EOSC Future

D7.2b

EOSC Service Delivery and Management

The *EOSC Future* project is co-funded by the European Union Horizon Programme call INFRAEOSC-03-2020, Grant Agreement number 101017536

Version 2
May 2023

D7.2b / EOSC Service Delivery and Management

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Dissemination level of the document

Public

Abstract

This deliverable is a status update since the first version of this deliverable and report of work in implementing the Service Management System (SMS) framework to support the delivery of services within the EOSC Future project. It includes work done to verify the maturity of the SMS and sustainability considerations for both the SMS and for EOSC as a whole. The current updated version includes the report of the external audit of the SMS.

Version History

Version	Date	Authors	Description
V0.1	23/12/2022	Matthew Viljoen (EGI.eu)	Initial version based on D7.2a
V0.2	24/12/2022	Matthew Viljoen (EGI.eu)	Incorporation of comments and preparation of final version
V1.0	31/12/2022	Matthew Viljoen (EGI.eu), Athanasia Spiliotopoulou (JNP), Ron Dekker (TGB), Mike Chatzopoulos (ATHENA)	Submission to EC by PC (ATHENA)
V1.1	05/03/2023	Matthew Viljoen (EGI.eu)	Updated with first internal audit report
V2.0	24/05/2023	Matthew Viljoen (EGI.eu)	Final version reviewed and prepared for resubmission

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Abbreviations

Acronym	Definition
CPA	Core Participation Agreement
CAB	Change Advisory Board
CAPM	Capacity Management
CHM	Change Management
CI	Configuration Item
CONFM	Configuration Management
CPA	Core Participation Agreement
CSI	Continual Service Improvement
EOSC	European Open Science Cloud
EPOT	EOSC Portal Onboarding Team
ISM	Information Security Management
ISRM	Incident and Service Request Management
KEDB	Known Error Database
MVE	Minimum Viable EOSC
PM	Problem Management
PMB	Project Management Board
RDM	Release and Deployment Management
RfC	Request for Change
SACM	Service Availability and Continuity Management
SDTP	Service Design and Transition Package
SFI	Suggestions for Improvement
SLM	Service Level Management
SMS	Service Management System
SFRM	Supplier Federation member Relationship Management
SOCRM	Service Ordering and Customer Relationship Management
SPM	Service Portfolio Management
SQA	Software Quality Assurance
SRM	Service Reporting Management
TCB	Technical Coordination Board

1 Executive Summary

The EOSC Service Management System (SMS) now functions to support all areas of service delivery of the EOSC-Core. At the time of writing this deliverable, it has just passed its first audit with an external consultant in order to assess its level of maturity. While some areas were identified needing further development, the initial feedback from the audit highlighted multiple areas that were functioning well. The official audit report is now included as a revision to the original version of this deliverable, submitted in December 2022. This deliverable seeks to provide an update of the developments within the SMS since the first version of this deliverable, D7.2a in March 2022. It also covers remaining work that is planned to be done before the end of the project and includes considerations for how the SMS will contribute to the sustainability of EOSC after the project.

2 Introduction

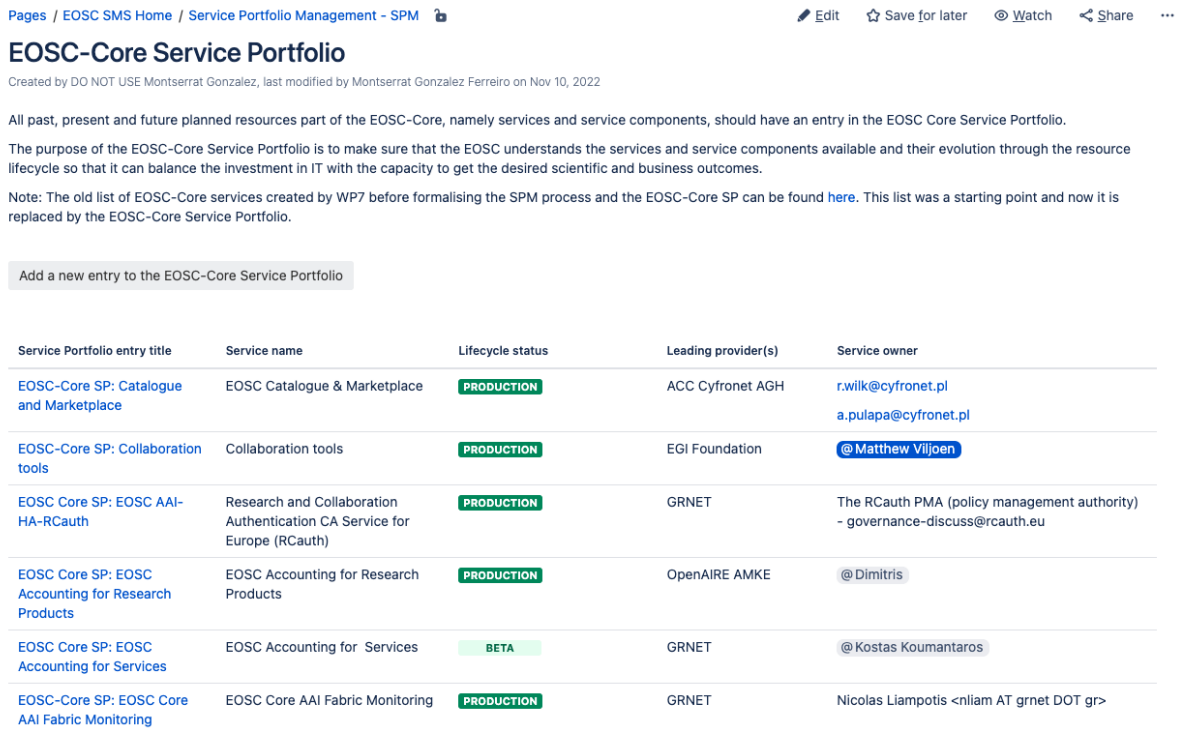
The Service Management System (SMS) exists to support all aspects of service delivery of the EOSC-Core, ensuring that all services and components constituting the EOSC-Core are delivered in a professional, reliable, and repeatable manner, regardless of the organisations or funding project supporting service delivery activities. The SMS has made the transition from being set up within EOSC Future to a point where its essential components are fully functioning with documented processes, procedures and policies. Now that we are moving into the final year of the EOSC Future project, the adherence to the SMS by the product teams is being assured and the activity to ensure that the SMS is suitable to continue after the end of EOSC Future has started.

