EOSC-SYNERGY

EU DELIVERABLE: D5.1

National/International engagement plan with policy makers and funders

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Abstract:

In order for the project to have an impact on the national policies and practices as well as the broader EOSC-related policy landscape, it is necessary to develop a coherent engagement strategy for the interactions with the key policy-level stakeholders. This document presents an analysis of the specific challenges of the current EOSC landscape, initial information and assumptions related to the organisational structures and dynamics the policy engagement approach is based on and the key processes and the mechanisms they will be assessed (and updated, if necessary) during the project lifetime.

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II. Delivery Slip

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IV. List of Acronyms

Acronym	Description
DoA	Description of the Action (defines consortium obligations and high-level workplan)
e-IRG	e-Infrastructure Reflection Group (policy body)
EOSC	European Open Science Cloud
ESFRI	European Strategy Forum on Research Infrastructures (policy body)
FAIR	Characteristic of a good data repository: Findable, Accessible, Interoperable and Reusable
T5.1	EOSC-synergy task 5.1 - Landscape analysis
T5.2	EOSC-synergy task 5.2 - Gap analysis and recommendations
T5.3	EOSC-synergy task 5.2 - National and international liaisons
WP	Work Package
WP2	EOSC-synergy WP2 - Capacity Expansion at Infrastructure Level
WP5	Alignment of national policies and practices

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1. Executive Summary

EOSC-synergy extends the EOSC coordination to nine participating countries by harmonising policies and federating relevant national research e-Infrastructures, scientific data and thematic services, bridging the gap between national initiatives and EOSC. This document presents the results of the initial policy landscape analysis and uses it as a foundation of the project's policy engagement strategy and its implementation.

In general, we see policy engagement as serving several different roles, from being part of the overall sustainability of the service provision to being one of the enablers of disruptive innovation. Within the project, policy engagement is a service function: it needs to support requirement gathering and compliance activities of the technical work packages, as well as being part of the "organisational memory" when it comes to identifying solutions and workarounds that make federated service provision that complies with the relevant regulatory frameworks more efficient.

The initial landscaping work has confirmed the *a priori* assumptions behind the policy engagement strategy of the project. At the European level, the EOSC-related policy and funding structures are evolving rapidly, whereas the structures within individual countries tend to have longer evolutionary histories and more stable organisational and governance structures. However, national approaches to EOSC-related policy work are very diverse.

Thus, the engagement strategy needs to be adaptive and process-oriented. It is based on systematic, continuous surveying of the policy landscape, coupled with an efficient division of labour in the monitoring and engagement tasks. Rather than defining in advance which of the organisations and initiatives the project should engage (and how), the focus is on ensuring that new policy issues are logged and managed in a consistent manner.

From the point of view of external stakeholders, a big part of the consistency of the policy engagement is based on assigning "liaison persons" for each of the organisations the project engages with. With the exception of exceptional circumstances, they will act as the primary contact points for initiating communications and will be responsible for maintaining an accurate picture of the project's relationship with the organisations they're responsible for.

Within the project, the policy engagement will be closely aligned with all of the project's activities, with a specific emphasis on the dissemination and exploitation activities. However, its scope as a service function is not limited to these specific tasks.

1. 2. Introduction

1.1 2.1. Purpose

Service platforms need to consider policy aspects from several points of view: from relatively straightforward compliance (privacy, data security, interoperability) issues to factors influencing the sustainability of the service provision (funding policies, procurement practices

and so on). However, from the policy engagement point of view, the goals of the interactions with the funding agencies and policymakers fall into one or more of the following categories:

- Minimising the risk of disruption to existing service provision: ensure that the policymakers and funding agencies are aware of the project as a stakeholder that could and should be consulted when forming new policies.
- Promoting best practices that have proven successful in regional/thematic setting and could prove to be valuable in Pan-European scope.
- Proposing new approaches that would make more optimised service provision possible (by removing policy-level roadblocks).

Understanding these distinctions is important when performing the actual policy engagement: for example, with issues belonging to the two first categories, it is possible to come up with quantitative results to support the arguments. There are obvious synergies with the project's dissemination activity in the latter two categories, whereas the first category is more relevant for the overall risk management of the project. However, in the overall policy engagement strategy, these distinctions do not change the overall process of keeping track of policy issues and stakeholders.

The approaches described in this document are designed to be independent of the organisational developments in the EOSC domain. Thus the focus is on descriptions of the processes and overall approaches that are needed to support the policy work of the project, rather than in describing approaches used to target specific organisations or initiatives. This information will be maintained in internal knowledge bases of the project that will reuse the tools and approaches used by the dissemination activities of the project.

The main focus of this document is to present the policy formation -related service interfaces WP5 offers to the rest of the project.

1.2 2.2. Document organisation

This document is organised as follows:

- Chapter 2 presents the initial analysis of the policy landscape EOSC-synergy operates on. This forms the foundations of the requirements, priorities and design decisions behind the project's policy engagement processes.
- Chapter 3 presents the high-level requirement analysis for the project's engagement strategy with the policymakers and funding agencies.
- Chapter 4 presents the initial implementation of the processes and tools that are used to fulfil the requirements outlined in the previous chapter.
- Chapter 5 includes a concise summary of the deliverable and annexes as a conclusion of the deliverable.

1.3 2.3. DoA Requirements and the Relationship with the other project activities

The DoA defines the overall goal of the WP5 as follows (emphasis added):

*"WP5 is **in charge of gathering national information and requirements**, complement it with information from international stakeholders, conduct a gap analysis and develop recommendations that are **validated across different countries, and promoted in the final stage of the project for adoption by national funding agencies and policy makers**.*

*Strong emphasis will be given to the harmonization of **transnational access policies**, as the lack of shared European vision on provisioning resources between countries is perceived as one of the main obstacles to full EOSC implementation…"*

To support this overall objective, the task T5.3 (National and international liaisons) needs to collect information and identify individuals and organisations that have relevant knowledge and contacts, especially in areas related to transnational procurement and service provisioning. The following diagram (Figure 1) illustrates the relationship between the different tasks of the WP5.
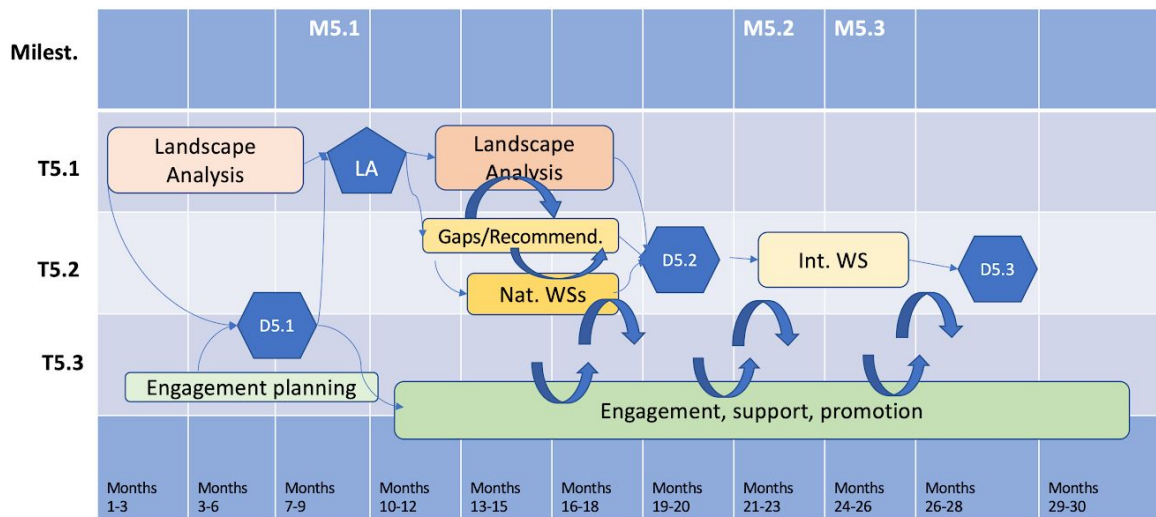
Figure 1. Relationship between the WP5 tasks

This deliverable forms the basis of T5.3 support function by summarising the knowledge of the landscape collected so far and the rationale and design of the policy engagement approach. The high-level goals are defined as:

*"T5.3 **supports the other tasks of the project** by focusing on the definition of the **methodology and the implementation of an effective liaison** structure and collaboration framework with policy makers and funders at the national and international levels."*

By identifying key individuals and engaging with them, the DoA specifies that the task will support the following channels of interaction between the WP5 and the whole project:

"• at the national level interaction with national funders and policy makers and potential national EOSC stakeholders;

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> *• at the international level interaction with the EOSC Governance, EOSC-hub and other EOSC-related projects, especially those approved in this call in the subtopics (a) on the governance of EOSC and (c) on FAIR data uptake and compliance in all scientific communities, which includes data policy, practice and FAIR certification, and also relevant policy boards (e.g. ESFRI, e-IRG).*
>
> *The task aims at achieving an effective coordination of policy-related activities at international level. This will be realized by establishing contacts with relevant national and international policy bodies, funding agencies and stakeholders."*

Finally, it should be noted that the joint WP2/WP5 activities may identify new stakeholders or potentially even stakeholder groups that should be taken into account as part of the project's overall engagement plan. It should be noted that e.g. collaboration with task WP2/T2.3 (*"Technical integration on the policy level"*) has already brought up policy engagement needs, validating the adopted process-oriented approach.

