

D4.2: Science Demonstrator Selection Process

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Abstract:

The selected Science Demonstrators will represent a broad range of scientific activities that will provide requirements for the infrastructure and will help in evaluating the services offered by the EOSCpilot.

Five initial Science Demonstrators were selected during the preparation of the EOSCpilot project proposal. The objective of this deliverable is to define a process and criteria that will be used to select the ten additional Science Demonstrators that will be run within the project. To define the selection process and criteria, we considered the objectives of the Science Demonstrators, the principles in which the selection process will be based and the minimum necessary staff to run the selection process.

The selection process is formed by 13 different steps: open the call for proposals, review the compliance of the applications received, assign reviewers for all the applications, develop a scientific review, develop a technical review, prioritize the proposals, do the final selection, communicate the results to the EOSCpilot project consortium, communicate the results to the applicants, allocate resources to the selected projects, provide an appeal process and answer questions, and develop a general assessment on the selection procedure.

As complement to the selection process, we have specified the selection criteria that will be used during the selection process and provided to the applicants.

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EXECUTIVE SUMMARY

WP4 Science Demonstrators will represent a range of scientific domains as early adopters of the EOSCpilot project. They will provide requirements for the infrastructure and evaluate the services made available to them.

Five initial Science Demonstrators were selected during the preparation of the EOSCpilot project proposal. Ten additional Science Demonstrators will be selected through two calls during the project execution. These additional Science Demonstrators will prioritize science areas (e.g. Life Sciences, Energy, Climate and Materials) and stakeholders (e.g. EIROforum laboratory, EU Research Infrastructures, EU Flagship Projects, EU Centres of Excellence, National Research Centres, evolving multi-national science initiatives and the long-tail of science) that are currently under represented within the EOSCpilot to maximize coverage of the different European 'grand challenge' areas. The additional demonstrators will lead to an expansion of the consortium which will be achieved through a modification of the Grant Agreement.

The objective of this deliverable is to define a process and criteria that will be used to select the ten additional Science Demonstrators: 5 at PM6 and a further 5 at PM12

To define the selection process and criteria, we have considered the objectives of the Science Demonstrators, the principles in which the selection process will be based and the minimum staff required to run the selection process.

We have defined the selection process itself. It is formed by 13 different steps: open the call for proposals, review the compliance of the applications received, assign reviewers for all the applications, develop a scientific review, develop a technical review, prioritize the proposals, do the final selection, communicate the results to the EOSCpilot project consortium, communicate the results to the applicants, allocate resources to the selected projects, provide an appeal process and answer questions, and develop a general assessment on the selection procedure.

As complement to the selection process, we have specified the selection criteria that will be used during the selection process and provided to the applicants.

Finally, we designed: the form to be used to submit expressions of interest, the call guidelines that will be used by applicants and staff involved in the selection procedure, the guidelines for reviewers, the forms to be completed by the reviewers and the selection process assessment forms.

1. INTRODUCTION

In order for the project to begin quickly from day one an initial call for EOSCpilot Science Demonstrators was released among the members of the project consortium. This initial call yielded 28 expressions of interest covering different scientific areas, data types (open, sensitive, regulated) and technical use cases. As a consequence, an early selection of 5 Science Demonstrators was made based on the following initial criteria:

1. Having a strong and well defined data analysis activity (e.g. explicit research challenge or supporting the operation of a Virtual Research Environment) that will show the scientific excellence and societal impact that could be achieved by EOSC.
2. Provide data integration, management, interoperability and analysis challenges that will drive the specification and development of services within the EOSC ecosystem that also support open science.
3. Be already developed and demonstrated to be working at scale on existing elastic computational/data/connectivity and other infrastructures (e.g. private, national, European or public clouds/grids/HTC/HPC/network resources) that would become part of the EOSC.
4. Be representative of a broader data analysis model that when established in EOSC would have impact across Europe and beyond.
5. Be supported by mature research infrastructures and/or research organisations at a European/National level that will be the long-term consumers of the EOSC.
6. Commit to publishing or consuming third-party research artefacts (e.g. publications, datasets, tools, workflows) as part of the Open Science model.

After the initial call and selection of the first 5 Science Demonstrators, the tasks of the EOSCpilot project WP4 will include:

- to set up a programme for science demonstrators, including operating a call, selection and evaluation procedure for bids for new science demonstrators; and
- to establish a further set of 10 Science Demonstrators, staggered in two calls across the project.

The EOSCpilot proposal specifies the timeline for the development of the whole set of 15 Science Demonstrators. Hence, the Calls for Science Demonstrators and the development of the Science Demonstrator Selection Process have been planned to accommodate the agreed timeline.

The 10 additional Science Demonstrators will be chosen following a rigorous selection process and criteria. The process and criteria (which differ from the initial set) have been developed during the first three project months and are detailed in the current deliverable.

The deliverable is organised in five main sections, being this introduction the first one, and nine annexes. It first considers the Selection principles that will set the ground for the development of the Selection process and the Selection criteria. It will then go on to describe the minimum staff necessary and the steps to follow to carry on the Selection process. The third part explains the Selection criteria to be used during the different phases of the proposal review. In particular, there will be a compliance, a technical and a scientific review.

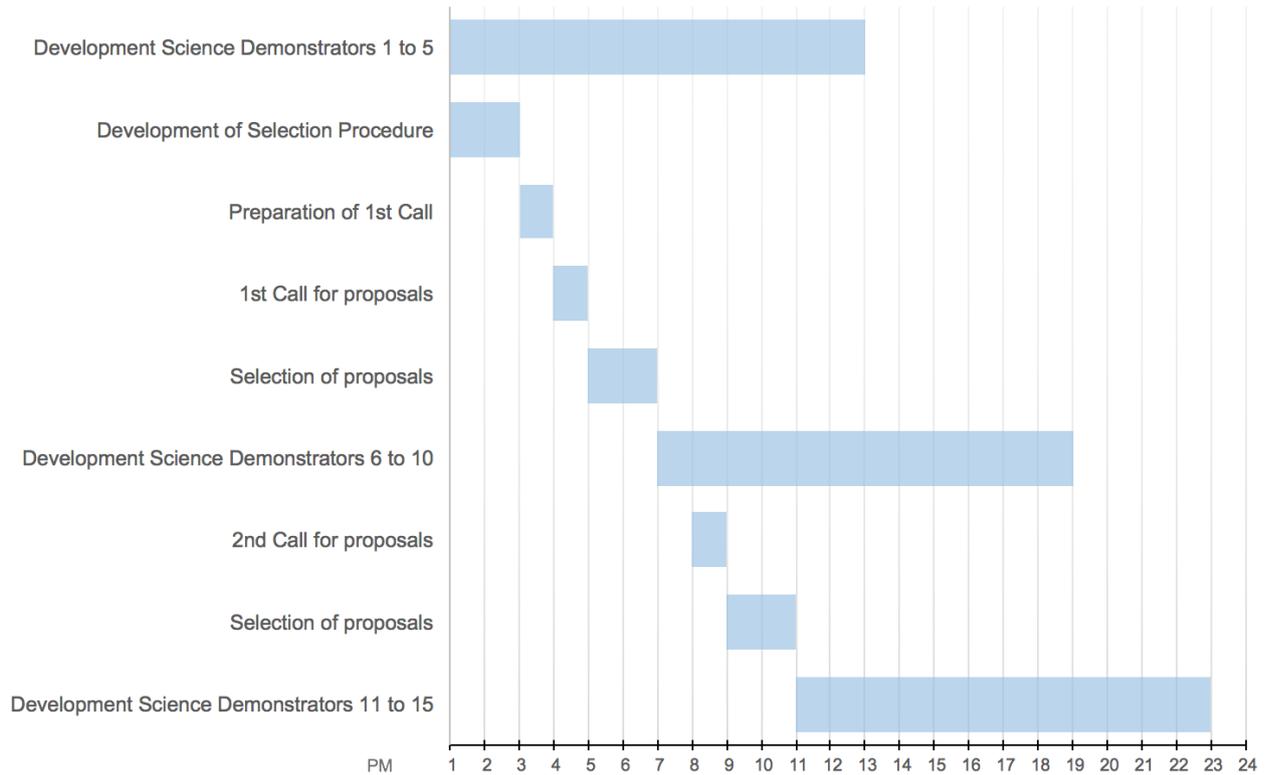


Figure 1 – Gantt chart for the Selection and development of Science Demonstrators within WP4

Finally, some conclusions are drawn demonstrating how the established Selection process will contribute to the effective selection of Science Demonstrators that will impulse the EOsc implementation.

