The EOSC Partnership Monitoring Framework

V7.0

BRUSSELS, THE 21ST OF JUNE 2024

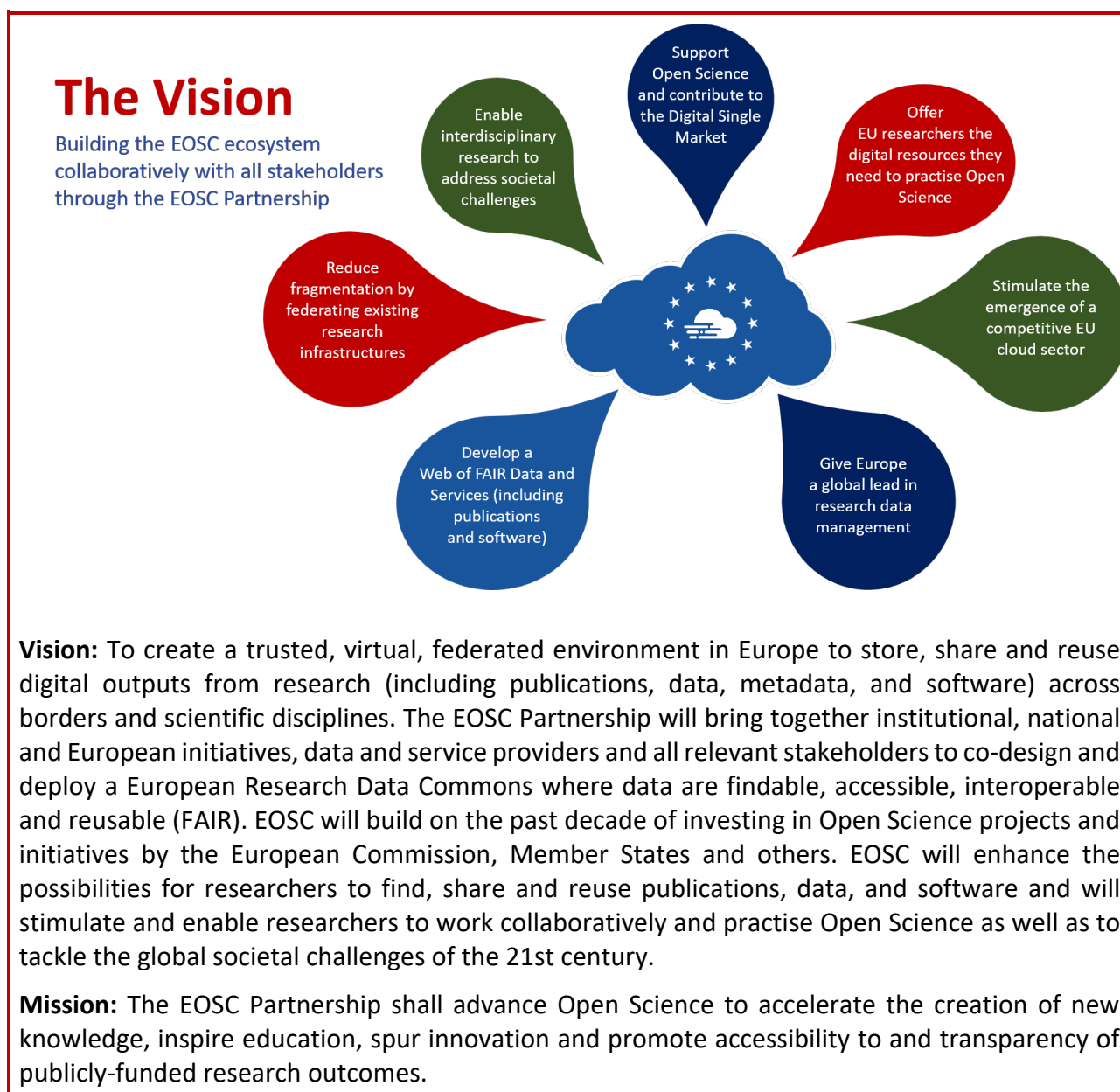This monitoring framework is co-developed by the EC and the EOSC Association.

This version (V7.0, 21 June 2024) of the EOSC Partnership Monitoring Framework was adapted from V.6.7 (March 2022), with the aim to modernise the indicators with respect to the evolving EOSC state of play.

Table of Contents

1. The Vision: Building the EOSC Ecosystem through the EOSC Partnership

The European Open Science Cloud (EOSC) Partnership was launched with a Memorandum of Understanding between the European Commission ('EC', or 'Commission') and the EOSC Association AISBL ('EOSC-A' or 'EOSC Association'), in June 2021. The aim was to enable a trusted, virtual, federated environment in Europe to store, share and reuse digital outputs from research (including publications, data, metadata and software), across borders and scientific disciplines. With invited representatives of the EU Member States and Associated Countries to the EU research framework programme (MS/AC) in its governance bodies, the EOSC Partnership represents a new governance model for EOSC, placing stakeholders across Europe firmly in the driving seat. It will ensure, until at least the end of 2030, a coordinated approach in investments and initiatives in the EOSC ecosystem, from the European Commission, the MS/AC and the EOSC stakeholders, and will ensure directionality and complementarity of commitments and contributions, at all levels.