2. 3. Result of the initial landscaping study

2.1 3.1. High-Level Landscape

At the time of writing, the policy landscape the project operates on presents certain challenges. The most obvious ones are related to the number of ambitious, large-scale projects involved in realising the EOSC vision. On the other hand, this represents also an opportunity since reaching the critical mass of activity, awareness and political commitment is much more likely with the high-level policy commitments in place. However, these commitments are still somewhat abstract in nature, and the EOSC activities are bringing together several Pan-European and regional thematic and technological clusters that have developed slightly different ways of structuring, steering and documenting the collaborations.

For this reason, the high-level landscape is characterised by a number of open questions related to the details of the governance, funding and processes of the EOSC activities. Thus, especially when focusing on the issue of transnational access it is difficult to assess the relative impact of the current and emerging policy-related groups.

When designing the engagement strategy, we can assume that **the majority of the experts and policy-makers on the Pan-European are already involved in the EOSC-related governance work, typically participating simultaneously in several expert groups or task forces.** As a consequence, when considering the information gathering and supporting the eventual uptake of the policy-related project results, we can focus on maintaining contacts between EOSC-synergy and the experts/representatives involved in the EOSC governance and sustainability work.

The landscape is slightly different on the national level: the key experts and policymakers tend to be focused on national issues with EOSC-related topics representing only a small fraction of the topics covered by their formal responsibilities. There is also a wide range of organisational approaches to cover all the thematic, sectoral and infrastructure, as noted in

the e-IRG survey of national nodes[1]. For both of these reasons, the project cannot rely on existing contacts between policymakers and their counterparts in other countries.

2.2 3.2. Collaboration with EOSC-related projects

2.2.1 3.2.1. Cross-project collaboration with 5b projects

The most detailed, formal cross-project coordination mechanism is based on the collaboration agreement with the other INFRAEOSC-05-2018-2019 projects. The agreement was signed in December 2019 and established a joint activity plan that addresses overlaps and complementarities between the projects. It provides mechanisms for collaboration, periodic review/update of the activities, the creation of dedicated thematic task forces, and the development of a common strategy to synchronise the projects collaboration activities with the EOSC Working Groups. A set of initial milestones is defined in the agreement:

- December 2019: First version of the Joint Activity Plan
- Month-1 after the start of the agreement: Task Forces Formation
- Month-3 after the start of the agreement: First input for EOSC WG meetings

The collaboration agreement created six collaboration Task Forces. Each one of them deals with a specific section of the coordinated plan of activities and is responsible for developing a common coordination strategy and for collaborating with the EOSCSecretariat on the synchronization with the EOSC Working Groups and the EOSC Governance. The six Task Force topics initially identified are **National policies and governance, Training and Skills, Communication and events, FAIR, Service onboarding, and Landscaping**.

The National Policies and Governance Task Force is of particular interest for this deliverable. Its plan of action envisages the following activities:

- Provide advice on processes to engage policymakers and influence national policies to foster the uptake of Open Science OS practices and support the realisation of the EOSC vision;
- Collate and discuss operational policies in the participating countries (e.g. procurement of services, funding, usage models);
- Collate and discuss on national policies, OS declarations & roadmaps against the EOSC roadmap;
- Propose to the Cross-Project Collaboration Board (CPCB) the organisation of a Europe-wide and all Task Forces (TFs)-engaging event and cover in it the policy aspects.

The Task Force held its first full working meeting on 6 February, appointing the Secretariat representative Jos Van Wezel as the TF Chair. The participants agreed to begin work first on the task of collating and discussing national policies, OS declarations & roadmaps against the EOSC road map. The aim is to determine whether there are FAIR or Open Science elements that could become EOSC governance elements.

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[1] http://e-irg.eu/catalogue/eirg-1006

In addition, the Landscaping Task Force plays an important role in the execution of the National and International liaisons. The activities in the action plan include the following:

- Define common targets and methodology for the National Initiatives landscaping activities;
- Design the survey in a way that will allow to obtain structured and comparable data for each country, also taking into account existing mapping exercises (e.g. eIRG);
- Involve the relevant stakeholders (including Research Infrastructures (RIs), the EOSC Executive Board (EB) and the EOSC Governance Board (GB)) in the design process and provide updates on the activity while collecting feedback from them to integrate the effort with EB/GB landscape activities;
- Contribute to decide on the methodology for extending the survey to countries outside the geographical scope of the projects;
- Collaborate with the expert hired by secretariat to/ with the contribution of the expert hired by secretariat, integrate the results of the different surveys in order to create a European-level map;
- With the contribution of the expert hired by the Secretariat, to create a summary report of the resulting data including visualisation and/or infographics at the European level to communicate the results.

The Landscape Task Force held its first meeting on the 6th of February, 2020, approving a chair and sharing information about the progress of their respective landscape data gathering and the steps to be taken to consolidate and share results. Most projects have been carrying out landscaping surveys, with FAIRsFAIR as forerunner. EOSC-Pillar has made its methodology and questionnaire openly accessible and all other regional projects, including EOSC-Synergy. The projects are planning to coordinate their datasets so that the information can be comparable and compatible across all regions. Table 2.1 that follows provides an overview of the status of the landscaping work as of mid February 2020.

Surveys executed by the collaborating projects

Project	Scope (region/theme/focus)	Survey time
EOSC-pillar	Regional: France, Germany, Italy, Austria and Belgium	October 2019 - November 2019
EOSC-Nordic	Regional: Finland, Sweden, Norway, Denmark, Iceland, Estonia, Latvia, Lithuania, Netherlands and Germany	November 2019 - December 2019
NI4OS	Regional: Southeastern Europe[2]	October 2019 - November 2019

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[2] See https://ni4os.eu/overview/

| ExPaNDS | Thematic: photon and neutron research | December 2019 |
| FAIRsFAIR | Thematic: FAIR data | Report published November 2019[3] |

Table 2.1: Summary of the surveys undertaken by the collaborating projects

In addition to the Task Forces that are based on the contract amendments of the participating projects, EOSC-related projects are expected to engage in broader collaboration and coordination activities, including but not limited to the concertation mechanisms. As a result of the latest of such events (EOSC Coordination day in November 2019), the following interest groups that are open to all EOSC-related projects were established in February 2020:

- EOSC Researcher Engagement and Use cases
- EOSC Service and Research Product Catalogues
- EOSC Federating Core

At the time of writing, there is no formal link between the task forces and the newly-created interest groups. However, the project will monitor the developments in both sets of the cross-project collaborative activities using the approaches described later in the document.

2.2.2 3.2.2. Links with OpenAIRE-Advance and EOSC-hub

The project has organic links (for example, through project partners' involvement) with several projects involved in building the core components of the future EOSC ecosystem. These projects provide important indirect channels for the policy engagement of the project. As an example of these resources, we provide some details of the networks and resources of two projects: OpenAIRE-Advance and EOSC-hub.

The OpenAIRE vision and role within the EOSC is widely covered in the OpenAIRE White Paper[4]. The vision and philosophy of the project embodies a participatory, service-driven infrastructure anchored on the triplet of policies–services–training, contributing the following assets in EOSC:

- Policies & Governance: A network of 34 National Open Access Desks (NOADs)
- Infrastructure & Services: A data infrastructure enabling open scientific communication, connecting and federating repositories and services across institutions, national settings and RIs.
- Training & Support: An Open Science Helpdesk bringing coherence to the EOSC training and support landscape, by leveraging the unique potential and placement of NOADs to train stakeholders and build local support networks for researchers and data practitioners.

On the other hand, EOSC-hub project brings together multiple service providers to create a single contact point for European researchers and innovators to discover, access, use and

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[3] https://zenodo.org/record/3558173#.XkFyNVJKh24
[4] https://zenodo.org/record/3475076#.XjhKaxNKhuX

reuse resources for advanced data-driven research. The project mobilises providers from the EGI Federation, EUDAT CDI, INDIGO-DataCloud and other major European research infrastructures to deliver a common catalogue of data, services and software for research, collaborating closely with eInfraCentral, EOSCpilot, GÉANT 4.2, OpenAIRE-Advance and the RDA Europe 4.0 projects to deliver a consistent service offer for research communities across Europe. EOSC hub contributes to EOSC in 4 main strategic directions, each of them interlinking technical, practical, organisational and policy aspects:

- **Architecture**: Providing a framework to manage services sourced from a number of service providers and plays the role of service integrator.
- **Data**: Offering a discovery and access channel to FAIR-accredited datasets via the EOSC-hub Marketplace.
- **Services**: Contributing to the definition of a participatory and lightweight service portfolio management process in collaboration with the participating service providers. It also engages with the demand and supply side of the EOSC, by developing and operating a marketplace as one entry point to EOSC.
- **Rules of Participation**: Collaborating with partners and external projects and initiatives to establish a corpus of policies that is attractive and provides value for both service providers and service users.

The EOSC-hub project provided a support letter for the EOSC Synergy project, exploring the common interests and describing the collaboration activities, attached in the Annex VIII.

2.3 3.3. National Landscape - initial assessment

Compared to the European-level policy landscape, the national level picture is more stable but considerably more diverse in terms of structures and approaches. As the overall situation has been assessed quite recently in the e-IRG document "National Nodes - Getting organised; how far are we?"[5], the EOSC-synergy assessment will focus on the countries covered by its activities. As a general observation, the document noted that:

> *The European landscape of e-Infrastructures is as diverse as its cultures and ethnicities. One cannot opt for a single scenario for all countries, or enforce an "apply in all cases" solution when it comes to the existing, or future, organisation scheme of all Member States and related Associated Countries.*

This conclusion highlights the importance of creating a liaison network who understands the specifics on the country level. While the goal is an eventual Pan-European policy alignment, the country level implementation will almost certainly have very heterogeneous organisational and governance structures.

