MISSIONE 4
ISTRUZIONE RICERCA

Deliverable 2.1

USER STRATEGY

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Table of contents

GLOSSARY

User Profile

A collection of settings and information associated with main users of the RI. It contains useful information aimed to identify the typology and the main characteristics of the subject's engagement in the utilization of the RI. This information is related to individuals, teams, and institutions from academia, business, industry, and public services. They are engaged in the conception or creation of new knowledge, products, processes, methods and systems.

User Need

The specific requirements and expectations of users that the RI should fulfill to provide value and enhance their research experience. These needs represent users' perspectives, goals, motivations, pain points across multiple team members and stakeholders.

User Strategy

The strategic and long-term planning to improve how users interact with the RI. It considers the user's needs and goals and defines a plan, specifying processes with procedures and tools, to improve the overall experience.

SERVICE CATALOGUE

A list of services offered by the RI, usually digital and interactive. They include user-friendly options, cross-search functions, filters and other tools useful to support and facilitate the user experience.

ACCESS MANAGEMENT PLAN

A roadmap design plan that designates access offered to the users.
Description of RI processes and procedures in place to allow a legitimate and authorized physical, remote and virtual admission to, interactions with and use of Research Infrastructures and to services offered by Research Infrastructures to Users. Such Access can be granted, amongst others, to machine time, computing resources, software, data, data-communication services, trust and authentication services, sample preparation, archives, collections, the set-up, execution and dismantling of experiments, education and training, expert support and analytical services.

ACCESS POLICY

The Access Policy gives guidelines and describes the general principles for access to RI facilities,

resources and services provided to users. Access Policies shall contain clear, simple statements of guiding principles on how the RI intends to regulate, grant and support access to its users from any sector (academia, business, industry, public services, citizens, non-governmental organizations, etc.). Access Policies should cast light on the crucial elements of the access program to be established, indica/ng the key actors (users, as beneficiaries – facilities as providers – RI's access management unit), what type of services are offered, what type of access is provided and in which way. Policies should also define issues related to Intellectual Property Rights as well as any other possible principle related to access.

ACCESS TYPE

Virtual access is free access to users provided through communication networks; the available services or resources can be simultaneously used by an unlimited number of users and the users are not selected.

Physical or in person access is "hands-on" access when users physically visit an infrastructure/facility/equipment. The available services or resources are not unlimited, and a competitive process is required following a defined procedure and criteria for the selection of users.

Remote access is access to resources and services offered by the RI without users physically visiting the infrastructure/facility, as well as physical access, the services or resources are not unlimited, and a competitive selection is required.

Hybrid access combines multiple types of access to RI resources and services, including virtual access to data and digital tools, and/or on-site access to the physical laboratories and premises of an RI, and/or remote access to various resources or equipment within the facility. As it involves resources for which the RI facilities have limited capacity, a competitive selection of users is required.

1. INTRODUCTION

This document is prepared within the ITINERIS project (the Italian national system of RI in the environmental domain) and it is part of the activity of the Work Package WP2 ACCESS TO FACILITIES, FAIR DATA AND RELATED SERVICES which concern access to facilities, FAIR data and services provided by the 22 Italian Environmental Research Infrastructures (RIs) involved in the project.

Deliverable 2.1 is produced within the framework of activity 2.1 of ITINERIS project named *Development of a sustainable and strategic framework for access to distributed National ENVironmental RI*.

Developing such a coordinated and common access framework to a very diverse network of national nodes from 22 RIs is a very challenging and ambitious goal. The access services to the national RIs' facilities and fair resources (data, services and other research outputs) will be set up in accordance with the RIs' network technical capability and mission, following a user-centric approach.

This deliverable is based on the current knowledge of user base of each single RI involved in the project and it has been produced under the responsibility of the Operative Unit (OU) of the National Research Council, Institute of Methodologies for Environmental Analysis (CNR-IMAA), with the participation of the reviewers of each RI "Access" topic (Access Working Group).

This document starts with a Glossary of the most significant terms shared among the Access WG to ensure a common understanding of the principal access related concepts. Then, a general framework of the user role in RI lifecycle, as foreseen by ESFRI, is represented along a general presentation of the project.

Sections 5 and 6 describe the applied methodology and a presentation of each single RI, highlighting their own user approach.

Finally, a comprehensive analysis of data collected is reported in section 7 and the document closes with a perspective of ITINERIS user strategy assessment.

2. USER ORIENTED POLICY

ESFRI, the European Strategy Forum on Research Infrastructures, is a strategic and policy instrument to develop the scientific integration of Europe and to strengthen its international outreach giving concrete advice to Research Infrastructures (RI) in Europe. ESFRI vision for RIs is that they will play an important role in stimulating innovation and solving critical social challenges. ESFRI main objective is to ensure an open, competitive and collaborative field for RIs, allowing access as needed by users to all major facilities used in cutting-edge research, advanced technologies and world-class education. In fact, the competitive and open access to high quality RIs supports the collaboration, quality and excellence of European scientists and attracts the best researchers from around the world. ESFRI vision and objective strongly contribute to the ERA Policy Agenda 2022-2024: 'Strengthen sustainability, accessibility and resilience of research infrastructures in the ERA.

The role of users in ensuring *Long-Term Sustainability of Research Infrastructures* is strongly encouraged by ESFRI in relevant document [ESFRI, 2017]. Specifically, in accordance with ESFRI recommendation "**Establish and maintain excellence",** in order to provide state-of-the-art instrumentation and cutting-edge services and methodology, RIs have to establish a continuous consultation with their user communities. In the objective of encouraging and facilitating the very best research among the RI, an effective engagement with the user community and access mechanisms must be guaranteed. From this exchange, RIs benefit having periodically assessment of their own performance and relevance in relation to the needs of their user communities, identifying gaps between their demands and the services and tools offered. The user community also benefits from orienteering where the RIs services need to be improved to better meet its needs and inform where the best services are offered.

Moreover, a fruitful exchange in ideas and perspectives with a more diverse user base (in terms of science and technology, nationality and culture) helps embracing scientific and technical challenges.

The "**Fully exploit the potential of RIs as innovation hubs"** ESFRI recommendation, encourages engaging with and relate more to Public Services and Business & Industry sectors by identifying their needs and by tailoring user policies and practices to meet these needs.
Furthermore, a strategic classification of RIs' potential users is essential to identify and meet the particularities of each sector.

The role and the importance of knowledge of the user base and communities of each RI is also highlighted by ESFRI in its *Strategy report on Research Infrastructures, Roadmap 2021,* Public Guide [ESFRI, 2019]. The guide reports the minimal key requirements along the phases of the RI lifecycle, and the *user strategy and access policy* are one of the 5 minimal key requirements (from its design to its termination) defined by ESFRI for the evaluation of new proposals and the monitoring of its projects to demonstrate its scientific maturity.

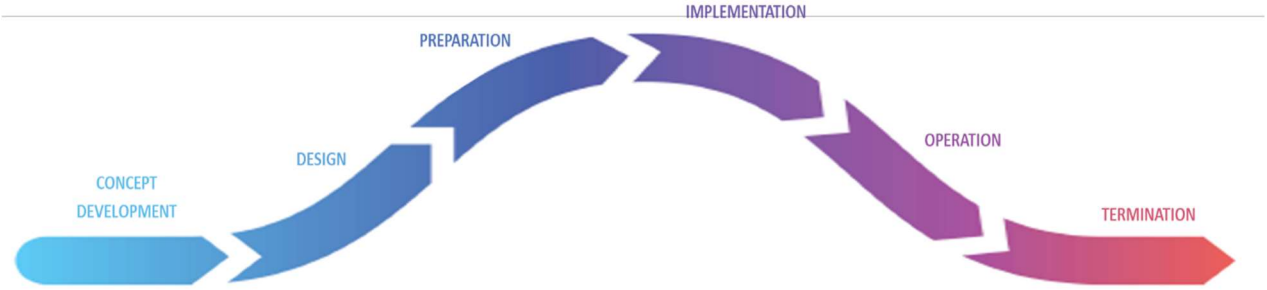

Figure 1: RI lifecycle, from RIs design to its termination [Source ESFRI].

Here in Table 1, there is an extract of list of minimal key requirements for scientific case as reported in ANNEX II of ESFRI, Strategy report on Research Infrastructures - Roadmap 2021, Public Guide, September 2019 along RI lifecycle about the ***user strategy and access policy:***

Concept development and design
Vision about user community Access modes described
Preparation
Identified user categories Survey executed demonstrating expected user community and description of it in terms of origin and size Identified services based on a clear identification of user demands and needs Single entry point for users outlined
Implementation

User community consolidated in terms of origin and size Mechanism of exchange/engagement with users Accommodation of user needs/feedbacks Catalogue of initial services for users User strategy consolidated Common access policy – excellent driven access implemented / transparent process, international research programmes, etc. Organisational structure and procedure for regulating access – including single entry point for users - decided and approved Competitive and open access to high quality RI Attracting best researchers world-wide Better use and development of RI on EU and international level
Operation Delivering excellent science services and generating frontier research
Common access management plan including: Solid mechanism of exchange with users Established catalogue of services for users Operational single-entry point for access established Assistance to users for the entire process (from the proposal till after the access) IPR policies fully established Dissemination programmes in place, including innovation actions
Termination
Deployed IPR beyond decommissioning

Table 1: user strategy and access policy in key requirements for scientific case [ESFRI, Strategy report on Research Infrastructures - Roadmap 2021, Public Guide]

At the very early stages of the RI planning and its implementation the user community, current and potential shall be assessed, as one of the preconditions for its long-term sustainability.

ITINERIS, as better described in the next section, will establish the Italian national system of RI in the environmental domain and this work represents the first step in its user strategy definition. The ITINERIS user strategy is essentially an approach to engage and serve the needs of a large community of users from the scientific domain, the private sector, and the general public and to provide them with high-quality, integrated data and services in the area of environmental sciences, including access to instrumented platforms, services tailored for scientific and technological usage and training opportunities. The user strategy will continuously be defined and evolves within a dynamic and

interactive process for optimization and improvement to ensure alignment with the overall ITINERIS strategy.

3. THE ITINERIS PROJECT

ITINERIS is an Italian project funded by MUR (Ministry of University and Research) from research to business and it will build the Italian Hub of Research Infrastructures in the environmental scientific domain for the observation and study of environmental processes in the atmosphere, marine domain, terrestrial biosphere, and geosphere, providing access to data and services and supporting the Country to address current and expected environmental challenges. ITINERIS coordinates a network of national nodes from 22 RIs (17 from the environmental domain, 3 from agri-food with strong link with the environment and 2 from the PSE domain, supporting services for the marine domain). The participating RIs (here in the following graphically represented all in one with their own institutional web-site) are the Italian nodes of the ESFRI Landmarks ACTRIS, EMSO, Euro-Argo, ICOS and LIFEWATCH, from the ENV domain and ANAEE from the H&F domain; of the ESFRI projects DANUBIUS, DiSSCo, e-LTER, from the ENV domain, and EMPHASIS and IBISBA from the H&F domain; of the EU RIs ECORD, EUFAR, Eurofleets, JERICO and SIOS, all from the ENV domain; and the national RIs ATLaS, CeTrA, N/V Laura Bassi, and SMINO, from the ENV domain, and Geosciences and LNS, both from the PSE domain.

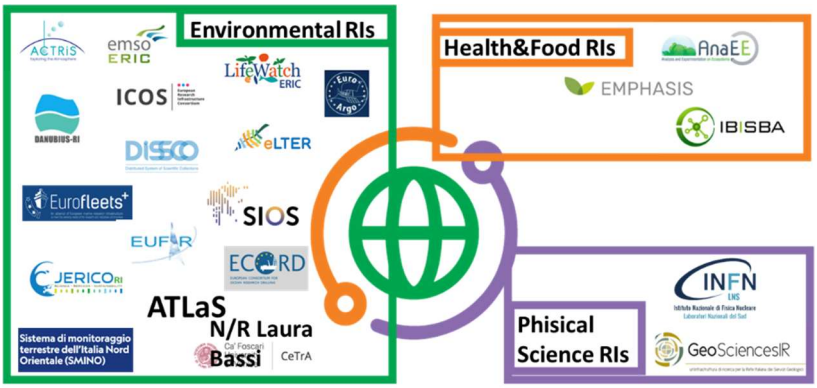

Figure 2: Domains of ITINERIS Ris.

