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Deliverable Abstract

In 2024, WP4 of the EOSC Focus project continued supporting the European Open Science Cloud - Association (EOSC-A) in monitoring, reporting, and evaluating the EOSC Partnership's progress. Key achievements during this period included the update of the EOSC Partnership Monitoring Framework (MF, V7.0, June2024) and the completion of the 2nd Biennial KPI Survey, which saw a significant increase in stakeholder participation. Additionally, the Additional Activities Plan (AAP 2025) and Additional Activities Report (AAR 2023) surveys validated over €322 million of in-kind contributions for 2023 (AAR), with projections exceeding a total of €1.3 billion by 2025.

WP4 also subcontracted development of a Data Management System (DMS) to improve monitoring and reporting efficiency, transparency and data management. Measuring the impact of the EOSC partnership was initiated through the EOSC Macro-Roadmap impact case studies and the delivery of the Sustainable Exploitation Planning (SEP) methodology to the projects participating the HE Impact WG. These efforts support the long-term sustainability of EOSC-related activities, contributing to the continued success of the EOSC Partnership and its alignment with Horizon Europe priorities.

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Glossary/ Abbreviations

Glossary/Abbreviations	Definition
AA	Additional Activities
AAP	Additional Activities Plan
AAR	Additional Activities Report
API	Application Programming Interface
BMR	Biennial Monitoring Report
BoD	Board of Directors
CI	Common Indicators
D	Deliverable
DMS	Data Management System
DPIA	Data Protection Impact Assessment
EC	European Commission
EU	European Union
EOSC	European Open Science Cloud
GDPR	General Data Protection Regulation
IAM	Identity and Access Management
e-SEP	Enhancement of Sustainable Exploitation Planning (SEP methodology)
EOSC-A	European Open Science Cloud-Association
FMR	Full Monitoring Report
FTE(s)	Full-Time Equivalent(s)
GDPR	General Data Protection Regulation
HE	Horizon Europe
KER	Key Exploitable Result
KPI	Key Performance Indicator
MF	The EOSC Partnership Monitoring and Evaluation Framework
MoU	Memorandum of Understanding
MVP	Minimum Viable Product
REA	European Research Executive Agency
RFP	Request for Proposal
SEP	Sustainable Exploitation Planning

SP	Service Provider
SRIA	Strategic Research and Innovation Agenda
WG	Working Group
WP4	Work Package 4: Monitoring and Impact Assessment
WP5	Work Package 5: Sustainability of EOSC

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Executive Summary

In 2024, WP4 (Monitoring and Impact Assessment) of the EOSC Focus project continued to support the EOSC-A in the monitoring, evaluation and reporting of the EOSC-Partnership’s progress towards the objectives outlined in the Memorandum of Understanding (MoU) with the European Commission (EC). This report summarises the key activities conducted between January 2024 and March 2025.

Key achievements included the update of the EOSC Partnership Monitoring Framework (MF), the successful completion of major surveys (the 2nd Biennial KPI Survey for EOSC Partnership, Additional Activities Plan 2025, Additional Activities Report 2023), and subcontracted the development of a Data Management System (DMS) platform designed to streamline the EOSC Association’s duties in monitoring and reporting and the survey data management. The updated EOSC MF was agreed within the EOSC Partnership Board Meeting of July 2024 to account for the rapidly evolving landscape of the EOSC initiative. Responses to the 2nd Biennial KPI Survey for the EOSC Partnership nearly doubled from 2022 to 2024, reflecting stronger engagement across the EOSC-A membership. Meanwhile, cumulative in-kind contributions reported in the Additional Activities Plan (AAP) 2025 and Additional Activities Report (AAR) 2023 surveys reached €1.3 billion, reinforcing the Partnership’s robust trajectory.

A notable focus of WP4 was to support the demonstration of impact through several of actions: i) Establishment of the HE Impact Working Group to support EOSC-related Horizon Europe projects in approaching the sustainable exploitation of their key results, with the aim to maximise their potential to impact on the EOSC development, as well as on other areas of societal interest; ii) Reporting cases of impactful contributions from both members and non-members of EOSC-A to the EOSC Macro-Roadmap; iii) Introduction of the Sustainable Exploitation Planning (SEP) methodology to help projects ensure the long-term viability of their outcomes. Reported activities reflect WP4’s effort to deliver effective monitoring and evaluation frameworks, contributing to the demonstration of the EOSC Partnership effectiveness in pursuing its strategic objectives towards the envisaged impact.

1. Introduction

The EOSC Partnership, launched in June 2021 through a MoU¹ between the European Union (EU), represented by the European Commission (EC), and the EOSC-A, aims to drive coordinated investments and initiatives aligned with the EOSC Strategic Research and Innovation Agenda (SRIA)². Under the MoU, the EC committed €490 million in Horizon Europe actions for 2021–2030, while EOSC-A and its Members pledged €500 million for EOSC-related activities. The reported actual and planned contributions have already reached €1.3 billion within the Partnership’s first four years.

To ensure accountability and track progress toward the goals outlined in the MoU¹, EOSC-A carries out continuous monitoring and periodic reporting to the EC (see Section 1.1). EOSC Focus WP4 has supported this process by providing insights into progress, identifying risks, guiding revisions to the

¹ https://eosc.eu/wp-content/uploads/2023/08/EOSC_Memorandum_30_July_2021-1.pdf
² https://eosc.eu/wp-content/uploads/2024/12/20241031_SRIA_1.3_final_Annex.pdf

Monitoring and Evaluation Framework³, and assessing the Partnership's added value (see Section 2). A key development in this regard was the subcontracted development of an online survey and data management platform, enhancing the collection, organisation, and analysis of member contributions for AAP, AAR, and KPI surveys (see Section 3).

Impact assessment is another major component of the Partnership's periodic reporting, encompassing the mining of impact case studies from AAR 2022 and their inclusion in the latest *Biennial Monitoring Report 2024 on European Partnerships*⁴ and *First biennial Full Report of the Co-Programmed European Partnership EOSC*⁵ reports. Some of these cases, along with in-kind contributions from both members and non-members, are published in the EOSC Macro-Roadmap catalogue⁶ (see Section 4).

Additionally, the impact of HE EOSC-related projects also remains an important aspect of the reporting. While the realisation of impact may require a longer time scale than the project's lifetime, WP4 has provided a methodology and support to the INFRAEOSC projects to develop long term exploitation plans, towards the maximisation of their impact potential. Initiatives such as the Sustainable Exploitation Planning (SEP) methodology have been developed to support the EOSC-related projects in contributing with lasting values beyond their EU funding cycles (see Section 4.1).

1.1. The Monitoring and Evaluation Framework of the EOSC Partnership

As part of advancing the EU's digital ambitions, and as documented in the MoU, the EOSC Partnership is required to monitor its progress toward the objectives of its SRIA. In 2024, EOSC Focus WP4 continued supporting EOSC-A in its monitoring and reporting obligations (see Sections 2.1, 2.2, and 2.3), with the revision of the Monitoring and Evaluation Framework³ (see Section 2.3.1), and with the assessment of the impact of EOSC-related activities (see Section 4). These efforts employed both quantitative (e.g., AAP/AAR/KPI surveys) and qualitative (e.g., Macro-Roadmap and SEP) methodologies.

Monitoring and reporting activities align with the Partnership requirements, and encompass both annual and biennial evaluations:

- **Annual Monitoring and Reporting Activities:**
 - Monitoring of the EOSC-A Members' in-kind contributions, via the Additional Activities Plan (AAP) and Additional Activities Reporting (AAR) surveys;
 - Reporting these contributions to the EOSC Partnership Board.
- **Biennial Monitoring and Reporting Activities:**
 - Surveying the status of the Key Performance Indicators (KPIs) of MF³ to measure progress towards SRIA² objectives (2022, 2024, 2026);

³ https://eosc.eu/wp-content/uploads/2024/08/20240621_Draft_EOSC_Monitoring_Framework_v7_Final_Clean.pdf

⁴ European Commission: Directorate-General for Research and Innovation, *Performance of European partnerships – Biennial monitoring report 2024 on partnerships in Horizon Europe*, Publications Office of the European Union, 2024, <https://data.europa.eu/doi/10.2777/991766>

⁵ *First biennial Full Report of the Co-programmed European Partnership EOSC for the period 01/06/2021 - 30/06/2023*, https://eosc.eu/wp-content/uploads/2024/01/20231212_FMR.pdf

⁶ <https://eosc.eu/eosc-macro-roadmap/>

- Reporting to the EOSC Partnership Board on the above-mentioned KPIs (2022, 2024, 2026);
- Preparing the EOSC Partnership Fiche and responding to the Common Indicators (CIs) survey, in connection with the Biennial Monitoring Report (BMR)⁴ requirements by the EC's Central Coordination Unit for HE Partnerships (2021, 2023, 2025, 2027);
- Compiling the Full Monitoring Report (FMR)⁵ as a supplement to the BMR, which provides insights on the additionality (EOSC-A Members contribution), directionality (progress towards the objectives), functioning of the Partnership, and impact case studies, as committed in the MoU (2021, 2023, 2025, 2027).

1.2. Scope of this deliverable

This deliverable builds on the work reported in EOSC Focus D4.2, *Annual Report Published by the EOSC-A and Monitoring Framework Revision (1st release)*⁷, and further developed in D4.3, *Annual Report Published by EOSC-A, Providing Aggregated Data Relating to Performance Levels and Contributions*⁸. It details the support provided by WP4 to the EOSC Partnership's monitoring and reporting activities, as well as activities related to impact assessment, from January 2024 to March 2025.

Specifically, this deliverable aims to:

- **Report on forecast contributions** by EOSC-A Members for 2025, as outlined in the Additional Activities Plan survey (AAP 2025);
- **Report on actual contributions** by EOSC-A Members for 2023, as outlined in the Additional Activities Report survey (AAR 2023);
- **Present the data collected from the 2024 Biennial KPI Survey for EOSC Partnership**, capturing progress against the Key Performance Indicators (KPIs) of the EOSC Partnership Monitoring Framework (MF)³ for 2022–2023, as measured against the SRIA objectives and the 2021 baselines. This report, required by the EC, will be submitted in spring 2025 for approval;
- **Report on preparatory activities** for AAP 2026 and AAR 2024 surveys;
- **Describe the development and implementation** of the online survey tool and data management system subcontracted by EOSC Focus WP4 to improve reporting efficiency;
- **Highlight impact-related activities**, including contributions to the EOSC Macro-Roadmap, from both member and non-members of the EOSC Association, and supporting the establishment and operation of the Horizon Europe Impact Working Group (HE Impact WG);
- Reflect on lessons learned and propose next steps to enhance monitoring, reporting, and impact assessment.

This deliverable demonstrates EOSC Focus's crucial role in ensuring the Partnership's accountability, strategic reporting, and progress measurement.

2. Monitoring and Reporting Activities

2.1. Additional Activities Plan 2025 (AAP 2025)

EOSC-A Members have committed to providing €500 million in in-kind contributions to support the co-financing of the EOSC Partnership over the period 2021-2030. This funding aims to advance the

⁷ <https://doi.org/10.5281/zenodo.10930869>

⁸ EOSC Association (2024), Deliverable 4.3, *Annual report published by EOSC-A, providing aggregated data relating to performance levels and contributions* (Pending REA Approval)

objectives outlined in the SRIA and aligns with the provisions of the Partnership's MoU. These in-kind contributions, known as Additional Activities, complement the financial support allocated by the European Commission (EC) under Horizon Europe (HE). They are measured annually through the AAP, a plan structured around nine high-level categories. The in-kind contributions planned by EOSC-A Members for 2025 were approved at the 7th Partnership Board meeting on December 11, 2024.

The AAP 2025 survey was conducted by EOSC-A with the assistance of EOSC Focus WP4 during Q2/Q3 2024 using the EUSurvey platform. Its purpose was to collect information on forecasted activities for 2025. A total of eighty-six members participated from twenty-three European countries. Participation in the survey among EOSC-A Members has remained consistent since its launch in 2022, with around 50% of the membership responding. Key reasons for non-participation include competing priorities, survey length and survey fatigue, misalignment of survey categories with EOSC priorities, strategic membership motivations, complexity, and the fact that participation is not mandatory.

Among the survey respondents, 54% were from Research Performing Organisations, 34% from Service Providers, 8% from Research Funding Organisations, and 4% from other types of organisations. The majority (81%) represented public institutions.

