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## **ENVRIplus D10.2: Masterplan to facilitate and encourage access to RIs**

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► **To cite this version:**

Mylène Ndisi, Lilith Kuckero, Sabine Philippin, Anders Tjulin, Inger Jennings, et al.. ENVRIplus D10.2: Masterplan to facilitate and encourage access to RIs. CNRS. 2019. hal-04618098

**HAL Id: hal-04618098**

**<https://hal.science/hal-04618098v1>**

Submitted on 21 Jun 2024

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## D10.2 MASTER PLAN TO FACILITATE AND ENCOURAGE ACCESS TO RIS

WORK PACKAGE 10 – GOVERNANCE FOR SUSTAINABLE AND  
ADJUSTABLE ACCESS TO RIS

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Accepted by: Paolo Laj (WP 10 leader)

**Deliverable type:** [REPORT]

**Dissemination level:** PUBLIC

**Deliverable due date:** 28.02.2019/M46

**Actual Date of Submission:** 01.03.2019



## ABSTRACT

This deliverable is meant to propose to Environmental Research Infrastructures the key elements that will enable the provision of access for users to the Research Infrastructure's facilities, resources, and services in the most efficient and sustainable manner. Environmental research infrastructures comprise a variety of research infrastructures offering resources and services are often geographically distributed. Aiming at improving the understanding of the complex Earth system and covering the biosphere, atmosphere, hydrosphere, and the lithosphere, the distributed nature of the Environmental research infrastructures presents specific challenges and opportunities. Master tools that facilitate access, which are outlined herein, mostly refer to physical and remote access, as virtual access is wide access and requires different tools. The primary focus of this deliverable is, therefore, the access process for physical and remote access.

Tools that facilitate access in the document are derived from work and experience from the Research Infrastructures participating in ENVRIplus, as well as from contributions from distributed service providing infrastructures. Environmental Research Infrastructures provide access to their services and rely on the user's will and motivation to use them. Moreover, physical and remote access requires additional resources and the staff of the RIs encounter a diversity of tasks in order to make access possible and smooth. The access management plan and data management plan help the staff in the provision of efficient access. Subsequently, the conception of an access provision plan for distributed RIs is challenging. This present deliverable aims at providing advice and information about possible solutions.

Strategies put in place for access to Environmental Research Infrastructures must allow the facilitation of an efficient and effective access process to respond and integrate the user needs towards service-oriented Research Infrastructure operations, taking into account the needs not only of the relevant scientific communities but the society at large. This is especially important for Environmental RIs having the primary aim of providing near real time data and access for Earth observation and forecasting of hazardous events of great immediate societal impact such as earthquakes, tsunamis, volcanic eruptions and other.

Project internal reviewer(s):

<b>Project internal reviewer(s):</b>	<b>Beneficiary/Institution</b>
Technical Reviewer	Rosa M. Petracca Altieri
RI Reviewer	Benedicte Ferré



Document history:

Date	Version
19.11.2018	Draft for comments
07.01.2019	Corrected version
12.02.2019	Accepted by Paolo Laj

#### DOCUMENT AMENDMENT PROCEDURE

Amendments, comments and suggestions should be sent to the author Mylène Ndisi ([mylene.ndisi@uca.fr](mailto:mylene.ndisi@uca.fr)).

#### PROJECT SUMMARY

ENVRIplus is a Horizon 2020 project bringing together Environmental and Earth System Research Infrastructures, projects and networks together with technical specialist partners to create a more coherent, interdisciplinary and interoperable cluster of Environmental Research Infrastructures across Europe. It is driven by three overarching goals: 1) promoting cross-fertilization between infrastructures, 2) implementing innovative concepts and devices across RIs, and 3) facilitating research and innovation in the field of environment for an increasing number of users outside the RIs.

ENVRIplus aligns its activities to a core strategic plan where sharing multi-disciplinary expertise will be most effective. The project aims to improve Earth observation monitoring systems and strategies, including actions to improve harmonization and innovation, and generate common solutions for many shared information technology and data related challenges. It also seeks to harmonize policies for access and provide strategies for knowledge transfer amongst RIs. ENVRIplus develops guidelines to enhance interdisciplinary use of data and data-products supported by applied use-cases involving RIs from different domains. The project coordinates actions to improve communication and cooperation, addressing Environmental RIs at all levels, from management to end-users, implementing RI-staff exchange programs, generating material for RI personnel, and proposing common strategic developments and actions for enhancing services to users and evaluating the socio-economic impacts.



ENVRiplus is expected to facilitate structuration and improve quality of services offered both within single RIs and at the pan-RI level. It promotes efficient and multi-disciplinary research offering new opportunities to users, new tools to RI managers and new communication strategies for environmental RI communities. The resulting solutions, services and other project outcomes are made available to all environmental RI initiatives, thus contributing to the development of a coherent European RI ecosystem.