Additionally, nine annexes are included to provide a glossary and details on the call guidelines, the application form, guidelines for reviewers, the evaluation forms and the selection process assessment form.

2. SELECTION PROCESS PRINCIPLES

The following basic principles are the foundation of the selection process.

- **Transparency**
There is need of transparency around the selection process to applicants and stakeholders.
- **Expert assessment**
The review will be developed by experts with appropriate knowledge and experience.
All the proposals will be assessed according to the same criteria.
- **Avoidance of parochialism**
The selection process will ensure that proposals of specific regions, institutions or countries are not favoured.
- **Fairness to science**
The proposals will be evaluated according to their merit and potential impact.
It will be considered that science areas currently under represented within the EOSCpilot can be prioritized to maximize coverage of the different European 'grand challenge' areas.
- **Prioritisation**
The proposals will be ranked according to the selection criteria defined for the call.
- **Right of appeal**
Applicants will be able to contact the reviewers to ask for clarifications regarding the review and appeal for reconsideration of a proposal.
- **Confidentiality**
The identity of reviewers will be protected.
- **Management of conflicts of interests**
Reviewers will be asked to state any conflict of interest with the proposals assigned for their review. Conflicts of interest can be personal, professional or intellectual.
- **Appropriate communication channels**
The outcome of the selection process will be promptly and adequately notified.

3. DESCRIPTION OF THE SELECTION PROCESS

The selection process considers the WP4 goals aligned with the overall EOSCpilot project objectives. It is designed following best practices¹. to ensure its neutrality and to build the trust of applicants and stakeholders. Moreover, it will ensure that the proposals are reviewed in a fair, competitive, transparent and in-depth manner.

3.1. Objectives of the Science Demonstrators

The objective of the Science Demonstrators is to develop a number of Science Demonstrators in different science domains that will show the relevance and usefulness of the EOSC Services and how they enable data reuse, and thereby drive the further development of the EOSC.

The Science Demonstrators work package aims to:

- Cover a broad range of disciplines ranging including large-scale European infrastructures scientific infrastructures and highly distributed long-tail activities.
- Include at least one demonstrator per broad scientific field.
- Deliver science projects that serve to demonstrate the impact and effectiveness of the EOSC brokering framework across the open science lifecycle.
- Steer the Service and Interoperability Demonstrators and evaluate the effectiveness of their outcomes.
- Provide inputs into the activities on Governance, Policy and Training work packages.
- Contribute to the outreach and dissemination activities of the EOSCpilot.

3.2. Required staff to run the Selection Process

Following best practices, we have identified the minimum necessary staff and its responsibilities to run the selection process.

Call Coordinator, typically the WP4 leader, responsible for:

- Ensuring the efficient and effective execution of the steps involved in the Selection Process.
- Confirming that the different staff has received clear guidelines to develop their role.
- Confirming that the reviewers have access to all the proposals to be reviewed.
- Pairing proposals with reviewers according their area of expertise. Technical reviewers will be drawn from the EOSCpilot Shepherds. Scientific reviewers from the Scientific Advisory Board.

Compliance reviewer, typically WP4 staff, responsible for:

- Checking the completeness and compliance of each proposal once the call has been closed.
- Contacting the applicants to clarify administrative issues.

Scientific reviewers, drawn from the Scientific Advisory Board, responsible for:

- Developing the scientific review of the proposals assigned to them.

Technical reviewers, drawn from the WP4 EOSCpilot Shepherds, responsible for:

- Developing the technical review of the proposals assigned to them.

¹ Handbook of HPC e-Science Infrastructure Allocation Reviewing, Selection and Management, EC FP7 contract RI-246711.

Selection committee, drawn from the project's executive committee, responsible for:

- Analysing the comments from the scientific and technical reviews.
- Prioritizing the proposals to be supported.
- Assessing the effectiveness of the selection process.
- Requesting modifications on the selection process.

General Assembly, formed by a delegate per partner

- Agreeing the final selection.

3.3. Selection Process

The Selection process will be formed by the next steps:

Step 1: Call for Proposals

- *Description*: opening the call for proposals.
The calls for proposals should:
 - Provide clear guidelines on how to prepare and submit expressions of interest.
 - Be properly broadcasted and targeted to relevant stakeholders.
 - Be announced in a timely manner and include reminders as the deadline approach.
 - Inform applicants on how to get support or help in clarifying issues.
- *Staff involved*: Call Coordinator and other WP4 participants.

Step 2: Review for compliance

- *Description*: Once the call is closed, the compliance reviewer will check on the completeness and compliance of each proposal. The compliance reviewer will contact the applicant to solve small issues.
- *Staff involved*: WP4 participants.

Step 3: Assignment of reviewers

- *Description*: The call coordinator/s will need to assign the requests to reviewers depending on their area or expertise.
- *Staff involved*: WP4 Leads, Scientific Advisory Board.

Step 4a: Scientific review

- *Description*: Assessment of the scientific project exposed by the proposal. If possible, every accepted proposal will need to represent a different area of science, while giving consideration to already selected science demonstrators. The aim is to get at least one demonstrator per broad scientific field.
- *Staff involved*: Scientific Reviewers drawn from the Scientific Advisory Board.

Step 4b: Technical review

- *Description*: Evaluation of the technical suitability and feasibility of the proposal. The proposed projects need to demonstrate the impact and effectiveness of the EOOSC.
- *Staff involved*: WP4 and WP5 members.

Step 5: Right to reply

- *Description*: The appraisal done by the Scientific and Technical review will be provided to the submitters in order to gather their feedback.
Submitters will not receive all the details of the reviews, only the appraisal.
- *Staff involved*: WP4 members.

Step 6: Prioritization

- *Description:* The Selection Committee will analyse all the reviews, synthesize them and produce a ranking list of the proposals to be supported.
Since the number of applications to be accepted is limited, the ranked list may be organised in three different categories: proposal to be awarded, proposal positively considered but not to be awarded due to insufficient resources available, and proposal not accepted (e.g. due to not being aligned with the objectives of the call).
- *Staff involved:* Selection Committee drawn from the project executive committee.

Step 7: Final Selection

- The prioritised list will be presented by the Selection Committee to the General Assembly. The General Assembly will be able to review the process that has been undertaken, and the technical and scientific reviews of the proposed Science Demonstrators, and verify that the process has been undertaken transparently and finalise the selected Science Demonstrators.
- *Staff involved:* EOSCpilot General Assembly.

Step 8: Notify result to the consortium

- *Description:* The results have to be communicated to the EOSCpilot consortium members.
- *Staff involved:* WP4 participants.

Step 9: Notify result to applicants

- *Description:* The results have to be communicated to the applicants. Formal acceptance or rejection letters can be sent by e-mail or other means.
- *Staff involved:* WP4 participants

Step 10: Resource allocation

- *Description:* Once the results have been communicated to the applicants, the resources (human and technical) that will develop the proposed project need to be identified. It has already been established that each awarded proposal will be allocated 12 PM of effort to engage with the EOSC Project during the 12 months' duration of the Science Demonstrator.
- *Staff involved:* EOSCpilot Executive Committee, Call Coordinator and WP4 & WP5 participants.