The Vision

Building the EOSC ecosystem collaboratively with all stakeholders through the EOSC Partnership

- Enable interdisciplinary research to address societal challenges
- Support Open Science and contribute to the Digital Single Market
- Offer EU researchers the digital resources they need to practise Open Science
- Reduce fragmentation by federating existing research infrastructures
- Stimulate the emergence of a competitive EU cloud sector
- Develop a Web of FAIR Data and Services (including publications and software)
- Give Europe a global lead in research data management

Vision: To create a trusted, virtual, federated environment in Europe to store, share and reuse digital outputs from research (including publications, data, metadata, and software) across borders and scientific disciplines. The EOSC Partnership will bring together institutional, national and European initiatives, data and service providers and all relevant stakeholders to co-design and deploy a European Research Data Commons where data are findable, accessible, interoperable and reusable (FAIR). EOSC will build on the past decade of investing in Open Science projects and initiatives by the European Commission, Member States and others. EOSC will enhance the possibilities for researchers to find, share and reuse publications, data, and software and will stimulate and enable researchers to work collaboratively and practise Open Science as well as to tackle the global societal challenges of the 21st century.

Mission: The EOSC Partnership shall advance Open Science to accelerate the creation of new knowledge, inspire education, spur innovation and promote accessibility to and transparency of publicly-funded research outcomes.

The creation of the European Open Science Cloud Partnership forms the central element in the development of the EOSC ecosystem, defined by the broad development of the support systems for Open Science and of digital support for scientific output, in Europe. Leveraging the EOSC Strategic Research and Innovation Agenda (SRIA), defined by the EOSC Governance, the partnership has a number of key objectives: to ensure that standards are defined, and services and tools developed to enable researchers to find, access, reuse and combine (FAIR) results from all areas of research; to make Open Science practices and skills become the new normal and are rewarded and taught across Europe; and to establish a sustainable and federated infrastructure enabling open sharing of scientific results.

The EOSC Association and the European Commission will focus on developing a web of FAIR data and related services for science, which defines the ultimate goal of the EOSC. In doing so, the EOSC Association will contribute to the vision illustrated in the figure above. In the context of the EOSC Partnership, the forthcoming Horizon Europe projects will work in collaboration with the EOSC Association to address several aspects of the implementation. The EOSC ecosystem comprises many stakeholders and initiatives. With the ambition to bring together more key stakeholders in this ecosystem, the EOSC Association wil provide a single voice for advocacy and representation for the broader EOSC stakeholder community.

2. European Partnership for the EOSC - Monitoring and evaluation Framework (MF)

General Objectives	GO1 Ensure that Open Science practices and skills are rewarded and taught, becoming the "new normal"
A measure of success *(General objectives are linked to the Specific objectives and to their KPIs)*	The way that researchers, as well as the public and private sectors create, share and exploit digital research outputs (data, publications, protocols, methodologies, software, code, etc.) within and across research disciplines is gradually transformed through the mainstreaming of Open Science practices, leading to better quality, validation, more innovation and higher productivity of research.
State of Play	(2022) To Be Determined (TBD)
Data Reporting	EOSC Association
Data Sources	A combination of the reports, studies, project reporting obtained for the linked specific & operational objectives
Data Provider	EOSC Association

	GO2 Enable the definition of standards, and the development of tools and services to allow researchers to find, access, reuse and combine results
A measure of success *(General objectives are linked to the Specific objectives and to their KPIs)*	European researchers can find, access and re-use an increasing amount of research outputs across borders and disciplines through state-of-the-art technologies underpinning discoverability and interoperability of research outputs;
State of Play	(2022) TBD
Data Reporting	EOSC Association
Data Sources	A combination of the reports, studies, project reporting obtained for the linked specific & operational objectives
Data Provider	EOSC Association

	GO3 Establish a sustainable and federated infrastructure enabling open sharing of scientific results
A measure of success *(General objectives are linked to the Specific objectives and to their KPIs)*	Increased availability of services that can be integrated in the existing workflows of researchers across different disciplines, facilitating the cross-disciplinary collaboration, reducing the time to results and increasing productivity.
State of Play	(2022) TBD
Data Reporting	EOSC Association
Data Sources	A combination of the reports, studies, project reporting obtained for the linked specific & operational objectives
Data Provider	EOSC Association

Strategic and operational objective	SO1 Increase the number of relevant research results that are made available as open as possible by researchers performing publicly funded research
KPI	SO1_01 The percentage of publications from EOSC Association Research Performing members that have been available in immediate open access in the last 12 months.
Baseline	(2022) TBD
Target	(2023) 70% of the publications from the target year from the EOSC Association research-performing members become immediate open access.
Data Reporting	EOSC Association
Data Sources	Internal Reports, OpenAIRE Database
Data Provider	EOSC-A members
Collection Methodology	Surveys and/or desk-studies