Survey Structure

Similar to the structure used in 2023, the survey was divided into three main sections:

- Section I: "Your Organisation Profile"
- Section II: "Additional Activities 2025": This section requested information on contributions forecast for 2025 and adhered to the nine main categories provided by the EC for HE projects. Each category was further broken down into activity types agreed upon with the EC. Members provided detailed data, including Full-Time Equivalents (FTEs), monetary values (€, incorporating FTE valuations), and descriptions of activities that demonstrate their relevance to EOSC.
- Section III: "Additional Activities 2025: Case Studies": Given the importance of showcasing the practical applications of EOSC, the AAP surveys have, since last year, encouraged EOSC-A Members to provide a detailed description of at least one flagship initiative among the planned activities reported in section II. The goal is to capture their specific impact, not only in terms of the number of FTEs and financial contributions, but also in relation to the particular areas they influence. The AAP 2025 survey questionnaire is available on the EOSC-A website⁹.

Updates and Improvements

The AAP, along with the AAR survey, underwent some changes between 2022 and 2024. These updates were documented in D4.3⁸.

For 2025, recognising the need for more detailed insights into funding sources, and with the requirements emerging from the other EC monitoring indicators (Common Indicators for the HE partnerships), the AAP survey introduced a new section. Members were asked to specify the percentage of funding allocated to each reported activity, categorised by the following sources: the European Regional Development Fund (ERDF), European Social Fund Plus (ESF+), Cohesion Fund (CF), European Agricultural Fund for Rural Development (EAFRD), European Maritime, Fisheries, and

⁹ https://eosc.eu/wp-content/uploads/2024/04/AAPsurvey2025_Word.docx

Aquaculture Fund (EMFAF), National/Regional Funds, Institutional Funds, Private Donors, and other sources.

Furthermore, section III of the AAP2025 survey: “Additional Activities 2025: Case Studies” was updated with new fields to reflect categories for member contributions from the EOSC Macro-Roadmap. The new fields included an interactive catalogue of the results of EU projects developing EOSC and the deliverables of the EOSC-A Task Forces, as well as member and non-member contributions to EOSC (details are in section 4.1 of this report: ‘EOSC Macro-Roadmap – Member and Non-Member Contributions’).

Training and Support

EOSC-A, with the support of EOSC Focus WP4, organised a series of online training sessions to assist Members in completing the AAP 2025 and AAR 2023 surveys. Three sessions, held on 9, 11 and 17 April 2024, provided guidance on navigating the survey, supported by training materials shared on the EOSC-A website. The materials included a comprehensive presentation¹⁰ covering the following topics: The MoU between the EU and EOSC-A; Definitions of Additional Activities (AAs); Monitoring & Reporting of AAs - Annual Cycle; Categories of AAs; Insights into the AAP 2025 and AAR 2023 surveys (General improvements, Survey Structure, Survey Guidance, Live demonstration); Background information and FAQs.

Additionally, from April 25 to June 30, 2024, EOSC-A, in collaboration with the WP4 team, hosted weekly online office hours, every Thursday from 10:00 to 11:00. These sessions provided respondents with the opportunity to address specific issues and receive one-on-one assistance.

Summary of Results

Figure 1 outlines the results of the AAP 2025 survey, as approved during the 7th Partnership Board meeting in December 2024. It presents estimated in-kind contributions (€) across the nine main Additional Activities categories, with a total value of 340.123.842 €. Key categories identified as receiving significant investment in 2025 included: Category 1: Support to additional research and innovation (€116 million), Category 3: Demonstrators (€76 million), and Category 7: Supporting ecosystem development (€43 million). All approved documents can be found in the EOSC-A website under the tab Monitoring & Reporting in the section “Tracking in-kind contributions”¹¹.

The progress of various activity types has shown varying trends over the years, with some experiencing growth and others seeing a decline. These changes reflect evolving priorities and the shifting focus of the partnership. For instance, activity 1.1, which focuses on upgrading research infrastructures and e-infrastructures for EOSC federation, has experienced a decline (Figure 2a), which might indicate that necessary infrastructural upgrades have been completed; activity 7.9, which supports strategic alignment and coordination with other partnerships, has also decreased (Figure 2b), which could be attributed to the fact that initial synergies have been established, reducing the need for ongoing coordination at this stage.

On the other hand, activities that have seen growth include Activity 5.1 (Figure 2c), which focuses on developing education and training on Open Science and FAIR data management. Its growth shows the increasing importance of equipping young researchers, civil servants, and policymakers with the necessary skills to drive the digital transformation in research. Similarly, Activity 9.2, aimed at

¹⁰ https://eosc.eu/wp-content/uploads/2024/04/20240418_AAP_2025_survey_Guidance_materials_v4.pdf

¹¹ <https://eosc.eu/monitoring-reporting/additional-activities-in-kind-contributions-to-the-eosc-partnership/>

promoting open publishing and access through EOSC, has steadily increased (Figure 2d), reflecting a growing global commitment to open science and wider dissemination of research outcomes.

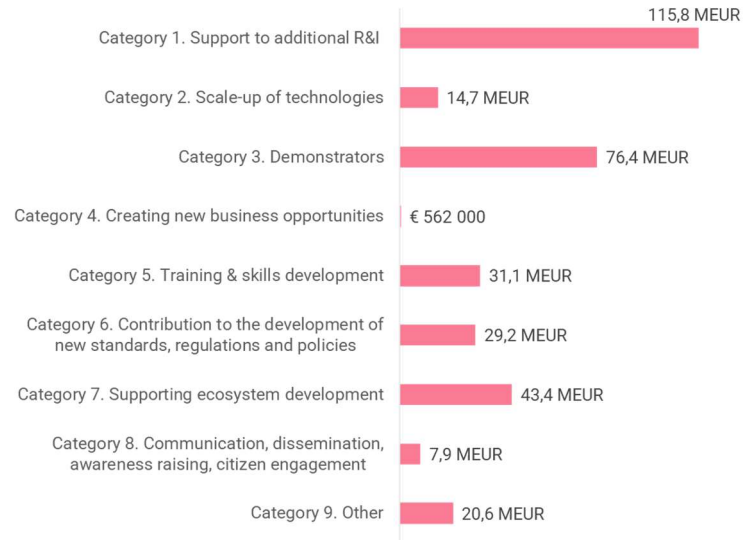


Figure 1. Annual estimated in-kind contributions in Additional Activities, AA provided by EOSC-A Members for year 2025 (AAP 2025 survey). A summary for main AA categories is provided.



Figure 2, a-d. Trends in in-kind contributions for various Additional Activities types over the years 2022-2025.

2.2. Additional Activities Report 2023 (AAR 2023)

The AAR 2023 survey was conducted in Q2/Q3 2024 (in parallel with the AAP 2025 survey) by EOSC-A with support from EOSC Focus WP4. Its objective was to validate the actual in-kind contributions provided by EOSC-A Members in 2023. These actual in-kind contributions for 2023 were submitted to the EC through the newly introduced IKKA online tool and officially approved on October 14, 2024. Furthermore, the Partnership Board endorsed the contributions during its 7th meeting on December 11, 2024.

As for the AAP2023 conducted in 2022, the survey utilised the EUSurvey platform and adhered to a consistent structure to ensure comparability. The AAR 2023 survey questionnaire is available online¹². 85% (71/84) of members who participated in the AAP 2023 survey in 2022 validated their contributions in 2024. Most members who did not validate their contributions had already withdrawn their membership from the Association. The participating Members represented 26 countries, with 49% from Research Performing Organisations, 36% from Service Providers, 11% from Research Funding Organisations, and 4% from other types of organisations.

Figure 3 provides a summary of the 2023 results, indicating total reported contributions of €322 million compared to the AAP 2023 forecast of €384 million (-16%). Reasons for discrepancies are similar to those reported in AAR 2022, including variations in actual activities performed, lower/higher number of FTEs reported, and use of a different FTE conversion rate.

The top categories of investment reported in 2023 included: Category 1: Support to additional R&I planned investment (€119 million), Category 7: Supporting ecosystem development (€56 million) and Category 3: Demonstrators (€51 million). Further details on AAR 2023 survey results are available on the EOSC-A website under the Monitoring & Reporting tab, in the section "Tracking in-kind contributions"¹¹.

The deviations between planned and actual in-kind contributions for 2023 are presented in Table 1. Discrepancies were due to the following factors: differing FTE conversion rates between AAP2023 and AAR2023; variations in the number of FTEs invested; delays (e.g., administrative issues, recruitment) or exclusion of EU funds; and differences between planned and actual activities. Additionally, two organisations saw significant investment drops: Category 3 (€37 million reduction due to integrating open science into larger EC projects) and Category 7 (€15 million decrease due to a typographical error).

The cumulative value of in-kind contributions delivered in 2022 and 2023 stands at €614 million, surpassing the €500 million target set in the MoU for 2030. Planned contributions for 2024 and 2025 indicate sustained growth, with annual investments exceeding €300 million. By the end of 2025, total contributions - both actual and planned - are projected to reach €1.3 billion (Figure 4).

¹² https://eosc.eu/wp-content/uploads/2025/01/AAP2023_survey-questionnaire.pdf

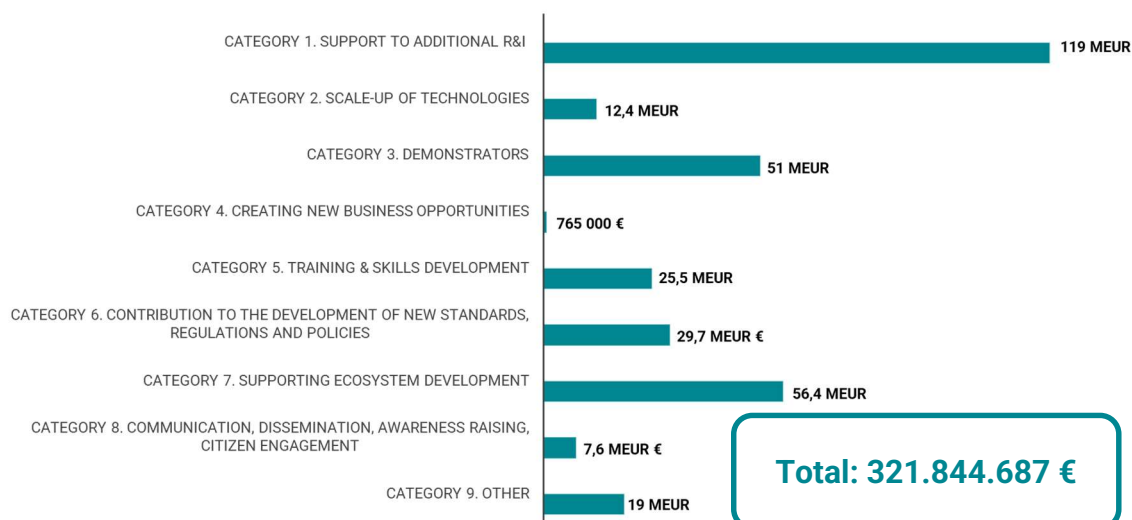


Figure 3. Annual actual in-kind contributions in Additional Activities, AA provided by EOSC-A Members for year 2023 (AAR 2023 survey).

Table 1. Comparison of estimated (results from AAP 2023) and actual (results from AAR 2023) annual values (€) per Additional Activities (AA) category, for the in-kind contributions provided by EOSC-A Members in the form of AAs from 01/01/2023 to 31/12/2023.

Categories	AAP2023	AAR2023	Variation
1. Support to additional R&I	€ 114.288.546	€ 119.063.890	€ 4.775.344
2. Scale up of technologies	€ 21.741.460	€ 12.465.822	-€ 9.275.638
3. Demonstrators	€ 94.058.548	€ 51.020.642	-€ 43.037.906
4. Creating new business opportunities	€ 2.110.000	€ 765.000	-€ 1.345.000
5. Training & skills development	€ 24.575.983	€ 25.573.992	€ 998.009
6. Contribution to development of new standards, regulations, and policies	€ 30.981.585	€ 29.762.614	-€ 1.218.971
7. Supporting ecosystem development	€ 71.164.691	€ 56.426.423	-€ 14.738.268
8. Communication, dissemination, awareness raising, citizen engagement	€ 7.771.390	€ 7.698.569	-€ 72.821
9. Other	€ 17.237.094	€ 19.067.736	€ 1.830.641
	€ 383.929.296	€ 321.844.687	-€ 62.084.609

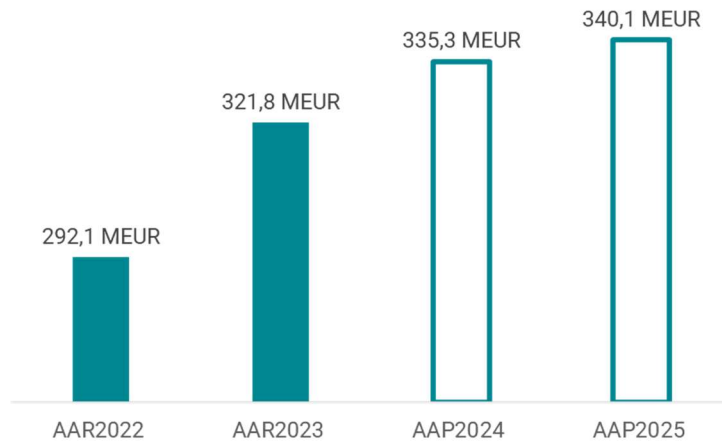


Figure 4. Final (actual) EOSC-A Members in-kind contributions from AAR2022 and AAR2023 surveys, and planned in-kind contributions from AAP2024 and AAP2025 surveys.