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# MASTER PLAN TO FACILITATE AND ENCOURAGE ACCESS TO RIs

## 1. INTRODUCTION

Environmental Research Infrastructures provide access to their facilities, resources, and services and are oriented to service the user demands. To encourage efficient use, particularly distributed Research Infrastructures (RI) in their provision of remote and physical access, encounter challenges to make access possible and smooth. Subsequently, the conception of an efficient access provision plan for distributed RIs is essential, and so this deliverable aims at providing advice and information about suitable solutions.

This master plan focuses on the tools that help to facilitate easy provision of access to services. They are employed with a main aim of encouraging physical and remote access to distributed RIs by users. These tools are, among others, access policies and processes that make access provision efficient. Often heavy administrative processes can be problematic in terms of logistical organization and time consumption for the management and implementation of physical and remote access. Access provision that is tailored to the user need, as the European Commission in its call of action paper<sup>1</sup> on sustainability of access provision concluded, is primordial. Access to RIs is best ensured by well-defined data and access policies and guidelines that are precise, clear and feasible. These tools also simplify work processes for the staff in the access providing the RI.

A benchmark used to evaluate the utility of an infrastructure is its provision of results in the form of data and of publications. Open access to data and publications will support research infrastructures in increasing the science and innovation activity and its impact. Guidelines will help to ensure that access processes are handled responsibly and efficiently.

Good access and data policies should underpin the development of an access management plan and a data management plan establishing the key elements of successful access and data provision. Such plans define the access process, how data are to be handled for research use and provide guidelines for both staff and users. Access and data management plans elaborate the roles and responsibilities of all parties throughout the process. A good central management and a clearly defined process, including results dissemination and evaluation of performance will facilitate

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<sup>1</sup> European Commission. (2017). *Sustainable European Research Infrastructures, A call for Action*. Luxembourg: Publications Office Luxembourg.



successful access, encourage potential users and simplify processes for the involved RI staff.

## 2. TERMINOLOGY

**Research Infrastructures (RIs)** are facilities, resources and services that are used by the research communities to conduct research and foster innovation in their fields. Where relevant, they may be used beyond research, for education or public services.

**Environmental Research Infrastructures** enable research to foster innovation and societal impact in matters such as climate change, extreme events or loss of biodiversity. The ENVRIplus project is a H2020 project that brings together environmental as well as earth system research infrastructures to create an interdisciplinary and interoperable cluster of environmental research infrastructures in Europe. A majority of the research infrastructures in the environmental domains (biosphere, atmosphere, hydrosphere, lithosphere), as well as in the ENVRIplus project, are categorized as distributed research infrastructures.

**Access** refers to physical, remote and virtual admission to, interactions with and use of RIs and to services offered by RIs to Users.

Such Access can be granted, amongst others, to data, data-communication services, software, computing resources, samples, archives, observational facilities, fixed and mobile experimental facilities, education and training, expert support and analytical services.

**Physical access type** is access involving hands-on access of any user, i.e., the users physically visit the RI installation. A competitive selection is needed for this access as it is capacity-driven and depends on the available resources. This is access to different facilities, observatories, laboratories, stations, platforms, research vessels, instruments etc.

**Virtual access type** is any access through communication networks in which resources can be simultaneously accessed by a theoretically unlimited number of users. A competitive selection process is not needed. This is typical for access to data and other digital tools.

**Remote access type** is the non-physical access of a user at the installation. The resources to be accessed are not unlimited and a competitive selection is needed. This is remote access to sensors, remote access to calibration facilities for instrument calibration, access to machine time, distribution of reference samples etc.

**The Excellence-driven access mode** regulates the competitive selection of users and is dependent on the scientific excellence, originality and quality, technical and ethical feasibility of an access proposal for scientific purposes.





**The Technical need-driven access mode** regulates the competitive selection of users and is based on a technical need that can be satisfied through an access to RI services and/or facilities.

**The Market-driven access mode** applies when there is a market need that can be satisfied through an access to RI to find market-oriented technical or scientific solutions.

### 3. ACCESS PROCESS

In figure 1, virtual access is open hence the access process is simple. The access process for physical and remote access comprises of different steps which are described below and are illustrated in figure 2.