Step 11: Appeal request

- *Description:* The applicant will have right to appeal after reception of a rejection letter.
It will have to be noticed that appeal requests will not block the allocation process since they will be considered for the next call.
- *Staff involved:* Science Demonstrator Representatives.

Step 12: Respond to appeal

- *Description:* The appeal requests will be treated and answered by the Selection Committee, if needed in consultation with the Scientific and Technical Reviewers. The call coordinator will ensure the responses are completed and communicated to the requestor in a timely manner.
If the appeal is rejected, as best practice the call coordinator can suggest alternative options or next steps to follow.
- *Staff involved:* Call coordinator, Selection Committee, Scientific and Technical reviewers.

Step 13: Assessment of the selection process

- *Description:* Once the science demonstrator is over, the awarded applicants and the assigned shepherds will be contacted to get their feedback on the effectiveness of the overall selection and support process. This feedback will be considered to improve the process for the future calls.
General information, relating to the call will be released: number of applicants, different institutions

participating, project titles, number of proposed projects deemed fundable/rejected/funded. This data will be anonymised and never associated with the name/s of the applicant/s.

- *Staff involved:* Science Demonstrator Representatives, Shepherds, Selection Committee, WP4 participants.

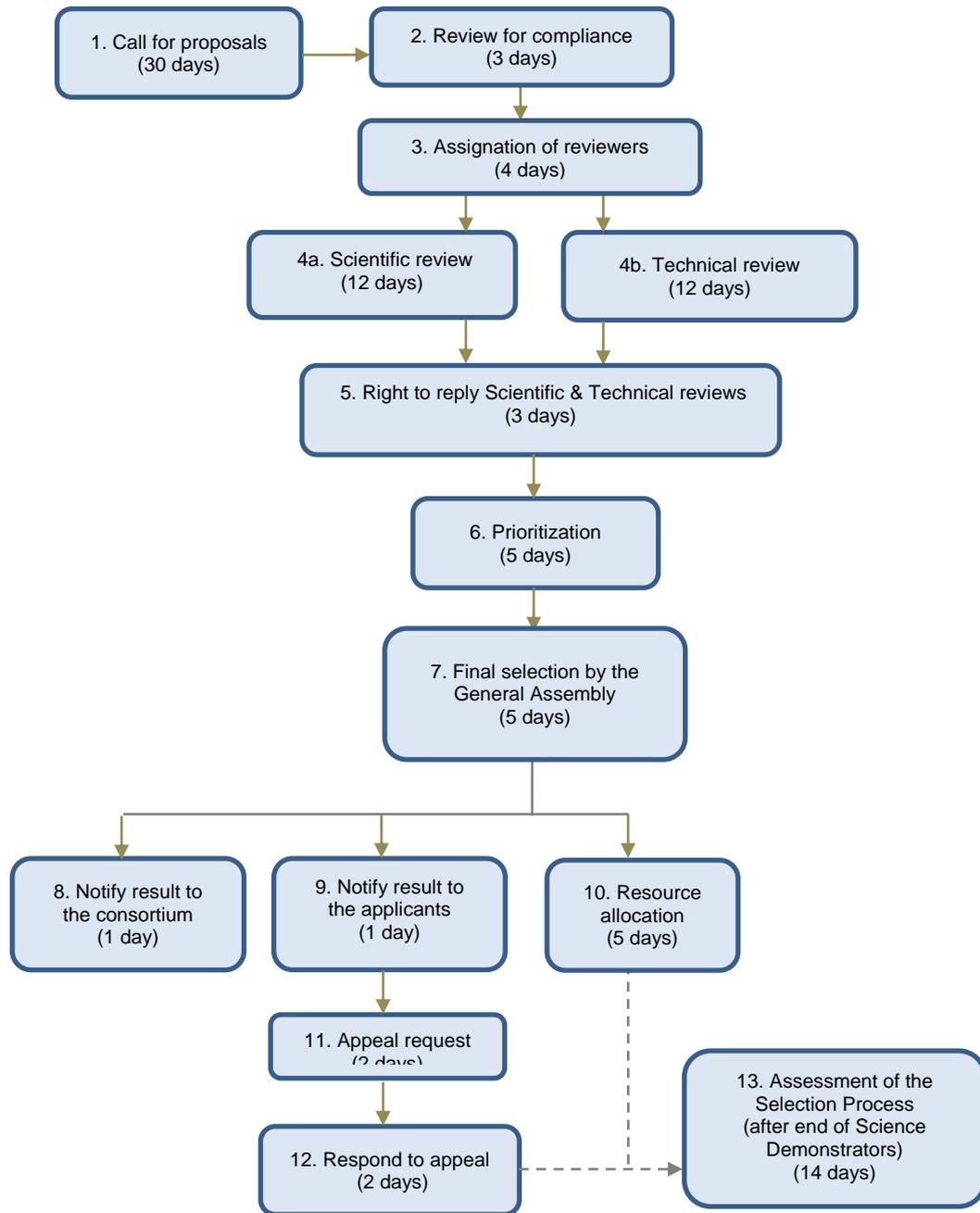


Figure 2 – Activities and estimated duration (working days) to develop the Selection Process

3.4. Timeline to develop the first iteration of the Selection Process

The timeline has been planned to accommodate the general EOSCpilot planning. It takes into consideration that the execution of the second set of 5 Science Demonstrators will have to start in July 2017. Also, the Assessment of the Selection Process is happening once the execution of the Science Demonstrator has finished in order to be able to evaluate the full experience and be able to use the feedback provided in the next iteration of the Selection Process.

Table 1 – Estimated timeline to develop the EOSCpilot Selection process (Steps 1 to 13)

Step/Action	Duration (working days)	Start date	End date
Call for proposals	20	01/04/17	30/04/17
Review for compliance	3	02/05/17	04/05/17
Assignment of reviewers	4	05/05/17	10/05/17
Scientific review	12	11/05/17	26/05/17
Technical review	12	11/05/17	26/05/17
Reply scientific and technical review	3	29/05/17	31/05/17
Prioritization	5	01/06/17	07/06/17
Final selection	5	08/06/17	14/06/17
Notify result to the consortium	1	15/06/17	15/06/17
Notify results to the applicants	1	15/06/17	15/06/17
Resource allocation	5	15/06/17	21/06/17
Appeal request	2	15/06/17	16/06/17
Respond to appeal	2	19/06/17	20/06/17
Assessment of the selection process	15	15/07/18	30/07/18

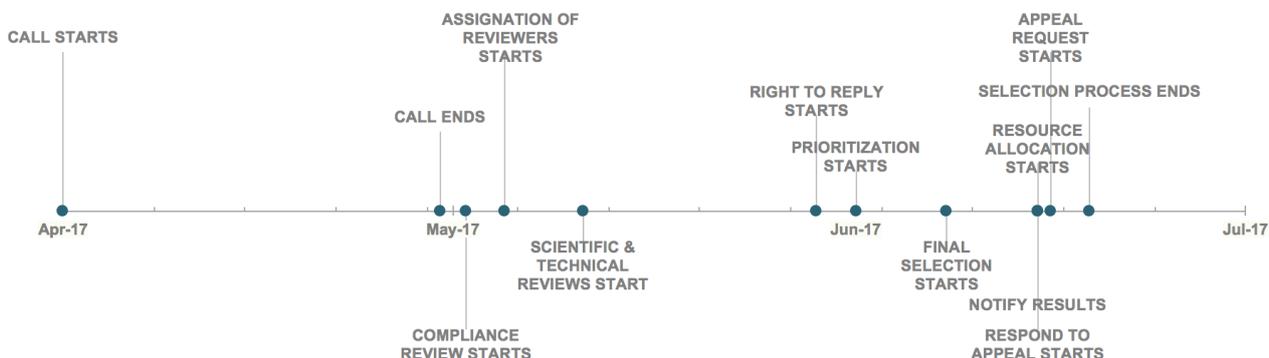


Figure 3 – Estimated timeline to develop the first Selection Process (Steps 1 to 11)

4. SELECTION CRITERIA FOR SCIENCE DEMONSTRATORS

The selection criteria have been shaped considering the selection principles, the selection process defined and the early selection criteria.