	IR	website
1	ACTRIS	https://www.actris.eu/
2	AnaEE	https://www.anaee.eu/
3	ATLaS	https://www.ri-atlas.unifi.it
4	CeTrA	https://www.unive.it/pag/42456

5	Danubius	https://www.danubius-ri.eu/index.html
6	DiSSCo	https://www.dissco.eu/
7	ECORD	https://www.ecord.org/
8	eLTER	https://elter-ri.eu/
9	EMPHASIS	https://emphasis.plant-phenotyping.eu/
10	EMSO	https://emso.eu/
11	EUFAR	https://www.eufar.net/
12	EURO ARGO	https://euro-argo.eu/
13	Eurofleets	https://www.eurofleets.eu/
14	GeoSciencesIR	https://geosciences-ir.it/
15	IBISBA	https://www.ibisba.eu/
16	ICOS	https://www.icos-cp.eu/
17	Jerico	https://www.jerico-ri.eu/
18	LifeWatch	https://www.lifewatch.eu/
19	LNS	https://www.lns.infn.it/en/
20	N/R Laura Bassi	https://www.ogs.it/en/research-vessel-laura-bassi
21	SIOS	https://sios-svalbard.org/
22	SMINO	https://www.ogs.it/en/northeast-italy-monitoring-system-smino

3 ITINERIS targeted RIs.

ITINERIS will build the Italian Hub of Research Infrastructures in the environmental scientific domain for the observation and study of environmental processes in the atmosphere, marine domain, terrestrial biosphere, and geosphere, providing access to data and services.

The main goal is to develop cross-disciplinary research in environmental sciences through the use and re-use of existing data and services and new observations, to address scientifically and societally relevant issues such as sustainable use of natural resources, pollution reduction, ecosystem management and restoration, mitigation of the downstream effects of climate and environmental change. Such novel, integrated system will offer new opportunities to the scientific community and to a wider stakeholder and user group to gather information and answer specific questions in the marine, atmospheric, terrestrial biosphere and geosphere subdomains, representing a significant advancement over existing facilities considering, in particular, that the interactions and links among the different components, something is often overlooked in individual RIs.

4. METHODOLOGY

In order to make the review of the existing and expected user community for ITINERIS, it is necessary to start from the user base of each RI participating in ITINERIS, their main categories, origin and size, and then to make a step-forward towards the identification of user demands and specific needs that ITINERIS can address. To perform a comprehensive analysis of the current user base of each RI participating in ITINERIS, dedicated process and tools have been identified according to the flow chart reported in Figure 4.

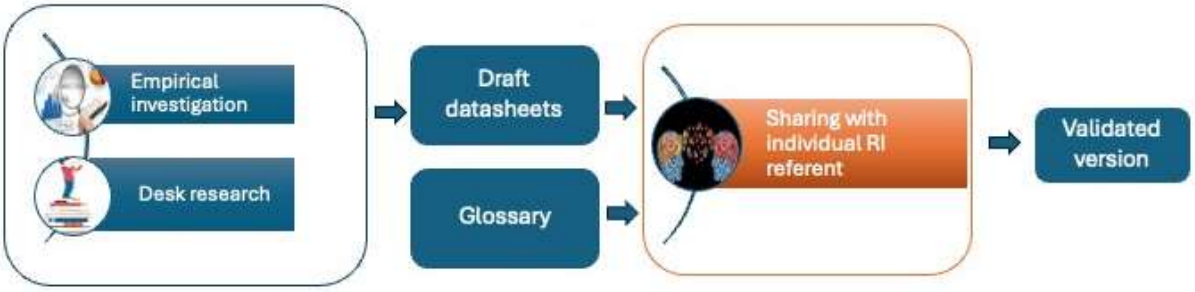

Figure 4: The implemented methodological approach.

An empirical investigation conducted by a survey and desk research, both explained in detail as follows, were carried out. This first phase produced some draft datasheets about the main characteristics of the RIs by the comparison and merge of survey and desk results. An overall analysis of the ITINERIS RI maturity-level in terms of User Strategy started from clarifying what we mean for User Strategy, and in which terms this can be defined and implemented by the RIs themselves. In this direction, a proper **glossary** has been developed starting from the European Charter for Access to RIs released by [ESFRI, 2015], including also some practical examples and focusing on the main five pillars of the RI activity in terms of User Strategy (User Profile, User Need, User Strategy, Service Catalogue and Access Management Plan and Policy).

The grouping of reference definitions (essential terms and concepts) on each topic represents scientific guidelines useful to optimize the knowledge process. The RIs received a draft from the IMAA team and promptly gave back their feedback which has been revised, obtaining the agreed version describing the "state of art" of user strategy of each RI involved in ITNERIS, as reported in section 6.

<u>Empirical Survey</u>

The first step of this methodology was designing a detailed survey targeting RIs (individual ones or networks with joint access scheme). This survey was launched in order to collect information about

current access procedures, modalities and policies implemented within the RIs joining in the ITINERIS project.

The structure of survey questionnaire was constructed in eight sections named from A to H, each one characterized by a variable number of open questions, as follows in Table 3:

SECTION	TITLE OF THE SECTION	N° OF QUESTIONS
A	INFRASTRUCTURE	5
B	ACCESS MODALITY (PHYSICAL, REMOTE, VIRTUAL, OTHER)	7
C	SELECTION PROCEDURES FOR PROVIDING USERS' ACCESS	3
D	USERS'S PROFILE	5
E	USERS' ATTRACTION	4
F	ETHICAL ASPECTS	2
G	POST-ACCESS PROVISIONS	3
H	GENERAL ASPECTS	6

Table 2: The macro-structure of the survey

This survey was administered via email to the representatives of each individual research infrastructure.

Half of the RIs answered the survey (11 out of 22 in total). The analysis of the responses highlighted a very diverse level of maturity between the interviewed RIs. All questions were answered, although in some cases with not clear answers, probably due to the unavailability of historical data and/or incomplete understanding of the questions themselves.

The RI respondents express a very diverse access approach and nature of service offered, often depending on the domain and the nature of the RI (single site or distributed). Their main characteristics are reported in Table 2.

Categories of respondent RIs	ESFRI Landmarks, ESFRI Project, EU RIs, National RIs
Domains of respondent RIs	17 from Environmental- ENV, 3 from Health and Food- H&F, 2 from Physics and Engineering -PSE
Structure of respondent RIs	distributed, single-sited

Table 43: Main characteristics of RI targeted respondents

Desk research

The second step of this methodology consisted in a desk research, carried out selecting and collecting the available information/data about each RI on the topic.

The desk research consisted in six steps: observation, inquiry, interpretation, reflection, iteration and

analysis addressed to better know the status of the subject that is being investigated. Its purpose was the knowledge update and consolidation of existing user strategies, specifically regarding the fields reported in the following Table 5)Table 4, also comparing and merging survey results with web content and official documents' information.

1	RI Description
2	RI Mission
3	USER PROFILE
4	USER NEED
5	USER STRATEGY
6	SERVICE CATALOGUE
7	ACCESS MANAGEMENT PLAN

Table 4: Fields of investigation of the desk research

The desk research was conducted considering as main source the institutional websites of the involved RIs and the most updated official documents (e.g. Access Policy, Access Management Plan, User outreach approach, vision plans, strategic plans, activity plans, programs, guidelines, portfolios, summaries etc.). These sources have been verified and mentioned with direct web-links.

The output of this analysis has been submitted to each RI for a direct review. After validation feedback by each RI and an overall analysis, 22 RI sheets have been consolidated and reported in the next section. In the subsequent sections, an in-depth analysis of the five identified "user components" has been given, combining quantitative information (data) gathered with the survey and more qualitative information provided by the bibliographic analysis.

5. OVERVIEW OF ITINERIS RIs USER APPROACH

ACTRIS Aerosol, Clouds and Trace Gases Research Infrastructure		Source
DESCRIPTION	The Aerosol, Clouds and Trace Gases Research Infrastructure (ACTRIS) is the pan-European research infrastructure (RI) producing high-quality data and information on short-lived atmospheric constituents and on the processes leading to the variability of these constituents in natural and controlled atmospheres.	https://www.actris.eu/about
MISSION	ACTRIS shall establish, operate, and develop a pan-European distributed research infrastructure for short-lived atmospheric constituents. ACTRIS shall also provide effective access for a wide user community to its resources and services, in order to facilitate high-quality Earth system research.	https://www.actris.eu/what-we-do
USER PROFILE	ACTRIS users originate from the academic, public, and private sectors. The users comprise scientists in atmospheric sciences (including experts from climate and national weather services, space agencies, national and regional air quality monitoring networks and environmental protection agencies), as well as professionals from business industries (e.g., instrument manufacturers, sensor industries) but also users from other fields: environmental sciences, energy, health & food, physical sciences & engineering, etc.	ACTRIS IMP D6.4: Updated ACTRIS user strategy
	Users come from the scientific community for 42%, public institutions for 12%, education 31%, private sector 10%, other 5%. The 20% is internal, 50% from IR member countries, 45% from other EU countries, 5% outside EU. User attraction is based on providing tailored user services.	Survey
USER NEED	ACTRIS aims to place its users at the centre of ACTRIS operations and strategic development. A systematic approach is taken to understand and engage the users, identify their needs, and create experiences that meet their expectations. The most common ACTRIS user needs include access to data and modelling; access to facilities, instruments and testing; technical services like testing and validation of instruments and processes for quality and standards compliance, and training.	ACTRIS IMP WP6/MILESTONE6.7: Enhanced user strategy with recommendations to ACTRIS facilities
	The following objectives are pursued by user requesting: basic research (5%), applied research i.e. to solve a specific scientific issue (15%), access to research facilities for industrial research (10%), testing and calibration of instruments/equipment (5%), training (5%), education (10%). Actris offers support to users in the following areas: scientific, technical, training, logistic, administrative.	Survey
USER STRATEGY	The ACTRIS user strategy defines the goals, priorities and plan of action required for providing services to its users that effectively satisfy their needs and meet their expectations. This includes offering high-quality, integrated data and services in atmospheric sciences, providing access to instrumented platforms, tailored services for scientific and technological use, and training opportunities. The user strategy results engagement with users in a process aimed at identifying their needs, designing and deploying solutions to meet those needs, and tracking the results. It involves collecting feedback from users, analysing the data, and adjusting services within an interactive cycle intended to optimize the process and ensure that the developed services meet the user needs and expectations.	ACTRIS IMP D6.4: Updated ACTRIS user strategy
SERVICE CATALOGUE	ACTRIS' services are accessible through an interactive and online catalogue of services that provides detailed information about a variety of services offered. The ACTRIS catalogue of services has user- friendly search options, cross-search functions and filters that allow users to explore the service database quickly and find the suitable services. The interactive nature of the catalogue allows users to search for specific services or to browse through the available services. Each service is sufficiently (but concisely) described comprising contact information and location, geographical environment and atmosphere type, type of service, research area, service status and availability, type of access, service provision procedure and expected duration, on-site user support, potential user fees, and other information related to the services being offered.	ACTRIS IMP WP6/MILESTONE6.7: Enhanced user strategy with recommendations to ACTRIS facilities

	ACTRIS Services Catalogue can be reached at https://www.actris.eu/catalogue-of-services	
ACCESS MGT PLAN	The Access Management Plan (AMP) complements the ACTRIS access and service policy establishing operational rules, procedures and detailed workflows to put into practice the principles for access stated in the policy. The AMP is an internal document guiding the operations of personnel involved in access management. For each process, the AMP describes the set of correlated and interacting activities, detailing the content, required input and expected output for each activity.	ACTRIS IMP D6.5: ACTRIS Access and Service Management Plan
	Actors in charge for the provision of access to national users are: facility/lab PIs and technical/IT staff. An e-logbook of access recording is maintained. Access requests are mostly by directly contact with the facility/lab PIs. Then, the PIs go in contact with the user for getting a detailed description of the experiment and related technical needs (if needed, telco or meeting are arranged). The request is then forwarded to the facility/lab technical team for a preliminary evaluation of feasibility. As a function of the request complexity multiple interactions with the user are possible to finalize the access request. Access requests are submitted and evaluated by a team of experts. The process is centrally managed. The following types of access are in place: • Physical (defined as the access involving hands-on access of any user, i.e., the users * physically visit the installations) • Remote (defined as the non-physical access of a person at the installation, e.g., instrument * calibration, distribution of reference samples, etc. The accessible resources are not unlimited and a competitive selection is required) • Virtual (defined as any access through communication networks. Resources can be * simultaneously accessed by an "unlimited" number of users. Users do not need to be selected) The following modes of access are in place: • Excellence-driven Access (exclusively dependent on the scientific excellence, originality, quality, technical feasibility of an application evaluated through peer review conducted by internal or external experts) • Market-driven Access (Access is defined through an agreement between the User and the RI that can lead to a fee for the Access and that may remain confidential) • Wide Access (broadest possible Access to scientific data and digital services provided by the RI to Users wherever they are based through communication networks and no selection) • Need-driven Access (when access to services is required to meet specific needs of users, for instance technical needs to guarantee quality assurance and high instrument performance, e.g. calibration, comparison and combination with other instruments or RIs, or training needs, to expand knowledge and expertise) Track and record of the scientific output are done by asking users to provide info about output.	Survey