This deliverable serves as a status update to D7.2a EOSC Service Delivery and Management (March 2022), providing a concise summary of work done since this date. In Section 3, significant updates are provided for the different SMS processes and planned work between now and the end of the project. Section 4 provides important status updates on the Core Participation Agreement (CPA), the mechanism which ensures quality service delivery of the EOSC-Core. Section 5 provides an overview of work done to ensure smooth uptake of the SMS through adoption, training and dissemination activities. Section 6 includes considerations about how the SMS may contribute to sustainability of EOSC and service delivery activities after the end of the EOSC Future project.

3 EOSC SMS Updates

3.1 Service Portfolio Management

Over the last 6 months, the EOSC-Core service portfolio has been populated with entries for the entire EOSC-Core and in doing so has now become the 'source of truth' or definitive list of services constituting the EOSC-Core, along with their lifecycle status ('PRODUCTION' or 'BETA').



Pages / EOSC SMS Home / Service Portfolio Management - SPM

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EOSC-Core Service Portfolio

Created by DO NOT USE Montserrat Gonzalez, last modified by Montserrat Gonzalez Ferreiro on Nov 10, 2022

All past, present and future planned resources part of the EOSC-Core, namely services and service components, should have an entry in the EOSC Core Service Portfolio.

The purpose of the EOSC-Core Service Portfolio is to make sure that the EOSC understands the services and service components available and their evolution through the resource lifecycle so that it can balance the investment in IT with the capacity to get the desired scientific and business outcomes.

Note: The old list of EOSC-Core services created by WP7 before formalising the SPM process and the EOSC-Core SP can be found here. This list was a starting point and now it is replaced by the EOSC-Core Service Portfolio.

Add a new entry to the EOSC-Core Service Portfolio

Service Portfolio entry title	Service name	Lifecycle status	Leading provider(s)	Service owner
EOSC-Core SP: Catalogue and Marketplace	EOSC Catalogue & Marketplace	PRODUCTION	ACC Cyfronet AGH	r.wilk@cyfronet.pl a.pulapa@cyfronet.pl
EOSC-Core SP: Collaboration tools	Collaboration tools	PRODUCTION	EGI Foundation	@Matthew Viljoen
EOSC Core SP: EOSC AAI-HA-RCauth	Research and Collaboration Authentication CA Service for Europe (RCauth)	PRODUCTION	GRNET	The RCauth PMA (policy management authority) - governance-discuss@rcauth.eu
EOSC Core SP: EOSC Accounting for Research Products	EOSC Accounting for Research Products	PRODUCTION	OpenAIRE AMKE	@Dimitris
EOSC Core SP: EOSC Accounting for Services	EOSC Accounting for Services	BETA	GRNET	@Kostas Koumantaros
EOSC-Core SP: EOSC Core AAI Fabric Monitoring	EOSC Core AAI Fabric Monitoring	PRODUCTION	GRNET	Nicolas Liampotis <nliam AT grnet DOT gr>

Figure 3.1: EOSC-Core Service Portfolio

Every entry in the EOSC-Core service portfolio consists of essential information about each service; for example: its description; the leading/contributing providers; intended customer groups; value proposition; service owner; security contact; components and their technology readiness level (TRL) and essential information about the finance model for the service. See Appendix A – The EOSC-Core Service Portfolio Entry for the entire Service Portfolio entry with explanatory information for each field.

A Service Design and Transition Package (SDTP) has been created and is intended to be completed for EOSC-Core services once they undergo a lifecycle phase transition (e.g. from 'beta' to 'production', or from 'retirement' to 'termination'). As such, the SDTP contains a checklist of what criteria are needed to be fulfilled in order for a new service to be regarded as production ready – e.g. an availability/continuity plan and capacity plan exists; support is integrated with the EOSC Helpdesk etc. See Appendix B – The EOSC-Core Service Design and Transition Package for the SDTP entry with explanatory information for each field.

3.1.1 Plans for the final period of the project

It is unrealistic to expect an SDTP to be completed for each entry of the Service Portfolio which is already in production; and indeed, the essential information is already present in the Service Portfolio entry. However, there is a plan to ensure adherence to all production criteria listed in the SDTP for services already in production. This activity will also be done after the Core Participation Agreements have been signed for all services.

The SDTP is planned to be completed for the EOSC Observatory in January 2023, the newly developed service that is now production ready.

3.2 Supplier Management

Service providers – both lead providers and contributing providers – have been identified and registered in the SMS along with contact details for the supplier who is the signatory of the Core Participation Agreement.

3.2.1 Plans for the final period of the project

Supplier information will be kept up to date until the end of the project.