2.3. Key Performance Indicators (KPIs)

The EOSC Partnership monitors its progress toward the objectives in the EOSC Strategic Research and Innovation Agenda (SRIA)², through two mechanisms:

- Tracking in-kind contributions from EOSC-A Members via AAP and AAR surveys (Sections 2.1 and 2.2); and
- Defining, establishing baseline measures, and assessing the Partnership's KPIs.

The Partnership's progress against the SRIA objectives is evaluated based on the Key Performance Indicators (KPIs) outlined in the MF³. A baseline for all KPIs was established with a first survey conducted in October 2022, using 2021 as the reference year. The baseline results were detailed in Deliverable D4.2⁷. The 2nd KPI survey, conducted from 1 to 30 October 2024, assessed the further progress by the Partnership, referring to the years 2022-23.

2.3.1. The EOSC Partnership Monitoring Framework Revision (2024)

The MF³ provides a transparent, evidence-based evaluation of the Partnership's development. Each KPI is linked to a strategic objective of the EOSC SRIA and is assigned clear target values and timelines. Data sources and the monitoring responsibilities are also clearly defined, ensuring a robust and transparent methodology for data collection and reporting.

Initially adopted in 2022, the Monitoring and Evaluation Framework underwent a comprehensive revision in 2024, in consideration of the recommendations provided by D4.2, based on the first iteration of the KPI monitoring exercise (2022) and of the rapidly evolving status of the EOSC deployment. The revised MF (version 7.0) was formally adopted at the 6th Partnership Board Meeting, in July 2024. It now includes 27 KPIs: nine KPIs correspond to six Specific Objectives of SRIA; and: 18 KPIs correspond to 14 Operational Objectives of SRIA. These KPIs were monitored in October 2024, with the 2nd Biennial KPI Survey of the EOSC Partnership, referring to the status of the indicators in the years 2022-2023.

2.3.2. The 2nd Biennial KPI Survey for EOSC Partnership (2024)

The 2024 survey was launched by EOSC-A on 1 October 2024, hosted on the GDPR-compliant EUSurvey platform (by EC). Initial closing date was set on 18 October but the deadline was extended to 30 October to accommodate delayed submissions.

To support respondents, three online training sessions were held on 3, 9, and 11 October 2024. These sessions, attended by approximately 30 representatives of EOSC-A Members, included an overview of the survey structure, clarification of questions, and guidance on completion. The EOSC-A President also participated. Registration was required, and the session materials, including presentation slides¹³, are accessible online.

Building on the 2022 experience and the feedback received from the respondents of the first iteration, the 2024 questionnaire was streamlined to enhance efficiency and user experience: the survey questions were organised to address only the target group to which they referred: only a subset of questions was addressed to the whole EOSC-A Membership Base (both EOSC-A Members and Observers); other subsets targeted the specific groups of Research Performing Organisations, Research Funding Organisations, Service Providers, and the Research Infrastructures on the ESFRI Roadmap; a set of questions were reserved for the EOSC-A Secretariat and representatives from the EC (DG RTD). This survey logic is described in Appendix 1, while the full survey questionnaire is available online¹⁴.

The survey saw a significant increase in participation compared to its first edition in 2022, with the number of responding EOSC-A members more than doubling. In 2024, 133 out of 256 eligible Members and Observers recorded in 2023 participated (52% response rate), along with two additional new Members who joined in 2024, bringing the total number of respondents to 135. This contrasts with the 2022 survey, in which 63 out of 159 possible Members participated (40% response rate). Notably, the 2024 edition included 102 Members and 31 Observers, whereas the 2022 survey targeted only Members. This increase can be attributed not only to the expanded respondent pool, which now includes both Members and Observers, but also to a streamlined reporting process that reduced respondent fatigue and a comprehensive communication strategy that actively engaged participants through training sessions and direct outreach.

The anonymised and aggregated results from the survey are detailed in the next section. Further information about the KPI survey can be found in the Monitoring & Reporting section of the EOSC website in the section “Measuring KPIs”¹⁵ and by consulting the revised MF (v7.0).

2.3.3. Key Findings and Trends from the 2nd Biennial KPI Survey

Comparing 2021 to 2022-2023 data, the progression of the EOSC Partnership status with respect to the objectives set in the MoU is evident, with 50% of the indicators that resulted ‘on track’, in the 1st survey, reaching the status ‘achieved’. At this point in time, the majority of the indicators (60%) resulted

¹³ https://eosc.eu/wp-content/uploads/2024/10/20241003_KPI-survey-2024_Training-slides.pdf

¹⁴ https://eosc.eu/wp-content/uploads/2025/01/KPI-survey-for-EOSC-Partnership_2024.pdf

¹⁵ <https://eosc.eu/monitoring-reporting/eosc-partnership-monitoring-framework/>

as achieved. Figure 5 presents all investigated KPIs and their 2024 performance (covering 2022-2023 period), in comparison to the baseline values measured in 2022 for year 2021.

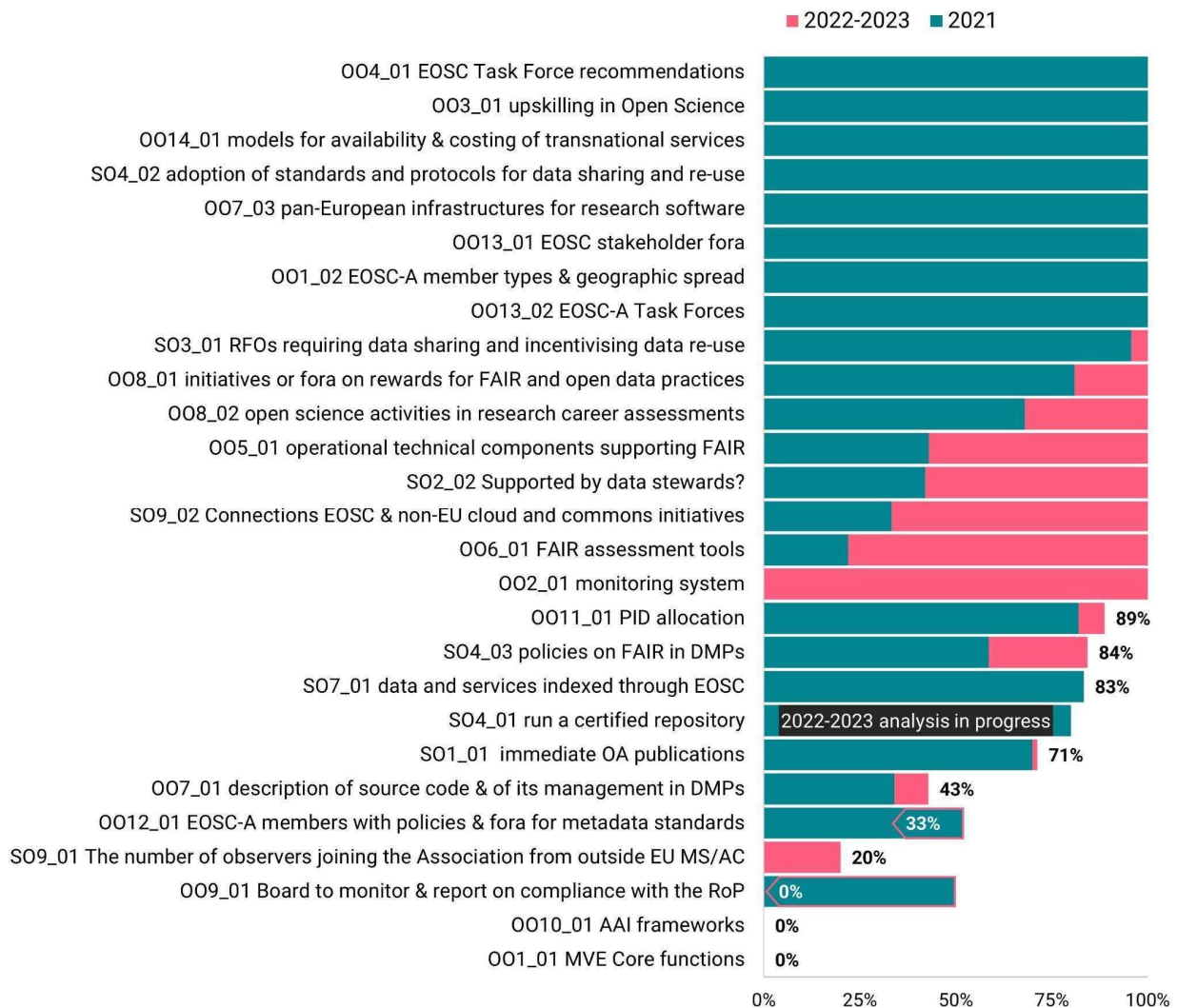


Figure 5. Progression of the EOSC Partnership Indicators (KPIs). The bars represent the percentage of progress against the target values, with results of the 2022 survey (baseline for 2021) in green, and results of the 2024 survey (covering the years 2022-2023), in pink; data labels correspond to the 2024 KPI survey values.

For the 2024 survey results, we assigned a traffic-light colour coding to the KPI values to allow reviewing their status at a glance (Figure 6). Indicators which achieved the MF targets are shown in green, representing the majority of the KPI population (60%). Indicators that are well below the target (below 40% of target value) are shown in red and account for less than one-fifth of the population than (18%). Indicators that are 'well on track' towards target achievement (between 40% and 99% of target value) are in orange and represent 18% of the KPIs.

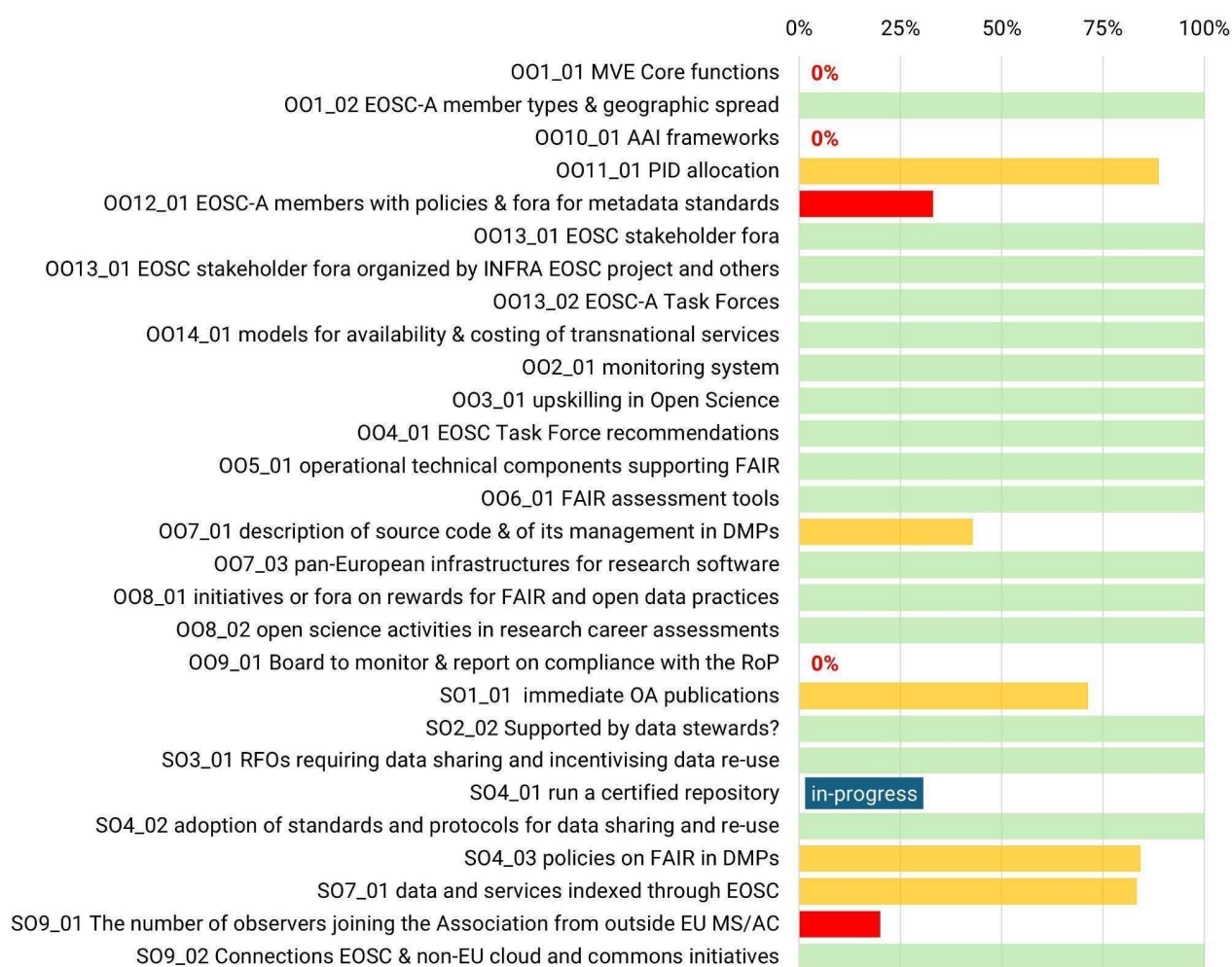


Figure 6. Colour-coded overall KPI progression, as resulted from the 2nd Biennial KPI survey of the EOSC Partnership. The data values represent the percentage of progress against the KPI target value, as indicated in the EOSC Partnership Monitoring Framework (v.7).