ANAEE Analysis and Experimentation on Ecosystems		Source
DESCRIPTION	ANEE ERIC is a Research Infrastructure focused on Analysis and Experimentation on Ecosystems. ANAEE coordinates experiments leading to improving applied research models, integrating experimentation, analysis and modelling into a single RI, therefore working on the following: • Science - Advances in understanding Ecosystem functioning, ecology, agronomy, interactions between pressures, linear and non-linear evolution, management practices, new tools, statistics, syntheses • Society – Forecasting Food and fibre production. Food security, biodiversity, ecosystem carbon storage, greenhouse gas emissions, post and decease control, invasive species • Policy - Policy and regulations Science-based policies, sustainable bio-economy, ecosystem health and resilience, short value chains • Teaching - Education and training Impact on curriculae, undergraduate and graduate training, training of professionals, continuous and sustained education • Citizens - Citizen awareness Outreach, citizen science, collaboration with NGOs, printed and online media, social networks	ANAEE website – About - Missions
MISSION	AnaEE (Analysis and Experimentation on Ecosystems) will pave the way for understanding the complex impact of today's multiple, interacting global change drivers on terrestrial and aquatic continental ecosystems across Europe. It will forge evidence-based adaptation and mitigation strategies that assure plant, soil, water, biodiversity and ecosystem health today and in the future. Those strategies are needed to maintain essential services to society, including carbon sequestration, food security, clean water, biodiversity. Characteristic to AnaEE its versatile facilities that can simulate environmental drivers from land-use change, pollution, biological invasions, rising atmospheric greenhouse gases concentrations, and to increasing extreme events such as droughts and heatwaves. AnaEE has the potential to look into the future, thanks to the integrative and coordinated usage of its experimental, analytical and modelling facilities. AnaEE will link its facilities with an array of user communities, including scientists, land managers, the bio-economy industry and policy makers, with the goal to minimize human environmental impact and maximize societal benefits in a dynamic world. The specificity of AnaEE is to integrate, in a single, distributed, RI, all the steps of the scientific experimental methods, modelling and experimentation. This original approach leads to advances in understanding. Also, new management methods, or extreme events such as the introduction of a pest species can be tested, as well as the effect of regulations, before they come in effect publicly. This will rise the citizen awareness and confidence in new policies, or industry.	ANAEE website – About - Missions
USER PROFILE	ANAEE users' profile is typically based on institutions, governments, industry, non-governmental organisations and civil society.	ANAEE website - Services
USER NEED	AnaEE offers different types of services to internal and external infrastructure stakeholders, to ensure that research teams are in charge of their scientific projects, from their design to their valorisation, through the experimental implementation of projects and the sharing of data consolidated through the application of FAIR principles. The Centres, i.e. the Central Hub, the Technology Centre, the Data and Modelling Centre and the Interface and Synthesis Centre, provide support to research teams and platform staff on the technical standards to be applied, data processing and scientific exploitation for the benefit of external players such as European institutions, governments, industry, non-governmental organisations and civil society.	ANAEE website - Services
USER STRATEGY	A potential user strategy in ANAEE could be deduced from the description of Service Centres. The ERIC will be of the *distributed* type. The legal structure will consist of the Central Hub **(CH)**, in charge of the overall coordination of the ERIC, and of three service centres:	ANAEE website - Services - Centres

	• The Technology Centre **(TC)** : watch and develop new emerging technologies, and ensure that instrumentation and methods are coordinated among the platforms. The TC is also responsible for the spin-off of new technologies developed within AnaEE, as well as for coordinating the training of users and platform operators. • The Data and Modelling Centre **(DMC)** : responsible for the processing of the data and metadata, the provision of data to the users (either the direct users or the community), the access to the models and model factory. It will also organize workshops and training for users and AnaEE staff. • The Interface and Synthesis Centre **(ISC)** : responsible for the overall integration of the results obtained thanks to AnaEE RI. It prepares synthesis and opinion papers on behalf of AnaEE, watch for emerging societal needs, answer to demands from the society, economy, and policy makers. It is also responsible for the training and outreach. • The platforms remain the property of their respective country/institution. They will be linked by Service Level Agreements, signed between the ERIC and the host institutions, which will describe the services given by the ERIC to the platforms, and from the platform to the ERIC.	
SERVICE CATALOGUE	ANAEE does provide a proper Service Catalogue online through the ISIA platform.	ISIA – Catalogues - ANAEE ERIC Service Catalogue
ACCESS MANAGEMENT PLAN and ACCESS POLICY	AnaEE platforms are open to all user projects that comply with the long-term integrity of the on-going experiments in the involved platform(s) (mostly Open-air) and/or to de novo experiments in the involved platform(s) (mostly Enclosed) that comply with the technology and number of replicates available. However, project acceptance and granting of access will require both a scientific evaluation and confirmation of the technical feasibility by the platform owner(s). With guidance and supervision from AnaEE centrally the platform owners hold the responsibility of ensuring the technical quality of measurements during the execution of user projects and will in turn benefit from user projects to improve their technical and methodological expertise and enrich their platform database. The AnaEE web portal provides the service of a single-entry point to all platforms as well as administrative support to ease the access, i.e. checking the technical feasibility of projects, user fee calculations, and data management plans. AnaEE procedures for these central services are described in detail in the AnaEE access policy document. A special web interface is available at the AnaEE web portal to provide a single-entry point for requesting access to the AnaEE infrastructure. The web portal informs users about the main services offered by each of the platforms and service centres and provides a structured way for users to apply for access. The web portal contains a service catalogue including the main features of each platform and information about on-going research activities as well as the primary results that have been generated. It also contains a search algorithm allowing identifying the relevant platforms for specific research topics according to metadata collected by the AnaEE Technology Centre. The AnaEE user project procedure follows user projects from the time of the first submission of a pre-proposal via the web portal until final project termination. The procedure was designed to ensure maximum scientific and technical quality of user projects, as well as project reporting to AnaEE and facilitation of open access to project data after potential grace period following project termination. Figure shows how projects are evaluated, improved, executed and terminated.	ANAEE website – Services – Proposal Portal – User Access Policy and Procedure

ATLaS Advanced Technologies for LandSlides		Source
DESCRIPTION	ATLaS is an infrastructure based at the Department of Earth Sciences of University of Florence, at the Center for Civil Protection of the University of Florence (a Competence Center of the National Department of Civil Protection) and at the UNESCO Chair on Prevention and Sustainable Management of Hydrogeological Risks. The available instrumentation is distributed among three scientific laboratories (Laboratory of Technical Geology and Geomechanics, Laboratory of Geomatics and Thematic Cartography, Laboratory of Remote Sensing). It consists of a system of software and in-situ and remote sensing multi-sensor equipment (laser, radar, thermal-optical, sonar, and multispectral) and multi-platform (ground-based, aerial, and underwater) that can be used in various operational configurations for rapid mapping, real-time monitoring, and alerting purposes. ATLaS has been included in the National Research Research Infrastructure Plan (PNIR) 2021-2027, where it is classified as a medium-priority research infrastructure. ATLaS is strictly connected to the International Consortium of Landslides (ICL). The International Consortium of Landslides is a network of 60 research institutes from 33 countries and promote landslide research for benefit of society and the Environment, The infrastructure has been recognized for seventh consecutive times as the World Center of Excellence on Landslide Risk Reduction (WCoE), by the IPL (International Program on Landslides) Global Promotion Committee of ICL and by UN/DRR for advanced technologies advanced for landslide monitoring, earth observation data and models for landslide risk assessment.	Survey
MISSION	ATLaS mission is to promote research and technological development in the field of hydrogeological risk prevention and management, to support actions and policies for risk reduction. In line with the mission the activities are: • Development of new technologies for monitoring and mitigation of geo-hydrological hazards • Forecast models and quantitative risk assessment of geo-hydrological hazards • Early warning systems and resilience enhancement • Protection of cultural heritage threatened by geo-hydrological risks • Scientific networking, training, capacity development and dissemination	Italian Ministry of University and Research, form code INRI20G2JR
USER PROFILE	Users' profiles have been described as follows: • 25% scientific community • 30% public authorities • 25% private sector • 20% Education	Survey
	• 95% users from research infrastructure member countries • 5% users from other European countries	Survey
USER NEED	According to ATLaS Survey Report, 25% of users access the research facilities for basic research (to enhance knowledge and understanding, e.g. driven by curiosity), 45% access for applied research (to solve a specific scientific question, e.g., to develop a specific product, etc.), 10% for training, 20% education.	Survey
USER STRATEGY	ATLaS is connected with its users through a series of channels and by participating to several networks. It is a member of the International Consortium on Landslides (ICL), which is an International non-governmental and non-profit scientific organisation established in 2002, supported by UNESCO, WMO, FAO and UNDRR and other governmental bodies. As an ICL member, ATLaS participates at the International Programme on Landslides (IPL) for international cooperative research and capacity building on landslide risk mitigation, notably in less developed Countries. It is also a member of the International Consortium on Geo-disaster Reduction (ICGdR) that aims at promoting the reduction of disasters triggered by geological and geophysical events on Earth. It is a member of the Global Alliance of Disaster Research Institutes (GADRI) established at the 2nd Global Summit of Research Institutes for Disaster Risk. GADRI is an open forum for sharing knowledge and promoting collaboration on topics related to disaster risk reduction and resilience to disasters. ATLaS gathers feedback and analyzes the users' needs also through the participation to many congresses and seminars with different target groups. Some are aimed at the scientific community, others at practitioners and public bodies,	Survey

	other at the general public. Such events also work as user attraction, besides other specific activities to attract users like public dissemination events such as Bright Night the European Night of Researchers, open days to show the laboratories and instrumentations.	
SERVICE CATALOGUE	The services are offered in the field of landslide and involve: in situ monitoring, remote sensing, mapping, scenario modeling, access to data, consulting on emergency management and long-term planning, human and drone surveys, geotechnical and geomechanical characterization with in situ and laboratory tests. ATLaS does not have a specific catalogue of services	Survey
ACCESS MGT PLAN	ATLaS has a specific access management plan Users request, usually using computerized methods, the access to the infrastructure, by specifying: a) type and name of the user; b) period of use; c) level of training in the use of the infrastructure; d) scope of use (institutional or commercial); e) activities to be carried out; f) type of service requested; g) data for issuing the invoice (for external users). Reservations made by users must be formalized through acceptance by the Centre manager. Acceptance is subject to the evaluation of the activity to be carried out, the methods of use of the infrastructure, the overall period, and the access time to the infrastructure spaces. Access to the Infrastructure is subject to the application of tariffs, approved by the Centre's bodies, defined on the basis of: a) type of service requested; b) type of user (internal or external) c) scope of use (institutional or commercial); d) access methods (direct use, use with technical assistance and service). The costs for using the infrastructure are: a) direct costs: include installation, maintenance and amortization costs, defined based on the time of use of the infrastructure and the cost of consumables; b) indirect costs: determined according to the time of use of the infrastructure, they include insurance costs and general expenses (use of the premises, utilities, cleaning, surveillance, etc.); c) technical assistance costs: cost of man-hours of the technician involved in using the infrastructure in the "use with technical assistance" and "service" modes.	Survey
	• Type of access: 10% physical, 65% remote, 25% virtual • Type of access modes: 10% excellence-driven, 30% market-driven, 30% wide, 30% need-driven	Survey

