

E E I S O

European University

**INNOCORE OPEN SCIENCE STRATEGIC PLANNING AND
IMPLEMENTATION GUIDE**

Deliverable 3.2

Date: August 2022



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101035811

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Open Science Strategic Planning and Implementation Guide

Version 1.0

Technical references

Grant Agreement number:	101035811
Project Acronym:	EELISA InnoCORE
Project title:	EELISA INNOVation and Common Research strategy
Start date of the project:	1 June 2021
Duration of the project:	36 months

Deliverable No.:	3.2
Work Package:	WP3
Task:	Desk research existing OS practices and policies within partner HEIs;
Lead beneficiary:	University POLITEHNICA of Bucharest
Due date of deliverable:	31.08.2022
Actual submission date:	21.07.2022
Dissemination level:	Public

Document history

V	Date	WP Leader	Reviewed by:
0.1	2022-07- 21	UPB	First draft, Dana Gheorghe, Loredana Manasia, Catalin Negru, Ciprian Dobre
0.2	2022-07-31	UPB	Second draft modified following input from UPM, ITU, UPB, PSL, SSSA, SNS, FAU, BME, Paris Tech
0.3	2022-08- 05	UPB	Quality check review from FAU
0.4	2022-08-15	UPB	Second quality check review from EELISA Exec. Board, EELISA InnoCORE quality assurance coordinator Juan Manuel Muñoz (UPM)
1	2022-08-22	UPB	Final version

Executive Summary

The **OS Strategic Planning and Implementation Guide** sets the stage for the EELISA InnoCORE partners to re-think strategic planning and implementation of OS by following a common approach.

The document presents a journey to OS adoption building upon a common framework and a dedicated toolbox.

Firstly, we lay the foundation for a common methodological approach to understand OS proficiency. OS scores were computed and used to profile the members of the partnership. Following the findings on the preliminary quantitative analysis, three phases of OS adoption were identified and described: **Learning**, **Support**, and **Growth** phases. Each of the three phases is accompanied by a set of descriptors. **OS descriptors** are statements that describe organisational behaviours and actions which indicate that the institution concerned has achieved a certain level of proficiency with regard to OS. OS descriptors complement OS scores to allow for a more comprehensive analysis. Consequently, three broad institutional profiles have been created: **OS Learners**; **OS Achievers** and **OS Experiencers**.

There are several ways to use the descriptors. Therefore, an OS Journey has been imagined and described as a multi-stage process to help the partners to achieve OS adoption. The stages are chronologically presented; however, each HEI can decide on the path to take and start in the way they deem most appropriate for their context.

Together with the OS scores, the descriptors can be used for diagnosis purposes, planning, implementation and reassessment, consistently informing the whole process of boosting organisational OS proficiency.

Considering these arguments, the descriptors were integrated into an **OS Action Plan (OSAP)** Template. The OSAP and the bank of descriptors should be seen as a **compass** guiding planning, implementation, and assessment, rather than a to-do list. In this view, the partners will use the OSAP Template as a toolbox from which to pick and combine the most relevant elements considering the level of OS implementation and their specific context.

For illustrative purposes, **the Guide** introduces a case study of the use of descriptors and other additional tools. The Guide concludes with the presentation of mutual activities to be further considered.

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Introduction

OS Methodological Toolkit outputs

The **D3.2. OS Strategic Planning and Implementation Guide** builds on the findings and roadmap developed in the D3.1. OS Methodological Toolkit. The Toolkit was intended to be an action-oriented compilation of related information, resources, or tools structured on a “common set” of good practices identified as existing or as necessary. In conjunction with the Toolkit, the Guide suggests a non-prescriptive, multi-stage process and specific actions to be taken in the adoption and acknowledgement of Open Science.

In the case of an alliance of universities, which starts from the main challenge of finding a common ground on the concept and practices of Open Science, the two documents will help the members of the alliance to use common tools to define customized, strategic directions for OS. Most importantly, the journey suggested by the Guide builds upon individual potential and OS proficiency to move towards open-up, joint and sharing activities.

The **OS Survey** that informed the development of the Toolkit has found different challenges and benefits under each of the **four pillars** of Open Science: Open Access Publishing (OA), Research Data Management (RDM), Open Science Skills and Training (OSST), Open Science Incentives and Rewards (OSIR).

As argued in the D3.1 Toolkit, some areas of activity are clearly more advanced than others.

Open Science activities often start with the issue of **Open Access** to publications, and this pillar of Open science is usually led institutionally by the university libraries. Some of the InnoCORE members pointed out that their policies favour exclusively OA journals. More precisely, they want to support publication in Open Access gold publications. There is also a strong commitment to encouraging the publication in Open Access diamond publications. Nonetheless, the publication in hybrid journals is not excluded, but for some of the partners complying with cOAlition S' policies and national regulations is of great importance.

Some of the members have developed **RDM policies** and almost all of them reported the existence of specialised **RDM tools** or infrastructure provided to researchers. This finding supports the need for strategic framework to approach RDM and other OS components. Some of the partners are currently in the process of preparing a policy or it is to be included in a broader OS policy.

As regards the **Open Science Skills and Training**, all the partners declared that their institutions offer courses on **research publishing** and **dissemination**. Moreover, **citizen science** and **science communication** play a pivotal role in the process of EELISA InnoCORE OS skillset development.

In relation to **Open Science Incentives and Rewards**, three of the partners have in place specific measures. However, the practices seem to vary largely even within the institutions. Those findings played a pivotal role in defining a set of OS descriptors to guide strategic planning and implementation. They will be largely discussed in the section OS Adoption Phases and Institutional Profiles of the present document.

OS Strategic Planning and Implementation Guide

The concept

Based on the *Methodological Toolkit* the **OS Strategic Planning and Implementation Guide** is intended to be an instrument with non-specific rules or principles providing direction to



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action or determining a course of action and helping each partner/user to accomplish the specific tasks that contribute to meeting the recommendation or the standard practice in supporting OS.

The scope

The OS Strategic Planning and Implementation Guide aims to assist HEIs leaders and teams in charge of designing and implementing OS strategy by offering them a comprehensive set of descriptors to guide the process, a suggested journey towards the full adoption of OS and examples of best practices.

After the *Introduction*, section 2 – **Methodological approach** – presents the process of data preparation and analysis. It explains how the data from the OS survey were transformed in order to support the elaboration of the descriptors.

Section 3 – **OS Adoption Phases and Institutional Profiles** proposes a framework to understand and assess present OS practices and plan future interventions. Three phases of OS adoption were identified, namely the Learning, Support and Growth phases. In connection, three organisational profiles of OS proficiency were described (Learners, Achievers, and Experiencers). Specific descriptors were created for each profile.

Section 4 – **Going forward** introduces a case study of the use of descriptors and other additional tools for illustrative purposes. The Guide concludes with the presentation of mutual activities to be further considered.

Methodological approach

Data preparation

In this phase we normalized and scaled all results obtained in OS survey (see **Annex 14**) and prepared the analysis of data. The aim was to quantify the degree of implementation of Open Science practices. Each question in the survey was scored.

Data normalization represents the process of rescaling one or more attributes to the range of 0 to 1. This means that the largest value for each attribute is 1 and, the smallest value is 0.

In the scaling process, we changed the range of obtained scores in a range between 1 and 5 to correspond with the levels defined in question 10 of the survey.

The normalization process

Each question has been scored with 1 or 0 points. In the survey there are three types of questions, and they have been scored as follows:

- Questions with **Yes or No response** – these have been scored with 1 for Yes response and 0 otherwise.
- Questions with **multiple choices** – these have been scored with 1 if a minimum of 3 choices has been made.
- Questions with **free text answer** – these have been scored with 1 if the answer is positive and state that the analysed criteria will be accomplished.

The four **pillars of Open Science** (Open Access Publishing (OA), Research Data Management (RDM), Open Science Skills and Training (OSST), Open Science Incentives and Rewards (OSIR)) were considered. Next, we have defined a set of ten **Open Science dimensions** and for each we chose a **set of questions** that best fit with the respective dimension as follows:

Dimension 1 Open Access Research to Publications: Q14, Q15, Q16, Q17, Q18, Q19, Q20, Q21, Q22,

Dimension 2 Research Data Management: Q23, Q24, Q25, Q26, Q27, Q28, Q29, Q30, Q31, Q33, Q35,

Dimension 3 Fair Data: Q7, Q8 Q9, Q11, Q12, Q37, Q41, Q45, Q46, Q51,

Dimension 4 Data Sharing: Q7, Q11, Q19, Q41, Q57,

Dimension 5 Open Protocols: Q36, Q46,

Dimension 6 Open-Source Research Software and Code: Q31, Q32, Q33, Q34, Q46, Q51,

Dimension 7 Open Evaluation: Q37, Q42, Q46,

Dimension 8 Open Education: Q7, Q9, Q37, Q38, Q45, Q46, Q51, Q53,

Dimension 9 Citizen Science: Q7, Q9, Q37, Q45, Q46, Q52, Q61

Dimension 10 Science Outreach and Communication: Q11, Q42, Q46, Q51, Q54, Q61.

Furthermore, for each partner university, we calculated a total score for each OS dimension. This score was scaled in a range between 1 to 5. These scales correspond with levels (e.g., level 1 to level 5) defined in question number 10 of the survey, which refers to the level of importance and implementation of the ten Open Science dimensions mentioned above.

Data analysis

Following data preparation, we have calculated the scores of each partner university for each of the 10 dimensions.

It is worth mentioning that these scores reflect the situation at the time of the survey.

Furthermore, the Open Science situation can be reassessed, at any time, by repeating the survey and by recalculating the scores using the proposed methodology presented in the previous step. Moreover, **Annexes 1 to 10** show in detail the calculated scores for an Open science dimension.

Below we present the OS Scores for each university partner as a spider chart, because this allows us to display data across several unique dimensions and give a general overview of the current situation regarding the level of implementation for different OS dimensions.

As a preliminary analysis, based on the charts presented below (**Figure 1 - Figure 9**), we can say that all partner universities have a high level of implementation with respect to Science Outreach and Communication. Also, with few exceptions also the Data Sharing and Fair Data dimensions have a very good level of implementation.

Furthermore, there are exceptional cases like Partner 9, a "confederal" university, where some scores are partly irrelevant in this context. For instance, its member institutions are currently piloting their open access data publication policies, in a "down-top" logic. Partner 9 aggregates the results of its policies at a higher level. So, there can be local initiatives for specific OS dimensions, but these are not centrally managed and thus not scored.

Thus, this methodological approach represents the base for high-level analysis with respect to OS Adoption Phases & Institutional Profiles.



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Figure 1. Partner 9 OS Scores

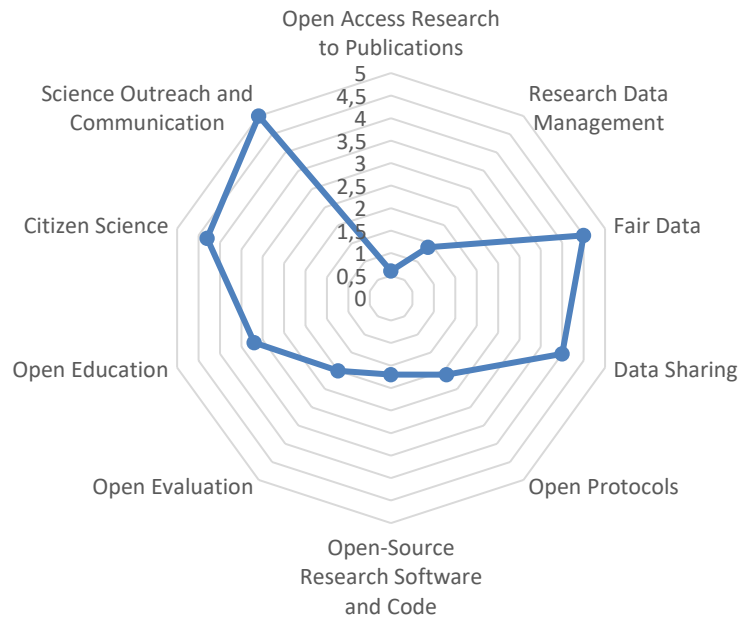


Figure 2. Partner 8 OS Scores

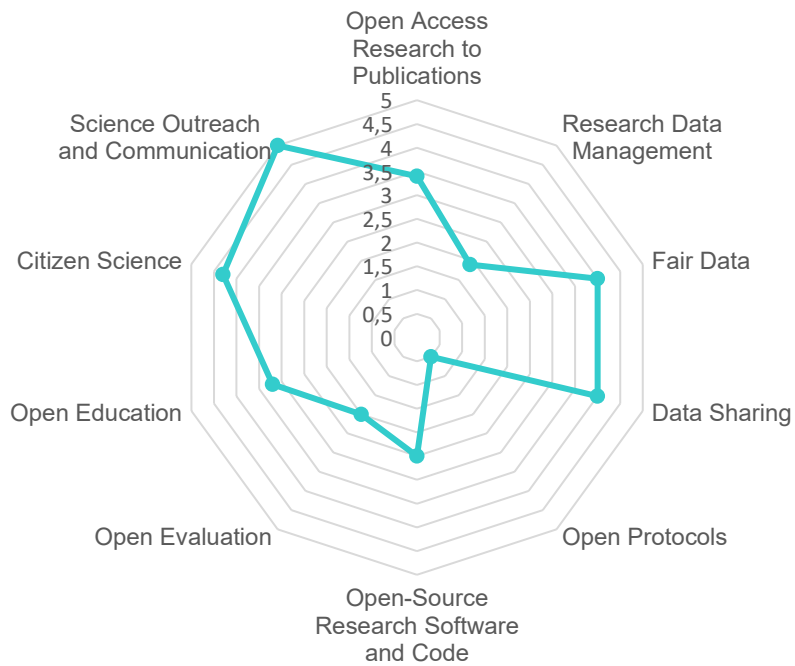


Figure 3. Partner 7 OS Scores

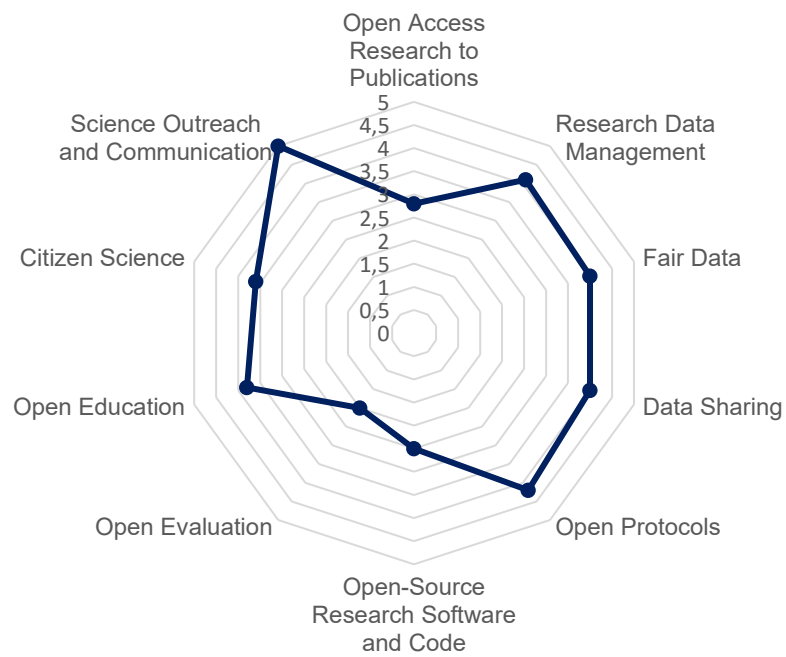
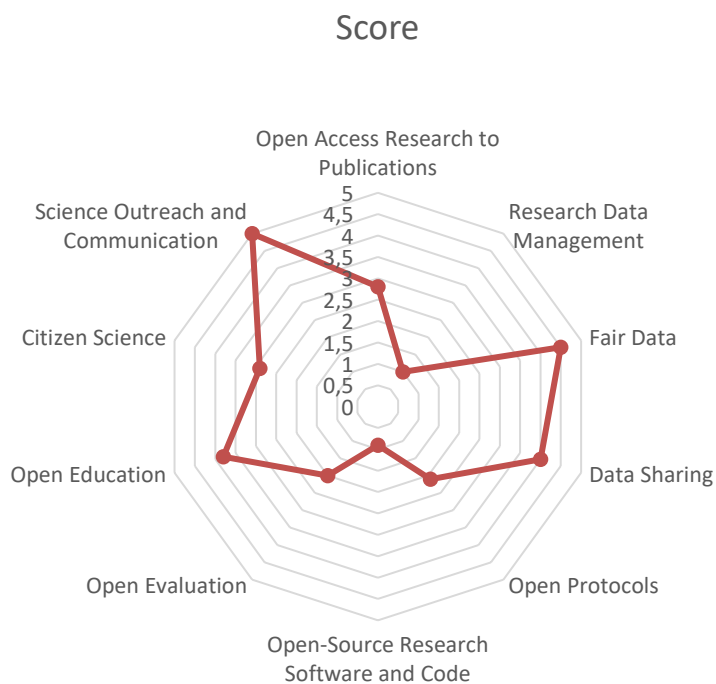


Figure 4. Partner 6 OS Scores



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Figure 5. Partner 5 OS Scores