2.3.1 3.3.1. Portugal

Cross-ministry actors: Portuguese Government (Council of Ministers), The National Council for Science, Technology and Innovation (CNCTI), National Council on Entrepreneurship and Innovation (CNEI)

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[5] http://e-irg.eu/catalogue/eirg-1006

Ministries: The Minister of Science, Technology and Higher Education (MCTES), Ministry of Economy, Other Ministries

The Portuguese Research and Innovation (R&I) System reflects the cooperation between different stakeholders that contribute as a whole to the educational, scientific, technological and innovation sectors in Portugal.

At a first level, the Portuguese Government (Council of Ministers) has the responsibility in terms of policy and strategic direction for Higher Education, Research and Innovation. Additionally, it is also responsible for the implementation of the European Union (EU) Structural and Investment Funds in Portugal, according to the EU guidelines.

The National Council for Science, Technology and Innovation (CNCTI) advises the Government on science, technology and innovation, while the National Council on Entrepreneurship and Innovation (CNEI) advises the Government on entrepreneurship and innovation.

Following this level, the governance is comprised of individual line Ministries, headed by Ministers with specific areas. The Minister of Science, Technology and Higher Education (MCTES) has the purpose to formulate, conduct, execute and evaluate the national politics for science, technology and higher education, considering the scientific and technological innovation, the guidelines in what concerns the digital repositories, scientific computation, the diffusion of scientific and technological culture and the scientific and technological cooperation worldwide. It is important to refer that the primary responsibility for business innovation policy lies within the Ministry of Economy. On the other hand, the Ministry of Planning and Infrastructure is in charge of the management of the EU structural funds in several areas.

At a third level, the governance is composed of several agencies with implementation or regulatory responsibilities, such as the Foundation for Science and Technology (FCT), the National Innovation Agency (ANI), the Competitiveness and Innovation Agency (IAPMEI), the National Agency for Scientific and Technological Culture (Ciência Viva) and the Agency for Internationalization (AICEP).

Finally, the fourth level of R&I System governance includes the organizations that are dedicated to the production of knowledge, such as Universities, Polytechnics, R&D Units and Research Infrastructures. It also includes Interface Institutions that serve as a link between these entities and the knowledge receptors, like business enterprises.

FCT is the Portuguese national funding agency for all scientific areas of science and technology, promoting excellence, innovation and international competitiveness across all areas. This entity supports research infrastructures of strategic interest that sustain scientific and technological advances and strengthen the capacity of the R&D community in Portugal. To this end, FCT launched in 2013 a call for the creation of the Portuguese Roadmap of Research Infrastructures of Strategic Interest (RNIE)[6]. This roadmap evaluates existing and emerging research infrastructures in need of support for implementation, develop a strategic plan for investment in research infrastructures until 2020, promoting synergies and overcoming redundancies and prioritizing funding. This project enabled Portugal to be

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[6] https://www.fct.pt/apoios/equipamento/roteiro/2013/docs/Portuguese_Roadmap_of_Research_Infrastructures.pdf

integrated into the group of European countries that have produced their national roadmaps, in line with the European Strategic Research Infrastructure Forum (ESFRI).

The Portuguese Government and MCTES have defined as a priority the commitment of science to the principles and practices of Open Science[7]. In pursuit of this goal, the MCTES published in February 2016 the Guiding Principles for Open Science[8]. Also in March 2016, the MCTES was mandated by the Council of Ministers to create an Inter-Ministerial Working Group with the purpose to present a strategic plan for the implementation of the National Policy for Open Science (PNCA)[9]. FCT has also adopted an Open Access policy in line with the European Commission recommendations and in accordance with other public R&D financing agencies from other countries.

FCT is developing a national advanced computing network, which will integrate resources from the EuroHPC Joint Undertaking. It will require 13 to 18 M€ of investment and 1,4 to 2 M€ annually for the operation. In terms of data infrastructure, 2020 plans include s Portuguese node of EUDAT, as well as Dataverse for the long tail of research data. The estimated budget corresponds to 100 K€.

FCT is responsible for the infrastructure RCAAP[10] (Scientific Open Access Repositories of Portugal). Among other services, RCAAP offers SaaS hosting services for repositories (based on DSpace) and Open Access journals (based on OJS). The yearly amount for the operation corresponds to approximately 500 K€.

Transnational access policies are particular to specific user communities. Examples can be found on the Portuguese participation in ESFRI. The mapping between the set of National Research Infrastructures and ESFRI is included in Annex IV of this document.

2.3.2 3.3.2. Spain

Cross-ministry actors: Collaborations between CSIC and Centro Desarrollo Técnico e Industrial (CDTI, Ministry of Industry)
Ministries: Spanish Ministry of Science and Innovation

The General Directorate for internationalization of Science and Innovation from the Spanish Ministry of Science and Innovation is the governmental organization which is representing EOSC in the Governing Board of EOSC. The major stakeholders involved in its construction are represented by IBERGRID[11] initiative, led by the Spanish Research Council with the contribution of members of the Spanish Network for Supercomputing, the Spanish NREN other research centres such as CIEMAT, Universities and Spanish centres participating in ESFRIs (such as Instruct, EMSO, SKA and LIFEWATCH-ERIC). The Spanish participants of EOSC-SYNERGY are the key representatives.

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[7] The current ministerial mandate is dated as of October 2019 and will end in October 2023. However, the current structure predates the current mandate and is not expected to change in 2023.
[8] https://dre.pt/application/conteudo/74094659
[9] https://www.ciencia-aberta.pt/home
[10] http://projeto.rcaap.pt/index.php/lang-en/sobre-o-rcaap/servicos/portal-rcaap
[11] https://wibergrid.lip.pt/site/

The interaction among the stakeholders is organized through the Spanish Network for e-Science. This network has been initially created as a Thematic Network under the contract RED2018-102377-T, and it will be continued through a Ministerial Order from the General Directorate of Singular Scientific and Technological Infrastructures, of the Spanish Ministry of Science and Innovation. The above mentioned two General Directorates will also foster the inclusion of topics in the next Spanish Research Program related to EOSC. Currently, at the national level, the State Plan of Scientific and Technical Research (2017-2020)[12] allocates the RDI public national budget addressing the specific goals outlined in the Strategy. The promotion of open science, open access and the strengthening of Research Infrastructures are covered in this plan.

The Spanish Strategy on Science, Technology and Innovation 2013-2020 is the RDI policy for the State Administration and the Regions sharing the vision with Europe2020 Strategy, Innovation Union Flagship and H2020, addressing key actions in related to the goals of EOSC. Additionally, the Spanish Roadmap for the European Research Area Development 2016-2020[13] supports the contribution of national RIs and Research Centres to EOSC.

The Spanish Strategy of Science, Technology and Innovation 2013-2020 defines the policy for Open Access to results and Research Data of research activities subsidized with public resources. The works published in scientific journals funded by the State Plan will be deposited in repositories (institutional and / or international), in open access considering the specific characteristics of the different subjects, in compliance with the provisions of Article 37 of Law 14/2011, from June 1, on Science[14], Technology and Innovation and the recommendations linked to the European agenda on open access and open science[15].

In order to boost access to research data, funded R&D projects may include, optionally, a research Data Management Plan that will be uploaded to institutional, national and/or international repositories after the completion of the project and after the deadline defined in the corresponding calls.

Transnational access policies are particular to specific user communities. Examples can be found on the Spanish participation to ESFRIs, for example, access biodiversity areas (Donana) and the oceanographic facilities (Ships, and Antarctica base).

2.3.3 3.3.3. Czech Republic

Cross-ministry actors: The Research, Development and Innovation Council (R&D&I Council (advising the whole Government of the Czech Republic)
Ministries: Ministry of Sports, Youth and Education is the primary responsible one, but own research oriented programs are also independently realized by other ministries, esp. Ministry of Health, Ministry of Culture, Ministry of Interior and Ministry of Industry of Trade. Special position has the Ministry of Regional Development, which oversees the ESF implementation.

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[12] http://www.ciencia.gob.es/stfls/MICINN/Investigacion/FICHEROS/Politicas_I+D+i/Resumen_Ejecutivo_Estrategia_Espanola_01022013.pdf

[13] https://ec.europa.eu/research/infrastructures/pdf/roadmaps/spain_national_roadmap.pdf#view=fit&pagemode=none

[14] https://www.boe.es/buscar/pdf/2011/BOE-A-2011-9617-consolidado.pdf

[15] https://ec.europa.eu/research/openscience/index.cfm

The primary stakeholders responsible for the national research policy and its implementation are listed below. They interact in many formal and informal ways, and together they create a system that governs (but not implements) the research landscape in the Czech Republic. Only major stakeholders are noted.

The Research, Development and Innovation Council (R&D&I Council) is a professional and consultancy body of the Government of the Czech Republic in the field of research, experimental development and innovation. Its main tasks involve:

- Preparation of regular annual analysis of R&D&I and comparison thereof on the international level
- Processing of priorities of applied research, development and innovations of the Czech Republic
- Proposals for members of the Presidium and Chairman of the Technology Agency of the Czech Republic and the Czech Science Foundation
- A proposal for the size of overall expenditures on R&D&I of respective budget chapters and a proposal for their allocation
- Safeguarding and preparation of the Methodology for Evaluating Research Organizations and R&D&I Purpose-tied Aid Programmes
- Preparation of the National R&D&I and control of its realization
- Negotiations with the advisory bodies and councils for R&D&I of EC and other countries.