Analysing these results against areas of interest for the evaluation of the EOSC Partnership evolution, it is evident that the EOSC-A membership achieved significant progress, in the years 2022-2023, in Open Science monitoring, FAIR ecosystem development, and global collaboration, while surpassing key targets in the areas of service provider participation (77% vs 40%) and data-sharing policies among funders (86% vs 70%). However, challenges remain in areas like governance, certification of the infrastructures and participation of thematic research infrastructures, with several goals deferred to 2025 or beyond. Despite these setbacks, the members sustained clear efforts in Open Science training, stakeholder engagement, and standardisation, ensuring steady growth and laying the groundwork for future milestones. These findings are described in detail in [Table 2](#), [3](#) and [4](#).

Table 2. Progress in meeting KPI targets as reported in the 2nd Biennial KPI Survey for EOSC Partnership (conducted in 2024), covering the years 2022-2023. Results for KPIs that achieved the MF targets are presented.

KPI description	Results summary
KPI 003_01 defines that 50% of research performing organisations across Europe from EOSC-A members offer training on Open Science for researchers and data stewards.	The results from 2024 (covering the years 2022-2023) are comparable to the values obtained in the 2022 survey (which established the baseline for the Partnership status in 2021) confirming that this KPI is indeed achieved.
KPI 004_01 defines that 50% of the EOSC-A members have engaged in initiatives that provide community/ discipline specific recommendations on standards and/ or Open Science best practices.	KPI 004_01 in the 2022 survey specified that each major scientific community had at least one initiative from EOSC-A Task Forces on standards and Open Sciences best practices. The corresponding task forces indeed involved participants from various disciplines and they did work on recommendations in those areas. In the 2024 survey, this KPI was adapted to measuring whether the EOSC-A member organisations were engaged in initiatives providing community- or discipline-specific recommendations on these topics. The 2024 assessment, based on data from 2022-2023, showed an 86% engagement level, exceeding the 50% target.
KPI 007_03 aims at the availability of a first generation of pan-European infrastructures for preservation, management and sharing of research software.	This has been indicated by respondents to be Zenodo linked to Github. In the 2022-2023 period, EOSC-A members showed to have remained active in pan-European networks for managing and sharing research software source code, promoting documentation and sharing. The infrastructure 'Software Heritage' was also established, under the initiative of INRIA (FR), in collaboration with international partners, also from the private sector (https://www.softwareheritage.org).
KPI 0013_01 describes at least one EOSC stakeholder forum to take place on a yearly basis.	At least 15 events have been indicated for 2021 through the 2022 survey, while in 2022-2023 (2024 survey) the number increased to 20.
KPI 0013_02 describes five EOSC Association task forces with representation from users and service providers from different disciplines. These task forces issue relevant recommendations and initiate consultations for the continued development of EOSC.	In 2022, 13 task forces were established under five advisory group umbrellas, and this number remained unchanged until 2023.
KPI 0014_01 aims for at least 30% of service providers from the EOSC-A members to have developed, adopted or tested models for the availability and costing of their transnational services.	In 2021, more than half of respondents confirmed having met this criterion. The target remains in status achieved in 2022-2023, while a decline (to 38%) was observed, very likely due to the larger number of respondents.
KPI SO4_02 defines 60% of research disciplines to have documented standards and protocols for data sharing and re-use.	In the 2022 survey, this point was affirmed by every respondent belonging to all but one major discipline, lacking only agricultural sciences so far. In the 2024 survey, the adoption and implementation of standards and protocols for data sharing and reuse remained above target.
KPI 002_01 envisions a monitoring system like a dashboard to gather Open Science metrics of the evolving landscape of policies, infrastructures and open resources accessible through EOSC.	This system plays a pivotal role in tracking progress toward the EOSC Partnership's objectives. While a single joint monitoring system is not yet achieved, various initiatives are fully established, such as the EC IKAA IT Tool and the EOSC Observatory developed by EOSC Future.

KPI description	Results summary
KPI 005_01 describes standards, schemas, APIs, metadata frameworks and other technical components supporting FAIR digital objects specified by EOSC-related communities and supported by the service providing organisations to be operational.	In the 2022 survey (baseline for 2021), the indicated frameworks were all exemplified, by almost half of respondents. In the 2024 survey (for 2022-2023 period), 77% of the Service Providers and Research Performing Organisations reported key components of the FAIR ecosystem to be successfully developed, almost doubling the assumed target of 40% for 2024.
KPI 006_01 monitors the availability of FAIR assessment tools to measure the FAIRness of various research digital objects. A target was set of at least one type of such a tool for measuring the FAIRness of each dataset, software and data management plans.	In the 2022 survey, 22% of respondents from RPOs and Horizon Europe projects affirmed the availability of such a tool, without further indication of type. Based on the baseline investigation performed in 2022 for year 2021, this KPI's target value was adapted to 20%, while the target respondent group was broadened to all EOSC-A members. In the 2022-2023 period (2024 survey), the adoption of FAIR assessment tools increased by over 20%, surpassing the target initially set, and aligning with projections.
KPI S03_01 monitors the percentage of RFOs among EOSC-A members that require data sharing and incentivise data re-use.	While the first part is true for two thirds of the respondents, only half of respondents affirmed the latter. In the 2022-2023 period, requirements for both data sharing and reuse were introduced among 86% of EOSC-A RFOs, surpassing the target of 70%.
KPI 008_02 states that half of EOSC-A members recognise Open Science activities in the assessment of research careers.	In the 2022-2023 period, the percentage of members meeting this criterion increased from 34% in 2021 to 51%, reaching the target ahead of the expected achievement in 2025.
KPI S02_02 measures the percentage of EOSC-A members whose research is supported by professional data stewards, with a target 50%.	In the 2022 survey, less than a quarter of respondents confirmed meeting this criterion, while some indicated partial support. In the 2024 survey, the target was successfully achieved (51%).
KPI S09_02 measures formalised connections between EOSC and non-EU cloud and common initiatives which allow EOSC users to discover additional resources, aiming for three initiatives.	In the 2022 survey, one such example has been indicated, given the Worldwide Large Hadron Collider Computing Grid. In the 2024 survey, six initiatives were reported by the EOSC -A and the EC, including joint undertakings with Research Data Alliance (RDA), Global open research commons (GORC), Global Open Science Cloud (GOSC) and Committee on Data of the International Science Council (CoDATA).
KPI 008_01 states that the EOSC-A is represented and active in policy fora where rewards and recognition frameworks for FAIR and open data practices are co-designed.	In the 2022 survey, over 80% of EOSC-A Members including EOSC-A have confirmed this to be true. However, as no specific target value is provided, the KPI's definition could be interpreted as for a yes/no type of answer. In the 2022-2023 period (2024 survey), the KPI was adapted and placed the monitoring only on the Association side. EOSC-A actively engaged in multiple such initiative policies, with 23 examples.
KPI 001_02 defines that the number of EOSC-A members has grown by 25 new members from different stakeholders in the EOSC ecosystem, such as RPOs, RFOs, libraries, SPs, and mandated organisations, coming from at least 5 different EU MS. comprising various stakeholders without the stakeholder groups of libraries or international organisations.	In the 2022-23 period, 46 new members joined. In addition, a balanced representation should also be achieved in the Board of Directors, which was already attained in 2022.

Table 3. Progress in meeting KPI targets as reported in the 2nd Biennial KPI Survey for EOSC Partnership (conducted in 2024), covering the years 2022-2023. Results for KPIs that are 'well on track' towards target achievement (between 40% and 99% of target value) are presented.

KPI description	Results summary
KPI 0011_01 specifies that all members of the EOSC-A have adopted the practice of persistent identifier allocation and usage.	In the 2022 survey, 82% of respondents confirmed adherence to this practice. However, the 2024 survey results showed limited progress, with adoption at 89%, which is reassuring given that the number of respondents was much larger. A fuller adoption rate is targeted for 2025.
KPI S01_01 sets a target for 70% of publications by RPOs from EOSC-A members to be made immediately open access.	In 2021, nearly 50% of the member's publications met this criterion. In the survey of 2024, the question was directed to the EOSC Association, to be answered through a desk study. The Association eventually resolved to submit the question to their members, during the General Assembly of May 2025. While the accurate evaluation of this indicator is pending, it is estimated that its value will remain similar to the previous assessment and below target.
KPI S04_03 describes the percentage of EOSC-A members, who have policies which request FAIR to be implemented in project design via data management plans, with a target of 70% by 2024.	In the 2022-2023 period, over 40% of members had such policies in place. The percentage increased by 18% from the 2021 baseline, bringing it very close to the target, which appears within reach.
KPI 007_01 defines that half of RFOs across EOSC-A members should include software source code as a research output to be described and managed in their data management plans.	In the 2022 survey only 17% of respondents confirmed this practice. While progress has been slow, the adoption rate among RPOs has increased to 21%. Achieving the target of 50% adoption by RFOs remains a goal for 2025
KPI S07_01 aims for all major scientific disciplines to have relevant data and services indexed through EOSC.	In 2021 (2022 survey), this was achieved for disciplines except agricultural sciences. The 2024 assessment for 2022-2023 period showed no change, with agricultural sciences still lacking representation. Achieving 100% coverage is targeted for 2027.

Table 4. . Progress in meeting KPI targets as reported in the 2nd Biennial KPI Survey for EOSC Partnership (conducted in 2024), covering the years 2022-2023. Results for KPIs that are well below the target (below 40% of target value) are presented.