3.3 Continuous Service Improvement

As part of Continual Service Improvement (CSI), an audit of the SMS was carried out in December 2022 against ISO20000-1:2018[1] and the FitSM federated standards family[2] by an external consultant. The reason for this was to provide an impartial assessment of the level of maturity of the SMS and to provide a source of suggestions for further improvement. Such an activity had happened in the EOSC-hub project and although this wasn't originally planned for within EOSC Future, it was felt to be beneficial and was included in the first project amendment.

Before the audit, CSI organised a programme of management reviews of all SMS processes between the process managers and process owners. This was intended as a means of self-reviewing the status of the processes including their procedures and policies.

The audit confirmed that many essential areas of the SMS were either working effectively and maturely or their essential aspects were functioning. Some areas (e.g. Problem Management and Configuration Management) were immature and needed significant further work before the end of the project and a number of potential non-conformities against the standards within scope of the audit were highlighted. Although the formal report of the audit had not been written in time for inclusion within this deliverable, an update of the deliverable will be provided during the first quarter of 2023 where the formal audit report will be included as an appendix.

The audit highlighted the fact that Key Performance Indicators (KPIs) had not been defined for all SMS processes and it was suggested that this should be done. It was also suggested that KPIs that are part of the EOSC Future project that are related to service delivery may be incorporated as part of the SMS and as such may contribute to the sustainability of service provision and enhanced user experience, independent of the existence of time-dependent projects and project funding.

Unfortunately, due to the timing of this audit and the agreed date for submitting this deliverable, it was not possible to include the audit results in its original submission. This revised version of this deliverable contains the report as Appendix C – Report from the First Internal Audit of the EOSC SMS.

3.3.1 Plans for the final period of the project

The audit proved to be a useful activity and since sufficient funding was put aside during Amendment 1 of the project to cover a second audit, it is planned that this will take place during June 2023 in order to assess the final state of the SMS before the end of the project, the state of implementation of suggestions for improvement from the first audit, and the readiness of the SMS to be handed over to the follow-on project after EOSC Future.

3.4 Service Ordering and Customer Relationship Management

Service ordering of EOSC Exchange services has continued successfully since the first version of this deliverable using the Service Order Management Back Office (SOMBO) service. It should be mentioned that within the SMS at present, requests for integration with the Core are considered separately than Exchange service ordering and the approach of Core integration needs to be formalised. However, it is likely that this will happen as part of Service Portfolio Management rather than Service Ordering, with EOSC-Core services marked as 'integratable' and thus forming a virtual 'catalogue' of EOSC-Core services available for integration after onboarding to the Exchange.

3.4.1 Plans for the final period of the project

So far customer satisfaction surveys have not been performed, although this is a component of Customer Relationship Management. We plan to run targeted surveys for EOSC Portal services which are used by end users (e.g. marketplace, helpdesk) as a means of gathering input and gauging user satisfaction.

3.5 Service Availability and Continuity Management

Service Availability and Continuity Management (SACM) is scoped for EOSC-Core services. So far one SACM plan is complete (for SOMBO) and the plans for the other EOSC-Core services are in progress.

3.5.1 Plans for the final period of the project

With all CPAs requiring SACM plans to exist, these will be completed for the remaining EOSC-Core services before the end of the project.

3.6 Information Security Management

As reported in the 2nd Periodic Technical Report, within Information Security Management (ISM), trust and operational security in the EOSC have been enhanced through the formal definition and adoption of two security policies (baseline Acceptable Use/Terms and Conditions, and the Security Operational Baseline) and five accompanying procedures.

3.6.1 Plans for the final period of the project

Further work on the ISM Risk Assessment framework is planned, along with increasing of security awareness across EOSC users and service providers.

3.7 Incident and Service Request Management and Problem Management

The Incident and Service Request Management (ISRM) process is in full production with the newly introduced Zammad-based EOSC Helpdesk, and all procedures are now formally defined and approved.

3.7.1 Plans for the final period of the project

For the remainder of the project, the focus is now on enhancing Helpdesk as a Service to onboarded service providers requiring this functionality. It will be decided whether a distinct Problem Management process along with a Known Error Database is required for the EOSC-Core services and if so, this will be created before the end of the project.

3.8 Configuration Management, Change Management and Release and Deployment Management

Since the M12 release, Release Management has been coordinated by a bi-weekly meeting with the participation of representatives of all product teams involved in the releases and a Release Manager, who has assessed the readiness of releases prior to their delivery. This has then interfaced with the SMS Change Management process by submitting change requests on a per-component basis containing information about the releases, testing that has been done and rollback plans. However, there has been no methodical approach to understanding and document the Configuration Items (CIs) that need to be controlled at a central SMS level and what needs to be controlled at the level of the service providers. As such, there does not exist at the time of writing a Configuration Management Database (CMDB) as part of Configuration Management.

Regarding the integrated testing of EOSC-Core services, while all product teams perform testing at a service level, so far there is limited visibility of integrated testing across services and documented links to the testing reports at each release.

3.8.1 Plans for the final period of the project

For the remainder of the project, the Configuration Management, Change Management and Release and Deployment Management processes will be rationalised by clearly specifying the CIs which need to be controlled centrally by the EOSC SMS Change Management and Release and Deployment Management. Such CIs could be (for example) major release numbers, major functionality, interfaces between services etc.

For the remainder major releases before the end of the project, a more consistent approach will be used to ensure cross-service testing is happening wherever it is needed with a release, and to link test reports to the release's documentation.

3.9 Capacity Management

Capacity Management (CAPM) is scoped for EOSC-Core services. So far six CAPM plans are complete and the plans for the other EOSC-Core services are in progress.

