infrastructure, e-Infrastructure, Data Space, etc)	Research Infrastructure / e-Infrastructure
Countries building/delivering in the pilot Node (list the countries only)	Spain, Italy, The Netherlands, Belgium, Greece, Portugal, Slovenia, Bulgaria
Entities participating in the EOSC Node - Institutional level list of entities (legal or non-legal)	**Institutional level:** The entities involved in the pilot node are the three LifeWatch ERIC Common Facilities based in Spain, Italy, and The Netherlands: LW ERIC ICT-CORE, LW ERIC SERVICE CENTRE, LW ERIC VLIC.
Node type (i.e. thematic, national, regional, e-infra)	Thematic
Scope of the Node (provide a solid description)	LifeWatch ERIC is the e-infrastructure for biodiversity and ecosystem research. It aims to create a unique access point to enable scientists to discover, collect, manage, and analyze data within specific Virtual Research Environments. The node aims to share and expand the availability of data, tools, and services to support biodiversity and ecosystem research.
Scientific disciplines supported by the Node https://confluence.egi.eu/display/EGIG/Scientific+Disciplines ? Please use appropriate values from the standard above. In addition, list any other scientific discipline, if it's not included in the standard.	*1.5.8 Biology, 1.5.10 Botany, 1.5.11 Cell biology, 1.5.12 Computational biology, 1.5.14 Developmental biology, 1.5.15 Ecology,1.5.16 Evolutionary biology, 1.5.17 Genetics and heredity, 1.5.18 Marine and Freshwater biology, 1.5.19 Mathematical biology, 1.5.20 Microbiology, 1.5.21 Mycology, 1.5.22 Plant science, 1.5.23 Reproductive biology, 1.5.24 Structural biology, 1.5.25 Taxonomy, 1.5.26 Theoretical biology, 1.5.27 Thermal biology, 1.5.29 Zoology, 1.5.99 Other*

Support/Technical contact	
Benefits/resources wished from the EOSC Federation (i.e. what the Node needs) Be precise. Try to include the technologies and capacities in the description Examples: e.g access to generic (e.g. PID) services benefits from pooling resources (with other services or nodes) What are the challenges that you are seeking solutions for via establishing a node	• Metadata Catalogue Federation to improve the LifeWatch ERIC Knowledge Base • Helpdesk federation to improve the LifeWatch ERIC support system • Data Lake enrichment • Standards Alignment Wish list: Monitoring, AAAI
Benefits/resources could be offered to the EOSC Federation (i.e. what the Node can offer to others) Be precise. In addition to high-level benefits, skill brought to the table, try also to include the technologies and capacities in the description. Focus on the benefits. Examples: physical infra but there are terms of providing the services (cost, in-kind)	• **Metadata Catalogue:** Based on GeoNetwork, covering datasets, services, VREs, research sites, and training materials (metadatacatalogue.lifewatch.eu) • **EcoPortal:** The semantic artifacts repository for the ecological domain, based on OntoPortal technology (ecoportal.lifewatch.eu) • **Helpdesk:** Providing support services for researchers and users • **Metadata Standards Knowledge:** Expertise in ecological metadata standards like EML 2.2.0 profile, ISO 19139, etc. • **LifeBlock:** A blockchain FAIR system to manage, trace and secure biodiversity datasets (www.lifeblock.eu) • **Virtual Research Envir**
Stakeholders (Please provide tuples of <type, role/needs>) Stakeholder roles: consumer, provider (service/data/other resource), funder, governance Examples: researcher/consumer research institution/consumer node/consumer university/data provider university/data provider researcher/provider computing center/service provider	• **Researcher:** Consumer • **Research institution:** Consumer • **Node:** Consumer • **University:** Data provider • **Researcher:** Provider • **Computing center:** Service provider • **Public administration:** Provider • **SMEs:** Consumer • **Citizens:** Consumer • **Students:** Consumer • **Citizens:** Provider
Communities to be served (i.e. PAN community, national (which country) researchers, etc.)	LifeWatch ERIC members, Biodiversity and Ecological domain communities

Scientific use cases (ideally, enabled in the EOSC Federation) Please mark, if a given scientific use case is possible to be fulfilled already within your Node only, or does it require resources from "the outside'	Phytoplankton plays an important role in aquatic ecosystems because it accounts for most of the global primary production and affects the biogeochemical processes, trophic dynamics, and biodiversity architecture. The Phytoplankton Virtual Research Environment (Phyto VRE) is a working environment supporting researchers in phytoplankton data computation and analyses. It provides services in order to facilitate the identification of the species, the calculation of demographic and morphological traits and to execution phytoplankton traits analyses. The use case is possible to be fulfilled already within the LifeWatch node (https://www.phytovre.lifewatchitaly.eu/), but with resources from "outside" can be enriched.
Technical use cases (ideally, enabled in the EOSC Federation) Please mark, if a given technical use case is possible to be fulfilled already within your node only, or if it requires resources from "the outside`'. Please try to derive the technical use case from the scientific use cases above.	• Data and Service discoverability: METADATA CATALOGUE Federation • Standard Definition: ECOPORTAL semantic artifacts population • LifeBlock: Data Interoperability and Management • Helpdesk federation • VRE
Resources to be offered (via EOSC Exchange) EOSC Exchange user types: researchers students data managers data stewards service developers service providers citizens citizen scientists policymakers public administration business other (please specify) EOSC Exchange client types (how do you grant the access, on what level): single user scientific community scientific institution country scientific project other EOSC Node (please specify if possible) research infrastructure	EOSC Exchange user types: • researchers • students • citizens • citizen scientists • policymakers • public administration • business EOSC Exchange client types (how do you grant the access, on what level): • single user

List of resources of a given type Services for providers and developers Service name target audience (Exchange user types) supported client types: list the possible clients of your service is the service offered differently depending on the client type EOSC Access and Use policy available to all EOSC users accessible in the federation under specific conditions. List relevant policies and rules. Services for end-users Service name service type (data source/computing/storage / generic data processing service/data transfer service/data management service / thematic service/training service / other (please specify) target audience (Exchange user types) supported client types: list the possible clients of your service is the service offered differently depending on the client type EOSC Access and Use policy available to all EOSC users accessible in the federation under specific conditions. List relevant policies and rules. Research Products Disclaimer: if you claim to offer research products in the EOSC Exchange, it would imply that the records of the research products will be available in the EOSC Federated Catalogue. Enabling merely a data source in EOSC Exchange that hosts these research products does not equal to publishing these research products in EOSC Federation Publications Y/N estimated number, if possible Data Y/N estimated number, if possible Software Y/N estimated number, if possible Other Y/N *Please specify what kind of other Research Products your Node brings to the federation Training Materials Y/N	**Services for providers and developers** ● Service name: Metadata Catalogue o Target audience: Researchers, Students o Supported client types: Single user o EOSC Access and Use policy: Available to all EOSC users ● Service name: HelpDesk ● Target audience: Researchers, Students ● Supported client types: Single user ● EOSC Access and Use policy: Available to all EOSC users ● Service name: LifeBlock o Target audience: Researchers, Students o Supported client types: Single user o EOSC Access and Use policy: Registered users **Services for end-users** ● Metadata Catalogue o single user o available to all EOSC users o Researchers, Students o supported client types: o EOSC Access and Use policy ● HelpDesk o single user o available to all EOSC users o Researchers, Students o supported client types: o EOSC Access and Use policy ● Metadata Catalogue o single user o available to all EOSC users o Researchers, Students o supported client types: o EOSC Access and Use policy

	• HelpDesk
	  o single user
	  o available to all EOSC users
	  o Researchers, Students
	  o supported client types:
	  o EOSC Access and Use policy
	
	• LifeBlock (for the interoperability and discoverability part)
	  o single user
	  o registered users
	  o Researchers, Students
	  o supported client types:
	  o EOSC Access and Use policy
	
	Training Materials

What aspects do you consider, when deciding on access to your Node's resources? user type (Y/N) - you will grant the access differently (also capacity-wise) to the researcher than to the citizen scientist. Please provide the details if possible user nationality (Y/N) user affiliation - u grant for accepted institutions communities	• **User type:** Yes • **User nationality:** No • **User affiliation:** Yes

Federated capabilities (in EOSC Core) Giver - enabling the capability to the others Taker - not having that capability, taking it from the federation (one of the givers) P2P - connecting your core service to the federation Resource Catalogue AAI Monitoring Accounting Helpdesk Order/Access Management Messaging system Other possible federating capabilities: What other federated capabilities can your node offer to other nodes Examples: PID service orchestration service conversion/transformation service (for units or metadata schemata) hub for controlled vocabularies metadata schema registry software/data quality control thematic catalogue Try to be as descriptive as possible	• **Resource Catalogue:** p2p - Metadata Catalogue • **AAI:** Taker • **Monitoring:** Taker • **Helpdesk:** p2p • **Order/Access Management:** N/A • **Messaging system:** N/A **Other possible federating capabilities:** What kind of federating capabilities can your node offer to other nodes Examples: **PID serviceOrchestration service conversion/transformation service (for units or metadata schemata)Hub for controlled vocabulariesMetadata schema registry software/data quality controlThematic catalogue** Currently, all services provided by LifeWatch ERIC are accessible via APIs, ensuring extensive federating capabilities. This API accessibility allows seamless integration and interoperability with other systems and platforms, enhancing the collaborative and interconnected nature of research infrastructures. In addition to these API-enabled services, LifeWatch ERIC includes LifeBlock, a blockchain-based system that offers unique federating capabilities inherent to blockchain technology. LifeBlock utilizes blockchain to ensure data provenance, integrity, and security, providing an immutable and transparent record of data transactions. Moreover, LifeBlock leverages IPFS (InterPlanetary File System) for distributed storage, which further enhances its federating capabilities. IPFS technology allows for decentralized data storage and retrieval, ensuring high availability and resilience. By combining blockchain and IPFS, LifeBlock provides a robust and scalable solution for managing and federating biodiversity and ecosystem data, offering advanced features for data traceability and distributed storage that are crucial for modern scientific research.
Supported standards What does the standard apply to?	INSPIRE, DarwinCore, EML, Dublin Core
Supported APIs and protocols Please attach the capability/service connected to a given API/protocol. Try to attach the standard to the API if applicable	Various APIs and protocols depend on the specific service or standard being used.

Sustainability Statement Minimum - 3 years of the project. What happens after? Relate to the sustainability of the underlying infrastructure/community. State what it would take to make the Pilot Node sustainable longer. If possible, refer to the node life cycle (sustainability) but also to services provided by it (exchange, federating)	The project is designed to be sustainable for a minimum of three years. Post-project sustainability will rely on the underlying infrastructure and community support. Continued sustainability will require ongoing funding, community engagement, and integration with the broader EOSC infrastructure.
Who can onboard resources to this Pilot Node? Would service and data providers have to be a "member" of the Node to have the right to onboard their services? The onboarding process should probably include various agreements: The onboard has the right to offer the resource transparent and complete disclosure of visibility/access/use policies, as well as specific SLAs for services If the service is a federating service, what is required? onboarder allows Node to act as its representative in any discussions about the Node's collective set of services and data – e.g. joining the Federation, sharing resource metadata with other nodes, etc. Practical info about contacts, escalation, issue management, etc.	

Table 4- LifeWatch ERIC

EOSC Pilot Node Template	
Node Name	**METROFOOD-RI**
Node legal entity name	There is no legal representative of the node yet. We are preparing the step 2 application for getting it as an ERIC. Step 1 was already positively evaluated.
Node legal representative/signing person	There is no legal representative of the node yet. We are preparing the step 2 application for getting it as an ERIC. Step 1 was already positively evaluated.
Entity type (i.e. Research Infrastructure, National infrastructure, e-Infrastructure, Data Space, etc)	Research Infrastructure
Countries building/delivering in the pilot Node (list the countries only)	• Italy • Belgium • Czechia • Germany • Spain • Greece • Slovenia • Poland • Portugal • Romania • Rep. North Macedonia • Turkey • Switzerland May be more, depending on the evolution of the ERIC

Entities participating in the EOSC Node - Institutional level list of entities (legal or non-legal)	• ENEA • SCIENSANO • CZU • TUM • EUT • AUTH • IJZRSM • PMT PL • INSA • IBA • JSI • TUBITAK • PREMOTEC GMBH May be more, depending on the evolution of the ERIC
Node type (i.e. thematic, national, regional, e-infra)	Thematic
Scope of the Node (provide a solid description)	METROFOOD-RI is a RI for promoting Metrology in Food and Nutrition, which will provide high-level metrology services for enhancing food quality & safety. METROFOOD-RI node's primary goals will be implementing FoodCASE as a pilot data space for the food domain and connecting with the EOSC Data Spaces, integrating METROFOOD-RI AAI with the EOSC AAI and METROFOOD-RI data catalogues with EOSC, as well as establishing an EOSC node for the food domain.
Scientific disciplines supported by the Node https://confluence.egi.eu/display/EGIG/Scientific+Disciplines ? Please use appropriate values from the standard above. In addition, list any other scientific discipline, if it's not included in the standard.	• Chemical sciences • Biology sciences • Agricultural sciences • Nanotechnology • Environmental biotechnology
Support/Technical contact	Karl Presser, Premotec (karl.presser@premotec.ch)
Benefits/resources wished from the EOSC Federation (i.e. what the Node needs) Be precise. Try to include the technologies and capacities in the description Examples: e.g access to generic (e.g. PID) services benefits from pooling resources (with other services or nodes) What are the challenges that you are seeking solutions for via establishing a node	• Technical exchange in EOSC to understand how to contribute to actual realisation of the FAIRness of our data • Data integration and interoperability with data of other infrastructures and platform • Support in open science • A space where to include our data platform • Technical exchange with EOSC how to implement METROFOOD-RI systems, what components can be taken from EOSC, and how we interoperate with other systems.