The Ministry of Sports, Youth and Education (MEYS) is the central body of the state administration of the Czech Republic for elementary, secondary and higher education, science and for the state's support for sports and youth. It has a responsibility over the preparation of the National Research and Development Policy of the Czech Republic in accordance with international treaties and the monitoring of its implementation in the form of positions on the compliance of the programmes of research and development presented by the providers with the National Research and Development Policy of the Czech Republic before these programmes are approved by the government. The MEYS manages the ESF funding for research, currently under the program "Research, Development and Education". The MEYS also coordinates funding for large research infrastructures and e-infrastructures, both from specific ESF and national funds; MEYS prepares the Roadmap of large research infrastructures which is approved by the government. The EOSC agenda is currently supervised by MEYS, too.

The Academy of Sciences Czech Republic with its almost 50 institutes has a separate budget chapter in the national budget. It also has its own funding agency, primarily to support fundamental research.

The research funding at the country level is also provided through two major funding agencies - The Grant Agency of the Czech Republic (GACR) and the Technology Agency of the Czech Republic (TACR). While the former primary target is fundamental and theoretical research and support of individual researchers and teams, the latter deals with applied research and specifically supports the collaboration with research institutions with industry. Both agencies operate with dedicated budgets approved by the parliament.

Additionally, individual ministries (esp. Ministries of Health, Culture, Interior, Trade and Industry and Transport) have programs to support research in their areas of interest.

At this moment, no coherent strategy towards Open Science (esp. Open Access and FAIR data) exists at the country level. However, preparatory work towards more aligned with EOSC vision and strategy in the next funding period (since 2023) is ongoing. This work is primarily coordinated by MEYS.

2.3.4 3.3.4. Poland

Cross-ministry actors: Polish Parliament
Ministries: Ministry of Science and Higher Education (MNiSW), Ministry of Digital Affairs, The Ministry of Culture and National Heritage

During the last decade, several high-level EOSC-related policy statements and documents have been published. In July 2013, the Polish Academy of Sciences and the Conference of Rectors of Academic Schools in Poland jointly published a statement in support of the Green Road to Open Access, calling for institutional repositories to be established in all scientific units in the country. In October 2015, the Ministry of Science and Higher Education (MNiSW) issued a document[16] which sets specific OA recommendations for all major stakeholders in Poland. In 2016 the report on future directions of Open Research Data in Poland was prepared[17]. In March 2018, the Ministry published a report on the implementation of open access policy[18] summarising efforts in 2015-2017 and identifying barriers to open access and providing recommendations for further work. In 2018, the Polish parliament passed the Law on Higher Education and Science, the so-called Law 2.0. It provided the framework for the reform of the higher education system.

Organisationally, the Ministry of Science and Higher Education (MNiSW) is responsible for the development and implementation of research policy. The Ministry provides core funding for the statutory activities of various types of research institutions and for large infrastructure investments, and it also supervises the two major governmental funding agencies – the National Science Centre (Narodowe Centrum Nauki, NCN) and the National Centre for Research and Development (Narodowe Centrum Badań i Rozwoju, NCBR).

The Conference of Rectors of Academic Schools (CRASP) in Poland is the representative body of academic schools, which have the right to award the doctor's degree (or equivalent) in at least one scientific discipline. On July 5th 2013, CRASP and Polish Academy of Sciences (Polska Akademia Nauk, PAN) issued a joint statement on open access to scientific publications and educational resources. In 2018 CRASP published a statement on the implementation of open science model. CRASP is a member of the European University Association, which supports universities in the implementation of Open Science principles.

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[16] „Kierunki rozwoju otwartego dostępu do treści naukowych w Polsce" (in Polish only)
[17] Fenrich,W., Siewicz, K. and Szprot, J. (2016). Towards Open Research Data in Poland. Warszawa: Wydawnictwa ICM, https://depot.ceon.pl/handle/123456789/12489
[18] „Raport nt. realizacji polityki otwartego dostępu do publikacji naukowych w latach 2015-2017" (available only in Polish)

The Polish Academy of Sciences (Polska Akademia Nauk, PAN) is a national research institution founded in 1952. It conducts advanced research at its scientific units, integrates research community in Poland, supports and promotes various forms of research and educates young scholars.

The National Science Centre (NCN) was launched in 2011 as the main governmental agency supporting basic research in Poland. This is achieved through the funding of research projects in all fields of sciences and humanities. In April 2019, the Centre announced its plan to include research data management plan into grant application form as the first stage of introducing an institutional open access policy.

The National Centre for Research and Development (NCBR) was established in July 2007. It is a governmental agency responsible for the funding of applied scientific research programmes and activities. Its main task is the managing and implementation of strategic scientific research that should lead directly to the development of innovations. NCBR also supports the commercialization of scientific research results.

Other relevant ministries include the Ministry of Digital Affairs that was established by the ordinance of the Council of Ministers of 7th December 2015, which transformed the former Ministry of Administration and Digitisation. The ordinance entered into force on the day of its announcement, with effect from 16th November 2015. In accordance with the decree of the Prime Minister of 9th December 2015, the Minister of Digital Affairs heads the computerization department of the government administration.

The Ministry of Culture and National Heritage is a governmental administration office concerned with various aspects of Polish culture. It was formed on 31st October 2005 from the transformation of the preceding Ministry. The Ministry Department of European Funds participates in works on implementing the Infrastructure and Environment Operational Programme and the Cultural Exchange Fund, European Economic Area Financial Mechanism and Norwegian Financial Mechanism. Moreover, it coordinates the fulfilment of tasks connected with regional politics of the European Union in the area of culture and collaborates with European Commission and General Secretariat of the Council of the EU in the field of EU regional politics.

In Poland, there is no well-defined long-term funding programme for installing or renewal of e-Infrastructure. There are partial funds covering maintenance yearly. The bulk of support comes from various polish domestic projects, also involving EU programmes. Some examples of available open science services funded or co-funded by polish Ministries are included in Annex V.

2.3.5 3.3.5. Slovak Republic

Cross-ministry actors: Office of the Deputy Prime Minister of the Slovak Republic for Investments and Informatization, and The Office of Government Plenipotentiary for the Development of Civil Society operating under the Government of the Slovak Republic.
Ministries: The Ministry of Education, Science, Research and Sport. Currently, there is no official policy on EOSC as such on the national level implemented.

The Ministry of Education, Science, Research and Sport[19] of the Slovak Republic is the central body of the state administration of the Slovak Republic for elementary, secondary and higher education, educational facilities, lifelong learning, science and for the state's support for sports and youth. The Ministry entrusted the Slovak Centre of Scientific and Technical Information (CSTI)[20] the role of the primary player in the policy landscape, nominating national representatives to the EOSC Governance Board. The CSTI in collaboration with the Section of Science and Technology at Ministry established National Working Group for EOSC in which Institute of Informatics SAS is a member. Slovakia is a member in several Research Infrastructures and associations endorsed the EOSC Declaration (listed in Annex VI). The Section of Science and Technology at Ministry is supporting key Slovak players in e-infrastructures and research infrastructures.

National strategies and policies

In the Slovak Republic, the elaboration of the National Open Access Strategy is one of the tasks of the Open Government Initiative Action Plan set for 2019-2021[21]. The aim of the National Strategy is to improve the real-time application of research results, to improve scientific literacy (the public will have easier access to scientific outputs and methods) and to increase the economic and social impact. The strategy will include the definition of the whole process from research planning, research activities (storage, management and analysis of research data), research results (publishing and long-term preservation), financing the costs of open access publishing. As regards the infrastructure national R&D evaluation systems and scientific data storage systems are envisaged. The provisional date for government adoption of the National Open Access Strategy is December 2020.

National initiatives

The Slovak Centre of Scientific and Technical Information (SCSTI) is a national information centre, and a specialized scientific library of the Slovak Republic focused on natural, technical, economic and social sciences. SCSTI provides several information systems supporting R&D on national level funded by the Ministry, i.e. Central Registry of Publication Activities, Central Registry of Theses and Dissertations, Central Information Portal for Research, Development and Innovation and Slovak Current Research Information System (SK CRIS). Details of the SCSTI's role in the Slovak Republic Open Access landscape can be found in Annex VI.

2.3.6 3.3.6. United Kingdom

Cross-ministry actors: Open Research Data Task Force (ORDTF)
Ministries: Department for Business, Energy and Industrial Strategy - sponsors UK Research and Innovation (UKRI) among other roles, JISC

The ministerial department BEIS (Department for Business, Energy and Industrial Strategy) is responsible, amongst other things, for science, research and innovation. BEIS sponsors

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[19] https://www.minedu.sk/about-the-ministry/
[20] https://www.cvtisr.sk/en.html?page_id=58
[21] Currently presented for approval by the Government of the Slovak Republic https://www.opengovpartnership.org/wp-content/uploads/2017/05/Slovakia_NAP_2017-2019_EN.pdf

UK Research and Innovation (UKRI), which allocates the majority of research funding in the UK.

Following a detailed survey of the UK's research infrastructure landscape[22] which identified over 750 infrastructures of regional, national and international significance, UKRI has recently published a research and innovation infrastructure roadmap[23] which identifies potential opportunities to expand and strengthen the UK's research infrastructure capability as a contribution to achieving wider ambitions including achieving a step-change in UK technological capability and the availability of data.

The UK government has committed to reaching the target of 2.4% of GDP investment in Research and Development (R&D) by 2027. In pursuit of this goal, public investment in R&D is planned to rise from around £9.5bn (€11.2bn) per annum in 2016-17 to around £12.5bn (€14.8bn) per annum in 2021-22. Following the recent UK general election, it is possible there will be changes to investment plans for research and innovation. Separate figures for e-Infrastructure operational and capital spending are not currently available.

The UK is a world leader in research data, following policies from UK research funders and engagement in support of research data management within UK universities, as well as long-established specialised data centres. The academic community has played an important role in developing the research data landscape, particularly with the development of the Open Research Data Concordat[24], which proposes a set of expectations of best practice for working with research data that cover the many roles needed to support the research process.