3.9.1 Plans for the final period of the project

With all CPAs requiring CAPM plans to exist, these will be completed for the remaining EOSC-Core services before the end of the project.

4 Core Participation Agreement

The first version of this deliverable, D7.2a outlined the rationale behind establishing a Core Participation Agreement to outline agreed expectations regarding service delivery within the EOSC-Core. The CPA is an agreement between the coordinators of the EOSC Future project and the project partners delivering services since the CPAs are scoped within the activities of EOSC Future. Until the time of writing this deliverable, there have been lengthy discussions over how many CPAs should be established and how they should be grouped. Having one CPA per service would mean a significant overhead of maintaining multiple agreements, however the different configurations of service providers involved in different services means that having too few CPAs would be problematic. A compromise was reached in that each EOSC-Core service should have a lead service provider and contributing service providers – indicated in the EOSC-Core Service Portfolio entry – and that the CPA should name the lead/contributing providers as the signatory. This reduces the number of agreements to a manageable size.

Even though CPAs are intended to be an indication of intent rather than formal agreements, they still require the consensus of multiple management representatives within the many organizations that deliver EOSC-Core services. As such, at the time of writing this document, one CPA is signed covering three services, while the others are in an advanced stage of negotiation.

4.1.1 Plans for the final period of the project

The signing of the remainder CPAs remains the highest priority in the remaining period of the project. Reports will be produced showing the extent to which agreed service target levels as specified in the CPAs are being met.

5 Adoption and Training activities

A functioning and mature SMS is of severely limited value if nobody knows how to use it and in the case of the EOSC SMS the primary users are the product teams delivering the EOSC-Core. Since June 2022, *Task 7.4 EOSC-Core Delivery* has delivered a series of workshops covering the operational aspects of the SMS aimed at EOSC-Core product teams, on the following topics:

1. **Core Participation Agreement (CPA), the Service Design and Transition Package (SDTP) and Reporting**
2. **Change Management and Release and Deployment Management**
3. **Release and Deployment Management (inc. Software Quality Assurance expectations), Continual Service Improvement**
4. **Capacity Management**
5. **Integrated Testing**

Each workshop has included slides and a discussion, the material and writeup being included in the project wiki[3] . Together they constitute a valuable resource of information for the teams involved in service delivery.

In addition to these workshops, the EOSC Symposium 2022 in Prague included a session on the EOSC SMS which gave a comprehensive introduction to the EOSC SMS, its activities and plans.

5.1.1 Plans for the final period of the project

During the final year of the project, WP7 will ensure that SMS procedures and policies are being followed by its intended users. Where appropriate, further workshops will be delivered and feedback will be sought in order to identify improvements to the SMS, which will be coordinated by CSI.

6 Sustainability considerations

During the audit conducted in December 2022 and mentioned above in Section 3.3, CSI identified a number of areas relating to service delivery that are documented as part of the project within the wiki but they are not part of the EOSC SMS itself (for example, EOSC Portal service onboarding). Since the aim of the EOSC is to establish a sustainable infrastructure, it was recommended that all repeatable activities relating to service delivery that currently happen as part of the EOSC Future project should be part of the EOSC SMS and be decoupled from the EOSC Future project which will end in September 2023. This will promote the persistence of these service delivery activities regardless of funding cycles and suppliers of services, both of which are subject to change over time. Similar arguments apply to project Key Performance Indicators (KPIs) which relate to service delivery, which should also become process KPIs within the EOSC SMS.

The relationship of the EOSC Association and the EOSC SMS should also be established before the end of the EOSC Future project, and whether the EOSC Association should be the signatory of the CPAs after the project ends (as noted in Section 4, the current signatory of the CPAs is the EOSC Future project coordinator, which is clearly not appropriate after the termination of the project).

7 Conclusion

This deliverable has provided a status update of service delivery and management activities over the last nine months, and the development of the EOSC Service Management System (SMS). An important activity which has just completed at the time of writing this deliverable is the external audit of the SMS, the report from which is included in the current revised version of this deliverable. The report findings detail the extent to which the EOSC SMS was determined to conform with the FitSM standards family at the time of the audit and includes a list of 3 non-conformities, 13 strong recommendations, 14 hints and 2 positive aspects. All identified areas of improvement will aim to be implemented before the end of the project, and a follow-on audit is planned in June 2023, where the extent of this work will be evaluated. The nonconformities reflecting the most significant areas to improve were for the change and release/deployment management, configuration management and problem management processes. Work is ongoing to address these points, which will be scrutinised during the follow-on final internal audit in June 2023.