KPI description	Results summary
KPI 009_01 introduces an "RoP Board" to monitor and report on the qualitative and quantitative compliance with the Rules of Participation (RoP).	In 2021, the RoP Board was still in the planning stage, and as of 2022-2023, it has not yet been established.
KPI S04_01 defines 30% of repositories in EOSC to be certified by 2025.	In the 2022 survey, about a quarter of respondents from RPOs and SPs indicated that they operated a certified repository in 2021. In the 2024 survey, we ran a desk study to verify which of the EOSC-A member organisations held a certificate for their repositories from either Core Trust Seal, Nestore or appropriate

<i>KPI description</i>	<i>Results summary</i>
	<i>ISO standards. The value of this KPI will be updated as soon as the desk study is complete.</i>
<i>KPI 0010_01 tracks the deployment and operational status of a federated Authentication and Authorization Infrastructure (AAI) framework, intended to enable service providers to offer services to identified users, and for those users to access these services.</i>	<i>While the AAI system was under assessment in 2021 (2022 survey), it remains incomplete as of 2023 (survey conducted in 2024), hindering both service provider offerings and user access. Full deployment is anticipated by the end of 2025.</i>
<i>KPI S09_01 monitors EOSC-A observers from outside EU member states and associated countries and aims at a minimum of 10 geographically spread observer organisations to have joined EOSC-A from outside.</i>	<i>At the time of the survey, two observers joined, one from Canada and one from Switzerland, which was not an HE-Associated country at the time the survey refers to.</i>
<i>KPI 001_01 tracks the maturity of the core functions within the minimum viable EOSC (MVE), targeting a value of 4.</i>	<i>While the KPI was initially undefined in 2021 and required further stakeholder input for clarification, as of 2022-2023 period, no MVE core functions have been reported as mature. The progress towards this objective shall become apparent in the next two years.</i>
<i>KPI 0012_01 outlines that standards for minimum metadata requirements are agreed and progressively adopted by relevant EOSC-A members, based on the participation in corresponding fora on standards for minimum metadata requirements and policies in place to enforce their adoption.</i>	<i>In 2021, as reported in the 2022 survey more than half of survey participants were involved in such fora, less than half had policies in place. In the 2022-2023 period, the percentage of EOSC-A members with the policies or fora stayed close to the 2021 baseline level. Fuller adoption of metadata requirements is projected for 2025.</i>

In order to produce a clear insight on the meaning of this information, we utilised some of the KPIs to represent the progress of the EOSC Partnership against the three general objectives identified under the SRIA (Figure 7). The MF does not establish a specific correspondence between indicators and the general objectives of the Partnership: the choice of the KPIs for this analysis was based on our interpretation of which indicators would be most suitable to represent each of the three general objectives. The analysis revealed that Open Science is becoming the new normal, in the dynamic environment of the EOSC-Association membership, with many institutions already aligning their policies with EU priorities on data sharing and data reuse, and many others progressing towards that goal (Figure 7a). EOSC-A Members showed a high level of “EOSC readiness”, particularly in terms of documented standards and protocols for data sharing and reuse, and with the establishment of structural data stewardship support (Figure 7b). On the other hand, the prospected implementation of the minimum EOSC core functions had not been achieved and the AAI were not established either; on the other hand, progress was evident with respect to the baseline situation (2021) for other operation services, which will be essential when the EOSC federated infrastructure will be established (Figure 7c).

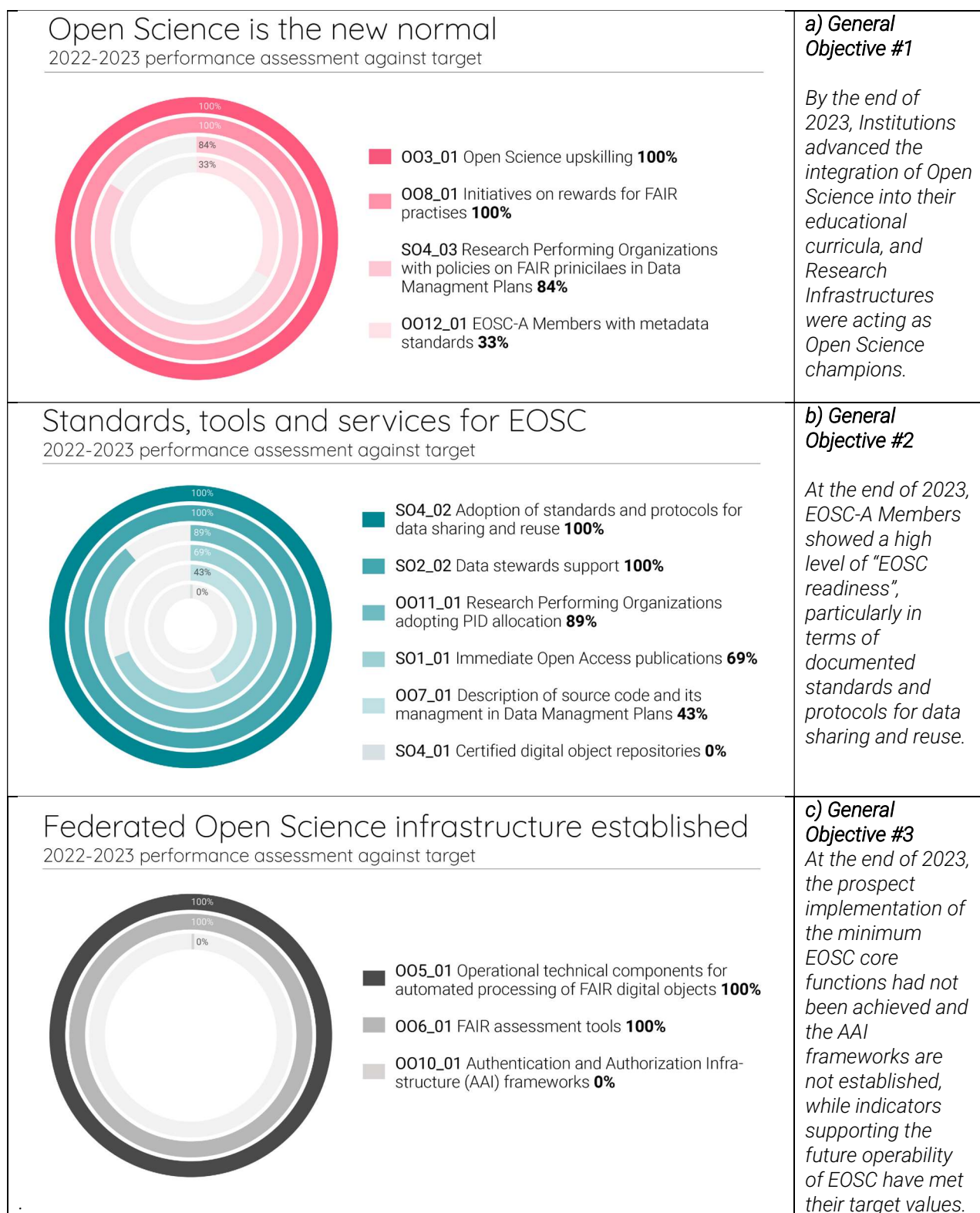


Figure 7, a-c. Status of the progress of the EOSC Partnership against its SRIA General Objectives, as resulting from the 2nd biennial survey of the EOSC Partnership KPIs.

2.4. Preparatory Activities for AAP2026 and AAR 2024 Surveys

The preparation of the AAP 2026 survey, including training sessions planning, was carried out to forecast contributions for 2026.

To finalise 2024 actual contributions (AAR 2024) in 2025, EOSC-A launched the survey in March 2025, findings would be consolidated in May-June, for adoption by the EOSC Partnership Board, by the end of the year.

3. Development of the Online Survey Tool and Associated Data Management System (DMS) as a Monitoring and Reporting Platform

3.1. Introduction

The objective of Task 4.1 “Methods and tools” was to ensure that the monitoring and reporting system uses methods and tools well adapted to the objectives and scope of the EOSC Partnership and enable reporting and monitoring of the EOSC Partnership and EOSC ecosystem. This involved evaluating existing tools, adapting them where necessary, and contributing to their ongoing development – in line with the Grant Agreement’s description of this task.

Initially, during the drafting of the EOSC Focus proposal in summer 2021, a single EOSC monitoring tool was intended to be developed in collaboration with the H2020 project EOSC Future. This tool, at that time known as the EOSC Open Science Observatory¹⁶, was to provide a secure environment for a comprehensive and reliable data collection, aligned with the EOSC monitoring framework outlined in Task 4.1.

Despite efforts to align the EOSC Open Science Observatory with EOSC Partnership monitoring needs, technical, legal, and financial concerns (vendor lock-in) led EOSC-A to independently launch surveys via alternative platforms like LamaPoll and EUSurvey. Key challenges of the Observatory included insufficient technical support, unresolved GDPR issues, and high operational costs. These challenges led EOSC-A to pursue alternative solutions to upload Task 4.1’s objectives, while keeping the EC informed about the situation. This included using LamaPoll and EUSurvey platforms for data collection.

Recognising the ongoing need for a sustainable, adaptable, and user-friendly monitoring platform, EOSC-A prioritised contributing to the development of a new system. In 2024 the EOSC Track project¹⁷ (coordinated by OpenAIRE), launched under a dedicated EC call with pre-identified beneficiary, assumed responsibility for implementing the monitoring of the national contributions to EOSC. Although the EOSC Association was not part of the project consortium, the need for an independent monitoring and reporting system remained, and it was considered more important to contribute to the development of the system, even without direct involvement in the EOSC Track project.

To further Task 4.1’s goal of adapting monitoring methods and tools, EOSC-A issued a Request for Project Proposal (RFP) to procure services for developing an integrated survey and data management system. This system aimed to enhance historical data accessibility, improve user experience, increase response rates, and meet GDPR requirements. The purchased services directly supported the

¹⁶ <https://eoscobservatory.eosc-portal.eu/home>

¹⁷ <https://www.openaire.eu/eosc-track-project>

adaptation of monitoring tools to the scope of the EOSC ecosystem monitoring framework, as described in the Grant Agreement budget table.

This initiative supported the creation of a monitoring framework aligned with the European Research Data Landscape study. It also established procedures for consistent reporting and monitoring and offered accuracy in data-collection and documentation – key elements outlined in Task 4.1. Moreover, it is expected to contribute to future recommendations for improving the EOSC Partnership's monitoring framework.

In summary, the activities undertaken – including the procurement of services – reflected the commitment to Task 4.1's objectives: adapting, developing, and enhancing monitoring tools to ensure they are fit for purpose and aligned with the EOSC Partnership's evolving needs.

3.2. Request for Project (RFP) Proposal and Procurement Procedure

The procurement process for the "Online Survey Tool and Associated Data Management System – Consultancy for the EOSC Association" commenced with a Request For Project (RFP) proposal, issued in the summer 2024.

3.2.1. Procurement Process

On 12 August 2024, EOSC-A, supported by EOSC Focus WP4, released an RFP titled "Online Survey Tool and Associated Data Management System – Consultancy for the EOSC Association" to select a service provider for the development of a system that would support the EOSC-A's monitoring and reporting needs. Four Service Providers were informed of the RFP, and two proposals were submitted.

After a detailed review and evaluation of the submitted proposals both Service Providers (SPs) were invited to negotiations and asked to provide a brief presentation on their offer, with particular focus on the following areas:

- Technical implementation of the platform/ analytics/ workplan;
- Security, backups & hosting solutions;
- Support during and after project completion;
- Composition of the team & justification of efforts to be spent;
- Price confirmation.

Following the negotiations, the SPs were asked to revise the proposals submitted in response to the RFP to align with the suggestions provided by EOSC-A during the negotiations.

After the negotiations and thorough review, the selected SP, Trust-IT, was awarded the contract. Their updated proposal aligned best with EOSC-A's criteria and satisfied the negotiation outcomes. Trust-IT involved an experienced core team, made up of a range of professionals who were able to deliver all the competencies needed by the tender. The team size was appropriate to the envisaged tasks.

3.2.2. RFP Timeline

The RFP and procurement process followed a structured timeline, beginning with its release on 12 August 2024, and concluding with the contract award on 3 October 2024, and ending with project closure in April 2025.

3.2.3. Evaluation Criteria

Proposals were evaluated based on the following equally weighted criteria:

1. Best value-for-money over the service's lifetime
2. Experience, personnel, and knowledge base
3. Resource allocation for the requested services
4. Project management, schedule, and work plan
5. Integration capabilities with existing EOSC-A systems
6. Ease of implementation.

3.3. Online Survey Tool and Associated DMS Project Scope

The project to develop an Online Survey Tool and Associated Data Management System (DMS) started by designing and implementing an integrated web survey platform and data management system tailored to the EOSC Association's monitoring and reporting needs. This solution was designed to support GDPR-compliant surveys and link data seamlessly with the DMS. Serving the whole EOSC-A member base (including Members and Observers), it should enable secure submission and editing through an Authentication and Authorisation Infrastructure (AAI). The system was expected to feature an intuitive user interface, improved analytics for reporting, and compliance with data storage/security requirements, including encrypted EU-based storage. Additionally, it was expected to support historical data access, trend analysis, and role-based secure access via robust Identity and Access Management (IAM).

The consultancy also focused on transitioning the existing survey processes from spreadsheets to a centralised database, streamlining data management and reporting efficiency. The project included comprehensive training, system testing, and post-launch optimisation to ensure the platform meets EOSC-A's long-term functional and technical requirements over a 5-year lifespan. The contract was scheduled for completion by SP by 28 March 2025, with final documentation verification and approval to be completed by the end of April 2025.

3.4. Online Survey Tool and Associated DMS Project Work Plan

The project's work plan, as developed by EOSC Focus WP4, included the three following phases:

1. Needs assessment (workshops, requirement gathering, architecture discussions);
2. Solution evaluation and selection (pilot reporting, system approval, historical data transfer);
3. Implementation (data migration, system testing, training, platform delivery).