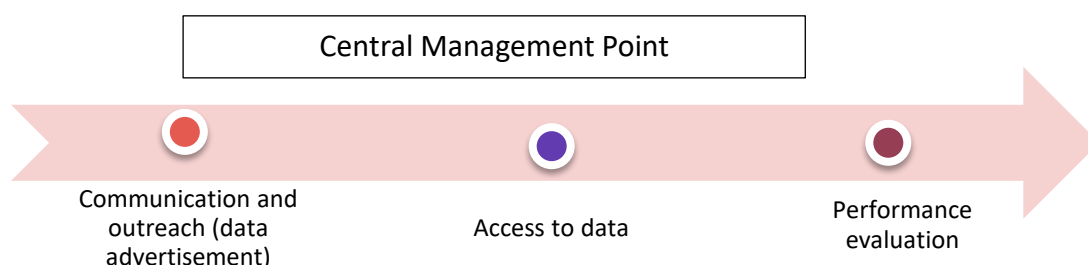


FIGURE 1: ACCESS PROCESS FOR VIRTUAL ACCESS

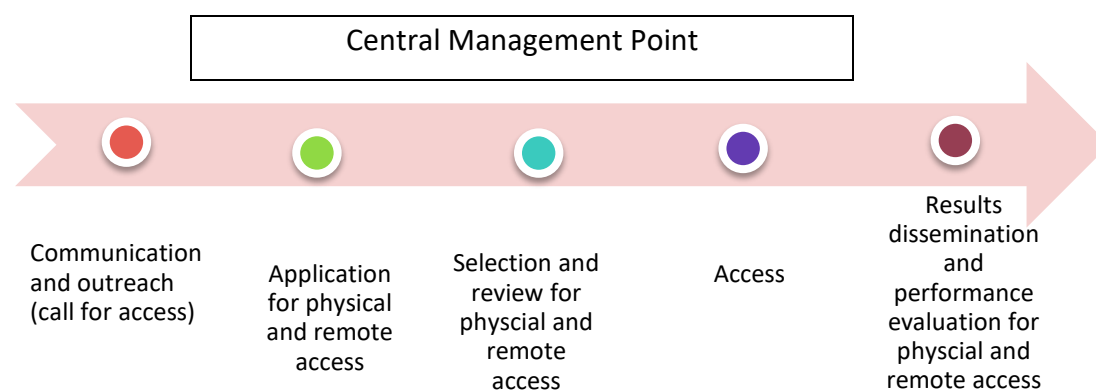


FIGURE 2: ACCESS PROCESS FOR PHYSICAL AND REMOTE ACCESS

#### 3.1. Central Access Management

The main goal of a central access management for distributed RIs is to facilitate efficient and effective access to RIs by making procedures and conditions as easy as possible for the user and particularly for the RI. A central access management is

fundamental for RIs providing access to distributed infrastructures as it is the case for the majority of Environmental RIs. The particularity of distributed RIs is that their facilities are geographically dispatched in nature. A central management was discovered to be crucial by a sample RI. It would provide harmonized and standard procedures that if applied would ensure simplified access<sup>2</sup>.

The central management should be governed by an access management plan. This plan should define the entire access process (see figure 1) including:

- User outreach, engagement and communication activities,
- Detailed description of application and selection procedures for physical and remote access, access workflows, access provision and support, results from access, issues related to intellectual property,
- Access monitoring, and other post access provisions.

The central access management should also include a data management plan to manage the data life cycle and data provision. Details of the management plans are further discussed in the recommendations of this deliverable in section 4.

A central access management represents the interface between the user and the RI services. It is implemented following two main organizational principles, as indicated in the ESFRI Roadmap Guide 2018:

- A single point of access for all users,
- A support structure dedicated to optimize the access.

These points are further discussed below.

### 3.1.1. Single entry point

The single entry point is the first contact point of a potential user with an RI and is essential for any distributed RI. The advantage of the single entry point is the existence of a unique interface between the user and the RI's services that are geographically distributed. This concept allows the provision of effective guidance to potential users and sufficiently informs them on the available RI services. A single access management point remains a key advantage in linking the RI, especially a distributed RI, to its users. This is because a unique contact at the RI can guide users for an RI services and access and answer questions during the application and follow-up process.

The entry point accepts requests for different types of access offered by an RI. As in figure 3 below, there are three ways how services can be accessed: one is wide access, also virtual access, which is access through online communication networks. It allows

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<sup>2</sup> ACTRIS. (2018, October 31). *ACTRIS Access and service policy*. From ACTRIS: [https://www.actris.eu/Portals/46/Documentation/ACTRIS%20PPP/Deliverables/Public/WP2\\_D2.6\\_M32.pdf?ver=2018-10-29-152442-467](https://www.actris.eu/Portals/46/Documentation/ACTRIS%20PPP/Deliverables/Public/WP2_D2.6_M32.pdf?ver=2018-10-29-152442-467)



simultaneous access regardless of the location to data and data products. This access must be open in alignment with the EU strategies and incentives for provision of open science<sup>3</sup>. Those services that are available through virtual access will be provided directly to the users without any written request or required interaction with the RI. Another way to access RI services is competitive access, namely physical access which allows actual visits to the sites of facilities, and remote access which enables users to have access to a facility remotely. Remote and physical access' selection processes will be applied depending on availability of the RI and eligibility of the user. Desired outcomes of calls could be different depending on eligibility criteria.