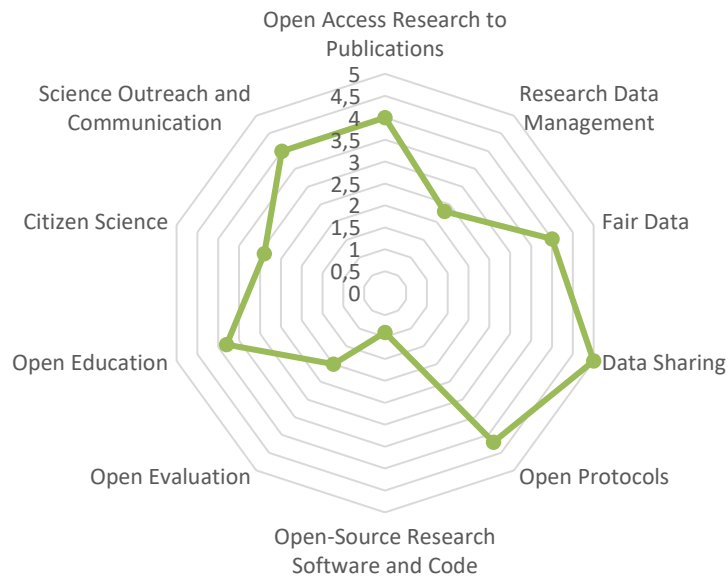


Figure 6. Partner 4 OS Scores

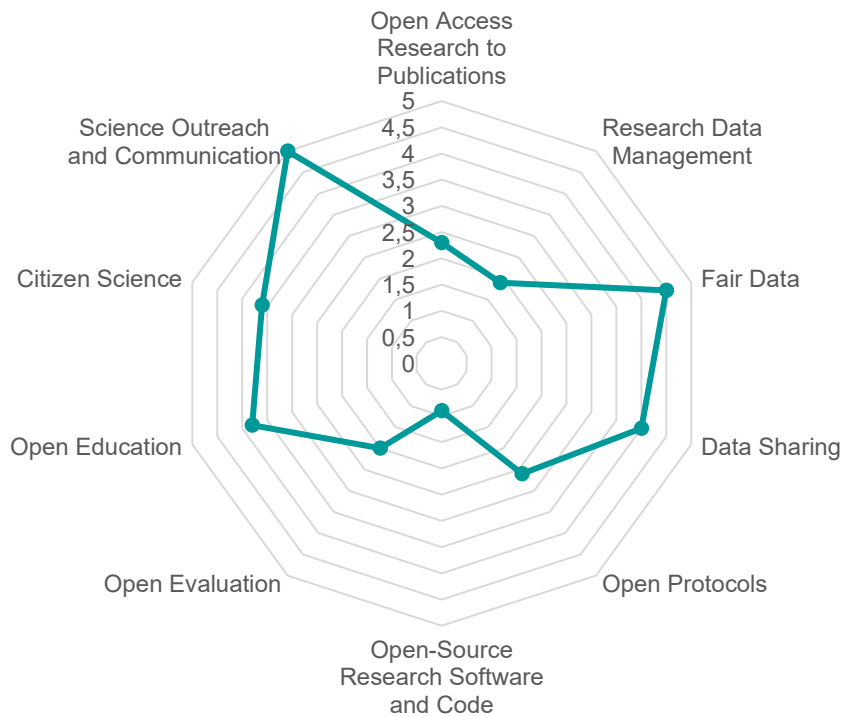


Figure 7. Partner 3 OS Scores

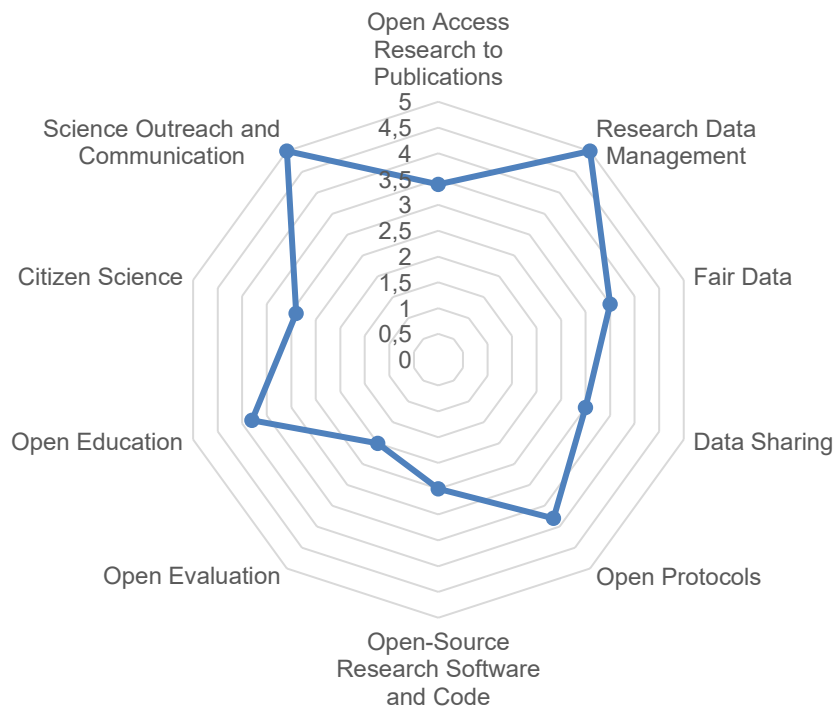
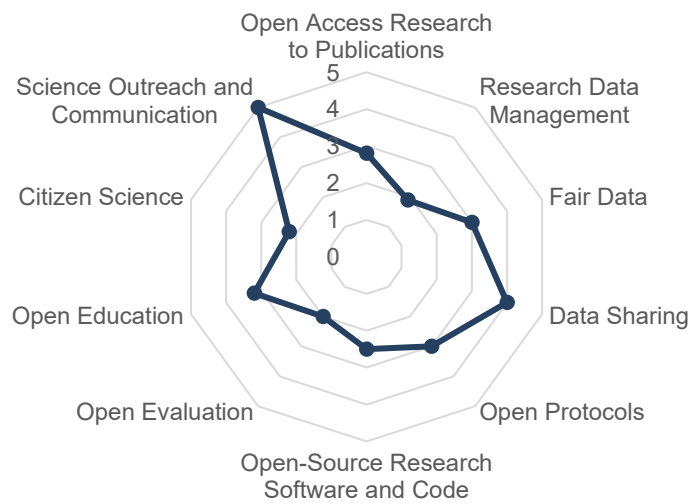
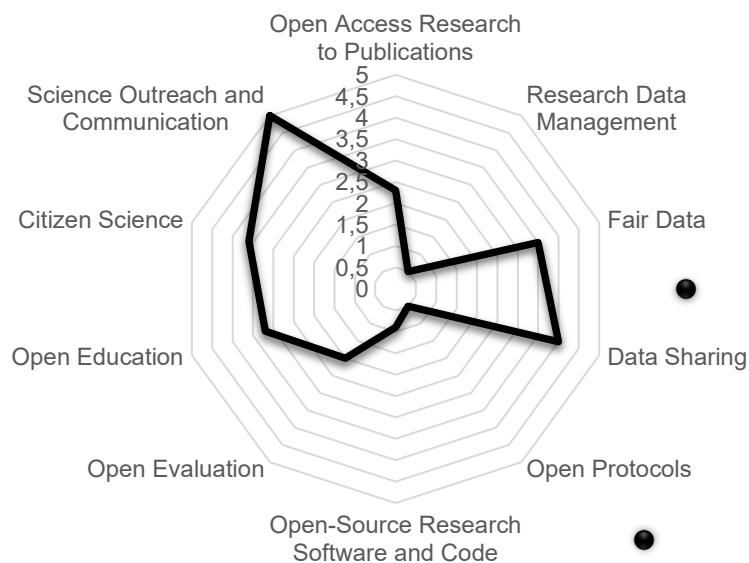


Figure 8. Partner 2 OS Scores



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Figure 9. Partner 1 OS Scores



OS Adoption Phases & Institutional Profiles

As stated in *Introduction*, the present Guide is meant to be a compass for the EELISA InnoCORE community. In order to contribute to the implementation of the roadmap proposed in the Toolkit, the partnership will need to carry out actions which can be divided into three phases, described in the following three main sections of this document: **Learning**, **Support**, and **Growth**.



The *Learning Phase* describes activities that enable people and institutions to gain knowledge and cultivate a culture of Open Science.

The *Support Phase* refers to actions aimed at creating the necessary enabling conditions to harmonize the development of OS practices and embed them into current professional activities and project of the HEIs.

The *Growth Phase* encompasses actions aimed at increasing the scale and diversity of OS practices and deepening the strategic dimension of OS.

Each of the three phases is accompanied by a set of 'can-do' descriptors. **OS descriptors** are statements that describe organisational behaviours and actions which indicate that the institution concerned has achieved a certain level of proficiency with regard to OS. They provide an overview of key features of the OS pillars.

Based on the data analysis discussed in the previous section, three broad institutional profiles have been created: **OS Learners**; **OS Achievers** and **OS Experiencers**.

An OS culture relies on people having the values, attitudes, skills and knowledge that are encompassed by the institutional profiles and a set of corresponding **descriptors**. Two elements are essential to ensuring the development of OS practices:

- 1) The possibility to assess the current level of implementation of OS practices with a focus on identifying areas for further development.
- 2) References for both academic and non-academic staff and responsible units which can help them to design, implement and evaluate OS interventions in organisational settings.

In order to meet these needs, this section provides descriptors for each of the four pillars that were analysed in D3.1. These descriptors help to operationalise the pillars and their respective dimensions and provide important and useful tools for OS planning, implementation, and assessment.

How the descriptors were developed

The following criteria were used to formulate the descriptors for OS:

- Derivation from the items in the survey developed for D3.1;
- Literature-informed approach based on consulting relevant white papers and policy documents (e.g., LERU's [Roadmap](#) for cultural change);
- Brevity and concision;
- Positivity of behaviours and actions;
- Clarity;
- Independence in relation to the other descriptors;
- Definiteness.

Based on these criteria, a set of 42 can-do descriptors covering all 4 pillars were produced (see **Annex 11**). The descriptors can be clearly associated with just one of the three OS institutional profiles.

How to use the descriptors

There are several ways to use the descriptors. The visual representation in Figure 10 suggests a multi-stage process to help the partners to achieve OS adoption. The stages are chronologically presented; however, each HEI can decide on the path to take and start in the way they deem most appropriate for their context.

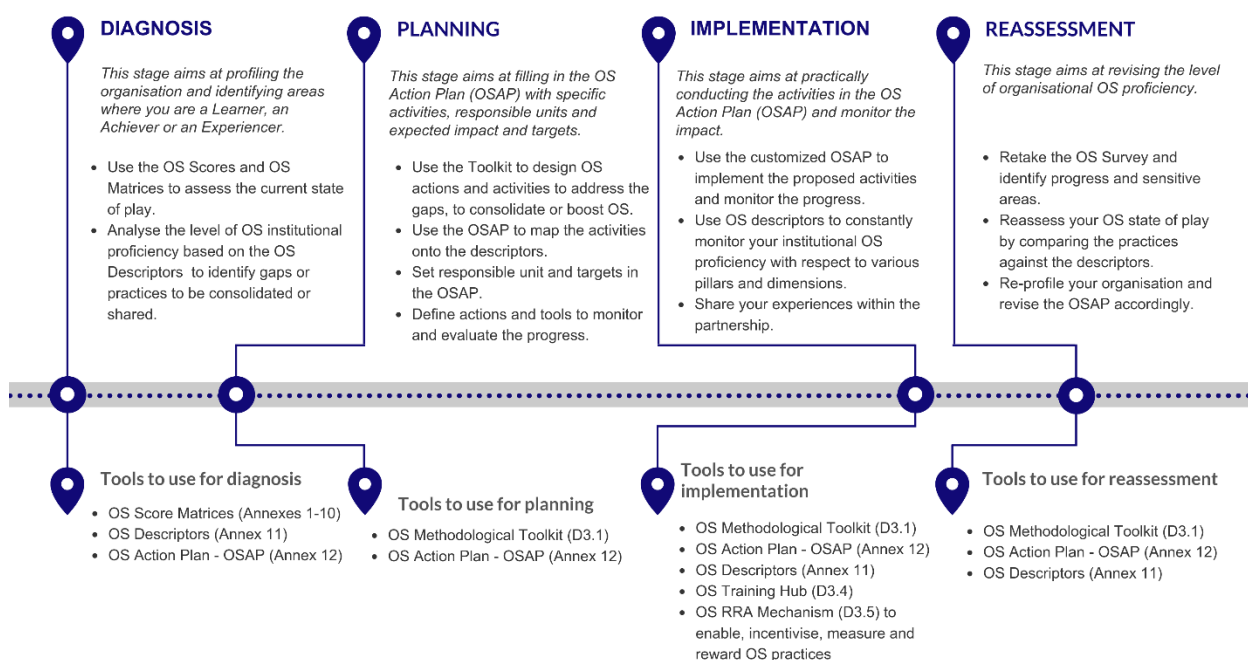
Together with the OS scores and matrices (see Annex 1-10), they can be used for diagnosis purposes, planning, implementation and reassessment, consistently informing the whole process of boosting organisational OS proficiency.

Practically, the above-mentioned OS scores guide the partners to assess the state of play at a certain moment in time (i.e., when the survey was filled out). Consequently, the assessment could point out a mix of profiles with respect to OS pillars and their respective dimensions. More precisely, each partner could simultaneously be an Achiever in relation to one or several dimensions and an Experiencer regarding others.



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Figure 10. How to use the descriptors: The OS Journey



Following this preliminary analysis, the descriptors can be used to complete the diagnosis stage and move forward.

A basic assumption to build the use of the descriptors upon is that if a HEI conducts activities associated with a descriptor at the level of Experienter, then it is probable that this organisation also be able to take actions corresponding to the descriptors at the Achiever and Learner levels for the same pillar.

There are several ways to use the descriptors. Firstly, because they make reference to concrete actions related to OS, they are directly **relevant for planning** OS strategies and action plans. Secondly, together with the examples of practices in the **D3.1 Toolkit** can be used for the **design, implementation** and **evaluation** of OS activities.

Moreover, as the EELISA InnoCORE partnership aims to implement a comprehensive approach to OS across all partners, university leadership and the responsible units can propose activities associated with combinations of descriptors from different pillars.

Nevertheless, the use of descriptors simplifies the task for the EELISA HEIs to address as many as possible of the four OS pillars and their corresponding dimensions, if not all.

Considering these arguments, the descriptors were integrated into an **OS Action Plan (OSAP) Template** (see **Annex 12**). This document and the bank of descriptors should be seen as a **compass** guiding planning, implementation and assessment, rather than a to-do list. In this view, the partners will use the OSAP Template as a toolbox from which to pick and combine the most relevant elements considering the level of OS implementation and their specific context. Each of the descriptors will be firstly used to assess the current level of OS implementation. Because the descriptors are references to outcomes, it is appropriate to use them for assessment purposes. However, they indicate the level of proficiency and not the performance of the organisation in a specific situation. Then specific actions should be designed to help the organisation move to the next level of OS proficiency for various pillars and descriptors. The expected impact of those actions should not be set to high if the organisation is not prepared for this. Conversely, the target should not be too low if the organisation is mostly an Achiever and the potential is high.

Being formulated in positive terms, the descriptors showcase what the partners can do and allow for mutual activities and experience sharing. As it is presented in the following section, even the descriptors for Learner profiles require a significant level of OS practices implementation.

To conclude, the descriptors are useful references for both organisations and individuals responsible for planning, implementing and assessing OS practices. Their cumulative and guiding nature allows for developing customised strategies or action plans to foster an OS culture.

The Learning Phase & OS Learners

Descriptors

The **Learning phase** and its respective organisational profile include institutions that have started the adoption of OS principles and practices, but the strategic dimension of OS is yet to be defined. Usually, the OS actions were context-driven and purposefully addressed some (but not all) of the OS dimensions. Conventionally, the OS scores for Learners vary from 0 to 2 (see Annexes 1-10 for more details) and reflect the state of play at a certain moment in time, not the organisational potential. Whereas the Learner profile is the primary or dominant one, an organisation can be an Achiever or even Experienter in regards to a limited number of OS dimensions, given the uneven approach of the dimensions (as shown in figures 1-9).

To complement the quantitative analysis reflected in the OS scores, the partners should use the OS Descriptors (see Annex 11). As stated before, the descriptors are qualitative statements derived from the OS Survey (see Annex 14) and refined to reflect the level of OS organisational proficiency.

HEIs with the OS Learner profile will:

Table 1. Can-do Descriptors for OS Learners

Pillars	OS Dimensions	Descriptors for Learners
Open Access	Open Access Research to Publications	D.1. Advocate OA D1.2. Monitor the number of publications authored by its researchers and published in open access journals D1.3. Monitor the cost of publications authored by its researchers and published in open access journals
Research Data	Research Data Management	D1.4. Inform its researchers of and advocate RDM tools that follow FAIR principles D1.5. Advocate the use of standards, guidelines, and protocols such as author identifier systems (e.g., ORCID), publication identifiers (e.g., DOI), Creative Commons (CC) licenses D1.6. Provide researchers with a Data management planning tool (DMP tool) D1.7. Identify funding and resources to archive and to publish data D1.8. Have signed the EOSC Declaration as a statement of commitment at a local level
	FAIR Data	
	Data Sharing	
	Open Protocols	
	Open-Source Research Software and Code	
Open Science Incentives and Rewards	Open Evaluation	D1.9. Make information about its policies on researcher evaluation open and easily accessible



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Pillars	OS Dimensions	Descriptors for Learners
Open Science Skills and Training Needs	Open Education	D1.10. Provide introductory training on practical tips on getting started with OS as well as providing information on discipline specific tools and resources researchers can use D1.11. Construct guidance for research administrators and academics on good and bad practice in the use of OS D1.12. Have updated the research integrity codes to explicitly address OS D1.13 Recognise citizen science as an evolving set of research methods, as well as its societal and educational benefits
	Citizen Science	
	Science Outreach and Communication	

Recommendations

This section describes **actions to be taken, desirable actions** in support of OS and connects to relevant **practices and experiences** already presented in the Toolkit's Idea Catalogues.

The actions to take are meant to setting the stage for OS adoption, raising awareness and increasing the knowledge about OS. Desirable actions accelerate the learning phase and open the transition to the next level of proficiency (the Achiever level). Both types of actions in conjunction with the practices in the Idea Catalogue could guide the partners in the process of the OSAP design and implementation. Although the actions below are not intended to support leapfrogging approaches, the partners could take into consideration such strategies in the design of the OSAP.

ACTIONS TO TAKE	DESIRABLE ACTIONS
Appoint a senior manager to lead Open Science approaches and engage OS champions at local level	Support non-commercial OA publishing
Form a team to conduct the gap analysis based on the OS scores and Descriptors and to further design the OSAP	Identify how Open Science could help stop unethical behaviours in areas such as ghost authorship, omitting authors from research outputs despite their substantial contributions, unethical peer review behaviours, plagiarism and theft of ideas
Raise awareness of Open Science practices/policies and issues for Early Career Researcher	Reflect on Open Science change processes and incentivization
Create a dedicated section on the institutional website to be fed with relevant and specific information	Reflect on „How can keep science open – but also secure“?
Design various types of activities to constantly inform the academic community about OS developments (e.g., newsletters, social media posts, share invitations to external events, invite speakers to give lectures and share experiences)	
Organize events (e.g., round tables, discussions) focussing on research integrity and trust in science to create a link to OS	
Initiate an analysis of the curriculum for master's and PhD programmes to prepare them for OS embedment	

Develop a monitoring and evaluation framework to assess which actions lead to a greater impact



IDEA CATALOGUE: EELISA InnoCORE OS Policies

Click on the tabs below to learn more about members' OS policies.