CETRA Centre for Trace Analysis		Source
DESCRIPTION	CeTrA is a joint Research Infrastructure of Department of Environmental Sciences, Informatics and Statistics (DAIS), Department of Molecular Sciences and Nanosystems (DSMN) at Ca' Foscari University of Venice (UNIVE) and the Institute of Polar Sciences (CNR-ISP Venice). Further support is provided by the Systems and Infrastructure Office, having a wide expertise in the design, development, implementation and maintenance of data transmission network, infrastructures (data centers and services) and IT security of UNIVE. Curretly, CeTrA is not involved in any Italian/EU RI networks, except for the Col Margherita Observatory (MRG), which is part of GAW-WMO.	Survey
MISSION	The Centre for Trace Analysis is a joint infrastructure of Ca' Foscari University of Venice and the Institute for Polar Sciences of the Italian National Research Council (ISP-CNR). CeTra is a center of international excellence for research, advanced training and services operating with universities, research institutions and companies interested in trace/ultra-trace analysis and chemical imaging in the fields of life science, environment, advanced materials and cultural heritage. The facility makes available state-of-the art instrumentation and technical expertise for advanced studies of chemical identification and quantitative determination at extremely low levels and/or in complex matrices, and spatial distribution or structural analyses at the micro-to-nano scale.	CETRA Ca' Foscari University of Venice - website
USER PROFILE	CETRA users are as follows: Scientific Community 70%; Public Authorities 5%; Education 20%; Private Sector 5%, Internal users 80%, Users from other European countries 15%, Users from other countries outside Europe 5%.	Survey
USER NEED	Main objectives pursued by users requesting are as follows: Access to the research facilities for basic research 50%; Access to the research facilities for applied research 20%; Access to research facilities for industrial research 5%; Testing and calibration of instruments/equipment 5%; Education 20%.	Survey
USER STRATEGY	CETRA does offer scientific, technical and administrative support to users. Measures in place to attract users or to target specific types of users are invitations through collaboration with eventually funded projects. UNIVE tracks the scientific output with ARCA, the institutional open access repository created in 2014 with the aim of collecting, disseminating and preserving the scientific production of the University. Currently, there is no dedicated/automatic system to track the record of CeTrA in scientific publications, the tracking is based on direct informal communication with internal researchers/operators running the exchanges with the users (CeTrA is acknowledged in scientific publications). The implementation of a systematized data repository throughout Itineris could potentially offer the possibility for the future integration of an automatic tracking system. Currently a feedback mechanism is expected to implement by logging users needs during experimental sessions.	Survey
SERVICE CATALOGUE	CeTrA currently provides the following types of services: 1. physical access (self or assisted) to advanced analytical instrumentation dedicated to the chemical identification and physical characterization of environmental samples at the micro-to-nano scale; 2. physical access to the laboratories, clean rooms and general infrastructural resources at the facility; 3. physical access to the high altitude observatory MRG 4. access to internally generated environmental datasets (including real- time data from MRG). Remote access to a few selected analytical instruments is optionally available for internal self-users. All these services are under systematic organization through the development of an internal digital platform, to be put into full operation by the end of 2023. The full list of available scientific equipment and facilities is currently published in terms of instrumental resources: • Clean Laboratories • Inductively coupled plasma - sector field mass spectrometer (ICP-SFMS) • Inductively coupled plasma - quadrupole mass spectrometer (ICP-QMS)	Survey CETRA Ca' Foscari University of Venice - website

	• Inductively coupled plasma - optical emission spectrometer (ICP-OES) • Mercury analyzers • Fourier-transform infrared spectroscopy (FT-IR) microscope • High performance ion chromatograph - mass spectrometer (HPIC-MS) • High performance liquid chromatograph - tandem mass spectrometer (HPLC-MS/MS) • Ultra performance liquid chromatograph - high resolution mass spectrometer (UPLC-HRMS) • Gas chromatograph - tandem mass spectrometer (GC-MS/MS) • Gas chromatograph – mass spectrometers (GC-MS) • Transmission electron microscope with scanning mode (S/TEM) • Scanning electron microscope (SEM) • Atomic force microscope (AFM) • X-ray diffraction spectrometer (XRD) • Col Margherita Atmospheric Observatory These instrumental resources though, is still lacking individual instructions and links for navigating towards a submission of usage requests. Remote access to instruments is only limited to the MRG observatory (weather stations and data logger) and a few other selected instruments at the Campus, being queried via terminal at admin level.	
ACCESS MGT PLAN	Currently, CeTrA provides mostly physical access to laboratory facilities and instrumentation, plus to the fixed observational platform of MRS (currently operational, to be expanded through Itineris) and the mobile (sensors equipped vehicle) observational platform foreseen for purchase in the next months. A data repository system is planned to be implemented throughout Itineris as well. CeTrA is currently accessible from the webpage through the contact email reported therein. The access process in place is currently the following: the users submit their request for access to instruments and laboratories by contacting the corresponding responsibles (technicians/researchers) through the contact point of CeTrA as the intermediary. An access management plan is under development downstream to the development of a governance document for the entire RI. Currently there are no specifically defined plans/procedures; individual datasets can be exchanged upon direct negotiation with internal researchers responsible for scientific projects and collaborations. As soon as the internal data repository and the access portal will be implemented, systematized policies will be also established. Accesses provided are used as follows: Physical 90%, Remote 9%, Virtual 1%. Need-driven Access covers 100% of accesses implemented. We foresee to organize the physical access in two main units, namely SWH for assisted users and Equipment Working Hours (EWH) for both self and assisted users, to be integrated with a background amount of SWH derived for the personnel dedicated to the off- experimental interaction with the users (dataset exchange + data post-processing and scientific advice). An amount of 1800 EWH + 1800 SWH per year is expected as a starting condition, with high uncertainty since being strictly dependent by the structure of the access platform and by a period of pilot testing and re-assessment. The accesses are currently managed within the framework of research collaborations/projects, whose additional costs might be both formally or informally arranged in a zero-sum agreement. The implementation of a systematized access platform in the upcoming 2 years will automatically lead to the definition of a formalized financial management system, differentially set with respect to internal vs. external-research vs. external-company users. In terms of access management, the midterm objectives are to implement: 1. a full operational state an harmonized internal web platform for all types of access available at CeTrA; 2. a complete internal network for the remote access to all instruments of CeTrA (admin level); 3. internal services that indirectly support an efficient access system such as Laboratory Management System with inventory, Electronic Lab Notebook; Data Repository and automatic backup system. The long-term objectives are: 1. to achieve a routinary and sustainable operational state of the platform; 2. to formally approve a governance system for the RI;	Survey

	3. to implement digital links from the platform of CeTrA to the ones of Itineris' partners.	

DANUBIUS International Centre for Advanced Studies on River-Sea Systems		Source
DESCRIPTION	DANUBIUS-RI is a pan-European distributed research infrastructure supporting interdisciplinary research on River-Sea Systems, with 4 thematic nodes and 10 supersites. Italy contributes with: Modelling Node: It will provide modelling services that rely on the collective critical mass of the community. Modelling Node services include model codes and manuals; training material on common approaches to implement modelling tools in river-sea systems; and the establishment of expert teams to supervise specific modelling implementations done by users or to give feedback of possible approaches. The Po Delta and North Adriatic Lagoons Supersite mainly focused on the role of transitional environments within the RSS. Services can be observation system, toolboxes, living labs and services for investigating issues mainly connected to the interaction processes between freshwater and marine systems, feedbacks on ecosystems and the role of transitional environments within a highly humanized context.	Survey
MISSION	DANUBIUS-RI's Mission is to facilitate and contribute excellent science on the continuum from river source to sea; to offer state-of-the art research infrastructure; and to provide the integrated knowledge required to sustainably manage and protect River-Sea Systems. DANUBIUS-RI's Vision is to achieve healthy River-Sea Systems and to advance their sustainable use, in order to live within the planet's ecological limits by 2050. DANUBIUS-RI's Goal is to overcome the fragmentation of science, knowledge, data and management approaches in river and seas by integrating spatial, temporal, disciplinary and sectoral thinking. DANUBIUS-RI will provide science-based solutions to societal risks arising from global and climate change as well as coincident extreme events. Likewise, it will offer a source to sea perspective to resolve the problems of adverse human impacts on water and sediment quality and quantity, hydromorphology, and biodiversity and ecosystem functioning. DANUBIUS-RI will be a distributed research infrastructure offering: • State-of-the-art and fit-for-purpose facilities of river to coastal sea observation systems; • Development and implementation of interoperable and harmonised methods, tools and models, to achieve comparability across the freshwater-seawater continua; • A data portal to integrate existing data and knowledge across sectors and disciplines, supplemented by new data and syntheses; • Smart observation and analytical technologies developed jointly with small and medium-sized enterprises; • Test beds for nature-based management and restoration solutions; • Education and training programmes for scientists; • Engagement with public authorities and policy makers through assessment, evaluation and measures to improve the environmental status of River-Sea Systems; • Outreach to, and education for, the interested wider public.	DANUBIUS website - Mission
USER PROFILE	DANUBIUS-RI is a very heterogeneous RI, different kind of services can be provided to several typology of users. This is a strength from interdisciplinary and elastic point of view but rise up also difficulties in facing a several number of specific cases. This can have an impact on the clarity of access policy and procedures.	Survey
	A provisional list of end-users and stakeholders who will potential interact with the TTO including the following Practitioners in the rivers, deltas, estuaries and seas communities: • Businesses (e.g. SME - Small to Medium Enterprise and MNC - Multi National Companies where appropriate) • Marine Spatial Planners and river / coastal manager • Terrestrial planners, regulatory authorities, and public agencies responsible for the monitoring of systems and responding to development proposals • Organisations responsible for monitoring and regulating industries who routinely operate in river-sea systems Scientists from across a wide range of disciplines (cross-disciplinary scientists):	DANUBIUS website – Danubius RI – End users and stakeholders

	• Encouraging new member to use, or join, the infrastructure • Data produced and associated methods and tools being developed and tested will be both of interest and subject to validation by the respective scientific communities to ensure validity and robustness • Outputs from the project (e.g. scientific papers) will be subject to peer-review Public audiences: • The wider public will be a target audience in terms of awareness of the roles and benefits of DANUBIUS-RI and the promotion of its public image (esteem) • Involvement of local communities in citizen science initiatives including data collection Internal Stakeholders: • Inventor(s) - to determine the most appropriate vehicle to protect their invention • Business development specialists - based in the nodes and supersites to facilitate early identification, and realisation of, opportunities from their local scientific communities • Nodes/Supersites - as the host institute of the inventor could also benefit from the invention • Technology Transfer Office – where allowable could receive incentives based on successful realization of IP	
USER NEED	A detailed understanding of river-sea system functioning is essential to maintain these services, to avoid irreversible degradation and to implement effective restoration, conservation and protection strategies. Europe lacks the necessary research infrastructure to enable major gaps in our understanding to be filled. This is largely a structural problem as research institutions, though often world-leading, have been set up as discipline-specific and able to address only elements of the river-sea systems. Europe's research infrastructures are inadequate to support the interdisciplinary research that is urgently needed for an understanding of the whole river-sea system. Many of the services and facilities, e.g. physical and chemical analyses, are available at laboratories in a number of European countries. However, they often do not have the quality control and comparability needed for DANUBIUS-RI nor the expertise for interdisciplinary research. A range of observation activities exists but, again, they lack quality control and comparability. Data sources for different elements of the whole river-sea system do exist but are fragmented. Importantly, there is no infrastructure, available to the international research community, providing expertise for interdisciplinary research across the whole river-sea system including transition zones. DANUBIUS-RI will respond to these needs throughs its services.	Survey
USER STRATEGY	DANUBIUS-RI will attract users providing the following benefits to the user community: - Access to 10 natural laboratory, Supersites (specific list of services for each of them); - Access to unique set of facilities for interdisciplinary research in hydrology, biology, ecology, sedimentology, geology and hydrochemistry; - Access to a broad range of expertise; - Application of own research at a broader infrastructure or ecosystem level; - Coordination of monitoring, QA, protocols; - Opportunities for working in interdisciplinary teams; - Sustainable means to bridge the gap between marine and freshwater environments; - Opportunity to face challenges in the Danube – Black Sea area to establish best practice for other river-seas systems worldwide; - Use of educational activities to introduce young scientists to complex systems; - Data sharing; - Access to catchment-scale integrated and standardised data (including the transitional and coastal – marine zones); - Common analytical and modelling tools; - Development and uptake of new technologies;	Survey