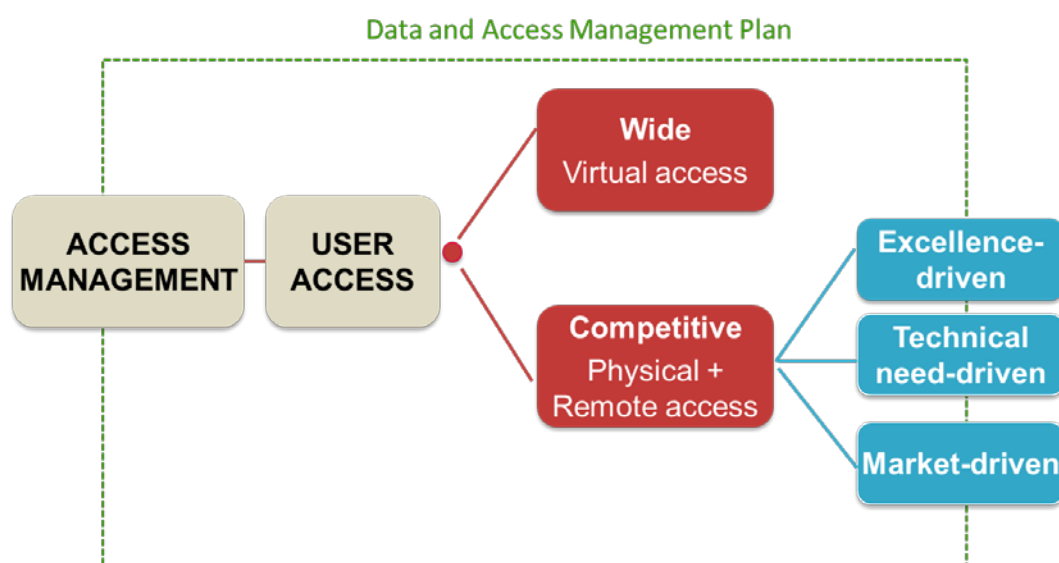


FIGURE 3: ACCESS TYPES AND MODES

### 3.1.2. User support point

#### ***Link with access provider***

The central access management furthermore acts as a link between users and the access provider who provides RI services for distributed RIs for physical and remote access. The access provider is the personnel in charge of access provision at the facility who provides technical, administrative and logistical onsite support. Through a central access management point, a flow of information is ensured between the users and the different facilities of the infrastructure to facilitate and enable efficient access provision as intended by the RI strategy.

<sup>3</sup> ESFRI. (2018, October 5). *Roadmap 2018*. From <http://roadmap2018.esfri.eu/>: <http://roadmap2018.esfri.eu/media/1048/rm2018-part1-20.pdf>

### ***Advice during access process***

Central management will also accompany the user through the access period. A user helpdesk can offer additional support in the form of email contact, webinars for users, online fora, instant messaging services, precise and clear instruction manuals etc. Effort should be made in instructing or training the responsible access management staff in delivering good guidance and on-site support throughout the access process. This might encourage the applicant for requesting access, facilitating the process and minimizing any administrative burden on the user side for remote and physical access.

As part of the master plan, the RI may also provide a structured guide on funding possibilities to cover expenses related to the required user mobility for accessing the services. This could encourage more potential users to apply for access, and thus enhance the use of the RI physically and remotely.

### ***Post access***

The central user support point also ensures a post access follow up in the dissemination of and access to the user results in the form of publications and data resulting from access. This single point should act as a link with RI data center for archiving data resulting from access and potential access to it. Furthermore, a central access management can provide a basis for knowledge exchange for users. This could be ensured through user platforms that give opportunities for sharing experience and knowledge in the targeted scientific domains. Central management is essential for collection of user access information (e.g., quantity of access provided, scientific and technical reports) and continued monitoring of access provision and, therefore, an easier implementation of corrective measures that may be needed in case of evolving user needs. User access information should be collected in line with ethical guidelines. This is done according to performance evaluations and user feedback.



### 3.2. Outreach and communication

The outreach and communication process before, during and after access is shown below in figure 4.