FAU

SNS

ENPC

PSL



IDEA CATALOGUE: Actions and projects in support of OS

Read more about members' initiatives.

[Deep Green Project](#) aims to transfer scientific publications, which can be made freely available after the end of their embargo periods, automatically from publishers into open access repositories. Approx. 1 staff position within the university library (plus additional personnel at the external project partners). Rationale: 'enlivening' and automatic filling of the repository, and thus easing the workload for authors on the green road of Open Access.

Open Access Publishing and **Open Access Publication Costs**: the projects aim at the central establishment of Open Access publication funds at the university. Approx. 2 staff positions within the university library. Reason: financial support for authors who want to publish Open Access but do not have third-party funding to do so.

[Open Source Academic Publishing Suite](#) (OS-APS) enables XML-based workflows for media-neutral publishing (e.g. Open Access) without technical expertise and cost-intensive XML editing and content management systems. Corporate design can be controlled via existing typesetting templates or in detail with a template development kit. OS-APS will thus be of benefit to open access university publishers in Germany and beyond. Approx. 1 staff position within the university library (plus additional personnel at the external project partners). Rationale: University publishers, such as the local FAU University Press, usually do not have the resources to create media-neutral e.g., EPUB e-books.

[eHumanities](#): RDM in Digital Humanities and Social Sciences. The project develops best practices, training material and workflows for research data management as well as software tools to support these workflows. 1.25 staff positions in the university library are involved in the FAU part in the project.

Developing an [Open Science Community](#)

PhD teaching on Open Science and Scientific Integrity - [VIRT2UE certification](#)

Setting up of the [Research Assessment and Open Science Office](#) to support the research staff



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The Support Phase & OS Achievers

Descriptors

The **Support phase** implies that most of the OS pillars and their corresponding dimensions have been addressed and consolidate to a significant extent. Conventionally, the OS scores for Achievers vary from 2,1 to 4 (see Annexes 1-10 for more details) and reflect the state of play at a certain moment in time, not the organisational potential. Whereas the Achiever profile is the primary or dominant one, an organisation can be a Learner or even Experiencer in regards to a limited number of OS dimensions, given the uneven approach of the dimensions (as shown in figures 1-9).

To complement the quantitative analysis reflected in the OS scores, the partners should use the OS Descriptors (see Annex 11). As stated before, the descriptors are qualitative statements derived from the OS Survey (see Annex 14) and refined to reflect the level of OS organisational proficiency.

HEIs with the OS Achiever profile will:

Table 2. Can-do Descriptors for OS Achievers

Pillars	OS Dimensions	Descriptors for Achievers
Open Access	Open Access Research to Publications	D2.1. Provide support to researchers to make their research publications available in open access D2.2. Provide researchers with dedicated financial tools to support OA
Research Data	Research Data Management	D2.3. Provide research data storage
	FAIR Data	D2.4. Develop an institutional research data repository
	Data Sharing	D2.5. Provide researchers and non-academic staff with RDM tools
	Open Protocols	D2.6. Have a team dedicated to provide advice on RDM and data stewardship
	Open-Source Research Software and Code	D2.7. Implement standards, guidelines, and protocols related to data sharing (e.g., DOI, metadata, Creative Commons licenses) D2.8. Provide researchers with advanced RDM tools (e.g., data anonymization tools, versioning control systems) D2.9. Have a search and discovery service , enabling users to find what research data is available, and where it is located
Open Science Incentives and Rewards	Open Evaluation	D2.10. Evaluate the possibility to embed the new forms of research evaluation in its internal processes for promotion/reward and research evaluation
Open Science Skills and Training Needs	Open Education	D2.11. Provide specific training related to Open Science in all or certain of the areas, or other Open Science aspects
	Citizen Science	D2.12. Give particular focus to early career researchers , providing training to enable them to adopt the OS culture
	Science Outreach and Communication	D2.13. Create units to raise awareness amongst researchers of successful citizen science and support them in the process

Recommendations

Similar to the previous section, the recommendations for Achievers encompass **actions to be taken, desirable actions** in support of OS and relevant **practices and experiences** already presented in the Toolkit's Idea Catalogues.

The actions to take and desirable actions are meant to consolidate the already existing practices and bridge the transition to the Experienter profile. Both types of actions in conjunction with the practices in the Idea Catalogue could guide the partners in the process of the OSAP design and implementation.

ACTIONS TO TAKE	DESIRABLE ACTIONS
Review activity in delivering Open Access publishing options	If appropriate, establish new mechanisms for scholarly publishing based on the good practice identified in EELISA InnoCORE
Appoint an OS Ambassador	In the wake of Plan S, engage with academics to promote transition to OA
Sign publication agreements with OA publishers	Conclude new deals with the publishers named „transformative agreements”
Develop an action plan to support the implementation of OS policy	Reflect on Open Science change processes and incentivization
Review assessment framework in universities	Prepare for participating in opening-up and sharing initiatives Raise awareness and to limit the risk of foreign interference
Review research ethics measures/policies to ensure Open Science issues such as transparency and reproducibility are addressed and explained to Early Career Researchers	
Develop Guidelines to apply EU Regulations regarding Knowledge Safety and Knowledge Security	
Embed Citizen Science into institutional strategy	
Develop tools to assess the extent to which individuals, teams or units integrate Open Science in their daily practice	



IDEA CATALOGUE: EELISA InnoCORE OA Regulations & Initiatives

Click on the tabs below to learn more about members' OA regulations.

FAU

SSSA

ENPC

PSL



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101035811

UPM

BME

SNS

UPB



IDEA CATALOGUE: Subscribe-to-open alternative and transformative agreements

Subscribe-to-Open (S2O) is an alternative, transformative model that aims to transition subscription journals to open access in a fair and sustainable way without Article Processing Charges (APCs). First introduced by [Annual Reviews](#) and later [endorsed by cOAlition S](#), S2O has been embraced by a number of publishers who have come together in the [S2O Community of Practice](#). This innovative model has quickly become an accepted approach for achieving open access and builds on collaborative initiatives such as [SCOAP3](#) and [Knowledge Unlatched](#) (Source: [EDP Sciences](#))

Click on the tabs below to learn more about partners' publishing agreements.

FAU

UPM

SNS



IDEA CATALOGUE: EELISA InnoCORE RDM Policies

Click on the tabs below to learn more about members' RDM policies

FAU

ENPC

UPM



IDEA CATALOGUE: EELISA InnoCORE Learning Courses about OS provided by the partners

Topic	Audience
Open up your research @ITU	PhD students
@SNS Open Science and RDM:10-hour course covering the following: <ul style="list-style-type: none"> • What is Open Science • Open Access and the Funders' strategy • Research Data Management e FAIR Data • How to write a Data Management Plan • How to use the institutional Repository IRIS SNS also organizes every year information webinars on Open Science dedicated to post-doc fellows and researchers 	PhD students
Work in progress to develop a master's programme on OS and RDM @UPB	Master's students
Work in progress to introduce a compulsory Open Science course for all PhD programs @SSSA	PhD students
Research Software & Data Formats in the Humanities & Social Sciences @FAU	NA

Learn more	
Data Management Plans & RDMO @FAU Learn more	NA
Search & reuse research data @FAU Learn more	NA
Open Science and Scientific Integrity @ENPC	PhD students

The Growth Phase and OS Experiencers

Descriptors

The **Growth phase** implies that all of the OS pillars and the respective dimensions have been effectively addressed and consolidated. At this stage, the organisation can assume the role of an OS broker at the consortium level. Conventionally, the OS scores for Experiencers vary from 4,1 to 5 (see Annexes 1-10 for more details) and reflect the state of play at a certain moment in time, not the organisational potential. Whereas the Experiencer profile is the primary or dominant one, an organisation can be an Achiever or even Learner in regards to a limited number of OS dimensions, given the uneven approach of the dimensions (as shown in figures 1-9).

HEIs with the OS Experiencer profile will:

Table 3. Can-do OS Descriptors for Experiencers

Pillars	OS Dimensions	Experiencers
Open Access	Open Access Research to Publications	D3.1. support the move to full Open Access 3.2. Support new forms of scholarly publishing from third parties, such as OpenEdition and Knowledge Unlatched 3.3. Establish new mechanisms for scholarly publishing based on the good practice identified in EELISA
Research Data	Research Data Management	D3.4. Implement Plan S
	FAIR Data	D3.5. Participate in equipment, facilities, and laboratory sharing initiatives
	Data Sharing	D3.6. Collect information about the data archived and published by its research community
	Open Protocols	D3.7. Have access to a 3rd party repository/repository which can interact with the EOSC
	Open-Source Research Software and Code	



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101035811

Pillars	OS Dimensions	Experiencers
Open Science Incentives and Rewards	Open Evaluation	<p>D3.8. Integrate Open Science in its HR and career frameworks as an explicit element in recruitment, performance evaluation and career advancement policies</p> <p>D3.9. Include research data, depositing of research articles in a repository, open research protocols and open-source research software and code as a valuable output in research assessments</p> <p>D3.10. Assess the extent to which individuals, teams or units integrate Open Science in their daily practice</p> <p>D3.11. Incentivise the researchers developing open access activities</p>
Open Science Skills and Training Needs	Open Education	<p>D3.12. Integrate Open Science concepts, thinking, and its practical applications in educational and skills development programmes</p> <p>D3.13. Design micro credentials on open science and its respective dimensions</p> <p>D3.14. Provide training to the OS support staff</p> <p>D3.15. Make OS training mandatory for R1-R4 researchers</p> <p>D1.16. Assess the impact and contributions of citizen science to university's missions</p>
	Citizen Science	
	Science Outreach and Communication	

Recommendations

Similar to the previous two sections, the recommendations for Experiencers encompass **actions to be taken, desirable actions** in support of OS and relevant **practices and experiences** already presented in the Toolkit's Idea Catalogues.

The actions to take and desirable actions are meant to consolidate the already existing practices and open-up some of the resources and practices to the EELISA InnoCORE partners. Both types of actions in conjunction with the practices in the Idea Catalogue could guide the partners in the process of the OSAP design and implementation.

ACTIONS TO TAKE	DESIRABLE ACTIONS
Advocate to decision makers and research funders the best approaches to delivering 100% immediate OA	Implement ways to advocate for and deliver Diamond Open Access
Participate in opening-up and sharing initiatives within the consortium	Show how open source software and related outputs complement Open Access publications and FAIR data
Implement Plan S	Set up an 'overarching' or 'umbrella' Open Access platform that essentially connects the individual repository archives by enabling users (essentially, all Internet users of the world) to search through institutional archives through a single search
Analyse the research assessment criteria in line with the new principles of RRA	Analyse the RRA agreement in order to formulate the option for endorsement and accession to the RRA coalition
Map out and identify all areas of Research Integrity and how Open Science impacts on them	Universities should provide guidance on the (free) use of research data in OA produced in universities by industry (and their possible commercialization) and the generated costs for universities

Adapt appointments, promotion and reward criteria to embrace Citizen Science activities

Assess how citizen scientists can receive training/use university platforms to pursue Citizen Science activity



IDEA CATALOGUE: EELISA InnoCORE disciplinary tailored OS courses

- Open data and big data @UPB;
- Scholarly communication: An introduction @SSSA
- From the traditional paradigm to Open Science @SSSA;
- The Open Access publishing paradigm and FAIR (Open) Data @SSSA;
- Research Data Management @SSSA;
- Research Infrastructures @SSSA;
- the European Open Science Cloud and Open Science practices @SSSA;
- Data sharing policy @FAU;
- GIT & GitLab @FAU;
- data filing concept @FAU;
- metadata & data sharing for computational engineering @FAU;
- legal aspects of data management (sensitive data, copyright, anonymization) for medicine & social sciences @FAU;
- social media data (tools, legal aspects) for educational sciences @FAU;
- Working with IIF & Mirador (for DH / history of arts) @FAU;
- Long-term archiving solutions (medicine) @FAU;
- RDM and research software management (mathematics) @FAU;
- [UPM Seminars](#) @UPM



IDEA CATALOGUE: EELISA InnoCORE CRIS infrastructures

Click on the tabs below to learn more about members' CRIS infrastructures.

UPB

SNS

UPM



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IDEA CATALOGUE: EELISA InnoCORE institutional research data repositories/archives and external recommendations

Click on the tabs below to learn more about members' repositories and archives.

UPM

Recommendation 1

Recommendation 2

Recommendation 3

Recommendation 4

Recommendation 5

Monitoring & Evaluating Progress – OS Indicators

While OS descriptors provide an overview of OS key features, allowing a partner to describe what they can do at a certain point in time, a set of OS indicators can be used to complement the descriptors for monitoring and measuring purposes.

The indicators we propose are based the Open Science Monitor (European Commission. Directorate General for Research and Innovation, 2019). Similar to the descriptors, the indicators are aligned with the four OS pillars: namely Open Access, Research Data, Open Science Incentives and Rewards, Open Science Skills and Training Needs – see Table 4.

To ensure comparability and a common ground across the consortium, the indicators must be **normalised** so that they can be compared and have meaning. Where possible, we focus on proportions rather than counts.

The **contextualisation** of indicators will be necessary in some cases. Monitoring the numbers could not be enough, especially on the consortium level. Case studies or best practices could complement the numbers and encourage other universities to adopt a similar practice. For instance, it is not only relevant to make data available on many platforms but also to demonstrate the relevance of such platforms.

Some overlap of indicators across pillars may occur. For example, we have included an indicator for the number of papers reusing data published by other scientists to illustrate the research data pillar. We also believe that this indicator is relevant for Open Access as well.

Finally, the **source of data** for calculating the indicators is also important. As the descriptors and indicators indicate the characteristics of the HEI's performance with respect to a particular criterion derived from the OS Survey (see Annex 14), the partners can retake the OS Survey on a yearly basis to measure progress both quantitatively and qualitatively. Nevertheless, some of the data can be retrieved from a paid subscription to either Web of Science or Scopus.

Table 4. Alignment of proposed indicators with OS Pillars

Pillars	Indicators
Open Access (OA)	<p><i>I1_{OA}</i> Number of open science events or informative sessions run.</p> <p><i>I2_{OA}</i> Percentage of open access publication in total publications:</p> <ul style="list-style-type: none"> not OA; OA, gold OA, Green OA, Hybrid OA, Bronze OA Not OA % of change /year, OA % change/year <p><i>I3_{OA}</i> Percentage of open access publications by field of Science and Technology</p> <p><i>I4_{OA}</i> % researchers active in experimental peer review</p> <p><i>I5_{OA}</i> Funding for Open Access publishing/year/researcher</p> <p><i>I6_{OA}</i> Number of support staff available/researcher</p> <p><i>I7_{OA}</i> % of researchers that shared data from their last project</p> <p><i>I8_{OA}</i> Types of data usage</p> <p><i>I9_{OA}</i> % of research outputs published on pre-print servers</p>
Research Data (RD)	<p><i>I10_{RD}</i> Number of data repositories</p> <p><i>I11_{RD}</i> Number of repositories with open meta-data</p> <p><i>I12_{RD}</i> % of researchers that share data</p> <p><i>I13_{RD}</i> Amount of data stored in the repositories</p> <p><i>I14_{RD}</i> Open data usage</p> <p><i>I15_{RD}</i> Number of scientific APIs</p> <p><i>I16_{RD}</i> Number of scientists reusing data published by other scientists,</p> <p><i>I17_{RD}</i> Number of papers reusing data published by other scientists</p> <p><i>I18_{RD}</i> % of researchers that are contacted about shared data by type of organisation</p>
Open Science Incentives and Rewards	<p><i>I19_{OSIR}</i> Existence of an updated career framework (yes/no)</p> <p><i>I20_{OSIR}</i> HR Policy and Guidelines for researchers are available on the institutional website (yes/no)</p> <p><i>I21_{OSIR}</i> Share of research assessment criteria relating to open science activities</p> <p><i>I22_{OSIR}</i> Existence of instruments to assess the adoption of OS (yes/no)</p> <p><i>I23_{OSIR}</i> % of researchers incentivised for developing open science activities</p>
Open Science Skills and Training Needs	<p><i>I24_{OE}</i> % of faculty and staff members who have completed training in Open Science</p> <p><i>I25_{OE}</i> Number of open science courses or workshops run.</p> <p><i>I26_{OE}</i> Number of open educational resources, i.e. free and available material (e.g. e-learning material, e-books, videos, animations) that is created and offered by the university</p> <p><i>I27_{OE}</i> Number of free and available on-line courses, e.g. MOOCs (Massive On-line Open Courses) and micro degree courses.</p> <p><i>I28_{OE}</i> Number of programs and courses in open science methods</p> <p><i>I29_{OE}</i> % of faculty staff teaching open science courses, modules or short-term</p> <p><i>I30_{CS}</i> Number of papers co-authored with civil society actors</p>



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Pillars	Indicators
	I31 _{CS} Number of citizen science sites
	32 % researchers in citizen science programs
	I33 _{CS} Number of projects in SciStarter
	I34 _{CS} Number of projects in Zooniverse

Going forward

Case in point: UPB's OS Journey

An OS journey for UPB is discussed in this section for illustrative purposes. The multi-stage framework in Figure 10 is applied with regards to the **Research data** pillar. The tools indicated in Figure 10 are also applied. The **Diagnosis** and **Planning** stages are presented in the format suggested by the OSAP template (see Annex 12). The **Implementation** and **Reassessment** stages are not covered in this preliminary exercise.

1. ORGANISATIONAL PROFILE & DIAGNOSIS

Please provide a very brief description of your organisation in relation to OS.

As the OS scores in Figure 5 showed, UPB has started his journey towards being an **Achiever**. However, it is to be noted that not all the dimensions were evenly developed and in regards to some descriptors UPB is a Learner. For instance, the dimension of *Research Data Management* has a score of 2.3. Being a composite score, the analysis has been funnelled with the aid of the OS Score Matrices. This led us to conclude that UPB needs to strengthen its strategical approach to OS by designing a comprehensive **OS strategy** and appropriate tools and mechanisms to support its implementation. Moreover, as an emergent Achiever, UPB needs to provide infrastructures for research data storage, commitment that has not been fully achieved yet. Therefore, developing an *institutional data repository* is a key action to be included in the OSAP. Another area of improvement relates to the **RDM tools** provided by UPB to its researchers. In line with the recommendations in the D3.2 Guide, UPB will engage in a process of selecting and appointing a **senior manager and a support team to lead Open Science approaches**. In conclusion, the OSAP developed by UPB will focus on scaling-up the practices developed in the Learning phase and developing and consolidating the practices derived from the Achiever Descriptors. UPB will not engage in leapfrogging approaches and will address a limited number of descriptors related to the Experiencer level of proficiency. The activities proposed cover the **2022-2025** time frame.