8 Appendix A – The EOSC-Core Service Portfolio Entry

Service overview	
Service name	Write the name of the service as know by the end user. It should also be the title of the Confluence page you will create by filling this template.
Lifecycle status	Add lifecycle status copy & pasting the status from the right side options.
Description	Write a short (few lines) description of the resource. The description must be written in a way that is oriented toward customers and users.
EOSC-Core Service Portfolio entry	Include the link to the Service Portfolio entry (which will be generated after you complete this template). It will be useful when we export this entry to a document, such as a pdf.
Leading provider(s)	Add the names(s) of all the leading or coordinating Provider(s) that manage or deliver the service in federated scenarios, which are beneficiary organisations of EOSC Future.
Contributing provider(s)	The name(s) of (all) the contributing Provider(s) that manage or deliver the service in federated scenarios in addition to the leading providers, which are beneficiary organisations of EOSC Future. The providers of services or resources that have been integrated are not contributing service providers e.g. despite using the AAI to authenticate, we cannot say that the AAI provider is contributing to the development and running of all the EOSC-Core services. If there are no contributing providers, your answer can be as simple as "none"
Core Participation Agreement	Link to the EOSC-Core service Core Participation Agreement
Access policies	Policies stating how the service can be accessed, examples are: Policy-based: users are granted access to the service based on policies defined by EOSC Future Wide-access: users can freely access the service provided Market-driven: users can negotiate a fee to access the service either directly with the EOSC Future service provider or indirectly with EOSC Future
Terms of use	Add the URL to a document containing the rules which one must agree to abide by in order to use the service
Roadmap	Add the URL to the service roadmap (if exists) or say that it is not available.
Use cases	Links to examples on how this service could be used.
Service value	
Customer group	Type of customers who are allowed to commission this resource. Restrictions may apply according to various criteria like the location (e.g. country) or type of activity (e.g. research, commercial). By customer, we mean an organisation that commissions a service provider to deliver one or more resources, doing so on behalf of a number of users; customers commission a service and usually discuss the terms of the contract and of

	the SLA but do not necessarily use it; users use the service but do not necessarily commission it. For EOSC Core resources typically this is: 1. The EOSC legal entity (hub operators), 2. Other operators of regional or thematic nodes of EOSC, or 3. External service providers who may integrate them with their resources somehow.
User group	Type of individuals that primarily benefits from and uses a resource. E.g. large research groups, individual researcher, site admins.
Value proposition	The benefit to a customer and their users delivered by a resource; benefits are usually related to alleviating pains (e.g., eliminate undesired outcomes, obstacles or risks) or producing gains (e.g. increased performance, social gains, positive emotions or cost saving). Also it should be considered that a service part of the EOSC Core must contribute to the digital platform providing the functionality required for cross-domain and cross-country sharing of open science practices according to the EOSC interoperability framework.
Tagline	Short catchphrase for marketing and advertising purposes. It will be usually displayed close to the service name and should refer to the main value or purpose of the resource.
Features	List of distinct characteristics for this service and what makes it different to other similar solutions.
URL	Link to a webpage providing information about the resource. This webpage is usually hosted and maintained by the service provider. It contains fresh and additional information, such as what APIs are supported or links to the documentation.
Service support	
Service owner	The person(s) name and email with overall responsibility for the delivery of the service.
Operational contact	The person(s) responsible for operations of the service. Ideally this should be a mailing list.
Security contact	The person(s) responsible for dealing with security aspects of the service. Ideally this should be a mailing list.
Public contact	External contact (e.g., e-mail, phone) for end users to ask information about the service.
User documentation	Links to guidelines, user manual and any relevant information for end users of the service (e.g. technical information on integration with other services).
Training material	Links to training materials designed to assist users in using this service.
Communication material	Links to communications to inform end users of the service of different aspects.
Service architecture	
Components	List of service components and their TRLs[4] . Include a diagram if necessary.
List of integrations with other EOSC resources	<table><tr><th>#</th><th>Type</th><th>Name</th><th>Description</th><th>TRL</th><th>Contact</th></tr></table>

(EOS-Core services or service components)	1	Enabling or Enhancing Definitions: - Enabling service components are the minimum set of service components that make the service available - Enhancing service components are any additional service components that improves the service, however, the service would still run without them, even if at lesser quality.	Service component name.	Short description of each service component and the function(s) it enables.	Number	Name, affiliation and email address.

Finances	
Payment model(s)	Supported payment models and restrictions that apply to each of them; examples of types of payment models are: sponsored use, pay-as-you-go, subscription, membership to corporate customers, higher education, etc.
Cost	The costs required to develop and maintain/operate the service in the best case, e.g. human effort; financial investment.
Revenue	E.g. public funding, membership fees, in-kind, paid (specify price).
Actions required	List the actions that are required to complete the service portfolio entry according to the specific service phase; if no actions are required, write 'no'

9 Appendix B – The EOSC-Core Service Design and Transition Package

Template: EOSC-Core Service Design and Transition Package

Document control

Area	SPM
Document status	FINALIZED
Document owner	Montserrat Gonzalez (montserrat.gonzalez@egi.eu)
Approval status	APPROVED
Approved version and date	V1.0 15 Sep 2022
Statement	All new services or major changes to services part of the EOSC-Core require a Service Design and Transition Package (SDTP) to ensure proper evaluation, define the necessary pieces of information regarding the service design, delivery, and transition planning. The SDTP can be used to design new services and use the information in the SDTP to feed the service entry in the EOSC-Core Service Portfolio. It also can be used to plan the transition of existing services and then many of the information contained in the SDTP will be copied from the service entry in the EOSC-Core Service Portfolio. The template was included in EOSC Future D7.4a and approved by the Technical Coordination Board TCB).
Next template review	01 Sep 2023

Regarding Document Status and Approval Status

Document status according EOSC Future SMS can be:

DRAFT - The document is in the initial stages of the writing process

DISCUSSION - The document is in the stage of discussion and consultation. The document must stay at this stage until it is finalized and approved (if needed).

FINALIZED - The document is in the stage of being finalized and approved (if needed).

DEPRECATED - The document is no longer applicable. It is kept for reference purpose.

The specific status may be indicated by use of the document status macro.

Policies, processes, agreements and procedures are subject to approval:

APPROVAL REQUIRED

APPROVED

Content

Part 1. Service Portfolio entry: Overview, value, support, architecture, and finances

Service overview	
Service name	Write the name of the service as know by the end user. It should also be the title of the Confluence page you will create by filling this template.
Lifecycle status	Add lifecycle status copy & pasting the status from the right side options.
Description	Write a short (few lines) description of the resource. The description must be written in a way that is oriented toward customers and users.