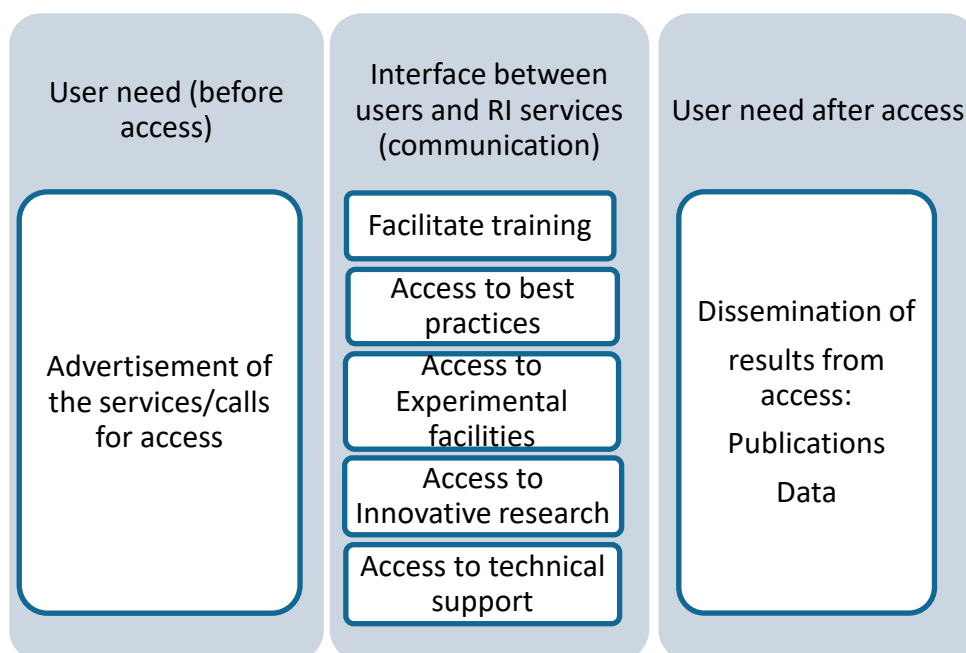


FIGURE 4: ACCESS OUTREACH AND COMMUNICATION

The intended result of outreach through communication as an activity is to engage users and to bring knowledge as well as to enhance expertise. Such strategies aim to enhance the user community's general knowledge and understanding of the RI's services, mission and goals towards users. The first step of the outreach strategy is to identify and analyze potential users or the target audience, then the services provided. This should lead to a clear picture of how to develop the RI's offer of services, which is based on the RI's capability to answer the users' needs. In addition to that, getting to know the different user types helps to tailor the suitable messages to communicate with and to engage each user category. User engagement shall be pursued by implementing tools for the continuous interaction with the users (such as user fora, social media, virtual online communities etc.), to get insights of their evolving interests and needs and to orient the RI's strategic developments plans.

Communication is therefore a key tool to promote access to the RI services for the various user communities<sup>4</sup>. Without efficient communication, an RI will not be able to effectively promote and provide its services. Communication towards users implies

<sup>4</sup> European IPR Helpdesk. (2018). *Making the most of your H2020 project*. Brussels: Online publication. [https://www.iprhelpdesk.eu/sites/default/files/EU-IPR-Brochure-Boosting-Impact-C-D-E\\_0.pdf](https://www.iprhelpdesk.eu/sites/default/files/EU-IPR-Brochure-Boosting-Impact-C-D-E_0.pdf)

that opportunities for access are advertised, for example through open and ongoing calls. These opportunities of access could be made depending on infrastructure availability, capacity, and need or even according to various RI scientific goals. For example, if an access provider is not active in communicating services to the RI, a researcher may not become aware of the opportunities and will not come to the site for the services even if access was free-of-charge. After users are evaluated and selected, the central management also communicates results of the selection process to users. There needs to be ample time left between the application and the actual access for the possible need for the users to optimize their proposal.

RIs must implement adequate measures to disseminate its services to user communities that can be very wide and numerous:

- For the scientific research community (environmental sciences linking to health, food and nutrition and energy and other sectors): services include access to data and data products, experimental facilities for basic and applied research for new scientific and technological knowledge, training, technical services and best practices.
- For Industry and private sector: services include experimental facilities for innovative research for new technological knowledge, instrument testing and development.
- For public services and authorities: services include information and data for anticipating and predicting of environmental events and for decision making and policy development on local, regional, national, international level.
- For civil society: services include access to environmental information of immediate societal impact.

Most significant channels for promoting access provision are: RI web portal, email (e.g., newsletters), social media (Facebook, Twitter, etc.), webinars, common online working platforms as well as presence on relevant conferences, workshops and open days/site visits. Further printed materials (booklets, posters etc.) are a common way of dissemination.

In addition, users should be encouraged to get actively involved in the results' dissemination activities while acknowledging the RI in the case of publications and attributing in the case of data. Users should be encouraged to present results at conferences and scientific meetings or provide information to the non-scientific public community, general and social media.

