

The EOSC Partnership Monitoring Framework

V6.6

EOSC-A, THE 23RD OF MARCH 2022

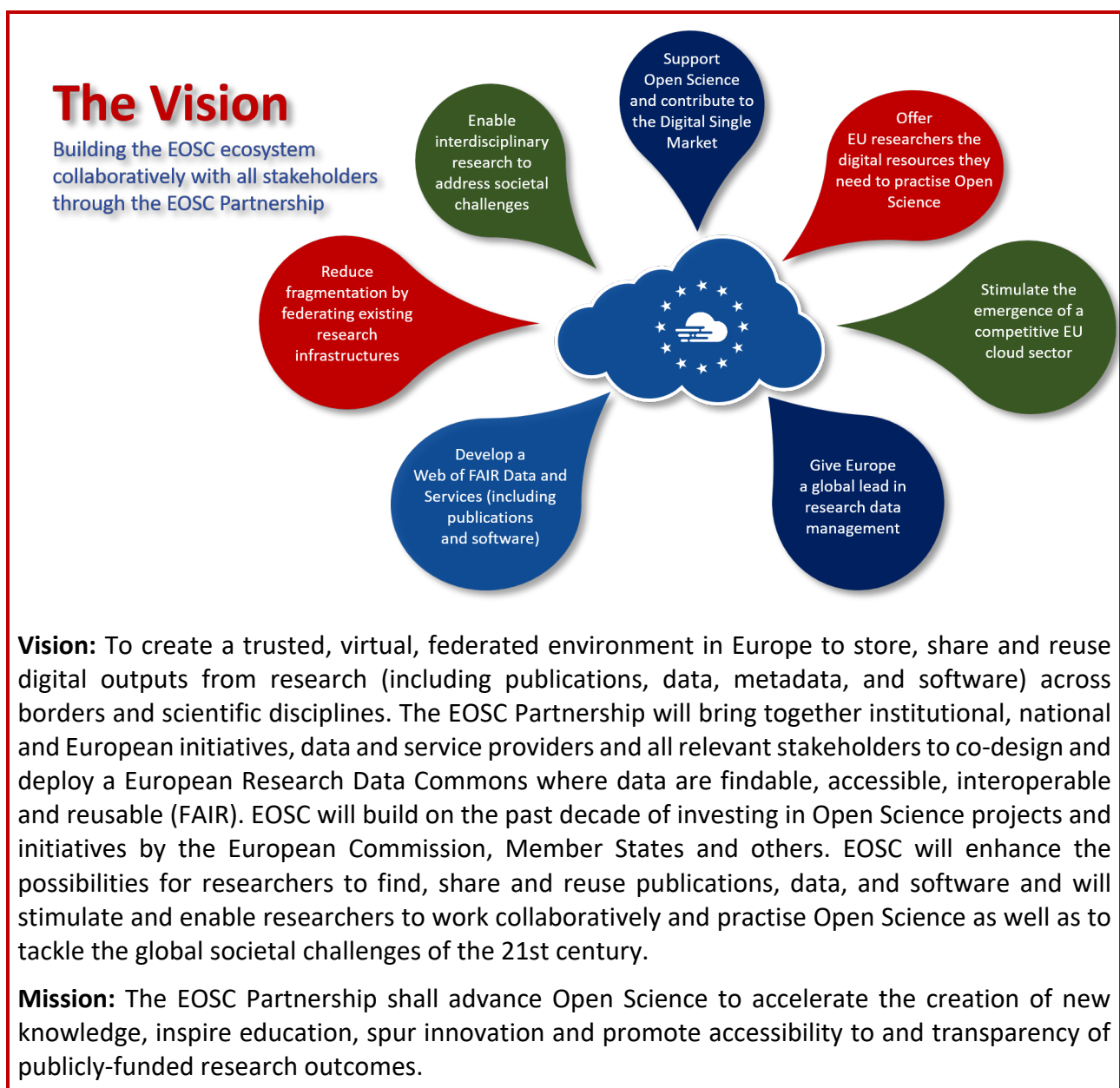
This monitoring framework is co-developed by the EC and the EOSC Association.

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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 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 will 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 <i>(General objectives are linked to the Specific objectives and to their KPIs)</i>	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 <i>(General objectives are linked to the Specific objectives and to their KPIs)</i>	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 <i>(General objectives are linked to the Specific objectives and to their KPIs)</i>	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 incentivise data re-use
Baseline	(2022) TBD
Target	(2025) 70% of research-funding members of the EOSC Association require data sharing and 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	<ul style="list-style-type: none"> a. EOSC Association reports/surveys b. EOSC Platform c. RE3Data's unique catalogue of repositories d. FAIR-Data Support Actions under HE INFRAEOSC (e.g.: FAIR Impact - ex FAIRsFAIR)
Data Provider	<ul style="list-style-type: none"> a. EOSC Association b. Operators of the EOSC Platform c. RE3Data d. Project coordinators of the FAIR data support actions under HE INFRAEOSC.
Collection Methodology	Desk study/Survey

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 research disciplines have documented standards and protocols for data sharing and reuse.
Data Reporting	EOSC Association
Data Sources	<ul style="list-style-type: none"> a. ESFRI reports b. ESFRI Cluster projects reports
Data Provider	<ul style="list-style-type: none"> 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	SO4 Increasing amounts of research data produced by publicly funded research in Europe are FAIR by design
KPI	SO4_04 The percentage/ the estimated number of research data-sets from EOSC-A members that are deposited in repositories and made open and FAIR.
Baseline	(2022) TBD
Target	(2025) 50% of research data-sets from EOSC Association members that is deposited in repositories is made FAIR and “as open as possible”, i.e.: at least the metadata are available.
Data Reporting	EOSC Association
Data Sources	EOSC Association reports/surveys
Data Provider	EOSC Association members
Collection Methodology	Survey

Strategic and operational objective	SO5 The EOSC Interoperability Framework supports an increasing range and quantity of FAIR digital objects including data, software and other research artefacts
KPI	SO5_01 Number of major research infrastructures which adopt the EOSC Interoperability Framework, enabling their data to be federated into EOSC.
Baseline	(2022) TBD
Target	(2023) The EOSC Interoperability Framework is adopted by at least 5 major research infrastructures in Europe, enabling their data to be federated into EOSC
Data Reporting	EOSC Association
Data Sources	a. European RIs b. RI projects
Data Provider	a. Research infrastructures managers b. Coordinators of the RI projects
Collection Methodology	Survey

Strategic and operational objective	SO6 Provide an increased number of services and resources to ensure that European research is discovered and reused within and across disciplines to extract new knowledge
KPI	SO6_01 The number of inter and cross-disciplinary use cases conducted, on data sharing practices, using EOSC services.
Baseline	(2022) TBD
Target	(2025) Five use cases have demonstrated engaging diverse research communities in cross-disciplinary data sharing using services onboarded into EOSC.
Data Reporting	EOSC Association
Data Sources	a. EOSC Platform b. ESFRI Cluster projects and HE INFRAEOSC projects supporting the missions
Data Provider	a. Operators of the EOSC Platform b. ESFRI Cluster project coordinators
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 Research Infrastructures (as a proxy for all major scientific disciplines) that have relevant data and services indexed through EOSC.
Baseline	(2022) TBD
Target	(2027) All major scientific disciplines (Frascati Nomenclature-Level 1) have relevant data and services indexed 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. European 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	SO8 Essential additional functionalities for end users, including from the public and private sectors, and citizen scientists, are implemented in EOSC (these developments are complementary to those of other European data spaces)
KPI	SO8_01 The number of services dedicated to the requirements of end users, including from the public sector and citizen scientists, that are made available through the EOSC Core and EOSC Exchange.
Baseline	(2022) TBD
Target	(2025) Ten additional functionalities and services dedicated to the requirements of end users, including from the public sector, and citizen scientists, are made available through the EOSC Core and EOSC Exchange.
Data Reporting	EOSC Association
Data Sources	EOSC Platform
Data Provider	Operators of the EOSC Platform
Collection Methodology	Survey

Strategic and operational objective	SO8 Essential additional functionalities for end users, including from the public and private sectors, and citizen scientists, are implemented in EOSC (these developments are complementary to those of other European data spaces)
KPI	SO8_03 The number of active data spaces that take up FAIR data management principles and practices, and provide data into the EOSC ecosystem.
Baseline	(2022) TBD
Target	(2027) At least 50% of the active data spaces take up data management practices, including the FAIR data principles and provide data into the EOSC ecosystem.
Data Reporting	EOSC Association
Data Sources	a. EU Data Spaces b. relevant EC studies, if available
Data Provider	a. EU Data Spaces governance b. EC* (*the role of the EC will be limited to providing relevant studies, if available)
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 EOOSC 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 formalised connections between EOOSC and non-EU cloud and commons initiatives, which allow EOOSC users to discover additional resources.
Baseline	(2022) TBD
Target	(2027) EOOSC establishes connections with at least 3 non-EU cloud and commons initiatives, which allow EOOSC users to discover additional resources.
Data Reporting	EOOSC Association
Data Sources	a. RDA data, data from other global initiative b. International partnerships.
Data Provider	a. RDA managers b. International partnerships governance.
Collection Methodology	Survey and/or desk studies