	- Development of innovative business opportunities; - Gateway to stakeholders. - Optimisation of conservation and restoration strategies - Defragmentation of research Users outputs are tracked using the following KPI indicators 1. Number of publications Number of citations; 2. Number of papers using data/knowledge provided by DANUBIUS-RI Number of scientific users; 3. Number of non-European Union users; 4. Number of non-ERIC users using Research Infrastructure facilities for world-wide sites; number of non-scientific users; 5. Number of MSc and PhD students using the Research Infrastructure; Number of individuals trained who are not Research Infrastructure staff. 6. Number of successful applications (worldwide) for using the Research Infrastructure; Total number of applications (incl. rejected); 7. Research user fees for competitive access; Research user fees for on demand access. Users will be also attracted through promotion of education outreach: 1. Openness to public; 2. Web Access; 3. Knowledge sharing and improvement including the number of scientific conferences and workshops organised; 4. Total number of people trained in academia and industry; 5. Number of educational and outreach activities including numbers attending; 6. Career path of students trained within the Research Infrastructure; 7. Number of students trained and their distribution	
SERVICE CATALOGUE	The typologies of services offered by the Italian components will rely on Dataset (EO, satellite and in situ, model outputs and products), Numerical models (Codes and manuals), equipment, and expert support. The DANUBIUS-RI Service Catalogue is under development during the implementation phase project DANUBIUS-IP. A first list of services (urly.it/3-5s7) was provided for the first pilot call (https://danubius-ip.tumblr.com/pilotcall)	Survey
ACCESS MGT PLAN	In Italy, the following installations can be accessed: Piattaforma Oceanografica Acqua Alta, Paloma; Meda S1-GB; 4 torbidimetri Laguna di Venezia; Stazione Mareografica Trieste; Stazione Meteo-Marina Trieste; 2 Autonomous Surface Vehicles SWAMP; solution to access and monitor extremely shallow water by means of portable, modular, reconfigurable and highly maneuverable robotic vehicles. The Access Management Group (AMG), established by the General Assembly, manages the Calls for physical and remote access to the services of DANUBIUS-RI. AMG independent members will be appointed for four years, renewable once. The AMG will be chaired by the DANUBIUS-ERIC Operations Director, whose staff will provide the secretariat and administration for the access evaluation process. It will select reviewers for each proposal. The AMG will work with the Scientific Advisory Committee and the Research Infrastructure Committee to select Call topics and scheduling. It will monitor the progress and outcome of Calls and individual projects, and their dissemination. User teams choose the most relevant access mode and submit their access application proposals on the DANUBIUS-RI Portal. There will usually be three steps to obtain access: feasibility review (both technical and financial), evaluation (scientific, technical and financial), and scheduling. These three steps previously mentioned are to be performed within 45 working days from the moment when the Call deadline is reached. In justified cases, the term of 45 working days could be extended. Evaluation procedure depends on the access mode. This is not valid for the virtual mode where datasets that can be directly accessed. Accesses are provided as follows: Physical (30%), Remote (20%), Virtual (50%). Access modalities are implemented as follows: Excellence-driven (30%), Market-driven (5%), Wide (50%), Need-driven (5%), Other (10%). Special access is provided as follows: Training and education access; Training for students, professionals, employees of authorities, and other users;	Survey

	Fast-track access; Access where stated criteria for urgency are met; Emergency access used when an immediate decision or action is needed to mitigate or prevent environmental, economic or social damage. Internal- Access Management Group (AMG), a panel of six independent expert researchers, drawn from across the DANUBIUS-RI Science and Innovation Agenda, and four Operational Managers selected from the DANUBIUS-RI Components. AMG will work with the Scientific Advisory Committee and the Research Infrastructure Committee to select Call topics and scheduling. It will monitor the progress and outcome of Calls and individual projects, and their dissemination. The following selection criteria are applied: Excellence Driven: Scientific excellence points 45, threshold 30, Socio-economic importance p 15, t 10, Track record of applicant p15, t 10, Compliance with DANUBIUS Commons p 15 t 10, Interdisciplinarity p 10 t 5. Market Driven: TRL p 45, t 30, contribution to addressing the Societal Challenges p 35 t 20, Track record of applicant p20 t10. The training and education mode: through a long-term agreement or through an ad hoc, one-off request. The fast-track mode: proven scientific motive/justification for immediate access and clear scientific motivation. The emergency mode can be used when an immediate decision or action is needed. Virtual Access Registration for statistics and KPI.	

DISSCO		Source
Distributed System of Scientific Collections		
DESCRIPTION	The Distributed System of Scientific Collections is a new world-class Research Infrastructure (RI) for Natural Science Collections. The DiSSCo RI aims to create a new business model for one European collection that digitally unifies all European natural science assets, sharing common access, curation, policies and practices across countries while ensuring that all the data complies with the FAIR principles (Findable, Accessible, Interoperable and Reusable data).	DISSCO website - home
MISSION	DiSSCo aims to enable the community of NSCs to overcome its current limitations and thrive in this new, ever-evolving environment of opportunities. DiSSCo will transform today's landscape of individual European NSCs providing simple access to various data classes into a new reality: a comprehensive and sustainable knowledge base of unprecedented scale that links all data classes across institutions. From here, DiSSCo aspires to: • Create a one-stop e-science infrastructure providing discovery, access, interpretation, and analysis of complex linked data. • Provide end-user services such as digitisation on demand, research support and training activities to address current community limitations. • Optimise collection access, curation and management practices in individual institutions, enabling strategies under a common research agenda. • Accelerate digitisation, taking the current workflows to an industrial scale. • Permanently link representations of digital specimens to their attributes across distributed digital resources, thus ensuring robust science. • Reduce the global carbon footprint with digital collections access that will reduce international trips and global shipments of specimens. • Improve efficiency, facilitate economies of scale, make natural science research more responsive and resilient to urgent needs and accelerate biodiversity discovery.	DISSCO – Dissco – Why Dissco
USER PROFILE	The structure of DiSSCo allows for two different kinds of participation. You can either get involved as an individual or become a member of the DiSSCo consortium with your institution. • Guidance on how to participate as an organisation he members of DiSSCo are mostly natural history collections holding institutions that are organised in so called National Nodes that gather the participating institutions from one member country and speak through a representing organisation with one voice.)uring the implementation phase, becoming a DiSSCo partner is very straightforward. If you wish to become a member, please get in contact with the respective head in your country. They will be able to guide you along the process. It will culminate in the signature of a Memorandum of Understanding that will mark the beginning of your membership in DiSSCo. • How to participate as an individual ersion 1 of ELViS (European Loans and Visits System) was developed by Picturae in the EC-funded SYNTHESYS+ project to facilitate some of the Transnational Access and Virtual Access calls organised in the project. The system was handed over to DiSSCo to support future calls for short-term transnational research visits to consortium institutions and digitisation-on-demand requests). The DiSSCo roadmap includes further development of the tool into a one-stop shop for access requests to the collections (visits, digitisation on demand, loans) and to taxonomic services. Other users profile description can be traced in the DiSSCo GitHub as follows: • Enterprise • Teams • Startups • Education	DISSCO website - Participate DISSCO GitHub - Solutions
USER NEED	European Natural Sciences Collections (NSC) are a pivotal infrastructure for meeting the most important challenge humans face over the next decades – mapping a sustainable future for ourselves and the natural systems upon which we depend – and for answering fundamental scientific questions about ecological, evolutionary, and geological processes. Data derived from European NSCs	DISSCO – Why Dissco – Why do researchers need Dissco

	underpin countless discoveries and innovations, including tens of thousands of scholarly publications and official reports annually (used to support legislative and regulatory processes on land use, societal infrastructure, health, food, security, sustainability and environmental change); inventions and products essential to our economy; databases, maps and descriptions of scientific observations; educational material for students; and instructive resources for the public. In the last decades, however, research practice tools have changed dramatically. Digital transformation and instrumentation, remote sensing, rapid identification and molecular approaches allow us to efficiently monitor the changing world and to better understand the causes of those changes. As the volume and diversity of information derived from NSCs are exponentially increasing, so does the need for suitable infrastructures that go further than providing simple access to different data classes. A holistic approach is now required, where cross-linked information effectively underpins the entire research life cycle and provides open access to mass and precise data. New technologies are providing opportunities to develop new tools that combine the data held in NSCs with other sources of information on species, genomes, phenotypes, geography, geology and the environment in ways that drive novel, integrative research. Prime examples of those are: • The compilation of data on the distribution of living species that is held by the Global Biodiversity Information Facility (GBIF) • The genetic sequence information that is collated by DDBJ, EMBL, GenBank and iBOL. • The data on morphology held by MorphoBank and TraitBank. • Geo-collection data that is held in GeoCASe. At present, however, the exploitation of such opportunities is severely limited by the low proportion of the collections that is digitally accessible and can then be used for comprehensive research; the lack of a common platform for access to NSCs specimen information; incomplete and/or broken links between major data sources about the natural world; and weak informatics tools to facilitate data exploitation and use. Furthermore, fragmentation of access policies, practices and models across hundreds of NSC locations severely impedes reaching the full potential of NSCs as unique global scientific asset. DiSSCo's services will help NSCs providers become an integral part of the European and Global scientific community, making them better equipped for changing user needs and new scientific usage of collections. For researchers, the services mean improved efficiency to become more responsive to urgent needs. DiSSCo's services will also accelerate biodiversity discovery, improve visibility in their contributions and reduce the global carbon footprint derived from trips and shipments of specimens.	DISSCO website - Services
USER STRATEGY	The scientific and technical approach to the DiSSCo mission can be very briefly summarised. DiSSCo sets the physical objects, the specimens, at the epicentre of the development of a robust, quality ensured and fit-for-purpose knowledge base for bio- and geo-diversity. This way, DiSSCo aims at putting NSC-derived information at the very core of data-intensive bio- and geodiversity sciences. To implement this revolutionary approach , it is imperative that institutions that hold NSCs not only improve the efficiency of access and reach of their assets, but that they completely change their business model to support a transformative shift in the way NSCs are used across scientific disciplines. By building the required economies of scale (i.e. the pool of resources to improve overall effectiveness), DiSSCo will significantly improve the role of NSCs in frontier scientific research. Furthermore, organisations will benefit from being able to better understand, describe and monitor the impact of their collections data in different scientific disciplines. Finally, organisations will be able to develop their specialisation and prioritisation strategies, within the wider DiSSCo community and in alignment with national primacies (e.g. Smart Specialisation Strategies), as well as developing and harmonising common research and innovation agendas. DiSSCo RI works for the digital unification of all European natural science assets under common curation and access policies and practices that aim to make the data easily Findable, more Accessible, Interoperable and Reusable (FAIR).	DISSCO – Why Dissco – Why do researchers need Dissco

SERVICE CATALOGUE	DiSSCo's core team is developing a set of facilities which will provide user services in the next future: • ECOI a European Collection Objects Index for digital specimen and collection data, • ELVIS a European Loans and Visits System for loans and visits transactions, • UCASMa Unified Curation and Annotation System for annotations and interpretations of preserved specimens • UKGI a Unified Knowledge Graph Index for links to supplementary data, • PTI a Provenance and Traceability Index for tracing back curatorial operations through time.	Survey DISSCO Community e-Services
ACCESS MGT PLAN	DiSSCo will create a unique access point for integrated data analysis and interpretation through a wide array of digital services provided by its community. The services aim to serve real life needs and therefore are based on the priorities set by collection providers and a robust base of user stories. DISSCO trying to achieve the following: • Support and improve both physical and digital access to European Natural Scientific Collections (NSCs) • Enable and support industrial scale digitisation of the collections • Provide enhanced interpretation, curation, annotation and use of specimen data by novel, machine-actionable mechanisms DISSCO Access Management Plan is based on the following: • Requesting physical access to DiSSCo national facilities DiSSCo provides the opportunity to researchers in Europe and globally, through the DiSSCo-linked project SYNTHESYS+, to physically access European Collections. Annual calls are issued. • Requesting Virtual access to DiSSCo collections' material. A piloting activity for virtual access to European Collections, through on-demand digitisation projects, enables researchers to request imaging and genomic information from DiSSCo facilities. Calls for virtual access are supported by the SYNTHESYS+ project. • Requesting Short Term Scientific Missions to DiSSCo facilities Opportunities for short term missions for capacity and experience building in the area of digitisation and data mobilisation of European collections is provided by the DiSSCo project Mobilise COST Action. • Getting involved in DiSSCo-linked projects DiSSCo preparatory phase is implemented through a series of externally funded research innovation and networking projects. More than 500 individuals and tens of organisations are involved. If you or your organisation would like to engage with one of the projects, please contact directly the corresponding coordinator or manager. • Getting involved in community working groups (incl. CETAF, TDWG, Mobilise) We particularly invite you to look into opportunities of participating in the different thematic groups of our European network (CETAF), the Biodiversity Information Standards Organisation (TDWG) and the MOBILISE Action. • Provide technical feedback via GitHub https://github.com/DiSSCo	DISSCO Community Services DISSCO website - Participate