Strategic and operational objective	SO2 Professional data stewards are increasingly available in research performing organisations in Europe to support Open Science
KPI	SO2_01 The number of countries where the national education system recognises curricula for data stewards
Baseline	(2022) TBD
Target	(2025) 5 national education systems recognise curricula for data stewards.
Data Reporting	EOSC Association
Data Sources	a. National reports, ERA Forum b. Relevant EC studies, if available
Data Provider	a. EOSC-SB, national agencies, mandated organisations b. EC* (*the role of the EC will be limited to providing relevant studies, if available)
Collection Methodology	Survey

Strategic and operational objective	**SO2 Professional data stewards are increasingly available in research performing organisations in Europe to support Open Science**
KPI	SO2_02 The percentage of EOSC Association members whose research is supported by professional data stewards.
Baseline	(2022) TBD
Target	(2025) 50% of the RPOs that are EOSC Association members have data stewards to support their research.
Data Reporting	EOSC Association
Data Sources	Stats from RPOs
Data Provider	RPOs that are EOSC Association members
Collection Methodology	Survey

Strategic and operational objective	**SO3 Development and adoption of incentives for researchers to perform Open Science**
KPI	SO3_01 Percentage of research-funding members of EOSC-A that require data sharing and/or incentivise data re-use
Baseline	(2022) TBD
Target	(2025) 70% of research-funding members of the EOSC Association require data sharing and/or incentivise reuse.
Data Reporting	EOSC Association
Data Sources	Policies/reports of research-funding members of EOSC-A
Data Provider	Research-funding members of EOSC-A, National Agencies
Collection Methodology	Survey

Strategic and operational objective	SO4 Increasing amounts of research data produced by publicly funded research in Europe are FAIR by design
KPI	SO4_01 The number of repositories in EOSC that have a certification (e.g. CoreTrustSeal).
Baseline	(2022) TBD
Target	(2025) 30% of the repositories in the EOSC will have a certification (e.g. CoreTrustSeal);
Data Reporting	EOSC Association
Data Sources	a. EU Node resource hub b. RE3Data unique catalogue of repositories/ Core Trust Seal c. FAIR-Data Support Actions under HE INFRAEOSC (e.g.: FAIR Impact - ex FAIRsFAIR)
Data Provider	a. EOSC Association/EC
Collection Methodology	Desk study

Strategic and operational objective	SO4 Increasing amounts of research data produced by publicly funded research in Europe are FAIR by design
KPI	SO4_02 The number of thematic European research infrastructures (as a proxy for all major scientific disciplines) with documented standards and protocols for data sharing and re-use.
Baseline	(2022) TBD
Target	(2023) 60% of thematic European research infrastructures have documented standards and protocols for data sharing and reuse.
Data Reporting	EOSC Association
Data Sources	a. ESFRI reports b. ESFRI Cluster projects reports
Data Provider	a. ESFRI Research Infrastructures b. Coordinators of ESFRI Cluster projects and relevant HE INFRAEOSC projects, Representatives from ESFRI RIs
Collection Methodology	Survey

Strategic and operational objective	**SO4 Increasing amounts of research data produced by publicly funded research in Europe are FAIR by design** In particular: **Increasing amounts of project DATA MANAGEMENT Plans require FAIR DATA.**
KPI	SO4_03 Percentage of members of the EOSC Association that have policies which require FAIR to be implemented in project design via Data Management Plans.
Baseline	(2022) TBD
Target	(2023)70% of the members of the EOSC Association have policies which require FAIR to be implemented in project design via Data Management Plans.
Data Reporting	EOSC Association
Data Sources	EOSC Association reports/surveys EOSC Observatory
Data Provider	Members of the EOSC Association
Collection Methodology	Survey

Strategic and operational objective	**SO7 EOSC is operationalised and provides a stable and valuable infrastructure supporting researchers addressing societal challenges**
KPI	SO7_01 The number of major thematic research and data infrastructures that have developed data and/or services specifically aiming to be offered through EOSC.
Baseline	(2022) TBD
Target	(2027) All major thematic research and data infrastructures have developed data and/or services specifically aiming to be offered through EOSC
Data Reporting	EOSC Association
Data Sources	a. European Research Infrastructures b. EOSC Association c. Relevant EC studies, if available d. EOSC Platform
Data Provider	a. Europen Research Infrastructures managers b. EOSC Association member base c. EC* (*the role of the EC will be limited to providing relevant studies, if available) d. Operators of the EOSC Platform
Collection Methodology	Survey

Strategic and operational objective	SO9 EOSC increasingly establishes ties with related initiatives from regions around the world and becomes a partner in global cooperation frameworks for Open Science
KPI	SO9_01 The number of observers joining the Association from outside EU MS/AC.
Baseline	(2022) TBD
Target	(2025) At least 10 geographically spread observer organisations have joined EOSC from outside EU MS/AC
Data Reporting	EOSC Association
Data Sources	a. RDA data, data from other global initiatives b. EU Data Spaces , International partnerships (e.g. EuroHPC, etc.).
Data Provider	a. RDA managers b. EU Data Spaces governance, international partnerships governance (e.g. EuroHPC)
Collection Methodology	Survey and desk studies