2. THE CURRENT STATUS OF OS PRACTICE & PROPOSED ACTIONS

Status: to what extent does this organisation meet the following descriptors?	Implementation: ++ = fully implemented + = almost but not fully implemented - = partially implemented -- = insufficiently implemented	Proposed actions and responsible units In case of --, -/+, or +/-, please indicate the actions to be taken	Timing (at least by year's quarter/semester)	Indicator(s) / Target(s)					
Research Data									
LEARNERS									
D1.4. Inform its researchers of and advocate RDM tools that follow FAIR principles	+	UPB constantly organises informative events such as lecturers, conferences, summer schools to inform its academic community about OS and RDM tools. Moreover, a ToT programme dedicated to RDM has been developed under the Erasmus+ Project <i>Open Science and Research Data Management Innovative and Distributed Training Programme</i> (TRAIN RDM) - https://rdmtraininghub.eu/ A course catalogue is to be developed to give access to all academics to courses and information on events on OS.	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">2022</td><td>1st</td></tr> <tr><td>2nd</td></tr> <tr style="background-color: #cccccc;"><td>3rd</td></tr> <tr><td>4th</td></tr> </table>	2022	1st	2nd	3rd	4th	A course catalogue with minimum 2 courses dedicated to OS
2022	1st								
	2nd								
	3rd								
	4th								
D1.5. Advocate the use of standards, guidelines, and protocols such as author identifier systems (e.g., ORCID), publication identifiers (e.g., DOI), Creative Commons (CC) licenses	++	UPB has developed internal monitoring tools to collect information about the publications published by its researchers. The researchers are required to provide a DOI or other identifiers (e.g., WOS number)	<i>Not applicable</i>	UPB will continue the practice.					
D1.6. Provide researchers with a Data management planning tool (DMP tool)	-	UPB currently does not offer to researchers a DMP tool. Users use online tools such as DMPTool.org.							



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Status: to what extent does this organisation meet the following descriptors?	Implementation: ++ = fully implemented + = almost but not fully implemented - = partially implemented -- = insufficiently implemented	Proposed actions and responsible units In case of --, -/+, or +/-, please indicate the actions to be taken	Timing (at least by year's quarter/semester)	Indicator(s) / Target(s)					
D1.7. Identify funding and resources to archive and to publish data	++	UPB has developed the PUBArt Programme supporting researchers to publish in open access publications. Moreover, through the https://www.e-information.ro/ UPB researchers can participate in webinars to learn more about resources and platforms to publish data. Additionally, UPB has successfully applied for national funding to develop its internal repository.	<i>Not applicable</i>	UPB will continue the practice.					
D1.8. Have signed the EOSC Declaration as a statement of commitment at a local level	++	UPB is a Member in EOSC and, as such, has signed the EOSC Declaration. UPB has a deputy member in the EOSC Board.		UPB will continue the practice.					
ACHIEVERS									
D2.3. Provide research data storage	+	UPB operates its own CRIS repository, called CRESCDI, where metadata regarding all research activities are aggregates and reported. In addition, UPB is setting an institutional research data repository based on CKAN, to be integrated in re3data.org.	<table border="1" style="width: 100%; text-align: center;"> <tr><td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">2023</td><td>1st</td></tr> <tr><td>2nd</td></tr> <tr style="background-color: #cccccc;"><td>3rd</td></tr> <tr><td>4th</td></tr> </table>	2023	1st	2nd	3rd	4th	
2023	1st								
	2nd								
	3rd								
	4th								
Develop an institutional research data repository	+	UPB operates its own CRIS repository, called CRESCDI, where metadata regarding all research activities are aggregates and reported. In addition, UPB is setting an institutional research data repository based on CKAN, to be integrated in re3data.org. At this moment, UPB's researchers use public repositories: Zenodo, OSF, re3data.	<table border="1" style="width: 100%; text-align: center;"> <tr><td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">2023</td><td>1st</td></tr> <tr><td>2nd</td></tr> <tr style="background-color: #cccccc;"><td>3rd</td></tr> <tr><td>4th</td></tr> </table>	2023	1st	2nd	3rd	4th	
2023	1st								
	2nd								
	3rd								
	4th								

Status: to what extent does this organisation meet the following descriptors?	Implementation: ++ = fully implemented + = almost but not fully implemented - = partially implemented -- = insufficiently implemented	Proposed actions and responsible units In case of --, -/+, or +/-, please indicate the actions to be taken	Timing (at least by year's quarter/semester)	Indicator(s) / Target(s)					
D2.4. Provide researchers and non-academic staff with RDM tools (e.g.,	+	UPB provides its researchers with several research infrastructures, on engineering domains. Such infrastructures provides access to instruments ranging from high-end microscopes to High-Performance Computers when needed. In addition, UPB runs a GitHub repository and, as a Microsoft partner, makes available to the community software tools for different purposes (from notebooks to office software to data analytics software licenses).	<i>Not applicable</i>	UPB will continue the practice.					
D2.5. Have a team dedicated to provide advice on RDM and data stewardship	-	UPB currently does not have a RDM dedicated team, but it plans to develop a data repository and to train a dedicated team for RDM and data stewardship	<table border="1"> <tr><td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">2023</td><td>1st</td></tr> <tr><td style="background-color: #cccccc;">2nd</td></tr> <tr><td>3rd</td></tr> <tr><td>4th</td></tr> </table>	2023	1st	2nd	3rd	4th	A senior member will be appointed to coordinate the team and will assume the role of OS Ambassador as well.
2023	1st								
	2nd								
	3rd								
	4th								
D2.6. Implement standards, guidelines, and protocols related to data sharing (e.g., DOI, metadata, Creative Commons licenses)	+	UPB is in the process of developing a data repository that will implement as many standards, guidelines and protocols related to data sharing.	<table border="1"> <tr><td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">2023</td><td>1st</td></tr> <tr><td>2nd</td></tr> <tr><td style="background-color: #cccccc;">3rd</td></tr> <tr><td>4th</td></tr> </table>	2023	1st	2nd	3rd	4th	
2023	1st								
	2nd								
	3rd								
	4th								
D2.7. Provide researchers with advanced RDM tools (e.g., data anonymization tools, versioning control systems)	-	A GitHub repository is available for versioning to the entire UPB research community. In addition, services provided by UPB Library and ICT management office include counselling on GDPR/privacy aspects, getting ethics approval, data cleansing.							
D2.8. Have a search and discovery service , enabling users to find what research data is available, and where it is located	-	UPB currently do not have a search and discovery service. Users use free online services such as re3data.org							



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Status: to what extent does this organisation meet the following descriptors?	Implementation: ++ = fully implemented + = almost but not fully implemented - = partially implemented -- = insufficiently implemented	Proposed actions and responsible units In case of --, -/+, or +/-, please indicate the actions to be taken	Timing (at least by year's quarter/semester)	Indicator(s) / Target(s)					
Experiencers									
D3.4. Implement Plan S	--	<i>This descriptor will not be addressed in the next three years.</i>	<i>Not applicable</i>						
D3.5. Participate in equipment, facilities, and laboratory sharing initiatives	--	UPB will engage in mutual activities under the EELISA InnoCORE consortium	<table border="1" style="border-collapse: collapse; text-align: center;"> <tr><td rowspan="4" style="writing-mode: vertical-rl; transform: rotate(180deg);">2023</td><td>1st</td></tr> <tr><td>2nd</td></tr> <tr><td>3rd</td></tr> <tr><td>4th</td></tr> </table>	2023	1st	2nd	3rd	4th	
2023	1st								
	2nd								
	3rd								
	4th								
D3.6. Collect information about the data archived and published by its research community	-	UPB operates its own CRIS repository, called CRESCDI, where metadata regarding all research activities are aggregates and reported. In addition, UPB is setting an institutional research data repository based on CKAN, to be integrated in re3data.org.	<i>Not applicable</i>	UPB will continue the practice.					
D3.7. Have access to a 3rd party repository/repositories which can interact with the EOSC	--	<i>This descriptor will not be addressed in the next three years.</i>	<i>Not applicable</i>						

Mutual activities

Open Science Ambassadors

Going forward, the focus of implementation of the OS process thereby moved to the local universities. That is why it is recommended to nominate an Open Science Ambassador at the level of each university and to create the Group of OS Ambassadors at the EELISA level. The newly formed EELISA Open Science Community (OSC) can be instrumental in the process of nomination and co-operation among OS ambassadors. The Open Science Ambassadors are the way to take this forward, providing institutional leadership for Open Science and working with the WP3 OS representatives and with the OS policy teams/groups involved from each university. The OS Ambassador is not a manager of Open Science or a coordinator, but it is a facilitator, a representative, a spokesperson and a voice for Open Science at the level of the university. This why the university has to nominate the most suitable person for such a role.

Within his/her university, an Open Science Ambassador:

- facilitates the application of the OS recommendations for all directions as proposed by the methodological toolkit and guide

- creates awareness about Open Science.
- shares and multiplies information about Open Science
- takes the initiative to organize symposia or other events around Open Science.

The Open Science Ambassadors Group gathers the OS Ambassadors of EELISA universities and acts as a focus / forum:

- to take stock of the status of actions and initiatives by the EELISA members (progress and challenges),
- to exchange of ideas and identify best practices - drawing on the detailed knowledge and insight of EELISA policy and thematic groups,
- to facilitate the collaboration between EELISA members for identifying possible ways forward - which they are free to choose or otherwise,
- to address new topics that rise (e.g. cross policy group topics) and which require new policies. During the development of the new policy/strategy/ action plans, the Group of Open Science Ambassadors work jointly with the EELISA WP3 representatives, drawing on their detailed knowledge and insight.

The Open Science Ambassadors are in charge of disseminating and mainstreaming Open Science practices across the research communities of their respective universities and EELISA's research communities. Their work is therefore essential for the universities of EELISA Alliance to become an international example of the adoption of Open Science practices in order to:

- grow the Open Science community through collaboration and information sharing
- share perspectives on the EELISA blog and join the online conversation about Open Science
- help provide training for the EELISA and other tools that support reproducible practices
- represent EELISA and each Partner for promoting Open Science practices at meetings and conferences

OS Rewards and Incentives and Reforming Research Assessment (RRA)

In accordance with the OS pillars "Rewards and incentives" and "Next-generation metrics" in WP3/Task 3.4 „Rewarding excellence in Open Science was planned to develop a mechanism to enable, incentivize, measure and reward OS practices: (M20)”: „An incentive mechanism will be used as a pilot to record and acknowledge the training (e.g. credits, certificates of attendance, etc.), to demonstrate the Open Science competencies as part of career development, appraisals or promotions.”

At the time of the proposal, it was thought that this incentive and reward mechanism should propose only those criteria and metric elements that refer to OS and the use of OS practices.

But at end of 2021, a process to reform and transform the research assessment system was launched at the European level involving all research stakeholders at different types of institutions. This process evolved at a fast pace during 2022 and it is now at the stage when all stakeholders should analyse and decide who and how will respond to the actions and documents proposed by the representatives of the European communities involved in this process.

Thus, if initially we set out to think of indicators and measures for their application for assessing research performance through open science to help to:

- move towards open access publishing of scientific publications;
- involve citizens more in science;



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- promote FAIR data;
- store more scientific data on open repositories;
- strengthen transparency and integrity in research;
- inspire policy-makers, research institutions, funding bodies and researchers themselves to use context-appropriate metrics to complement qualitative assessments for monitoring and stimulating development,
- we are now at the stage when the area of reforming the assessment of research at European level has become much wider.

Now the calls are for an assessment system that:

- recognises that openness improves the quality, efficiency and impact of research, and fosters team science;
- reaffirms the need to align what we assess with what we value;
- evaluates research proposals, researchers, research units and research institutions on the basis of their intrinsic merits and impact, rather than on the number of publications and where they are published, promoting qualitative judgement provided by peers, supported by a responsible use of quantitative indicators;
- rewards quality and the various impacts of research;
- ensures that research meets the highest standards of ethics and integrity;
- values the diversity of research activities and outputs such as publications and preprints, data, methods, software, code and patents, as well as their societal impacts and activities related to training, innovation and public engagement.
- uses assessment criteria and processes that respect the variety of research disciplines;
- rewards not only research outputs, but also the appropriate conduct of research, and values good practices, in particular open practices for sharing research results and methodologies whenever possible;
- values collaborative work, as well as cross-disciplinarity and citizen science, when appropriate;
- supports a diversity of researcher profiles and career paths.

Moreover, the evolution of the proposed transformations regarding the reform of the research assessment was very rapid this year, so it reached the stage when the document proposing the principles and directions to follow had already been elaborated and made public (i.e. the Agreement on Reforming Research Assessment). The governance system for the reform of the research assessment at the European level had also been discussed. All universities are invited to meet these challenges.

Thus, each partner within the “coalition of the willing” can now express its own option regarding the acceptance and then application of the principles proposed in the Agreement on Reforming Research Assessment. The alliances of European universities are also invited to express their option.

Therefore, the deliverable to be developed within WP3 should reflect this new vision and possibly integrate what would be applied to support OS within this reform of the research assessment. It should also consider the context in which each university and the Alliance as a whole should express their positions on Reforming Research Assessment and the choose the actions they would take.

Open collaboration challenge

From the very beginning, we advanced the idea that together with the OS directions we follow (i.e. those established by the H 2020 work programme) we would also try to launch some challenges, namely to develop common OS mechanisms. These mechanisms would allow open access to and shared use of the resources held by the alliance through its members. This would open the discussions and approach on Open Collaboration at the level of our Alliance in a context in which certain tools already proposed / developed can already be considered Open Collaboration.

What would OC entail?

Some examples of collaboration and open collaboration between partners can be given at EELISA level:

Open collaboration is an umbrella concept that embraces: open source hardware, open code and reproducibility cases. The major drivers present in the cases related to open collaboration show the relevance of a user-centric and supplier approach behind the initiative and the support from community and institutions.

Open scientific collaboration refers to the forms of collaboration in the course of the scientific process that go beyond open data and open publications. Measuring open scientific collaboration includes measuring of different type of outputs such as open code, open hardware, the use of collaborative platforms between scientists and the "citizen-science" phenomenon. As such, according to [EC](#) there are several indicators linked to the raise of Open Collaboration activities for research and innovation: Application Programming Interfaces (APIs), journals' policies on open code, and number of citizen science projects.

The term Open Research, which means sharing economy applied to research. Especially when talking about publicly funded research, Open Research says that not every researcher should need to obtain the equipment, instrumentation, data, or even personnel to conduct research **when those resources could be shared amongst them**.

In principles, Open Collaboration is encouraged by several transparency- and inclusion-mechanisms for doing science. For example, good researchers should write about their research on a regular basis as the research is conducted to gain insights on the data and to maintain a log of activities. Open laboratory notebooks are thus accumulated and published online as soon as possible to encourage research collaboration. Researchers can use open research platforms, such as the [Open Science Framework](#) (OSF), to accomplish this.

Platforms like OSF can be used to conduct research; collaborate with partners; share data, code, notes, and other files; and publish the resulting articles and data in an openly accessible location.

Besides research publication, Open Science Collaboration encourages the way Academia and Private companies work together. Open data partnerships provide universal and free access to research outputs, which might be perceived in contrast not only to commercial emphasis on intellectual property rights, but even to classic open science in which only the final outputs are shared. Research partnerships are innovation-based relationships focusing on joint research and development (R&D) activities. Companies engage in research partnerships because they allow investments in the creation of new knowledge to be shared across multiple participants.

Some examples of collaboration and open collaboration between partners can be given at EELISA level:

Open Scientific Collaboration is at the core of the EELISA project. The main instrument in EELISA is the formation of EELISA Communities. Each community is defined by a mission, challenges, the people/organization, activities, and evaluation criteria. All of them offer the possibility to gain EELISA Credentials – a passport in which student collects the evidence or "badges" of his/her contribution to social challenge solving processes.

On the technical side, as an instrument for Open Scientific Collaboration, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU) developed a platform that fosters and support an interaction between actors interested in proposing and working towards the realisation of EELISA Communities.

In EELISA InnoCORE, partners developed another interesting instrument called the proto cluster. More exactly, these proto-clusters are research-led communities fostering Open Collaboration between researchers and aiming to solve challenges set by the EELISA societal-driven communities. Thus, researchers form such proto-clusters and propose together funding proposals and develop common, more-often interdisciplinary-led, R & I solutions. On the technical side, the research-based proto-cluster Collaborative formations will be supported also by the platform developed by FAU in EELISA.



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In EELISA Unfolds partners identify and promote the best entrepreneurial mechanisms to commercialise the research output of universities (produced in EELISA mainly, but not alone). Partners in EELISA Unfolds discuss a common entrepreneurial approach to be implemented following local constraints (based on a "think globally, act locally" design), where the instruments (accelerators, innovation hubs, etc.) and stakeholders (e.g., financing parties) are commonly used in Open Collaborations between universities. For example, in the Innovation Hackathon organised by University POLITEHNICA of Bucharest can participate teams from all around Europe, the prize consists in training opportunities offered by Univ. of Pisa, and the business incubator can benefit from seats offered by Budapest University of Technology and Economics (BEM), to give an example. The end result is an Open Collaborative effort to foster and encourage entrepreneurial inter-state initiatives all around Europe, an idea that slingshots business ideas directly to EU Markets otherwise not easily accessible.

Finally, it presents an example of Co-Design / Co-Creation initiative at UPB. To better support the collaboration between Companies (private entities) and Academia (research-led groups), UPB developed a platform (<https://diploma.crescdi.pub.ro/>) where companies come officially close to the university, They can propose internships to students, they can externalise ideas for students to work on during their Bachelor and Master thesis development. The platform acts like a marketplace for ideas, companies can make proposals to students that can further apply and negotiate the position and terms for accomplishment. But students or researchers can propose ideas in the collaboration with the industry. For example, a PhD thesis could be proposed in conjunction with a company. A researcher interested in a particular subject could easily find the consortium of companies willing to work together on the idea. And, of course, companies can export R & I activities to the most appropriate group of researchers able to accomplish the tasks.

Thus, the IT platforms we propose within EELISA on research areas and competencies, on the shared use of infrastructure, on clusters, on course catalogues, etc., can be considered as offering open practices for access to and shared use of these resources. Would we like to move forward with the development of other Open collaboration facilities?

Next steps

This section proposes concrete further steps to be taken at both institutional and consortium levels (see Table 5).