Strategic and operational objective	OO1 Deliver and operate all the necessary components of the MVE to 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 MVE Core functions
Baseline	(2022) TBD
Target	(2025) 4 core functions of the MVE are developed to make the EOOSC ecosystem accessible to researchers across disciplines and countries
Data Reporting	EOOSC Association
Data Sources	a. Reports on the EOOSC Platform b. Current offerings and deliverables on HE INFRAEOOSC projects contributing to the architectural implementation of the MVE
Data Provider	a. Operators of the EOOSC Platform b. HE INFRAEOOSC project coordinators
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_02 Types and geographic spread (EU MS) of members in EOOSC-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 EOOSC-A membership has grown by at least 25 new members representing different stakeholders in the EOOSC 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	EOOSC Association
Data Sources	a. EOOSC Association stats re. Board of Directors and membership b.
Data Provider	EOOSC-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 EOOSC (including the development of a dashboard to monitor the evolving landscape of policies, infrastructures and open resources made accessible via EOOSC 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 EOOSC.
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 EOOSC.
Data Reporting	EOOSC Association
Data Sources	a. EOOSC Observatory b. EOOSC Steering Board, subgroup A
Data Provider	a. EOOSC Future b. Members of the EOOSC 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 scientific disciplines for which EOSC Association TFs provide recommendations on standards and Open Science best practices.
Baseline	(2022) TBD
Target	(2023) Each major scientific community (Level 1 of the Frascati Manual Nomenclature) has at least one initiative on standards and Open Science practices involving EOSC-members.
Data Reporting	EOSC Association
Data Sources	Reports from TFs
Data Provider	TFs set up by the EOSC Association
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 following technical components supporting FAIR digital objects and their automated processing are operational: standards, schemas, APIs, metadata frameworks.
Baseline	(2022) TBD
Target	(2023) Standards, schemas, APIs, metadata frameworks and other technical components supporting FAIR digital objects are specified by EOSC related communities and supported by the service providing organisations.
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 Availability of FAIR assessment tools to measure the FAIRness of different research digital objects
Baseline	(2022) TBD
Target	(2025) At least one type of FAIR assessment tool exists to measure the FAIRness of datasets, software and DMPs, respectively
Data Reporting	EOSC Association
Data Sources	Relevant HE INFRAEOSC projects
Data Provider	Project coordinators for the HE INFRAEOSC projects
Collection Methodology	Survey / desk study

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 first generation pan-European infrastructures for preservation, management and sharing of research software
Baseline	(2022) TBD
Target	(2025) A first generation of pan-European infrastructures for preservation, management and sharing of research software is available
Data Reporting	EOSC Association
Data Sources	a. EOSC Association b. ESFRI c. Relevant HE INFRAEOSC projects
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	EOSC Association
Data Provider	All EOSC-A members, EOSC-A TFs
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 Number of federated frameworks that are deployed and operational allowing service providers to offer services to users
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 Number members of the Association that participate in fora to agree on standards for minimum metadata requirements and 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	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_02 Percentage of metadata belonging to publicly funded research datasets, from EOSC Association members, which are defined as Open Data, that are discoverable through EOSC federated infrastructure.
Baseline	(2022) TBD
Target	(2025) 70% of the metadata related to publicly funded research datasets (from EOSC Association members) which are defined as Open Data are discoverable by a search mechanism through EOSC federated infrastructure.
Data Reporting	EOSC Association
Data Sources	a. EOSC Association reporting of its members, b. OpenAIRE services c. Relevant HE INFRAEOSC projects
Data Provider	a. All EOSC-A members b. OpenAIRE governance c. Coordinators of the relevant HE INFRAEOSC projects
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 the EOSC Association or 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. INFRAEOSC project coordinators
Collection Methodology	Internal 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_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	<p>(2022) 13 TFs have been created by the EOSC Association, under five advisory group umbrellas (https://eosc.eu/advisory-groups):</p> <ul style="list-style-type: none"> • <u>Implementation of EOSC</u> <ul style="list-style-type: none"> ○ PID policy and implementation ○ Researcher engagement and adoption ○ Rules of Participation (RoP) compliance monitoring • <u>Metadata and data quality</u> <ul style="list-style-type: none"> ○ FAIR metrics and data quality ○ Semantic interoperability • <u>Research careers and curricula</u> <ul style="list-style-type: none"> ○ Data stewardship curricula and career paths ○ Research careers, recognition and credit ○ Upskilling countries to engage in EOSC • <u>Technical challenges on EOSC</u> <ul style="list-style-type: none"> ○ AAI Architecture ○ Infrastructures for quality research software ○ Technical interoperability of data and services • <u>Sustaining EOSC</u> <ul style="list-style-type: none"> ○ Financial Sustainability ○ 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:

<p>3.1 - EOSC-A and EC will work together and define the MF information workflow, including:</p> <ul style="list-style-type: none"> • 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.: <ul style="list-style-type: none"> - 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. 	<p>3.2 - EOSC-A will start implementing the monitoring framework, in 2022, with the establishment of the baseline for all KPIs, as follows:</p> <ul style="list-style-type: none"> • 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 <p>EOSC-A will address the broader EOSC ecosystem by:</p> <ul style="list-style-type: none"> • Engaging in bidirectional exchange of information with its mandated organisations; <p>EOSC-A will ensure the evolution of the monitoring framework as a living document by:</p> <ul style="list-style-type: none"> • 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) 	<p>3.3 - EC will implement the provision of the EC-data stream.</p> <p>Full methodology and timeline will be described, in line with the HE monitoring mechanism to be developed in support of all HE partnerships:</p> <ul style="list-style-type: none"> • 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.
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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. <i>See the SRIA: https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf</i>
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. <i>See the SRIA: https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf</i>
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. <i>See the OECD Glossary of Statistical Terms: https://stats.oecd.org/glossary/detail.asp?ID=7045</i>
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). <i>See the Research Methodology Net: https://research-methodology.net/research-methods/data-collection/</i>
Data	An encompassing term used in the EOSC context for all digital outputs of research including datasets, metadata, publications and software code. <i>See the SRIA: https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf</i>
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. <i>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</i>
Data Stewardship	Support offered at all levels to researchers and institutions by expert data stewards with respect to the management of data. <i>See the SRIA: https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf</i>
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. <i>See the SRIA: https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf</i>
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. <i>See the SRIA: https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf</i>
EOSC Partnership	The Co-programmed European Partnership between the EOSC Association and the European Commission that consolidates the outputs of EOSC projects from Horizon

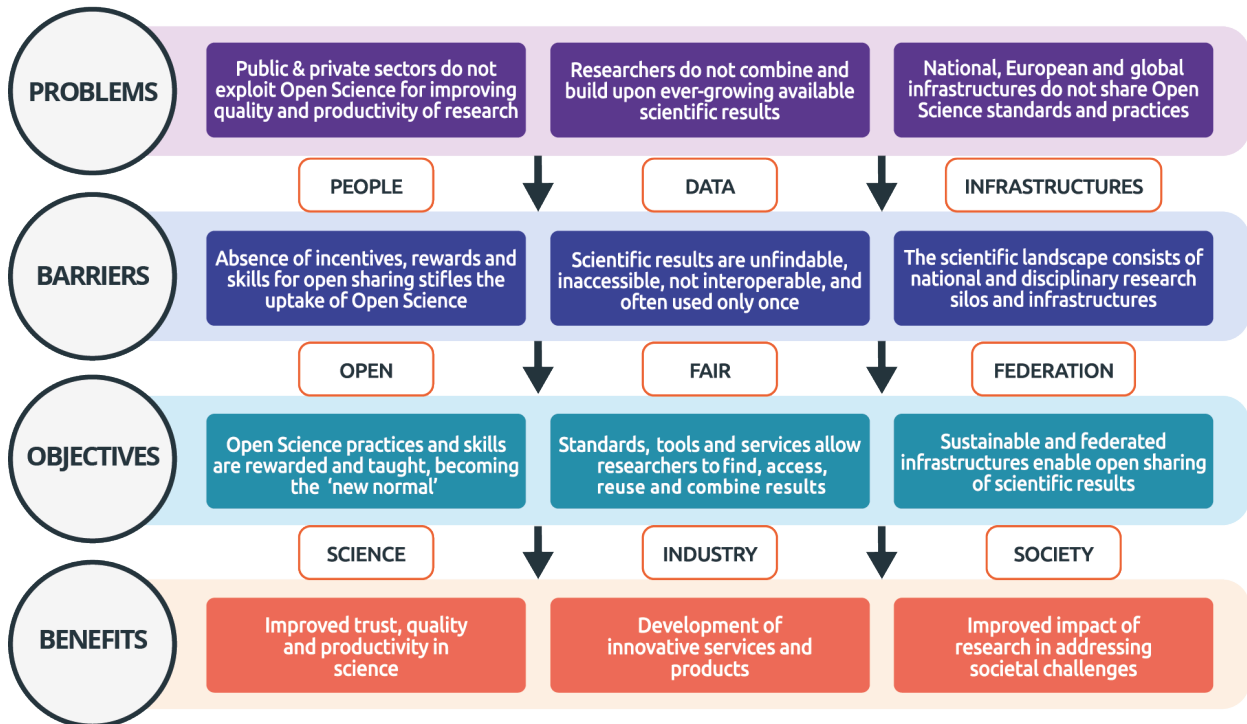
	<p>2020 and further develop EOSC through structured funding in Horizon Europe and in-kind contributions from the member organizations.</p> <p>See the SRIA: https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf</p>
EOSC Platform	<p>The EOSC Platform refers to the range of services and resources accessible 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”.</p>
EOSC Task Forces	<p>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.</p> <p>See the EOSC-A website: https://www.eosc.eu/advisory-groups</p>
European data spaces	<p>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.</p> <p>See the SRIA: https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf</p>
EOSC-Core	<p>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.</p> <p>See the SRIA: https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf</p>
EOSC-Exchange	<p>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.</p> <p>See the SRIA: https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf</p>
EOSC Interoperability Framework	<p>A set of principles (technical, semantic, organisational, and legal principles) and a model for the organisation of FAIR digital objects into EOSC.</p> <p>See the EC website: https://op.europa.eu/en/publication-detail/-/publication/d787ea54-6a87-11eb-aeb5-01aa75ed71a1</p>
ESFRI Cluster projects	<p>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.</p> <p>See the EOSC Glossary: https://eosc-portal.eu/news/five-new-esfri-cluster-projects-eosc-panorama</p>
EOSC Ecosystem	<p>The encompassing set of federated (e-)infrastructures, research infrastructures, stakeholder organisations and projects that contribute to and/or use EOSC.</p> <p>See the SRIA: https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf</p>
FAIR (principles)	<p>The set of guidelines for making research (meta)data findable, accessible, interoperable, and reusable that ultimately ensures standardized machine actionability.</p> <p>See: FAIR Principles - GO FAIR (go-fair.org)</p>
FAIR metrics	<p>A quantitative approach for evaluating the extent to which data have been made FAIR.</p> <p>See the SRIA: https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf</p>
FAIR data	<p>Data that conform to the FAIR principles.</p> <p>See the SRIA:</p>