Strategic and operational objective	SO9 EOSC increasingly establishes ties with related initiatives from regions around the world and becomes a partner in global cooperation frameworks for Open Science
KPI	SO9_02 The number of connections and/or collaborations between EOSC (also via its Bodies) and non-EU/international cloud and commons initiatives.
Baseline	(2022) TBD
Target	(2027) EOSC (also via its bodies) establishes connections and/or collaborations with at least 3 non-EU/international cloud and commons initiatives
Data Reporting	EOSC Association
Data Sources	a. RDA data, World FAIR, data from other global initiative b.International partnerships.
Data Provider	a. RDA managers b. EOSC governance.
Collection Methodology	Survey and/or desk studies

Strategic and operational objective	**OO1 Deliver and operate all the necessary components of the MVEto share openly research data, publications, software, tools, and services while attracting increasing numbers and categories of users (public and private) (based on a governance structure representative of the various stakeholders and including domain-specific user environments supporting Open Science) by 2025**
KPI	OO1_01 The number of operational and discoverable EOSC Core federating capabilities
Baseline	(2022) TBD
Target	(2025) 4 EOSC core federating capabilities of EOSC are developed to make the EOSC ecosystem accessible to researchers across disciplines and countries
Data Reporting	EOSC Association
Data Sources	a. Reports on the EOSC Platform /EU Node
Data Provider	a. Operators of the EOSC Platform / EU Node
Collection Methodology	Desk study

Strategic and operational objective	**OO1 Deliver and operate all the necessary components of the MVEto share openly research data, publications, software, tools, and services while attracting increasing numbers and categories of users (public and private) (based on a governance structure representative of the various stakeholders and including domain-specific user environments supporting Open Science) by 2025**
KPI	OO1_02 Types and geographic spread (EU MS) of members in EOSC-A, and members of the Board of Directors (BoD), to represent the varied stakeholders' nature (RPOs, RFOS, Libraries, Service Providers, Mandated Organisations) and a varied EU MS representation.
Baseline	(2022) TBD
Target	(2025) The EOSC-A membership has grown by at least 25 new members representing different stakeholders in the EOSC Ecosystem (RPOs, RFOS, Libraries, Service Providers, Mandated Organisations) coming from at least 5 different EU MS. In addition, a balanced representation is also achieved in the Board of Directors.
Data Reporting	EOSC Association
Data Sources	a. EOSC Association stats re. Board of Directors and membership b.
Data Provider	EOSC-A
Collection Methodology	Survey and/or desk studies

Strategic and operational objective	**OO2 Make monitoring systems to gather data and evidence on best open science practices accessible through EOSC (including the development of a dashboard to monitor the evolving landscape of policies, infrastructures and open resources made accessible via EOSC by 2023)**
KPI	OO2_01 A monitoring system (like a dashboard) to gather OS metrics of the evolving landscape of policies, infrastructures and open resources can be accessed through EOSC.
Baseline	(2022) TBD
Target	(2023) A monitoring system (like a dashboard) to gather OS data and feed metrics of the evolving landscape of policies, infrastructures and open resources can be accessed through EOSC.
Data Reporting	EOSC Association
Data Sources	a. EOSC Observatory b.EOSC Steering Board, subgroup A
Data Provider	a. EOSC Future b. Members of the EOSC Steering Board - subgroup A
Collection Methodology	Survey and/or desk studies

Strategic and operational objective	**OO3 Increasingly mainstream Open Science skills in European research-performing organisations (RPOs) including through the uptake of curricula and training frameworks related to data stewardship through the lifespan of the Partnership**
KPI	OO3_01 Percentage of RPO members of the Association that provide training for the upskilling of their researchers in Open Science.
Baseline	(2022) TBD
Target	(2025) 50% of EOSC-A RPOs across Europe offer training on Open Science for researchers and data stewards.
Data Reporting	EOSC Association
Data Sources	EOSC Association surveys
Data Provider	EOSC Association RPO members
Collection Methodology	Survey

Strategic and operational objective	OO4 Co-develop domain-specific standards and adopt Open Science practices through the engagement with research communities during the lifespan of the Partnership
KPI	OO4_01 Number of organisations which have engaged in initiatives that provide community/discipline specific recommendations on standards and/or Open Science best practices
Baseline	(2022) TBD
Target	(2023) . 50% of the EOSC-A members have engaged in initiatives that provide community/discipline specific recommendations on standards and/or Open Science best practices
Data Reporting	EOSC Association
Data Sources	EOSC Association surveys
Data Provider	ESFRI RIs and other major thematic RIs
Collection Methodology	Survey

Strategic and operational objective	OO5 Provide the technical components of a FAIR ecosystem for uptake and customisation by the communities by 2023 (including open specifications, standards, schemas, application programming interfaces (APIs), metadata frameworks supporting FAIR digital objects and their automated processing)
KPI	OO5_01 The number of Service Providers and Research Performing Organsation in EOSC-A that have participated in developing components of a FAIR ecosystem, such as standards, schemas, APIs, metadata frameworks
Baseline	(2022) TBD
Target	(2023) 40% of the Service Providers and Research Performing Organsations in EOSC-A have participated in developing components of a FAIR ecosystem, such as standards, schemas, APIs, metadata frameworks
Data Reporting	EOSC Association
Data Sources	a. ESFRI Cluster projects, ESFRI b. EC Horizon Dashboard and/or EC Open Data Portal and relevant EC studies, if available
Data Provider	a. RI managers b. EC* (*the role of the EC will be limited to providing public access to the data portal/dashboard, and to the provision of relevant studies, if available)
Collection Methodology	Survey and/or Desk Studies