ECORD The European Consortium for Ocean Research Drilling		Source
DESCRIPTION	ECORD, the European Consortium for Ocean Research Drilling, is a management structure of 15 members (14 European countries and Canada) for scientific ocean drilling as part of the International Ocean Discovery Program (IODP) "Exploring the Earth under the sea" and previously the Integrated Ocean Drilling Program – IODP from 2003 to 2013. The science in IODP involves a wide range of fundamental and applied issues for society, such as climate and ocean change, biodiversity and origin of life, the Earth in motion including the study of earthquakes processes, and the Earth structure and dynamics in relation with its surface environment. Three Platform Providers conduct IODP expeditions: the U.S.A. and Japan operate deep-sea drillships, JOIDES Resolution and Chikyu respectively. ECORD is responsible for funding and implementing mission-specific platform (MSP) expeditions. To date, ten IODP MSP expeditions – Arctic Coring-ACEX (2004), Tahiti Sea Level (2005), New Jersey Shallow Shelf (2009), Great Barrier Reef Environmental Changes (2010), Baltic Sea Paleoenvironment (2013), Atlantis Massif Serpentinization and Life (2015), Chicxulub K-Pg Impact Crater (2016), Corinth Active Rift Development (2017), JAPAN TRENCH PALEOSEISMOLOGY (2021), and HAWAIIAN DROWNED REEFS (2023) – have been carried out in areas inaccessible to the JOIDES Resolution and Chikyu.	ECORD website – About us
MISSION	As part of the International Ocean Discovery Program, ECORD focuses on: • ECORD membership: the ECORD Memorandum of Understanding (MoU) is signed by all ECORD members; • Delivering an average of one MSP expedition per year; • Signing the ECORD-NSF MoU, which defines the ECORD financial contribution to the JOIDES Resolution and the number of ECORD scientists to sail on each JR expedition; • Signing the ECORD-JAMSTEC MoU, which defines the ECORD financial contribution to the funding of the Chikyu and the number of ECORD scientists to sail on each Chikyu expedition; • Establishing a European Infrastructure; • Defining in-kind contributions for mission-specific platform expeditions.	ECORD website – About us
USER PROFILE	Mainly scientists and industry	ECORD website
USER NEED		
USER STRATEGY	User Strategy in ECORD is based on outreaching users through: • Blogs • Museums • Conferences • Media packs • Press releases • ECORD headlines Other info can be traced through the ECORD annual Reports of Activity at the following link: https://www.ecord.org/resources/reports/activities/	ECORD website - Outreach https://www.ecord.org/about-ecord/management-structure/eso/
SERVICE CATALOGUE	ECORD Services can be traced consulting ECORD and IODP databases	ECORD website – Resources - Databases
ACCESS MGT PLAN	Among the IODP (International Ocean Discovery Program) users can use the IODP Platform at https://proposals.iodp.org/index.php/site/login. Drilling proposals can also be submitted through the use of scientific ocean drilling legacy assets (LEAP Proposal). The same background will be introduced in the new programme (IODP3, which will start on the 1st of January 2025) with the "Scientific Projects using Ocean Drilling Archives" - SPARCS projects. Science in IODP is driven by community-generated proposals targeting the research themes outlined in the program's overall science plan and utilizing multiple drilling platforms. IODP proposal submission is a process designed to transform exciting science into successful expeditions. Therefore, users can follow the Proposal Submission Guidelines published online. Access ECORD data and information:	IODP Proposal Submission Guidelines ECORD website – Resources – ECORD and IODP Databases https://www.iodp.org/

	• The MSP expeditions database presents all data collected during mission-specific platform (MSP) expeditions operated by the ECORD Science Operator (ESO) with support from WDC-MARE/PANGEA. ink: http://iodp.pangaea.de/ • The ECORD Information database keeps record of ECORD participation in IODP expeditions, proposals and workshops, as well as members of panels and committees. We are currently working on a renewed version of the database to be re-launched on September-October 2019. ink: http://ecordbase.ecord.org/ Access IODP, ODP and DSDP data • Google Earth Scientific Borehole Map shows location of all DSDP, ODP and IODP drilled sites. • The Scientific Earth Drilling Information System (SEDIS) gives access to data, information and publications related to scientific ocean drilling (IODP, ODP and DSDP), regardless of origin or location of data. SEDIS allows the public to search the databases of the IODP Implementing Organizations (IOs) CDEX, ESO and USIO – by harvesting distributed metadata. • The Site Survey Data Bank (SSDB) is a repository for digital site-survey data submitted in support of International Ocean Discovery Program (IODP) proposals, expeditions and related activities. • USIO Core Database (JOIDES Resolution expeditions) • SIO7 Data Center (Chikyu expeditions) • Ocean Drilling Citation Database In collaboration with AGI, the IODP-JOIDES Resolution Science Operator (JRSO) maintains a citation database for DSDP, ODP and IODP-related publications. • See also IODP website	

eLTER-RI Integrated European Long-Term Ecosystem, critical zone and socio-ecological Research Infrastructure		Source
DESCRIPTION	eLTER-RI is a pan-European in-situ RI with the aim to study long-term ecological changes in terrestrial, freshwater and transitional/coastal ecosystems through a holistic "whole system" approach, based on the integration of different environmental disciplines, to understand the role and interactions of multiple and complex ecosystem variables. The RI consists of 26 national networks, 500 research sites and 50 LTSER (Long-Term Socio-ecological Research) platforms, providing broad and systematic coverage of key European ecosystems, integrating the socio-ecological components. eLTER-RI comprises National Research Infrastructures (NRIs), and European level Central Services (CS), such as data access, training and harmonized methods and parameters (standard observations). eLTER responds to the challenge of understanding the complex interactions between people and nature over the long term. Environmental sustainability can only be achieved on the basis of the robust knowledge and empirical evidence needed to identify and mitigate human impacts on ecosystems. eLTER catalyzes scientific discovery and insights through its state-of-the-art research infrastructure, collaborative working culture, and transdisciplinary expertise. This enables the development and application of evidence-based solutions for the well-being of current and future generations. In 2002 the European Commission created a coordinated mechanism for strategic planning of priority research infrastructures across European countries. This mechanism is called the European Strategy Forum for Research Infrastructures (ESFRI). For supporting the implementation and long-term operation of top infrastructures, ESFRI publishes and regularly updates a Roadmap, which reflects strategic European priorities. In 2018 eLTER was added to this ESFRI Roadmap. ESFRI provides a political framework for multilateral negotiations towards formalized RIs, where the European process and priorities are mirrored at the national scale by national ESFRI delegations and national ESFRI Roadmaps. After a long history of bottom-up networking and establishing 26 formal national LTER networks in Europe, the inclusion to the Roadmap marks a milestone towards the sustainable operation of a distributed network of excellent sites. eLTER is now in the preparatory phase on the way to becoming a fully-fledged RI and ERIC (presumably in 2026) and is funded by the European Commission through the H2020 projects eLTER PPP and eLTER PLUS and the Horizon Europe project eLTER-EnRich.	eLTER website - Home eLTER website - Home - Vision eLTER RI website – eLTER RI eLTER RI website – About eLTER RI
MISSION	The mission of eLTER is to facilitate high impact research and catalyse new insights about the compounded impacts of climate change, biodiversity loss, soil degradation, pollution, and unsustainable resource use in terrestrial, freshwater, and transitional water ecosystems. The pan-European, in-situ research infrastructure will serve multiple scientific communities with high-level central facilities and distributed well-instrumented eLTER Sites. At socio-ecological LTSER Platforms, eLTER combine the socio-ecological approach in studying integrated human-nature systems and the commitment to integrating stakeholder knowledge. Novel data services and products will result from combining harmonized standard observations at the sites with information from a wide range of other sources. These and other services will be accessible to a broad diversity of users from local to continental scales.	eLTER website - Home - Mission
USER PROFILE	eLTER provides researchers with access to over >500 sites and >50 larger LTSER Platforms across Europe, including Israel, and biogeographical regions, establishing and offering access to harmonised and standardised data, services and training useful to citizens and experts in their joint efforts to find sustainable solutions to the Grand Societal Challenges. In the framework of the eLTER-PPP project a detailed analysis of the stakeholders landscape was performed. This leads to the following Stakeholder Categories for the eLTER RI: • Researchers and science stakeholders	eLTER website – Home – Strategic Goals eLTER PPP Stakeholder Landscape Analysis

	• Research and Research Infrastructure funders • Peers in environmental research and observation • Internal stakeholders • Government and policy decision-makers • Business and industry • Civil society and interested members of the public	
	Users are represented as follows: • Scientific Community for the 80%, Public Authorities for the 10%, Private Sector. • Internal users for the 5%, Users from RI member countries for the 60%, Users from other European Countries for the 30%, Users from other countries outside Europe. The main objectives pursued by users requesting access to eLTER RI are as follows: • Access to the research facilities for basic research, 55% • Access to the research facilities for applied research, 40% • Training, 5%	Survey
USER NEED	Access to data and datasets, research sites information activities and persons (DEIMS-SDR and other virtual services). At site level, through a Transnational Access (TNA) programme, access to experimental facilities and equipment is provided - currently 48 sites are offered for TNA, 2 are in Italy (https://elter-ri.eu/transnational-remote-access-ta-ra#participating-sites). Service portfolio (https://elter-ri.eu/elter- pilot-services) under development. For the TA, the following assistance is offered to users: • Scientific in terms of assistance in planning and designing the scientific question • Technical in terms of access to analytical instrumentations • Training in terms of guidelines to work at site and use of specific equipments • Logistics in terms of support to field activities • Administrative	Survey
USER STRATEGY	eLTER Strategic goals are: 1. Facilitate innovative research for addressing grand societal challenges, with the aim to increase the scientific capacity, efficiency, visibility, and attractiveness of the European Research Area, to support management and policy making for a sustainable future. eLTER wants to seamlessly bring together researchers of ecosystem ecology and biodiversity, the critical zone, and socio-ecological systems to address grand societal challenges from a systemic perspective. eLTER is striving to develop and provide innovative research methods, which will be tested and implemented at eLTER in-situ facilities. 2. Design and operate a distributed and highly functional network of eLTER in-situ facilities across Europe. eLTER aim is to integrate existing and newly established eLTER Sites and eLTSER Platforms into a pan-European, distributed research infrastructure supported by user-friendly centralised services. To benefit the individual in situ facilities and their teams through harmonised design and instrumentation, eLTER has secured long-term funding and forged high-level collaborations. eLTER is specifically dedicated to achieving long-term sustainable operations and to collaborating closely with environmental RIs and other initiatives nationally, in Europe and globally. 3. Create a unique and widely accessible service portfolio. The eLTER Service Portal will be the one-stop gateway to all eLTER RI resources, supporting the collection of, and access to, harmonised data from eLTER in situ facilities and access to other services provided both centrally and by in situ facilities. Options for co-developing tools and services via technical and strategic collaboration will be continuously explored with both external and internal users. 4. Promote collaboration, integration, and a conducive working culture. eLTER aspires to achieve high ethical and environmental standards. It also strives to establish productive and synergistic relations with related RIs across Europe and globally. eLTER will create a collaborative internal working culture through an integrative governance structure, and will advance a transdisciplinary research framework encouraging cooperation between multiple disciplines and knowledge sources. It will also invest in the current	eLTER website – About – Strategic Goals eLTER Plus website – Transnational and Remote Access

	and next generation of European scientists and strengthen the diversity of the research community. Other user strategy can be found on the Transitional and Remote access content on eLTER Plus project website.	
	The following measures are in place to attract users: solicited applications to specific target groups (e.g. gender, early career). Scientific output is tracked and recorded by request to share publications, data and results through the eLTER-RI tools and social channels. The following feed-back mechanisms are in place: blog, webinar, participation to projects periodic consortia meetings.	Survey
SERVICE CATALOGUE	eLTER fields a variety of handful tools and services that could be of use to researchers, students and policymakers such as the Dynamic Ecological Information System - Site and dataset registry (DEIMS-SDR) that provides information from 1211 sites worldwide; the Data Integration Portal (eLTER DIP) for visualizing dynamic near real time data; the Digital Asset Registry (eLTER DAR); the Common controlled vocabulary for keyword tagging and discovery. eLTER RI provides access to ~200 well equipped sites and platforms. Data gathered at these sites will be integrated with a wide range of other data from various sources, including remote sensing and official statistics. Research based on this wealth of information will provide insights into the functioning of our life supporting system. eLTER is currently developing the service portfolio to build on and complement core activities to serve the identified stakeholder groups. The service specifications and pilots are currently being developed under **6 Thematic Service Areas**. Additionally, the eLTER Head Office will lead central strategic and coordinating activities. As the detailed implementation plans for the service portfolio takes shape, eLTER will identify a number of Topic Centres to add value to the operation and evolutions of the RI's capabilities.	eLTER website - Home - Service Portfolio
ACCESS MGT PLAN	The following installation can be accessed: data repository, LTER observational sites and LTSER platforms. Phases for the access project call and evaluation: Periodic calls, scientific review of the calls, feasibility assessment of the site manager, approval of the proposal by the central office of eLTER RI. Proposer of access projects are requested to share data with site PI and make them open for the RI but there is not yet a standardized procedure to do that. The following type of access is provided: Physical 60%, Remote 20%, Virtual 20%. The following access modes are implemented: Excellence-driven access 40%, Wide Access 40%, Need-driven Access 20%. The unit of access mostly used is "RWD", depending on research facilities. 360 RWD access units are provided per year Excellence based access in eLTER RI is under the H2020 eLTER PLUS advanced community project In terms of costs, for those sites which have additional costs for access the site, these are covered by the H2020 eLTER PLUS advanced community project. The following selection criteria are applied as a function of access modes: Excellence-driven, Need-driven and Wide Access: peer review. Access opportunities are promoted by calls shared through mailing list, web site and social media Post access provisions are in place in terms of access reports and provision of publications.	Survey