	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 an 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. <i>See the SRIA:</i> https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf
Minimum 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. <i>See the SRIA:</i> 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. <i>See the EOSC Glossary:</i> 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. <i>See the EOSC Glossary:</i> 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. <i>See the SRIA:</i> 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. <i>See the SRIA:</i> 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. <i>See the SRIA:</i> https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf
Repository	Service delivering organized and persistent data storage that allows data retrieval. <i>See the EOSC Glossary:</i> 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: <ul style="list-style-type: none"> • Natural sciences • Engineering and technology • Medical and Health sciences • Agricultural sciences • Social sciences <i>See:</i> 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. <i>See the SRIA:</i> 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. <i>See the EOSC Glossary: https://eosc-portal.eu/glossary</i>
Research artefacts	Any product of the research lifecycle such as methodologies, data, software, publications, reviews and learning materials. <i>See the SRIA: https://www.eosc.eu/sites/default/files/SRIA_2022_01.pdf</i>
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



The EOSC Partnership Monitoring Framework

V6.6

EOSC-A, THE 23RD OF MARCH 2022

ANNEX ONE

COMPANION TO THE MONITORING FRAMEWORK

Companion to the Monitoring Framework

This companion provides a list of additional, partially developed, KPIs and targets for future consideration when developing a more comprehensive version of the EOSC Monitoring Framework. This list is provided to keep track of the outcome of previous work on EOSC measures of success. It will be subject to further revisions with the support of representatives of the EOSC constituency, notably the EOSC task forces and the Commission. These KPIs might therefore be removed, changed or completed by new KPIs in future version of the EOSC Monitoring Framework.

Objectives	KPIs	Targets
SO1 Increase the number of relevant research results that are made available as open as possible by researchers performing publicly funded research	SO1_02 Percentage of research data from EOSC Association members are made as FAIR as possible, ideally open	(2027) 70 % of research data from EOSC Association members are made as FAIR as possible, ideally open
SO3 Development and adoption of incentives for researchers to perform Open Science	SO3_02 Number of EOSC association members that recognise open science activities in research career assessments	(2025) 50% of the EOSC association members recognise open science activities in research career assessments
SO5 The EOSC Interoperability Framework supports an increasing range and quantity of FAIR digital objects including data, software and other research artefacts	SO5_02 Percentage of research data produced in the last year by European RIs is made FAIR and can be accessed through EOSC	(2025) 70% of research data produced in the last year by European RIs is made FAIR and can be accessed through EOSC
	SO5_03 Percentage of research data and other digital objects produced yearly in Europe that is FAIR and available Through EOSC	(2027) 50% of data and other digital objects produced yearly in Europe that is FAIR and available Through EOSC
SO6 Provide an increased number of services and resources to ensure that European research is discovered and reused within and across disciplines to extract new knowledge	SO6_02 Yearly increase of number of data and services available through EOSC	(2025) Increase of 30% of number of data and services available through EOSC compared to the previous year
	SO6_03 Number of tools and services from national infrastructures available through EOSC	(2027) At least 30% of tools and services available through EOSC are from national infrastructures

Objectives	KPIs	Targets
<p>SO8 Essential additional functionalities for end users, including from the public and private sectors, and citizen scientists, are implemented in EOSC (these developments are complementary to those of other European data spaces)</p>	<p>SO8_02 Number of commercial providers that provide research related services through EOSC</p>	<p>(2027) At least 2 agreements with commercial providers are activated to enhance the EOSC resources at national or international level</p>
<p>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</p>	<p>OO1_03 An effective governance framework that coordinates activities and that directs the architectural development and the EOSC interoperability framework</p>	<p>(2024) An effective governance framework for architecture and interoperability framework of EOSC</p>
<p>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)</p>	<p>Implementation of an infrastructure to gather OS metrics through EOSC</p>	<p>(2025) Infrastructure to gather OS metrics can be accessed through EOSC.</p>

Objectives	KPIs	Targets
<p>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.</p>	<p>OO7_02 number of services and infrastructures for software and source code (including repositories that opened up to host software) that are available through EOSC</p>	<p>(2025) 10% increase with respect to the previous year of services and infrastructures for software and source code (including repositories that opened-up to host software) are available through EOSC</p>
<p>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</p>	<p>OO9_02 Availability of detailed and comprehensive set of guidance documents to implement the RoP</p>	<p>(2023) A detailed and comprehensive set of guidance documents are available.</p>
<p>OO11 Implement the EOSC persistent identifier (PID) policy and architecture by 2025</p>	<p>OO11 Services that resolve a wide variety of PIDs</p>	<p>(2025) A global PID resolver is developed to resolve all kinds of digital objects including services, for different kinds of PID (e.g. DOIs, ARKs, handles, etc.).</p>
<p>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</p>	<p>OO13_03 EOSC Exchange growth in number of domain-specific services.</p>	<p>(2025) increase of 10% of the average number of domain-specific services available through EOSC Exchange</p>

ADDITIONAL ACTIVITIES PLAN

2022



Additional Activities Plan	
European Partnership for the European Open Science Cloud (EOSC)	
Year:	2022
Total annual envisaged in-kind contributions in Additional Activities by the Partners other than the Union:	312.453.697,31 €

The aim of this Additional Activities Plan is for the Partnership Board to annually list the Additional Activities they want to steer R&I investments towards to achieve partnership's objectives. The Additional Activities listed here would be the one available in the next annual reporting template for Additional Activities.

In order for the costs to be accounted for as in-kind contributions, the underlying additional activities shall be carried out in the European Union or countries associated to Horizon Europe.

Category				Estimated number of FTEs per category	Estimated annual value in euro per category
1. SUPPORT TO ADDITIONAL R&I				310,96	132.165.265,20
Envisaged Additional Activities type	Description of the Additional Activities	Link to partnership's objectives / KPIs	[Optional] Link to partnership's project/ topic	Estimated number of FTEs per Additional Activity type	Estimated financial contribution in euro (value of FTEs included) per Additional Activity type
1.1 Upgrade of existing research infrastructures and e-infrastructures so that they may be federated through EOSC	1. Upgrade of institutional and national repositories (e.g., upgrade of the data catalogues) 2. Upgrade of existing institutional, local, and national data infrastructures (e.g., databases, publishing platforms) 3. Implementation of interfaces to integrate computer and data management solutions to ease access and reuse data 4. Scale up the e-infrastructure capabilities of data centres and improving their connectivity with the EOSC and other European infrastructures 5. Upgrade of data storage infrastructures and/ or research data management services (e.g., extension of processing capabilities, extension of data storage capacity, upgrade of DOI management application) 6. Provision of portals and service desks for Open Sciences related tools 7. Provision of tools for secure collaboration between researchers 8. Upgrade of the SSH Open Marketplace 9. Integration of FAIR-Data services in infrastructure	SO4 SO6 SO7 SO8 OO2 OO5 OO10 OO11 OO13 AA3 - FAIR metrics & certification AA4 - AAI AA5 - User Environments AA6 - Resource Provider Environments AA14 - Widening to public & private sectors & going global		111,83	107.215.223,20

	10. Integration of a new data processing centre in the EOSC portal, offering Cloud resources to EU researchers and upgrade of existing scientific cloud providers in the EOSC portal				
1.2 Development and deployment of EOSC-compatible search engines to allow the researchers to explore rich metadata and semantic descriptions in EOSC-connected registers	<p>1. Development of terminology services for exploring, publishing, and developing shared ontologies, vocabularies, and terminologies.</p> <p>2. Upgrade of catalogues with information about policies for OA, licenses, publication fees and conditions offered by the different institutions</p> <p>3. Implementation of data catalogues together with an automatic metadata enrichment</p> <p>4. Development, maintenance, and support of research output discovery in e.g. Limo Lirias, Research Data Repository front-end, metadata distribution to FRIS portal, OpenAire, Google Scholar and Google Dataset Search</p> <p>5. Development and maintenance of metadata repositories and semantic interoperability tools</p> <p>6. Upgrade of data catalogues to support data onboarding to thematic and EOSC Data Portals</p> <p>7. Improvement of standard compliance in all national archives to ensure optimal interoperability through automated testing of metadata quality</p> <p>8. Implementation of discovery services</p> <p>9. Integration of existing data repositories with EUDAT services for metadata indexing</p> <p>10. Maintenance and operation of the PID Central Registry</p>	<p>SO1</p> <p>SO4</p> <p>SO6</p> <p>SO7</p> <p>SO8</p> <p>OO2</p> <p>OO5</p> <p>OO10</p> <p>OO11</p> <p>OO13</p> <p>AA1 - Identifiers</p> <p>AA2 - Metadata and ontologies</p> <p>AA3 - FAIR metrics & certification</p> <p>AA4 – AAI</p> <p>AA5 - User Environments</p> <p>AA6 - Resource Provider Environments</p> <p>AA14 - Widening to public & private sectors & going global</p>		29,45	3.345.804,00