The selection criteria have been organised in three parts in order to clarify the aspects to be reviewed in the different steps of the selection process:

Compliance Review

1. Having submitted a completed form in compliance with the call guidelines.

Scientific Review

2. Having a strong and well defined scientific challenge addressed by the use of e-infrastructure (e.g. an explicit data analysis challenge or supporting the operation of a Virtual Research Environment, or the dissemination and sharing of data and other research outputs) that will show the scientific excellence and societal impact that could be achieved by EOOSC.
3. Be representative of a broader scenario that when established in EOOSC would have impact across Europe and beyond.
4. Be supported by mature research infrastructures and/or research organisations at a European/National level that will be the long-term consumers of the EOOSC and who can demonstrate their engagement in EOOSC or their willingness to be engaged.
5. Commit to publishing or consuming third-party research artefacts (e.g. publications, datasets, tools, workflows) as part of the Open Science model, with the application of FAIR principles, and also as part of the Open Research Data Pilot in H2020.
6. Contribute to achieve as broad a range of stakeholders through the science demonstrators as possible with maximum coverage of different types of research, services used and varieties of types of data, strengthening the consortium.
7. Proposals between them should cover a range of scenarios across the open science lifecycle, from data collection and analysis, to final publication and long-term preservation and reuse.

Technical Review

8. Provide data integration, management, interoperability and analysis challenges that will drive the specification and development of services within the EOOSC ecosystem that also support open science.
9. Be already developed and demonstrated to be working at scale on existing computational/data/connectivity and other infrastructures (e.g. private, national, European or public clouds/grids/HTC/HPC/network resources) that would become part of the EOOSC.
10. Be feasible to be completed within the timeframe available to carry out the work plan (12 months).
11. Be suitable to be developed with the resources offered (12 PM of effort to engage with the EOScpilot project during the 12 months' duration of each Science Demonstrator).
12. Proposals between them will demonstrate different capabilities/services of EOOSC.

5. CONCLUSIONS

The Selection Process defines a fair, transparent and competitive procedure from the call for proposals to the final selection of Science Demonstrators for the EOSCpilot. It ensures that awarded Science Demonstrators proposals will represent a wide range of scientific domains and illustrate how they can benefit using the EOSC Services.

As a foundation for the Selection Process and the selection criteria, the selection principles were set. Those principles involve: transparency, expert assessment, avoidance of parallel assessment and parochialism, fairness to science, use of prioritisation, applicant right of appeal, confidentiality, conflicts of interests and use of appropriate communication channels.

The Selection Process is aligned with the overall EOSCpilot project objectives. It is designed following best practices to ensure its neutrality and to build the trust of applicants and stakeholders. The proposals will be reviewed in a fair, competitive, transparent and rigorous process. Additionally, the planned workflow and the identified necessary roles and their responsibilities will facilitate the effective and efficient development of the Selection Process. The defined timeline for the first iteration of the Selection Process will ensure that the objectives of WP4 will be reached on time to facilitate the work in other EOSCpilot work packages.

Also, a solid selection criteria has been derived from the selection principles. The criteria will be used to fulfil the compliance, scientific and technical reviews.

Hence, the defined Selection Process, and its continuous improvement due to the process assessment, will ensure that the awarded proposals for Science demonstrators show EOSC usefulness and relevance and thereby drive the further development of the EOSC.

ANNEX A. GLOSSARY

The definitions below shall be considered for the purpose of this deliverable.

Term	Explanation
Cloud computing	The practice of using a network of remote servers hosted on the Internet to store, manage, and process data, rather than a local server or a personal computer.
Consortium	The EOSCpilot project consortium
Data analysis	Process of inspecting, cleansing, transforming, and modelling data with the goal of discovering useful information, suggesting conclusions, and supporting decision-making.
Data integration	To combine data from disparate sources into meaningful and valuable information.
Data interoperability	To work with other data systems and exchange information while preserving the meaning and relationships of the data exchanged.
Data management	Development and execution of architectures, policies, practices and procedures in order to manage the information lifecycle needs in an effective manner.
EOSC	European Open Science Cloud.
FAIR principles	The principles that for data to be open it should be Findable, Accessible, Interoperable, and Re-usable.
General Assembly	It is the ultimate decision-making body of EOSCpilot project. In accordance with normal H2020 practice, it consists of one Delegate per Partner, who may appoint a substitute to attend and vote at any meeting (one vote per Delegate).
Grid computing	A distributed computing architecture that combines computer resources from various domains to reach a main objective. In grid computing, the computers on the network can be orchestrated to work on individual tasks concurrently together, thus functioning as a much larger computer.
HPC	High-Performance Computing. Implies the use of parallel processing for running advanced application programs efficiently, reliably and quickly.

HTC	High-Throughput Computing. Implies the use of many computing resources over long periods of time to accomplish a computational task.
Network resources	Forms of data, information and hardware devices that can be accessed by a group of computers through the use of a shared connection.
Open Research Data Pilot in H2020	An initiative in the H2020 programme that all research outputs (e.g. data and publications) from H2020 projects should be subject to a data management plan and made open access, within the limits of legitimate reasons for confidentiality.
Open Science	The movement to make scientific research, data and dissemination accessible to all levels of an inquiring society, amateur or professional.
Science demonstrators	High-profile pilots that integrate services and infrastructures to show the usefulness of the EOSC Services and will drive the further development of EOSC.
Science Demonstrator representative	Contact person from a specific Science Demonstrator. He/she will work together with the Shepherd assigned to the Science Demonstrator in order to develop the proposed project.
Shepherd	Staff who supports the main contact of an approved Science Demonstrator in order to facilitate the engagement with the EOSCpilot project in establishing their technical use case, software tools, data models and scientific workflow going to be used.

ANNEX B. SCIENCE DEMONSTRATOR CALL GUIDELINES

1. Introduction

The European Open Science Cloud for Research pilot project (EOSCpilot) project is supporting the first phase in the development of the European Open Science Cloud (EOSC) as described in the EC Communication on European Cloud Initiatives. The EOSCpilot project will address some of the key reasons why European research is not yet fully tapping into the potential of data. Specifically, it will reduce fragmentation between data infrastructures by working across scientific and economic domains, countries and governance models, and improve interoperability between data infrastructures by demonstrating how data and resources can be shared even when they are large and complex and in varied formats.

These actions will build on and leverage already available resources and capabilities from research infrastructure and e-infrastructure organisations to maximise their use across the research community. The EOSC pilot project will improve the ability to reuse data resources and provide an important step towards building a dependable open-data research environment where data from publicly funded research is always open and there are clear incentives and rewards for the sharing of data and resources.