The UK government established the Open Research Data Task Force (ORDTF) in 2016 to provide advice on open research data (ORD). The ORDTF published its final report "Realising the Potential"[25] in February 2019 which builds on the principles in the Concordat and makes recommendations to accelerate the UK's move to open research data. The recommendations are grouped under the themes of better incentives, fewer barriers; active leadership; clear expectations; user-friendly services; and sustainable funding. More generally, the UK Department for Digital, Culture, Media and Sport (DCMS) is in the early stages of developing a National Data Strategy[26].

The UK has an ecosystem of computational infrastructure and e-Infrastructure, including computational resources for modelling, simulation and data analysis, large-scale data storage facilities, and network infrastructure. These infrastructures are provided by a variety of organisations and agencies including UKRI, Jisc, universities and research centres. Jisc is a not-for-profit membership organisation providing UK universities and colleges with shared digital infrastructure and services. It is funded partly by subscriptions from its

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[22] https://www.ukri.org/files/infrastructure/landscape-analysis-final-web-version/

[23] https://www.ukri.org/files/infrastructure/the-uks-research-and-innovation-infrastructure-opportunities-to-grow-our-capacity-final-low-res/

[24] https://www.ukri.org/files/legacy/documents/concordatonopenresearchdata-pdf/

[25] https://www.gov.uk/government/publications/open-research-data-task-force-final-report

[26] https://www.gov.uk/guidance/national-data-strategy

members and partly by higher and further education funding bodies. UKRI, Jisc and others contribute towards EOSC policy, working together with BEIS.

The UK has strong open access policies for publications in both of its main research funding routes: through UKRI policy which applies to UK research council funding and through policy applying to the Research Excellence Framework (REF) exercise https://www.ref.ac.uk/, which allocates funding to institutions based on ratings every sixyears. REF policy is developed by the UK funding bodies for all UK nations: Research England, the Higher Education Funding Council for Wales (HEFCW), the Scottish Funding Council and Dept for the Economy in Northern Ireland.

The UKRI open access policy is currently under review, and the new policy is now open for consultation until mid-April 2020[27].

A 2017 report highlighted progress towards open access in the UK[28]. Highlights included:

- *More than half of UK-authored articles are made accessible for public view within 12 months, either through Gold or Green OA*
- *37% of UK outputs (vs 25% globally) are freely available to the world immediately on publication, either through Gold or Green OA.*

2.3.7 3.3.7. The Netherlands

Cross-ministry actors: Government and various official and informal contact networks (e.g. bilateral personal cross-ministry contacts or experts working with several ministries). "Sounding board group"
Ministries: Ministry of Education, Culture and Science

The Dutch Ministry of Education, Culture and Science (Onderwijs, Cultuur en Wetenschappen, OCW) was an important initiator and propagator of Open Science in Europe. Under the Dutch presidency of the EU in the first half of 2016, the "Amsterdam Call for Action" was launched on the occasion of a high-level conference 'Open Science – From Vision to Action', which received follow-up in the Council of EU Ministers later that year[29]. The rapid developments can be partly explained by the fact that at the time the vice-chair of the EC and the DG Research were also Dutch, and that together with the vice-Minister, all three worked together to push Open Science. The Ministry of OCW maintains connections with the Ministry of Economic Affairs (Economische Zaken, EZK) on Open Science policies, and also involves the governmental knowledge institutions and applied research organisations. The Ministry of EZK has set up an interdepartmental consultation on data sharing. Here knowledge and experience are exchanged about initiatives from the different areas (public, private and scientific data).

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[27]https://www.ukri.org/funding/information-for-award-holders/open-access/open-access-review/
[28]
https://www.universitiesuk.ac.uk/policy-and-analysis/reports/Pages/monitoring-transition-open-access-2017.aspx
[29] https://www.government.nl/documents/reports/2016/04/04/amsterdam-call-for-action-on-open-science

The Netherlands itself has a long tradition of openness in its culture, and the size, scale and interconnectedness of the country make it relatively easy to organise and coordinate scientific resources in an open and coordinated way. The Dutch tend to spend lots of time agreeing on how to organise things, be it dykes or research infrastructures, a tendency that is often called "the polder model". Therefore, there are several stakeholders that interact in many configurations and on different levels.

Within the Ministry, it is the Directorate Research Policy that is primarily responsible for the subject matter of this report. The directorate has organised a "sounding board group" for the EOSC, in which key stakeholders are represented. The list of participants (Annex VII) neatly sums up the most important actors in the field, among which the National Platform Open Science has a special role to strengthen the Dutch landscape of facilities and services and make it more efficient.

There are a few additional cross-domain or other coordinating/overarching actors of note, in which we often find several of the organisations mentioned in Annex VII represented:

- The National Coordination Point Research Data Management aims to facilitate a national strategy for RDM in the Netherlands, in close cooperation with education and research institutions[30].

- Research Data Netherlands (RDNL) is a coalition of DANS, SURF and 4TU.ResearchData, joining forces in the area of long-term data archiving[31].

- National disciplinary research infrastructures, often connected to ESFRI projects, such as Open Data Infrastructure for Social Science and Economic Innovations (ODISSEI)[32] and Biobanking Netherlands (BBMRI-NL)[33].

- The Netherlands Federation of University Medical Centres (NFU)[34].

In organisational terms, one might again see the egalitarian polder society in action: there are many layers of coordination, arranged in a way that doesn't easily translate into a hierarchical model.

Like most scientific organisations, the Dutch funder NWO (and ZonMw for the medical and healthcare sector) supports the idea of the EOSC, although details of the organisational and (financial) sustainability models are still being discussed. Nevertheless, NWO has already started to align its investment plans for digitisation of science and digital infrastructure to the emerging EOSC[35]. It is expected that many of the existing organisations will be part of or connected to the EOSC. Hence, the funding mechanisms and quantities will probably only gradually be adapted.

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[30] https://www.lcrdm.nl/en
[31] https://researchdata.nl/en/
[32] https://odissei-data.nl/en/
[33] https://www.bbmri.nl
[34] https://www.nfu.nl/english/about-the-nfu/
[35] Integrale aanpak voor digitalisering in de wetenschap: Uitvoeringsplan investeringen digitale onderzoeksinfrastructuur (NWO, Den Haag, oktober 2019)
https://www.nwo.nl/documents/enw/uitvoeringsplan-investeringen-digitale-onderzoeksinfrastructuur

At the moment, no comprehensive budget figures that would represent aggregated amounts of money spent on digital infrastructure are available. Furthermore, it is hard to give educated guesses, given the variety of financial streams (local, national, international), and on definitions and specifications of what to include and what not. According to the state budget for 2020, about 55 million euros is spent on "large-scale research infrastructure", but this covers only a fraction of the investments and running costs of the many components of the full landscape of facilities and services[36].

As stated above, the Dutch government and the science system in general embrace Open Science ideas and policies. The attitude is well-reflected in the following statement from the NWO-website: "NWO is of the opinion that research results paid for by public funds should be freely accessible worldwide. This applies to both scientific publications and other forms of scientific output. In principle, it must be possible to share research data with others as well. This allows valuable knowledge to be used by researchers, companies and public organisations"[37]. It should be noted that the reservation in the sentence after "In principle [...]" should be highlighted. This recognition of the limitations may also be phrased as "Open if possible, protected if needed". Open access to publications and data is being monitored in several ways. For example, the percentage of open datasets stored at the DANS archives went up from less than 50% in 2012 to over 70% in 2016 and has further increased since then[38]. It is, however, unknown how many datasets are hidden on researchers' private hard disks or in inaccessible institutional systems.

3. 4. Engagement strategy

As noted in Chapter 2, the engagement strategy needs to adapt to the characteristics of the landscape:

- The rapid evolution of the European level governance structures and especially cross-project activities feeding information and input to their work
- Involvement of a relatively small number of key influencers in the transnational policy work, often representing several initiatives and/or organisations
- Diverse national level organisational and governance structures

For these reasons, the engagement strategy will be based on addressing concrete policy-related issues, either anticipated (e.g. the transnational access focus of the project) or emerging from the work performed in the other activities (e.g. policy issues preventing broader deployment of solutions developed). The whole project will act simultaneously as a source of information and practice-derived policy issues. Both of these will be analysed and refined in the gap analysis task (T5.2) and provided as feedback to the EOSC-related task forces and other cross-project structures (discussed in section 2.2 of this deliverable). Based

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[36] Rijksbegroting 2020: VIII Onderwijs, Cultuur en Wetenschap. https://www.rijksoverheid.nl/documenten/begrotingen/2019/09/17/viii-onderwijs-cultuur-en-wetenschap-rijksbegroting-2020
[37] https://www.nwo.nl/en/policies/open+science
[38] https://easy.dans.knaw.nl/ui/browse

on the initial landscape analysis (sections 2.1 and 2.3), it is possible to articulate some axioms and assumptions the engagement strategy should take into account:

- On the European level, policymakers face a constant stream of requests to review, comment, provide information etc. on a broad range of e-Infrastructure related topics. EOSC-synergy can't fully avoid being yet another source of requests, but it is crucial to appear an informed one: not to ask for information that is already available, ask for same or similar things in quick succession and so one.
- On the national level, policymakers should be assumed to be similarly overloaded. However, governance models, organisational processes and language issues (e.g. availability of the reference material in English) can create additional challenges. At the minimum, understanding the specific features of the EOSC-related policy and governance structures is needed. Being aware of the country-based dynamics and organisational cultures is crucial for efficient communication.
- Understanding the mandates and roles of the organisations is important: an organisation where members act in their personal capacity can be an excellent source of information but will likely have only an indirect and potentially delayed impact on the policies themselves.