	<p>11. Development of an online platform to reduce the barriers for accessing scientific publications by citizens</p> <p>12. Establishment of the EOSC-compatible search portal that constitutes a single-entry point for searching, discovery and recall of thousands of scientific and scholarly publications, namely journal articles, conference papers, thesis, and dissertations, distributed by several repositories.</p> <p>13. Development of the Comprehensive Information System for acquiring, processing, preservation and provision research and bibliometric information and publications</p> <p>14. Integration of metadata search engine and platform for FAIR epidemiological computational modelling and simulation</p> <p>15. Instalment and maintenance of infrastructure related to ontology service</p> <p>16. Preparation of platforms for academic libraries, including search engine for both documents and data from one access point</p> <p>17. Development and implementation of standards and data interfaces for research information</p> <p>18. Development and integration of open research knowledge graphs for semantically describing research contributions</p>				
<p>1.3 Deploying EOSC-Core components for FAIR (e.g. the deployment of online tools for data FAIRification</p>	<p>1. Development, hosting, maintenance, and support for different FAIR tools to support researchers in every step of the life cycle e.g., DMP tool, PRET platform, iRODS infrastructure for active data</p>	<p>SO1 SO6 OO5</p>		<p>104,80</p>	<p>11.582.386,00</p>

<p>or to help creating FAIR Data Management Plans)</p>	<p>management, diversified storage solutions</p> <ol style="list-style-type: none"> 2. Development and pilot of public data repository services for institutions not having capacity to deploy their own repository 3. Provision of standard services for Data Management Plan Tools and REST API (e.g., DMPOnline) 4. Integration of online DMP tool with organisational tools such as repositories and data registers 5. Establishment and implementation of machine-actionable DMP tools 6. Integration of local CRIS systems with DMP tool 7. Development of DMPonline Metadata for Machines toolbox for ontologies and metadata definition 8. Upgrade of Data Management Expert Guides and realisation of Data Archiving Guides for data experts 9. Implementation of DMP standards 10. Collaboration on FAIR DMPs, collaboration on Data Stewardship Wizard deployment 11. Enhancement of existing UIs for data access in correspondence with EOSC requirements for FAIR data 12. Development and deployment of Domain Data Protocols and F-UJI FAIR assessment tools 13. Contribution to various FAIR-related initiatives, which analyse research systems and experiments with new tools and approaches to science funding 14. Development of Paediatric Data interoperability service where users can access tools for identifying, accessing, integrating, and analysing paediatric 	<p>AA2 - Metadata & Ontologies</p> <p>AA3 - FAIR metrics & certification</p> <p>AA5 - User Environments</p> <p>AA6 - Resource Provider Environments</p> <p>AA7 - EOSC Interoperability Framework</p> <p>AA13 - Communication</p>			
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	<p>data to facilitate sharing and re-use of data according to the FAIR principles</p> <p>15. Deployment of online tools to support the creation of Data Management Plans (DMPs)</p> <p>16. Deployment of management platforms for metadata quality</p> <p>17. Implementation of FAIR data in existing repositories</p> <p>18. Establishment of the FAIR Checker - a tool to assess the FAIR metrics of a resource</p>				
1.4 Development and publication of large scale studies	<p>1. Funding of two large cohort studies: the Swiss Transplant and the HIV Cohort Study</p> <p>2. Large-scale studies under the project IDE@S (Innovative Data Environment @ Styria) that aims to foster the cooperation between industry and HEIs in data science</p> <p>3. Policy regulations for the sharing of research data, a study of strategies and regulations</p> <p>4. Mapping and analysis of Open Science policy developments at international, European, and national level</p>	<p>SO1</p> <p>SO5</p> <p>SO6</p> <p>SO8</p> <p>OO1</p> <p>OO2</p> <p>AA3 - FAIR metrics & certification</p> <p>AA5 - User Environments</p> <p>AA6 - Resource Provider Environments</p> <p>AA7 - EOSC Interoperability Framework</p>		11,20	3.239.000,00
1.5 Contribution to operating core functions of a Minimum Viable EOSC ecosystem	<p>1. Maintenance, improvement, and operation of services for cloud orchestration related to the EOSC EGI Cloud Compute</p> <p>2. Implementation of MVE Research Infrastructures (e.g. Connectome Research Infrastructure)</p> <p>3. Exploitation of AAI Federation and access to Géant EduGain</p> <p>4. Development of the Persistent Identification (PID) service</p> <p>5. Development of the Research Activity Identifier that helps identify not only</p>	<p>SO1</p> <p>SO5</p> <p>SO6</p> <p>SO7</p> <p>SO8</p> <p>OO1</p> <p>OO5</p> <p>OO10</p> <p>OO11</p> <p>AA1 - Identifiers</p>		53,68	6.782.852,00

	<p>research projects but also identify infrastructure used in research projects</p> <p>7. AAI infrastructure development and maintenance of AAI federation in platforms (e.g. ELIXIR, B2ACCES)</p> <p>8. Maintenance of provider profiles on the EOSC Portal</p> <p>9. Integration of generic data science platform in the EOSC portal, with links to existing EOSC-Exchange services, according to EOSC specifications and architecture</p> <p>10. New generation platform for libraries, WG Metadata schemas, National Metadata Catalogue, National Centre for PIDs</p>	<p>AA3 - FAIR metrics & certification</p> <p>AA4 - AAI</p> <p>AA5 - User Environments</p> <p>AA6 - Resource Provider Environments</p> <p>AA14 - Widening to public & private sectors & going global</p>			
2. SCALE UP OF TECHNOLOGIES				17,50	2.876.736,00
<p>2.1 Investment done complementing the results of a project, bringing it to a higher TRL level (e.g. EOSC thematic services) or to deployment</p>	<p>1. Continuous improvement of services registered in EOSC Portal</p> <p>2. Metrics service deployment</p> <p>3. Support on the development of EOSC thematic services for the development of a Medical Imaging Real World Data repository to create a biobank on medical imaging data, internally funded by the institution</p> <p>4. Sustaining outcomes of the SSHOC cluster project to become TRL-8 services.</p>	<p>SO4</p> <p>SO7</p> <p>SO8</p> <p>OO1</p> <p>OO5</p> <p>AA5 - User Environments</p> <p>AA6 - Resource Provider Environments</p> <p>AA7 - EOSC Interoperability Framework</p>		4,95	1.195.000,00
<p>2.2 Uptake of EOSC projects' outcomes through adoption of, for instance, new open specifications, standards for data interoperability, common EOSC frameworks for managing AAI, also but not</p>	<p>1. The investment in the SSH Open Marketplace will be maintained as part of the post-project sustainability plan for continued collaboration by the RIs in SSH</p> <p>2. Exploitation of EOSC services for a Satellite Image Processing Thematic service</p>	<p>SO1</p> <p>SO4</p> <p>SO5</p> <p>SO7</p> <p>OO1</p> <p>OO5</p> <p>OO6</p> <p>OO10</p>		5,90	847.850,00

exclusively in the context of public procurement	<p>3. Adoption of outcomes of relevant projects (e.g. SSHOC, EOSC Future, OpenAIRE, OPERAS)</p> <p>4. Injection of knowledge from 'EOSC interoperability framework' and 'A Persistent Identifier (PID) policy for the European Open Science Cloud (EOSC)' and AAI architecture into national working groups and upcoming projects</p> <p>5. Development and implementation of standards and data interfaces for research information (Subproject 1), Concept Study for a Research Portal (Subproject 2)</p> <p>6. Development Interfaces for shared research infrastructures</p> <p>7. Adoption of repositories (Data Stations) and LTP-systems (vault) to fit into EOSC frameworks</p> <p>8. Implementation of AAI into institution online services, using EOSC compute services in scientific pipelines</p> <p>9. Development of guidelines on adoption of standards for interoperability in institutional and national settings</p> <p>10. FBI data roadmap for 2022: using the EOSC standards and AAI for biological image management</p>	<p>OO11 OO12</p> <p>AA1 - Identifiers AA3 - FAIR metrics & certification AA4 - AAI AA5 - User Environments AA6 - Resource Provider Environments AA7 - EOSC Interoperability Framework AA14 - Widening to public & private sectors & going global</p>			
2.3 Implementation of technical specifications required to provide services through the EOSC	<p>1. Standardization and vocabulary development activities relevant for EOSC</p> <p>2. Implementation of state-of-the-art standards for metadata, interoperability and persistent identification for the upgrading of the cultural heritage digitised collections repository</p> <p>3. Adoption of service templates at all service provider archives</p>	<p>SO1 SO4 SO5 SO7 OO1 OO6 OO10 OO11 OO12</p>		6,65	833.886,00

	<p>4. Implementation of technical specifications required to provide repository and LTP services through the EOSC</p> <p>5. Support implementation interoperability guidelines</p> <p>6. Support repository platforms to embed functionalities for specs</p>	<p>AA1 – Identifiers</p> <p>AA2 - Metadata & Ontologies</p> <p>AA3 - FAIR metrics & certification</p> <p>AA4 - AAI</p> <p>AA5 - User Environments</p> <p>AA6 - Resource Provider Environments</p> <p>AA7 - EOSC Interoperability Framework</p> <p>AA14 - Widening to public & private sectors & going global</p>			
3. DEMONSTRATORS				104,88	63.932.416,42
<p>3.1 Investment in new platforms, demonstrators, pilot use cases exploiting domain-specific user environments and supporting the EOSC vision including the value of sharing FAIR and open research data and other research digital objects such as software</p>	<p>1. Pilot of new services and pilot applications in the context of the Open Research Knowledge Graph for various applications and science domains</p> <p>2. Update of the Digital Object Gateway demonstrator</p> <p>3. Development of the AlmaHealthDB (AHDB) infrastructure, adopting a FAIR by design approach, and develop a shared infrastructure for ensuring the highest interoperability level</p> <p>4. Build a repository for Medical Image data in Cancer for research, applying the FAIR principles</p> <p>5. Investments concerning the further development of a MVP Discovery Platform and use-case development to uptake features developed on top of the Connectome Knowledge Graph (future interoperable with EOSC)</p> <p>6. In kind contribution of BBMRI-ERIC members and employees for the</p>	<p>SO1</p> <p>SO4</p> <p>SO5</p> <p>SO6</p> <p>SO7</p> <p>SO8</p> <p>OO1</p> <p>OO4</p> <p>OO5</p> <p>OO6</p> <p>OO12</p> <p>AA3 - FAIR metrics & certification</p> <p>AA4 – AAI</p> <p>AA5 - User Environments</p> <p>AA6 - Resource Provider Environments</p> <p>AA7 - EOSC Interoperability Framework</p>		103,88	63.832.416,42