The EOSCpilot is a consortium of 33 pan-European organisations & 15 third parties covering a range of disciplines and organisations working together to achieve a series of objectives:

- **Governance:** designing and testing a stakeholder-driven governance framework with the involvement of research communities, research institutions, research infrastructures including e-infrastructure, and research funding bodies, to shape and oversee future development of the European Open Science Cloud.
- **Policy:** establishing the policy environment required for the effective operation, access and use of the envisioned open and trusted EOSC to foster research and science, by lowering the barriers to interaction with the EOSC.
- **Science Demonstrators:** developing a number of Science Demonstrators in particular domains that will show the relevance and usefulness of the EOSC Services and their enabling of data reuse, and will drive the further development of the EOSC.
- **Services:** creation of a number of EOSC pilot services that federate data, infrastructure and services fostering multidisciplinary research across geographical borders and across time (through data preservation).
- **Interoperability:** defining and implementing specifications, interfaces, standards and processes that enable and underpin interoperability and sharing of EOSC data and infrastructures across disciplines and providers.
- **Skills:** developing common standards and assessment frameworks to ensure that organisations and individuals are motivated to develop the capabilities and competencies that the EOSC will rely on, and to develop an EOSC education and training strategy and coordinate its delivery.
- **Stakeholder Engagement:** identifying and engaging with the major groups of stakeholders from the scientific research, private and public sectors coupled with supporting the project through an effective communication and outreach strategy based around results oriented content.

2. Scope of the call

The Call for EOSCpilot Science Demonstrators is intended for projects that:

- Have a strong and well defined scientific challenge addressed by the use of e-infrastructure (*e.g. an explicit data analysis challenge or supporting the operation of a Virtual Research Environment, or the dissemination and sharing of data and other research outputs*) that will show the scientific excellence and societal impact that could be achieved by EOSC.

- Provide data integration, management, interoperability and analysis challenges that will drive the specification and development of services within the EOSC ecosystem that also support open science.
- Are already developed and demonstrated to be working at scale on existing computational/data/connectivity and other infrastructures (e.g. private, national, European or public clouds/grids/HTC/HPC/network resources) that would become part of the EOSC.
- Are representative of a broader scenario that when established in EOSC would have impact across Europe and beyond.
- Are supported by mature research infrastructures and/or research organisations at a European/National level that will be the long-term consumers of the EOSC.
- Are committed to publishing or consuming third-party research artefacts (e.g. publications, datasets, tools, workflows) as part of the Open Science model with the application of FAIR principles, and also as part of the Open Research Data Pilot in H2020.
- Contribute to achieve as broad a range of stakeholders as possible with maximum coverage of different types of research and varieties of types of data, strengthening the consortium.
- Are feasible to be completed within the timeframe available to carry out the work plan (12 months).
- Are suitable to be developed with the resources offered (12 PM of effort to engage with the EOSCpilot project during the 12 months' duration of each Science Demonstrator).

3. Eligibility

- Participants in Science Demonstrators will be invited to become beneficiaries of, or third parties to, the EOSCpilot Grant Agreement, and should therefore meet the eligibility requirements of the EC H2020 programme. New project beneficiaries will also be invited into the EOSCpilot Consortium Agreement.
- Only proposals with a civilian purpose will be eligible to participate in EOSCpilot call.
- Only proposals led by academia and public research organisations will be eligible, although contributions from private sector organisations would be welcome.
- The proposal should conform to the commitment to open science and open access, as part of the Open Research Data Pilot in H2020, within the constraints of data protection legislation and legitimate confidentiality.
- Only proposals written in English will be eligible.

4. How to apply?

- All proposals must be submitted via the EOSCpilot website or sending the completed application form to any recipient specified by the EOSCpilot project members.
- All proposals must be fully completed and submitted by the closing date.
- In the case of technical difficulties, the decision of EOSCpilot members as to whether an application can be accepted is final.

5. Selection Process

The Selection process will be formed by the next steps:

Step 1: Call for Proposals

The call for proposals should:

- Provide clear guidelines on how to prepare and submit expressions of interest.
- Be properly broadcasted and targeted to relevant stakeholders.

- Be announced in a timely manner and include reminders as the deadline approach.
- Inform applicants on how to get support or help in clarifying issues.

Step 2: Review for compliance

Once the call is closed, the compliance reviewer will check on the completeness and compliance of each proposal. The compliance reviewer will contact the applicant to solve small issues.

Step 3: Assignment of reviewers

The call coordinator/s will need to assign the requests to reviewers depending on their area or expertise.

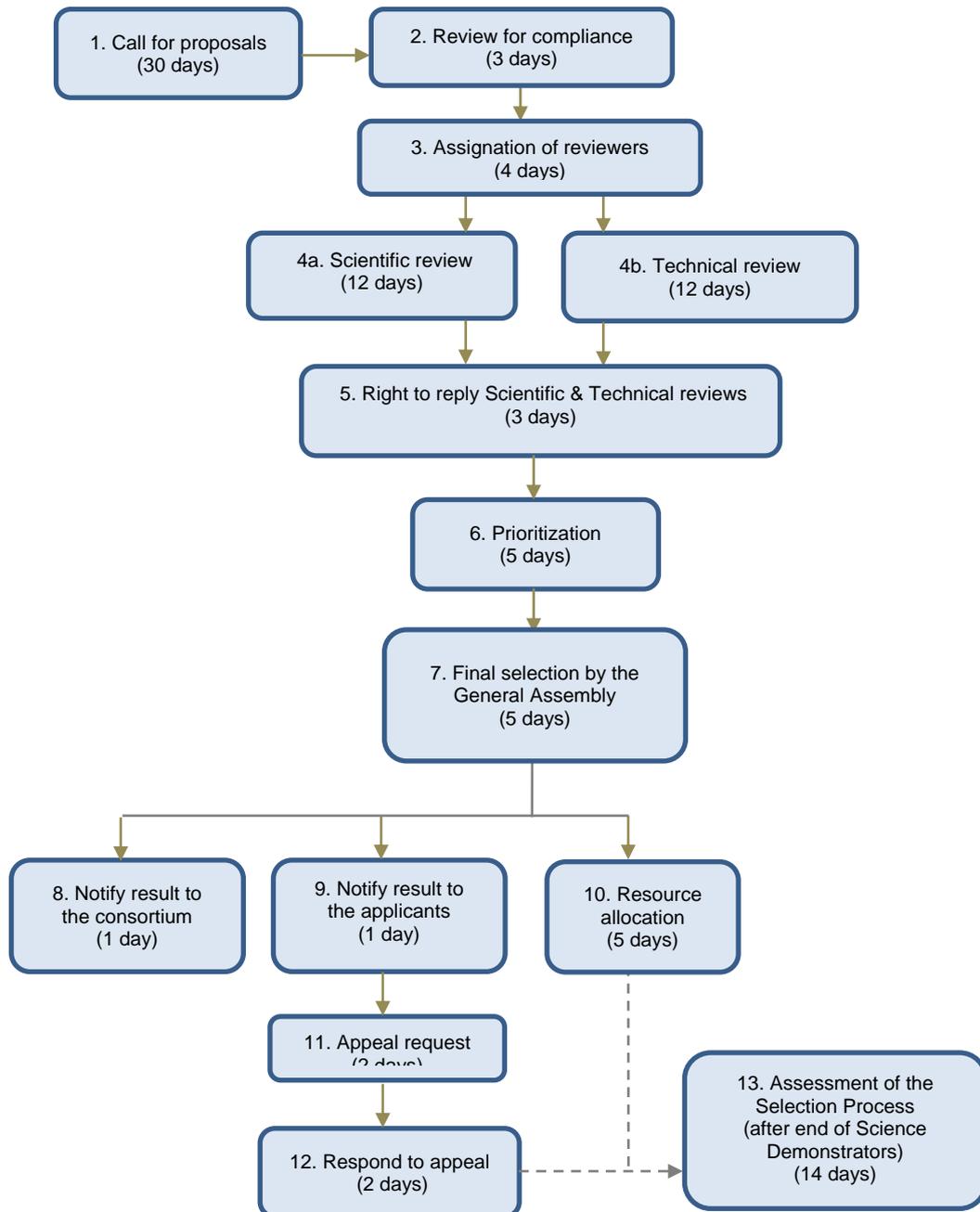


Figure – Activities and estimated time of the EOScpilot project Selection process

Step 4a: Scientific review

If possible, every accepted proposal will need to represent a different area of science, while giving consideration to already selected science demonstrators. The aim is to get at least one demonstrator per broad scientific field.