Strategic and operational objective	**OO6 Provide the metrics and tools to measure the adoption of the FAIR principles for research artefacts and provide frameworks to help in certifying that repository services enable FAIR in EOSC throughout the lifespan of the Partnership**
KPI	OO6_01 The number of organisations that make use of available FAIR assessment tools to measure the FAIRness of different research digital objects
Baseline	(2022) TBD
Target	(2025) At least 20% of EOSC-A members make use of FAIR assessment to measure the FAIRness of datasets, software and DMPs, respectively
Data Reporting	EOSC Association
Data Sources	TF FAIR
Data Provider	All EOSC-A members
Collection Methodology	Survey

Strategic and operational objective	**OO7 Co-develop a first generation of a robust pan-European network of infrastructures for software source code (including incentives for the effective documentation and sharing of research software) by 2025.**
KPI	OO7_01 Percentage of research funders who are members of the EOSC association that include software source code as a research output to be described and managed in their Data Management Plans (DMPs).
Baseline	(2022) TBD
Target	(2025) 50% of research funders across the members of the EOSC Association include software source code as a research output to be described and managed in their Data Management Plans (DMPs).
Data Reporting	EOSC Association
Data Sources	a. EOSC Association member base
Data Provider	a. EOSC Association RFOs/ Funders members
Collection Methodology	Survey

Strategic and operational objective	**OO7 Co-develop a first generation of a robust pan-European network of infrastructures for software source code (including incentives for the effective documentation and sharing of research software) by 2025.**
KPI	OO7_03 The number of organisations - EOSC-A members, participating in a pan-European network of infrastructures for preservation, management and sharing of research software source code (including incentives for the effective documentation and sharing of research software) by 2025;
Baseline	(2022) TBD
Target	(2025) 10% of EOSC-A members participate in pan-European networks of infrastructures for preservation, management and sharing of research software source code (including incentives for the effective documentation and sharing of research software)
Data Reporting	EOSC Association
Data Sources	a. EOSC Association b. ESFRI c. Relevant HE INFRAEOSC projects (e.g.: EVERSE)
Data Provider	a. EOSC Association RFOs/ Funders members b. ESFRI governance c. Project coordinators for relevant HE INFRAEOSC projects.
Collection Methodology	Survey

Strategic and operational objective	**OO8 Co-design and adopt a rewards and recognition framework for FAIR and open data practices in research during the lifespan of the Partnership**
KPI	OO8_01 Number of policy fora where rewards and recognition frameworks for FAIR and open data practices are co-designed, where the EOSC Association is represented.
Baseline	(2022) TBD
Target	(2023) The EOSC Association is represented and active in policy fora where rewards and recognition frameworks are co-designed
Data Reporting	EOSC Association
Data Sources	COARA, Research Funders WG, Science Europe, RDA, FDO Forum
Data Provider	EOSC-A, RDA, FDO, COARA
Collection Methodology	Survey

Strategic and operational objective	**OO8 Co-design and adopt a rewards and recognition framework for FAIR and open data practices in research during the lifespan of the Partnership**
KPI	OO8_02 Number of Association members that recognise open science activities in research career assessments (i.e.: FAIR and open data practices are linked to researchers' online records, publications linked to a researcher; open data practices and FAIR data practices are linked back to the researcher who can get credit for this).
Baseline	(2022) TBD
Target	(2025) 50% of the EOSC association members recognise Open Science activities in research career assessments.
Data Reporting	EOSC Association
Data Sources	EOSC Association surveys of their members
Data Provider	EOSC-A members and TFs
Collection Methodology	Survey

Strategic and operational objective	**OO9 Implement and evolve the EOSC Rules of participation and onboarding process for EOSC providers and increase the number of service providers and services offered progressively over the course of the Partnership**
KPI	OO9_01 Establishment of an "RoP Board" to monitor and report on the qualitative and quantitative compliance with the Rules of Participation.
Baseline	(2022) TBD
Target	(2023) An "RoP Board" is established to monitor and report on the qualitative and quantitative compliance with the Rules of Participation.
Data Reporting	EOSC Association
Data Sources	a. EOSC Association reports
Data Provider	a. EOSC Association and EOSC TFs
Collection Methodology	Survey

Strategic and operational objective	**OO10 Deploy and operate an authentication and authorisation infrastructure (AAI) framework to manage user identity and access by 2024**
KPI	OO10_01 An authentication and authorisation infrastructure (AAI) framework to manage user identity and access is deployed and operational
Baseline	(2022) TBD
Target	(2025) A federated AAI framework is deployed and operational allowing service providers to offer services to identified users, and allowing users to gain access to services
Data Reporting	EOSC Association
Data Sources	a. EOSC Future b. HE INFRAEOSC projects
Data Provider	a.EOSC Future project coordinator b. Project coordinators for HE INFRAEOSC projects
Collection Methodology	Survey