For this reason, one of the key elements of the engagement strategy is the concept of a "liaison person". For all of the target audiences, the project will aim at identifying a person who can act as a single contact point for all the formal communications between the project and the policymaker. This approach will help dealing with the excessive workload of the policymakers the project needs to engage with, as well as making liaising with the key decision makers on the national level considerably more efficient.

3.1 4.1. Target audiences

EOSC-synergy deliverable D1.1 identified four stakeholder groups:

- Service providers
- Research communities
- Decisionmakers
- Society

The detailed analysis of these four groups presented in D1.1 is included in Annex 1 of this document. These same groups have different degrees of relevance for the policy work.

Decisionmakers are the core target group of the T5.3. The project needs to be seen as a "good corporate citizen" by European, regional and national decisionmakers involved in shaping the policies and funding decisions that are relevant to EOSC. Thus, the task needs to ensure that when requested, the project will be able to provide high-quality feedback to surveys and requests for comments. The reputation and social capital built this way will increase the awareness of the project's outputs and ensure that the project itself is considered as a relevant source of expertise and information for policy work.

In order to be able to provide high-quality feedback that is grounded on practical work, the policy engagement task needs be seen as an ally in resolving policy-related issues that the

service providers and research communities face, as well as performing foresight activity that ensures these stakeholder groups receive information about policy-level developments that might affect them as early as possible. This ensures that WP5 has a good contact network that can provide information or feedback that further grounds the policy work in the e-Infrastructure practice.

The society as a whole has a more indirect role: in the T5.3 context, it should be considered mainly as a source of emerging policy issues that the project should be able to address. For example, increased interest in a specific type of environmental impact of IT might require preparing background material to address the issue if it arises specifically in the e-Infrastructure context. However, most of these activities would be led by dissemination tasks, with T5.3 playing a supporting role.

On the national level, the key stakeholder groups identified in the preliminary landscaping activity are:

- E-Infrastructures (as Service Providers as well)
- Research Infrastructures
- Funding bodies/policy decision makers
- Research Performing Organisations (Universities and other types of RPO)

These categories are used as a suggested categorisation of the stakeholder groups identified in the liaison management. However, as the initial landscape analysis presented in chapter 2 shows, the most efficient ways to engage with these stakeholder groups on a national level is dependent on the organisational and governance structures.

3.2 4.2. Impact analysis approach

Due to the nature of the task, most of the quantitative metrics that could be easy to measure are not capturing the impact of the activity. Thus, the key methods for analysing the progress are qualitative:

1. Self-assessment (e.g. during the WP5 calls and meetings)
2. Soliciting feedback from the other WPs, especially during the all hands meetings of the project
3. Using the defined roles to identify issues to address in the future.

Any changes to the processes or tools will be documented in the WP5 meeting minutes.

4. 5. Implementation

4.1 5.1. Policy engagement goals and high-level examples

The implementation of the engagement strategy is based on addressing the relevant objectives of the project. The activities listed are not formal project milestones, since, e.g.

organising events of broadcasting EOSC-synergy related material can - in extremis - be counterproductive if they do not seem relevant for the stakeholders the project tries to reach. Thus, the following table should be seen as an illustration of the high-level "toolbox" the policy engagement can apply.

Gener.l Object.	Specific Objective	Possible Activities	Indicators	Timeline
O4.1	Ensuring that EOSC policies and practices are propagated to the national level. Special emphasis will be given to policies and practices that address the needs of different EOSC stakeholders.	Provide National Policy and Funding bodies with EOSC reports and Material Mailing list for high level and relevant communities Organise an event with National representatives	Number of contact points and organisations Number of requests for information from the countries Coverage of event participation	Continuous activity
O4.2	Provide recommendations aiming at evolving national policies and practices according to the needs of Open Science practices and international research collaborations	Providing evidence-based feedback to EOSC governance documents. Informal consultations to fine-tune recommendations	Survey responses (project consensys opinions) Number of consultations and improvements in the recommendations	2nd half of the project
O4.3	Contributing to the national and international coordination and alignment in funding and provisioning of services in the EOSC scope.	Promote T5.1 and T5.2 outputs	Technical metrics (number of downloads etc.) Talks in policy events (e.g. e-IRG workshops)	2nd half of the project

4.2 5.2. Roles

The policy engagement policy model is based on simple abstract workflows and definitions of roles of the different project staff members in each of the processes. The latter uses the "RACI" matrix as defined, e.g. in the FitSM-3 standard:

- **Responsible**: A person or role actually executing / performing / carrying out a process or activity
- **Accountable**: The person or role governing a process or activity by defining and approving goals and providing or acquiring resources and capabilities required so that the process or activity can be carried out effectively
- **Consulted**: A person or role whose expertise or another kind of contribution is needed to carry out a process or activity without this person being responsible for the process or activity him-/herself
- **Informed**: A person or role who needs to be kept informed about the status and/or results of a process or activity

These roles are used consistently in the descriptions of the policy engagement processes.

4.3 5.3. Tools

The key design principle for tool design is minimising the additional effort needed to access and log information and facilitate continuous assessment and improvement. The initial selection of supporting tools will consist of groups of online spreadsheets shared within the project and a functional email address to contact the T5.3 team for any policy-related issues.

All the data management tools are implemented as shared spreadsheets that keep track of the following information:

- General-purpose journal logging any major policy-related events (workshops, planned face-to-face meetings, feedback provided and so on).
- Organisations and liaisons: list of organisations that are relevant to EOSC-synergy policy work with the contact points within the project and in the organisation (primary and secondary)
- Policy issues: tracking issues that have emerged as part of the project's work (either within WP5 or identified by the other WPs).

The structure of the data gathered in these three knowledge repositories is presented in Annex II and III. Anyone within the project interested in the details can get read access to the data. For this reason, the information will include only information related to the professional roles liaison persons - i.e. no personal information will be stored as part of the policy engagement activity. In addition to these internal tools, the project has established a functional email (policy@eosc-synergy.eu) that can be used to reach the policy engagement team by anyone within the project or from the outside.

4.4 5.4. Processes

The following subsections describe the processes with a high-level description/workflow and the RACI matrix specific to the process. Triggering of any of these processes will be logged in the journal.

4.4.1 5.4.1. Add a new policy contact

This process is used to manage the information in the project's liaison database. The trigger for the process can either be the identification of a new stakeholder (e.g. due to a policy organisation publishing an EOSC-related recommendation) or contact to an individual who the project should engage with as a representative of a policy or funding organisation. The process contains the following steps:

1. Add a new stakeholder entry to the database
2. Analyse the relevance of the organisation to EOSC-synergy and identify key topics
3. If possible, assign a liaison person who has suitable contacts with the organisation

Responsible	Accountable	Consulted	Informed
Task member who had the first contact	T5.3 leader	-	T5.3 leader, WP5 Communication leader (periodically)

4.4.2 5.4.2. Log a new policy issue

This process is triggered when a member of the project staff or an external party notes a policy issue that may have an impact on the project's success. The notification can arrive through the functional email address, or be provided as an answer to a survey of policy issues performed by T5.3. The process contains the following steps:

1. Assess the issue for relevance (can it have an impact on the future EOSC service provision, especially in a manner that would specific to EOSC)
2. If not relevant, provide feedback to the originator
3. Otherwise, log the issue, make the initial impact assessment
4. If possible, assign responsible, decide on the escalation path

Responsible	Accountable	Consulted	Informed
WP5 member assessing the issue	T5.3 leader	WP5 staff	Policy issue owner, PMB (periodically)

4.4.3 5.4.3. Respond to a request for feedback

This process is triggered when the project should provide feedback on a policy document. This can happen either due to a direct request to the project (e.g. from the Commission) or through identifying a consultation process as being relevant to the project through the "Log a new policy issue" process. The process contains the following steps:

1. Assess what the correct consultation level within the project is. PMB should usually be consulted. If the feedback requested is for data that is factual in nature, then the request is handled as "Request for information".
2. Note the request with a deadline in the policy issue database
3. Assign the responsibility for drafting/collecting the response to an individual staff member
4. The responsible staff member will agree on the timeline and delivery process with the project leader/PMB.

Responsible	Accountable	Consulted	Informed
Response owner (assigned)	WP5 leader	PMB	GA

4.4.4 5.4.4. Request for information

The process is triggered when someone within or outside the project requests access to policy-related information that is factual - reporting on a policy issue, but not providing an opinion about it.

1. Assess whether the person should be added to the policy contact (trigger the "Add a new policy contact" process)
2. Check if this is a new policy issue
3. Check if the information is already - if yes, provide a reply
4. For external parties: assess the degree of help project should provide
5. For internal requests:
   a. Log the issue in the policy issue database
   b. Route the request to the appropriate liaison person or initiate the first contact.
   c. In case of urgent requests, the organisation can be connected directly (with the primary contact being kept informed).

Responsible	Accountable	Consulted	Informed
T5.3 leader	WP5 leader	WP5 leader (external requests)	WP5 staff

4.4.5 5.4.5. Change of liaison person

To hand over tacit information related to a relationship and to maximise its continuity, a change in the primary contact person needs to be managed carefully. Once the need for the change has been identified, the following steps will be executed:

1. The old contact person will
   1.1. Schedule a handover planning meeting to provide sufficient background to the new liaison person. The meeting should outline the handover process and should ideally be scheduled about a month before completing the handover
   1.2. Do the initial (typically virtual) introduction of the new liaison contact
   1.3. Note the planned change in the journal; the new contact will be noted as a secondary liaison in the database
2. The planned change will be concluded based on the steps identified in the planning meeting (ranging from an email/conference call to a face-to-face meeting)
3. The conclusion of the change will be noted in the journal and the liaison database

Responsible	Accountable	Consulted	Informed
Current liaison person	T5.3 leader	New liaison person	WP5

4.4.6 5.4.6. Review of the policy data

The T5.3 manager will periodically (once every two months at the minimum) initiate a review of the policy issues, organisational information and other policy-related knowledge repositories. The process will focus on the high priority issues (with high potential adverse impact and likelihood) and - if necessary - escalate issues through suitable channels so that they can be managed through project's standard risk management processes.