Benefits/resources could be offered to the EOSC Federation (i.e. what the Node can offer to others) Be precise. In addition to high-level benefits, skill brought to the table, try also to include the technologies and capacities in the description. Focus on the benefits. Examples: physical infra but there are terms of providing the services (cost, in-kind)	• Food analysis • Agro-ecosystem characterisation (analysis of water, soils, air etc.) • Development of methods and devices • Reference material development (to calibrate lab machines) • Harmonisation and standardisation (proficiency testing schemes) • Food packaging: Development, testing and analysis • Food production • Food preparation • Data quality services • Professional software design and development services • UI and UX design • Interoperability services • E-Learning as online courses • FoodCASE (food data management software)
Stakeholders (Please provide tuples of <type, role/needs>) Stakeholder roles: consumer, provider (service/data/other resource), funder, governance Examples: researcher/consumer research institution/consumer node/consumer university/data provider university/data provider researcher/provider computing center/service provider	• scientists within the RI (data, lab equipment and research, tools and services) - consumers • tools and service developers who want to (re)use services from MetroFood RI - consumers • users/scientists from other nodes (same as for the scientists but different access policies) - consumers • government reps - data-driven policy and legislation decisions - consumers • food consumers (data) - consumers • other nodes (for general services like data quality, data itself) - consumers • industry - consumers • data stewards – consumers • food supply chains - consumers • Countries (ministries of Research and Education) - members of the RI - providers • Laboratories - providers • Universities - providers • SMEs - providers • Data Centres - providers • Governmental laboratories - providers • Data Stewards (standards) - providers • Certification bodies - providers • Funding agencies – funders • Countries (ministries of Research and Education) - members of the RI - governance

Communities to be served (i.e. PAN community, national (which country) researchers, etc.)	Agrifood community, Metrology community, scientists and researchers / academics, industry (both SMEs and BCs from the agrifood)
Scientific use cases (ideally, enabled in the EOSC Federation) Please mark, if a given scientific use case is possible to be fulfilled already within your Node only, or does it require resources from "the outside'	Overall, the labs/fields/plants produce research outcomes that need to go into repositories. Some apps are needed to work with data (data analysis, extraction, aggregation, linkage, visualisation), as well as virtual online research environments (like Guacamole). Additionally, computational capacities such as hardware power (HPC) and storage are needed. Example: Data on origin (geographical and botanical/zoological origin) measured on foods (raw materials and products) is to be integrated with data about primary production (e.g. georeferencing plus soils, environmental conditions, feeds, etc) measured not only at a lab level, but also with sensors (eventually combined with data food composition data plus data on food quality and safety). This to be processed with algorithms and then shared as open science.
Technical use cases (ideally, enabled in the EOSC Federation) Please mark, if a given technical use case is possible to be fulfilled already within your node only, or if it requires resources from "the outside`'. Please try to derive the technical use case from the scientific use cases above.	Must collect data in labs, fields or plants, though sometimes work must be done virtually. Sometimes computational capacities and storage are needed. Must do data work Example: Must perform lab level measurements and sensor measurements for origin and primary productions. Must integrate the results. Must process with algorithms. METROFOOD-RI has a software called FoodCASE that is a data management software for food data. We want it to become a pilot data space for the food domain. We want to connect it with EOSC Data Spaces.
Resources to be offered (via EOSC Exchange) EOSC Exchange user types: researchers students data managers data stewards service developers service providers citizens citizen scientists policymakers public administration business other (please specify) EOSC Exchange client types (how do you grant the access, on what level): single user scientific community scientific institution country scientific project other EOSC Node (please specify if possible) research infrastructure	EOSC Exchange user types: • researchers • students • citizens • citizen scientists • policy makers • public administration • business EOSC Exchange client types (access defined below): • single user • scientific community • scientific institution • country • scientific project • maybe research infrastructure (not sure about this one)

List of resources of a given type Services for providers and developers Service name target audience (Exchange user types) supported client types: list the possible clients of your service is the service offered differently depending on the client type EOSC Access and Use policy available to all EOSC users accessible in the federation under specific conditions. List relevant policies and rules. Services for end-users Service name service type (data source/computing/storage / generic data processing service/data transfer service/data management service / thematic service/training service / other (please specify) target audience (Exchange user types) supported client types: list the possible clients of your service is the service offered differently depending on the client type EOSC Access and Use policy available to all EOSC users accessible in the federation under specific conditions. List relevant policies and rules. Research Products Disclaimer: if you claim to offer research products in the EOSC Exchange, it would imply that the records of the research products will be available in the EOSC Federated Catalogue. Enabling merely a data source in EOSC Exchange that hosts these research products does not equal to publishing these research products in EOSC Federation Publications Y/N estimated number, if possible Data Y/N estimated number, if possible Software Y/N estimated number, if possible Other Y/N *Please specify what kind of other Research Products your Node brings to the federation Training Materials Y/N	**Example of a physical service:** ● Reference material development (to calibrate lab machines) o service type - thematic service o target audience - researchers o supported client types: single user, scientific community, scientific institution, country, scientific project ▪ policies and rules listed below o EOSC Access and Use policy ▪ accessible in the federation under specific conditions - policies and rules listed below **IT Services:** ● Professional software design and development o Service type: software development o Target audience: all o Supported client types: all ▪ is the service offered differently depending on the client type - no o EOSC Access and Use policy ▪ available to all EOSC users ▪ no access conditions ● UI and UX design o Service type: software development o Target audience: all o Supported client types: all ▪ is the service offered differently depending on the client type - no o EOSC Access and Use policy ▪ available to all EOSC users ▪ no access conditions ● Interoperability services

	○ Service type: data standardisation, electronic data exchange, interoperability of systems ○ Target audience: all ○ Supported client types: all ▪ is the service offered differently depending on the client type - no ○ EOSC Access and Use policy ▪ available to all EOSC users ▪ no access conditions ● FoodCASE ○ Service type: software / data management services / thematic (food data management) ○ Target audience: all ○ Supported client types: scientific community, scientific institution, country, scientific project ▪ is the service offered differently depending on the client type - no ○ EOSC Access and Use policy ▪ available to all EOSC users ▪ no access conditions ● Data quality ○ Service type: data quality management and research ○ Target audience: all ○ Supported client types: all ▪ is the service offered differently depending on the client type - no ○ EOSC Access and Use policy ▪ available to all EOSC users ▪ no access conditions ● E-learning as online courses ○ Service type: hosting / content creation ○ Target audience: all

	o Supported client types: all ▪ is the service offered differently depending on the client type - no o EOSC Access and Use policy ▪ available to all EOSC users ▪ no access conditions **Research Products** ● Publications o Y o estimated number, if possible - unknown ● Data o Y o estimated number, if possible - unknown ● Software o Y o estimated number, if possible - unknown ● Other o Y o Please specify what kind of other Research Products does your Node bring to the federation: wiki, guidelines, best practices **Training Materials** ● Y

What aspects do you consider, when deciding on access to your Node's resources? user type (Y/N) - you will grant the access differently (also capacity-wise) to the researcher than to the citizen scientist. Please provide the details if possible user nationality (Y/N) user affiliation - u grant for accepted institutions communities	open to users (single users or small consortia) from: ● EU Member States ● EU Associated Countries ● Non-EU Countries or international research organizations. For groups containing users that are not working in an EU or associated country, access will be limited to 20% of the total access. Following the new directives implemented by EU to suspend cooperation with Russia on research and innovation, in response to the Russian military aggression against Ukraine and in solidarity with the people of Ukraine, users are not considered eligible if they come from: ● Russian researchers working in non-Russian/ Russian institutions. ● Non-Russian researchers working in Russian institutions. Users can belong to all the user categories identified: ● research/academy, ● policy makers/food ● inspection and control, ● food business operators (SMEs, industries, producer associations), ● consumers/citizens/consumer associations. Consortia can both involve users from the same category or combine different user categories (e.g., research + food business operators). Users will have to comply with ethics and security requirements, ensuring that all ethics issues related to activities are addressed in compliance with ethical principles, the applicable international and national law, and ensure the fulfilment of the DNSH principles. Users with granted access will have to accept the data management approaches of METROFOOD-RI Node, complying with the Data Management Plan.

Federated capabilities (in EOSC Core) Giver - enabling the capability to the others Taker - not having that capability, taking it from the federation (one of the givers) P2P - connecting your core service to the federation Resource Catalogue AAI Monitoring Accounting Helpdesk Order/Access Management Messaging system Other possible federating capabilities: What other federated capabilities can your node offer to other nodes Examples: PID service orchestration service conversion/transformation service (for units or metadata schemata) hub for controlled vocabularies metadata schema registry software/data quality control thematic catalogue Try to be as descriptive as possible	**Federated capabilities (in EOSC Core):** ● Resource Catalogue (P2P) - Connect EOSC catalogues with METROFOOD catalogues ● AAI (P2P) - Connect EOSC AAI with METROFOOD AAI ● Monitoring (P2P) - Nagios (or Kubernetes that is in development currently) may integrated with the CORE Monitoring service - open to check this ● Accounting - no ● Helpdesk (Taker) - Might implement helpdesk - open to check ● Order/Access Management - no ● Messaging system - no **Other possible federating capabilities:** ● Event registration system - we prepared an event registration system, e.g. for conferences ● PID service (not planned in this project) ● metadata schema registry (not planned in this project) ● software/data quality control (not planned in this project) ● thematic catalogue (not planned in this project)
Supported standards What does the standard apply to?	Standards connected to data exchange in food science
Supported APIs and protocols Please attach the capability/service connected to a given API/protocol. Try to attach the standard to the API if applicable	METROFOOD Data Exchange Formats and APIs
Sustainability Statement Minimum - 3 years of the project. What happens after? Relate to the sustainability of the underlying infrastructure/community. State what it would take to make the Pilot Node sustainable longer. If possible, refer to the node life cycle (sustainability) but also to services provided by it (exchange, federating)	If ERIC status is given (in process), METROFOOD will exist as a legal entity, therefore sustainability is given.

Who can onboard resources to this Pilot Node? Would service and data providers have to be a "member" of the Node to have the right to onboard their services? The onboarding process should probably include various agreements: The onboard has the right to offer the resource transparent and complete disclosure of visibility/access/use policies, as well as specific SLAs for services If the service is a federating service, what is required? onboarder allows Node to act as its representative in any discussions about the Node's collective set of services and data – e.g. joining the Federation, sharing resource metadata with other nodes, etc. Practical info about contacts, escalation, issue management, etc.	Resources can be onboarded only by the Members of METROFOOD-RI.

Table 5- METROFood RI

EOSC Pilot Node Template	
Node Name	**NFDI (Nationale Forschungsdateninfrastruktur, national research data infrastructure)**
Node legal entity name	Nationale Forschungsdateninfrastruktur (NFDI) e.V.
Node legal representative/signing person	York Sure-Vetter (Director)
Entity type (i.e. Research Infrastructure, National infrastructure, e-Infrastructure, Data Space, etc)	National infrastructure
Countries building/delivering in the pilot Node (list the countries only)	Germany
Entities participating in the EOSC Node - Institutional level list of entities (legal or non-legal)	NFDI consortia • DAPHNE4NFDI (first pilot consortium) • PUNCH4NFDI (under deliberation) • Text+ (under deliberation) • NFDI4ING (under deliberation) • Jupyter4NFDI (under deliberation) Helmholtz federated IT services (HIFIS) as base infrastructure provider
Node type (i.e. thematic, national, regional, e-infra)	national
Scope of the Node (provide a solid description)	The node will provide a common entrypoint for scientists of the German NFDI consortia to a collection of useful scientific and/or collaborative services.
Scientific disciplines supported by the Node https://confluence.egi.eu/display/EGIG/Scientific+Disciplines ? Please use appropriate values from the standard above. In addition, list any other scientific discipline, if it's not included in the standard.	1.3 Information sciences 1.5 Biology sciences 1.6 Physics sciences 1.7 Chemical sciences 2. Engineering and Technology
Support/Technical contact	HIFIS support technical contact: support@hifis.net organisational contact: support@hifis.net

Benefits/resources wished from the EOSC Federation (i.e. what the Node needs) Be precise. Try to include the technologies and capacities in the description Examples: e.g access to generic (e.g. PID) services benefits from pooling resources (with other services or nodes) What are the challenges that you are seeking solutions for via establishing a node	• Generalized access to data and services via EOSC AAI to share science products between scientific disciplines in Europe • make use of general services in EOSC (and especially any useful combination of research products and/or infrastructure services) • be prepared to use services provided to/by EOSC at a later stage More precise: In the beginning p2p integration with EOSC AAI, monitoring and helpdesk are foreseen to be needed. Further needs will be communicated after the setup phase.
Benefits/resources could be offered to the EOSC Federation (i.e. what the Node can offer to others) Be precise. In addition to high-level benefits, skill brought to the table, try also to include the technologies and capacities in the description. Focus on the benefits. Examples: physical infra but there are terms of providing the services (cost, in-kind)	• currently existing services provided in-kind • expertise in AAI/IAM, data management and federated infrastructure • Apart from generic data tools the NFDI pilot node seeks to offer one or more tools that are domain specific and will be selected from the the scientific disciplines that are supported by the node. Part of the development process of the NFDI Pilot Node is to appraise tools and technologies and lay out the process for the uptake of research specific services.
Stakeholders (Please provide tuples of <type, role/needs>) Stakeholder roles: consumer, provider (service/data/other resource), funder, governance Examples: researcher/consumer research institution/consumer node/consumer university/data provider university/data provider researcher/provider computing center/service provider	• researcher, consumer • researcher, data provider • research institution, consumer • research institution, (service/data) provider • university, consumer • data center, service provider • research center/university, funder • research center/university, governance
Communities to be served (i.e. PAN community, national (which country) researchers, etc.)	• PaN community • German researchers (and partners)
Scientific use cases (ideally, enabled in the EOSC Federation) Please mark, if a given scientific use case is possible to be fulfilled already within your Node only, or does it require resources from “the outside’	• data publications within PaN & related community • compute/storage infrastructure usage for German researchers and their partners • general collaborative service use for researchers in multi-institutional collaborations • community building for knowledge exchange (Helmholtz connect, at a later stage if needed)

Technical use cases (ideally, enabled in the EOSC Federation) Please mark, if a given technical use case is possible to be fulfilled already within your node only, or if it requires resources from "the outside`'. Please try to derive the technical use case from the scientific use cases above.	Already present within the node: ● data storage ● data transfers ● compute infrastructure federation ● AAI federation
Resources to be offered (via EOSC Exchange) EOSC Exchange user types: researchers students data managers data stewards service developers service providers citizens citizen scientists policymakers public administration business other (please specify) EOSC Exchange client types (how do you grant the access, on what level): single user scientific community scientific institution country scientific project other EOSC Node (please specify if possible) research infrastructure	N/A