Strategic and operational objective	**OO11 Implement the EOSC persistent identifier (PID) policy and architecture by 2025**
KPI	OO11_01 The Number of RPO members of the EOSC Association that adopt and use the persistent identifier allocation practice.
Baseline	(2022) TBD
Target	(2025) Persistent identifier allocation and usage is the adopted practice by all RPO members of the EOSC Association.
Data Reporting	EOSC Association
Data Sources	a.EOSC Association surveys across its RPO members
Data Provider	a. EOSC Association RPOs members
Collection Methodology	Survey and/or Desk Studies

Strategic and operational objective	**OO12 Co-develop a minimum metadata framework and provide a common search and access mechanism to EOSC resources across the EOSC federation by 2025**
KPI	OO12_01 a) Number of members of the Association that participate in for a to agree on standards for minimum metadata requirements; And: b) Number of members of the EOSC-A that have policies in place to enforce the adoption of standard minimum metadata.
Baseline	(2022) TBD
Target	(2025) Standards for minimum metadata requirements are agreed and are progressively adopted by relevant EOSC Association Members.
Data Reporting	EOSC Association
Data Sources	EOSC Association reporting of its members
Data Provider	EOSC Association RPOs, RFOs
Collection Methodology	Survey

Strategic and operational objective	**OO13 Continuously monitor and promote the increased uptake of core services and EOSC resources, access to EOSC Exchange tools and services and ensure a feedback loop with the users**
KPI	OO13_01 Frequency of EOSC stakeholder fora that are organised by: a) the EOSC Association; and b) by INFRAEOSC projects.
Baseline	(2022) TBD
Target	(2023) At least one EOSC stakeholder forum takes place; and: plans exist for yearly events.
Data Reporting	EOSC Association
Data Sources	a. EOSC Association workplans b. INFRAEOSC project reports
Data Provider	a. EOSC-A b. EC
Collection Methodology	Desk study

Strategic and operational objective	**OO13 Continuously monitor and promote the increased uptake of core services and EOSC resources, access to EOSC Exchange tools and services and ensure a feedback loop with the users**
KPI	OO13_02 The number of EOSC-A Task Forces which are set up with representation of users and service providers from different disciplines that issue relevant recommendations and launch relevant consultations for the continued development of EOSC.

Baseline	(2022) 13 TFs have been created by the EOSC Association, under five advisory group umbrellas (https://eosc.eu/advisory-groups):
	 ● Implementation of EOSC
	     o PID policy and implementation
	     o Researcher engagement and adoption
	     o Rules of Participation (RoP) compliance monitoring
	 ● Metadata and data quality
	     o FAIR metrics and data quality
	     o Semantic interoperability
	 ● Research careers and curricula
	     o Data stewardship curricula and career paths
	     o Research careers, recognition and credit
	     o Upskilling countries to engage in EOSC
	 ● Technical challenges on EOSC
	     o AAI Architecture
	     o Infrastructures for quality research software
	     o Technical interoperability of data and services
	 ● Sustaining EOSC
	     o Financial Sustainability
	     o Long-term data preservation

Target	(2023) The EOSC-A sets up five Task Forces with representation of users and service providers from different disciplines. The TFs issue relevant recommendations and launch relevant consultations for the continued development of EOSC.
Data Reporting	EOSC Association
Data Sources	EOSC Association internal reports
Data Provider	EOSC-A TFs
Collection Methodology	Survey

Strategic and operational objective	OO14 Define models for availability and costing of services across borders
KPI	OO14_01 Percentage of service providers who are members of the Association that have developed, adopted or tested models for the availability and costing of transnational services.
Baseline	(2022) TBD
Target	(2023) At least 30% of the EOSC Association service provider members have developed, adopted or tested models for the availability and costing of their transnational services.
Data Reporting	EOSC Association
Data Sources	Organisation reports by service provider organisations that are members of the EOSC-A
Data Provider	Service provider organisations that are members of the EOSC-A EOSC-A TFs
Collection Methodology	Survey

3. The Partnership Monitoring Framework as a living document

The monitoring framework will be further developed and discussed with the EOSC Association membership. In particular:

3.1 - **EOSC-A and EC will work together and define the MF information workflow, including:**	3.2 - **EOSC-A will start implementing the monitoring framework, in 2022, with the establishment of the baseline for all KPIs, as follows:**	3.3 - **EC will implement the provision of the EC-data stream.**