These outreach strategies encourage the promotion of users' research as well as the visibility of the involved RIs and/or the access-providing facilities.

### **3.3. Application**



To be granted access to any distributed RI services, users should submit a written access request in the form of an application. This refers to mainly physical and remote access which is competitive due to limited resources and which therefore requires a selection process. Regarding the application process for access provision, there are several aspects to be considered.

Application procedures need to be standardized and simplified in order to save time and facilitate the work for both staff of the RI and the applicants. Supporting guidance should be clear and concise. Applications should contain a minimum amount of information such as the user profile, scientific goals and description, and financial and logistical needs.

Applications are essential to formulate the request for the use of a specific service and they make possible selection of the requests. Selection is based on the fact that the resources for physical and remote access are limited but also on the scientific excellence and the technical merit that should emerge from the proposal. There is a need for an online submission as this is more efficient for management compared to paper submissions.

### **3.4. Selection Process**

The user service requests lead to a selection process. This is a multiple stage process involving a first eligibility check by the central access management, an overall feasibility check by the relevant access provider, and an evaluation done by a review panel. The review stage is done according to defined selection criteria and access modes.

The virtual access type allows wide access through online communication networks and is open, therefore, no selection process or review criteria are needed. The conditions for selecting the users for physical or remote access are regulated by the different access modes. Excellence driven access requires a selection process based on scientific excellence, and the technical need-driven access is aligned with the technical needs of the users. The market driven access offers user-tailored services and solutions and is market-oriented. It may involve user fees and is based on a user agreement and negotiation, according to the RI access management plan.

An application that is rejected at any stage should not undergo further validation. The central access management should inform the applicants on the acceptance or rejection of their access request, or any revision that may be needed.

#### **3.4.1. Eligibility check**

This is a general check. Different checking criteria could be applied for different access opportunities, depending on the desired outcome of the call. For example, some of



the basic requirements are if the full application sheet is filled and correctly completed or requirements for participants from a specific geographical location are fulfilled.

### 3.4.2. Validation/feasibility check

In a second stage, the request for access should be assessed as regards the feasibility of the proposed access. This is done by the access provider. It is an essential step to verify that the requested services are available, that there is sufficient capacity and fit into the time schedule of the facility, and that the request is technically and logistically feasible. User requests that are not accepted by the access provider should be rejected or undergo revisions for optimizing the application. The central access management should inform the applicant in case of rejection of a user request, along with explanations for refusal. A project can be scientifically feasible, but may be hard to accommodate due to poor logistical aspects. In such a case the access provider may allow the request to the next stage depending on RI goals.

### 3.4.3. Review

Thirdly, the review process is a peer-review evaluation of the application carried out by a review panel, and is based on specific criteria defined for a specific access mode.

A specific review panel should be set up for scientific and technical evaluation. The composition and functioning of the review panel are based on principles of transparency, fairness, and impartiality. The review panel should be composed of experts in the relevant environmental field, with a minimum independent from the RI. The purpose, mandate, composition and appointment of review panel members should be described in the RI access management plan.

In order to achieve maximum transparency, clearly and precisely defined criteria are needed. Basically this review process is an assessment if these criteria are met. A review based on the criteria will filter proposals that will reach this stage. Unclear selection criteria can lead to ambiguity.

A scoring system be used to facilitate evaluation. Examples of criteria from different RIs<sup>5</sup> are:

- Scientific excellence: considering originality, quality, state of the art, technical aspects, relevance and impact.
- Inter-disciplinarity aspect of the project, which would allow the integration of knowledge and methods from different disciplines using a real synthesis approach, can play a role in selecting a project.

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<sup>5</sup> SIOS. (2018, January 26). *SIOS Svalbard Access Policy*. [https://sios-svalbard.org/sites/sios-svalbard.org/files/common/SIOS\\_Access\\_Policy.pdf](https://sios-svalbard.org/sites/sios-svalbard.org/files/common/SIOS_Access_Policy.pdf)





- Technical aspects: instrument performance (maintenance, calibration, quality assurance), operator training, ...;
- Market-driven aspects: relation to business and innovation, private sector participation, technical development, innovative solutions and socio-economic impact.
- Aspects related to the User profile and/or origin of Users, considering new users, early-career researchers or researchers from less-favoured regions (training, best practice), gender equality.
- Or any other pertinent criteria.

At this stage of the selection process, any request for services accepted by the review panel after the selection should be accommodated by the RI. User might be given recommendations by the review panel towards the user's objectives that should be respected by the user whenever possible. It is essential that the RI and access providers as well as the users fulfill their commitment towards the access process once an application has been accepted.