RACI matrix

Responsible	Accountable	Consulted	Informed
T5.3 leader	WP5 leader	WP5 task members	Communication and innovation leaders, PMB

5.   6. Conclusions

This document presents the foundations of the policy engagement services provided by the project, both for the project's internal stakeholders as well as external collaborations. The rapid evolution of the European level landscape will likely influence the key stakeholder groups the project needs to engage with. However, the process-oriented approach chosen will mean that the fundamentals of the policy engagement approach described in the deliverable are unlikely to change.

The experiences of implementing this approach in practice will be analysed in the project's first periodic report, including statistics related to the number of stakeholders and policy issues identified so far. More in-depth analysis of the experiences, including information about lessons learned and recommendations for future activities, will be included in the deliverable D5.3 (Feedback report on project policy recommendations, project month 28).

Annex I - Target audiences identified in D1.1

The stakeholders groups identified in the Deliverable 1.1 for Innovation and Dissemination plan

Stakeholder groups	Stakeholder type	Specific subgroup	Specific ways to engage with them
Researchers and resource providers in ESFRI clusters of the countries involved	European e-infrastructures	EGI, EuroHPC	Consortium channels (Newsletters, meetings, video/written interviews, cross e-infra use cases, etc.) Additional EGI channels (NILs, Council, etc.)
Research communities (incl. Individuals and long tail of science)	Non-European e-infrastructures	Southamerican Stakeholders	Managerial-level communication/interview; Joint events
Research communities (incl. Individuals and long tail of science)	Thematic service developers	Involved in the project	Use cases and interviews with Thematic services
		ESFRIs with EGI experience	Rescope existing contacts and experience to EOSC Synergy/EOSC engagement
InfraEOSC-5 (a, b, c) and EOSC-related H2020 projects	H2020 projects	a) Secretariat b)NI4OS EOSC Nordic ExPaNDS EOSC-Pillar c) FAIRsFAIR	Task Forces on areas of common interest
EOSC-related H2020 projects		EOSC Hub RDA	Joint participation on Task Forces and Working Groups

Governmental, funding, policy agencies	EC	DG-RTD DG-CONNECT EuroHPC JU	Engage through national EOSC-Synergy entities (NGIs); Further actions based on EC guidance
Governmental, funding, policy agencies	National	Ministry officials, policy makers, RPOs	Network of contacts of EOSC-GOV representatives Managerial-level communication and meetings
General public	Society	Citizens in general with an emphasis in undergraduate students	Website with description of the project activities, information via social networks, invitation to public events, public lectures, etc...

Annex II - Policy issue database

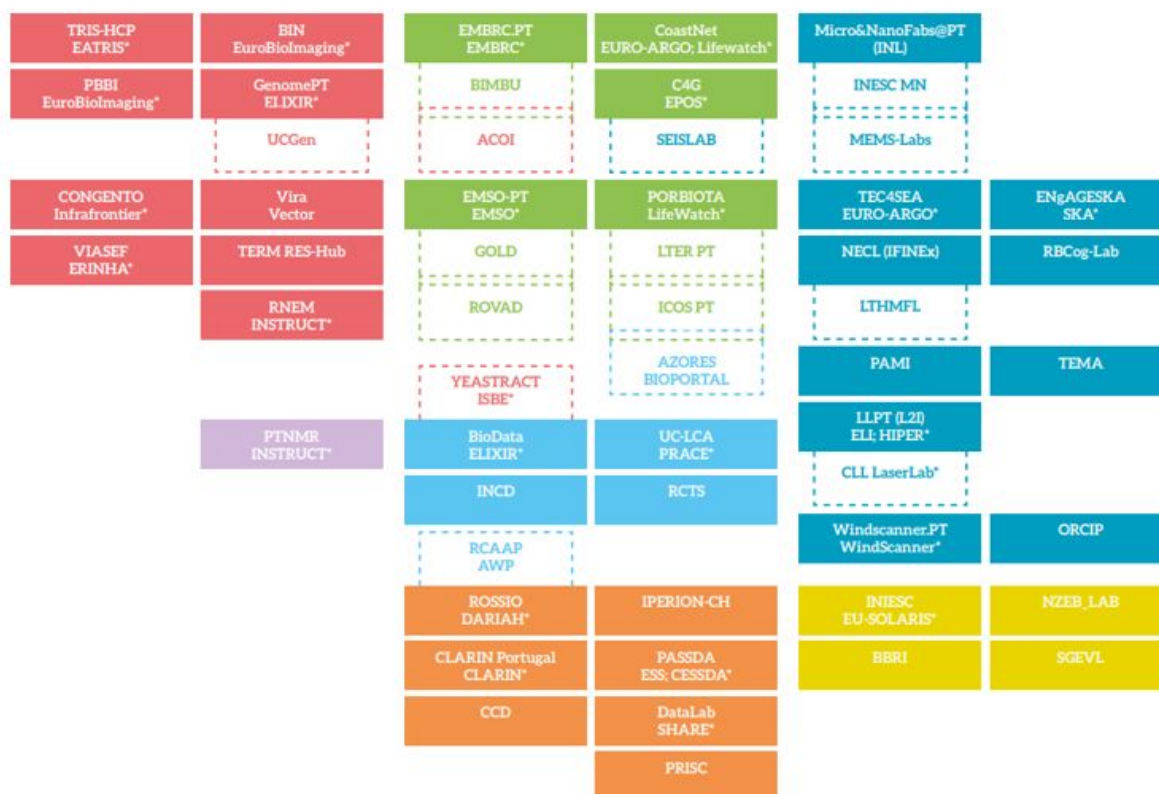Data related to policy issues curated by WP5:

- **Name** - descriptive name of the issue
- **Issue owner** - person who raised the issue
- **WP5 contact** - person leading the work in WP5 (can be the same as issue owner)
- **Deadline (primarily for events, responses to consultations etc)** - noted in case there is an action to be taken by a certain date. For example, closing of a public consultation process
- **Resolved** - yes/no
- **Type (risk MGT, best practice promotion, new approaches)** - mapping to the categories listed in section 1.1
- **Potential impact (3 = high, 2 = medium, 1 = low)** - mostly relevant for the risk management
- **Probability of occurring (3 = high, 2 = medium, 1 = low)** - mostly relevant for the risk management
- **Description** - Free text description, additional background
- **History/actions** - actions taken that relate to the issue

Annex III - Liaison database

Liaison database

- **Entity data** - concise description of the stakeholder
  - **Name**
  - **URL**
  - **Type of entity**
  - **Formal contact point** - this can be either person or e.g. functional email address
  - **Informal links**
- **EOSC-synergy liaisons**
  - **Primary** - person who acts as the coordinator of the contact
  - **Secondaries** - persons who can act as deputies (e.g. in case of urgent situations)
- **Topics of interest for EOSC-synergy**
  - **Primary**
  - **Secondaries**

TRIS-HCP EATRIS*	BIN EuroBioImaging*	EMBRC.PT EMBRC*	CoastNet EURO-ARGO; Lifewatch*	Micro&NanoFabs@PT (INL)	
PBBI EuroBioImaging*	GenomePT ELIXIR*	BIMBU	C4G EPOS*	INESC MN	
	UCGen	ACOI	SEISLAB	MEMS-Labs	
CONGENTO Infrafrontier*	Vira Vector	EMSO-PT EMSO*	PORBIOTA LifeWatch*	TEC4SEA EURO-ARGO*	ENgAGESKA SKA*
VIASEF ERINHA*	TERM RES-Hub	GOLD	LTER PT	NECL (IFINEx)	RBCog-Lab
	RNEM INSTRUCT*	ROVAD	ICOS PT	LTHMFL	
			AZORES BIOPORTAL	PAMI	TEMA
	YEASTRACT ISBE*			LLPT (L2I) ELI: HIPER*	
PTNMR INSTRUCT*	BioData ELIXIR*	UC-LCA PRACE*		CLL LaserLab*	
	INCD	RCTS			
	RCAAP AWP			Windscanner.PT WindScanner*	ORCIP
	ROSSIO DARIAH*	IPERION-CH		INIESC EU-SOLARIS*	NZEB_LAB
	CLARIN Portugal CLARIN*	PASSDA ESS; CESSDA*		BBRI	SGEVL
	CCD	DataLab SHARE*			
		PRISC			

■ Biological and Medical Sciences	■ Social Sciences and Humanities	
■ Environmental Sciences	■ Energy	
■ Physical Sciences and Engineering	■ Materials and Analytical Facilities	
■ E.Infrastructures		

Fig. 1. The ecosystem of research infrastructures included in the Portuguese roadmap.

* Alignment with ESFRI projects

Annex V - Polish Open Science services funded or co-funded by ministries

https://www.europeana.eu. Europeana Collections provides access to over 50 million digitised items – books, music, artworks and more – with sophisticated search and filter tools to help you find what you're looking for.

http://ehum.psnc.pl/ Digital Research Infrastructure for the Humanities.

https://fbc.pionier.net.pl/ Collections of Polish cultural institutions on-line. The database has got over 6.6 million objects available already.

http://www.prace-ri.eu/ Poland is also the co-founding member of PRACE Partnership for Advanced Computing in Europe. PRACE is an international not-for-profit association (aisbl) in Brussels. It has 26 member countries whose representative organisations create a pan-European supercomputing infrastructure, providing access to computing and data management resources and services for large-scale scientific and engineering applications at the highest performance level.