Lifecycle status options:

DISCOVERY Discovery: Researching users needs, exploring technological or policy constraints

DESIGN Design: Designing the service

PREPARATION Preparation: Service in preparatory phase when the design is ready and the related plans to develop and run it are being drafted.

PLANNED Planned: Service planned and resources to develop and run have been acquired.

10 Appendix C – Report from the First Internal Audit of the EOSC SMS

This appendix includes the complete report audit report detailing the findings of the first internal audit of the EOSC SMS, written on 21 December 2022. The audit was carried out by an external consultant.

Internal SMS Audit for EOSC Future (19-20 December 2022)

10.1 Introduction

This document summarizes the objectives, scope, criteria, findings, and conclusions drawn from an audit conducted on behalf of the EOSC Future project from 19-20 December 2022. Audit activities have been carried out under consideration of the guidelines for management systems auditing according to EN ISO 19011:2018.

10.2 General information

Audit objectives	• Assessment of the conformity and effectiveness of the EOSC Service Management System (SMS) and its processes • Identification of individual nonconformities and practical suggestions for further development / improvement
Audit scope	The service management system (SMS) covering the (IT) service management processes and activities carried out under control of the EOSC Future project to deliver services to customers

Audit criteria	**Audit criteria relate to the following topic areas:**
	
	General requirements for a service management system
	
	• Focus on:
	  ○ Top Management Commitment & Responsibility
	  ○ Documentation
	  ○ Scoping, Planning, Implementing, Monitoring/Reviewing and Continually Improving Service Management
	• Requirements based on FitSM-1, Clause 4 (GR1-7)
	
	Process-specific requirements
	
	• Focus on:
	  ○ Service Portfolio Management
	  ○ Service Level Management
	  ○ Service Reporting Management
	  ○ Service Availability & Continuity Management
	  ○ Capacity Management
	  ○ Information Security Management
	  ○ Customer Relationship Management
	  ○ Supplier Relationship Management
	  ○ Incident & Service Request Management
	  ○ Problem Management
	  ○ Configuration Management
	  ○ Change Management
	  ○ Release & Deployment Management
	  ○ Continual Service Improvement Management
	• Requirements based on FitSM-1, Clause 5 (PR1-14)

Audit client	EGI Foundation on behalf of the EOSC Future project
Audit team	Dr Thomas Schaaf

Auditee	Relevant partners within the EOSC Future project
Language	• Audit report (this document): English • Interviews: English
Dates and places	• Dates: Monday, December 19th to Tuesday, December 20th, 2022 • Place: Remote (Zoom)

10.3 Audit activities

See timetable at:
https://docs.google.com/spreadsheets/d/1loxODOGlG1VveRCV8Sdq3iH7UdwQoByv/edit#gid=1092981426

10.4 Audit findings

Audit findings have been classified according to the following scheme:

Type of audit finding	Explanation
(NC) Nonconformity or potential nonconformity	Situation in which requirements are not met or a core activity is not effective, although at the current stage of the SMS implementation, the respective requirements should be fulfilled or the respective activity in place and effective.
(SR) Strong recommendation	Situation that requires follow-up action, since requirements are or will not be met, and there is a risk of not meeting expectations in the future, if no corrective action is taken.
(H) Hint, suggestion, opportunity for improvement	Suggestion for improvement that should be considered to further increase the effectiveness or maturity of a process or activity.
(PA) Positive aspect	Situation that exceeds expectations

Please note that the number of findings (in total or per category) is NOT an indicator of the level of conformity, effectiveness or maturity of the respective process or topic. The absence of positive aspects does NOT indicate that there is nothing positive about the process or topic.

10.4.1 Management Responsibilities

(FitSM-1, GR1)

- Management commitment / leadership
- Service management policy, (strategic) goals, requirements, expectations
- Governing bodies
- Governance processes / Control of the service management system
- Management Review

Audit evidence:
(EV) T7.4 EOSC Core Operations (Confluence: EOSC Future Private Space)
(EV) 2022-06-22 Core Participation Agreement (CPA), the Service Design and Transition Package (SDTP) and Reporting (Confluence)
(EV) 2022-10-27 Integrated Testing (Confluence)
(EV) SMS Management plan
(EV) SMS Roles and responsibilities (Confluence)
(EV) Service Management policy (Confluence)
Additional information:

- Two different service portfolios: (1) EOSC core services to support / operate the EOSC platform, (2) EOSC Exchange services (customers: research organisations)

Audit findings:

Classification	Finding
(SR)	Awareness should be raised for the purpose and objectives of the SMS. In particular, it should be clear to key persons that any recurring activities related to service planning,

	delivery, operation and control should be integrated in the SMS and its processes, even if these activities are covered by EOSC Future project / work package activities. One of the key reasons for this is that any project-related organisational setting (such as the work plan and activities / deliverables for a given work package) may not survive the end of the lifetime of a project, while the SMS is designed for sustainability. (Background: For example, work in work packages 3 and 4 of the EOSC Future project that is clearly related to SPM / impacting SPM has been carried out outside the SPM activities and control, e.g., defining the fields for the provider onboarding in the providers portal.)
(SR)	The SMS management plan and service management policy has not been reviewed and updated recently, since the focus was on operational activities. The SMS management plan and service management policy should be updated.
(SR)	The role of the EOSC Association in the context of the SMS in the future (and beyond the lifetime of the EOSC Future project) should be clarified.
(H)	"Formal" management reviews should be conducted by the SMS owner, taking into account findings from internal audits and results from process reviews.
(H)	The description of the role of the SMS owner could be complemented by his/her responsibilities to represent the SMS in the Technical Coordination Board, and related tasks.