3.5. Online Survey Tool and Associated DMS Project Objectives

The objectives of the EOSC Association Online Survey Tool and Associated DMS creation were:

1. Implementing surveys on an EU-GDPR compliant platform, ideally seamlessly interconnected with the DMS, ensuring that information gathered from respondents is directly integrated into the DMS. The survey must comply with the Data Protection Impact Assessment (DPIA). A draft of the DPIA and Terms and Conditions were expected to be delivered by the service provider; however, the final rules were developed by EOSC-A.

2. Enabling survey respondents to access and edit their submitted information within a specified timeframe, ideally using the same survey platform through which they made the submission.
3. Access restriction by an Authentication and Authorization Interface (AAI).
4. Securely storing historical records and allowing each respondent to have read-only access to their own data at any time.
5. Organising and maintaining individual records of surveyed information from all respondents over the years, facilitating data management, monitoring, and reporting by platform managers, with details defined during the needs assessment phase.
6. Providing the EOSC-A monitoring team with tools for data aggregation, analysis, comparisons, and report creation, offering graphical outputs that are fast, scalable, and easy to use.
7. Ensuring a secure, resilient, and sustainable architecture for storing and maintaining all survey data within the EOSC-A, in compliance with its privacy policy (<https://eosc.eu/privacy-policy/>) and the EU General Data Protection Regulation.

3.6. Online Survey Tool and Associated DMS Project Deliverables

The RFP outlined clearly the expected deliverables for the consultancy. The project's execution achieved its stated objectives and resulted in the following outcomes:

D1.1 – A list of main goals, expectations, and functional and technical requirements

This document provided a comprehensive list of project goals, expectations, and functional and technical requirements. It was developed based on the RFP and workshops conducted with EOSC-A users and Members' users. The requirements outlined in this deliverable served as a roadmap for designing a robust survey and Data Management Tool tailored to EOSC-A's needs.

D1.2 – List of options with architecture design, advantages, disadvantages and recommendations

This document presented a detailed evaluation of potential architecture designs for the EOSC-A Online Survey Tool and Data Management System. It included recommendations based on cost, functionality, and user experience, supporting the selection of the optimal combination of third-party plugins, custom solutions, and web platform environments related to platform hosting to meet the project's objectives. The deliverable concluded with the acceptance of the proposed list of plugins and custom solutions, as well as EOSC-A's final decision to integrate the Online Survey Tool and Associated DMS into the eosc.eu website rather than hosting it separately on a dedicated subdomain.

D2.1 - Pilot report on shortlisted options with final conclusions and recommendations

This deliverable provided an in-depth analysis and refined guidance based on initial assessments and insights gathered during the project's progression. It served as an implementation roadmap, introducing a Minimum Viable Product (MVP) with essential features for the platform's first iteration. The MVP documentation established a foundation for ongoing updates and future iterations, enabling early evaluation of core functionalities.

D3.1 Successful data migration and system implementation

Historical survey data, including KPI surveys from 2022 and 2024, as well as AAP/AAR surveys from 2022 to 2024, were successfully transferred to the new platform, ensuring data continuity and accessibility within the system. This migration followed a historical data harmonization process conducted by EOSC-A and WP4, which included the export of raw data to XLSX and CSV formats for consistency and compatibility.

To facilitate the import of historical raw submissions by the SP and ensure their correct association with member organisations, the process began with retrieving organisational data from the EOSC-A's member database as the primary source, while the new platform served as the secondary database of survey submitters. This approach minimized manual entry errors, ensuring that all organizational data displayed was authoritative. Regular API synchronization checks were implemented to track changes, additions, or removals within the primary source, ensuring that the DMS was consistently updated and maintained with reliable data. This module was fully developed as a custom plugin by the SP and integrated seamlessly with the primary source system via its API.

Placeholder accounts for organisations were created to link submissions to the correct organisational profiles, ensuring that all submissions were properly associated with their respective members. This approach provided seamless access to historical submissions for participants of previous surveys, facilitating smooth data retrieval.

D3.2 User training sessions

Two tailored training sessions addressed the needs of EOSC-A and Members' users.

- Session 1: Focused on EOSC-A users, equipping platform administrators and roles such as Data Validators and Survey Creators to effectively use the system.
- Session 2: Targeted Members' users, introducing functionalities like role distinctions (e.g., Viewer, Editor, Submitter), access to historical surveys, and user dashboards and collected their feedback and suggested improvements.

EOSC-A and WP4 tested the platform, provided feedback and reported errors, and suggested improvements. Identified issues and proposed enhancements were reported to Trust-IT.

D3.3 Successful implementation of optimisations and improvements

The implementation of optimisations and improvements was supported by documented evidence collected during testing. User feedback, including EOSC-A, WP4 and Member representatives, as well as error reports, were instrumental in refining the platform, ensuring it became a secure, streamlined, and analytically robust tool. This enhanced tool aligns with EOSC-A's long-term goals for effective monitoring and reporting, meeting the requirements outlined in the EOSC Focus project.

3.7. Online Survey Tool and Associated DMS Project Outcomes

Key outcomes and benefits of the Online Survey and DMS project:

- Secure access and role-based permissions. Ensures data integrity and controlled access through Authentication and Authorization Infrastructure (AAI) and users authorisation by EOSC-A administrators.
- Centralized data management. Enables efficient historical data retrieval and long-term trend analysis to support the EOSC MF.
- User-centric design. Provides an intuitive interface to enhance EOSC-A members engagement and streamline data submission and reporting processes.
- Analytics and visualization. Facilitates data-driven decision-making through scalable reporting and graphical representations.
- GDPR compliance and data security. Guarantees compliance with the EU General Data Protection Regulation (GDPR) and EOSC-A's privacy policies, ensuring secure data storage and encryption.
- Sustainability and adaptability. Designed to evolve with EOSC-A's monitoring needs, ensuring long-term usability and flexibility.
- Seamless integration with the EOSC-A's member primary database. Automates data retrieval and validation processes, improving data accuracy and consistency across monitoring activities and reducing time and effort spent on manual data harmonisation.

3.8. Online Survey Tool and Associated DMS Platform Sustainability

The finalised platform is designed to provide secure access, streamlined data management, and analytics capabilities, ensuring alignment with EOSC-A's long-term monitoring and reporting objectives, as well as compliance with European Commission (EC) requirements.

Thanks to its flexibility, the platform can be further adapted to suit different monitoring needs, as they may emerge from the evolution of the EOSC initiative.

3.9. Online Survey Tool and Associated DMS Project Conclusion

The Online Survey Tool and Associated DMS project has successfully transitioned EOSC-A's survey management processes into a single, secure, and scalable web platform. By integrating GDPR compliance, and seamless DMS connectivity, the tool enhances data-driven decision-making and long-term monitoring. The system's adaptability ensures its continued alignment with EOSC-A's evolving needs, reinforcing its role as a cornerstone for sustainable data management and reporting.

4. Impact Assessment

As outlined in the MoU, the periodic reporting from Co-Programmed European Partnerships (including the EOSC Partnership) should include "structured and representative 'impact case studies' that will be used to highlight lessons learned from specific projects/activities, their drivers and barriers to impact, and their possible follow-up with the appropriate instruments..."¹.

To support this, EOSC Focus WP4 has assisted EOSC-A in the development of the EOSC Macro-Roadmap (see Section 4.1) and with the establishment of the Horizon Europe (HE) Impact Working Group (see Section 4.2).

4.1. EOSC Macro-Roadmap – Member and Non-Member Contributions

The EOSC Macro-Roadmap⁶ is an interactive catalogue featuring three key resources: results from EU projects developing EOSC; deliverables from EOSC-A Task Forces; and selected in-kind contributions from EOSC-A members and non-members. The latter has been developed by EOSC WP4 and will be continuously updated.

The in-kind contributions selected showcase diverse and impactful initiatives from both EOSC-A Members and Observers and non-members, highlighting advancements in research data management, infrastructure, and collaboration across Europe. These contributions – ranging from case studies to best practices – are aligned with EOSC's goals. Thus the EOSC Macro-Roadmap supports the assessment of EOSC's impact by showcasing initiatives that align with its strategic objectives, contributing to the overall understanding of how EOSC is advancing its goals and fostering collaboration within the open science community.

To ensure the quality and relevance of these contributions, EOSC Focus WP4 has established a rigorous Quality Control (QC) process.

The QC process involves three levels of review: initial checks conducted by TU Graz and TU Wien, followed by further evaluation by EOSC-A and NCN, and final approval by the EOSC-A Board of Directors. All four institutions - EOSC-A, NCN, TU Graz and TU Wien - are partners in WP4. TU Graz and TU Wien as WP4 partners were chosen for the initial checks, while EOSC-A and NCN, as the leads of Tasks 4.3 and Task 4.5, respectively, oversee the subsequent evaluation before final approval. Contributions are evaluated based on specific criteria, including their alignment with SRIA objectives, the scope of the Macro-Roadmap areas, uniqueness, added value, geographic and institutional diversity. They are also assessed for their potential to inspire, provide replicable blueprints, and contribute broadly to the EOSC community. While national policies are excluded, institutional policies, national infrastructures, aggregators, and platforms may be included, provided they demonstrate clear relevance and added value to EOSC's objectives.

Contributions must adhere to presentation standards, including clear communication materials and at least one relevant hyperlink. Examples can be sourced from various channels, such as submissions from EOSC-A Members through AAP/AAR surveys or proposals from non-members identified by Mandated Organisations, funders, and partners.

All evaluation criteria and contribution sources were first consulted with and then approved by the EOSC-A Board of Directors, and are now being used in the QC process.

This structured approach of QC process ensures that the Macro-Roadmap features a diverse, high-quality collection of initiatives that align with EOSC's strategic objectives and provide value to the broader open science community. For more information and to explore the catalogue, visit the EOSC Macro-Roadmap⁶.

4.2. HE EOSC Impact Working Group

The Horizon Europe (HE) Impact Working Group was established in May 2023 to support the projects planning the sustainability of their Key Exploitable Results (KERs), with the aim to maximise the potential of their work to generate the anticipated impact. This voluntary support-measure that EOSC Focus produced also meant to facilitate the projects fulfilling their obligation to produce and implement such plans, according to Art. 16 of their Grant Agreement. The group worked to produce a Sustainable Exploitation Planning (SEP) methodology for project KERs (see Section 4.2.1), which would ultimately promote the delivery of an impactful project. The HE EOSC Impact Working Group was represented in the EOSC Forum web platform, with 59 members.

4.2.1. Sustainable Exploitation Planning (SEP) methodology – a proposition for the HE EOSC-related projects

The Sustainable Exploitation Planning methodology (SEP) was designed to support projects in early approaching the definition of sustainable exploitation strategies for their KERs. The SEP encourages projects to consider the long-term viability of their results and their exploitation beyond project funding, thus ensuring continuous value delivery.

In the initial phase, the HE Impact Working Group identified the need for projects to have greater support in the planning of KER exploitation. The SEP offered a structured approach to this activity, supporting projects' teams in developing actionable, sustainable plans. During the EOSC Winter School 2024 (29 January – 1 February 2024), WP4 delivered a three-day session on "Sustainable Exploitation of HE projects' KERs for Impact"¹⁸. This session was part of the broader educational initiative of the EOSC Winter School, introducing SEP as a tool to guide projects through this critical process. A full report of the WS2024 experience is available on Zenodo¹⁹.

While the feedback received from the hands-on experience of the school participants informed the refinement of the SEP methodology and its fruition, the publication of WP5 D5.1 - 'Resourcing Models for EOSC'²⁰, provided an opportunity to enhance the SEP methodology with the concepts delivered by WP5 for the EOSC Business Model platform.

The SEP was then extended with the integration of self-mapping routines (Wardley mapping²¹), which would place each KER onto an ideal exploitation space, connected with business model choices, which would diversify the project options for exploitation models. The interactive testing and piloting exercises for the SEP refinement were conducted by WP4 in collaboration with some of the projects of the HE Impact WG.