List of resources of a given type Services for providers and developers Service name target audience (Exchange user types) supported client types: list the possible clients of your service is the service offered differently depending on the client type EOSC Access and Use policy available to all EOSC users accessible in the federation under specific conditions. List relevant policies and rules. Services for end-users Service name service type (data source/computing/storage / generic data processing service/data transfer service/data management service / thematic service/training service / other (please specify) target audience (Exchange user types) supported client types: list the possible clients of your service is the service offered differently depending on the client type EOSC Access and Use policy available to all EOSC users accessible in the federation under specific conditions. List relevant policies and rules. Research Products Disclaimer: if you claim to offer research products in the EOSC Exchange, it would imply that the records of the research products will be available in the EOSC Federated Catalogue. Enabling merely a data source in EOSC Exchange that hosts these research products does not equal to publishing these research products in EOSC Federation Publications Y/N estimated number, if possible Data Y/N estimated number, if possible Software Y/N estimated number, if possible Other Y/N *Please specify what kind of other Research Products your Node brings to the federation Training Materials Y/N	**Services for providers and developers** Open Data portal (public-data.desy.de) ▪ target audience data providers ▪ supported client: RestAPI (documented) for dataset creation/consumption ▪ EOSC Access and Use policy dataset creation only for registered data curators read access free for all users Data storage for open data (hifis-storage.desy.de) ▪ target audience data providers ▪ supported client WebUI WebDAV NFS … ▪ EOSC access and Use policy data upload only for authorized users data download possible for everyone if data open (subject to ACLs) Helmholtz Transfer service (data transfers) ▪ target audience data providers/consumers (storage servers) ▪ supported client RUCIO/FTS3 all protocols for data transfer (webDAV, NFS, S3, FTP, GridFTP, …) ▪ EOSC access and Use policy open for everyone need to provide a storage endpoint accessible via the internet (subject to authN/Z possible) TS4NFDI (Terminology service) all TBD target audience supported client EOSC access and Use policy RSD (Research software directory) ▪ target audience research software developers (to list their SW) ▪ supported client web interface ▪ EOSC access and Use policy subject to clearance from curators Helmholtz cloud portal (service catalogue) ▪ target audience

	service providers ▪ supported client web interface ▪ EOSC access and Use policy restricted access to listing services, subject to service curation/onboarding process in HIFIS **Services for end-users** Jupyter4NFDI ▪ service type computing generic data processing training service ▪ target audience researchers students Anyone in NFDI, who needs a JupyterNotebook ▪ supported client types WebUI ▪ EOSC Access and Use policy unclear, at minimum accessible for NFDI users, probably expandable under some conditions Open Data portal (public-data.desy.de) ▪ service type (meta-) data source ▪ target audience researchers data catalogues ▪ supported client: RestAPI (documented) for dataset creation/consumption web interface ▪ EOSC Access and Use policy read access free for all users Data storage for open data (hifis-storage.desy.de) ▪ service type storage ▪ target audience researchers NFDI consortia ▪ supported client types Web interface common storage protocols ▪ access policy open for VO members in Helmholtz/NFDI/partners subject to ordering TS4NFDI (Terminology service)

	▪ service type data source ▪ target audience researchers ▪ supported client types WebUI ▪ access policy TBD RSD (Research software directory) ▪ service type data source ▪ target audience software users researchers ▪ supported client types web interface ▪ access policy ▪ open for everyone Helmholtz cloud portal (service catalog) ▪ service type resource/service catalog ▪ target audience researchers software users students citizen scientists ▪ supported client types WebUI ▪ access policy open for everyone
What aspects do you consider, when deciding on access to your Node's resources? user type (Y/N) - you will grant the access differently (also capacity-wise) to the researcher than to the citizen scientist. Please provide the details if possible user nationality (Y/N) user affiliation - u grant for accepted institutions communities	In the beginning it will be decided based on nationality (German) and affiliation with a research institute or university that is part of NFDI or otherwise affiliated with any of the entities within NFDI.

Federated capabilities (in EOSC Core) Giver - enabling the capability to the others Taker - not having that capability, taking it from the federation (one of the givers) P2P - connecting your core service to the federation Resource Catalogue AAI Monitoring Accounting Helpdesk Order/Access Management Messaging system Other possible federating capabilities: What other federated capabilities can your node offer to other nodes Examples: PID service orchestration service conversion/transformation service (for units or metadata schemata) hub for controlled vocabularies metadata schema registry software/data quality control thematic catalogue Try to be as descriptive as possible	Resource Catalogue - maybe yes, but only p2p AAI - p2p Monitoring - possibly yes, but only p2p Accounting -possibly yes, but only p2p Helpdesk - p2p (probably forwarding) Order/Access Management - no, but generally possible via helpdesk integration (orders need a curation step) Note: p2p specifically means that we are running those services for ourselves already but would want to exchange information with the EOSC Core services in order to make our offers findable, observable and accessible for other members of the EOSC federation, especially in the context of collaborations. To be discussed internally as offering: ● Thematic data catalogue (via Scicat) ● Compute infrastructure federation (via VISA portal) ● Data transfer management (via Helmholtz data transfer service using FTS3/RUCIO) ● Community building (via Helmholtz Connect)
Supported standards What does the standard apply to?	
Supported APIs and protocols Please attach the capability/service connected to a given API/protocol. Try to attach the standard to the API if applicable	● AAI - OAuth2, OIDC, Saml ● Monitoring - REST (to be specified) ● Helpdesk - Zammad RestAPI
Sustainability Statement Minimum - 3 years of the project. What happens after? Relate to the sustainability of the underlying infrastructure/community. State what it would take to make the Pilot Node sustainable longer. If possible, refer to the node life cycle (sustainability) but also to services provided by it (exchange, federating)	The node will be based on the existing Helmholtz IT infrastructure platform HIFIS, which is a permanent structure in Germany. It currently supports not only Helmholtz but also NFDI, whose consortia are the main target of our pilot node. All useful/advantageous efforts made within EOSC Beyond could potentially live on within NFDI/HIFIS after the end of EOSC Beyond. This decision is subject to evaluations in the future.

Who can onboard resources to this Pilot Node? Would service and data providers have to be a "member" of the Node to have the right to onboard their services? The onboarding process should probably include various agreements: The onboard has the right to offer the resource transparent and complete disclosure of visibility/access/use policies, as well as specific SLAs for services If the service is a federating service, what is required? onboarder allows Node to act as its representative in any discussions about the Node's collective set of services and data – e.g. joining the Federation, sharing resource metadata with other nodes, etc. Practical info about contacts, escalation, issue management, etc.	In the beginning, services and resources will be onboarded by the team representing NFDI in EOSC Beyond. Later onboarding will follow a process similar to the one in place with HIFIS and will take service readiness, AAI integration and sustainability into account (among other criteria).

Table 6- NFDI

EOSC Pilot Node Template	
Node Name	**NI4OS-Europe**
Node legal entity name	GRNET S.A.
Node legal representative/signing person	Dr. Aristidis Sotiropoulos, CEO
Entity type (i.e. Research Infrastructure, National infrastructure, e-Infrastructure, Data Space, etc)	A Consortium of National and Institutional e-Infrastructures
Countries building/delivering in the pilot Node (list the countries only)	Albania, Armenia, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Georgia, Hungary, Moldova, Montenegro, North Macedonia, Romania, Slovenia, Serbia
Entities participating in the EOSC Node - Institutional level list of entities (legal or non-legal)	GRNET, IPB, UKIM
Node type (i.e. thematic, national, regional, e-infra)	Regional
Scope of the Node (provide a solid description)	NI4OS-Europe aims to play a significant role in the EOSC service portfolio. We are committed to the governance of EOSC and strive to ensure inclusiveness at the European level to promote global open science. We actively support the development and integration of national open science cloud initiatives in 15 member states and associated countries within the EOSC governance framework. We promote the adoption of the EOSC philosophy and FAIR principles within the regional community. Additionally, we offer technical and policy support to assist service providers in joining EOSC, including generic services such as computing, data storage, and data management, as well as thematic services, repositories, and data sets.
Scientific disciplines supported by the Node https://confluence.egi.eu/display/EGIG/Scientific+Disciplines ? Please use appropriate values from the standard above. In addition, list any other scientific discipline, if it's not included in the standard.	All with a special focus on Climate, Digital Cultural Heritage, Life Science, and Computational Physics.

Support/Technical contact	
Benefits/resources wished from the EOSC Federation (i.e. what the Node needs) Be precise. Try to include the technologies and capacities in the description Examples: e.g access to generic (e.g. PID) services benefits from pooling resources (with other services or nodes) What are the challenges that you are seeking solutions for via establishing a node	A Node registry to act as a node discovery point; A Resource Catalog to replace the currently used catalog within the NI4OS-Europe community.
Benefits/resources could be offered to the EOSC Federation (i.e. what the Node can offer to others) Be precise. In addition to high-level benefits, skill brought to the table, try also to include the technologies and capacities in the description. Focus on the benefits. Examples: physical infra but there are terms of providing the services (cost, in-kind)	Scale-out on-boarding process; Mature services and providers; Opportunities for collaboration within the region.
Stakeholders (Please provide tuples of <type, role/needs>) Stakeholder roles: consumer, provider (service/data/other resource), funder, governance Examples: researcher/consumer research institution/consumer node/consumer university/data provider university/data provider researcher/provider computing center/service provider	Researcher/consumer; Node/consumer; Node/provider; Researcher/provider; Service Provider/service provider; Research communities/consumer.
Communities to be served (i.e. PAN community, national (which country) researchers, etc.)	NI4OS-Europe acts as a catch-all community in the SEE region.
Scientific use cases (ideally, enabled in the EOSC Federation) Please mark, if a given scientific use case is possible to be fulfilled already within your Node only, or does it require resources from “the outside’	We have implemented several workflows using only the resources provided within the NI4OS-Europe catalog. However, scaling up the workflows will likely require additional external resources, especially infrastructure resources.
Technical use cases (ideally, enabled in the EOSC Federation) Please mark, if a given technical use case is possible to be fulfilled already within your node only, or if it requires resources from “the outside`’. Please try to derive the technical use case from the scientific use cases above.	Resource onboarded via NI4OS-Europe followed the regional onboarding procedure, which, while compatible with the EOSC, required several additional steps. This could be seen as a technical use case.

Resources to be offered (via EOSC Exchange) EOSC Exchange user types: researchers students data managers data stewards service developers service providers citizens citizen scientists policymakers public administration business other (please specify) EOSC Exchange client types (how do you grant the access, on what level): single user scientific community scientific institution country scientific project other EOSC Node (please specify if possible) research infrastructure	Researchers; Students; Data managers; Data stewards; Service developers; Service providers. Single user; Scientific community; Scientific institution; Scientific project; Other EOSC nodes; Research infrastructure.

List of resources of a given type Services for providers and developers Service name target audience (Exchange user types) supported client types: list the possible clients of your service is the service offered differently depending on the client type EOSC Access and Use policy available to all EOSC users accessible in the federation under specific conditions. List relevant policies and rules. Services for end-users Service name service type (data source/computing/storage / generic data processing service/data transfer service/data management service / thematic service/training service / other (please specify) target audience (Exchange user types) supported client types: list the possible clients of your service is the service offered differently depending on the client type EOSC Access and Use policy available to all EOSC users accessible in the federation under specific conditions. List relevant policies and rules. Research Products Disclaimer: if you claim to offer research products in the EOSC Exchange, it would imply that the records of the research products will be available in the EOSC Federated Catalogue. Enabling merely a data source in EOSC Exchange that hosts these research products does not equal to publishing these research products in EOSC Federation Publications Y/N estimated number, if possible Data Y/N estimated number, if possible Software Y/N estimated number, if possible Other Y/N *Please specify what kind of other Research Products your Node brings to the federation Training Materials Y/N	Within the NI4OS-Europe catalogue (https://catalogue.ni4os.eu/) resources are grouped into: • Repositories, 46 in total, https://catalogue.ni4os.eu/?_=/resources/all/repository • Thematic services, 35 in total, https://catalogue.ni4os.eu/?_=/resources/all/thematic • Generic services, 21 in total, https://catalogue.ni4os.eu/?_=/resources/all/generic • Core services, 8 in total, https://catalogue.ni4os.eu/?_=/resources/all/core Access and privacy policy, guidelines and related training materials are provided for each resource.
What aspects do you consider, when deciding on access to your Node's resources? user type (Y/N) - you will grant the access differently (also capacity-wise) to the researcher than to the citizen scientist. Please provide the details if possible user nationality (Y/N) user affiliation - u grant for accepted institutions communities	Each resource has its own access and privacy policy. The majority of resources are available to all European researchers, while the infrastructure resources (HPC clusters, Cloud infrastructure, etc.) are typically provided through a peer-review process.

Federated capabilities (in EOSC Core) Giver - enabling the capability to the others Taker - not having that capability, taking it from the federation (one of the givers) P2P - connecting your core service to the federation Resource Catalogue AAI Monitoring Accounting Helpdesk Order/Access Management Messaging system Other possible federating capabilities: What other federated capabilities can your node offer to other nodes Examples: PID service orchestration service conversion/transformation service (for units or metadata schemata) hub for controlled vocabularies metadata schema registry software/data quality control thematic catalogue Try to be as descriptive as possible	Resource Catalogue (Taker); AAI (P2P); Monitoring (P2P); Accounting (P2P); Helpdesk (P2P); Messaging system (P2P).
Supported standards What does the standard apply to?	The resources are described following the EOSC profiles specifications.
Supported APIs and protocols Please attach the capability/service connected to a given API/protocol. Try to attach the standard to the API if applicable	Most of the resources registered within the catalog provide open APIs via REST protocol.
Sustainability Statement Minimum - 3 years of the project. What happens after? Relate to the sustainability of the underlying infrastructure/community. State what it would take to make the Pilot Node sustainable longer. If possible, refer to the node life cycle (sustainability) but also to services provided by it (exchange, federating)	The NI4OS-Europe consortium is an evolution of a collaboration of partners for more than 20 years and we are actively pursuing funding to continue to collaborate in the future. All partners agree to maintain the collaboration and the momentum for the periods that funding is not available in a best effort basis.

Who can onboard resources to this Pilot Node? Would service and data providers have to be a "member" of the Node to have the right to onboard their services? The onboarding process should probably include various agreements: The onboard has the right to offer the resource transparent and complete disclosure of visibility/access/use policies, as well as specific SLAs for services If the service is a federating service, what is required? onboarder allows Node to act as its representative in any discussions about the Node's collective set of services and data – e.g. joining the Federation, sharing resource metadata with other nodes, etc. Practical info about contacts, escalation, issue management, etc.	Any service provider within the supported countries that wishes to follow the Rules of Participation.