10.4.2 Service Portfolio Management

(FitSM-1, PR1)

Audit evidence:

(EV) Service Portfolio Management – SPM (Confluence)
(EV) EOSC-Core SP: EOSC Helpdesk (Confluence)
(EV) EOSC-Core SP: Collaboration tools (Confluence)
(EV) SPM Procedures (Confluence)
(EV) EOSC Providers Portal (Web)
(EV) EPOT Procedure-03: Onboard a Service (Confluence: EOSC Onboarding)
(EV) EOSC Service Catalogue and Marketplace (Web)
(EV) EOSC Exchange inclusion criteria (Confluence)

Audit findings:

Classification	Finding
(H)	It could be considered to maintain more detailed information on the leading and contributing providers in the core service portfolio, e.g., a short description of the individual contribution for each provider.

10.4.3 Service Level Management, Service Reporting Management

(FitSM-1, PR2 & PR3)

Audit evidence:

(EV) Service Level Management – SLM (Confluence)
(EV) SLM Procedures (Confluence)
(EV) SLM Framework (Confluence)
(EV) SLM Agreements and templates (Confluence)
(EV) EOSC Core Participation Agreement with EGI (Google Doc)

Additional information:

- SLM and in particular setting up CPAs is currently work in progress

Audit findings:

Classification	Finding
(SR)	Core participation agreements (CPAs) are not in place for all relevant providers and core services at this point in time. This is work in progress and should be further promoted.
(SR)	A reporting of the performance of suppliers / lead providers in delivering EOSC core services, including potential CPA violations, is not in place at this point in time. This is work in progress and should be further promoted.

(H)	The wording for (core) participation agreements should be used more consistently through the SLM procedures.
(PA)	The approach to agreeing core participation agreements (CPAs) with all lead providers is positive.

10.4.4 Supplier and Federation Member Relationship Management

(FitSM-1, PR8)

Audit evidence:

(EV) Supplier and Federation Member Relationship Management – SFRM (Confluence)
(EV) SFRM Procedures (Confluence)
(EV) SFRM3 Monitor service provider performance (Confluence)

Audit findings:

Classification	Finding
(H)	Reporting of the performance of suppliers / lead providers in delivering EOSC core services, including potential CPA violations should consider thresholds for reporting / escalating to the Technical Coordination Board.

10.4.5 Continual Service Improvement (CSI), Evaluation & Improvement

(FitSM-1, GR5 & GR7 & PR14)

Audit evidence:

(EV) Continual Service Improvement – CSI (Confluence)
(EV) Software and Services Quality Assurance (SQA) guidelines

Audit findings:

Classification	Finding
(H)	Process reviews and the way they are conducted should be addressed as part of the CSI procedures.
(H)	The management of key performance indicators (measurements) should be addressed as part of the CSI procedures.
(H)	Currently, no KPIs are actively measured and reported for the CSI process itself. Such KPIs could be defined, measured, and reported.
(H)	The role "SMS team" is referred from CSI procedures; however, this role has not been defined as part of the roles and responsibilities.
(H)	Transparency over the state of KPIs (Defined? Measured? Reported reliably?) over all processes of the SMS should be further promoted, e.g. by having an overview / dashboard of all KPIs and their current "state".

10.4.6 Service Ordering and Customer Relationship Management

(FitSM-1, PR7)

Audit evidence:

(EV) Order Workflow V4 (JPG image)
(EV) Operations Portal for EOSC – SOMBO – SOCRM KPIs (Web)
(EV) SOCRM KPI (Confluence)
(EV) EOSC-Core SP: EOSC Order Handling System (Confluence)
(EV) Service Order and Customer Relationship Management – SOCRM (Confluence)
(EV) SOCRM Procedures (Confluence)

Audit findings:

Classification	Finding
(SR)	The scope of managing customer satisfaction should be extended from EOSC core to EOSC exchange / portal. For example, customers (research organizations) using the EOSC marketplace to get connected to providers and their services could be subject to satisfaction surveys. However, these should not focus on their satisfaction with the actual service they receive from a provider, but on the services and processes around the marketplace and EOSC as a service broker.

(PA)	The reporting / visualization of the six KPIs for SOCRM in the SOMBO dashboard (order handling system), including the automated measurement / evaluation of the underlying metrics, is positive.

10.4.7 Service Availability and Continuity Management

(FitSM-1, PR4)
Audit evidence:
(EV) SACM: EOSC SOMBO
(EV) SACM2 Create and maintain Service Availability and Continuity Plans (Confluence)
Audit findings:

Classification	Finding
(SR)	The need for SACM plans has not been evaluated for all core services at this point in time. Currently, only one SACM plan (SOMBO) is available. Thus, the work on SACM planning should be continued, and SACM plans should be established where required (depending on tolerance level, RTO/RPO etc.).

10.4.8 Information Security Management

(FitSM-1, PR6)
Audit evidence:
(EV) SIRTIFI framework
(EV) EOSC Security Operational Baseline (Confluence)
(EV) ISM3 Security Risk Management (Confluence)
(EV) WISE Risk Assessment framework
(EV) IR maptable exercise
(EV) ISM1 Security Incident Response (Confluence)
(EV) ISM5 Security Events (Confluence)
(EV) ISM KPI (Confluence)
Additional information:

- Key focal areas:
  - Risk Management
  - Incident Handling
  - Security Baseline
  - Awareness

Audit findings:

Classification	Finding
(SR)	The development of a risk management approach (and tooling) to be applied as part of the information security management process is still work in progress and should be further promoted.
(H)	It could be considered to add another KPI, based on KPI ISM.3, to report on the results of the communication challenges (e.g. number of challenges where the security contact did not respond within the required period of time).
(H)	It could be reviewed, to which extent additional Information security aspects and requirements can or should be added to the EOSC interoperability framework and the provider / service onboarding process.