EMPHASIS European Infrastructure for Plant Phenotyping		Source
DESCRIPTION	The European Strategy Forum for Research Infrastructures (ESFRI) has identified "Plant Phenotyping" as a priority for the European research area, and EMPHASIS has been listed on the ESFRI Roadmap 2016 for Research Infrastructures as an infrastructure project to develop and implement a pan-European plant phenotyping infrastructure. In 2017, EU funded the preparation phase of EMPHASIS, a four-year-long project called EMPHASIS-PREP, which conclude in June 2021. Since 2021, EMPHASIS is currently in the implementation phase (EMPHASIS-GO) in order to bring EMPHASIS to the level of legal, financial and technical maturity required for full operation foreseen in 2025 with the establishment of EMPHASIS-ERIC	EMPHASIS website – About – Mission & Objectives
MISSION	The overall objective of EMPHASIS is to foster collaboration with the European plant phenotyping community and stakeholders, to the analysis of crop performance with respect to structure, function, quality and interaction with the environment for the exploitation of crop genetic diversity required for the enhancement of plant productivity and progress in plant breeding. EMPHASIS aims to create centralized access to phenotyping data by building and integrating compatible, consistent information systems. EMPHASIS will provide methods and interfaces for interoperability of datasets to manage, share, reuse and visualize heterogeneous, high-throughput plant phenotyping data stemming from different sources often in an interdisciplinary context. The main goal is that datasets are findable, accessible, interoperable and reusable (FAIR standard) in such a way that the datasets can be analyzed by several groups inside and outside EMPHASIS. This requires software interfaces providing different levels of access to different users to allow data analysis in relation to environmental conditions. In addition, data organization and storage need to be done in a secure way over long term periods, the data can be interpreted in a biological context and used for meta-analyses of experiments. The basic ontology of objects defined in EMPHASIS is described in the ontology of objects involved in phenotyping.	EMPHASIS website – About – E-Infrastructure
USER PROFILE	EMPHASIS users can be researchers, operators of plant phenotyping installation, policy makers or ESFRI delegates, industry representative and citizens. Participation rules and recommendations can be found in the "Get Involved" area of its website. The following users' categories can benefit by EMPHASIS strategy: • Researchers from academia and private sector in need of quantitative plant assessment • Public sector investors in complementary plant phenotyping infrastructure in Europe • Scientific institutions using synergies in operating plant phenotyping infrastructures in Europe • Industry harnessing innovation in technology development and its application for breeding • Society in general due to a sustainable increase of food quality and quantity in conditions of climate change Main users of EMPHASIS are researchers from academia or research institutions, mainly public entities.	EMPHASIS website – Services – Get Involved EMPHASIS website – Outreach – Publications – Promotion Material – Info Material – Digital Flyer
USER NEED	EMPHASIS provides a number of benefits for all its users as follows. Researchers from academia and industry: • Access to hitherto not available infrastructures to address scientific research question • Access to high quality data that follow common experimental and data standards to develop and validate models, perform meta studies, test hypothesis etc.	EMPHASIS website – Services – Get Involved

	• Network to present and discuss research at conferences, workshops, round table discussions, innovation events etc. • Support in translational research fostering knowledge and technology transfer. • Engagement in development of common experimental and data standards • Education and training on different aspects of plant phenotyping. Operators: • Participating in EMPHASIS will attract new users and new partners for joint projects. • Operators installation can participate in a European-wide excellence-driven access procedure, attracting additional users, increasing visibility and supporting research quality. • Operators can benefit from EMPHASIS engaging and attracting industry to plant phenotyping installations. • Through EMPHASIS operators can get access to cutting-edge and affordable technology. • EMPHASIS will raise awareness for the relevance of plant phenotyping with funders, policy makers and the broader public, providing a platform to bring perspective on the future development of European plant phenotyping towards these stakeholders. • EMPHASIS will support operators in building up and sustaining competences for operating their own facility. Policy makers: By getting involved now, you can ensure that your country's interests are taken into account during the development of EMPHASIS. You can bring in the perspective and expectations of your country on strategic aspects of how EMPHASIS should be operated. These aspects comprise all parts of the EMPHASIS business plan, including user strategy (service portfolio and benefit generation), governance, organizational policies, legal framework, cost models, funding framework, and implementation plan. Citizens: EMPHASIS will enable researchers to make the most of resources in order to study how to improve plant production in times of a changing climate. This is beneficial to everyone, because public resources will be used more efficiently and because it will help to secure future food supplies. Current status of EMPHASIS - implementation phase: research 20%; training 20%; technical 40% (data management systems development); 30% network	
USER STRATEGY	EMPHASIS wants to enable scientists to better understand plant performance and translate this knowledge into application. EMPHASIS aims to promote future food security and agricultural business in a changing climate. Therefore, EMPHASIS objectives are based on developing infrastructure and providing access, particularly as follows: • Develop and integrated pan-European infrastructure of instrumented facilities. • Link data acquisition to a European-level data information system and modelling. • Develop, evaluate and share knowledge and novel technologies. Emphasis contributes to the European Research Area Priorities by: • Harmonizing activities of plant phenotyping facilities to foster collaboration and connectivity. • Supporting interoperability of national R&I funding schemes • Raising public awareness of the relevance of plant phenotyping for food security • Driving transformative change needed to ensure food security.	EMPHASIS website – Outreach – Publications – Promotion Material – Info Material – Digital Flyer
SERVICE CATALOGUE	In terms of Infrastructure Categories, plant phenotyping requires integration of both facilities and activities. • Controlled Conditions: investigating diverse plant traits in response to well-defined environmental conditions. • Intensive Field: detailed investigation of plants and canopies under well-	EMPHASIS website – Outreach – Publications – Promotion Material – Info Material – Digital Flyer

	monitored field conditions. • Lean Field: field sites basic equipment and environmental monitoring that can be linked to a network of field sites. • Modelling: models integrated in phenotyping pipelines and predictive models using phenotypic data. • Data & Computational Services: integrating compatible information system to provide access to data. There are also a series of tools and services developed in collaboration with other project and infrastructures: • Experimental Design and Monitoring following FAIR principles • RI-VIS resources for research infrastructures • Phenomics Webinars to discuss latest developments in plant phenotyping • Emphasis data Management course material The main aim of this course was to understand and introduce FAIR principles for phenotyping applications, and to present some tools and methods needed to put these into practice. For this, everyone needs help and fortunately we can take advantage of a wide range of knowledge and skills within the Emphasis community.	
ACCESS MGT PLAN	EMPHASIS data management pilot addresses three levels. The objective of this pilot is to make available the datasets collected in EMPHASIS installations to a large community of plant scientists, following the FAIR principles (findable, accessible, interoperable, reusable). The rationale is that a user can reanalyze published datasets and/or perform meta-analyses compiling datasets. Three levels are considered for that. • Level 1: Data Identification and organization ('Reusable') Sensors, plants or plots and vectors are identified with persistent and non-ambiguous identifiers (e.g. URIs), in particular the spatial positions of sensors, plants and plots are traced. Environmental variables are organized so all steps between sensor outputs to time courses and/or spatial distribution of variables are traced so a user can understand them. Phenotypic variables are traced via entities (e.g. 'meristem' or 'air', quality (e.g. 'temperature'), methods (e.g. 'thermocouple' or 'thermal infrared') and units (e.g. °C) and comply with MIAPPE specifications whenever relevant. Software tools help to map them onto public ontologies. Events during experiments are traced using public or local ontologies. Datasets are organized in files with the necessary metadata. These processes are compatible with those in the infrastructure ELIXIR and in a common working group MIAPPE. • Level 2: Local information system for environmental and phenotypic datasets ('Findable', 'Accessible', 'Reusable' at the level of a single local infrastructure) The local infrastructure installs an information system that allows connecting information for rapid query of any combination of information (e.g. trait values for plants of a given genotype in a given range of environments, across experiments), and rapid detection of problems associated with an experiment. This is based on stabilized ontologies and the use of semantic web. • Level 3: A multi-local information system facilitating meta-analyses ('Findable', 'Accessible', 'Reusable', Interoperable' at the level of the EU) This third step connects local infrastructures that have reached level 2. It allows any user to perform the same queries as in level 2, but at a multi-local level. A software, 'Emphasis layer" is currently under development for that by using existing tools, it is tested in three locations.	EMPHASIS website – Services – EMPHASIS Pilots - Data Services - The data management pilot addresses three levels

ACCESS POLICY	Based on the analysis of user demand, EMPHASIS foresees to provide afferent services that require different access modes to the EMPHASIS infrastructure. The services focus on: ACCESS: access provision for user community to the phenotyping installations including : controlled environment installations, field installations, networks of field sites, modelling. QUALITY: measures to implement quality criteria at research infrastructure, specifically experimental design, standards, sensor calibration etc. DATA MANAGEMENT: approaches enabling data reusability embedded in a relevant data policy. INNOVATION: dissemination and utilization of technology and results from access and use of the phenotyping installations. COMMUNICATION: engaging all relevant stakeholders. TRAINING: supporting the next generation of plant scientist. EXPERT ADVICE: assessment of the plant phenotyping landscape specifically to funders and decision makers	EMPHASIS Criteria for User Demands

	Access mode	Purpose	Service portfolio	Cost model
Development Access (DevA)	**Internal Development Access(IDA)**	• exchange knowledge • standardization • technology transfer	• QUALITY • DATA MANAGEMENT • TRAINING	• exchange resources • cost recovery • exchange projects (eg. Marie Curie, etc)
	External Development access (EDA)	• test of new equipment form external groups (incl. industry)	• ACCESS • INNOVATION	• cost recovery (industry) • cooperation projects (academia and industry)
	User Access (UA)	• providing infrastructure to study GxMxE* • state-of-the-art technologies • specialized technology (e.g. tomography, modelling)	• ACCESS • QUALITY • DATA MANAGEMENT • INNOVATION • TRAINING	• cost recovery • cooperation projects • service, when appropriate
	Dissemination ACCESS (DissA)	• learning/training in phenotyping centres • learning about new technologies and modelling • evaluation of the European plant phenotyping landscape	• TRAINING • COMMUNICATTION • EXPERT ADVICE	• education program (e.g. summers schools, MC-ITN) • training, life-long-learning (cost recovery from industry)