Table 7- NI4OS

EOSC Pilot Node Template	
Node Name	**SSHOC (CESSDA filling in template as part of potential SSHOC Node)**
Node legal entity name	-
Node legal representative/signing person	One of the members RIs
Entity type (i.e. Research Infrastructure, National infrastructure, e-Infrastructure, Data Space, etc)	-
Countries building/delivering in the pilot Node (list the countries only)	Norway, France, Netherlands
Entities participating in the EOSC Node - Institutional level list of entities (legal or non-legal)	DARIAH ERIC, CLARIN ERIC, CESSDA ERIC
Node type (i.e. thematic, national, regional, e-infra)	Domain-specific (Thematic)
Scope of the Node (provide a solid description)	To provide discovery services, standardized workflows, training and support to SSHOC members and users and to wider SSH community as well.
Scientific disciplines supported by the Node https://confluence.egi.eu/display/EGIG/Scientific+Disciplines ? Please use appropriate values from the standard above. In addition, list any other scientific discipline, if it's not included in the standard.	5. Social Sceince 6. Humanities
Support/Technical contact	-
Benefits/resources wished from the EOSC Federation (i.e. what the Node needs) Be precise. Try to include the technologies and capacities in the description Examples: e.g access to generic (e.g. PID) services benefits from pooling resources (with other services or nodes) What are the challenges that you are seeking solutions for via establishing a node	These core services should be outsourced to EOSC Federation: Helpdesk PID Service Service monitoring These services should be integrated: CESSDA Resource Catalogue SSHOC Open Marketplace

EOSC Pilot Node Template	
Benefits/resources could be offered to the EOSC Federation (i.e. what the Node can offer to others) Be precise. In addition to high-level benefits, skill brought to the table, try also to include the technologies and capacities in the description. Focus on the benefits. Examples: physical infra but there are terms of providing the services (cost, in-kind)	SSH thesauri/vocabularies hosting SSH thesauri/vocabularies REST API Harvesting metadata and presenting in a form of a thematic view in the data catalogue
Stakeholders (Please provide tuples of <type, role/needs>) Stakeholder roles: consumer, provider (service/data/other resource), funder, governance Examples: researcher/consumer research institution/consumer node/consumer university/data provider university/data provider researcher/provider computing centre/service provider	
Communities to be served (i.e. PAN community, national (which country) researchers, etc.)	Researchers, organizations, SSHOC Community
Scientific use cases (ideally, enabled in the EOSC Federation) Please mark, if a given scientific use case is possible to be fulfilled already within your Node only, or does it require resources from “the outside’	
Technical use cases (ideally, enabled in the EOSC Federation) Please mark, if a given technical use case is possible to be fulfilled already within your node only, or if it requires resources from “the outside`’. Please try to derive the technical use case from the scientific use cases above.	

EOSC Pilot Node Template	
Resources to be offered (via EOSC Exchange) EOSC Exchange user types: researchers students data managers data stewards service developers service providers citizens citizen scientists policymakers public administration business other (please specify) EOSC Exchange client types (how do you grant the access, on what level): single user scientific community scientific institution country scientific project other EOSC Node (please specify if possible) research infrastructure	**EOSC Exchange user types:** researchers, students, data managers, data stewards service developers, service providers citizens, citizen scientists policymakers, public administration business **EOSC Exchange client types:** single user, scientific community, scientific institution - AAI user or public access other EOSC Node, research infrastructure - API Token (planned)

EOSC Pilot Node Template	
List of resources of a given type Services for providers and developers Service name target audience (Exchange user types) supported client types: list the possible clients of your service is the service offered differently depending on the client type EOSC Access and Use policy available to all EOSC users accessible in the federation under specific conditions. List relevant policies and rules. Services for end-users Service name service type (data source/computing/storage / generic data processing service/data transfer service/data management service / thematic service/training service / other (please specify) target audience (Exchange user types) supported client types: list the possible clients of your service is the service offered differently depending on the client type EOSC Access and Use policy available to all EOSC users accessible in the federation under specific conditions. List relevant policies and rules. Research Products Disclaimer: if you claim to offer research products in the EOSC Exchange, it would imply that the records of the research products will be available in the EOSC Federated Catalogue. Enabling merely a data source in EOSC Exchange that hosts these research products does not equal to publishing these research products in EOSC Federation Publications Y/N estimated number, if possible Data Y/N estimated number, if possible Software Y/N estimated number, if possible Other Y/N *Please specify what kind of other Research Products your Node brings to the federation Training Materials Y/N	**SERVICES FOR END-USERS** **CESSDA Data Catalogue (TRL-9)** - Social science research data aggregator and discovery service. - A platform for researchers to find specific dataset => available to all EOSC users and user types => Source data available on request according to specific rules **CESSDA Data management Expert Guide (TRL-9) and Data Archiving guide (TRL-9)** The Data Management Expert Guide provides best practices for managing research data, ensuring high-quality and reproducible results. The Data Archiving Guide offers comprehensive guidelines for archiving data, ensuring long-term preservation and accessibility of research outputs. => available to all EOSC users and user types **SERVICES FOR PROVIDERS and DEVELOPERS** **CESSDA Kuha 2 metadata aggregator (TRL-9)** - An aggregator for Service Providers making their content more accessible, findable and exposed to other infrastructures. => available to all EOSC users => Service providers, developers **CESSDA European Language Social Science Thesaurus (ELSST) (TRL-9)** ELSST is a broad-based, multilingual thesaurus for the social sciences. The thesaurus consists of over 3,300 concepts and covers the core social science disciplines. It is used to map and establish semantic relationships between research outputs, enhancing searchability and interoperability. => available to all EOSC users => Service providers, developers, repository managers **CESSDA Vocabularies Service (CVS) (TRL-9)** CVS is a comprehensive service providing controlled vocabularies for the social sciences. It supports consistent data annotation and enhances interoperability across datasets by offering standardized terms and definitions. => available to all EOSC users => Service providers, developers, repository managers

EOSC Pilot Node Template	
What aspects do you consider, when deciding on access to your Node's resources? user type (Y/N) - you will grant the access differently (also capacity-wise) to the researcher than to the citizen scientist. Please provide the details if possible user nationality (Y/N) user affiliation - u grant for accepted institutions communities	user type (Y/N) - Y => strict rules for access to sensitive (personal, identifiable) data user nationality (Y/N) - N user affiliation (Y/N) - N
Federated capabilities (in EOSC Core) Giver - enabling the capability to the others Taker - not having that capability, taking it from the federation (one of the givers) P2P - connecting your core service to the federation Resource Catalogue AAI Monitoring Accounting Helpdesk Order/Access Management Messaging system Other possible federating capabilities: What other federated capabilities can your node offer to other nodes Examples: PID service orchestration service conversion/transformation service (for units or metadata schemata) hub for controlled vocabularies metadata schema registry software/data quality control thematic catalogue Try to be as descriptive as possible	We would use: AAI Monitoring Helpdesk We could offer: conversion/transformation service (for units or metadata schemata) hub for controlled vocabularies metadata schema registry software/data quality control thematic catalogue
Supported standards What does the standard apply to?	DDI-L -/ DDI-C - describing data and/or the whole lifecycle
Supported APIs and protocols Please attach the capability/service connected to a given API/protocol. Try to attach the standard to the API if applicable	OAI-PMH REST API

EOSC Pilot Node Template	
Sustainability Statement Minimum - 3 years of the project. What happens after? Relate to the sustainability of the underlying infrastructure/community. State what it would take to make the Pilot Node sustainable longer. If possible, refer to the node life cycle (sustainability) but also to services provided by it (exchange, federating)	
Who can onboard resources to this Pilot Node? Would service and data providers have to be a “member” of the Node to have the right to onboard their services? The onboarding process should probably include various agreements: The onboard has the right to offer the resource transparent and complete disclosure of visibility/access/use policies, as well as specific SLAs for services If the service is a federating service, what is required? onboarder allows Node to act as its representative in any discussions about the Node’s collective set of services and data – e.g. joining the Federation, sharing resource metadata with other nodes, etc. Practical info about contacts, escalation, issue management, etc.	Service and data providers have to be "members"

Table 8- CESSDA

EOSC Pilot Node Template	
Node Name	**CNB-CSIC Data Space (conceived as providers inside INSTRUCT-ERIC Pilot Node. Not as an isolated Pilot Node)**
Node legal entity name	CSIC
Node legal representative/signing person	director of CSIC
Entity type (i.e. Research Infrastructure, National infrastructure, e-Infrastructure, Data Space, etc)	• Research Infrastructure (as part of INSTRUCT-ERIC) • Data Space (as part of EOSC Beyond)
Countries building/delivering in the pilot Node (list the countries only)	Spain
Entities participating in the EOSC Node - Institutional level list of entities (legal or non-legal)	CSIC
Node type (i.e. thematic, national, regional, e-infra)	Thematic

Scope of the Node (provide a solid description)	CNB-CSIC Data Space, as part of the INSTRUCT-ERIC EOSC Pilot Node, will aim to offer capabilities relevant to the structural biology community, more precisely, those related to cryo-EM data validation in terms of quality. As a result of the combination of INSTRUCT-ERIC and CNB-CSIC use cases, the INTRUCT-ERIC EOSC Pilot Node will perfectly represent the whole data cycle for cryo-EM data. Throughout the cryo-EM data cycle, numerous steps involve data generation, beginning with sample preparation and acquisition at the cryo-EM facilities and culminating in the reconstruction of the volume map and atomic models that represent the nature of a macromolecule target. As the number of maps deposited in public databases determined by cryo-electron microscopy is quickly growing, it becomes crucial to complement cryo-EM data with quality-related data at the latest stage of the cryo-EM data cycle. Indeed, not all data have the same quality, although it is not easily discernible. One of the core services of the CNB-CSIC Data Space is the cryo-EM Validation Report Service (VRS), which provides a modular and open validation grading system that qualifies a structure map at six different levels depending on the information available to assess it. Users can upload and validate their data through the open-access website https://biocomp.cnb.csic.es/EMValidationService/. In the background, a complete Scipion (https://scipion.i2pc.es/) workflow will be automatically deployed and executed, preventing users from downloading datasets, installing software, or setting up the environment. Finally, a full PDF report summarizing the evaluation process is available for download. We foresee the improvement of the infrastructure behind the Validation Report Service to achieve a much more modular, shareable and cloud-compatible workflow to ensure easy data transfer, analyses and deposition through workflow orchestrators such as the EOSC Execution Framework. EOSC users who have not yet deposited their maps or atomic models into public databases could take advantage of the EOSC Data Transfer and Storage Service in order to provide their own cryo-EM data and launch this validation workflow.

	Aiming to boost reliable research, the CNB-CSIC Data Space is parallelly validating all the already deposited structures across widely-used repositories, such as the Electron Microscopy Data Bank (EMDB, https://www.ebi.ac.uk/emdb/ which harbours cryo-EM volume maps) and the Protein Data Bank (PDB, https://www.ebi.ac.uk/pdbe/ which harbours atomic models obtained by different techniques including cryo-EM). Research outputs produced by the VRS are catalogued and accessible through a public repository that can be accessed at https://biocomp.cnb.csic.es/EMValidationService/pub/ and in the end, could feed or complement any EOSC catalogue such as the EOSC Resource Catalogue/Marketplace or any domain-specific catalogue such as EMDB/PDB or any other developed by the INSTRUCT-ERIC Pilot Node. Users will not only be able to find all of our resources independently through the EOSC Portal but also interconnect them, understanding them as a whole, and consequently enhancing composability and interoperability in the EOSC context. Taking advantage of the PID Service, each of the output reports will be assigned a PID, ensuring FAIR compliance. For entries published in the validation public repository, Structural Biology CNB-CSIC Data Space foresees providing a more detailed view, which means at the residue level, through a 3D viewer, possibly 3DBionotes-WS, an interactive molecular 3D viewer that integrates multiple biological data sources including validation data in a unified analysis environment. as part of the EOSC Future project, 3DBionotes-WS is already an onboarded service in the EOSC Platform and integrated with other EOSC Core services such as Helpdesk or Monitoring, providing us with the experience to properly implement it for new services such as the VRS and the validation data repository. In summary, the Structural Biology CNB-CSIC Data Space will contribute to theINSTRUCT-ERIC Pilot and the federated EOSC community Node by offering FAIR-compliant validation data generated by the execution of the VRS on public entries from EMDB and PDB, a public repository to access and find the validation data easily, and the VRS as cloud-compatible computing service for validating cryo-EM data on demand. Additionally, we will offer containers to facilitate the seamless execution of the VRS in any computational environment.
Scientific disciplines supported by the Node https://confluence.egi.eu/display/EGIG/Scientific+Disciplines ? Please use appropriate values from the standard above. In addition, list any other scientific discipline, if it's not included in the standard.	1.5.24 Structural biology
Support/Technical contact	

Benefits/resources wished from the EOSC Federation (i.e. what the Node needs) Be precise. Try to include the technologies and capacities in the description Examples: e.g access to generic (e.g. PID) services benefits from pooling resources (with other services or nodes) What are the challenges that you are seeking solutions for via establishing a node	• Computing resources • Access to generic services such as Execution Framework, PID, AAI (possibly) and Resource Catalogue • Storage resources • Improve our interoperability capabilities Challenges: • Interoperability with third-party entities such as EMDB/PDB repositories because are not currently part of an EOSC Node and it is out of our control scope
Benefits/resources could be offered to the EOSC Federation (i.e. what the Node can offer to others) Be precise. In addition to high-level benefits, skill brought to the table, try also to include the technologies and capacities in the description. Focus on the benefits. Examples: physical infra but there are terms of providing the services (cost, in-kind)	• Data producing environment for validating structural data coming from cryo-EM: Validation Report Service, VRS. • Validation data (and metadata) FAIR-compliant on cryo-EM data published on repositories such as EMDB/PDB • Public catalogue to access validation data (and metadata) on cryo-EM data published on repositories such as EMDB. • Interconnection with 3D viewers (possibly 3DBionotes-WS) to visualize and interconnect validation data with other life science data (Drug Design, Omics, Biomedicine and other Structural data) in an interactive environment • Containers to deploy VRS • Expertise in structural biology and cryo-EM data at each step in the whole cycle, from the sample preparation to the validation of the data.
Stakeholders (Please provide tuples of <type, role/needs>) Stakeholder roles: consumer, provider (service/data/other resource), funder, governance Examples: researcher/consumer research institution/consumer node/consumer university/data provider university/data provider researcher/provider computing center/service provider	• Researchers, consumer • Research communities, consumer • Private companies (mostly pharmaceutical companies), consumer • Cryo-EM electron microscopy facilities and their workers, consumer • EOSC Nodes, resources providers • EMDB team, data provider • PDB team, data provider • Research projects, funders • Instruct Hub, funder • Instruct Hub, governance
Communities to be served (i.e. PAN community, national (which country) researchers, etc.)	Structural biology community, Instruct community, cryoEM community