10.4.9 Incident and Service Request Management

(FitSM-1, PR9)
Audit evidence:
(EV) Support Groups Overview (Confluence)
(EV) EOSC Helpdesk Guidelines (Confluence)
(EV) EOSC helpdesk tool Zammad (Web)
(EV) ISRM3 Escalation Procedure (Confluence)
(EV) Ticket: Mailing lists access problems (Helpdesk)
(EV) Ticket Priority (Confluence)

(EV) ISRM1 How to Record, Classify, Prioritize, … (Confluence)

Audit findings:

Classification	Finding
(SR)	The prioritization procedures and guidelines should be reviewed and improved. For example, "A user (…) can prioritize a ticket" does not seem to be adequate, if "user" refers to service users.
(SR)	The consequences of a certain priority level (e.g. "3: high priority") on the practical handling of incidents and service requests should be clarified: For example: How are high priority incidents handled differently from normal or low priority incidents? Will additional methods or mechanisms be applied? What is the impact on the expected response or resolution times? Definitions of the practical consequences of different levels of priority should be in line with the targets defined in CPAs, where possible.
(SR)	A connection between priority levels for incidents / service requests and ticket-related metrics (such as response time, resolution time etc.) should be created. For example, it should be clear, what the maximum acceptable response and resolution time is for an incident of a given priority.
(H)	The priority categories in the process documentation (e.g. procedure ISRM1, ticket priority guidelines) should be aligned with the priority categories currently used in the helpdesk tool.

10.4.10 Problem Management

(FitSM-1, PR10)

Audit evidence:

(EV) Problem Management – PM (Confluence)

Audit findings:

Classification	Finding
(NC)	An effective problem management (including identification and analysis of problems) has not been established yet due to other priorities. If "traditional" problem management is not considered useful at present, it should be considered to re-define the process towards a more lightweight and limited approach, for example by focusing on maintaining a knowledge base (e.g. in support of better user self-support) and performing an overall incident and service request (trend) analysis in regular intervals (e.g. bi-annual), to identify topics for which follow-up actions or updates in the knowledge base are required.
(H)	It should be considered to populate the knowledge base in the helpdesk tool by adding relevant information. Awareness for this function should be raised among relevant persons.

10.4.11 Change Management, Release and Deployment Management

(FitSM-1, PR12 & PR13)

Audit evidence:

(EV) EOSC Change Management (Jira)
(EV) EOSCCHM-16: EOSC Search Service – M18 release (Jira)
(EV) EOSCCHM-14: EOSC Service Providers Dashboard – M18 release (Jira)
(EV) Change Management CHM (Confluence)

Audit findings:

Classification	Finding
(NC)	Change Management does not seem to be effective in terms of promoting real and comprehensive control over changes to CIs. *See also: 4.13 (Configuration Management)*

10.4.12 Capacity Management

(FitSM-1, PR5)
Audit evidence:
(EV) Capacity Management – CAPM (Confluence)
(EV) Overview / report: CAPM Jira Actions (Confluence)
(EV) EOSCSMST-10: Capacity plan for the EOSC portal website (Jira)
(EV) EOSC SOMBO Capacity plan (Confluence)
(EV) CAPM Procedures (Confluence)
(EV) CAPM1 Create and Maintain a Capacity Plan (Confluence)

Audit findings:

Classification	Finding
(SR)	Some lead providers did not provide relevant input for capacity planning. Thus, the related plans were not created yet. The creation of the missing capacity plans should be further promoted.

10.4.13 Configuration Management

(FitSM-1, PR11)
Audit evidence:
(EV) Configuration Database of the EOSC federation services (Confluence)
(EV) CI: EOSC Accounting for Research Products (Confluence)
(EV) CI: EOSC Helpdesk (Confluence)
(EV) EOSC-hub Configuration Management Plan v1 (PDF)
Audit findings:

Classification	Finding
(NC)	A comprehensive and up-to-date configuration management database (CMDB) is not in place.
(SR)	It should be considered to identify the supporting service components and CIs for a given service from the EOSC core services portfolio. For each identified CI, the required level of change control should be determined. For example: (1) Full control: change requires planning, approval, tracking and post implementation review on the federation (EOSC) level. (2) Partial control: advance information on the planned change with an option on the federation (EOSC) level to comment and/or veto against the change. (3) No control required on the federation (EOSC) level.

11 References

[1] ISO/IEC 20000-1:2018 Information technology — Service management — Part 1: Service management system requirements. [online] Available at: https://www.iso.org/standard/70636.html

[2] FitSM Standards for lightweight IT service management. [online] Available at: https://www.fitsm.eu/

[3] EOSC Future T7.4 EOSC Core Operations (2022). [online] Available at: https://wiki.eoscfuture.eu/display/EOSCF/T7.4+EOSC+Core+Operations [PRIVATE]

[4] Guideline: EOSC-Core Service and EOSC-Exchange Resource lifecycle (2022). [online] Available at: https://wiki.eoscfuture.eu/display/EOSCSMS/Guideline%3A+EOSC-Core+Service+and+EOSC-Exchange+Resource+lifecycle [PRIVATE]