Step 4b: Technical review

Evaluation of the technical suitability and feasibility of the proposal. The proposed projects need to demonstrate the impact and effectiveness of the EOSC.

Step 5: Right to reply

The appraisal done by the Scientific and Technical review will be provided to the submitters in order to gather

their feedback.

Submitters will not receive all the details of the reviews, only the appraisal.

Step 6: Prioritization

The Selection Committee will analyse all the reviews, synthesize them and produce a ranking list of the proposals to be supported.

Since the number of applications to be accepted is limited, the ranked list may be organised in three different categories: proposal awarded, proposal positively considered but not awarded due to insufficient resources available, and proposal not accepted (e.g. due to not being aligned with the objectives of the call).

Step 7: Final Selection

The prioritised list will be presented by the Selection Committee to the General Assembly. The General Assembly will be able to review the process that has been undertaken, and the technical and scientific reviews of the proposed Science Demonstrators, and verify that the process has been undertaken transparently and finalise the selected Science Demonstrators.

Step 8: Notify result to the consortium

The results have to be communicated to the EOSCPilot consortium members.

Step 9: Notify result to applicants

The results have to be communicated to the applicants. Formal acceptance or rejection letters can be sent by e-mail or other means.

Step 10: Resource allocation

Once the results have been communicated to the applicants, the resources (human and technical) that will develop the proposed project need to be identified. It has already been established that each awarded proposal will be allocated 12 PM of effort to engage with the EOSC Project during the 12 months' duration of the Science Demonstrator.

Step 11: Appeal request

The applicant will have right to appeal after reception of a rejection letter.

It will have to be noticed that appeal requests will not block the allocation process since they will be considered for the next call.

Step 12: Respond to appeal

The appeal requests will be treated and answered by the Selection Committee, if needed in consultation with

the Scientific and Technical Reviewers. The call coordinator will ensure the responses are completed and communicated to the requestor in a timely manner.

If the appeal is rejected, as best practice the call coordinator can suggest alternative options or next steps to follow.

Step 13: Assessment of the selection process

Once the science demonstrator is over, the awarded applicants and the assigned shepherds will be contacted to get their feedback on the effectiveness of the overall selection and support process. This feedback will be considered to improve the process for the future calls.

General information relating to the call will be released: number of applicants, project titles and summaries, number of proposed projects deemed fundable/rejected/funded. Individual project proposal or their reviews will not be released.

6. Applicant commitments

The awarded applicant commits to:

- Joining the EOScpilot project as a project beneficiary or third party, and work within the EOScpilot processes and procedures, including financial and effort reporting.
- Allow the EOScpilot project to use results of the Science Demonstrator as appropriate within dissemination and outreach activities, within the scope of the EOScpilot GA and CA.
- Once the Science Demonstrator is over, provide feedback on the effectiveness of the overall selection and support process.
- Acknowledge the role of the EOScpilot in all publications which include the results from the execution of the awarded project. Users shall use the following (or equivalent) wording in such acknowledgements:

“We acknowledge the EOScpilot project for the support received. Specifically, we gratefully appreciate the support of [name of person/people] from [organisation name], [country].”

ANNEX C. APPLICATION FORM

The application form will gather the information necessary to carry out the selection process and especially the scientific and technical review.

Table – Information requested by the application form

Science Demonstrator title ⁽¹⁾
Project title.
Principal Investigator and team members ⁽²⁾ <i>Provide full names and affiliations</i>
Coordinator/s and team involved.
Brief Summary of the Science Demonstrator ⁽²⁾ <i>Write a brief and plain explanation of the proposed project and the challenge it will address. If your proposal is selected, this summary could be used by the EOScpilot project for dissemination purposes.</i>
Summary of the Science Demonstrator.
Description of the Scientific Demonstrator ⁽²⁾ <i>Explain how the project will fulfil the criteria exposed by the Scope of the call (see Science Demonstrators Call Guidelines for details).</i>
Explanation on how the proposed project fulfils the criteria to be considered during the Scientific and the Technical reviews.
Science Area ⁽¹⁾ <i>Please state the area of science of the project including one or more codes from the OECD Frascati Fields of Science most appropriate to the project (the codes can be consulted at https://www.oecd.org/science/inno/38235147.pdf)</i>
Area of Science in which the project is framed according to the OECD Frascati Fields of Science.
Specify the support that will be by mature European or national research infrastructures, organisations or equivalent initiatives ⁽¹⁾ <i>e.g. EIROforum, ESFRI, EU Flagship Projects, EU Centres of Excellence, evolving multi-national science initiative from several member states.</i>
Statement of the organisations supporting the proposal and the specific support they are providing.
Expected impact of the data activity ⁽³⁾ <i>How is this data challenge similar to others in your own or other research communities? By solving this problem what can others learn?</i>
Explanation of the expected impact of the data activity.

<p>Data Class & Description ⁽³⁾ <i>Is the data to be handled Regulated data, Sensitive data or Private data?</i></p>
<p>Description of the data class to be handled.</p>
<p>Data Challenges ⁽³⁾ <i>What are they e.g. integration, management, interoperability or analysis (scale)? What are the needs for storage and access to ensure the data is FAIR (Findability, Accessibility, Interoperability and Reusability)?</i></p>
<p>Explanation of the data challenges to be addressed.</p>
<p>Current deployment ⁽³⁾ <i>Where and what is the science demonstrator already working on? Grids/clouds/HPC/HTC?</i></p>
<p>Explanation of where and what is the Science Demonstrator proposal currently running.</p>
<p>Compute & Data Resources ⁽³⁾ <i>As there is no funding to provide compute and data resources within the pilot, who will be providing you with the computational and data resources to do this work? Will they be willing to work within the EOscpilot?</i></p>
<p>Description of the compute and data resources to be used.</p>
<p>Use of Open Science services ⁽³⁾ <i>What artefacts (e.g. publications, datasets, tools, workflows etc.) will you produce or consume as part of an Open Science model by the demonstrator? Do you have an existing data management plan? Please provide links.</i></p>
<p>Explanation of the Open Science services to be used.</p>

- (1) *This information could be used to release general statistics regarding the call (e.g. number of applicants, different institutions participating, project titles, number of proposed projects deemed fundable/rejected/funded). This data will be anonymised and never associated with the name/s of the applicant/s.*
- (2) *This information will only be released if the project is awarded to be executed within the EOscpilot project.*
- (3) *This information will only be used within the development of the Science Demonstrator and always within the EOscpilot project team.*

ANNEX D. GUIDELINES FOR SCIENTIFIC REVIEWERS

This document is aimed to provide EOScpilot Scientific Demonstrators reviewers general guidelines for the completion of the reviewer's form.

1. General considerations

Please contact the EOScpilot Call Coordinator (eosc-p-call-coord@eosc.eu) if:

- You are unable to review a proposal due to a conflict of interest.
- You find that your expertise does not cover the proposal you have been assign to review.

Remember during your review:

- You do not have to write any information that can reveal your identity to the applicant.
- Scientific and Technical reviews of the applications are conducted in parallel but they are independent. Since you are developing the Scientific review, you don't have to take the comments from the technical reviewer into consideration.

2. Scientific Selection Criteria for Science Demonstrators

The selection criteria have been organised in three parts in order to clarify the aspects to be reviewed in the different steps of the selection process. As a scientific reviewer, you only will have to consider the criteria for the Scientific Review.