Scientific use cases (ideally, enabled in the EOSC Federation) Please mark, if a given scientific use case is possible to be fulfilled already within your Node only, or does it require resources from "the outside'	• Structural biology researcher submits a proposal to ARIA (INSTRUCT-ERIC use case) to analyze their target macromolecule structure. Upon processing the acquired data from the facility and obtaining a cryo-EM map along with an atomic model, he/she seeks to validate the data to assess its quality and optimize the processing. The results can be viewed in the report and through an interactive 3D viewer (i.e.: 3DBionotes-WS). (possible to be fulfilled already) • Structural biology researcher accesses EMDB and PDB to select the most representative cryo-EM volume map and atomic model of a specific macromolecule so that he/she can understand its function, binding sites and dynamics. The structural biologist reviews the validation data indexed in each cryo-EM map and atomic model. Review it in the EMDB/PDB interface or in the validation data repository. He/She selects the best entries or starts creating a new map and atomic model if the existing data is not sufficient. (possible to be fulfilled already) • Given cryo-EM raw data published via the ARIA catalogue (INSTRUCT-ERIC use case) is linked to corresponding cryo-EM maps, atomic models, and their validation data, a structural biologist could identify poorly resolved areas in cryo-EM maps and atomic models and decide to reconstruct new ones starting from these raw data using better software and methods than those originally employed. In the end, the structural biologist would end up with newly generated maps and models that would provide a more accurate representation of the macromolecule's structure (require resources from the outside)

	• Cryo-EM facility operator wants to evaluate how properly the microscope's parameters and their on-the-fly processing workflows have been established by conducting data acquisition on well-studied samples like apoferritin. He/She executes the Validation Report Service to ensure all parameters of their microscope and processing software are optimal to obtain good maps.
Technical use cases (ideally, enabled in the EOSC Federation) Please mark, if a given technical use case is possible to be fulfilled already within your node only, or if it requires resources from "the outside`'. Please try to derive the technical use case from the scientific use cases above.	• Deployment of a cloud-enabled data validation environment advanced software solutions for structural biology validation analysis such as the VRS on users' demand (possible to be fulfilled already) • Deployment of a cloud-enabled data validation environment advanced software solutions for structural biology validation analysis such as the VRS for periodic updates of the validation data repository (possible to be fulfilled already) • Data Integration and Interoperability between validation data repository and other databases like ARIA catalogue (INSTRUCT-ERIC use case), which will include cryo-EM raw data, EOSC Catalogs or widely-used community repositories such as EMDB or PDB. (require resources from the outside)
Resources to be offered (via EOSC Exchange) EOSC Exchange user types: researchers students data managers data stewards service developers service providers citizens citizen scientists policymakers public administration business other (please specify) EOSC Exchange client types (how do you grant the access, on what level): single user scientific community scientific institution country scientific project other EOSC Node (please specify if possible) research infrastructure	• Containers (VRS container), researchers, scientific community • Open research data (validation data), researchers, scientific community • Data sources (validation public repository), researchers, scientific community

List of resources of a given type
 	
Services for providers and developers
Service name
target audience (Exchange user types)
supported client types: list the possible clients of your service
is the service offered differently depending on the client type
EOSC Access and Use policy
available to all EOSC users
accessible in the federation under specific conditions. List relevant policies and rules.
Services for end-users
Service name
service type (data source/computing/storage / generic data processing service/data transfer service/data management service / thematic service/training service / other (please specify)
target audience (Exchange user types)
supported client types: list the possible clients of your service
is the service offered differently depending on the client type
EOSC Access and Use policy
available to all EOSC users
accessible in the federation under specific conditions. List relevant policies and rules.
 	
Research Products
Disclaimer: if you claim to offer research products in the EOSC Exchange, it would imply that the records of the research products will be available in the EOSC Federated Catalogue. Enabling merely a data source in EOSC Exchange that hosts these research products does not equal to publishing these research products in EOSC Federation
Publications
Y/N
estimated number, if possible
Data
Y/N
estimated number, if possible
Software
Y/N
estimated number, if possible
Other
Y/N
*Please specify what kind of other Research Products your Node brings to the federation
 	
Training Materials
Y/N
	• Services for end-users:
	  o The Cryo-EM Validation Report Service
	  ▪ Target audience: structural biology community
	  ▪ Data processing service
	  ▪ Open access website. Data from individual users will be private and temporarily maintained.
	  o The validation data repository
	  ▪ Target audience: structural biology community
	  ▪ Data source
	  ▪ Open access website
	• Research Products:
	  o Validation data (reports and data objects)
	  ▪ Target audience: structural biology community
	  ▪ Open access

What aspects do you consider, when deciding on access to your Node's resources? user type (Y/N) - you will grant the access differently (also capacity-wise) to the researcher than to the citizen scientist. Please provide the details if possible user nationality (Y/N) user affiliation - u grant for accepted institutions communities	• User type: No • User nationality: No • User affiliation: No

Federated capabilities (in EOSC Core) Giver - enabling the capability to the others Taker - not having that capability, taking it from the federation (one of the givers) P2P - connecting your core service to the federation Resource Catalogue AAI Monitoring Accounting Helpdesk Order/Access Management Messaging system Other possible federating capabilities: What other federated capabilities can your node offer to other nodes Examples: PID service orchestration service conversion/transformation service (for units or metadata schemata) hub for controlled vocabularies metadata schema registry software/data quality control thematic catalogue Try to be as descriptive as possible	Federated capabilities (in EOSC Core) ● Resource Catalogue: p2p - CNB-CSIC maintains its own catalogue of validation data which could be syndicated ● AAI: possibly taker. ● Monitoring: taker ● Accounting: possibly taker. ● Helpdesk: taker. ● Order/Access Management: taker. ● PID services: taker ● Execution Framework: taker. **Other possible federating capabilities:** ● Thematic catalog: giver - access to our validation data repository catalog via a syndication feed ● VRS: giver - access to data-producing environment ● Validation data: giver.
Supported standards What does the standard apply to?	
Supported APIs and protocols Please attach the capability/service connected to a given API/protocol. Try to attach the standard to the API if applicable	
Sustainability Statement Minimum - 3 years of the project. What happens after? Relate to the sustainability of the underlying infrastructure/community. State what it would take to make the Pilot Node sustainable longer. If possible, refer to the node life cycle (sustainability) but also to services provided by it (exchange, federating)	Minimum support during the lifetime of the project (3 years).

Who can onboard resources to this Pilot Node? Would service and data providers have to be a "member" of the Node to have the right to onboard their services? The onboarding process should probably include various agreements: The onboard has the right to offer the resource transparent and complete disclosure of visibility/access/use policies, as well as specific SLAs for services If the service is a federating service, what is required? onboarder allows Node to act as its representative in any discussions about the Node's collective set of services and data – e.g. joining the Federation, sharing resource metadata with other nodes, etc. Practical info about contacts, escalation, issue management, etc.	Resource owner

Table 9- CNB-CSIC

ENES EOSC Pilot Node	
Node Name	**ENES Data Space**
Node legal entity name	Not defined yet
Node legal representative/signing person	Not defined yet
Entity type (i.e. Research Infrastructure, National infrastructure, e-Infrastructure, Data Space, etc)	Data Space
Countries building/delivering in the pilot Node (list the countries only)	Italy
Entities participating in the EOSC Node - Institutional level list of entities (legal or non-legal)	CMCC Foundation, University of Trento
Node type (i.e. thematic, national, regional, e-infra)	Thematic
Scope of the Node (provide a solid description)	The ENES Data Space node will aim to offer core services and capabilities relevant to the climate community. This includes data (input datasets and research products), resources (storage and compute), infrastructural components for deployment and orchestration of services, software solutions supporting researchers and institution departments in realistic scenarios.
Scientific disciplines supported by the Node https://confluence.egi.eu/display/EGIG/Scientific+Disciplines ? Please use appropriate values from the standard above. In addition, list any other scientific discipline, if it's not included in the standard.	Natural Sciences -> Earth Sciences -> Climate Research
Support/Technical contact	enesds-support@cmcc.it

Benefits/resources wished from the EOSC Federation (i.e. what the Node needs) Be precise. Try to include the technologies and capacities in the description Examples: e.g access to generic (e.g. PID) services benefits from pooling resources (with other services or nodes) What are the challenges that you are seeking solutions for via establishing a node	• Cloud resources (both storage and compute capacity) to support climate data analysis • AAI & Identity management • Monitoring & Accounting • Access to PID service to track digital objects, thus better supporting users' research workflow towards Open and FAIR data science.
Benefits/resources could be offered to the EOSC Federation (i.e. what the Node can offer to others) Be precise. In addition to high-level benefits, skill brought to the table, try also to include the technologies and capacities in the description. Focus on the benefits. Examples: physical infra but there are terms of providing the services (cost, in-kind)	• Access to climate data collections from well-known efforts (e.g., CMIP) and/or climate modelling groups that might want to expose/federate them. • Data cataloguing utilities enabling fast data search, discovery and access • Workflow services and AI & analytics capabilities • Provenance service to keep track of relevant data lineage information about climate analytics workflows.
Stakeholders (Please provide tuples of <type, role/needs>) Stakeholder roles: consumer, provider (service/data/other resource), funder, governance Examples: researcher/consumer research institution/consumer node/consumer university/data provider university/data provider researcher/provider computing center/service provider	• Researcher, consumer/provider • Research institution/department, (data) provider • Computing center, (service/resource) provider • Other nodes, (service/resource) provider
Communities to be served (i.e. PAN community, national (which country) researchers, etc.)	Climate community: scientists worldwide, modelling centers and data providers.
Scientific use cases (ideally, enabled in the EOSC Federation) Please mark, if a given scientific use case is possible to be fulfilled already within your Node only, or does it require resources from "the outside'	1. As a scientist, I want to run AI/ML-based applications and perform big data processing, interactive analytics and visualization on climate data, without taking care of downloading datasets, installing software and preparing the environment. 2. As a scientist, I want to run my analytics workflow and manage provenance information at different levels of granularity. 3. As an institution department, I want to expose my data collections and make them searchable, discoverable and accessible through a federated data catalogue.

Technical use cases (ideally, enabled in the EOSC Federation) Please mark, if a given technical use case is possible to be fulfilled already within your node only, or if it requires resources from “the outside`’. Please try to derive the technical use case from the scientific use cases above.	1. Deployment of a cloud-enable data science environment leveraging a scalable computing platform and providing both datasets and software solutions. 2. Deployment of a provenance service for managing provenance information in a structured way and enabling the navigation and exploration of the provenance space. 3. Data Space as a Service instance for exposing collections of spatial temporal data and indexing the corresponding assets, thus making them searchable and accessible at federation level.
Resources to be offered (via EOSC Exchange) EOSC Exchange user types: researchers students data managers data stewards service developers service providers citizens citizen scientists policymakers public administration business other (please specify) EOSC Exchange client types (how do you grant the access, on what level): single user scientific community scientific institution country scientific project other EOSC Node (please specify if possible) research infrastructure	

List of resources of a given type Services for providers and developers Service name target audience (Exchange user types) supported client types: list the possible clients of your service is the service offered differently depending on the client type EOSC Access and Use policy available to all EOSC users accessible in the federation under specific conditions. List relevant policies and rules. Services for end-users Service name service type (data source/computing/storage / generic data processing service/data transfer service/data management service / thematic service/training service / other (please specify) target audience (Exchange user types) supported client types: list the possible clients of your service is the service offered differently depending on the client type EOSC Access and Use policy available to all EOSC users accessible in the federation under specific conditions. List relevant policies and rules. Research Products Disclaimer: if you claim to offer research products in the EOSC Exchange, it would imply that the records of the research products will be available in the EOSC Federated Catalogue. Enabling merely a data source in EOSC Exchange that hosts these research products does not equal to publishing these research products in EOSC Federation Publications Y/N estimated number, if possible Data Y/N estimated number, if possible Software Y/N estimated number, if possible Other Y/N *Please specify what kind of other Research Products your Node brings to the federation Training Materials Y/N	• No services for providers and developers are expected to be offered. • The following services for end-users are expected to be offered: **Provenance service** ▪ service type: thematic service ▪ target audience: researchers, students ▪ supported client types: single user scientific community ▪ EOSC Access and Use policy available to all EOSC users membership to the *enes* VO might be required **Catalog of data collections** ▪ service type: data source ▪ target audience: researchers, students supported client types: single user scientific community ▪ EOSC Access and Use policy available to all EOSC users membership to the *enes* VO might be required **Data search engine** ▪ service type: data management service ▪ target audience: researchers, students ▪ supported client types: single user scientific community ▪ EOSC Access and Use policy available to all EOSC users
What aspects do you consider, when deciding on access to your Node's resources? user type (Y/N) - you will grant the access differently (also capacity-wise) to the researcher than to the citizen scientist. Please provide the details if possible user nationality (Y/N) user affiliation - u grant for accepted institutions communities	Generally, access to node's resources will be granted to all researchers, regardless of user type, nationality or affiliation. In some cases, users might have specific requirements (e.g., capacity- or software-wise) based on their activities/projects: this results in a customized configuration targeting the specific needs.