PRACE systems are available to scientists and researchers from academia and industry from around the world through 2 forms of access:

- Preparatory Access is intended for short-term access to resources, for code-enabling and porting, required to prepare proposals for Project Access and to demonstrate the scalability of codes. Applications for Preparatory Access are accepted at any time, with a cut-off date every 3 months. The PRACE SME HPC Adoption Programme in Europe (SHAPE) provides support to SMEs to include HPC in their business model.
- Project Access is intended for individual researchers and research groups including multi-national research groups and can be used for 1-year production runs, as well as for 2-year or 3-year (Multi-Year Access) production runs.

Project Access is subject to the PRACE Peer Review Process, which includes technical and scientific review. Technical experts and leading scientists evaluate the proposals submitted in response to the bi-annual calls. Applications for Preparatory Access undergo technical review only. Terms of use and application procedure presented on the web page[39].

Kronika@[40] Krajowe Repozytorium Obiektów Nauki i Kultury (National Repository of Science and Culture Objects)

The aim of the project is to create, within the existing state infrastructure, a place for long-term storage of culture and science resources, create a repository of digital resources and build a platform integrating all existing portals in this area, along with a search engine enabling searching the metadata of all integrated collections.

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[39] PRACE RI accessing policy: http://www.prace-ri.eu/application-procedure/, http://www.prace-ri.eu/deci-projects/

[40] Kronika@, https://www.gov.pl/web/cyfryzacja/kronik-krajowe-repozytorium-obiektow-nauki-i-kultury

The project timeline: 2018-2021

Principal Investigator: Ministry of Digital Affairs

Stakeholders: Ministry of Science and Higher Education, Ministry of Culture and National Heritage.

Annex VI - Slovakian Research Infrastructures and associations relevant to EOSC

Research Infrastructures:

- EMBL – European Molecular Biology Laboratory
- GÉANT Association
- LIBER – Association of European Research Libraries
- EuroCRIS – Current Research Information Systems
- ECRIN – European Clinical Research Infrastructure Network
- DiSSCo – Distributed System of Scientific Collections
- European XFEL – European X-Ray Free-Electron Laser Facility
- ILL – Institut Max von Laue – Paul Langevin
- CESSDA ERIC – Consortium of European Social Science Data Archives
- ESS ERIC – European Social Survey
- ESRF UPGRADES – Phase II: Extremely Brilliant Source

and a member in several Research Infrastructures related to EOSC:

- eLTER – Integrated European Long-Term Ecosystem, critical zone and socio-ecological system Research Infrastructure
- Euro-BioImaging – European Research Infrastructure for Imaging Technologies in Biological and Biomedical Sciences
- INSTRUCT ERIC – Integrated Structural Biology Infrastructure (Institute of Chemistry, Slovak Academy of Sciences)
- HL-LHC – High-Luminosity Large Hadron Collider PROSPECTIVE MEMBER COUNTRIES
- PRACE – Partnership for Advanced Computing in Europe
- EPOS – European Plate Observing System
- Euro-BioImaging – European Research Infrastructure for Imaging Technologies in Biological and Biomedical Sciences
- MIRRI – Microbial Resource Research Infrastructure
- EST – European Solar Telescope
- LifeWatch – e-infrastructure for Biodiversity and Ecosystem Research
- INSTRUCT – Integrated Structural Biology Infrastructure

The Slovak Centre of Scientific and Technical Information is a national key OA stakeholder.

- Since 2013 SCSTI serves as the [National point of reference](#) for the policy of "Open Access and preservation of scientific information".
- In 2015 SCSTI became a member of the OpenAIRE 2020 project and became NOAD for Slovakia.
- In 2016 the Contact Office for Open Access at SCSTI was established – based on the [Action Plan of the Initiative for Open Governance in the Slovak Republic 2017 – 2019](#) adopted by the Government in 2017.

- In October 2016 the [Open Access working group](#) was established. It has 27 members from libraries, ministries and the Slovak Academy of Sciences.
- There are [3 Open Access repositories](#) in Slovakia.
- Since 2019 has been initiated a national project on setting up national Open Access repository:

Title of the project: The Comprehensive Information System for acquiring, processing, preservation and provision research and bibliometric information and publications (COMIS) (2019 – 2023). The national project COMIS is focused on the development and use of ICT to support Open Science in Slovakia.

CSIT is the main coordinator for EOSC and national infrastructure projects in Slovakia. CSIT is communicating with other Ministries if needed. CSIT is building a sustainable infrastructure for users across Slovakia. The infrastructure is located in two cities. In Bratislava, these are computing resources and in the city of Žilina repositories Funding for research infrastructures and e-infrastructures is coming mainly from Research Agency (http://www.vyskumnaagentura.sk/en/) and Ministry Maintenance of different e-infrastructures and research infrastructures are supported from the Slovak Research and Development Agency (https://www.apvv.sk/?lang=en) and Scientific Grant Agency.

Annex VII - Membership of the "Sounding Board Group" in the Netherlands

- Royal Netherlands Academy of Arts and Sciences (KNAW)[41], which is both an advisory body for science and scholarship and a host for some 13 institutes, including Data Archiving and Networked Services (DANS, the Netherlands institute for permanent access to digital research resources, which is also represented separately)[42] and for a research infrastructure such as CLARIAH (arts and humanities; also represented separately)[43].
- Netherlands Platform for Open Science (NPOS), which runs the National Programme for Open Science, and which is developing policies and proposals to accelerate open science in the Netherlands. In NPOS many parties from academia participate.[44]
- Netherlands Organisation for Scientific Research (NWO), the main funding organisation for research in the Netherlands[45].
- GO FAIR, a bottom-up, stakeholder-driven and self-governed initiative that aims to implement the FAIR data principles[46].
- SURF, the collaborative organisation for ICT in Dutch education and research[47] and SURFsara, provider of computing and data services[48].
- Netherlands eScience Center (NLeSC), the Dutch national center of excellence for the development and application of research software to advance academic research[49].
- National Institute for Subatomic Physics (NIKHEF)[50]
- Dutch Tech centre for the Life sciences (DTL), a public-private partnership of more than 50 Dutch life-science organisations, aiming at improving the Dutch life science research infrastructure, with a focus on innovative technologies, FAIR data, and training[51].
- Dutch universities, represented by several representatives of the 14 universities (e.g. Institute of Data Science, Maastricht) and their joint association VSNU[52].
- The Netherlands Organisation for Health Research and Development (ZonMw), which funds health research in the Netherlands and promotes the actual use of the knowledge this research produces[53].

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[41] https://www.knaw.nl/en
[42] https://www.knaw.nl/en/institutes/dans
[43] https://www.clariah.nl/en/
[44] https://www.openscience.nl/en
[45] https://www.nwo.nl/en
[46] https://www.go-fair.org
[47] https://www.surf.nl/en
[48] https://userinfo.surfsara.nl
[49] https://www.esciencecenter.nl
[50] https://www.nikhef.nl/en/
[51] https://www.dtls.nl
[52] https://vsnu.nl/en_GB
[53] https://www.zonmw.nl/en/

Annex VIII - Letter of Support from EOSC-hub

Dr. Isabel Campos
CSIC - Spanish National Research Council

Letter of Support
EOSC-synergy, H2020 INFRAEOSC-05 B

Dear Isabel

EOSC-hub is one of the flagship EC projects contributing to the European Open Science Cloud implementation. It mobilises providers from the EGI Federation, EUDAT CDI, INDIGO- DataCloud and major research e-infrastructures offering services, software and data for advanced data-driven research and innovation. Access to these services are provided by the integration and management system of the European Open Science Cloud, acting as a single entry point for all stakeholders. The EOSC-hub service catalogue is open to new contributing communities and business organisations.

On behalf of EOSC-hub, I am pleased to offer our wholehearted support for the EOSC-synergy project proposal.

EOSC-hub is willing to promote the integration and exploitation of the EOSC-synergy services and resources for adoption by a large international group of users in EOSC, through the EOSC Portal Marketplace, EOSC-hub will offer you a mechanism to promote access and re-use of your key exploitable to EOSC stakeholders.

We are interested in building a joint service and resource portfolio that includes EOSC-synergy national services and certified data repositories that are quality verified and assessed by your international research collaborations of pan-European relevance. In addition, we are interested in collaborating to the definition of a joint service catalogue roadmap that takes into account users and providers' needs from the countries in the EOSC-synergy scope.

EOSC-hub is interested in setting up and implementing a joint events and communications programme aiming at harmonizing and strengthening the projects' innovation management plans. EOSC-hub will promote EOSC-synergy services and research data for both research and commercial exploitation via the EOSC Digital Innovation Hub, the EOSC stakeholder forum and other relevant engagement channels. We regard the EOSC-synergy human capacity development programme as an important EOSC pillar: EOSC-hub is committed to provide services and resources for training.

The EOSC-synergy policy recommendations will further contribute to the definition of EOSC suitable procurement and service provisioning and models that are necessary components of a sustainable EOSC ecosystem of services and resources.

Finally the two projects will deliver coordinated technical support to user communities. The projects will be responsible in their respective service provisioning areas for technical support in the thematic and competency areas in scope in the respective descriptions of work

I strongly believe the collaboration between the two projects will be of great benefit to the advancement of the implementation of the European Open Science Cloud initiative.

Amsterdam, 15 November 2018
Yours sincerely,

Dr. Tiziana Ferrari
EOSC-hub Project Coordinator