● Refine quantifiable KPIs and align them with the best measures of success and the objectives set in the Draft Monitoring Framework
● Alignment of these measures of success and KPIs with the data sources, the Data Provider and the data collection methodology
● Define a text for the monitoring framework with a clarified and agreed terminology, especially for the chosen measures of success/KPIs
● Inclusion of KPIs related to the functioning of the Partnership between the EC and the EOSC Association, e.g.:
  - *Degree of representativeness of the Association (Proportion of EU funders and RPOs included in as members)*
  - *Level of EU investments through HE;*
  - *Level of operationalisation of the Association; number of meetings etc.*
	● Turning the agreed tables into one or more target-specific questionnaires;
	● Upload of the questionnaire to an online platform, preferably with the support of EOSC Future Observatory;
	● Train the EOSC-A member base, on data provision;
	● Roll-out the survey;
	● Consolidate all inputs (from both EOSC-A and EC streams) and report on the results
	EOSC-A will address the broader EOSC ecosystem by:
	● Engaging in bidirectional exchange of information with its mandated organisations;
	EOSC-A will ensure the evolution of the monitoring framework as a living document by:
	● Continuing to ensure that the KPIs and targets remain meaningful; Expanding the list of KPIs and targets to ensure that the different dimensions of the objectives can be measured (to this effect, the monitoring framework includes a companion document - ANNEX One, with a pool of KPIs and targets which can serve as inspiration)
		Full methodology and timeline will be described, in line with the HE monitoring mechanism to be developed in support of all HE partnerships:
		● EC will address the broader EOSC ecosystem through involvement of the tripartite governance;
		● EC will facilitate the access to the EC data streams by various means, which could include: adding requirements to report information to EOSC-A when procuring EC services and projects related to EOSC; providing access to EC Horizon Dashboard and/or EC Open Data Portal and relevant EC studies, if/when available; and: liaising with newly granted HE INFRAEOSC projects.

4. The EOSC Monitoring Framework Glossary

Authentication and Authorisation Infrastructure (AAI)	Digital infrastructure that allows users to be identified and subsequently allowed to access data and/or services. *See the SRIA:* https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf
As open as possible	Slogan of Open Science recognising that the drive is for all research outputs to be open as far as possible and as soon as possible. *See the SRIA:* https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf
Baseline	A fixed point of reference that is used for comparison purposes. It is seen as the value of a performance indicator before the implementation of activities, against which progress can be assessed or comparisons made.
Data provider	The organisation or entity responsible for the collection and aggregation of data from their initial source. The data provider is accountable to provide the reporting organization with the required information.
Data source	A specific data set, metadata set, database or metadata repository from where data or metadata are available. *See the OECD Glossary of Statistical Terms:* https://stats.oecd.org/glossary/detail.asp?ID=7045
Data collection methodology	Data collection is a process of collecting information from all the relevant sources. Data collection methods can be divided into two categories: secondary methods of data collection (e.g. reports, studies, online portals, or databases) and primary methods of data collection (e.g., survey). *See the Research Methodology Net:* https://research-methodology.net/research-methods/data-collection/
Data	An encompassing term used in the EOSC context for all digital outputs of research including datasets, metadata, publications and software code. *See the SRIA:* https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf
Data Management Plan	A plan which describes the data management life cycle for the data to be collected, processed and/or generated by a European-funded project. *See the EC website:* https://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/open-access-data-management/data-management_en.htm
Data Stewardship	Support offered at all levels to researchers and institutions by expert data stewards with respect to the management of data. *See the SRIA:* https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf
European Open Science Cloud (EOSC)	The generic term for the envisioned federation of research (data) infrastructures that will enable the Web of FAIR Data and Services and help researchers to perform Open Science and open up and exploit their data, publications, and code. *See the SRIA:* https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf
European Open Science Cloud Association (EOSC-A)	International Non-Profit Association (AISBL) founded in Brussels on 29 July 2020 to represent those (eligible) stakeholders wishing to formalise their role in EOSC. In July 2022 the Association signed a Memorandum of Understanding (MoU) with the European Commission and thus form a Co-programmed European Partnership on EOSC. *See the SRIA:* https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf

EOSC Partnership	The Co-programmed European Partnership between the EOSC Association and the European Commission that consolidates the outputs of EOSC projects from Horizon 2020 and further develop EOSC through structured funding in Horizon Europe and in-kind contributions from the member organizations. *See the SRIA:* https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf
EOSC Platform	*The EOSC Platform refers to the range of services and resources accessible through the EOSC Portal (https://eosc-portal.eu/services-resources), currently operated by EOSC Future. Future developments of the EOSC Platform will take place in the context of the procurement "Delivering the EOSC Core Infrastructure and Services".*
EOSC Task Forces	Thirteen Task Forces consisting of groups of experts from the EOSC ecosystem focusing on implementation of EOSC, metadata and data quality, research careers and curricula, technical challenges and sustain EOSC, which have delivered reports and recommendations for EOSC. *See the EOSC-A website:* https://www.eosc.eu/advisory-groups
European data spaces	Ten data commons that will incentivise the sharing of data and facilitate the use of data across the areas of manufacturing, mobility, health, finance, energy, agriculture, public administration, skills, and the Green Deal. *See the SRIA:* https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf
EOSC-Core	The basic architecture, standards and services that form the technical backbone of EOSC and are necessary to operate a Web of FAIR Data and Services. *See the SRIA:* https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf
EOSC-Exchange	The value-added services that will build upon the EOSC-Core and offer its users additional functionality to perform Open Science and share and exploit FAIR (and open) data. *See the SRIA:* https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf
EOSC Interoperability Framework	A set of principles (technical, semantic, organisational, and legal principles) and a model for the organisation of FAIR digital objects into EOSC. *See the EC website:* https://op.europa.eu/en/publication-detail/-/publication/d787ea54-6a87-11eb-aeb5-01aa75ed71a1
ESFRI Cluster projects	Five ESFRI cluster projects launched in 2019, providing a gathering point for various ESFRI projects and landmarks to connect to the EOSC: ENVRI-FAIR, PaNOSC, ESCAPE, SSHOC, EOSC-Life. ESFRI Cluster projects also refer to new cluster projects for RI under Horizon Europe INFRAEOSC. *See the EOSC Glossary:* https://eosc-portal.eu/news/five-new-esfri-cluster-projects-eosc-panorama
EOSC Ecosystem	The encompassing set of federated (e-)infrastructures, research infrastructures, stakeholder organisations and projects that contribute to and/or use EOSC. *See the SRIA:* https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf
FAIR (principles)	The set of guidelines for making research (meta)data findable, accessible, interoperable, and reusable that ultimately ensures standardized machine actionability. *See:* FAIR Principles - GO FAIR (go-fair.org)
FAIR metrics	A quantitative approach for evaluating the extent to which data have been made FAIR. *See the SRIA:* https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf
FAIR data	Data that conform to the FAIR principles.