As argued in the D3.1 Open Science Methodological Toolkit and in the previous sections of this document, a **common strategic approach** is needed. Consequently, we propose that each partner engage in the development or update of an **Action Plan** following the proposed template. This activity will not only lead the consortium to creating a common pathway towards OS but will also contribute to a validation of the descriptors and indicators proposed.

Taking into consideration the level of OS organisational proficiency of the members (most of them are Achievers or even Experiencers), we feel that we should communicate our common vision and intended actions by launching a **manifesto**.

Table 5. Short-term actions

Institutional level	Consortium level
Develop/Update existing strategies or action plans to integrate the four pillars and the respective descriptors and indicators following the proposed template <i>Deadline: November, 2022</i>	Monitor the implementation of the Action Plans <i>Start date: December, 2022</i>

Start the implementation of the Action Plans <i>Deadline: December, 2022</i>	Publish a manifesto to make public EELISA InnoCORE's policy and aims towards a common OS approach <i>Deadline: January, 2023</i>
	Organize an event (e.g., a forum) to disseminate the manifesto and engage the partners in mutual learning activities (based on the Action Plans) <i>Deadline: April, 2023</i>

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101035811

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Annexes

Annex 1: OS Score Matrix for Open Access Research to Publications

Question	14	15	16	17	18	19	20	21	22		
Institution:	Has your institution defined a specific target for Open Access (OA) to research publications and a timeline for achieving this target?	Does your institution's OA policy exclusively favor OA journals (in other words, are OA publications in hybrid journals accepted as part	Does your institution monitor the number of publications deposited by researchers in the institution's own or shared repository?	Does your institution monitor the number of publications authored by researchers from your institution and published in open access journals (excluding hybrid	Does your institution monitor the cost of publications authored by researchers from your institution and published in open access journals?	Is your institution preparing for the implementation of Plan S?	Has your institution participated directly and/or supported non-commercial OA publishing ?	Does your institution have any signed publication agreements with OA publishers?	Can you indicate the specifics of the OA signed publishing agreement your institution has put in place? Please comment – free text-		
Partner 1	No	No	Yes	Yes	Yes	No	No	Yes		Points	Level
SCORE	0	0	1	1	1	0	0	1	0	4	2,3
Partner 2	Yes	No	Yes	No	No	No	Yes	Yes	The agreements was signed under the ANKOS		
SCORE	1	0	1	0	0	0	1	1	1	5	2,8
Partner 3	Yes	No	Yes	No	Yes	No	Yes	Yes	MDPI, CAMBRIDGE UNIVERSITY PRESS, ELSEVIER		
SCORE	1	0	1	0	1	0	1	1	1	6	3,4
Partner 4	Yes	No	Yes	Yes	Yes	No	No	No			
SCORE	1	0	1	1	1	0	0	0	0	4	2,3
Partner 5	Yes	Yes	Yes	Yes	Yes	Yes, We intend to apply Plan	Yes	No	No, we didn't sign a specific		
SCORE	1	1	1	1	1	0	1	0	0	6	3,4
Partner 6	No	Yes	Yes	Yes	Yes	Yes	No	No			
SCORE	0	1	1	1	1	1	0	0	0	5	2,8
Partner 7	No	No	Yes	Yes	Yes	No	Yes	Yes	Cf. https://ub.fau.de/e		
SCORE	0	0	1	1	1	0	1	1	0	5	2,8
Partner 8	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Our institution: Subscribe 2 Open with FDP Science		
SCORE	1	1	1	0	1	1	0	1	0	6	3,4
Partner 9	No	No	Yes	No	No	No	No	No			
SCORE	0	0	1	0	0	0	0	0	0	1	0,6



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Annex 2: OS Score Matrix for *Research Data Management*

Question	23	24	25	26	27	28	29	30	31	33	35	Points	Level
Institution:	Has your institution a dedicated RDM policy?	Does your institution provide research data storage?	What are the main challenges in hosting research data produced in technical/engineering disciplines on your institutional	Have you identified technical solutions for those challenges (e.g. external services)? Which ones?	Have you an institutional Current Research Information Systems - CRIS?	Does your institution provides an institutional research data repository/archive?	What are the main challenges for hosting research data produced in technical/engineering disciplines in your research data repository/archive?	If your institution recommends specific technical/engineering-oriented research data repositories/archives, please detail which ones.	Which RDM tools are provided by your institution? You can select more than one option.	Are there any specialized RDM tools/infrastructure provided to researchers working on technical/engineering disciplines by your institution?	Does your institution have a dedicated team to provide advice on RDM?		
Partner 1	under developme	No	not applicable	Not applicable	No	No	Not applicable	Not applicable	None of these	No	-		
SCORE	1	0	0	0	0	0	0	0	0	0	0	1	0,5
Partner 2	No	Data storage for	Not applicable	Not applicable	No	No	Not applicable	Not applicable	Data managers, High-Performance	No tool/infrastructure provided to	Librarians		
SCORE	0	1	0	0	0	0	0	0	1	0	1	3	1,4
Partner 3	Yes	Yes	Data silos in hybrid formats	We are getting up a	Yes	Yes	The process of publishing data in	e-GienciaDatos > https://datos.zenodo.org	DMP tool	High-Performance	Librarians		
SCORE	1	1	1	1	1	1	1	1	1	1	1	11	5
Partner 4	No	Yes	- high costs for infrastructures		Yes	No	- high costs for infrastructures		None of these	No			
SCORE	0	1	1	0	1	0	0	1	0	0	0	4	1,9
Partner 5	We are during the	We are developing a	Not applicable	Not applicable	Yes	No	Our resoa	Not applicable	Not applicable	High-Performance Computers			
SCORE	0	0	0	0	1	0	1	0	0	0	0	2	1
Partner 6	No	Not the Institution	Not applicable	Not applicable	No	No	Not applicable	Dropbox, OneDrive	None of these	No			
SCORE	0	1	0	0	0	0	0	1	0	0	0	2	1
Partner 7	Yes (please	Yes	- data volume - access	Except for data	Yes	Yes	- data volume - handling	No general recommendations	DM P, Elec High V, DM P	No	Librarians		
SCORE	1	1	1	0	1	1	1	0	1	0	1	8	3,7
Partner 8	Yes (please	No	Not applicable	Not applicable	No	No	Not applicable	Zenodo, Mendeley Data, Research	Data managers, High-Performance	No	Librarians		
SCORE	1	0	0	0	0	0	0	1	1	0	1	4	1,9
Partner 9	No	No	Multidisciplinarity of PSI		No	No	The lack of human resources and skills	Zenodo	None of these	No	Librarians		
SCORE	0	0	1	0	0	0	0	1	0	0	0	3	1,4

Annex 3: OS Score Matrix for FAIR Data

Question	7	8	9	11	12	37	41	45	46	51		
Institution:	Does your institution have a policy on Open Science?	If there is a publicly available version of the OS policy of your institution, please	(Only if you answer with a) or b) at Q7) If your institution has or is currently developing a policy on Open Science, this policy includes which of the followings aspects?	Which of the following factors has been primarily responsible for your institution's transition towards open science?	From the perspective of your institution, what are the main barriers at the institutional level in the transition to open science?	Does your institution provide training tailored to technical/engineering or other disciplines?	What type of support does your institution provide to researchers to make their research publications available in open access (both through repositories and open access publishing)?	Does your institution provide incentives for researchers developing open science activities	Which of the following open science elements are part of your university's approach to academic assessment	Please indicate below the level of availability in your institution of different skills needed to further develop open science activities:		
Partner 1	No, but we are developing a policy		The future of scholarly publishing, FAIR data	National policies or guidelines on Open Science	limited awareness at the institutional level	No	Training for researchers (including doctoral candidates). Developing	No	Open access publishing of research articles	Support staff with knowledge of national and European policies	Points	Level
SCORE	1	0	1	1	1	0	1	0	1	1	7	3,5
Partner 2	No, but we are developing a policy		The future of scholarly publishing, FAIR data	EU policies or guidelines on Open Science	limited awareness at the institutional level	Don't know	Training for researchers (including doctoral candidates). Institutional	No	None of these elements are part of our	Support staff with knowledge of national and European policies		
SCORE	1	0	1	1	1	0	1	0	0	1	6	3
Partner 3	No	At this moment we have the	The future of scholarly publishing, FAIR data	EU policies or guidelines on Open Science	Different disciplinary practices	Yes	Training for researchers (including doctoral candidates). Institutional	No	None of these elements are part of our	Legal skills (e.g., knowledge on copyright, licensing)		
SCORE	0	1	1	1	1	1	1	0	0	1	7	3,5
Partner 4	Yes	https://www.sns.it/sites/default/files	The future of scholarly publishing, FAIR data	EU policies or guidelines on Open Science	Concerns over the legal framework (e.g. data)	No	Training for researchers (including doctoral candidates). Institutional	Yes	Depositing of research articles in a repository	Support staff with knowledge of national and European policies		
SCORE	1	1	1	1	1	0	1	1	1	1	9	4,5
Partner 5	No, but we are developing a policy		The future of scholarly publishing, FAIR data	National policies or guidelines on Open Science	Resistance to making data available or to	Yes	Training for researchers (including doctoral candidates). Linkages to	No	Depositing of research articles in a repository	Technical skills in the area of e-infrastructure (e.g.		
SCORE	1	0	1	1	1	1	1	0	1	1	8	4
Partner 6	Yes	https://www.santanna-npa.it/it/tec	The future of scholarly publishing, FAIR data	EU policies or guidelines on Open Science	limited awareness at the institutional level	Yes	Training for researchers (including doctoral candidates). Institutional	Yes	None of these elements are part of our	Support staff with knowledge of national and European policies		
SCORE	1	1	1	1	1	1	1	1	0	1	9	4,5
Partner 7	Yes	https://doi.org/10.5281/zenodo.5149605	The future of scholarly publishing, FAIR data	National policies or guidelines on Open Science	Concerns over the legal framework (e.g. data)	Yes	Training for researchers (including doctoral candidates). Institutional	No	None of these elements are part of our	Support staff with knowledge of national and European policies		
SCORE	1	1	1	1	1	1	1	0	0	1	8	4
Partner 8	Yes	https://esp.acocherche.uw.ac.be/	The future of scholarly publishing, FAIR data	National policies or guidelines on Open Science	Concerns over the legal framework (e.g. data)	No	Training for researchers (including doctoral candidates)	Yes	None of these elements are part of our	Support staff with knowledge of national and European policies		
SCORE	1	1	1	1	1	0	1	1	0	1	8	4
Partner 9	Yes	https://psl.eu/sites/default/files/	The future of scholarly publishing, FAIR data	National policies or guidelines on Open Science	Concerns over the legal framework (e.g. data)	Yes	Training for researchers (including doctoral candidates)	No	Depositing of research articles in a repository	Support staff with knowledge of national and European policies		
SCORE	1	1	1	1	1	1	1	0	1	1	9	4,5



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101035811

Annex 4: OS Score Matrix for Data Sharing

Question	7	11	19	41							57		Points	Level
Institution:	Does your institution have a policy on Open Science?	Which of the following factors has been primarily responsible for your institution's transition towards open science?	Is your institution preparing for the implementation of Plan S?	What type of support does your institution provide to researchers to make their research publications available in open access (both through repositories and open access publishing)?							Does your institution participate in equipment, facilities, and laboratory sharing initiatives?			
Partner 1	No, but we are developing a policy	National policies or guidelines on Open Science (including open access)	No	Training for researchers (including doctoral candidates)	Developing open access	Linkages to career evaluation and	Funding for publishing in open access journals	awareness-raising	Yes					
SCORE	1	1	0	1							1	4	4	
Partner 2	No, but we are developing a policy	EU policies or guidelines on Open Science (including open access)	No	Training for researchers (including doctoral candidates)	Institutional website(s) on open access to research publications	Establishment of specific services (e.g., helpdesks) for researchers	We have transformative	Yes	In ITU we have an integrated					
SCORE	1	1	0	1							1	4	4	
Partner 3	No	EU policies or guidelines on Open Science (including open access)	No	Training for researchers (including doctoral candidates)	Institutional website(s)	Developing open research strategy and	Funding for publishing in open access	Guidelines provided	Establishment of specific services (e.g.,	Yes				
SCORE	0	1	0	1							1	3	3	
Partner 4	Yes	EU policies or guidelines on Open Science (including open access)	No	Training for researchers (including doctoral candidates)	Institutional website(s) on open access to research publications	Facilitating administrative reporting of	Funding for publishing in open access journals	Guidelines provided	Establishment of specific services (e.g.,	Yes	See above: WPA activities in			
SCORE	1	1	0	1							1	4	4	
Partner 5	No, but we are developing a policy	EU policies or guidelines on Open Science (including open access)	Yes	Training for researchers (including doctoral candidates)	Linkages to career evaluation and	Facilitating administrative reporting of	Funding for publishing in open access journals (APCs)	Yes	EOSC CERN DUMNA EU-ND					
SCORE	1	1	1	1							1	5	5	
Partner 6	No, but we are developing a policy	EU policies or guidelines on Open Science (including open access)	Yes	Training for researchers (including doctoral candidates)	Institutional website(s)		Funding for publishing in open access journals			No				
SCORE	1	1	1	1							0	4	4	
Partner 7	Yes	EU policies or guidelines on Open Science (including open access)	No	Training for researchers (including doctoral candidates)	Institutional website(s)	Developing open access	Facilitating administrative reporting of	Funding for publishing in open access journals	Guidelines provided	Establishment of specific services (e.g.,	Yes			
SCORE	1	1	0	1							1	4	4	
Partner 8	Yes	EU policies or guidelines on Open Science (including open access)	Yes	Training for researchers (including doctoral candidates)	Institutional website(s)	Developing open access			Guidelines provided	Establishment of specific services (e.g.,	No			
SCORE	1	1	1	1							0	4	4	
Partner 9	Yes	EU policies or guidelines on Open Science (including open access)	No	Training for researchers (including doctoral candidates)	Institutional website(s)	Developing open access			Guidelines provided	Establishment of specific services (e.g.,	Yes			
SCORE	1	1	0	1							1	4	4	

Annex 5: OS Score Matrix for Open Protocols

Question	36											46				
Institution:	Which standards, guidelines, and protocols are used in your institution's own or shared repositories? (Tick all that apply)											Which of the following open science elements are part of your university's approach to academic assessment?				
Partner 1	no data repository currently, just publication repository											Depositing of research articles in a repository		Points	Level	
SCORE	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0,5
Partner 2			Dublin Core		ORCID integration	Machine	Creative Commons		Harvesting of	REST API	OPENAI RE-					
SCORE	0	0	1	0	1	1	1	0	1	1	1	0	0	0	7	3
Partner 3	Assignment of DOIs	Disciplinary	Dublin Core	DataCite	ORCID integration		Creative Commons		Harvesting of		OPENAI RE-					
SCORE	1	1	1	1	1	0	1	0	1	0	1	0	0	0	9	3,8
Partner 4	Assignment of DOIs		Dublin Core		ORCID integration		Creative Commons		Harvesting of		OPENAI RE-	Depositing of research				
SCORE	1	0	1	0	1	0	1	0	1	0	1	1	0	0	6	2,6
Partner 5	Assignment of DOIs	Disciplinary	Dublin Core	DataCite	ORCID integration	Machine	Creative Commons	COUNTER-		REST API	OPENAI RE-	Depositing of research				
SCORE	1	1	1	1	1	1	1	1	0	1	1	1	0	0	10	4,2
Partner 6	Assignment of DOIs				ORCID integration		Creative Commons		Harvesting of		OPENAI RE-					
SCORE	1	0	0	0	1	0	1	0	1	0	1	0	0	0	5	2,1
Partner 7	Assignment of DOIs	Disciplinary	Dublin Core	DataCite	ORCID integration	Machine	Creative Commons		Harvesting of	REST API	OPENAI RE-					
SCORE	1	1	1	1	1	1	1	0	1	1	1	0	0	0	10	4,2
Partner 8	Assignment of DOIs															
SCORE	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0,5
Partner 9	Assignment of DOIs		Dublin Core		ORCID integration		Creative Commons				OPENAI RE-	Depositing of research				
SCORE	1	0	1	0	1	0	1	0	0	0	1	1	0	0	5	2,1



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101035811

Annex 6: OS Score Matrix for Open-Source Research Software

Question	31	32	33	34	46	51										Points	Level	
Institution:	Which RDM tools are provided by your institution? You can select more than one option.	If you checked the boxes for DMP tool, ELNs, Versioning control system, and/or Data anonymization tool in the previous question, please	Are there any specialized RDM tools/infrastructure provided to researchers working on technical/engineering disciplines by your	If Yes, which ones? Please provide your answer as a list and the links, if possible.	Which of the following open science elements are part of your university's approach to academic assessment?	Please indicate below the level of availability in your institution of different skills needed to further develop open science activities:												
Partner 1	None of these	Not applicable	No		Depositing of research articles in a repository	Support staff with knowledge of national and European policies	Support staff to provide advice to researchers on technical, occupational, copyright, licensing	Legal skills (e.g., knowledge on										
SCORE	1	0	0	0	0	1										2	1,7	
Partner 2	Data management planning tool (DMP tool)	Microsoft data management tool (Azura) - Yes	No	No tool/infrastructure	Not applicable		Support staff with knowledge of national and European policies	Legal skills (e.g., knowledge on copyright, licensing, data privacy)	Technical staff with skills in the area of data management (e.g. data									
SCORE	1	1	0	0	0	1										3	2,5	
Partner 3	Data management planning tool (DMP tool)	-Magerit-3: https://www.cesvima.com/en/learning/how-to-use-magerit-3/	Yes	Usually	e-CienciaDatos, a data repository			Legal skills (e.g., knowledge on copyright, licensing, data privacy)	Technical staff with skills in the area of data management (e.g. data	Researcher's skills in the area of data management (e.g. data	Researcher's skills in the area of data management (e.g. data	Researcher's skills in the area of data management (e.g. data						
SCORE	1	1	1		0	0										3	2,5	
Partner 4		none of these	No		Depositing of research articles in a repository	Support staff with knowledge of national and European policies	Support staff to provide advice to researchers on technical, occupational, copyright, licensing	Legal skills (e.g., knowledge on	Technical staff with skills in the area of data management (e.g. data	Researcher's skills in the area of data management (e.g. data	Researcher's skills in the area of data management (e.g. data	Researcher's skills in the area of data management (e.g. data						
SCORE	0	0	0	0	0	1										1	0,9	
Partner 5		Not applicable	No		Not applicable	Depositing of research articles in a repository			Technical staff with skills in the area of data management (e.g. data	Researcher's skills in the area of data management (e.g. data	Researcher's skills in the area of data management (e.g. data	Researcher's skills in the area of data management (e.g. data						
SCORE	1	0	0	0	0	0										1	0,9	
Partner 6		Not applicable	No		Not applicable	Support staff with knowledge of national and European policies	Support staff to provide advice to researchers on technical, occupational, copyright, licensing	Legal skills (e.g., knowledge on	Technical staff with skills in the area of data management (e.g. data	Researcher's skills in the area of data management (e.g. data	Researcher's skills in the area of data management (e.g. data	Researcher's skills in the area of data management (e.g. data						
SCORE	0	0	0	0	0	1										1	0,9	
Partner 7	Data management planning tool	E - DMP tool: RDMO - version control system I ELN: openBIS - version control system	No			Support staff with knowledge of national and European policies	Support staff to provide advice to researchers on technical, occupational, copyright, licensing	Legal skills (e.g., knowledge on	Technical staff with skills in the area of data management (e.g. data	Researcher's skills in the area of data management (e.g. data	Researcher's skills in the area of data management (e.g. data	Researcher's skills in the area of data management (e.g. data						
SCORE	1	1	0	0	0	1										3	2,5	
Partner 8	Data management planning tool	DMP Online (DMP Opidor instance) Citlab	No			Support staff with knowledge of national and European policies	Support staff to provide advice to researchers on technical, occupational, copyright, licensing	Legal skills (e.g., knowledge on	Technical staff with skills in the area of data management (e.g. data	Researcher's skills in the area of data management (e.g. data	Researcher's skills in the area of data management (e.g. data	Researcher's skills in the area of data management (e.g. data						
SCORE	1	1	0	0	0	1										3	2,5	
Partner 9		Depending on discipline	No		Depositing of research articles in a repository	Support staff with knowledge of national and European policies	Support staff to provide advice to researchers on technical, occupational, copyright, licensing	Legal skills (e.g., knowledge on	Technical staff with skills in the area of data management (e.g. data	Researcher's skills in the area of data management (e.g. data	Researcher's skills in the area of data management (e.g. data	Researcher's skills in the area of data management (e.g. data						
SCORE	0	1	0	0	0	1										2	1,7	