### 3.5. Access

At this stage, after the review process, users are able to carry out actual access to the facility according to results of the review process. Users of the facilities remotely or physically access environmental facilities for training purposes, to access experimental facilities, or for the purpose of innovative and applied research among other reasons. Both users and access providers have responsibilities to fulfill in order for this access process to be successful. On-site support by the access provider is crucial at this stage during the access process. The access provider provides technological and scientific support to the users during the access process. Through this process scientific expertise is shared. The support could include planning in order for the project to take place, the actual set up and finally the access to the instrumentation. They also guide the users administratively and help to organize accommodation, transport, shipping of material if needed, customs, specific permissions etc. Training is also a large component of support offered by access providers to new users.

Terms of service for access enable users to know and remain in compliance with principles that govern the facility and that the facility adheres to. They elaborate principles like those of sharing and use of data that the RI adheres to. They specify legal compliances of the RI nationally and internationally. They also highlight confidentiality and intellectual property laws that protect the user. Other examples of terms of service include the dissemination of results requirements, and terms of funding to the user.

Law and safety regulations at the facilities ensure that users are compliant with national and local safety regulations as they access the facilities, for example, users may be required to provide proof of insurance coverage in case of any eventualities.



This includes the required protection and adequate training for the use of the facility, health and risks etc.

### 3.6. Results

The results of access are in the form of data and publications.

#### 3.6.1. Data

Users should be expected to provide the data resulting from physical and remote access to the RI, which may later be made accessible to other users through virtual access in agreement with the data policy. The RI should allow archiving and access to data in agreement with the RI data policy. The aim is to foster European open science<sup>6</sup>, and provision of access according to the FAIR data principles for providing findable, accessible, interoperable and re-usable data and data use. Data attribution is required from data produced from access to the RI.

A data management plan in line with the data policy should aim at managing the overall data lifecycle including collection, processing, archiving, and sharing of data and digital tools for users.

#### 3.6.2. Publications

Users are expected to make their publications available in open access repositories<sup>7</sup>. They also need to give due acknowledgement for use of the facilities and contributing facility staff during the access when publishing results in accordance with the access management plan. Exemptions to publication requirements and open access policies are possible in specific cases (e.g., commercial users) in agreement with the RI access policy.

### 3.7. Monitoring

Monitoring of access keeps track of an RI access provision. It allows monitoring the metrics on the services such as: user access requests, the number of accepted

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<sup>6</sup> European Commission. (2016). *European Charter for Access to Research Infrastructures, principles and guidelines for access and related services*. Luxembourg: Publications office of the EU.

<sup>7</sup> European Commission. (2016, February 15). *Guidelines to the rules on open access to scientific publications and open access to research data in H2020*. From EU H2020 pilot guide: [http://ec.europa.eu/research/participants/data/ref/h2020/grants\\_manual/hi/oa\\_pilot/h2020-hi-oa-pilot-guide\\_en.pdf](http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-pilot-guide_en.pdf)



requests from the total requests, the number and type of services provided and the quantity of access provided. Other metrics concern the user characteristics such as: number of users, names, origin, affiliation and user needs. The monitoring of access is essential to ensure an efficient access strategy and allow to be flexible in case of evolving user needs. Efficient tools, preferable online tools, should be used to monitor the access provision, and requires at least the following minimum elements:

#### 3.7.1. Compliance statement

The compliance statement is used to ensure that the user access and results are compliant with the RI rules. This concerns certain requirements and obligations for users like the obligation to publish, acknowledge the infrastructure and roles of the users. Access is conditional to the user acceptance to comply with the access and data policy.

#### 3.7.2. Confirmation of access document

This document keeps track of the quantity of access provided by the RI to the user. This serves as a basis by which financial sponsorship is accorded. It enables the RI to record use in whichever access unit is agreed upon; either working days or hours etc.

#### 3.7.3. Scientific and technical reports

Users are required to report on their scientific outcomes after access to the RI. This allows an internal return of the scientific work and results to show from access of the RI work. A basis from which publications may be developed. In the case of technical services, the reports might not be provided by the user but by the facility which reports on the fulfilled technical needs of the facility.

### 3.8. Evaluation of performance

#### 3.8.1. User feedback

An RI strategy should have a well-designed user strategy which is based on the overall user demands and needs. Since RI services need to be aligned with user needs, it is important to keep track of user feedback. An RI should implement tools to monitor the efficiency of the access process and overall user satisfaction. Therefore, a user feedback after the access cycle/process is crucial. A constant review of the processes of the RI is highly recommended to adjust to changing needs of the users and the RI/staff at the RI. Needs from other potential users should be enquired via a user platform or other tools.



Feedback should be collected through standardized online questionnaires from users and of staff working in the access providing RI. This also provides insight on issues to be improved, identifies possible gaps, and gives information that makes access easier.