Federated capabilities (in EOSC Core) Giver - enabling the capability to the others Taker - not having that capability, taking it from the federation (one of the givers) P2P - connecting your core service to the federation Resource Catalogue AAI Monitoring Accounting Helpdesk Order/Access Management Messaging system Other possible federating capabilities: What other federated capabilities can your node offer to other nodes Examples: PID service orchestration service conversion/transformation service (for units or metadata schemata) hub for controlled vocabularies metadata schema registry software/data quality control thematic catalogue Try to be as descriptive as possible	The ENES Node is expected to be **TAKER** of the following federating capabilities: • Resource Catalogue (EU Node Resource Hub?) • AAI (EGI Check-in?) • Monitoring • Accounting • PID service • Orchestration service • Cloud federation The ENES Node is expected to be **GIVER** of the following federating capabilities: • Thematic data catalogue, for exposing climate collections and enabling data search, discovery and access. • Provenance service, for enabling provenance management and exploration in scientific workflows.
Supported standards What does the standard apply to?	• CF-Conventions, CMIP specifications, STAC family of specifications applied to climate data collections and metadata • W3C PROV Family of Documents related to provenance
Supported APIs and protocols Please attach the capability/service connected to a given API/protocol. Try to attach the standard to the API if applicable	• STAC API —> **Cataloguing** capability (a RESTful endpoint that enables search of **STAC** Items) • Provenance service API —> **Provenance** capability (**W3C PROV standard**)
Sustainability Statement Minimum - 3 years of the project. What happens after? Relate to the sustainability of the underlying infrastructure/community. State what it would take to make the Pilot Node sustainable longer. If possible, refer to the node life cycle (sustainability) but also to services provided by it (exchange, federating)	The Pilot Node lifecycle is guaranteed within the EOSC Beyond timeframe. Looking forward to new funding opportunities to foster the sustainability of the node as well as the underlying infrastructure/services.

Who can onboard resources to this Pilot Node? Would service and data providers have to be a “member” of the Node to have the right to onboard their services? The onboarding process should probably include various agreements: The onboard has the right to offer the resource transparent and complete disclosure of visibility/access/use policies, as well as specific SLAs for services If the service is a federating service, what is required? onboarder allows Node to act as its representative in any discussions about the Node’s collective set of services and data – e.g. joining the Federation, sharing resource metadata with other nodes, etc. Practical info about contacts, escalation, issue management, etc.	Services and resources will be onboarded by the team representing the ENES Data Space node in EOSC Beyond.

Table 10- ENES

Tables – Pilots User Stories & Use Cases

Pilot Name	User Story of highest priority	User journey	Core Service involved	Exchange service involved
EGI Node	As a researcher I want to **access computing resources** so that I can run molecular dynamic simulations to characterise perovskite materials. My research group at the university would need to have access to the model and evaluate the results.	1. Research scientist would need to register in the EGI node with an EGI recognised identity provider. (EGI NODE service CHECKIN) 2. Researcher would need to request from the service catalogue and order management system the type of computational and storage resources e.g. Cloud /HPC (EU Node service order management) 3. The order would be processed and a cloud /HPC /storage provider would be identified with the capacity requested by the user. Cloud /storage provider would (Cloud and storage federated service) 4. A Virtual Organisation is created and members of the research scientist team are added in order to manage access to resources. (Checkin AAI service)	AAI, Order Management	Storage, Compute
	As an IT administrator I want to synchronise monitoring data of services through my Node with the EU Node monitoring system so that we can control our services' SLAs fulfilment	1.IT administrator requests monitoring schema used by the EU monitoring node. 2. IT administrator ensures that monitoring data from the services are made available to the monitoring (e.g. service uptime) 3. IT administrator ensures that the EGI Node is authenticated (Federated AAI) with the monitoring service of EU Node. 4. Monitoring data (uptimes) are consumed by ARGO. 5. EGI Node provides Service Performance Reports to Services Providers to inform them of fulfilment with SLAs	Service Monitoring, AAI	
	As EGI Foundation I want to support the RI's to scale up computing capacity (providing resources, training, know-how) so that RI users can capitalise on data and compute colocation to train AI models	1. EGI assembles "pools" of similar resources across multiple providers (e.g. certain kinds of cloud compute, storage, HPC, etc.) 2. "Virtual Access" scheme is organized so that user access and ordering work automatically 3. Distinct pools of resources are listed in resource catalogue, not as individual endpoints/ servers, but using AWM orchestration as front end.	Marketplace, Resource Catalogue	Data Transfer, File sharing

		4. Specific deployment recipes are designed and put into Tools Market (part of Marketplace) and linked to data analytics and AI algorithms (e.g. containers) that are also in the Marketplace. 5. User Notes/Training is linked to algorithms in the Marketplace to guide users in how to use. 6. Researchers must select input data, use Data Transfer services to move to File Synch and Share resources accessible to required Cloud Compute or Virtual Machine resources from the pools 7. Containers are split into "data local" and "scale out" components. Data Local components are deployed by AWM on to compute next to storage. Scale out containers can be deployed to non-local compute. 8. Final Analytics result is moved to Researcher's designated storage location by Data Transfer service		
	As a researcher I want to understand what is the service offering of the EGI node so that I can concentrate on science and not on the technical set up	1.Researcher logs into EGI node (CHeckin). Log in provides attributes 2. Researcher accesses marketplace for EGI Node. Selects "filter by my credentials" 3. Marketplace displays resources to which researcher has access 4. Related training and comments/reviews(?) from other users help me assess possible resources for their suitability to my needs 5. Researcher can "like" or otherwise keep track of resources of interest for possible future use. 6. Liked resources are used by Marketplace to suggest similar resources, or to notify about changes to resources I have already tagged. 7. Researcher access order management service to get access to specific resources. Details about these resources are stored in researchers "shopping cart" for ease of future use. 8. Combinations of Ordered resources might be flagged as interoperable and "wizards" are available to get them set up and ready to use.	AAI, Marketplace, Order Management	Open research data, Data sources
CESSDA				
	As a service provider I want to be able to track usage of my resources and calculate	1. Registering the service at EOSC Accounting Platform 2. Configure exchange of	Service Accounting, research	

	associated costs/ eventualy charge commercial users	access/usage data between Service and Accounting Platform 3. Access to dashboards with statistical reports on usage for each resource/service	product accounting	
	As a researcher, I want to be able to access digital object outside my organisation using my institutional credentials.	1. Use of a federated AAI system 2. Enable AAI for member services access	AAI	
	As a service provider I want to enable registering/resolving PID's for digital objects managed within my infrastructure	1. Register PID's for digital object created within my services 2. Making it available for all organisations within my Node to use PID registration service and resolver	PID Service	
	As a service provider I want to have a central solution for monitoring my services and handling technical queries	1. Registering the service at EOSC Monitoring Platform 2. Configure exchange of monitoring data between Service and Monitoring Platform 3. Access to dashboards with historical data 4. Alerting on user defined events	Service Monitoring	
	As a research infrastructure architect developing a DMP tool / Publication repository and I need a source (API) for a discipline-specific metadata field which would describe a deposited dataset/publication in a standardized manner with a translation in multiple languages.	1. Search the Resource catalogue for a vocabulary service by discipline and keywords 2. Review metadata 3. Access documentation 4. Register as a service user using AAI with my credentials	Resource Catalogue	
	As a data steward and I want to check whether my approach in preparing the dataset for archiving is valid because data contains sensitive personal information.	1. Search the resource catalogue for Guides / Training materials 2. Find and visit web accessible Guide / Training material	Resource Catalogue	
	As a researcher (social scientists) I want to use the same instrument/scale for my research that was used in other similar research project to be able to easier compare data later.	1. Search the catalogue / Marketplace 2. Find the repository/platform/service of interest	Resource Catalogue	
	As a researcher (social scientist) I need an insight into election survey data from Germany collected in the period from 1990 to 2005	1. Visit a Node Marketplace and search/filter over the available metadata records harvested from Node member organisations	Marketplace	
CNB-CSIC	**US1**. As a structural biology researcher I want to submit a proposal to ARIA (INSTRUCT-ERIC use case) to analyze my target macromolecule structure. Upon processing the acquired data from the facility and obtaining a cryo-EM map along with an atomic model, I want to	1. Log in into ARIA (INSTRUC-ERIC use case), submit a proposal to study my macromolecule target and get it approved. 2. Get data from acquisitision at the cryo-EM facility and start processing it. 3. Get a cryo-EM volume map and atomic model of the target 4. Look for a validation software	Marketplace, Resource Catalogue, PIDs Service	Compute, containers, data transfer

	validate the data to assess its quality and optimize my data processing. Finally I want to view the results in a report and interactively within 3DBionotes-WS.	in the Marketplace or the Resource Catalogue and find the Validation Report Service (CNB-CSIC use case) 5. Deploy VRS on the cloud through Execution Framework to validate quality of the cryo-EM volume map and atomic model. In the background there will be resources and storage coming from other nodes that have been previously ordered through Order Management by VRS developers. 6. Get PIDs for the results through PID Service 7. View the results in the output report and in 3DBionotes-WS 8. Optimize my data processing workflow given the VRS results		
	US2. As a structural biology researcher I want to access EMDB and PDB to select the most representative cryo-EM volume map and atomic model of a specific macromolecule so that I can understand its function, binding sites and dynamics. I review the validation data indexed to each of the cryo-EM maps and atomic models to select the best entries or start creating a new map and atomic model if the existing data is not sufficient.	1. Go to Marketplace/Resource Catalogue and find widely used repositories for cryo-EM volume maps (EMDB) and atomic models (PDB), given statistics from Service Accounting. These resources will be provided by other nodes (EMDB/PDB node in case it exists in the future) 2. Select the most representative cryo-EM volume map and atomic model of a specific macromolecule 3. Review the validation data indexed in each cryo-EM map and atomic model. Review it in EMDB/PDB interface or in the validation data repository 4. Select the best entries or start creating a new map and atomic model if the existing data is not sufficient.	Resource Catalogue, Marketplace, Service Accounting	Open research data, Data sources
	US3. As a structural biology researcher I want to publish all the data derived from my cryo-EM study (including raw data, cryo-EM maps and atomic model) in public repositories such as ARIA (INSTRUCT-ERIC usecase) or EMPIAR for the raw data, EMDB for the volume maps and PDB for the atomic models.	1. Go to Marketplace/Resource Catalogue and find widely used repositories for each data type troughout the data life cycle: ARIA/EMPIAR, EMDB, PDB. These resources will be provided by other nodes: ARIA from INSTRUCT-ERIC node, EMPIAR/EMDB/PDB from EMPIAR/EMDB/PDB node in case it exists in the future) 2. Log in into each of the repositories using AAI 3. Publish data and metadata and get a PID through PID Service.	AAI, Resource Catalogue, Marketplace, PID Service	Open research data, Data transfer, Data sources
	US4. Given US3, as a repository maintainer I want to interconnect the diferent entries (raw data, volume maps, atomic models and validation data) of the different repositories that correspond to	1. Get PIDs for each of the data derived from the cryo-EM workflow and published in different repositories (ARIA/EMPIAR, EMB, PDB) 2. Given a PID, get the link to data harbored in other repositories	Resource Catalogue, Marketplace, PID Service	Open research data, Data sources

	data coming from the same cryo-EM study so community users can have an overview of the whole cryo-EM data cycle of the study.	3. Add different data link to my repository and expect other repositories do the same		
	US5. As a cryo-EM facility operator I want to evaluate how properly the microscope's parameters and my on-the-fly processing workflows have been established by conducting data acquisition on well-studied samples like apoferritin. I execute the Validation Report Service to ensure all microscope's parameters and processing software are optimal to obtain good maps. I want to view the results in a report and interactively within 3DBionotes-WS.	1. Start an acquisition for well-studied samples like apoferritin and execute on-the-fly cryo-EM processing workflows 2. Look for a validation software in the Marketplace or the Resource Catalogue and find the Validation Report Service 3. Deploy VRS on the cloud through Execution Framework to validate quality of the cryo-EM volume map and atomic model. In the background there will be resources and storage coming from other nodes that have been previously ordered through Order Management by VRS developers. 4. Get PIDs for the results through PID Service 5. View the results in the output report 6. Optimize microscope parameters and the data processing workflow given the VRS results	Marketplace, Resource Catalogue, PIDs Service	Compute, containers, data transfer
	US6. As a developer of scientific service, I want to enable the deployment of a controlled environment to execute the my service (for this case the Validation Report Service) in the cloud so I can provide advanced software solutions for structural biology validation analysis on users' demand	1. Prepare my software (in this case Validation Report Service) to be containerized and easily deployable in the cloud 2. Integrate my software with the EOSC Execution Framework. In the background there will be resources and storage coming from other nodes that have been previously ordered through Order Management by VRS developers	Order Management, Execution Framework	Compute, containers, data transfer
	US7. As a developer of scientific service, I want to enable the deployment of a controlled environment to execute the VRS in the cloud so I can periodically update the validation data repository.	1. Prepare my software (in this case Validation Report Service) to be containerized and easily deployable in the cloud 2. Integrate my software with the EOSC Execution Framework. In the background there will be resources and storage coming from other nodes that have been previously ordered through Order Management by VRS developers 3. Orchestrate VRS deployment on the cloud to validate additional data from EMDB and PDB and get periodic updates for the VRS catalogue. (This will be done by CNB-CSIC use case)	Order Management, Execution Framework	Compute, containers, data transfer
	US8. Given the US3 and US4, as a structural biologist want to identify poorly resolved areas in a specific cryo-EM	1. Go to Marketplace/Resource Catalogue and find widely used repositories for cryo-EM volume maps (EMDB) and atomic models	Resource Catalogue, Marketplace,	Data Transfer, Open research

	map and atomic models and reconstruct them again starting from the raw data. Currently there are better software and methods than those originally employed so in the end, I would end up with newly generated maps and models that would provide a more accurate representation of the macromolecule's structure.	(PDB), given statistics from Service Accounting. 2. Select the most representative cryo-EM volume map and atomic model of a specific macromolecule 3. Review the validation data indexed in each cryo-EM map and atomic model and see that the data is poorly resolved. Review it in EMDB/PDB interface or in the validation data repository 4. Get raw data from ARIA or EMPIAR (using data transfer resources from other node) 5. Start from scratch the cryo-EM processing workflow with better software and methods 6. Get new volume maps and atomic models that better represent the macromolecule target	Service Accounting	data, Data sources, compute
Instruct ERIC	As a facility manager - given that I am a small facility -I would like to **store my user data** for a long time , so that I can store my user's data and make it available to other researchers	1. During my visit I need to have access to one or more storage options 2. I need to understand and agree to T&C + costs 3. Once agreed I need to have storage provisioned and made accessible via a unique upload URL This URL and metadata needs to be associated with the visit record		Storage
	As a researcher I would like to have my research data accessible from the cloud and made public after an embargo period	Researcher must be able to log in Researcher can conduct their research Research data must be deposited in cloud storage securely After an embargo research data must be made available via the appropriate catalogues and repositories	Resource Catalogue, Marketplace, AAI	Containers, Notebooks, Storage, Data sources, File sharing
	As a researcher I would like to have access to my research data as I move between labs to perform my analysis	Researcher must be identified and logged in Research data must be securely available via online storage	AAI	Storage
	As a researcher I would like to be able to conduct new research based on outputs from a previous experiment	Research data must be findable in a catalogue Research data must be identified by appropriate metadata Associated data must be available via appropriate catalogue / repository	Marketplace	Data sources
	As a node I would like to be able to demonstrate impact by tracking research outputs and publications produced at my facilities or funded by my organisation	Identify research outputs via PIDs for the facilities involved Have publications associated with facilities Have publications associated with funding organisations Should not rely on text scraping	PID Service	
	As a facility manager I would like to be able to identify the	Mint PIDs (with appropriate metadata) identifying	PID Service	