	<p>development of the federated data platform</p> <p>7. Labs Digital Data Exchange Project piloting data sharing and data sovereignty options, lead to potential new services</p> <p>8. Build technical prototypes in EOSC-compatible frameworks, showcase them and work with end-users</p> <p>9. Set up vocabulary registries as a demonstrator for a federated registry service infrastructure</p> <p>10. Development of prototype of a flexible science platform for the access of open astroparticle data available through the EOSC</p> <p>11. Development and implementation of standards and data interfaces for research information</p> <p>12. Data storage system, connected to the university Cloud and HPC services, systematically requiring a DMP, to prepare a simple/smooth transition to an EOSC repository to open the data</p> <p>13. Development of domain-specific computational environment built on JupyterHub/Binder</p> <p>14. Analysis of EOSC requirements on complex workflow orchestration and distributed data management and their integration to the LEXIS platform</p> <p>15. Development of a new platform devoted to Health Data</p> <p>16. Establishment of / or provision a funding for new data centres. (e.g. creation of Thematic Digital Competence Centre for humanities and social sciences)</p> <p>17. Coordination, curation, and hosting of Covid-19 national platforms</p>	<p>AA14 - Widening to public & private sectors & going global</p>			
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	<p>18. Development of an IT platform for repurposing medicines focused on paediatric diseases, based on an innovative model including a fit-for-purpose IT environment for dedicated data analytics</p> <p>19. Dataverse infrastructure for FAIR geospatial data including contributing to the community metadata standards</p> <p>20. Upscaling of IPCC-Atlas Hub and integration with EOSC authentication system and EOSC Exchange</p> <p>21. Investment in collaboration with ICT consortia on how to use the OpenAIRE Graph for their businesses</p> <p>22. Build a core component of national research and innovation e-infrastructures with long-term advanced computing and storage resources and network connectivity</p> <p>23. Provision of services and infrastructures for data management and High-Performance Computing (replicated massive data storage, cloud infrastructures, computing and visualisation nodes)</p> <p>24. Development of PC oriented computing infrastructure, Big Data oriented computing infrastructure and infrastructure for on-demand cloud services that jointly offer secure data storage, scientific computing on the cloud, software, virtual machines, collaborative research, and computing facilities equipped with technical support and setup for user access</p> <p>25. Development and running Data Repository services allowing the publication of large-scale datasets to</p>				
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	support researchers to make large data sets FAIR and discoverable within EOSC 26. Development of advanced data management and analysis capabilities linked to strategic Supercomputing infrastructures (HPC) 27. Development of a national platform for the implementation of EOSC				
3.2 New (pre-)commercial services and capabilities along the data life cycle addressing current and anticipated needs of the research community at large	1. Definition of services and related policies for data management, processing and orchestration in accordance with potential commercial use-cases 2. Implementation of the EOSC AAI within EuroHPC	SO4 SO7 OO1 OO5 OO10 AA4 – AAI AA5 - User Environments AA6 - Resource Provider Environments AA7 - EOSC Interoperability Framework AA14 - Widening to public & private sectors & going global		1,00	100.000,00
4. CREATING NEW BUSINESS OPPORTUNITIES				5,45	769.350,00
4.1 Invest in start-ups, spin-offs on solutions developed within the projects	1. Support the creation of spinoffs by universities with a 5% stake 2. Transfer of BSC engineering applications to new spin-offs	SO8 AA14 - Widening to public & private sectors & going global		1,85	220.000,00
4.2 Start incubators/accelerators	1. Organisation of bootcamps, hackathons and datathons 2. Support the creation and development of innovative start-ups with high technological intensity and growth potential, founded both by university researchers and students, and by external entrepreneurs, providing strategic consulting services, coaching,	SO8 AA14 - Widening to public & private sectors & going global		2,1	399.350,00

	mentoring, fundraising support, and spaces 3. SWITCH Innovation Labs concerning the harnessing of Open Science with a focus one Open Research Data - Budget Labs				
4.3 Matchmaking between different start-ups, - SMEs, participating companies, stakeholders	1. Organisation of workshops with representatives of non-academic partners to develop a more articulate overview of existing opportunities and conditions for service provision and collaboration (innovation based on co-development) 2. Organisation of info days and matchmaking events 3. Support for SMEs to deliver new innovative products via the EOSC Future DIH	SO8 AA13 - Communication AA14 - Widening to public & private sectors & going global		1,4	140.000,00
4.4 Investments in procurement of innovative solutions	1. Procurement of innovative platform for scientific data preservation and management	SO8 OO7 AA14 - Widening to public & private sectors & going global		0,10	10.000,00
5. TRAINING & SKILLS DEVELOPMENT				253,96	25.893.368,69
5.1 Addressing the development of education, training and skills development in Open science and FAIR data management of research artefacts. Coordinating and aligning relevant curricula on skills for FAIR and Open Science, and training frameworks for young researchers, civil servants and policy makers	1. Various education, training, and skills development activities (such as webinars, video recordings and screencasts) in Open science and FAIR data management of research artefacts also in the context of EOSC related services 2. Contribution to the National Digital Skills and Jobs Coalition 3. Support to RPOs in delivering training on FAIR and RDM 4. Development of training materials and courses covering RDM topics like	SO1 SO2 SO4 SO6 SO8 OO3 OO4 OO6 AA1 – Identifiers AA2 -Metadata & Ontologies		253,96	25.893.368,69

	<p>anonymization, best practices, FAIR principles</p> <p>5. Data stewards' recruitment campaigns</p> <p>6. Trainings on Data Management Plan and data archiving provided by data repository staff to researchers involved in funded projects</p> <p>7. RDM support desks and OS support desks</p> <p>8. Training on ISO standards on data quality, security and on information transfer systems</p> <p>9. Development of data stewardship curriculums, establishment of data steward training programmes, data stewardship certificate courses</p> <p>10. Development of training resources about Open Science and FAIR data for the arts and humanities research communities</p> <p>11. Annual course on Responsible Research and Innovation with a specific stress on OS and FAIR</p> <p>12. Involvement in various working groups on FAIR data, data management</p> <p>13. Advisory services, courses and OS trainings for students, PhD candidates, university authorities, administrative staff, librarians</p> <p>14. Metadata for Machines workshops</p> <p>15. +B57Training activities focusing on experts (train-the-trainers) and researchers (data producers and data users)</p> <p>16. Diploma for 'scientific data management', certifications in Open Science</p> <p>17. Development of leadership programmes to foster the right policy</p>	<p>AA3 - FAIR metrics & certification</p> <p>AA5 - User Environments</p> <p>AA6 - Resource Provider Environments</p> <p>AA11 – Skills and training</p> <p>AA12 – Rewards and recognition</p> <p>AA13 - Communication</p> <p>AA14 - Widening to public & private sectors & going global</p>			
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	<p>environment that supports digital skills and training at institutional and national level</p> <p>18. Build capacities to sustain learning corpora for digital skills and tools so that EOSC represents a trusted and long-lasting knowledge hub</p> <p>19. Cycle of conferences within the framework of the HRS4R to promote scientific careers, incorporating aspects related to open science, FAIR data management plan</p> <p>20. Training platforms with courses on Open Access publishing and FAIR data /RDM</p> <p>21. Continuous upgrading of training materials on FAIR data, RDM, DMP, OA, OS</p> <p>22. Dedicated activities within Open Science Competence Centres and Knowledge Research Education Centres</p> <p>23. Training and dissemination activities among the national RIs connected to ESFRI</p>				
6. CONTRIBUTION TO THE DEVELOPMENT OF NEW STANDARDS, REGULATIONS AND POLICIES				304,63	30.608.601,00
6.1 Standardisation and certification activities related to EOSC trusted repositories (e.g. CoreTrustSeal and FAIR)	<p>1. Preparation of repositories and national repository platform for CTS certification</p> <p>2. Certification (CoreTrustSeal) of institutional research data repositories</p> <p>3. Development of FAIR practices, semantics interoperability of FAIR research resources and repositories</p> <p>4. Support for CoreTrustSeal certification</p> <p>5. Extension of activities of Meta Data Offices, including the management of meta data profiles</p>	<p>SO1</p> <p>SO3</p> <p>SO4</p> <p>SO6</p> <p>OO6</p> <p>OO12</p> <p>AA2 -Metadata & Ontologies</p> <p>AA3 - FAIR metrics & certification</p> <p>AA5 - User Environments</p>		8,9	1.236.394,00

	<p>6. Preparation of certification documentation for the Sensitive Cloud to deal with sensitive (health-related) data</p> <p>7. Financial contribution to the board and secretariat of Core Trust Seal</p> <p>8. Operation of internal ORD working groups</p> <p>9. Operation of the Metadata Validator services</p> <p>10. Contribution to national Computing and Data Infrastructure activities</p> <p>11. Investment in repository certifications stimulate the awareness and skill-levels for how to make data FAIR and help increase the volume of FAIR language data collections</p> <p>12. Provision of funds for participation of data providers to develop standards for interoperability</p> <p>13. Application of FAIR principles and Core Trust Seal certification (RDA & WDS) for Data Centers and services of the Ocean and Solid Earth</p> <p>14. Maintenance of certification services related to Core Trust Seal</p>	<p>AA6 - Resource Provider Environments</p> <p>AA7 - EOSC Interoperability Framework</p> <p>AA13 – Communication</p>			
<p>6.2 Translate FAIR guidelines and frameworks to make them applicable to other digital objects, such as software, code, data management plans, protocols</p>	<p>1. Templates, protocols, and guidelines to manage data according to FAIR principles for the research community, provided by Data Stewards</p> <p>2. Software development of data analysis under open code principles to guarantee its future reusability and data provenance</p> <p>3. Contribution to the development of applicable FAIR guidelines and DMP elaboration guidelines</p> <p>4. Development of FAIR practices, semantics interoperability of FAIR research resources and repositories</p>	<p>SO1</p> <p>SO2</p> <p>SO3</p> <p>SO4</p> <p>SO5</p> <p>OO3</p> <p>OO4</p> <p>OO5</p> <p>OO6</p> <p>OO7</p> <p>OO8</p>		<p>77,1</p>	<p>7.651.344,00</p>