### 3.8.2. KPIs

The establishment and use of key performance indicators (KPIs) for access is an important internal evaluation measure in an RI and should be assessed against the overall goals of the RI. These KPIs act as ways of measuring success, the quality of service and delivery of the overall goals of the access programme and services. They allow improvement of available processes and quality control processes of established services. The deliverable 10.3 has produced a set of the KPIs that are found relevant for environmental distributed research infrastructures.

## 4. RECOMMENDATIONS

In order to implement efficient data and access provision, it is recommended to RIs to establish data and access management plans that support the RI's user and access strategy as well as the functioning of the RI during the provision of access and they are important reference documents for the functioning of the RI. The data and access management plans should be compliant with the RIs data and access policy, respectively.

### 4.1. Data Management Plan

Environmental RIs providing virtual access to data and digital tools should produce a Data Management Plan (DMP) to describe the methods and procedures in place for the management of data covering the collection, processing, data production, organization, storage, curation, publishing and sharing of data. A data management plan ensures that data are well managed in the present and prepared for preservation in the future.

This data from access should be governed by a management plan stating what procedures of use are appropriate, making clear who can use them and for what purpose. This includes restrictions that may need to be applied following different licenses. The DMP will advise the user on all the possibilities of using, sharing, exploiting the data. It also defines procedures of quality control and assurance, and interoperability. The DMP details how access to different data levels, data sets and products provided, including provisions for open and free access to data and for data curation services. It should also identify responsibilities, highlight potential problems



and propose possible solutions before the problem/risk materializes. The DMP shall be in line the RI data policy principles.

#### 4.2. Access Management Plan

Environmental RIs providing physical and remote access to their facilities, resources and services should produce an Access Management Plan (AMP). The AMP is a document describing the guiding principles of the access management and process. It may address the following aspects:

- A general description of RI services and a description of types of access to these services as well as timelines for access to these services should also be defined in this management plan.
- The single entry point and central management point remain key. The central access management manages resources, organization and tools, roles and responsibilities of users. A single entry point ensures that users have a unique entry point for proposal submission, the RI through this principle is able to provide support and monitoring.
- The access management plan describes the access process including the communication and outreach strategies are key for dissemination and stakeholder reach. It also describes the application process as well as the selection process, which is a multiple stage process to evaluate the access request following a defined procedure. The review panel and its terms of reference are described here. There is a need to leave sufficient time between application and actual services provision to allow for possible proposal optimization through revisions. It also provides for actual access guidelines and for the result dissemination procedures. The access results should aim at recording the output following the access in terms of publications, data, exploitation of results etc.
- The monitoring of access section should identify best tools for monitoring success of the process. The evaluation of performance should be made based on access KPIs and tools to gather the feedback of the users and in respect to the general data protection regulation of 2016/679<sup>8</sup>. This is an EU regulation on personal data protection and on privacy for individuals within the EU which aims to give individuals maximum control over their personal data. This would ensure that any personal data processed by the RI is done so according to provisions and requirements of the GDPR. It requires that data is processed lawfully. This means collected for legitimate purposes and processed in line with the intended purpose of collection. Last but not least it also ensures that the data is accurate and is processed and stored in a manner ensuring security.
- An identification of risks related to access provision should be made to anticipate mitigation plans for the RI.

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<sup>8</sup> European Union. (2016). *Regulation 2016/679 of the European Parliament and of the Council*

Brussels: EU. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R0679>



## 5. CONCLUSIONS

This master plan iterates all main components that are recommended to RIs and in particular distributed RIs for implementing a competitive access programme. User access to the RI facilities, resources and services should be efficient and effective and aim at facilitating access capacities in an RI. Facilitation and encouragement of access requires adequate planning and management at each stage of the access process (communication, application, selection, access, result dissemination and finally monitoring and evaluation). Ideally the process should be made as simple and as efficient as possible for the user and the involved staff. The recommended access and data management plans detail these procedures of management.

### 5.1. Impact on project

This document is one result of the activities in Work Package 10 on developing governance tools and recommendations for access to environmental research infrastructures. It is one of four complementary deliverables providing guidelines, key performance indicators for access provision, and a strategy to ensure the sustainability of the access provision. It considers the results from work package 11 on new tools concepts for physical access provision.

### 5.2. Impact on stakeholders

This deliverable provides suggestions of considerable interest to RIs, facilities, research performing organizations and institutions as it offers useful guidelines for structuring a general master action plan to attract users, to promote their involvement, to better serve their evolving needs and, consequently, to better manage the provision of access and services. More strategically, all this will support stakeholders to guide the future developments of services and organizations, based on a thorough knowledge of their user base and understanding of their users' needs.

Key principles and elements presented here can be easily borrowed by different stakeholders and adapted to specific situations and contexts.



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