	components of my workflow and link it to the original science	components of a workflow Be able to graph those to visualise the workflow Perform optimisations of workflow based on aggregated inputs		
	As a user, I would like to be direct to a helpdesk that can help me if I experience any problem	Receive support requests from the wider EOSC via Node's internal Freshdesk Be able to refer FD tickets to the wider EOSC	Helpdesk	
E-INFRA CZ	As a user with an account in Czech AAI, I have an account in e-INFRA CZ Node. I want to **invite colleagues from other countries**, give them access to my project, etc.	1. local node accounts, projects etc. Expected as DONE. 2. AAI integration - node must be integrated with EOSC AAI 3. ?? something related to authorization	AAI	
	As a user I have found useful data in some thematic data repository. I need to get access to this data, I need to download them to my local storage in my Node, do analysis in Notebook service there and later publish this Notebook to Notebook service provided by EOSC EU Node and give access to my colleagues.	Thematic service must support our national AAI, grant access... Data transfer service requiered for downloading data Notebook service on node (DONE) Data repository where notebook can be published, PID is assigned (DONE) EOSC EU Node or other node where notebook service is running must be able to download and start notebook (TODO add story for scaling-up)	AAI, PID Service	Data Transfer, Notebooks, Storage
	As a developer of scientific service I want make a service visible to other scientists. My service may require user accounts, so I need to accept people with "EOSC accounts". I want support queue, where I can support users, publish FAQ etc.	AAI integration from US1 Register service withing node resource catalogue (dependency on US4) Enable EOSC AAI support in my service Service queue/tag/... should be created in node helpdesk ?? some requirement for helpdesk integration??	Resource Catalogue, Helpdesk, AAI	
	As an EOSC Node admin, I'm missing functionality of Resource Catalogue, where services from my node are registered and published to the EOSC federation. I'm looking for solution which can be easily adopted, installed and integrated with national AAI ...	Local installation of resource catalog service Integration with national AAI TODO: Some steps required to publish data from the catalog to the EOSC federation?	AAI, Resource Catalogue	
	As a researcher I want to have a place to store and publish my collection of data, make them visible for colleagues abroad etc. It would be great if I can also publish workflow used for data analysis (e.g. notebook file).	Node provides a data repository, and PID is assigned to the dataset and workflow. Expected as DONE. Node, EGI, and EOSC Notebook services must recognize PID and install my notebook. Download data from the repository during the computation TODO - some extension for scaling-up, some usage of execution framework, instead of direct usage of notebook service?	PID Service, Marketplace	Notebooks, Compute, Storage

ENES	As a scientist, I want to get **access to computing resources** so that I can perform interactive analysis and visualization on climate data.	1. Scientist registers to the ENES Data Space node and join the enes VO (AAI Checkin service). 2. Scientist logs in to the science gateway and selects the desired computational and software profiles (Orchestration service from EGI). 3. A ready-to-use environment is created allowing the scientist to run big data processing, data analysis and viz, AI/ML applications.	AAI	Compute, Storage, Containers, Notebooks
	As an institution/department, I want to provide my researchers with a complete and scalable data science environment including both datasets and tools to perform climate data analysis.	The institution manager requests the needed (cloud) resources from the service catalog (Resource Catalogue from the EOSC EU Node). The requested capacity allocation is supplied according to the identified cloud provider (Cloud Federation from EGI Node). A VO is created to allow members of the research group to get access to the resources (AAI Checkin service).	AAI, Resource Catalogue, Marketplace?	Compute, Storage, Containers, Notebooks
	As an IT administrator, I want to monitor my service so that I can get useful information about service performance and resource usage.	IT administrator ensures that the Node is authenticated (Federated AAI) with the monitoring service of the EGI Node. IT administrator ensures that the monitoring data from the services are made available to the monitoring service (Monitoring from EGI Node) Monitoring data (uptimes) are consumed by ARGO. EGI Node provides Service Performance Reports to inform IT administrator of fulfillment with SLAs.	AAI, Service Monitoring, Service Accounting	
	As a research division, I want to expose my data collections and make them discoverable and accessible through a federated data catalogue.	The research division staff asked for the deployment of a data space instance (Resource Catalogue from the EOSC EU Node). The instance is configured to include the relevant services and tools in terms of data access and cataloguing utilities. The local catalog is synchronized with the node thematic catalog, thus making data collections searchable and accessible at federation level.	AAI, Resource Catalogue, Marketplace?	Storage, Data sources, Containers
	As a scientist, I want to publish and/or manage my provenance documents, so that I can share and explore data lineage information.	The scientist runs a climate experiment and gets the provenance documents compliant with the W3C PROV standard. The scientist stores the JSON provenance document to the provenance service for future	PID Service	

		exploration (Provenance Service). The scientist assigns a PID to the provenance document (PID Service) to ensure citability and long-term access for the data.		
LifeWatch ERIC	As a Researcher I would evaluate the quality of a specific aquatic ecosystem, studying the phytoplakton species. To do this, I need to access to all the datasets available in the specific area I selected, finding abiotic e biotic data.I will need, also to know if there are services or VREs available to help me to calculate the ecological indicators of the quality of the ecosystem.	1. LW Metadata Catalogue has to been federated to the EOSC Resource Catalogue 2. LW Metadata Catalogue (based on Geonetwork) should harvest metadata related to datasets, services and VREs from the EOSC Resource Catalogue 3. The Researcher dont need to be registred to use the LW metadata Catalogue search 4. The Researcher can search different type of digital objects (datasets, services, VREs, Research Sites, Training Objects, etc.) in the LW Metadata Catalogue	Marketplace	Data sources
	As a IT Technician I would maintain high the quality of the LifeWatch metadata catalogue, in term of FAIRNESS and Resources availability, to offer a good service to the end-users. I will use a monitoring system to check dayly the state/availability of my services and a quality system for the FAIRNESS.	the IT technician should be registered in the LW node with a LW recognised identity provider (EOSC CORE AAI) the IT technician should log in to the services monitoring dashboard. the dashboard will use the Monitoring EOSC CORE Service, to check the state of the published services the OFAIRE algoritms/framework are used to give a measure of the Metadata FAIRNESS	Service Monitoring, AAI	
	I'm a Researcher that would like to access to a dataset available in the EOSC network, I found it in the LifeWatch metadata Catalogue but I have a troubleshoot. I need to solve it so I will use the LifeWatch Helpdesk to request support. The LifeWatch Helpdesk will forward the request to the EOSC Helpdesk and when the solution is done will inform me about the state of the ticket	the Researcher should be registered in the LW node with a LW recognised identity provider (EOSC CORE AAI) the Researcher should log in to LW Helpdesk. the Researcher should create a new ticket for support the ticket related to the EOSC issues is automatic forwarded to the EOSC Helpdesk the EOSC Helpdesk will manage the ticket updating for each state the LW Helpdesk the Researcher can continue to check the status of the ticket on the LW Helpdesk own area until the ticket is solved.	AAI, Helpdesk	
	I'm a Researcher that need to analyze the datasets in a VRE to have an high computational capability, but I'm worried about the security aspects of my research in the VRE. The LifeWatch infrastructure will	the Researcher should be registered in the LW node with a LW recognised identity provider (EOSC CORE AAI) the Researcher should log in to LW LifeBlock. LW LifeBlock will managed using BlockChain system the backups	AAI	

	backup the resulting data? Who can access to my work?	of the dataset and will log all the activities done on it		
NFDI	As a user I want to be able to log into any service offered by the node using either my institutional identity or a social login	Login will be provided by an AAI proxy chain handling user accounts and mapping. All services in the node will need to be registered against one of the proxies	AAI	
	As a researcher I want to be able to share access to resources/services with my collaboration partners from other institutions	Sharing access to resources will be possible by creating a VO in an AAI proxy for a certain purpose. VO creation is subject to policies and curation. After creation, the VO membership can be used for AuthZ in requested services, membership can be managed by the VO manager	AAI, Marketplace	File sharing
	As a service provider I want to be able to uniquely identify recurring users	Users are assigned a persistent UUID in each proxy in the AAI proxy chain so they can be traced back to their origin IdP/institute	Service Accounting, AAI	
	As an IAM admin I want to be able to lock user accounts if necessary	In each service and AAI proxy, user accounts can be disabled if found in breach of policies or compromised. Adhering to the SIRTFI framework will enable efficient communication between providers to find the root cause of any issue or breach. Contact information will also be attached to every user identity for those cases	Service Accounting, AAI	
	As a user I want to discover services offered by the node, possibly also from other nodes' catalogues	Services can be discovered in a service catalogue portal. For wider discoverability, a machine-readable service catalogue API will need to be implemented.	Resource Catalogue, Marketplace	Data sources
	As a developer I want to store, version and share my code with others while being able to also publish it as a package or container	The node offers a gitlab instance for this purpose	Resource Catalogue	Containers
	As a researcher I want to find and explore published open datasets	There will be a service package consisting of a metadata catalogue for the discovery of datasets and an infrastructure portal providing VM access for data exploration and limited computation on the data. Also, datasets can be downloaded either individually or in bulk	Marketplace	Data sources
	As a researcher I want to publish datasets and their metadata while minting a DOI for them to make them available to everyone	The metadata catalogue together with a storage service will be available to store metadata, the datasets themselves and mint a DOI after curation	Marketplace	Data sources
	As a service provider I want to be able to register my service with the node and make it discoverable	Services are curated by a governance board and onboarded into the service catalogue following policy guidelines set for	Marketplace, Resource Catalogue	

		the node in order to comply with the overall node requirements for services		
	As a user of the NFDI node I want to be able to use services in other nodes	Login to other nodes will be generally possible by making use of the AAI chain, although access might be subject to service-/node-specific requirements and authZ	AAI	
	As a user I would like to reach out support of other nodes which services I could probably use. I reach out the support of the other nodes via support channel provided by my node.	Full integration of NFDI Helpdesk with EOSC Helpdesk as well Helpdesks of other nodes, following spoke-hub architecture	Helpdesk	
	As a researcher I want to have a place to store, publish, find and access vocabularies and ontologies	The node will offer a Terminology service for this exact use case. Researchers can register and publish their vocabularies and ontologies there for everyone to access and use them	Marketplace	Data sources
NI4OS	As a regional LifeScience user, I would like to use the drug discovery and molecular dynamics services from the NI4OS Europe catalog to perform simulations using the offered cloud resources	1. Login through the AAI service to the jupiter notebook 2. Accss the data on the shared storage 3. Call the thematic serivices APIs 4. Deposit the results in the repository	AAI, Resource Catalogue, API	
	As a regional Climate researcher, I would like to use the available thematic services for climate research, as well as the deposited datasets to explore new climate models on the cloud services offered by NI4OS-Europe	1. Login in to the cloud service using AAI 2. Deploy VMs with required climate models 3. Get the datasetes from the repository 4. Deposit the results in the repository	AAI, Resource Catalogue, Cloud	
	As a regional digital cultural heritage user, I would like to access the datasets in the NI4OS-Europe repositories, as well as DCH tools to develop new models and simulations	1. Login to the DHC thematic tools using the AAI 2. Provide the tools with the necessary data from the repository 3. Perform modeling using the DHC thematic serivices 4. Deposit the results in the repository	AAI, Resource Catalogue, Thematic services	
	Aa a regional scientist, I would like to do a comparative analysus using data from various countries to make a new simulation model	1. Gather the data from the regional repositories 2. Use the regional HPC resources to perform simulations 3. Deposit the results in the data repository	AAI, Resource Catalogue, Generic services	
METROFOOD-RI	As a researcher I want to access all EOSC services with one login so that I don't have to remember multiple logins	Connecting METROFOOD AAI with EOSC AAI - currently using Keycloak, implementing connection between AAI used by EOSC and ours	AAI	
	As a member of METROFOOD-RI I want to use my login credentials in EOSC services so that I don't have to remember multiple logins	Connecting METROFOOD AAI with EOSC AAI, with having already active logins used - inserting METROFOOD logins into EOSC AAI	AAI	

	As a researcher I want to be able to browse data connected to food domain in EOSC Catalogue so that I don't have to look through multiple places	Connecting METROFOOD Catalogues with EOSC Catalogue	Marketplace	
	As a member of METROFOOD-RI I want to have my data available for others in EOSC Catalogues so that they can be accessed by other users from EOSC, with possible access modes (e.g. paying, only researchers, etc)	Connecting METROFOOD Catalogues with EOSC Catalogue (maybe Marketplace, Order Management and PID Service, depending what exactly they entail)	Marketplace	
	As a member of METROFOOD-RI I want EOSC help with actual realisation of the fairness of our data	Connecting METROFOOD Catalogues with EOSC Catalogue, help with making the data FAIR	Resource Catalogue	Data sources
	As a member of METROFOOD-RI I want to create a data space for food domain so that EOSC Data Spaces grow	Implementing FoodCASE Data Space for the food domain and connecting it with EOSC		
	As a user of METROFOOD services I want to be to contact support so that I can inform them about issues I'm experiencing	Potentially integrating with EOSC Helpdesk	Helpdesk	
	As an IT administrator I may want to connect my monitoring of services to the EU Node monitoring system so that we use one system in EOSC	Potentially connecting METROFOOD's Nagios/Kubernetes with EOSC Service Accounting	Service Monitoring	

Table 11- User Stories Summary

Tables – Data sharing matrix

Are you willing to share your AAI (users data) data with the other nodes?														
	EGI Pilot Node	**Instruct-ERIC**	**LifeWatch**	**NI4OS**	**e-INFRA CZ**	**NFDI**	**METROFOOD-RI**	**CESSDA**	**CNB-CSIC**	**ENES**	**EU Node**	**ENVRI**	**Clarin**	**SSHOC**
EGI Pilot Node	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint
Instruct-ERIC	Under restriction		Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction
LifeWatch	Under restriction	Under restriction		Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction
NI4OS	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction
e-INFRA CZ	Yes	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Yes	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint

Are you willing to share your AAI (users data) data with the other nodes?														
	EGI Pilot Node	**Instruct-ERIC**	**LifeWatch**	**NI4OS**	**e-INFRA CZ**	**NFDI**	**METROFOOD-RI**	**CESSDA**	**CNB-CSIC**	**ENES**	**EU Node**	**ENVRI**	**Clarin**	**SSHOC**
NFDI	Yes	Under restriction	Under restriction	Under restriction	Under restriction	Yes	Under restriction	Under restriction	Under restriction	Under restriction	Yes	Under restriction	Under restriction	Under restriction
METROFOOD-RI	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction		Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction
CESSDA	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint	Through normal processes for sharing AAI data under AARC blueprint
CNB-CSIC	No	No	No	No	No	No	No	No	No	No	No	No	No	No
ENES	Yes	No	No	No	No	No	No	No	No		Yes	No	No	No

Table 12- AAI Data Sharing Matrix

Are you willing to share your Service Accounting data with the other nodes?															
	EGI Pilot Node	Instruct-ERIC	LifeWatch	NI4OS	e-INFRA CZ	NFDI	METROFOOD-RI	CESSDA	CNB-CSIC	ENES	EU Node	Nordic	ENVRI	Clarin	SSHOC
EGI Pilot Node	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data
Instruct-ERIC															
LifeWatch	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
NI4OS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Are you willing to share your Service Accounting data with the other nodes?															
	EGI Pilot Node	**Instruct-ERIC**	**LifeWatch**	**NI4OS**	**e-INFRA CZ**	**NFDI**	**METROFOOD-RI**	**CESSDA**	**CNB-CSIC**	**ENES**	**EU Node**	**Nordic**	**ENVRI**	**Clarin**	**SSHOC**
e-INFRA CZ	Yes	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Yes	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data
NFDI	Yes	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Yes	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Yes	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data

Are you willing to share your Service Accounting data with the other nodes?															
	EGI Pilot Node	**Instruct-ERIC**	**LifeWatch**	**NI4OS**	**e-INFRA CZ**	**NFDI**	**METROFOOD-RI**	**CESSDA**	**CNB-CSIC**	**ENES**	**EU Node**	**Nordic**	**ENVRI**	**Clarin**	**SSHOC**
METROFOOD-RI															
CESSDA	Yes	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Yes	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Yes
CNB-CSIC	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ENES	Yes	No	No	No	No	No	No	No	No		Yes	No	No	No	No

Table 13- Service Accounting Data Sharing Matrix

Are you willing to share your Service Monitoring data with the other nodes?															
	EGI Pilot Node	**Instruct-ERIC**	**LifeWatch**	**NI4OS**	**e-INFRA CZ**	**NFDI**	**METROFOOD-RI**	**CESSDA**	**CNB-CSIC**	**ENES**	**EU Node**	**Nordic**	**ENVRI**	**Clarin**	**SSHOC**
EGI Pilot Node	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data
Instruct-ERIC															
LifeWatch	Yes	No		No	No	No	No	No	No	No	Yes	No	No	No	No
NI4OS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Are you willing to share your Service Monitoring data with the other nodes?															
	EGI Pilot Node	**Instruct-ERIC**	**LifeWatch**	**NI4OS**	**e-INFRA CZ**	**NFDI**	**METROFOOD-RI**	**CESSDA**	**CNB-CSIC**	**ENES**	**EU Node**	**Nordic**	**ENVRI**	**Clarin**	**SSHOC**
e-INFRA CZ	Yes	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Yes	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data
NFDI	Yes	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Yes	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Yes	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data

Are you willing to share your Service Monitoring data with the other nodes?															
	EGI Pilot Node	**Instruct-ERIC**	**LifeWatch**	**NI4OS**	**e-INFRA CZ**	**NFDI**	**METROFOOD-RI**	**CESSDA**	**CNB-CSIC**	**ENES**	**EU Node**	**Nordic**	**ENVRI**	**Clarin**	**SSHOC**
METROFOOD-RI	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction		Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction
CESSDA	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CNB-CSIC	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ENES	Yes	No	No	No	No	No	No	No	No		Yes	No	No	No	No

*Table 14- **Service Monitoring** Data Sharing Matrix*

Are you willing to share your Research Product Accounting data with the other nodes?

	EGI Pilot Node	Instruct-ERIC	LifeWatch	NI4OS	e-INFRA CZ	NFDI	METROFOOD-RI	CESSDA	CNB-CSIC	ENES	EU Node	Nordic	ENVRI	Clarin	SSHOC
EGI Pilot Node	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data
Instruct-ERIC															
LifeWatch	Under restriction	Under restriction		Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction		
NI4OS	No	No	No	No	No	No	No	No	No	No	Yes	No	No	No	No

Are you willing to share your Research Product Accounting data with the other nodes?

	EGI Pilot Node	Instruct-ERIC	LifeWatch	NI4OS	e-INFRA CZ	NFDI	METROFOOD-RI	CESSDA	CNB-CSIC	ENES	EU Node	Nordic	ENVRI	Clarin	SSHOC
e-INFRA CZ	Yes	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data
NFDI	Yes	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Yes	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Yes	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data

Are you willing to share your Research Product Accounting data with the other nodes?															
	EGI Pilot Node	**Instruct-ERIC**	**LifeWatch**	**NI4OS**	**e-INFRA CZ**	**NFDI**	**METROFOOD-RI**	**CESSDA**	**CNB-CSIC**	**ENES**	**EU Node**	**Nordic**	**ENVRI**	**Clarin**	**SSHOC**
METROFOOD-RI															
CESSDA	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Yes	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Subject either to federation data sharing agreements, or bilateral agreement with recipient Node, in any case not including any personnaly-identifiable data	Yes
CNB-CSIC	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ENES	No	No	No	No	No	No	No	No	No		No	No	No	No	No

Table 15- Research Product Accounting Data Sharing Matrix

Are you willing to share your Resource Catalogue data with the other nodes?															
	EGI Pilot Node	**Instruct-ERIC**	**LifeWatch**	**NI4OS**	**e-INFRA CZ**	**NFDI**	**METROFOOD-RI**	**CESSDA**	**CNB-CSIC**	**ENES**	**EU Node**	**Nordic**	**ENVRI**	**Clarin**	**SSHOC**
EGI Pilot Node	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue
Instruct-ERIC															
LifeWatch	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NI4OS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Are you willing to share your Resource Catalogue data with the other nodes?															
	EGI Pilot Node	**Instruct-ERIC**	**LifeWatch**	**NI4OS**	**e-INFRA CZ**	**NFDI**	**METROFOOD-RI**	**CESSDA**	**CNB-CSIC**	**ENES**	**EU Node**	**Nordic**	**ENVRI**	**Clarin**	**SSHOC**
e-INFRA CZ	Yes	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue
NFDI	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Under restriction	Under restriction	Under restriction	Under restriction	Yes	Under restriction	Under restriction	Under restriction	Under restriction	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Under restriction	Under restriction	Under restriction	Under restriction
METROFOOD-RI	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction		Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction

Are you willing to share your Resource Catalogue data with the other nodes?															
	EGI Pilot Node	**Instruct-ERIC**	**LifeWatch**	**NI4OS**	**e-INFRA CZ**	**NFDI**	**METROFOOD-RI**	**CESSDA**	**CNB-CSIC**	**ENES**	**EU Node**	**Nordic**	**ENVRI**	**Clarin**	**SSHOC**
CESSDA	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue	Yes, as long as visibility/access/use to catalogue entries was still managed under same terms & conditions as in our own catalogue
CNB-CSIC	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ENES	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes

Table 16- Resource Catalogue Data Sharing Matrix

Are you willing to share your Order Management data with the other nodes?															
	EGI Pilot Node	**Instruct-ERIC**	**LifeWatch**	**NI4OS**	**e-INFRA CZ**	**NFDI**	**METROFOOD-RI**	**CESSDA**	**CNB-CSIC**	**ENES**	**EU Node**	**Nordic**	**ENVRI**	**Clarin**	**SSHOC**
EGI Pilot Node	Only if the resources being ordered was from the other Node	Only if the resources being ordered was from the other Node	Only if the resources being ordered was from the other Node	Only if the resources being ordered was from the other Node	Only if the resources being ordered was from the other Node	Only if the resources being ordered was from the other Node	Only if the resources being ordered was from the other Node	Only if the resources being ordered was from the other Node	Only if the resources being ordered was from the other Node	Only if the resources being ordered was from the other Node	Only if the resources being ordered was from the other Node	Only if the resources being ordered was from the other Node	Only if the resources being ordered was from the other Node	Only if the resources being ordered was from the other Node	Only if the resources being ordered was from the other Node
Instruct-ERIC															
LifeWatch	Under restriction	No		No	No	No	No	No	No	No	Under restriction	No	Under restriction	No	No
NI4OS	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
e-INFRA CZ	Only if the resources being ordered was from the other Node	No	No	No	No	No	No	No	No	No	Under restriction	No	No	No	No
NFDI	Only if the resources being ordered was from the other Node	Under restriction	No	No	No	Yes	No	No	No	No	Only if the resources being ordered was from the other Node	No	No	No	No
METROFOOD-RI	No	No	No	No	No	No		No	No	No	No	No	No	No	No

Are you willing to share your Order Management data with the other nodes?															
	EGI Pilot Node	**Instruct-ERIC**	**LifeWatch**	**NI4OS**	**e-INFRA CZ**	**NFDI**	**METROFOOD-RI**	**CESSDA**	**CNB-CSIC**	**ENES**	**EU Node**	**Nordic**	**ENVRI**	**Clarin**	**SSHOC**
CESSDA															
CNB-CSIC	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ENES	No	No	No	No	No	No	No	No	No		No	No	No	No	No

Table 17- Order Management Data Sharing Matrix

Are you willing to share your Helpdesk data with the other nodes?															
	EGI Pilot Node	**Instruct-ERIC**	**LifeWatch**	**NI4OS**	**e-INFRA CZ**	**NFDI**	**METROFOOD-RI**	**CESSDA**	**CNB-CSIC**	**ENES**	**EU Node**	**Nordic**	**ENVRI**	**Clarin**	**SSHOC**
EGI Pilot Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node
Instruct-ERIC															
LifeWatch	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NI4OS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
e-INFRA CZ	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Are you willing to share your Helpdesk data with the other nodes?															
	EGI Pilot Node	**Instruct-ERIC**	**LifeWatch**	**NI4OS**	**e-INFRA CZ**	**NFDI**	**METROFOOD-RI**	**CESSDA**	**CNB-CSIC**	**ENES**	**EU Node**	**Nordic**	**ENVRI**	**Clarin**	**SSHOC**
NFDI	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Under restriction	Under restriction	Under restriction	Under restriction	Yes	Under restriction	Under restriction	Under restriction	Under restriction	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Under restriction	Under restriction	Under restriction	Under restriction
METROFOOD-RI	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction		Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction

Are you willing to share your Helpdesk data with the other nodes?															
	EGI Pilot Node	**Instruct-ERIC**	**LifeWatch**	**NI4OS**	**e-INFRA CZ**	**NFDI**	**METROFOOD-RI**	**CESSDA**	**CNB-CSIC**	**ENES**	**EU Node**	**Nordic**	**ENVRI**	**Clarin**	**SSHOC**
CESSDA	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node	Yes, happy to receive helpdesk tickets from other nodes if they relate to our catalogue items, and yes if we receive helpdesk requests regarding catalogue entries from another Node
CNB-CSIC	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
ENES	No	No	No	No	No	No	No	No	No		No	No	No	No	No

Table 18- Helpdesk Data Sharing Matrix

Are you willing to share your Marketplace data with the other nodes?															
	EGI Pilot Node	**Instruct-ERIC**	**LifeWatch**	**NI4OS**	**e-INFRA CZ**	**NFDI**	**METROFOOD-RI**	**CESSDA**	**CNB-CSIC**	**ENES**	**EU Node**	**Nordic**	**ENVRI**	**Clarin**	**SSHOC**
EGI Pilot Node	No since this data mostly reflects behaviour of individual users in our Marketplace (or vice versa)	No since this data mostly reflects behaviour of individual users in our Marketplace (or vice versa)	No since this data mostly reflects behaviour of individual users in our Marketplace (or vice versa)	No since this data mostly reflects behaviour of individual users in our Marketplace (or vice versa)	No since this data mostly reflects behaviour of individual users in our Marketplace (or vice versa)	No since this data mostly reflects behaviour of individual users in our Marketplace (or vice versa)	No since this data mostly reflects behaviour of individual users in our Marketplace (or vice versa)	No since this data mostly reflects behaviour of individual users in our Marketplace (or vice versa)	No since this data mostly reflects behaviour of individual users in our Marketplace (or vice versa)	No since this data mostly reflects behaviour of individual users in our Marketplace (or vice versa)	No since this data mostly reflects behaviour of individual users in our Marketplace (or vice versa)	No since this data mostly reflects behaviour of individual users in our Marketplace (or vice versa)	No since this data mostly reflects behaviour of individual users in our Marketplace (or vice versa)	No since this data mostly reflects behaviour of individual users in our Marketplace (or vice versa)	No since this data mostly reflects behaviour of individual users in our Marketplace (or vice versa)
Instruct-ERIC															
LifeWatch	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NI4OS	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
e-INFRA CZ	Yes	Under restriction	Under restriction	Under restriction	Yes	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction
NFDI	Yes	Under restriction	Under restriction	Under restriction	Under restriction	Yes	Under restriction	Under restriction	Under restriction	Under restriction	Yes	Under restriction	Under restriction	Under restriction	Under restriction
METROFOOD-RI															
CESSDA	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Yes	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction	Under restriction

Are you willing to share your Marketplace data with the other nodes?															
	EGI Pilot Node	**Instruct-ERIC**	**LifeWatch**	**NI4OS**	**e-INFRA CZ**	**NFDI**	**METROFOOD-RI**	**CESSDA**	**CNB-CSIC**	**ENES**	**EU Node**	**Nordic**	**ENVRI**	**Clarin**	**SSHOC**
CNB-CSIC	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
ENES	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes

Table 18- AAI Data Sharing Matrix