Scientific Review

- Having a strong and well defined scientific challenge addressed by the use of e-infrastructure (e.g. an explicit data analysis challenge or supporting the operation of a Virtual Research Environment, or the dissemination and sharing of data and other research outputs) that will show the scientific excellence and societal impact that could be achieved by EOOSC.
- Be representative of a broader scenario that when established in EOOSC would have impact across Europe and beyond.
- Be supported by mature research infrastructures and/or research organisations at a European/National level that will be the long-term consumers of the EOOSC and who can demonstrate their engagement in EOOSC or their willingness to be engaged.
- Commit to publishing or consuming third-party research artefacts (e.g. publications, datasets, tools, workflows) as part of the Open Science model, with the application of FAIR principles, and also as part of the Open Research Data Pilot in H2020.
- Contribute to achieve as broad a range of stakeholders through the science demonstrators as possible with maximum coverage of different types of research, services used and varieties of types of data, strengthening the consortium.
- Proposals between them should cover a range of scenarios across the open science lifecycle, from data collection and analysis, to final publication and long-term preservation and reuse.

3. Assessment methodology

You are asked to assess the proposal against a number of scientific criteria using a form. Explanatory notes are provided in the form as a reminder of issues that are likely to be significant in determining the overall merit of a proposal, but those are merely indicative and not exhaustive.

A full and brief justification for your assessment of each aspect of the proposal should be included in each section.

We encourage you to use the full scale of appreciation (from “Agree strongly” to “Disagree strongly”) for each criterion. A greater dispersion in the grades guarantees the quality of the final ranking.

The evaluation of a proposal includes assessing ideas, concepts and approaches of it. The presentation of the proposal may help or hinder your ability to review a proposal and a comment to this effect would be appropriate, but this should not form the basis of your assessment.

There is no set way for answering the questions on the form. However, the Selection Committee and the Applicant will find useful if they explicitly identify the main strengths and weaknesses of the proposal.

The maximum number of words or pages of the scientific document to be completed by applicants, including references, is limited by the application system. Should this limit be exceeded, you might shorten your reading to the required length.

4. The Scientific reviewer’s form

The form consists of 4 parts: general information, a reviewer’s self-assessment, the proposal review and the appraisal to be disclosed to the applicant.

- **General information** will show the proposal number, the project title, the contact(s) name(s), the organisation(s) and the Science area.
- The **Reviewer’s self-assessment** will ask you to detail the areas of expertise that are relevant to your assessment of this proposal, and your confidence level assessing the proposal.
- The **Proposal scientific assessment** will be your assessment of the different aspects of the proposal: the research scenario, impact, maturity of its supporting entities, publication and consumption of research artefacts, contribution to achieve a broad range of stakeholders and overall conclusions.
- The **Proposal’s scientific appraisal to be disclosed to the applicant** will be provided to the submitters. The applicants will use this appraisal to decide whether they will use their right to reply and provide clarifications before the prioritization of the proposals.

To facilitate the review, there are explanatory notes under each heading to help you focusing on what should be taken into consideration. However, these are not exhaustive.

Note that there is no limit for the number of words to answer each section of the review form, but please write your responses as concisely as possible while making sure that you cover all the areas of your expertise.



ANNEX E. GUIDELINES FOR TECHNICAL REVIEWERS

This document is aimed to provide EOScpilot Scientific Demonstrators reviewers general guidelines for the completion of the reviewer's form.

1. General considerations

Please contact the EOScpilot Call Coordinator (eosc-pilot-coord@eosc.eu) if:

- You are unable to review a proposal due to a conflict of interest.
- You find that your expertise does not cover the proposal you have been assigned to review.

Remember during your review:

- You do not have to write any information that can reveal your identity to the applicant.
- Scientific and Technical reviews of the applications are conducted in parallel but they are independent. Since you are developing the Technical review, you don't have to take the comments from the scientific reviewer into consideration.

2. Technical Selection Criteria for Science Demonstrators

The selection criteria have been organised in three parts in order to clarify the aspects to be reviewed in the different steps of the selection process. As a technical reviewer, you only will have to consider the criteria for the Technical Review.

Technical Review

- Provide data integration, management, interoperability and analysis challenges that will drive the specification and development of services within the EOsc ecosystem that also support open science.
- Be already developed and demonstrated to be working at scale on existing computational/data/connectivity and other infrastructures (e.g. private, national, European or public clouds/grids/HTC/HPC/network resources) that would become part of the EOsc.
- Be feasible to be completed within the timeframe available to carry out the work plan (12 months).
- Be suitable to be developed with the resources offered (12 PM of effort to engage with the EOscpilot project during the 12 months' duration of each Science Demonstrator).
- Proposals between them will demonstrate different capabilities/services of EOsc.

3. Assessment methodology

You are asked to assess the proposal according to a number of technical criteria using a form. Explanatory notes are provided in the form as a reminder of issues that are likely to be significant in determining the overall merit of a proposal, but those are merely indicative and not exhaustive.

A full and brief justification for your assessment of each aspect of the proposal should be included in each section.

We encourage you to use the full scale of appreciation (from "Agree strongly" to "Disagree strongly") for each criterion. A greater dispersion in the grades guarantees the quality of the final ranking.

The evaluation of a proposal includes assessing ideas, concepts and approaches of it. The presentation of

the proposal may help or hinder your ability to review a proposal and a comment to this effect would be appropriate, but this should not form the basis of your assessment.

There is no set way for answering the questions on the form. However, the Selection Committee and the Applicant will find useful if they explicitly identify the main strengths and weaknesses of the proposal.

The maximum number of words or pages of the scientific document to be completed by applicants, including references, is limited by the application system. Should this limit be exceeded, you might shorten your reading to the required length.

4. The Technical reviewer's form

The form consists of 4 parts: general information, a reviewer's self-assessment, the proposal review and the appraisal to be disclosed to the applicant.

- **General information** will show the proposal number, the project title, the contact(s) name(s), the organisation(s) and the Science area.
- The **Reviewer's self-assessment** will ask you to detail the areas of expertise that are relevant to your assessment of this proposal, and your confidence level assessing the proposal.
- The **Proposal technical assessment** will be your assessment of the different aspects of the proposal: how challenging it is to be supported by EO SC services, status of development, feasibility to be completed with the given resources (12 person months) and in the defined timeframe (12 months), and overall conclusions.
- The **Proposal's technical appraisal to be disclosed to the applicant** will be provided to the submitters. The applicants will use this appraisal to decide whether they will use their right to reply and provide clarifications before the prioritization of the proposals.

To facilitate the review, there are explanatory notes under each heading to help you focusing on what should be taken into consideration. However, these are not exhaustive.

Note that there is no limit for the number of words to answer each section of the review form, but please write your responses as concisely as possible while making sure that you cover all the areas of your expertise.

ANNEX F. SCIENTIFIC REVIEW FORM

Thank you in advance for your time and effort.

The form will help you to review the proposal submitted to be a EOScpilot Scientific Demonstrator. You can access here <link> to the general Guidelines for Scientific Reviewers for the completion of the form.

A. Proposal's general information

Proposal reference number:	
Science Demonstrator title:	
Contact(s) name:	
Organisation(s):	
Science Area:	

B. Scientific Reviewer's Self-Assessment

B1. Please indicate the areas of expertise that are relevant to your assessment of this proposal. If the proposal is multidisciplinary, please give details of which part of the proposal your assessment is directed towards.

Remember not to reveal your identity.

--

B2. What is your confidence level assessing this proposal?

Low		Unable to comment with confidence on any part of the proposal. If you select this option, do not complete the form and contact the Call Coordinator (eosc-p-call-coord@eosc.eu).
Medium		Clear understanding of some aspects of the proposal. If you select this option, please explain below the aspects in which you have expertise and that are driving your review.
High		Clear understanding of all or the major part of aspects involved in the proposal.

B3. Explain your previous choice:

--



C. Proposal Scientific Assessment

C1. Does the proposal has a strong and well defined research scenario?

i.e. an explicit data analysis challenge or supporting the operation of a Virtual Research Environment, or the dissemination and sharing of data and other research outputs that will show the scientific excellence and societal impact that could be achieved by EOOSC.