	<p>5. Upgrade the pISA-tree framework for FAIR data management of life science projects</p> <p>6. Preparation of FAIR guidelines for research projects</p> <p>7. Support different research communities in practical solutions to make their infrastructure and procedures FAIR engage in development of template DMPs</p> <p>8. Development of Metadata for Machines tools</p> <p>9. Participation in activities related to national Minimal DMPs</p> <p>10. Contribution to the European Software Sustainability Initiative (EUSSI), the Workshops on Sustainable Software Sustainability (WOSSS) and the FAIR Software Route</p> <p>11. Contribution to the development of institutional and national guidelines for RDM</p> <p>12. Participation to RDA, IVOA, IHDEA, IPDA working groups</p> <p>13. Involvement in EOSC Association's Task Forces work</p> <p>14. Development and upgrade of guidelines for publications, data, software, other research products</p> <p>15. Implementation of discipline specific RDM strategies</p> <p>16. Guidelines for FAIR applications (DMP, Licenses, interoperability standards, Authentication, Catalogues)</p>	<p>AA2 -Metadata & Ontologies</p> <p>AA3 - FAIR metrics & certification</p> <p>AA5 - User Environments</p> <p>AA6 - Resource Provider Environments</p> <p>AA7 - EOSC Interoperability Framework</p> <p>AA11 – Skills and training</p> <p>AA13 - Communication</p> <p>AA14 - Widening to public & private sectors & going global</p>			
<p>6.3 Continuous standardisation of PID resource types and promotion of new practices to expand the range of identifiable research</p>	<p>1. Collaboration with Data Cite on various PID standardization activities</p> <p>2. Implementation of a PID identifier (provided by DataCite) in the raw data of sets collected in different experimental stations</p>	<p>SO1</p> <p>SO2</p> <p>SO3</p> <p>SO4</p> <p>SO5</p> <p>OO1</p>		<p>66,65</p>	<p>6.306.563,00</p>

<p>objects e.g. instruments, services, organisations and software</p>	<p>3. Application in institutional context (eRA, PID service), contributions to committees (e.g., DataCite, CrossRef, ORCID-DE, Eurocris) 4. Work with DataCite DOI service 5. Establishment of national PID roadmaps 6. Integration of ORCID, DOI and other PID in university system 7. PID management, nation-wide services DOI-Service, ORCID, activities in the RDA National PID Strategies Working Group 8. Alignment of PID usage across national DOI users 9. Involvement in EOSC Association's Task Forces work (EOSC Task Force PID policy and implementation) 10. Collaboration on national PID infrastructures for FAIR data 11. Contribution to various national and international PID standardisation activities 12. Contribution to the PID Architecture and design document 13. Costs related to PIDs licencing (DataCite, Handle, CrossRef, ORCID). 14. Operation of the OpenOrgs service that bridges identifiers of organisations from different registries 15. Using and promoting the use of DOI for OGS digital materials 16. Establishment of National Centres for PIDs (ISSN, ORCID consortium, DataCite consortium, ROR)</p>	<p>OO4 OO7 OO8 OO11</p> <p>AA1 – Identifiers AA2 -Metadata & Ontologies AA3 - FAIR metrics & certification AA5 - User Environments AA6 - Resource Provider Environments AA7 - EOSC Interoperability Framework</p>			
<p>6.4 Support all research communities to develop and adopt domain-specific standards and to consolidate common</p>	<p>1. Support domain specific development of ontologies for semantic web applications 2. Support to LifeWatch and CSIC's Teledetection Thematic Platform on the</p>	<p>SO1 SO4 OO4 OO5 OO12</p>		<p>151,98</p>	<p>15.414.300,00</p>

<p>metadata and data schemata for use in the EOSC context</p>	<p>adoption of relevant standards for their domains of knowledge and FAIR principles</p> <ol style="list-style-type: none"> 3. Support to the implementation of data standards 4. Development of Flemish Standard for Research Data 5. Support arts and humanities research communities in developing/adopting new standards and policies, 6. Participation in the following EOSC-Association task forces: TF Upskilling Countries to Engage in EOSC, TF Research Careers, Recognition, and Credit, TF Defining Funding Models for EOSC and TF Semantic interoperability 7. Contribution to FOSB working group architecture - use cases 8. Support for adopting metadata and file format standards to ease data access and discovery 9. Development of national open science plans, development, and promotion of institutional OS policies 10. Support for several research communities in standardisation by data steward teams 11. Activities in the GEO Data Working Group 12. Support research communities (e.g., migration, historical financial data, religious studies, election studies) to implement dedicated metadata 13. Support research communities, mainly in the SSH, to adopt domain-specific standards 14. Development of Code of Conduct for Health Research 15. Preparation for National Metadata Catalogues for research data 	<p>AA2 -Metadata & Ontologies AA3 - FAIR metrics & certification AA5 - User Environments AA6 - Resource Provider Environments AA7 - EOSC Interoperability Framework</p>			
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7. SUPPORTING ECOSYSTEM DEVELOPMENT			328,13	33.859.813,00
7.1 Define and test financing models for a lasting long-term EOSC sustainability framework	<ol style="list-style-type: none"> 1. Co-definition of a sustainability framework with the members of the Hellenic Open Science Initiative 2. Participation in EOSC-A Task Force 'Long term data preservation' 3. Contribution to the work of EOSC Association Financial Sustainability Task Force development of national models for financial sustainability 4. Establishment of working group for defining and assessing business models for OpenAIRE services 5. Build ICDI Legal Entity: management effort, legal expenses, initial capital for all members" 	OO13 OO14 AA9 – Landscape Monitoring AA10 – Funding Models	3,35	435.000,00
7.2 Development of consensual EOSC frameworks and guidelines (e.g. for interoperability, AAI, the implementation of EOSC rules of participation)	<ol style="list-style-type: none"> 1. Participating in EOSC-A Advisory Group 'Technical challenges on EOSC' – Task Force 'AAI Architecture', Task Force 'Technical interoperability of data and services' 2. Participation in EOSC Rules of Participation Compliance Monitoring working group 3. Work on EOSC compatible AAI ecosystem for specific scientific domains (primary Life Science and Healthcare) 4. Contribution to AAI standards and best practices definition from the HPC centre and related services operator perspective 5. Participation in the definition of SRIA and the corresponding Architecture, AAI 6. Participation in the EOSC Association's Task Forces: Rules of Participation Compliance Monitoring, Long-Term Data Preservation 	SO5 OO4 OO5 OO13 AA3 - FAIR metrics & certification AA4 - AAI AA7 - EOSC Interoperability Framework AA9 – Landscape Monitoring	5,62	570.433,00
7.3 Support to knowledge building and sharing with	<ol style="list-style-type: none"> 1. Collaboration with national RPOs and researcher networks 	SO1 SO4	86,07	9.053.433,00

<p>the research domains to support data-intensive-science and inter-disciplinary research</p>	<ol style="list-style-type: none"> 2. Support the publication in Open Science Journals through internal grants 3. Fostering best practices in open science across researchers 4. Dedicated staff to support researchers with interdisciplinary data interoperability across department and projects 5. Establishment of Digital Competence Centers with a focus on improving research data management practises and the adoption of FAIR and Open Science 6. Engagement in several working groups and workshops, e.g., on metrics, architecture, metadata standards 7. Facilitation of dialog across research domains with relevant stakeholders 8. Support all research teams covering the entire data cycle, from writing DMPs, adopting appropriate storage solutions, depositing their datasets in open repositories 9. Communication and dissemination activities towards engagement of research communities in open science practice 10. Collection of regional competences and knowledge and make them available for industry 11. Organisation of a multi-disciplinary, annual scientific and technical users' conferences 12. The cost of personnel in Research Data/ Research Data Management Offices 13. The cost of personnel (developers, system managers, data curators) involved in local research infrastructure work 	<p>SO8 OO2 OO4</p> <p>AA1 – Identifiers AA2 -Metadata & Ontologies AA3 - FAIR metrics & certification AA9 – Landscape Monitoring AA11 – Skills and training AA13 – Communication AA14 - Widening to public & private sectors & going global</p>			
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<p>7.4 Building industry-academia cooperation (e.g. GAIA-X and other industry-driven initiatives)</p>	<ol style="list-style-type: none"> 1. Collaboration with national RPOs and researcher networks 2. Support the publication in Open Science Journals through internal grants 3. Fostering best practices in open science across researchers 4. Dedicated staff to support researchers with interdisciplinary data interoperability across department and projects 5. Establishment of Digital Competence Centers with a focus on improving research data management practises and the adoption of FAIR and Open Science 6. Engagement in several working groups and workshops, e.g., on metrics, architecture, metadata standards 7. Facilitation of dialog across research domains with relevant stakeholders 8. Support all research teams covering the entire data cycle, from writing DMPs, adopting appropriate storage solutions, depositing their datasets in open repositories 9. Communication and dissemination activities towards engagement of research communities in open science practice 10. Collection of regional competences and knowledge and make them available for industry 11. Organisation of a multi-disciplinary, annual scientific and technical users' conferences 12. The cost of personnel in Research Data/ Research Data Management Offices 13. The cost of personnel (developers, system managers, data curators) 	<p>S08</p> <p>AA9 – Landscape Monitoring</p> <p>AA14 - Widening to public & private sectors & going global</p>		<p>19,5</p>	<p>2.007.833,00</p>
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	involved in local research infrastructure work				
7.5 Enforcement and implementation of the EOSC Persistent Identifier (PID) policy and architecture	<ol style="list-style-type: none"> Internal campaign for adoption and promotion of ORCID among staff and researchers from the linked organisations PID analysis project within Knowledge Exchange Centre Revision of institutional policies and enforcement of PIDs for all data holdings The programme that aims to facilitate the production, access, sharing and management of information on national scientific activity Implementation & maintenance of pilot PID services for national User community 	<p>SO1 SO2 SO4 OO11</p> <p>AA1 – Identifiers AA2 -Metadata & Ontologies AA3 - FAIR metrics & certification AA9 – Landscape Monitoring</p>		2,80	283.202,00
7.6 Encouraging and incentivising use of European infrastructure for sharing of research software	<ol style="list-style-type: none"> Encouraging use of image data tools developed in EOSC-Life Internal campaign, using institutional newsletter, for promotion of EOSC membership and raise awareness of the importance of open standards and sharing of research software FAIR software project within Knowledge Exchange Centre Establishment and expansion of a software quality platform (EURISE Network) and bilateral collaborations with other scientific domains Contribution to the European Software Sustainability Initiative (EUSI), the Workshops on Sustainable Software Sustainability (WOSSS) and the FAIR Software Route HPCQS platform design activities MeHeart open-source optimized model of solid mechanics of the myocardium to reproduce the cardiac 	<p>SO6 SO7 OO1 OO7</p> <p>AA5 - User Environments AA6 - Resource Provider Environments AA9 – Landscape Monitoring AA14 - Widening to public & private sectors & going global</p>		2,86	315.533,00