Annex 7: OS Score Matrix for Open Evaluation

Question	37							42	46		Points	Level
Name of the Institution:	Does your institution provide training related to Open Science? (Thick all that apply)							What type of support does your institution provide to researchers interested in other open science activities	Which of the following open science elements are part of your university's approach to academic assessment?			
Partner 1	Research publishing and dissemination (Open Access, pre-prints, peer review)			Communicating science to the public (Different audiences, practical)	Involving the general public	Open science in Horizon Europe		training, proposal writing support, seminars	Depositing of research articles in a repository			
SCORE	1							1	0		2	2
Partner 2			Research publishing and	Collaborating and networking								
SCORE	1							0	0		1	2
Partner 3	Research and data management (Data storage)	Research publishing and dissemination	Research publishing and dissemination	Collaborating and networking (How to improve)	Communicating science	Involving the general public		-Open education: Infrastructure and Technical Support -Communication: Staff (Unidad de Cultura Científica, Científica)				
SCORE	1							1	0		2	2
Partner 4	Research and data management (Data storage)		Research publishing and dissemination					Staff support through Research Assessment and Open Science Office and Communication Office - Annual training	Depositing of research articles in a repository			
SCORE	1							1	0		2	2
Partner 5			Research publishing and dissemination	Collaborating and networking (How to improve)		Involving the general public		Infrastructure and specific services for open education.	Depositing of research articles in a repository			
SCORE	1							1	0		2	2
Partner 6	Research and data management (Data storage)		Research publishing and dissemination		Communicating science			training and dedicated support				
SCORE	1							1	0		2	2
Partner 7	Research and data management (Data storage)	Research publishing and dissemination	Research publishing and dissemination		Communicating science			- OER platform: www.studon.fau.de/oer				
SCORE	1							1	0		2	2
Partner 8	Research and data management (Data storage)	Research publishing and dissemination	Research publishing and dissemination		Communicating science	Involving the general public		For citizen science: an oncoming Web Magazine.				
SCORE	1							1	0		2	2
Partner 9	Research and data management (Data storage)	Research publishing and dissemination	Research publishing and dissemination					Staff support	Depositing of research articles in a repository			
SCORE	1							1	0		2	2



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101035811

Annex 8: OS Score Matrix for Open Education

	7	9		37				38	45		46	51					53				
Institution:	Does your institution have a policy on Open Science?	(Only if you answer with a) or b) at Q7) If your institution has or is currently developing a policy on Open Science.		Does your institution provide training related to Open Science? (Thick all that apply)				Does your institution provide training tailored	Does your institution provide incentives for researchers	Which of the following open science elements		Please indicate below the level of availability in your institution of different skills needed to further develop open science activities:					Are you aware of initiatives related to Open Education at your				
Partner 1	No, but we are developing a policy	The future of scholarly publishing	FAIR data	Research publishing and dissemination (Open Access, pre-prints, peer review)		Communicating science to the public	Involving the general public	No	No	Depositing of research articles in a repository		Support staff with knowledge of national	Support staff to provide advice to	Legal skills (e.g., knowledge on copyright,	Researchers' skills on open education	Yes		Points	Level		
SCORE	1	1		1				0	0	0		1					1		5	3,2	
Partner 2	No, but we are developing a	The future of scholarly publishing	FAIR data	Research publishing and dissemination (Open Access, pre-		Collaborating and networking (How to improve		Don't know	No			Support staff with knowledge		Legal skills (e.g.,	Technical staff with skills in the area of data management	Yes	ITU has Open				
SCORE	1	1		1				0	0	0		1					1		5	3,2	
Partner 3	No	The future of scholarly publishing	FAIR data	Research and data management	Research publishing and dissemination	Collaborating and networking	Involving the general public	Yes	No			Legal skills (e.g., knowledge on copyright, licensing, data privacy, data protection)			Technical staff skills	Researchers' skills	Yes				
SCORE	1	1		1				1	0	0		1					1		6	3,8	
Partner 4	Yes	The future of scholarly publishing		Research and data management (Data storage, sharing,		Research publishing and dissemination (Open Access, pre-		No	Yes	Starting from 2022	Depositing of research articles in a	Support staff with knowledge	Support staff to provide	Legal skills (e.g.,			Yes	SNS offers			
SCORE	1	1		1				0	1		0		1					1		6	3,8
Partner 5	No, but we are developing a	The future of scholarly publishing	FAIR data	Research publishing and dissemination (Open Access, pre-		Collaborating and networking	Involving the general public	Yes	No	Not yet	Depositing of research articles in a	Technical skills in the area of e-infrastructures (e.g., IT experts)			Researchers' skills	Yes					
SCORE	1	1		1				1	0	0		1					1		6	3,8	
Partner 6	No, but we are developing a	The future of scholarly publishing	FAIR data	Research and data management	Research publishing and dissemination	Collaborating and networking	Involving the general public	Yes	Yes	Only some		Support staff with knowledge	Support staff to provide	Legal skills (e.g.,	Technical staff skills	Researchers' skills	No				
SCORE	1	1		1				1	1	0		1					0		6	3,8	
Partner 7	Yes	The future of scholarly publishing	FAIR data	Research and data management	Research publishing and dissemination	Collaborating and networking	Involving the general public	Yes	No			Support staff with knowledge	Support staff to provide	Legal skills (e.g.,	Technical staff skills	Researchers' skills	Yes				
SCORE	1	1		1				1	0			1					1		6	3,8	
Partner 8	Yes	The future of scholarly publishing	FAIR data	Research and data management	Research publishing and dissemination	Collaborating and networking	Involving the general public	No	Yes	Custom Open Science		Support staff with knowledge	Support staff to provide	Legal skills (e.g.,	Technical staff skills	Researchers' skills	No				
SCORE	1	1		1				0	1			1					0		5	3,2	
Partner 9	Yes	The future of scholarly publishing	FAIR data	Research and data management	Research publishing and dissemination	Collaborating and networking	Involving the general public	Yes	No		Depositing of research articles in a	Support staff with knowledge	Support staff to provide	Legal skills (e.g.,	Technical staff with skills in	Researchers' skills	No				
SCORE	1	1		1				1	0	0		1					0		5	3,2	

Annex 9: OS Score Matrix for Citizen Science

Question	7	9		37				45		46		52		61			
Institution:	Does your institution have a policy on Open Science?	(Only if you answer with a) or b) at Q7)		Does your institution provide training related to Open Science? (Thick all that apply)				Does your institution provide incentives for researchers developing open science activities		Which of the following open science elements are part of your university's approach to academic assessment?		Are you aware of initiatives related to Citizen Science at your university?		What type of funding sources are used in your institution for supporting the following open science areas?			
Partner 1	No, but we are developing a policy	The future of scholarly publishing	Citizen science	Research publishing and dissemination (Open Access, pre-prints, peer review), Communicating science to the public (Different audiences, practical guides to				No		Depositing of research articles in a repository	Citizen science	No		Open access to research publications	Citizen science	Points	Level
SCORE	1	1		1				0		1		0		1		5	3,6
Partner 2	No, but we are developing a policy	The future of scholarly publishing		Research publishing and dissemination (Open Access, pre-prints, peer review), Collaborating and networking (How to improve collaboration through Open Science)				No		None of these elements are part of our approach to career assessment		No					
SCORE	1	0		1				0		0		0		1		3	2,2
Partner 3	No	The future of scholarly publishing	Citizen science	Research and data management (Data storage, sharing, FAIR - "Findable, Accessible, Interoperable, and Reusable" approaches)				No				None of these		Open access to research publications	Citizen science		
SCORE	0	1		1				0		0		1		1		4	2,9
Partner 4	Yes	The future of scholarly publishing		Research and data management (Data storage, sharing, FAIR - "Findable, Accessible, Interoperable, and Reusable" approaches)				Yes	Starting from 2022	Depositing of research articles in a repository		Yes		Open access to research publications	Citizen science		
SCORE	1	0		1				1		0		1		1		5	3,6
Partner 5	No, but we are developing a policy	The future of scholarly publishing	Citizen science	Research publishing and dissemination (Open Access, pre-prints, peer review)				No	Not yet	Depositing of research articles in a repository		No		Open access to research publications	Citizen science		
SCORE	1	1		1				0		0		0		1		4	2,9
Partner 6	No, but we are developing a policy	The future of scholarly publishing		Research and data management	Research publishing and dissemination	Communicating science	Yes	Only some Institutes			None of these		Open access to research publications				
SCORE	1	0		1			1		0		0		1		4	2,9	
Partner 7	Yes	The future of scholarly publishing	Citizen science	Research and data management	Research publishing and dissemination	Communicating science	No				None of these		Open access to research publications				
SCORE	1	1		1			0		0		1		1		5	3,6	
Partner 8	Yes	The future of scholarly publishing	Citizen science	Research and data management	Research publishing and dissemination	Communicating science	Yes	Custom Open Science			None of these		Open access to research publications				
SCORE	1	1		1			1		0		1		1		6	4,3	
Partner 9	Yes	The future of scholarly publishing	Citizen science	Research and data management	Research publishing and dissemination	Communicating science	No		Depositing of research articles in a repository	Citizen science	Yes			Citizen science			
SCORE	1	1		1			0		1		1		1		6	4,3	



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101035811

Annex 10: OS Score Matrix for Science Outreach and Communication

Question	11						42	46			51		61			
Institution:	Which of the following factors has been primarily responsible for your institution's transition towards open science?						What type of support does your institution provide to researchers?	Which of the following open science elements are part of your university's approach to academic assessment?			Please indicate below the level of availability in your institution of different skills needed to further develop open science activities:		What type of funding sources are used in your institution for supporting the following open science activities:			
Partner 1	National policies or guidelines on Open Science (including open access, PDM, FAIR data, data Science)	EU policies or guidelines on Open Science (including open access, PDM, FAIR data, data)		Top-down initiatives from high leadership (rector, vice rectors)		training, proposal writing support, seminars	Depositing of research articles in a	Science outreach and		Support staff with knowledge of national and	Researchers' skills in science outreach and	Open access to research publications, Science outreach and		Points	Level	
SCORE	1						0	1			1	1		5	5	
Partner 2	EU policies or guidelines on Open Science (including open access, PDM, FAIR data, data)		Research funder requirements on Open Science	Bottom-up initiatives from administrative	Bottom-up initiatives from administrative				None of these	Support staff with knowledge of national and		Open access to research publications				
SCORE	1						0	1			1	1		5	5	
Partner 3		EU policies or	Research funder			Exchanges of good	Open education: Infrastructure and Technical Support		None of these		Researchers' skills in science outreach and	Open access to research publications, Science outreach and				
SCORE	1						0	1			1	1		5	5	
Partner 4		EU policies or			Bottom-up initiative	Exchanges of good	Staff support through Research Assessment and	Depositing of research articles in a		Support staff with knowledge of national and	Researchers' skills in science outreach and	Open access to research publications, Science outreach and				
SCORE	1						0	1			1	1		5	5	
Partner 5	National policies or guidelines on		Research funder		Top-down initiative		Infrastructure and specific services for open education	Depositing of research articles in a				Open access to research publications, Science outreach and				
SCORE	0						0	1			1	1		4	4	
Partner 6		EU policies or	Research funder		Bottom-up initiative		training and dedicated support		None of these	Support staff with knowledge of national and	Researchers' skills in science outreach and	Open access to research publications, Science outreach and				
SCORE	1						0	1			1	1		5	5	
Partner 7	National policies or guidelines on	EU policies or	Research funder				— OER platform: www.studon.fau.de/faq		None of these	Support staff with knowledge of national and	Researchers' skills in science outreach and	Open access to research publications				
SCORE	1						0	1			1	1		5	5	
Partner 8	National policies or guidelines on	EU policies or			Bottom-up initiative		For citizen science: an oncoming Web Magazine		None of these	Support staff with knowledge of national and	Researchers' skills in science outreach and	Open access to research publications				
SCORE	1						0	1			1	1		5	5	
Partner 9	National policies or guidelines on		Research funder		Bottom-up initiative		Staff support	Depositing of research articles in a		Support staff with knowledge of national and	Researchers' skills in science outreach and					
SCORE	0						0	1			1	1		4	4	

Annex 11: OS ‘Can-do’ Descriptors

Pillars	OS Dimensions	Learners	Achievers	Experiencers
Open Access	Open Access Research to Publications	<p>D1.1. Advocate OA</p> <p>D1.2. Monitor the number of publications authored by its researchers and published in open access journals</p> <p>D1.3. Monitor the cost of publications authored by its researchers and published in open access journals</p>	<p>D2.1. Provide support to researchers to make their research publications available in open access</p> <p>D2.2. Provide researchers with dedicated financial tools to support OA</p>	<p>D3.1. Support the move to full Open Access for Publication</p> <p>3.2. Support new forms of scholarly publishing from third parties, such as OpenEdition and Knowledge Unlatched</p> <p>3.3. Establish new mechanisms for scholarly publishing based on the good practice identified in EELISA</p>
Research Data	Research Data Management	D1.4. Inform its researchers of and advocate RDM tools that follow FAIR principles	D2.3. Provide research data storage	D3.4. Implement Plan S
	FAIR Data	D1.5. Advocate the use of standards, guidelines, and protocols such as author identifier systems (e.g., ORCID), publication identifiers (e.g., DOI), Creative Commons (CC) licenses	D2.4. Develop an institutional research data repository	D3.5. Participate in equipment, facilities, and laboratory sharing initiatives
	Data Sharing		D2.5. Provide researchers and non-academic staff with RDM tools (e.g.,	D3.6. Collect information about the data archived and published by its research community
	Open Protocols		D2.6. Have a team dedicated to provide advice on RDM and data stewardship	D3.7. Have access to a 3rd party repository/repositories which can interact with the EOSC
	Open-Source Research Software and Code		D1.6. Provide researchers with a Data management planning tool (DMP tool)	D2.7. Implement standards, guidelines, and protocols related to data sharing (e.g., DOI, metadata, Creative Commons licenses)
	D1.7. Identify funding and resources to archive and to publish data	D2.8. Provide researchers with advanced RDM tools (e.g., data anonymization tools, versioning control systems)		
	D1.8. Have signed the EOSC Declaration as a statement of commitment at a local level	D2.9. Have a search and discovery service , enabling users to find what research data is available, and where it is located		



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Pillars	OS Dimensions	Learners	Achievers	Experiencers
Open Science Incentives and Rewards	Open Evaluation	D1.9. Make information about its policies on researcher evaluation open and easily accessible	D2.10. Evaluate the possibility to embed the new forms of research evaluation in its internal processes for promotion/reward and research evaluation	D3.8. Integrate Open Science in its HR and career frameworks as an explicit element in recruitment, performance evaluation and career advancement policies D3.9. Include research data, depositing of research articles in a repository, open research protocols and open-source research software and code as a valuable output in research assessments D3.10. Assess the extent to which individuals, teams or units integrate Open Science in their daily practice D3.11. Incentivise the researchers developing open access activities
Open Science Skills and Training Needs	Open Education	D1.10. Provide introductory training on practical tips on getting started with OS as well as providing information on discipline specific tools and resources researchers can use D1.11. Construct guidance for research administrators and academics on good and bad practice in the use of OS D1.12. Have updated the research integrity codes to explicitly address OS D1.13 Recognise citizen science as an evolving set of research methods, as well as its societal and educational benefits	D2.11. Provide specific training related to Open Science in all or certain of the areas, or other Open Science aspects D2.12. Give particular focus to early career researchers , providing training to enable them to adopt the OS culture D2.13. Create units to raise awareness amongst researchers of successful citizen science and support them in the process	D3.12. Integrate Open Science concepts, thinking, and its practical applications in educational and skills development programmes D3.13. Design micro credentials on open science and its respective dimensions D3.14. Provide training to the OS support staff D3.15. Make OS training mandatory for R1-R4 researchers D1.16. Assess the impact and contributions of citizen science to university's missions
	Citizen Science			
	Science Outreach and Communication			

Annex 12: OS Action Plan (OSAP) Template¹

1. ORGANISATIONAL PROFILE

<i>Please provide a very brief description of your organisation in relation to OS.</i>

2. THE CURRENT STATUS OF OS PRACTICE & PROPOSED ACTIONS

Please fill in a sum-up list of all individual actions to be undertaken in your organisation's OSAP to address the descriptors. Make use of the survey results and organisational profiles presented in D3.1 and D3.2. If this is your organisation's case, focus on the actions that will empower your institution to move from a learner profile to achiever or experienter profiles.