This work culminated in a HE Impact WG workshop, on the 5th of June 2024, to discuss the results of the SEP-piloting exercise and prepare for the Sustainability session of the EC-REA meeting with the projects on the 20th of June, where the lessons learned from the application of the SEP were conveyed to the EC. Notably, the projects identified that the sustainability of many of the outputs is liable to be uncertain until EOSC is operational and destinations for the project outputs are available and more

¹⁸ <https://eosc.eu/eosc-focus-project/winter-school-2024/infraeosc-projects-sustainable-pathways-to-exploitation-of-key-results/>

¹⁹ <https://doi.org/10.5281/zenodo.11165100>

²⁰ <https://doi.org/10.5281/zenodo.10931890>

²¹ More resources on the Wardley Maps can be found on the [Wikipedia page](#), and on this free quick training [How to Wardley Map - IT Revolution](#). Some additional reference resources are here : i) [Getting Started with Wardley's Doctrine Is Easier Than You Think](#); and: ii) [Tools](#)

clearly defined. The sustainability of project KERs remained a key topic at the 2025 EOSC Winter School, held in Seville (Spain), between 20-23 January 2025. A plenary talk by WP4 (Ilaria Nardello), on 'EOSC Impact and Sustainability'²², recapped the achievements of the HE Impact WG and introduced the process expected to be agreed within the EOSC Tripartite Governance to facilitate the uptake of KERs from projects in the EOSC Federation. The talk encouraged the participants to keep the obligation to explore the (sustainable) exploitation of the KER very present throughout the lifetime of a project, and of the need of identifying KERs to feature on the EOSC Macro-Roadmap as possible contributions or solutions for the EOSC Federation.

On the last day of the Winter School 2025, the key discussion themes were summarised. The concluding remarks reported the needs emerging from the discussions²³. Recurring concepts were identified across the various Opportunity Area discussions, such as: convergence, consensus, interoperability, synchronisation, user perspectives, use cases, common vocabularies, one-stop-shop. Several specific destinations for the project KERs were also identified, including:

- the EOSC Federation Handbook²⁴, for project-produced guidelines and recommendations;
- the EOSC EU Node or thematic or national Nodes of the Federation, for technical solutions;
- new HE projects;
- the EOSC Association for the common vocabulary;
- the commercial world.

The RAISE project²⁵ showcased a noteworthy example of planning KER exploitation within the commercial world. By engaging in an accelerator programme, it demonstrated how a project result could achieve societal impact and find applications beyond the EOSC ecosystem. The establishment of a roadmap to facilitate the uptake of the project results within the EOSC ecosystem was proposed as an additional support measure to be considered within the EOSC tripartite governance.

The growing maturity of the projects in articulating their sustainability challenges, as well as the transversal attention that the sustainability topic gained within the EOSC tripartite collaboration are a clear effect of the activities of the HE Impact WG. The insight generated by the activities of the HE Impact WG may further inform the SEP development during the follow-up HE project EOSC Gravity.

The SEP methodology development and its pilot application within the HE Impact WG are described in more detail in Appendix 1.b of D5.2 'EOSC Sustainability status and plans/issues for future work'²⁶.

5. Reflections for the future / lessons learned

The insights gained during this reporting period provide valuable perspectives on how EOSC monitoring and evaluation contribute to the broader success of the EOSC Partnership. Significant progress has been made in refining methodologies, enhancing stakeholder engagement, and establishing clear routines for monitoring and evaluation responsibilities of EOSC-A. Looking ahead,

²² <https://eosc.eu/wp-content/uploads/2025/01/1.-2025-EOSC-Winter-School-Opening-Session.pdf>

²³ <https://eosc.eu/wp-content/uploads/2025/01/5.-Closing-Session-2025-EOSC-WS.pdf>

²⁴ <https://eosc.eu/eosc-federation-handbook/>

²⁵ <https://raise-science.eu/>

²⁶ F. de Jong, M. Dietrich, S. Garavelli, J. Picard, M. Rey Mazon, I. Nardello, J. Picard, D. Robertson (2025), EOSC Focus Deliverable 5.2, Sustainability status and plans/issues for future work (Pending REA Approval)

there are opportunities to continue improving EOSC initiative impact assessment, stakeholder engagement, and long-term sustainability. Key reflections and lessons learned are detailed below, under three main headers, outlining both successes and areas for future improvement.

Enhancing the Effectiveness of Monitoring and Reporting

- **Aligning Monitoring with Strategic Goals:** The EOSC Partnership Monitoring Framework (MF), a key exploitable result (KER#4 - A defined and operational EOSC monitoring framework) from the EOSC Focus project, must continuously evolve to reflect the initiative's priorities. The revision of MF ensures its ongoing relevance and the ability to capture meaningful progress. Additionally, a reassessment of previously achieved KPIs is needed to determine whether continued measurement is necessary.
- **Adapted Monitoring Tool and Improved Usability:** The Online Survey Tool and Associated DMS, an essential output of EOSC Focus (KER#4), successfully modernized EOSC-A's survey management, enhancing data-driven decision-making and long-term monitoring. While the initial vision of a single EOSC monitoring tool faced challenges, the procurement and development of an independent system effectively addressed the EOSC Partnership's needs alongside the EOSC Open Science Observatory. Currently, the Observatory does not include Indicators to Monitoring or Contributions to EOSC Partnership. However, the work on the platform has harmonized EOSC-A's results and may serve as a potential data source if the vision of a single monitoring tool for the EOSC ecosystem is maintained.
Establishing API synchronization with EOSC-A's member database was effective in maintaining data consistency, but ongoing monitoring and maintenance remain essential to prevent discrepancies and ensure long-term data integrity.
The platform was designed to be scalable, allowing for future adaptations to evolving monitoring needs. However, long-term success will depend on ongoing stakeholder engagement to ensure that future developments align with EOSC's strategic goals. Sustained technical oversight and clearly defined ownership responsibilities will be necessary to maintain system efficiency. Additionally, the analytical and reporting capabilities of the platform may not yet be fully utilized. Further exploration of automation, data visualization, and trend analysis features could enhance efficiency, reducing the remaining manual effort for reporting purposes, which has already been significantly minimised. The system's potential for expanded functionality should be continuously assessed to ensure it remains a robust and adaptable tool for EOSC-A's evolving requirements.
- **Optimising Reporting and Survey Strategies:** While process improvements have streamlined reporting, the effectiveness of these efforts also depends on maintaining high responsiveness and useful insights. Strategic adjustments to survey timing and outreach efforts to respondents have demonstrated success, but ongoing monitoring and assessment of these strategies is essential to prevent survey fatigue and ensure that collected data directly influence decision-making.
- **Using Qualitative Contributions for a Comprehensive View:** The integration of selected in-kind contributions from both members and non-members into the EOSC Macro-Roadmap has helped showcase the broader impact of EOSC-related activities. The EOSC Macro-Roadmap has supported the delivery of KER#4 by incorporating these contributions, which have played a key role in amplifying the impact of both member and non-member activities. Expanding this approach could further highlight best practices, innovative solutions, and cross-sector

collaborations that strengthen EOSC's ecosystem. To sustain momentum, the Macro-Roadmap Contributions must remain visible and actively promoted to encourage continuous engagement from both EOSC-A members and non-members. Ongoing outreach efforts and direct engagement with stakeholders will be essential to ensuring that the Macro-Roadmap continues to grow as a valuable resource.

Strengthening Stakeholder Engagement and Participation

- Encouraging Broader Community Involvement: Engaging both EOSC Members and Observers remains critical for enhancing an inclusive and sustainable open science environment. Continued efforts to integrate contributions from diverse communities can reinforce EOSC's collaborative model and drive wider adoption of its initiatives.
- Improving Accessibility and Usability of Tools: The development of the described above Online Survey Tool and Associated DMS, aimed to enhance usability and centralise EOSC's monitoring efforts. The DMS platform consolidates survey responses, tracks submissions and visualises participation across geographic regions - offering transparency and accessibility. Early engagement with stakeholders through requirement gathering, regular meetings, workshops and training sessions significantly improved the tool alignment with EOSC-A's expectations. The active involvement of the EOSC-A monitoring team and BoD, accompanied by WP4, from the beginning ensured that the solution was tailored to long-term monitoring and reporting needs. However, evolving requirements during implementation necessitated additional refinements, highlighting the importance of an iterative approach to requirement finalization. Providing EOSC-A with earlier access to the pilot platform, accompanied by more hands-on sessions, would have facilitated quicker feedback and system adjustments. Further ensuring that these tools meet different stakeholders needs requires ongoing feedback, user training, and iterative refinements to enhance their accessibility and effectiveness.

Supporting Long-Term Impact and Sustainability

- Integrating Sustainability into EOSC Initiatives: The HE Impact WG's efforts, including the introduction of the SEP methodology, have laid the groundwork for raising awareness about the potential for ensuring long-term value creation. Expanding this type of methodologies and providing targeted training will help projects integrate sustainability planning into their strategies from the outset.
- Strategic Planning Through Wardley Mapping: The integration of Wardley Mapping into SEP methodology presents new opportunities for visualising value chains and business models as reported in D5.2 'EOSC Sustainability status and plans/issues for future work'**Błąd! Nie zdefiniowano załącznika.** However, simplifying its application and providing additional training could be necessary to maximise its utility across different stakeholder groups.
- Promoting Interactive Learning and Capacity Building: The SEP methodology (KER#x) and the EOSC Winter School have demonstrated the value of hands-on learning in equipping stakeholders with the knowledge needed to contribute effectively. The evidence is based on: the articulation of mature considerations regarding common KER sustainability issues, which the projects delivered at the 'EC/REA meeting with projects', in June 2024, including the identification of major bottlenecks for the realisation of exploitation models for the project KERs, and a call for support mechanisms by the EOSC Partnership; the identification of a

number of KER-landing opportunities, during WS 2025; the implementation of the planned actions by some of the projects, e.g., some consortia have submitted their candidacy to become thematic nodes of the EOSC Federation (PaNOSC, Blue Cloud, Escape), others are in conversation with the EOSC Association for the adoption of their recommendations, methodologies and exchange of practices (FAIR Impact, EOSC Focus), while the RAISE project is pursuing a commercial exploitation pathway.

Expanding these initiatives will help build a more informed and engaged community that actively supports EOSC's long-term objectives.

These reflections can influence future enhancements to EOSC's monitoring, reporting, and evaluation strategies, helping to ensure that they not only improve internal processes but also play a crucial role in supporting the initiative's broader mission of building an open and sustainable European research ecosystem.

6. References

No	Description/Link
R1	EOSC Association (2022), Memorandum of Understanding for the Co-programmed European Partnership for the European Open Science Cloud (EOSC) https://eosc.eu/wp-content/uploads/2023/08/EOSC_Memorandum_30_July_2021-1.pdf
R2	EOSC Association (2024), Strategic Research and Innovation Agenda (SRIA) of the European Open Science Cloud (EOSC) (Version 1.3) https://eosc.eu/wp-content/uploads/2024/12/20241031_SRIA_1.3_final_Annex.pdf
R3	EOSC Association (2024), The EOSC Partnership Monitoring Framework (v.7.0) https://eosc.eu/wp-content/uploads/2024/08/20240621_Draft_EOSC_Monitoring_Framework_v7_Final_Clean.pdf
R4	European Commission: Directorate-General for Research and Innovation (2024), Performance of European partnerships – Biennial monitoring report 2024 on partnerships in Horizon Europe, Publications Office of the European Union, https://data.europa.eu/doi/10.2777/991766
R5	EOSC Association (2023), First biennial Full Report of the Co-programmed European Partnership EOSC for the period 01/06/2021 - 30/06/2023 https://eosc.eu/wp-content/uploads/2024/01/20231212_FMR.pdf
R6	EOSC Association (2023), The Macro-Roadmap for the implementation of EOSC – an online tool https://eosc.eu/eosc-macro-roadmap/
R7	I.Nardello, O. Wolski, C. Jean-Quartier, M. Bierens, B. Sanchez Solis, Barbara, B. Saurugger (2024) EOSC Focus - D4.2 - Annual Report Published by the EOSC-A and Monitoring Framework Revision (1st release) https://zenodo.org/records/10930869
R8	M. Góral-Kurbiel, I. Nardello, P. Cabrerizo Padilla, A. Pazik-Aybar (2024), Deliverable 4.3, Annual report published by EOSC-A, providing aggregated data relating to performance levels and contributions (Pending REA Approval)
R9	EOSC Association (2024), EOSC ASSOCIATION Contributions to additional activities 2025 SURVEY - survey questionnaire https://eosc.eu/wp-content/uploads/2024/04/AAPsurvey2025_Word.docx