	<p>electro-mechanics in HPC environment for industrial, clinical, and academic applications</p> <p>8. Implementation of software metadata standards on DIGITAL.CSIC institutional repository to increase software visibility and metadata quality</p>				
7.7 Monitoring of EOSC key performance indicators (KPI's), investments and FAIR data production and management	<p>1. Monitor institutional progress of KPIs by Open Science teams</p> <p>2. Engagement in in OpenAIRE monitoring activities</p> <p>3. Reporting activities and participation in WG KPIs and WG Landscape Analysis of national EOSC Mandated Organisation</p> <p>4. Collection of KPIs based on ESFRI KPI framework</p> <p>5. Contribution to national open science website by publishing an online open science dashboard with a variety of indicators</p> <p>6. Performance of a national survey on the status of open access to research data</p> <p>7. Involvement in activities relating to monitoring in the EOSC Steering Board and in the EOSC Association</p>	<p>SO5</p> <p>OO2</p> <p>OO7</p> <p>AA9 - Landscape Monitoring</p>		1,72	172.000,00
7.8 Contributing to a rewards and recognition framework that incentivises FAIR data and Open Science	<p>1. Contribution to the alignment of the national rewards and incentives framework to the European initiatives</p> <p>2. Participation in EOSC-A Advisory Group 'Research careers and curricula' – Task Force 'Research careers, recognition and credit'</p> <p>3. Contributions to committees (e.g., EOSC TF Research careers and recognition and credit, The Guild) and contributions to institutional / national discussions</p>	<p>SO1</p> <p>SO4</p> <p>OO8</p> <p>AA3 - FAIR metrics & certification</p> <p>AA12 - Rewards & Recognition</p> <p>AA13 – Communication</p> <p>OO2</p> <p>OO7</p> <p>AA9 - Landscape Monitoring</p>		59,29	5.933.633,00

	<p>4. Creation of two new awards available to researchers: one for the 'best open access publication' and the other for the 'best FAIR research database'</p> <p>5. Involvement in European initiatives such as the development of an agreement on Reforming Research Assessment</p> <p>6. Ongoing support for the new evaluation system for university's professors</p> <p>7. Scientometric analyses and advisory services for university's researchers and research units</p> <p>8. A pilot for responsible metrics implementation in assessments and job applications</p> <p>9. Development of national rewards and recognition framework within national FAIR Strategy implementation</p> <p>10. Implementation of open science as part of assessment criteria for grant applications in 2022</p> <p>11. Include the Open Science metrics, esp. data sharing, into the career reward system</p> <p>12. Establishment of Research Assessment group</p> <p>13. Participation in initiatives outside EOSC Association (e.g. in cOAlition S and Science Europe)</p> <p>14. Establishment of internal working groups dedicated to rewards and recognitions as well as research assessment</p>				
<p>7.9 Activities contributing to strategic and operational alignment, coordination and synergies with other partnerships, HE missions,</p>	<p>1. Collaboration with other infrastructures, partnerships, Horizon Europe mission, to implement into the strategic and operational plans at EU</p>	<p>SO1 SO8 SO9 OO4</p>		<p>128,84</p>	<p>13.207.013,00</p>

<p>initiatives, research data commons and data spaces</p>	<p>level innovative paediatric research to be developed in synergy.</p> <ol style="list-style-type: none"> 2. Establishment of national Open Science Task Forces and/ or national EOSC Support Offices 3. Coordination of national Open Science Cloud Initiative as national, organizational, and technological environment which encourages and enables open science by providing the resources and services needed for collecting, processing, storing, sharing, and reusing research data following FAIR principles. 4. Participation in Executive Board in Competence Centers 5. Participation in national Open Science Observatories 6. Participation in EOSC task forces UNIBO, in Open Science working groups of The Guild 7. Coordination of national Network for e-Science, fostering the cooperation among main national stakeholders in e-Science, including Open Science 8. Contribution to national Open Research Forum which brings together stakeholders in national research ecosystem to help develop national policies on open research 9. Stakeholder-Management and Communication with Connectome Research Infrastructure Partners and prospective Partners, EOSC national group alignment 10. Collaboration with other important institution and initiatives contributing to strategic and operational alignment: Science Europe, part of CoNOSC, acting as national RDA Node 	<p>AA9 - Landscape Monitoring AA14 - Widening to public & private sectors & going global</p>			
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	<p>11. Connection to the European Consortia of Universities for practices exchange and a correlation of OS approaches</p> <p>12. Contributions to discussions in committees (e.g., The Guild, EUA, LIBER, RDA)</p> <p>13. Alignment with euroCRIS and EOSC</p> <p>14. Coordination of national network and programs on RDM policies to support information exchange and to create and pilot new RDM services</p> <p>15. Alignment between various national universities and with national administration</p> <p>16. Cooperation between universities and national funding organisations to establish an interaction between research information systems and research data management infrastructures with the aid of digital technologies</p> <p>17. Development of common definition of components of the national infrastructure for 1 million genomes (part of the Health Data Space) with relevant stakeholders</p> <p>18. Collaboration with main national providers of data services to have a better integrated national data infrastructure in place</p> <p>19. Contribution to the National e-Science Network</p> <p>20. Coordination of National Institute of Bioinformatic</p> <p>21. Participation to National Open Science Committee, and national EOSC working groups</p> <p>22. Contribution to relevant EU initiatives aligned with EOSC objectives:</p>				
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	SeaDATANET, Science Europe, GBIF, OPERAS 23. Participation in the community of IODE Ocean Best Practices system and in the Inter-sessional Working Group to propose a Strategy on Ocean Data and Information Stewardship for the UN Decade of Ocean Science for Sustainable Development 2021-2030				
7.10 Contact points at national or institutional levels and coordination mechanisms for EOSC uptake by the research communities, infrastructure connection and FAIR implementation	<p>1. Participation in the Hellenic Open Science Initiative, which aims to promote EOSC in the country</p> <p>2. Operation of contact points concerning EOSC activities, related projects, RDM steering group, research data networks</p> <p>3. Coordination activities for National Open Science Cloud Initiative</p> <p>4. Coordination of OS activities relevant at national level and acts as an OS and EOSC helpdesk, supporting the EOSC uptake, being connected to the main initiatives</p> <p>5. Coordination of the national EOSC Forum, running EOSC national Coordination Forum</p> <p>6. Coordination of the national OS Taskforce, engagement with national stakeholders, co-creation activities for potential 'EOSC-proof' services in collaboration with research organisations and researchers</p> <p>7. ERIC contact point that coordinates mechanisms for EOSC uptake at national or institutional</p>	<p>SO1 SO3 SO8 OO2 OO4</p> <p>AA8 – Rules of Participation AA9 - Landscape Monitoring AA13 – Communication AA14 - Widening to public & private sectors & going global</p>		18,08	1.881.733,00

	<p>level (i.e., raising awareness, onboard services on the EOSC Marketplace)</p> <p>8. Contact point for EOSC for national Association of Higher Educational Institutions</p> <p>9. Design of governance model to engage stakeholders (“mirroring the EOSC Association activities”) in the national EOSC building activities</p> <p>10. Coordination of activities and information flows, liaising with the involved ministries and national funding agencies</p> <p>11. Financial support for EOSC Membership for national institutions</p> <p>12. Contact point for Service Providers in member countries</p> <p>13. Staff dedicated to disseminating information among members, and strengthening reinforcement of cooperation to EOSC from all the HE institutions</p> <p>14. Coordination of national activities towards the implementation of ESOC, including work on the general conditions for this implementation participation in the coordination board for implementation of the EOSC initiative on a national level</p> <p>15. Coordinating of works of the national members of EOSC Association, as well as liaising with</p>				
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	those institutions that consider joining the EOSC Association 16. Provision of a communication platform for the institutions, which are not members of the EOSC Association, but whose Open Science initiatives and investments can be aligned with EOSC				
8. COMMUNICATION, DISSEMINATION, AWARENESS RAISING, CITIZEN ENGAGEMENT				54,79	5.510.900,00
8.1 EOSC-related communication, dissemination, outreach and awareness raising activities	<p>1. EOSC-related communication and awareness raising activities, using all available communication institutional channels, including webpages, magazines, newsletters and through social networks</p> <p>2. Dissemination, outreach, social media postings, events and webinars targeted widely for research communities on topics including research data management, EOSC, EUDAT, FAIR data, data infrastructures and research data services</p> <p>3. Dissemination actions with respect to EOSC during national e-Science meetings</p> <p>4. PR activities with national press and magazines (scientific, IT related, broad coverage, ...)</p> <p>5. Awareness raising activities in diverse contexts (e.g., institutional meetings and events, university alliances)</p> <p>6. Creation of a dedicated space on the institutional website to explain EOSC, publicize our membership and gather attention from our community</p> <p>7. Local and national workshops and events</p>	<p>SO1 SO2 SO3 SO4 SO8 OO3 OO4</p> <p>AA5 - User Environments AA6 - Resource Provider Environments AA9 - Landscape Monitoring AA13 - Communication AA14 - Widening to public & private sectors & going global</p>		42,24	4.238.400,00