Status: to what extent does this organisation meet the following descriptors?	Implementation: ++ = fully implemented +/- = almost but not fully implemented -/+ = partially implemented -- = insufficiently implemented	Proposed actions and responsible units In case of --, -/+, or +/-, please indicate the actions to be taken	Timing (at least by year's quarter/semester)	Indicator(s) / Target(s)
Open Access				
LEARNERS				

¹ Inspired by <https://euraxess.ec.europa.eu/useful-information/policy-library#group-collapsible-strengthened-hrs4r-process>



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Status: to what extent does this organisation meet the following descriptors?	Implementation: ++ = fully implemented +/- = almost but not fully implemented -/+ = partially implemented -- = insufficiently implemented	Proposed actions and responsible units In case of --, -/+, or +/-, please indicate the actions to be taken	Timing (at least by year's quarter/semester)	Indicator(s) / Target(s)
D.1. Advocate OA	Choose an item.	<i>Free text</i>		
D1.2. Monitor the number of publications authored by its researchers and published in open access journals	Choose an item.			
D1.3. Monitor the cost of publications authored by its researchers and published in open access journals	Choose an item.			
ACHIEVERS				
D2.1. Provide support to researchers to make their research publications available in open access	Choose an item.			
D2.2. Provide researchers with dedicated financial tools to support OA	Choose an item.			
EXPERIENCERS				
D3.1. support the move to full Open Access	Choose an item.			

Status: to what extent does this organisation meet the following descriptors?	Implementation: ++ = fully implemented +/- = almost but not fully implemented -/+ = partially implemented -- = insufficiently implemented	Proposed actions and responsible units In case of --, -/+, or +/-, please indicate the actions to be taken	Timing (at least by year's quarter/semester)	Indicator(s) / Target(s)
D3.2. Support new forms of scholarly publishing from third parties, such as OpenEdition and Knowledge Unlatched	Choose an item.			
D3.3. Establish new mechanisms for scholarly publishing based on the good practice identified in EELISA	Choose an item.			
Research Data				
LEARNERS				
D1.4. Inform its researchers of and advocate RDM tools that follow FAIR principles	Choose an item.			



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Status: to what extent does this organisation meet the following descriptors?	Implementation: ++ = fully implemented +/- = almost but not fully implemented -/+ = partially implemented -- = insufficiently implemented	Proposed actions and responsible units In case of --, -/+, or +/-, please indicate the actions to be taken	Timing (at least by year's quarter/semester)	Indicator(s) / Target(s)
D1.5. Advocate the use of standards, guidelines, and protocols such as author identifier systems (e.g., ORCID), publication identifiers (e.g., DOI), Creative Commons (CC) licenses	Choose an item.			
D1.6. Provide researchers with a Data management planning tool (DMP tool)	Choose an item.			
D1.7. Identify funding and resources to archive and to publish data	Choose an item.			
D1.8. Have signed the EOSC Declaration as a statement of commitment at a local level	Choose an item.			
ACHIEVERS				
D2.3. Provide research data storage	Choose an item.			
Develop an institutional research data repository	Choose an item.			

Status: to what extent does this organisation meet the following descriptors?	Implementation: ++ = fully implemented +/- = almost but not fully implemented -/+ = partially implemented -- = insufficiently implemented	Proposed actions and responsible units In case of --, -/+, or +/-, please indicate the actions to be taken	Timing (at least by year's quarter/semester)	Indicator(s) / Target(s)
D2.4. Provide researchers and non-academic staff with RDM tools (e.g.,	Choose an item.			
D2.5. Have a team dedicated to provide advice on RDM and data stewardship	Choose an item.			
D2.6. Implement standards, guidelines, and protocols related to data sharing (e.g., DOI, metadata, Creative Commons licenses)	Choose an item.			
D2.7. Provide researchers with advanced RDM tools (e.g., data anonymization tools, versioning control systems)	Choose an item.			
D2.8. Have a search and discovery service , enabling users to find what research data is available, and where it is located	Choose an item.			



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Status: to what extent does this organisation meet the following descriptors?	Implementation: ++ = fully implemented +/- = almost but not fully implemented -/+ = partially implemented -- = insufficiently implemented	Proposed actions and responsible units In case of --, -/+, or +/-, please indicate the actions to be taken	Timing (at least by year's quarter/semester)	Indicator(s) / Target(s)
Experiencers				
D3.4. Implement Plan S	Choose an item.			
D3.5. Participate in equipment, facilities, and laboratory sharing initiatives	Choose an item.			
D3.6. Collect information about the data archived and published by its research community	Choose an item.			
D3.7. Have access to a 3rd party repository/repositories which can interact with the EOSC	Choose an item.			
Open Science Incentives and Rewards				
Learner				
D1.9. Make information about its policies on researcher evaluation open and easily accessible	Choose an item.			

Status: to what extent does this organisation meet the following descriptors?	Implementation: ++ = fully implemented +/- = almost but not fully implemented -/+ = partially implemented -- = insufficiently implemented	Proposed actions and responsible units In case of --, -/+, or +/-, please indicate the actions to be taken	Timing (at least by year's quarter/semester)	Indicator(s) / Target(s)
Achiever				
D2.9. Evaluate the possibility to embed the new forms of research evaluation in its internal processes for promotion/reward and research evaluation	Choose an item.			
Experiencer				
D3.8. Integrate Open Science in its HR and career frameworks as an explicit element in recruitment, performance evaluation and career advancement policies	Choose an item.			
D3.9. Include research data, depositing of research articles in a repository, open research protocols and open-source research software and code as a valuable output in research assessments	Choose an item.			



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Status: to what extent does this organisation meet the following descriptors?	Implementation: ++ = fully implemented +/- = almost but not fully implemented -/+ = partially implemented -- = insufficiently implemented	Proposed actions and responsible units In case of --, -/+, or +/-, please indicate the actions to be taken	Timing (at least by year's quarter/semester)	Indicator(s) / Target(s)
D3.10. Assess the extent to which individuals, teams or units integrate Open Science in their daily practice	Choose an item.			
D3.10. Incentivise the researchers developing open access activities	Choose an item.			
Open Science Skills and Training Needs				
Learner				
D1.10. Provide introductory training on practical tips on getting started with OS as well as providing information on discipline specific tools and resources researchers can use	Choose an item.			
D1.11. Construct guidance for research administrators and academics on good and bad practice in the use of OS	Choose an item.			
D1.12. Have updated the research integrity codes to explicitly address OS	Choose an item.			

Status: to what extent does this organisation meet the following descriptors?	Implementation: ++ = fully implemented +/- = almost but not fully implemented -/+ = partially implemented -- = insufficiently implemented	Proposed actions and responsible units In case of --, -/+, or +/-, please indicate the actions to be taken	Timing (at least by year's quarter/semester)	Indicator(s) / Target(s)
D1.13 Recognise citizen science as an evolving set of research methods, as well as its societal and educational benefits	Choose an item.			
Achiever				
D2.10. Provide specific training related to Open Science in all or certain of the areas, or other Open Science aspects	Choose an item.			
D2.11. Give particular focus to early career researchers , providing training to enable them to adopt the OS culture	Choose an item.			
D2.12 Create units to raise awareness amongst researchers of successful citizen science and support them in the process	Choose an item.			



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Status: to what extent does this organisation meet the following descriptors?	Implementation: ++ = fully implemented +/- = almost but not fully implemented -/+ = partially implemented -- = insufficiently implemented	Proposed actions and responsible units In case of --, -/+, or +/-, please indicate the actions to be taken	Timing (at least by year's quarter/semester)	Indicator(s) / Target(s)
Experiencer				
D3.10. Integrate Open Science concepts, thinking, and its practical applications in educational and skills development programmes	Choose an item.			
D3.11. Design micro credentials on open science and its respective dimensions	Choose an item.			
D3.12. Provide training to the OS support staff	Choose an item.			
D3.13. Make OS training mandatory for R1-R4 researchers	Choose an item.			
D1.14. Assess the impact and contributions of citizen science to university's missions	Choose an item.			

3. IMPLEMENTATION

General overview of the expected implementation process.

(free text, 1000 words maximum)

Make sure you also cover all the aspects highlighted in the checklist below, which you will need to describe in detail:

Checklist	*Detailed description and duly justification
How do you intend to use the D3.1 Toolkit and D2.3 Guide in the implementation process?	free text, 300 words
How do you intend to involve the research community, your main stakeholders, in the implementation process?	free text, 300 words
How do you proceed with the alignment of organisational policies with the OSAP? Make sure the OSAP is recognized in the organisation's development strategy.	free text, 300 words
How will you ensure that the proposed actions are implemented?	free text, 300 words
How will you monitor progress (timeline)?	free text, 300 words

Additional remarks/comments about the proposed implementation process (if any):

(free text, 500 words)



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Annex 13: Indicators to monitor Open Science Progress

Pillars	OS Dimensions	Learners	Achievers	Experiencers	Indicators
Open Access	Open Access Research to Publications	<p>D1.1. Advocate OA</p> <p>D1.2. Monitor the number of publications authored by its researchers and published in open access journals</p> <p>D1.3. Monitor the cost of publications authored by its researchers and published in open access journals</p>	<p>D2.1. Provide support to researchers to make their research publications available in open access</p> <p>D2.2. Provide researchers with dedicated financial tools to support OA</p>	<p>D3.1. Support the move to full Open Access for Publication</p> <p>3.2. Support new forms of scholarly publishing from third parties, such as OpenEdition and Knowledge Unlatched</p> <p>3.3. Establish new mechanisms for scholarly publishing based on the good practice identified in EELISA</p>	<p><i>I1_{OA}</i> Number of open science events or informative sessions run.</p> <p><i>I2_{OA}</i> Percentage of open access publication in total publications:</p> <ul style="list-style-type: none"> not OA; OA, gold OA, Green OA, Hybrid OA, Bronze OA Not OA % of change /year, OA % change/year <p><i>I3_{OA}</i> Percentage of open access publications by field of Science and Technology</p> <p><i>I4_{OA}</i> % researchers active in experimental peer review</p> <p><i>I5_{OA}</i> Funding for Open Access publishing/year/researcher</p> <p><i>I6_{OA}</i> Number of support staff available/researcher</p> <p><i>I7_{OA}</i> % of researchers that shared data from their last project</p> <p><i>I8_{OA}</i> Types of data usage</p> <p><i>I9_{OA}</i> % of research outputs published on pre-print servers</p>
	Research Data Management	D1.4. Inform its researchers of and advocate RDM tools that follow FAIR principles	D2.3. Provide research data storage	D3.4. Implement Plan S	<i>I10_{RD}</i> Number of data repositories
	FAIR Data	D1.5. Advocate the use of standards, guidelines, and	D2.4. Develop an institutional research data repository	D3.5. Participate in equipment, facilities, and laboratory sharing initiatives	<i>I11_{RD}</i> Number of repositories with open meta-data
	Data Sharing				



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Pillars	OS Dimensions	Learners	Achievers	Experiencers	Indicators
	Open Protocols	<p>protocols such as author identifier systems (e.g., ORCID), publication identifiers (e.g., DOI), Creative Commons (CC) licenses</p> <p>D1.6. Provide researchers with a Data management planning tool (DMP tool)</p> <p>D1.7. Identify funding and resources to archive and to publish data</p> <p>D1.8. Have signed the EOSC Declaration as a statement of commitment at a local level</p>	<p>D2.5. Provide researchers and non-academic staff with RDM tools (e.g.,</p> <p>D2.6. Have a team dedicated to provide advice on RDM and data stewardship</p> <p>D2.7. Implement standards, guidelines, and protocols related to data sharing (e.g., DOI, metadata, Creative Commons licenses)</p> <p>D2.8. Provide researchers with advanced RDM tools (e.g., data anonymization tools, versioning control systems)</p> <p>D2.9. Have a search and discovery service, enabling users to find what research data is available, and where it is located</p>	<p>D3.6. Collect information about the data archived and published by its research community</p> <p>D3.7. Have access to a 3rd party repository/repositories which can interact with the EOSC</p>	<p><i>I12_{RD}</i> % of researchers that share data</p> <p><i>I13_{RD}</i> Amount of data stored in the repositories</p> <p><i>I14_{RD}</i> Open data usage</p> <p><i>I15_{RD}</i> Number of scientific APIs</p> <p><i>I16_{RD}</i> Number of scientists reusing data published by other scientists,</p> <p><i>I17_{RD}</i> Number of papers reusing data published by other scientists</p> <p><i>I18_{RD}</i> % of researchers that are contacted about shared data by type of organisation</p>
	Open-Source Research Software and Code				
Open Science Incentives and Rewards	Open Evaluation	D1.9. Make information about its policies on researcher evaluation open and easily accessible	D2.10. Evaluate the possibility to embed the new forms of research evaluation in its internal processes for promotion/reward and research evaluation	<p>D3.8. Integrate Open Science in its HR and career frameworks as an explicit element in recruitment, performance evaluation and career advancement policies</p> <p>D3.9. Include research data, depositing of research articles in a repository, open research protocols and open-source research software and code as a valuable output in research assessments</p> <p>D3.10. Assess the extent to which individuals, teams or units integrate Open Science in their daily practice</p> <p>D3.11. Incentivise the researchers developing open science activities</p>	<p><i>I19_{OSIR}</i> Existence of an updated career framework (yes/no)</p> <p><i>I20_{OSIR}</i> HR Policy and Guidelines for researchers are available on the institutional website (yes/no)</p> <p><i>I21_{OSIR}</i> Share of research assessment criteria relating to open science activities</p> <p><i>I22_{OSIR}</i> Existence of instruments to assess the adoption of OS (yes/no)</p> <p><i>I23_{OSIR}</i> % of researchers incentivised for developing open science activities</p>
	Open Education	D1.10. Provide introductory training on practical tips on getting	D2.11. Provide specific training related to Open Science in all or	D3.12. Integrate Open Science concepts, thinking, and its	
Open Science Skills	Citizen Science				

Pillars	OS Dimensions	Learners	Achievers	Experiencers	Indicators
	Science Outreach and Communication	<p>started with OS as well as providing information on discipline specific tools and resources researchers can use</p> <p>D1.11. Construct guidance for research administrators and academics on good and bad practice in the use of OS</p> <p>D1.12. Have updated the research integrity codes to explicitly address OS</p> <p>D1.13 Recognise citizen science as an evolving set of research methods, as well as its societal and educational benefits</p>	<p>certain of the areas, or other Open Science aspects</p> <p>D2.12. Give particular focus to early career researchers, providing training to enable them to adopt the OS culture</p> <p>D2.13. Create units to raise awareness amongst researchers of successful citizen science and support them in the process</p>	<p>practical applications in educational and skills development programmes</p> <p>D3.13. Design micro credentials on open science and its respective dimensions</p> <p>D3.14. Provide training to the OS support staff</p> <p>D3.15. Make OS training mandatory for R1-R4 researchers</p> <p>D1.16. Assess the impact and contributions of citizen science to university's missions</p>	<p><i>I24_{OE}</i> % of faculty and staff members who have completed training in Open Science</p> <p><i>I25_{OE}</i> Number of open science courses or workshops run.</p> <p><i>I26_{OE}</i> Number of open educational resources, i.e. free and available material (e.g. e-learning material, e-books, videos, animations) that is created and offered by the university</p> <p><i>I27_{OE}</i> Number of free and available on-line courses, e.g. MOOCs (Massive On-line Open Courses) and micro degree courses.</p> <p><i>I28_{OE}</i> Number of programs and courses in open science methods</p> <p><i>I29_{OE}</i> % of faculty staff teaching open science courses, modules or short-term</p> <p><i>I30_{CS}</i> Number of papers co-authored with civil society actors</p> <p><i>I31_{CS}</i> Number of citizen science sites</p> <p>32 % researchers in citizen science programs</p> <p><i>I33_{CS}</i> Number of projects in SciStarter</p> <p><i>I34_{CS}</i> Number of projects in Zooniverse</p>



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Annex 14: Survey on Open Science Practices

Introduction

Welcome to the survey on Open Science Practices at EELISA InnoCORE partners. Its purpose is to gain a better understanding of the challenges faced by the Open Science support teams at the InnoCORE partners when providing services to researchers working in technical/engineering disciplines.

The results of this survey will reveal the Open Science best practices of partner-organizations and it will be the starting point in designing a OS Methodological Toolkit - useful instrument for organizations to better understand OS and to improve their OS support services.

The specific target group of this survey is represented by persons responsible for Open Science support and/or services at the project partners. However, in many institutions, Open Science services do not rely on one solely office. Therefore, you are encouraged to get in touch with the appropriate collaborative offices at your institution to get an accurate picture of the challenges when providing Open Science support for technical/engineering disciplines.

The survey contains a total of 58 questions organized in four main sections: *Open Access Practices*, *Research Data Management Practices*, *Education Skills and Training*, and *Open Science Incentives and Rewards*.

Data protection: All information provided will be carefully handled obeying the data protection rules in place at EU level, the purpose of collecting data is to identify the Open Science practices inside partners of EELISA InnoCORE project, none of the collected data will be disclosed without prior partners' permission.

If you have any questions regarding this survey, please contact Dana Gheorghe (dana.gheorghe@upb.ro).

Note: Mandatory questions are indicated with the symbol (*)

Section I. General Information and the Open Science perspective

Q1. *Country:

Q2. Name of the Institution:

Q3. *Your position at the institution:

If you select the option 'Other' please specify/state double roles (e.g., scientist, PhD student, professor)

- a. Data Curator / Steward
- b. RDM Supervisor / Manager
- c. IT Professional
- d. Librarian
- e. Other:

Q4. How would you characterize your institution?



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- a. Mostly research-intensive
- b. Mostly teaching-led
- c. Both research-intensive and teaching- led

Q5. What is the total number of researchers (full-time equivalent, FTE), including doctoral candidates, working at your institution?

- a. Less than 100 persons
- b. Between 100 and 500 persons
- c. Between 500 and 1000 persons
- d. More than 1000 persons

Q6. *What is the level of importance of Open Science related to your institution’s strategic priority areas?

Please consider the different elements of Open Science and their development in your institution (e.g., open access to research publications, FAIR data, research data management, open innovation, open education, citizen science, etc.).



Please elaborate if you’d like

- Free Text –

Q7. * Does your institution have a policy on Open Science? This may include open access to research publications, RDM, academic career assessment, citizen science, open education, etc.