	See the SRIA: https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf
Key Performance Indicators (KPIs)	Indicators of performance towards the achievement of a pre-defined objective. Measured with a certain frequency, e.g., once a year, they can provide on indication of the progress of a certain activity towards reaching a set out target performance, from the initial status, which is called the baseline.
Metadata	Information that is provided with data to explain the nature of the data and how the data could and should be exploited. *See the SRIA:* https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf
Minimun Viable EOSC (MVE)	The EOSC-Core plus selected services from the EOSC-Exchange that provide researchers with the minimum level of functionality required to share and exploit FAIR (and open) data. *See the SRIA:* https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf
Monitoring	The systematic process of collecting, analyzing, and using information to track a programme's progress toward reaching its objectives.
Open Access (OA)	Possibility to access and re-use digital research outputs with as few restrictions as possible. *See the EOSC Glossary:* https://eosc-portal.eu/glossary
Open Science (OS)	Approach to the scientific process based on cooperative work and ways of disseminating knowledge, improving accessibility to and-reusability of research outputs by using digital technologies and collaborative tools. *See the EOSC Glossary:* https://eosc-portal.eu/glossary
Open data	Data in an open format that can be freely used, reused, and shared by anyone for any purpose. *See the SRIA:* https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf
Personal Identifier (PID)	A digital description that uniquely and persistently identifies an individual so that the correct digital object of research output can be linked to the correct researcher responsible for its creation. *See the SRIA:* https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf
Rules of Participation	The terms, policies, processes, and procedures required to provide assurance of sustainability, transparency, quality and trust in the practices and services offered through voluntary participation in EOSC. *See the SRIA:* https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf
Repository	Service delivering organized and persistent data storage that allows data retrieval. *See the EOSC Glossary:* https://eosc-portal.eu/glossary
Reporting	The systematic and timely provision of essential information at periodic intervals.
Research disciplines (= research communities)	The term refers to the Revised Field of Science and Technology (FOS) classification in the Frascati Manual, consisting of the following high-level groupings: ● Natural sciences ● Engineering and technology ● Medical and Health sciences ● Agricultural sciences ● Social sciences See: https://unstats.un.org/unsd/EconStatKB/KnowledgebaseArticle10269.aspx EUROSciVoc: https://op.europa.eu/s/vVxp
Research Infrastructure	An international, national, or institutional infrastructure that enables research communities to perform research. *See the SRIA:* https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf

Research data	Data collected or produced during scientific research activities and used as evidence in the research process, or commonly accepted in the research community as necessary to validate research findings and results. *See the EOSC Glossary:* https://eosc-portal.eu/glossary
Research artefacts	Any product of the research lifecycle such as methodologies, data, software, publications, reviews and learning materials. *See the SRIA:* https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf
Target	A specific, planned level of result to be achieved within an explicit timeframe.

5. EOSC Partnership intervention logic: linking expected impacts and objectives to activities, outputs, and KPIs

European Open Science Cloud Objectives Tree

PROBLEMS
- Public & private sectors do not exploit Open Science for improving quality and productivity of research
- Researchers do not combine and build upon ever-growing available scientific results
- National, European and global infrastructures do not share Open Science standards and practices

PEOPLE → DATA → INFRASTRUCTURES

BARRIERS
- Absence of incentives, rewards and skills for open sharing stifles the uptake of Open Science
- Scientific results are unfindable, inaccessible, not interoperable, and often used only once
- The scientific landscape consists of national and disciplinary research silos and infrastructures

OPEN → FAIR → FEDERATION

OBJECTIVES
- Open Science practices and skills are rewarded and taught, becoming the 'new normal'
- Standards, tools and services allow researchers to find, access, reuse and combine results
- Sustainable and federated infrastructures enable open sharing of scientific results

SCIENCE → INDUSTRY → SOCIETY

BENEFITS
- Improved trust, quality and productivity in science
- Development of innovative services and products
- Improved impact of research in addressing societal challenges