	<p>8. Dissemination of EOSC policy, funding, and other activities from the European to national and local level</p> <p>9. Roadshow and promoting EOSC to research communities</p> <p>10. Update of engagement strategy</p> <p>11. Activities of communication and awareness of the Scientific Culture</p> <p>12. Dissemination activities related to EOSC near the community, namely through the RDM Forum event</p> <p>13. Online materials devoted to EOSC and Open Science that will be disseminated among national researchers, data stewards, service providers, university authorities as well as local and national authorities</p> <p>14. Creating, transferring, and promoting informational and promotional content via the website, social media, as well as events and publications</p> <p>15. Digital University Hub is the cooperation and service platform for digital and social transformation initiatives by Austrian universities</p> <p>16. Conferences, articles, publications, online events (e.g., the “Open Science Café)</p> <p>17. Organization of promotion and outreach activities updating the information on the website on mapping of research infrastructures</p> <p>18. Development of and contribution to guidelines related to European policy framework and EOSC</p>				
<p>8.2 Promoting EOSC at all levels by engaging with relevant communities and stakeholders</p>	<p>1. Maintenance of dedicated webpage on EOSC-related activities, addressed to various communities</p>	<p>SO1</p> <p>SO3</p> <p>SO8</p> <p>SO9</p>		<p>12,55</p>	<p>1.272.500,00</p>

	<p>2. Engagement activities through EOSC Board and membership fee</p> <p>3. Regular webinars with researchers where EOSC and engagement opportunities are disseminated</p> <p>4. Management of large platforms such as BrainMap - the online community of researchers, innovators, technicians, and entrepreneurs with more than 42.000 accounts or EERIS platform that offers an overview of existing research facilities, equipment, services, and technological services at national level</p> <p>5. Promotion of EOSC in various activities, sometimes in cooperation with OpenAIRE</p> <p>6. Promotion of the federation of existing services and data at the European level</p> <p>7. Promotion of EOSC policy, funding, and other activities from the European to national and local level</p> <p>8. Leverage of existing network and communication channels to general e-infrastructure users' community</p> <p>9. Promotion of EOSC by engaging with research communities in the SSH</p> <p>10. Interactive webinars and EOSC conversations</p> <p>11. Promotion of Open Science with national events, press releases, posts on social media, web news on institutional web sites, paper material (leaflets, roll up, posters), contents on the dedicated section of the institutional web portal</p> <p>12. Citizen engagement through monitoring surveys with the use of innovative applications</p>	<p>004</p> <p>005</p> <p>007</p> <p>008</p> <p>009</p> <p>0014</p> <p>AA13 - Communication</p> <p>AA14 - Widening to public & private sectors & going global</p>			
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	13. Collaboration with funders, research organizations, policymakers, and research communities				
9. OTHER				88,11	16.837.247,00
9.1 Introduction of EOSC-specific references in research programmes and EOSC-related criteria for R&I funding	<p>1. Elaboration of a concrete roadmap/ action plan with indicators corelated to the EU policy recommendations and correlated with SRIA and the EOSC Partnership KPIs, including proposals/ estimates of the financial interventions needed at national level</p> <p>2. Support in drafting OS related criteria in different funding streams</p> <p>3. Contribution to the Horizon Europe Programme (HE) in collaboration with the national HE Programme Committee Research Infrastructures</p> <p>4. Support researchers in integrating EOSC & FAIR in proposals, support researchers to comply with requirements for projects</p> <p>5. University policy for Open Science and Open Access, finalization, and implementation</p>	<p>SO1 SO3 SO4 OO4</p> <p>AA8 – Rules of Participation AA9 - Landscape Monitoring AA12 - Rewards & Recognition</p>		0,15	15.000,00
9.2 Activities in support of open publishing and initiatives to promote wider open access publication through the EOSC	<p>1. Development, support, and promotion of the national infrastructure for OA and activities on boarding those infrastructures to EOSC</p> <p>2. Enforcement of the open access policy for mandatory deposit of publications and data in the institutional repositories - OpenAIRE compliant - through the recruitment of new library staff for full-text check</p> <p>3. Support to diamond open access through the institutional e-publishing platforms for open access peer-reviewed journals and books</p>	<p>SO1 SO3 SO4 OO1 OO3</p> <p>AA6 - Resource Provider Environments AA13 - Communication AA14 - Widening to public & private sectors & going global</p>		43,71	6.866.512,00

	<p>4. Institutional contributions to European infrastructures (e.g., OPERAS, OpenAIRE)</p> <p>5. Liaison activities with Open Research Europe - ORE and Open Repositories at EU, national and regional levels</p> <p>6. Collaboration with other organisations, support Open Science organisations like SCOSS, participation in OpenAIRE</p> <p>7. Open Access initiatives for digital publications</p> <p>8. Involvement in the international coalition, cOAlition S, which is behind Plan S</p> <p>9. Operation of the institutional open access repository Research Collection</p> <p>10. Support open access data journal Research Data Journal for Social Sciences and Humanities</p> <p>11. Support for researchers with finding appropriate research repositories and support in the deposition process</p> <p>12. Operation of institutional DSpace repository</p> <p>13. Development of guides for open access publishing in Horizon Europe</p> <p>14. Provision of technical links from OpenAIRE repositories to Open Research Europe</p> <p>15. CzechElib - transition to Gold OA via transformative agreements, National repository, Implementation of European OS standards</p>				
<p>9.3 Adoption of national or institutional strategies for digital transformation and related roadmaps including a reference to the EOSC</p>	<p>1. Support to the implementation of the Digital Bible priorities</p> <p>2. Digitisation projects of cultural heritage collections within the national program of the Ministry of Culture</p> <p>3. Research Data Management policy</p>	<p>SO1</p> <p>SO2</p> <p>SO3</p> <p>SO4</p> <p>SO9</p> <p>OO1</p>		<p>17,93</p>	<p>2.141.500,00</p>

	<p>4. Adoption of national strategies, e.g. National Strategy Open Research Data</p> <p>5. Development of national roadmap on Open Science</p> <p>6. Participation in projects aligned with the National AI strategy and actions in the field of data platforms</p> <p>7. Promotion of digital enabling technologies such as connectivity infrastructures or massive data environments to facilitate data sharing</p> <p>8. Development of advanced data management and analysis capabilities linked to strategic Supercomputing infrastructures (HPC)</p> <p>9. Finalization of the university roadmap on open science, essentially on open data</p> <p>10. Adoption and implementation of Institutional Strategies on Open Science</p> <p>11. Implementation of national digital transformation strategies through the University Action Plan</p> <p>12. Contribution to the National Roadmap for Digital Transformation which also included actions for Open Science and EOSC</p> <p>13. Implementation of the institutional strategies for digital transformation and related roadmaps through a dedicated working group, periodical meetings, and the involvement of all institute's personnel</p>	<p>OO2 OO3 OO4 OO6 OO8 OO13</p> <p>AA9 - Landscape Monitoring AA13 - Communication AA14 - Widening to public & private sectors & going global AA3 - FAIR Metrics & Certification AA9 - Landscape Monitoring</p>			
<p>9.4 Adoption of new policies on Open Science referring to the use of the EOSC or the implementation of the FAIR principles. Definition of policy targets and action</p>	<p>1. Support the implementation of activities included in the proposal for a National Open Science Plan</p> <p>2. Plan S implementation, national Open Science Board roadmap implementation</p> <p>3. Completion of national policies on Open Science</p>	<p>SO3 SO4 OO4</p> <p>AA3 - FAIR Metrics & Certification</p>		<p>20,83</p>	<p>2.094.235,00</p>

<p>plans for the implementation of those policies</p>	<ol style="list-style-type: none"> 4. Ensure a long-term connection to the major EU initiatives and the national ones 5. Operation of NOSCI forum 6. Contribution to the development of national policies, agenda, objectives on OS in the OS national Taskforce 7. Adoption of national roadmap on Open Science 8. Develop an update of the open science and the publication policy 9. Implementation of institutional RDM/ OS policy 10. Development of the concept of a national strategic document on Open Science for the Ministry of Education and Research 11. Development of national and institutional strategic document templates on Open Access, Open Science (for research performing and research funding organisations) 12. Development of the Institutional Open Research Data Policy framework 13. Development and implementation of national policies on Open Science 14. Revision of policies to adhere to new national ORD strategy, which also refers to EOSC 15. Implementation of institutional policy on FAIR Data & software 16. Development of a set of recommendations in relation to infrastructure and various research artefacts (research publications, data, software, open-source code) at national and institutional level 17. Continuation and enforcement of the institutional mandate for Open Access publications through DIGITAL repository 	<p>AA8 – Rules of Participation AA9 - Landscape Monitoring</p>			
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<p>9.5 Liaise internationally to develop a global cooperation framework for Open Science infrastructures</p>	<ol style="list-style-type: none"> 1. Collaboration aimed at increasing the awareness for the potential benefits of sharing language resource enabled by the interoperability framework 2. Maintenance of existing links with active consortia in South Africa, the US, Australia, and Latin America 3. Organisation of promotion and outreach activities updating the information on the website on mapping of research infrastructures 4. Active liaisons with regional networks around the world (Canada, Latin America, UN, GOSC, RDA, COAR) which include technology transfer, know-how and practices 	<p>S08 S09</p> <p>AA14 - Widening to public & private sectors & going global</p>		<p>5,50</p>	<p>5.720.000,00</p>
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