- a. Yes
- b. No, but we are developing a policy
- c. No

Q8. If there is a publicly available version of the OS policy of your institution, please provide the URL here:

-Free text-

Q9. (Only if you answer with a) or b) at Q7) If your institution has or is currently developing a policy on Open Science, this policy includes which of the followings aspects? Click all that apply.

- a. The future of scholarly publishing
- b. FAIR data
- c. The European Open Science Cloud (EOSC)
- d. Education and skills
- e. Rewards and incentives
- f. Next-generation metrics
- g. Research integrity
- h. Citizen science

Q10. *For each Open Science element presented in the table below, please assess its level of importance at your institution's strategic level and the degree of implementation that has been achieved so far.

Please use in your assessment the following scale items : 1= Very low; 2= Low; 3= Neither high nor low; 4= High; 5 = Very high

	Level on importance	Level of implementation
Open Access to research publications		
Research data management		
FAIR data		
Data sharing		
Open research protocols		
Open-source research software & code		
Open evaluation		
Open education		
Citizen science		
Science outreach and communication		

Q11. *Which of the following factors have been primarily responsible for your institution's transition towards open science? (Please tick only the three most important drivers)

- a. National policies or guidelines on Open Science (including open access, RDM, FAIR data, data sharing, etc.)
- b. EU policies or guidelines on Open Science (including open access, RDM, FAIR data, data sharing, etc.)
- c. External review processes requiring compliance with open science elements (e.g., open access to research articles, RDM plans, FAIR data, data sharing, science outreach, and communication, etc.)
- d. Research funder requirements on Open Science (including research outputs available in open access, RDM, FAIR data, data sharing, science outreach, and communication, etc.)
- e. Bottom-up initiatives from researchers
- f. Bottom-up initiatives from administrative staff or library staff
- g. Top-down initiatives from high leadership (rector, vice-rectors)
- h. Exchanges of good practices on Open Science with other higher education institutions,
- i. Member in a Network of experts on Open Science
- j. Other – please specify

Q12. *From the perspective of your institution, what are the main barriers at the institutional level in the transition to open science? (Please tick only the five most important barriers)

- a. Limited awareness at the institutional level of the benefits of open science
- b. Concerns over the legal framework (e.g., data privacy, copyright regulations, publishers' rules)
- c. Absence of policies or guidelines at the national level (e.g., from research funders)
- d. Technical complexity (e.g., lack of precise definitions, standards and procedures, variety of data formats)
- e. Different disciplinary practices



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- f. Resistance to making data available or to sharing data
- g. Misconceptions of open science from the part of senior faculty or high leadership of the institution
- h. Concerns over increased costs (e.g., infrastructure, specialized staff, article processing charge)
- i. Lack of expertise and skilled staff in different areas of open science at the institutional level
- j. Lack of coordination among the relevant actors within the university
- k. Lack of support structures at institutional level for researchers interested in open science activities
- l. Lack of awareness-raising, including training opportunities, at the institutional level for both early-stage researchers (i.e., doctoral candidates and postdocs) and senior faculty
- m. Absence of incentives to promote open science activities (e.g., absence of impact on academic career assessment and career progression)
- n. Other – please specify

Q13. Who oversees the implementation of Open Science policies at your institution?

You can select more than one option. If you select the option 'Other' please specify the organization responsible for the implementation of RDM at your institution.

- a. IT-department
- b. Library
- c. Legal office
- d. Research Management Department
- e. Business and development office
- f. Graduate school
- g. Other – please specify

- Free text -

Section II. Open Access practices

Q14. *Has your institution defined a specific target for Open Access (OA) to research publications and a timeline for achieving this target?

- a. Yes
- b. No

If YES , please give additional details on the OA policy: – free text-

Q15. Does your institution's OA policy exclusively favour OA journals (in other words, are OA publications in hybrid journals accepted as part of the policy)?

- a. Yes
- b. No

If YES please indicate your perspective: – free text-

Q16. *Does your institution monitor the number of publications deposited by researchers in the institution's own or shared repository?

- a. Yes
- b. No

Please comment: – free text-

Q17. *Does your institution monitor the number of publications authored by researchers from your institution and published in open access journals (excluding hybrid journals)?

- a. Yes
- b. No

Please comment: – free text-

Q18. Does your institution monitor the cost of publications authored by researchers from your institution and published in open access journals?

- a. Yes
- b. No

Please comment: – free text-

Plan S is an initiative for Open Access publishing that was launched in September 2018. The plan is supported by cOAlition S, an international consortium of research funding and performing organisations. Plan S requires that, from 2021, scientific publications that result from research funded by public grants must be published in compliant Open Access journals and platforms or made immediately available through Open Access Repositories without embargo.

Q19. Is your institution preparing for the implementation of Plan S²?

- a. Yes
- b. No

Please comment how: – free text-

Q20. Has your institution participated directly and/or supported non-commercial OA publishing (e.g., OA university press, funding for infrastructure (e.g., DOAJ, SCOSS, etc.))?

- a. Yes
- b. No

Please comment how: – free text-

Q21. *Does your institution have any signed publication agreements with OA publishers (i.e., OA journals or publishing houses)?

- a. Yes
- b. No

Please indicate, if you know, which ones: – free text-

Q22. Can you indicate the specifics of the OA signed publishing agreement your institution has put in place?

Please comment: – free text-

Section III. Research Data Management Practices

Q23. *Has your institution a dedicated RDM policy?

- a. Yes (please include a link where the policy is published)

² <https://www.coalition-s.org>



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- b. No

Please comment: – free text-

Q24. *Does your institution provide research data storage?

In this question, research data storage refers to temporary/project-related storage and not long-term storage.

- a. Yes
b. No

Please comment: – free text-

Q25. *What are the main challenges in hosting research data produced in technical/engineering disciplines on your institutional storage?

Please use bullet points to answer. Please write 'Not applicable' if your institution does not provide research data storage.

- Free Text -

Q26. Have you identified technical solutions for those challenges (e.g., external services)? Which ones?

Please write 'Not applicable' if your institution does not provide research data storage.

- Free Text -

A current research information system (CRIS) is a database or other information system to store, manage and exchange contextual metadata for the research activity funded by a research-performing organisation.

Q27. *Have you an institutional Current Research Information Systems - CRIS?

- a. Yes
b. No

Please comment: – free text-

An institutional repository is an archive for collecting, preserving, and disseminating digital copies of the intellectual output of an institution, particularly a research institution.

Q28. *Does your institution provide an institutional research data repository/archive?

This question refers to long-term data storage as provided by the repository or archive system.

- a. Yes
b. No
c. Other: (please indicate which one)

Q29. *What are the main challenges for hosting research data produced in technical/engineering disciplines in your research data repository/archive?

Please use bullet points to answer. Please write 'Not applicable' if your institution does not provide a research data repository/archive.

- Free Text -

Q30. If your institution recommends specific technical/engineering-oriented research data repositories/archives, please detail which ones:

Please provide your answer as a list

- Free Text -

Q31. *Which RDM tools are provided by your institution? You can select more than one option.

- a. Data management planning tool (DMP tool)
- b. Electronic Lab Notebook(s) (ELNs)
- c. High-Performance Computers
- d. Versioning control system
- e. Jupyter Notebooks
- f. Data anonymization tool
- g. None of these

Care to comment? - free text -

Q32. *If you checked the boxes for DMP tool, ELNs, Versioning control system and/or Data anonymization tool in the previous question, please provide the names of the tools here:

Please provide your answer as a list

- Free Text -

Q33. Are there any specialized RDM tools/infrastructure provided to researchers working on technical/engineering disciplines by your institution? (e.g., product data management tools, processing standards, workflow standards)

- a. Yes
- b. No

Care to comment? – free text-

Q34. If yes, which ones:

Please provide your answer as a list and the links, if possible.

– Free Text –

Q35. Does your institution have a dedicated team to provide advice on RDM? If so, please check all that apply if the RDM team includes:

- a. Librarians
- b. Research data officers
- c. Data Stewards
- d. IT-managers
- e. Research funding officers

Care to comment?: – free text-



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Q36. Which standards, guidelines, and protocols are used in your institution's own or shared repositories? (Tick all that apply)

- a. Assignment of DOIs
- b. Disciplinary metadata schemas
- c. Dublin Core metadata
- d. DataCite metadata schemas
- e. ORCID integration/support
- f. Machines ingest methods and protocols (REST API, SWORD, FTP)
- g. Creative Commons (CC) licenses
- h. COUNTER-compliant usage statistics and metrics
- i. Harvesting of metadata and associated files using established open standards (e.g., OAI-PMH, Resource-Sync)
- j. REST API functionality, conforming to open standards, with outputs in formats such as JSON/XML
- k. OPENAIRE-Compliant (OpenAIRE Guidelines)
- l. Other (please specify)

Section IV. Education Skills and Training

Q37. Does your institution provide training related to Open Science? (Thick all that apply)

- a. Research and data management (Data storage, sharing, FAIR - "Findable, Accessible, Interoperable, and Reusable" - approaches)
- b. Research integrity (Animal Research, data analysis, and interpretation, research with human samples, good practice in the lab, etc.)
- c. Research publishing and dissemination (Open Access, pre-prints, peer review)
- d. Collaborating and networking (How to improve collaboration through Open Science)
- e. Communicating science to the public (Different audiences, practical guides to getting started, online and offline options)
- f. Involving the general public in research (Citizen science: data gathering, data analysis, use of results)
- g. Other option

Q38. Does your institution provide training tailored to technical/engineering or other disciplines?

- a. Yes
- b. No
- c. Don't know

Q39. If you answer Yes to the question above, please provide the topics of training that have been organized between 2019 - 2021:

- Free Text -

Q40. Who attends these specialized training sessions tailored to technical/engineering or other disciplines?

You can select more than one option. Please select 'Not applicable' if no tailored training is provided for technical/engineering disciplines.

- a. PhD students
- b. Postdocs
- c. Principal investigators
- d. Engineers
- e. Any interested member of staff

- f. Not applicable
- g. Other: - comment -

Q41. What type of support does your institution provide to researchers to make their research publications available in open access (both through repositories and open access publishing)?

- a. Training for researchers (including doctoral candidates)
- b. Institutional website(s) on open access to research publications
- c. Developing open research strategy and vision
- d. Linkages to career evaluation and promotions within the institution
- e. Facilitating administrative reporting of publications in projects
- f. Funding for publishing in open access journals (APCs)
- g. Guidelines providing clarification of legal issues related to linking, sharing, and re-using Open Access content
- h. Establishment of specific services (e.g., helpdesks) for researchers
- i. Legal support
- j. Other (please specify)

Q42. What type of support does your institution provide to researchers interested in other open science activities (e.g., open education, open peer-review, citizen science, co-creation platforms, crowdsourcing practices, open evaluation, science outreach, and communication, etc.)?

Please consider all category of support available, e.g., staff support, availability of specific services, training, financial support, etc.

– Free text –

Q43. Is your institution using an online learning platform or course management system (CMS) for teaching? If your answer is Yes, please tell us what platform is being used?

- a) Yes
- b) No

Comments: - Free text-

Q44. *Is your institution providing learning courses relevant to Open Science / Research Data Management? Can you give us three examples of such online/offline classes?

- Free text -

Section V. Open Science Incentives and Rewards

Q45. Does your institution provide incentives for researchers developing open science activities (e.g. open access to research publications, data sharing, open review, citizen science, open education, etc.)?

- a) Yes
- b) No



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Free text

Q46. Which of the following open science elements are part of your university's approach to academic assessment? This may include your institution's assessment practices for the purpose of career progression, performance evaluation of academic units and/or allocating funding within the institution. (Tick all that apply)

- a. Depositing of research articles in a repository
- b. Open access publishing of research articles in open access journals (via payment of APCs)
- c. Open access books
- d. Open access archival or special collections
- e. Preprints
- f. Depositing of data in a repository
- g. Research data management plans
- h. Data sharing
- i. Open research protocols
- j. Open-source research software and code
- k. Open education
- l. Open evaluation
- m. Open collaborative tools
- n. Co-creation platforms
- o. Transdisciplinary research platforms
- p. Co-design of research projects
- q. Citizen science
- r. Crowdsourcing practices
- s. Science outreach and communication
- t. None of these elements are part of our approach to career assessment

Q47. In the future, does your institution plan to expand the range of open science elements taken into consideration for the academic assessment?

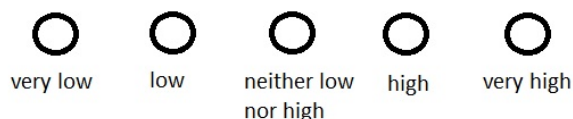


Q48. Which initiatives related to the transition to Open Science have been developed and implemented in your institution in the last 3 years?

In addition to explaining the initiative itself, please indicate which staff and which levels at your institution are involved in these initiatives and what were the reasons behind starting them:

- Free Text -

Q49. *How would you assess the level of engagement and practice of open science areas in your institution amongst different academic stakeholders?



Q50. Has your institution developed good practices or specific initiatives to further implement open science practices? Please explain:

- Free Text -

Q51. Please indicate below the level of availability in your institution of different skills needed to further develop open science activities:

- a. Support staff with knowledge of national and European policies on different open science areas (e.g., open access to publications, data sharing, academic career assessment, citizen science, etc.)
- b. Support staff to provide advice to researchers on technical, organisational and operational matters related to open science
- c. Legal skills (e.g., knowledge on copyright, licensing, data privacy, data protection)
- d. Technical staff with skills in the area of data management (e.g. data experts or library staff with knowledge on metadata; data storage/management/curation; technical standards)
- e. Technical skills in the area of e-infrastructures (e.g., IT experts)
- f. Researchers' skills in research data management
- g. Researchers' skills in research software engineering
- h. Researchers' skills in data mining, analytics, data visualization
- i. Researchers' skills on open education
- j. Researchers' skills in science outreach and communication

Q52. Are you aware of initiatives related to Citizen Science at your university?

- a. Yes
- b. No

Q53. Are you aware of initiatives related to Open Education at your university?

- a. Yes
- b. No

Comments – free text -

Q54. . *How would you assess the level of embeddedness of open science and its different areas in your institution?

*Please consider the following **four levels** of development described below. Please note that these levels are formulated in general terms and that they may be reflected in many different ways across institutions, depending on their unique profile, mission, strategy and local/national/international context.*

Level 1: This area is not yet part of our institution's priorities, policies, or practices.

Level 2: This area is part of our institution's priorities, policies, or practices, but its use in our institution is still sporadic or on an ad-hoc basis. This may be reflected in its low awareness across the institution; or occasional use (e.g., only in some departments/faculties, only by some a small group of researchers/faculty/staff); or low level of engagement from most stakeholders; or unallocated or inexistent resources for further awareness, implementation, or monitoring; or a combination of the latter.



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Level 3: This area is an important part of our institution's priorities, policies, or practices, and its use across the institution is gaining traction. This may be reflected in good awareness levels across the institution; or existent initiatives in several departments/faculties or by a sizable part of researchers/faculty/staff; or existence of basic monitoring mechanisms and review processes; or in the limited availability of technical and human resources dedicated to this area; or in the medium to a high level of engagement of most stakeholders in the institution; or a combination of the latter.

Level 4: This area is fully embedded in our institution's strategic priorities, policies, practices, structures, and workflows. This may be reflected in an articulated set of policies covering this area including complementarities with other policies in the institution; or streamlined activities across most departments/faculties and by most researchers/faculty/staff/students at all levels; or regular and comprehensive monitoring and review processes; or the allocation of sufficient technical and human resources to this area; or very high level of engagement from high leadership, management, support staff and researchers (senior and early career); or a combination of the latter.

	Level 1	Level 2	Level 3	Level 4
Open Access to research publications				
Research Data Management				
Data sharing/ FAIR Data				
Academic career assessment (i.e., considering open science contributions in the assessment of researchers)				
Citizen science				
Open Education				
Science outreach and communication				
Open Science in general				

Section VI. Other points

Q55. Does your institution currently have an Open Science Monitor(OSM) and a set of metrics to assess the implementation of OS?

- a. Yes
- b. No

Care to comment?: - text -

Q56. Does your institution provide open registries of research equipment, facilities, and laboratories?

- c. Yes
- d. No

Care to comment?: - text -

Q57. Does your institution participate in equipment, facilities, and laboratory sharing initiatives?

- a. Yes
- b. No

Care to comment?: - text -

Q58. Does your institution currently have any dedicated research data support services in place?

- a. Yes
- b. No

Care to comment?: - text -

Q59. Has your institution established specific research data support roles (e.g., data stewards, research data managers)?

- a. Yes, at the institutional/central level
- b. Yes, at the faculty/department level
- c. No

Q60. How is your institution dealing with the associated costs involved with the increasing need for data management infrastructure and services, e.g., staff costs, long-term storage, and archiving?

Please explain how your institution sees the sustainability of these costs and which type of funds are used for this purpose:

- Free text-

Q61. What type of funding sources are used in your institution for supporting the following open science areas? (Thick all that apply)

- a. General institution budget
 - i. Open access to research publications
 - ii. Data management
 - iii. Open Education



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- iv. Citizen science
- v. Co-creation platforms
- vi. Science outreach and communications
- b. National project-based funding
 - i. Open access to research publications
 - ii. Data management
 - iii. Open Education
 - iv. Citizen science
 - v. Co-creation platforms
 - vi. Science outreach and communications
- c. National block grants
 - i. Open access to research publications
 - ii. Data management
 - iii. Open Education
 - iv. Citizen science
 - v. Co-creation platforms
 - vi. Science outreach and communications
- d. EU project-based funding (e.g. Horizon 2020)
 - i. Open access to research publications
 - ii. Data management
 - iii. Open Education
 - iv. Citizen science
 - v. Co-creation platforms
 - vi. Science outreach and communications
- e. Private/industrial project-based funding
 - i. Open access to research publications
 - ii. Data management
 - iii. Open Education
 - iv. Citizen science
 - v. Co-creation platforms
 - vi. Science outreach and communications
- f. Public-private project-based funding
 - i. Open access to research publications
 - ii. Data management
 - iii. Open Education
 - iv. Citizen science
 - v. Co-creation platforms
 - vi. Science outreach and communications
- g. Others (please specify)
 - i. Open access to research publications
 - ii. Data management
 - iii. Open Education
 - iv. Citizen science
 - v. Co-creation platforms
 - vi. Science outreach and communications

Q62. What kind of authorisation and authentication system is your institution using for user management?

- Free text-

Q63. Is there an official affiliation of your institution to EduGAIN? Please let us know the details, for example, the name of the provider through which the access is provided.

- Free text-

Thank you for taking the survey. The survey results will be provided to you on request.



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