R10	EOSC Association (2023), HE EOSC PARTNERSHIP Additional Activities Plan 2025 Survey guidance materials https://eosc.eu/wpcontent/uploads/2024/04/20240418_AAP_2025_survey_Guidance_materials_v4.pdf
R11	EOSC-Association, EOSC-A website, subpage: Monitoring & Reporting, section: Tracking in-kind contributions https://eosc.eu/monitoring-reporting/additional-activities-in-kind-contributions-to-the-eosc-partnership/
R12	EOSC Association (2024), Horizon Europe EOSC ASSOCIATION, EOSC-A Members' contributions to additional activities 2023 SURVEY - survey questionnaire https://eosc.eu/wp-content/uploads/2025/01/AAP2023_survey-questionnaire.pdf
R13	EOSC Association (2023), Biennial KPI survey for EOSC Partnership, Guidance materials https://eosc.eu/wp-content/uploads/2024/10/20241003_KPI-survey-2024_Training-slides.pdf
R14	EOSC Association (2024), EOSC ASSOCIATION Biennial KPI Survey for EOSC Partnership 2024 - survey questionnaire https://eosc.eu/wp-content/uploads/2025/01/KPI-survey-for-EOSC-Partnership_2024.pdf
R15	EOSC-Association, EOSC-A website, subpage: Monitoring & Reporting, section: Measuring KPIs https://eosc.eu/monitoring-reporting/eosc-partnership-monitoring-framework/
R16	EOSC Observatory website https://eoscobservatory.eosc-portal.eu/home
R17	EOSC Track project website: https://www.openaire.eu/eosc-track-project
R18	I. Nardello, A. Pazik-Aybar (2024), EOSC Winter School 2024, session on Sustainable Exploitation Pathways within the EOSC Focus WP4 framework. https://eosc.eu/eosc-focus-project/winter-school-2024/infraeosc-projects-sustainable-pathways-to-exploitation-of-key-results/
R19	M. Rey Mazón, & I. Hasani-Mavriqi (2024), Report on the EOSC Winter School 2024. EOSC Association https://doi.org/10.5281/zenodo.11165100
R20	M. Rey Mazón, M. Dietrich, S. Garavelli, J. Picard, D. Robertson (2023), EOSC Focus Deliverable 5.1, Resourcing models https://doi.org/10.5281/zenodo.10931890
R21	More resources on the Wardley Maps can be found on the Wikipedia page , and on this free quick training How to Wardley Map - IT Revolution . Some additional reference resources are here : i) Getting Started with Wardley's Doctrine Is Easier Than You Think ; and: ii) Tools
R22	EOSC Winter School 2025, presentation slides from Opening Session: https://eosc.eu/wp-content/uploads/2025/01/1.-2025-EOSC-Winter-School-Opening-Session.pdf
R23	EOSC Winter School 2025, presentation slides from Closing Session: https://eosc.eu/wp-content/uploads/2025/01/5.-Closing-Session-2025-EOSC-WS.pdf
R24	EOSC-Association, EOSC-A website, subpage: Building the EOSC Federation, section: EOSC Federation Handbook: https://eosc.eu/eosc-federation-handbook/
R25	EOSC RAISE project website: https://raise-science.eu/
R26	F. de Jong, M. Dietrich, S. Garavelli, J. Picard, M. Rey Mazon, I. Nardello, J. Picard, D. Robertson (2025), EOSC Focus Deliverable 5.2, Sustainability status and plans/issues for future work (Pending REA Approval)

Appendix 1: The logic of the 2nd Biennial KPI Survey

A. Summary table of target respondent groups, per KPI

KPI code	RPOs	RFOs	SPs	RIs	e-RI	ALL EOSC-A Members (including type 'other')	EOSC-A	EC/EOSC-A
S01_01	X							
S02_02	X							
S03_01		X						
S04_01								X
S04_02				X				
S04_03						X		
S07_01				X	X			
S09_01							X	
S09_02							X	X
001_01							X	X
001_02							X	
002_01							X	X
003_01	X							
004_01						X		
005_01	X		X					
006_01						X		
007_01		X						
007_03						X		
008_01							X	X
008_02						X		
009_01							X	X
0010_01								X
0011_01	X							

KPI code	RPOs	RFOs	SPs	RIs	e-RI	ALL EOSC-A Members (including type 'other')	EOSC-A	EC/EOSC-A
0012_01.a						X		
0012_01.b						X		
0013_01a							X	
0013_01b								X
0013_02							X	
0014_01			X	X				

B: MF KPI questionnaire, with Survey KPI description, questions to be asked in the survey form, allowed answer format, and target respondent groups

KPI Code	KPI Description	Question Asked in the Survey	Answer Options in the Survey	Target Group
S01_01	The percentage r of publications from EOSC Association Research Performing members that have been available in immediate open access in the last 12 months	Please indicate the number of publications (e.g. articles, chapters, books, conference papers, policy papers, pre-prints, lecture notes) which your Research Performing Organisation released in 2023 and the number of them which were available in immediate (e.g. golden) open access.	Free text answer: - Number of publications in total - Number of publications available in open access - Number of publications available in immediate open access	RPOs
S02_02	The percentage of EOSC Association members whose research is supported by professional data stewards	Is the research activity carried out by your organisation supported by professional data stewards?	Single choice answer: Yes No	RPOs

S03_01	Percentage of research-funding members of EOSC-A that require data sharing and/or incentivise data re-use	Does your Research Funding Organisation require data sharing and/or incentivise data re-use?	Single choice answer: Yes No	RFOs
S04_01	The number of repositories in EOSC that have a certification (e.g. CoreTrustSeal)	Does your organisation run a certified repository (e.g. CoreTrustSeal certificate)?	Single choice answer: Yes No	EC/EOSC-A
S04_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	Has your Research Infrastructure developed or adopted documented standards and protocols for data sharing and re-use?	Single choice answer: Yes No	RIs
S04_03	Percentage of members of the EOSC Association that have policies which require FAIR to be implemented in project design via Data Management Plans	Does your organisation have policies which require FAIR principles to be implemented in project design via Data Management Plans?	Single choice answer: Yes No	EOSC-A Members
S07_01	The number of major thematic research and data infrastructures that have developed data and/or services specifically aiming to be offered through EOSC.	Does your Research/ Data Infrastructure have developed relevant data and/or services specifically aiming to be offered through EOSC?	Single choice answer: Yes No	RIs, EIs
S09_01	The number of observers joining the Association from outside EU MS/AC	Please list the names of new members with observer status who joined the Association from outside EU MS/AC, in the years 2022-2023	Free text answer	EOSC-A

S09_02	The number of connections and/or collaborations between EOSC (also via its bodies) and non-EU/international cloud and commons initiatives.	Please indicate the number of connections and/or collaborations between EOSC (also via its bodies) and non-EU/international cloud and commons initiatives.	Free text answer	EOSC-A, EC/EOSC-A
001_01	The number of operational EOSC Core federating capabilities.	What is the number of EOSC Core federating capabilities?	Free text answer	EOSC-A, EC/EOSC-A
001_02	Types and geographic spread (EU MS) of members in EOSC-A, and members of the Board of Directors (BoD), to represent the varied stakeholders' nature (RPOs, RFOs, Libraries, Service Providers, Mandated Organisations) and a varied EU MS representation	Please indicate the types of members in EOSC-A	Free text answer: -Number of RPOs -Number of RFOs -Number of Libraries -Number of Service Providers other than ESFRI RIs -Number of ESFRI RIs -Number of Mandated Organisations -Number of International - Organisations other than ESFRI RIs	EOSC-A
		Please indicate the geographic spread of members in EOSC-A	Multiple choice answer: -List of MS/ACs countries Free text answer: - Non-EU countries	
		Please indicate the geographic spread of EOSC-A Board of Directors	Multiple choice answer: -List of Ms/ACs countries Free text answer: - Non-EU countries	

002_01	A monitoring system (like a dashboard) to gather OS metrics of the evolving landscape of policies, infrastructures and open resources can be accessed through EOSC	Is a monitoring system (like a dashboard) to gather OS metrics of the evolving landscape of policies, infrastructures and open resources publicly accessible? Please provide a comment	Single choice answer: Yes No Please explain:	EOSC-A, EC/EOSC-A
003_01	Percentage of RPO members of the Association that provide training for the upskilling of their researchers in Open Science	Does your Research Performing Organisation provide training for the upskilling of their researchers in Open Science?	Single choice answer: Yes No	RPOs
004_01	Number of organisations have engaged in initiatives that provide community/discipline specific recommendations on standards and Open Science best practices. How many organisations have engaged in initiatives that provide community/discipline specific recommendations on standards and Open Science best practices	Has your organisation engaged in initiatives that provide community/discipline specific recommendations on standards and Open Science best practices?	Single choice answer: Yes No	EOSC-A Members
005_01	The number of organisations that have participated in developing components of a FAIR ecosystem, such as standards, schemas, APIs, metadata frameworks	Has your organisation participated in developing components of a FAIR ecosystem, such as standards, schemas, APIs, metadata frameworks?	Single choice answer Yes No	RPOs, SPs

006_01	Number of members that make use of available FAIR assessment tools to measure the FAIRness of different research digital objects	Does your organisation make use of available FAIR assessment tools to measure the FAIRness of different research digital objects?	Single choice answer: Yes No	EOSC-A Members
007_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)	Does your Research Funding Organisation require the description of the software source code and of its management in Data Management Plans (DMPs)?	Single choice answer: Yes No	RFOs
007_03	The number of organisations - EOSC-A members, participating in a pan-European network of infrastructures for preservation, management and sharing of research software source code (including incentives for the effective documentation and sharing of research software) by 2025;	Has your organisation participated in a pan-European network of infrastructures for preservation, management and sharing of research software source code (including incentives for the effective documentation and sharing of research software)?	Single choice answer: Yes No	EOSC-A Members

008_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	<p>In how many initiatives (such as discussion fora, conferences, symposia, workshops, etc.), where FAIR and open data practices are co-designed, was the EOSC Association represented, in the years 2022-2023?</p> <p>Optionally, please provide the names of fora and/or a reference to these initiatives (e.g. the framework under which it is carried out, or a hyperlink)</p>	<p>Free text answer: => N Initiatives</p> <p>and then</p> <p>Free text (optional): => Name of initiatives</p>	EOSC-A, EC/EOSC-A
008_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)	<p>Does your organisation recognise open science activities in research career assessments, e.g.:</p> <p>a) FAIR and open data practices and (meta)data sets linked to the researchers' online records; and/or:</p> <p>b) Open Access publications?</p>	<p>Single choice answer:</p> <p>Yes No</p>	EOSC-A Members
009_01	Establishment of an 'RoP Board' to monitor and report on the qualitative and quantitative compliance with the Rules of Participation	Has the EOSC-A established an 'Rules of Participation (RoP) Board' to monitor and report on the qualitative and quantitative compliance with the Rules of Participation?	<p>Single choice answer:</p> <p>Yes No</p>	EOSC-A, EC/EOSC-A

0010_01	An authentication and authorisation infrastructure (AAI) framework to manage user identity and access is deployed and operational.	Please indicate whether an authentication and authorisation infrastructure (AAI) framework to manage user identity and access is deployed and operational.	Single choice answer: Yes No	EC/EOSC-A
0011_01	The Number of RPO members of the EOSC Association that adopt and use the persistent identifier allocation practice	Does your organisation adopt and use persistent identifier (PID) allocation practices?	Single choice answer: Yes No	RPOs
0012_01	A) Number of members of the Association that participate in fora to agree on standards for minimum metadata requirements	Does your organisation participate in any forum to agree on standards for minimum metadata requirements?	Single choice answer: Yes No	EOSC-A Members
	B) Number of members of the EOSC-A that have policies in place to enforce the adoption of standard minimum metadata	Does your organisation have policies in place to enforce the adoption of standard minimum metadata? Optionally, please provide a hyperlink	Single choice answer: Yes => (Optional) free text No	EOSC-A Members
0013_01	A) Frequency (n/yr) of EOSC stakeholder fora that are organised by the EOSC Association;	Please indicate the number of EOSC stakeholder fora that were organised by the EOSC Association in 2023 Please provide the names of fora (optionally)	Free text answer (number) : =>Optional Free text answer	EOSC-A
	B) Frequency (n/yr) of EOSC stakeholder fora that are organised by INFRAEOSC and other EOSC-related projects	Please indicate the number of EOSC stakeholder fora that were organised by the INFRAEOSC and other EOSC-related projects in 2023	Free text answer (number)	Horizon Projects

0013_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	Please indicate the number of EOSC-A Task Forces which are set up in 2023, with representation of users and service providers from different disciplines that issue relevant recommendations and launch relevant consultations for the continued development of EOSC	Free text answer	EOSC-A
0014_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	Has your organisation either developed, adopted or tested models for the availability and costing of transnational (i.e. both in your country and outside) services, in 2023?	Single choice answer: Yes No	SPs, RIs