Agree strongly	
Agree somewhat	
Neutral	
Disagree somewhat	
Disagree strongly	

Explain your choice:

C2. Is the proposal representative of a broader research scenario that when established in EOOSC would have impact across Europe and beyond?

Agree strongly	
Agree somewhat	
Neutral	
Disagree somewhat	
Disagree strongly	

Explain your choice:

C3. Is the proposal supported by mature research infrastructures and/or research organisations at a European/National level that will be the long-term consumers of the EOOSC and who can demonstrate their engagement in EOOSC or their willingness to be engaged?

Agree strongly	
Agree somewhat	
Neutral	
Disagree somewhat	
Disagree strongly	

Explain your choice:

C4. Is the proposal committed to publishing or consuming third-party research artefacts (e.g. publications, datasets, tools, workflows) as part of the Open Science model with the application of FAIR principles, and also as part of the Open Research Data Pilot in H2020?

Agree strongly	
Agree somewhat	
Neutral	
Disagree somewhat	
Disagree strongly	

Explain your choice:

C5. Is the proposal to contribute to achieve as broad a range of stakeholders as possible with maximum coverage of different types of research and varieties of types of data strengthening the consortium?

Agree strongly	
Agree somewhat	
Neutral	
Disagree somewhat	
Disagree strongly	

Explain your choice:

C6. Conclusions from the Scientific Review

Explicitly identify the main strengths and weaknesses of the proposal and any additional comments.

--

D. Proposal’s scientific appraisal to be disclosed to the applicant

D1. Scientific appraisal for the applicant

Explain the main strengths and weaknesses and point out any aspect you find remarkable (for the better or worse).

Remember not to reveal your identity.

--



ANNEX G. TECHNICAL REVIEW FORM

Thank you in advance for your time and effort.

The form will help you to review the proposal submitted to be a EOSCPilot Scientific Demonstrator. You can access here <link> to the general Guidelines for Technical Reviewers for the completion of the form.

A. Proposal’s general information

Proposal reference number:	
Science Demonstrator title:	
Contact(s) name:	
Organisation(s):	
Science Area:	

E. Technical Reviewer’s Self-Assessment

E1. Please indicate the areas of expertise that are relevant to your assessment of this proposal. If the proposal is multidisciplinary, please give details of which part of the proposal your assessment is directed towards.

Remember not to reveal your identity.

E2. What is your confidence level assessing this proposal?

Low		Unable to comment with confidence on any part of the proposal. If you select this option, do not complete the form and contact the Call Coordinator (eoscp-call-coord@eoscpilot.eu).
Medium		Clear understanding of some aspects of the proposal. If you select this option, please explain below the aspects in which you have expertise and that are driving your review.
High		Clear understanding of all or the major part of aspects involved in the proposal.

E3. Explain your previous choice:



F. Proposal Technical Assessment

F1. Does the proposal provide data integration, management, interoperability and analysis challenges that will drive the specification and development of services within the EOSC ecosystem that also support open science?

Agree strongly	
Agree somewhat	
Neutral	
Disagree somewhat	
Disagree strongly	

Explain your choice:

F2. Is the proposal already developed and demonstrated to be working at scale on existing computational/data/connectivity and other infrastructures (e.g. private, national, European or public clouds/grids/HTC/HPC/network resources) that would become part of the EOSC?

Agree strongly	
Agree somewhat	
Neutral	
Disagree somewhat	
Disagree strongly	

Explain your choice:

F3. Is the proposal feasible to be completed within the timeframe available to carry out the work plan (12 months)?

Agree strongly	
Agree somewhat	
Neutral	
Disagree somewhat	
Disagree strongly	

Explain your choice:

F4. Is the proposal suitable to be developed with the resources offered (12 person months of effort to engage with the EOSCpilot project during the 12 months' duration of each Science Demonstrator)?

Agree strongly	
Agree somewhat	
Neutral	
Disagree somewhat	
Disagree strongly	

Explain your choice:

F5. Conclusions from the Technical Review

Explicitly identify the main strengths and weaknesses of the proposal and any additional comments.

D. Proposal's technical appraisal to be disclosed to the applicant**D1. Technical appraisal for the applicant**

Explain the main strengths and weaknesses and point out any aspect you find remarkable (for the better or worse).

Remember not to reveal your identity.

ANNEX H. SELECTION PROCESS ASSESSMENT FORM FOR APPLICANTS

The EOSCpilot project members invite you to answer the following form because you developed a Science Demonstrator within the EOSCpilot.

We are collecting your feedback to improve the way proposals are submitted and how they are assessed. All your answers will be kept confidential and never associated with your name.

1. What is your opinion about these statements regarding the proposal of a Science Demonstrator?

	Agree Strongly	Agree somewhat	Neutral	Disagree somewhat	Strongly Disagree	Don't know/ No opinion
The submission procedure is clearly explained at EOSCpilot website.	<input type="checkbox"/>					
The submission procedure is clearly explained in the EOSCpilot Call Guidelines.	<input type="checkbox"/>					
The information required to apply is adequate.	<input type="checkbox"/>					
The instructions of the on-line application form are clear.	<input type="checkbox"/>					
The on-line application form is easy to fill in.	<input type="checkbox"/>					

2. What is your opinion about these statements regarding the selection of Science Demonstrators?

	Agree Strongly	Agree somewhat	Neutral	Disagree somewhat	Strongly Disagree	Don't know/ No opinion
The selection criteria are properly explained at the EOSCpilot Call Guidelines.	<input type="checkbox"/>					
The selection process is clear and properly explained at the EOSCpilot Call Guidelines.	<input type="checkbox"/>					
The time between the submission of the application and the result notification is adequate.	<input type="checkbox"/>					
The availability of a right to reply to the result increases my confidence on the selection process.	<input type="checkbox"/>					
The comments from reviewers were useful.	<input type="checkbox"/>					

3. If you have any additional comments or questions, please feel free to write them here.

ANNEX I. SELECTION PROCESS ASSESSMENT FORM FOR SHEPHERDS

The EOSCPilot project members invite you to answer the following form because you were a Shepherd assigned to a Science Demonstrator within the EOSCPilot.

We are collecting your feedback to improve our Selection Process.

All your answers will be kept confidential and never associated with your name.

1. What is your opinion about these statements regarding the Science Demonstrator you worked with?

	Agree Strongly	Agree somewhat	Neutral	Disagree somewhat	Strongly Disagree	Don't know/ No opinion
The information in the application form was sufficient to understand the project to be developed.	<input type="checkbox"/>					
It included a well-defined research challenge.	<input type="checkbox"/>					
It was representative of a broader research scenario.	<input type="checkbox"/>					
It was supported by mature research infrastructures and/or research organisations.	<input type="checkbox"/>					
It was committed to publish or consuming third-party research artefacts.	<input type="checkbox"/>					
It provided a data integration challenge.	<input type="checkbox"/>					
It provided a data management challenge.	<input type="checkbox"/>					
It provided a data interoperability challenge.	<input type="checkbox"/>					
It provided a data analysis challenge.	<input type="checkbox"/>					
It was already working in an infrastructure that would become part of EOSC.	<input type="checkbox"/>					
It was feasible to be completed in 12 months with the available resources.	<input type="checkbox"/>					

2. What is your opinion about these statements regarding your appointment as Shepherd?

	Agree Strongly	Agree somewhat	Neutral	Disagree somewhat	Strongly Disagree	Don't know/ No opinion
I was appointed as Shepherd at least two weeks before starting the development of the Science Demonstrator.	<input type="checkbox"/>					
I received all the information I needed to understand the project.	<input type="checkbox"/>					

3. If you have any additional comments or questions, please feel free to write them here.