*GxMxE Genotype x Managing x Environment

EMSO European Multidisciplinary Seafloor and water column Observatory		Source
DESCRIPTION	The European Multidisciplinary Seafloor and water column Observatory (EMSO) aims to explore the oceans, to gain a better understanding of phenomena happening within and below them, and to explain the critical role that these phenomena play in the broader Earth systems. EMSO consists in a system of regional facilities placed at key sites around Europe, from Northeast to the Atlantic, through the Mediterranean, to the Black Sea. Observatories are platforms equipped with multiple sensors, placed along the water column and on the seafloor. They constantly measure different biogeochemical and physical parameters, that address natural hazards, climate change and marine ecosystems. EMSO offers data and services to a large and diverse group of users, from scientists and industries to institutions and policy makers. It is an extraordinary infrastructure to provide relevant information for defining environmental policies based on scientific data. EMSO is a consortium of partners sharing a common strategic framework scientific facilities (data, instruments, computing, and storage capacity). It is a European Research Infrastructure Consortium (ERIC), legal framework created for pan-European large-scale research infrastructures. EMSO achieved the Certification of Compliance to ISO 9001:2015 standard for the "Design, coordination, and development of environmental research activities on seafloor and water-column".	EMSO website – Home – About – What is EMSO
MISSION	EMSO Mission can be summarized as follows: – Provide deep sea high-quality, long-term time series. – Develop technology for sensors, communications, offshore operations. – Attract scientist, technicians, managers, and industries. – Collaborate with European and International Organization and Institution (specifically in EOOS and GEOOSS). – Promote innovation and knowledge-sharing. – Conduct outreach and communication.	EMSO website – Home – About – What is EMSO
USER PROFILE	EMSO ERIC's broad range of disciplines (from geophysics and oceanography to ecology, microbiology, and engineering) have the potential to support a large variety of services of great value not only to scientists but also to academic, institutional and industry users. The provision of these top-quality services based on data, data products, instrumentation and physical access are what allow the EMSO RI to have such a great impact on the furthering of knowledge, capacity building, innovation, literacy and education.	EMSO website – Innovation and Industry – Innovation: Vision & Mission – EMSO ERIC Strategic Plan 2018-2020
USER NEED	To date, technical assistance within the open ocean observing community has until recently been restricted to situations where essentially one Member State can get access to the observatory facility of another Member. Thus, users can access more than one node simultaneously in different EU areas, and EMSO ERIC assists with best practices on how to manage national access in practical terms, as well as guidance on how both national and trans-national efforts can enhance the capability of EMSO in addressing priority themes, activities and services. In 2016 the EC published a European Charter for Access to Research Infrastructures with the support of stakeholder organizations such as Science Europe and the European Universities Association. As reported in the document: "The Charter has the purpose of setting out non-regulatory principles and guidelines to be used, on a voluntary basis, as a reference when defining or re-defining rules and conditions for Access to Research Infrastructures''. In line with the Charter, EMSO ERIC provides access based on science quality and market-drivers. The science quality assessment is based on the research excellence, originality, ethics, and feasibility of an application through peer-review by international independent experts. The EMSO ERIC has established a web-based management system for access to the regional facilities and services from different end-user categories. The access system has been developed within the activities of the EMSO-Link European project. The access system has some steps, the applicant can select available nodes from the list of the available EMSO sites, choosing the access mode between Remote and In-person ("hands- on"). In the first case, the presence of the	EMSO website – About us – Documents – Corporate materials – EMSO ERIC Strategic Plan 2021-2023

	user or user group is not required, while in the second is required during the whole access period. EMSO added value in providing access to regional facilities lies in the harmonization of access information across Europe, enhanced visibility of each regional facility and mutualised legal support, including model contracts with users.	
USER STRATEGY	A central objective of EMSO ERIC is to deliver to its stakeholders the data, information, and knowledge that they need, based on sustained monitoring of environmental processes. EMSO stakeholders include marine science researchers, marine technology engineers as well as other ERICs, resource managers, policy makers, marine industries, and the public for both data collection and use, as well as promotion of new uses and users of the infrastructure. Stakeholders at the European level include those working to meet the statutory obligations of several legislative frameworks including the Marine Strategy Framework Directive, Common Fisheries Policy, Habitats Directive, Water Framework Directive, and Maritime Spatial Planning Directive.	EMSO website – About us – Documents – Corporate materials – EMSO ERIC Strategic Plan 2021-2023
SERVICE CATALOGUE	EMSO ERIC provides a large variety of services of great value not only to scientists but also to academic, institutional, and industrial users. The provision of top-quality services is based on high-quality data, data products, instrumentation and physical access will generate a great impact on the furthering of knowledge, capacity building, innovation, literacy, and education. Allowing user access to EMSO Regional Facilities is central to EMSO service operation. The targeted users come from the academic and industrial worlds. Different kinds of access are proposed, ranging from installing and running a scientific experiment or testing an industrial prototype device on a Regional Facility asset - be it at sea or onshore - to specialized training provided by Regional Team members as well as tailored marine data acquisition. LIST OF EMSO SERVICES: • Access to the Infrastructure Services • Climate Change Services • Marine Ecosystem Services • Geo-hazards Services • Training & Best Practices Services • Technology & Engineering Services • Data Management Services • Communications & Branding Services • Lobby & Policy Services • International Relations & Partnering Services	EMSO website – About us – Documents – Corporate materials – EMSO ERIC Strategic Plan 2021-2023 EMSO website – Services – List of Services
ACCESS MGT PLAN	Providing infrastructure access is a crucial factor in the development and sustainability of the formation of ERICs, including EMSO. The concept of access has been advanced through projects of the Integrating Infrastructure Initiative. Transnational Access is a key issue within a distributed infrastructure offering combined access in different nodes. The "ACCESS TO THE INFRASTRUCTURE 2024 CALL" The objective of the call is to offer physical access to EMSO Facilities where users' devices can be installed, including sensors, instruments, systems, new technologies and where new procedures/experiments can be tested/take place. The set of Regional Facilities offered for access provides the broadest scientific and technological capabilities to future users. The procedure for accessing the research facility is activated at fixed bi-monthly periodic intervals. The procedure consists of the following steps: • Submission of a letter of intent in which the applicant formalises the interest to participate in the EMSO physical access programme and provides a one-page project proposal. • The managers of the regional facilities selected by the applicant are contacted by the order of preference provided by the applicant to prepare the project proposal. If the one-page proposal is seen as unfeasible by the facility	EMSO website – About us – Documents – Corporate materials – EMSO ERIC Strategic Plan 2021-2023 EMSO website – Services – Physical Access

	managers, the applicant will be informed and asked to reformulate the proposal. • The applicant fills in the project proposal form once one or more host facilities have been appointed. In this detailed document the applicant exposes its know-how, ideas, work plan and budget for the execution of the project. • At cut-off dates, all received project proposals are sent to an Evaluation Panel formed of experts not belonging to any of the facilities participating as hosts in the intermediate call. • If the evaluation fulfils the thresholds, the project has the approval for being executed. • The user must sign two contracts or agreements. One between the "End User" or applicant and the "Call Coordinator" or EMSO ERIC. This first contract defines the terms under which the grant is given to the user and the rights and obligations of all the Parties involved, including data sharing and eventual provisions for early termination of the conferred access. The second contract is between the "End User" or applicant and the "Access Provider" or host facility: this contract is tailored to each project and contains more specific clauses regarding logistics, operational matters, and liabilities, if needed. • Once the two contracts are signed, the project can start following the work plan.	

EUFAR Svalbard Integrated Arctic Earth Observing System		Source
DESCRIPTION	Created in 2000, EUFAR (The EUropean Facility for Airborne Research) is a unique pan-European portal and network dedicated to airborne research in the environmental and geo-sciences. It brings together infrastructure operators of both instrumented research aircraft and remote-sensing instruments with the scientific user community, both expert and early-stage researchers, other data users and stakeholders. EUFAR is an association which does not seek financial gain, aims to work in the collective interest of its Members to facilitate collaboration amongst: the operators of airborne research infrastructures for environmental and geosciences in Europe; the scientific users of such airborne research infrastructures; research funding institutions; and relevant industry partners in accordance with the state aid rules.	EUFAR website - home EUFAR Statute: Art.3 Purpose and Scope of Activities
MISSION	Eufar's principal aim is supporting scientists, by granting them equal chance to carry out various atmospheric and in situ measurements onboard research aircraft by developing transnational access to national infrastructures. From planning summer schools, and expert workshops, and performing as an interactive and dynamic hub of information, to maintaining a central data archive, and developing tools and standards to collect, process and analysis data, EUFAR continues to improve the operational environment for conducting airborne research. EUFAR Objectives: • Facilitate and promote transnational access to national research **aircraft** and instruments • Reduce redundancy, fill the gaps, and optimise the use and development of airborne facilities to conduct research • Improve the quality of the service by strengthening expertise through knowledge exchange, development of standards and protocols, the constitution of databases, and joint instrumental research activities • Promote the use of research facilities, especially for young scientists from countries where such facilities are lacking, by providing education and training opportunities in airborne research • Support both market pull and technology push driven innovation in airborne research, and develop a culture of cooperation between EUFAR experts and SMEs to transfer airborne research instruments, methodologies and software into new products.	EUFAR website - home
USER PROFILE	Scientific user community, both expert and early-stage researchers, other data users and stakeholders. Coordinated approach between infrastructure operators, users and public authorities was the weakest point in the previous EUFAR UE projects. A gap analysis was performed in FP5 and a proposal was selected in the ESFRI roadmap in FP6 (COPAL, a Preparatory Phase study in the FP7 Research Infrastuctures ESFRI roadmap. It had the objective of providing the European scientific community with a unique research aircraft platform, capable of operating in any remote area in the world and offering a heavy-payload) for filling this gap. In parallel, legal structure models had been carefully examined to develop a sustainable structure for EUFAR. Both initiatives failed because public authorities were not involved in the process. Within the new EUFAR AISBL structure, public authorities are now in a position to drive and oversee the EUFAR initiatives for the development of the fleet and the sustainability of the network. The involvement of EU environmental organizations is also contributing by introducing a transnational perspective on these issues, and the industry players are suggesting alternative approaches such as sharing high performance test aircraft between applied and academic research.	EUFAR2 GA no. 312609 – Final Publishable Summary Report
USER NEED	EUFAR works to coordinate the operation of instrumented aircraft and hyperspectral imaging sensors, and exploit the skills of experts in airborne measurements in the fields of environmental and geo-sciences, in order to provide researchers with technical support and access to research infrastructures most suited to their needs. In order to evaluate the capability of the existing fleet in response to the scientific needs, to provide directions for enhancing the capability of the fleet, and to outline strategies for the long-term development of the fleet, a questionnaire was prepared in order to get feedback from the European scientific community. The	EUFAR website - home EUFAR Web-Survey

	online survey was launched at the end of November 2014 and remained open until the end of January 2015. A summary of the answers has been collected and are available online. In the previous EUFAR EU funded projects, allowances were allocated to access the Research Infrastructures. The selection procedure included these steps, that can be replicated once the EUFAR AISBL will set in force the Open Access capability. Pre-review and assistance with clustering It is expected that there will be a two-stage review process used for all three types of TA activity. The first stage is intended to provide applicants (especially those who are not experts in airborne observations) with information that will improve the overall scientific quality of their proposals. This pre-review could include: • contact with aircraft operators to identify existing nationally-funded projects that may provide opportunities for clustering. • contact with expert members of the existing EUFAR community of airborne measurement (tutors), to help the applicant improve their measurement and data analysis methodologies and to select the most appropriate aircraft. • extension of the research group with students or scientists from countries not operating research aircraft. The pre-review stage will also identify situations where the applicant could perform the project better using national facilities and funding – in this case the project will be considered ineligible for TA funding. Evaluation – Science review: the science review will be made by an independent pool of reviewers. The selection of the applications will be made based on the scientific merit: scientific value, originality, and practicality. – Logistic evaluation: the selected aircraft (and, if applicable, instrument) operators will assess that the project is logistically feasible. – Final decision: the final decision will be based on: ○ the feasibility: selected experiments will have to be feasible within the time period et for the activity. Studies of rare phenomena will be excluded in order to minimize constraints on the allocated time slots. ○ the science quality and impact (review marks and comments). ○ the network value and training potential of the project (experience gained by the scientists actively participating in an airborne field experiment, number of scientists and students involved, country of origin of the members of the group, etc).	
USER STRATEGY	STRATEGY & EUROPEAN INTEGRATION • Interactions with potential collaborators including the ENVRI community of Research Infrastructures and the airborne research community in the USA • Strategic Advisory Committee to guide EUFAR development • Development of Open Access to EUFAR facilities to broaden the user community and optimize their exploitation • Fostering of coordination for the harmonized development of future airborne observing systems including aircraft, UAVs, Balloons and instrumentation	EUFAR website – Activities – Strategy and European Integration
SERVICE CATALOGUE	The new EUFAR Data Catalogue replaces the former EUFAR Flight Finder tool. The Catalogue is hosted by AERIS, the French Data and Services Cluster for Atmosphere. EUFAR Flight Finder This is a geospatial-temporal search interface to locate EUFAR data (i.e. data mainly from the previous EUFAR EU projects activities) for download. The aim of the Catalogue is to facilitate the location and identification of EUFAR flights and to link to the appropriate data files in the archive. Users can search by geographical area on a map interface, by temporal constraints or using keywords or parameter names. Results are displayed on the map; clicking on a flight will show further details and links to the data.	EUFAR website – Resources - Data - Data Catalogue
ACCESS MGT PLAN	During the previous EUFAR EU projects, Transnational Access was offered to 17 instrumented aircraft and 3 remote-sensing instruments. This included fully-funded flight time, scientific engineering support for integration of instruments, data analysis and planning of the field campaign, and covered a travel and subsistence allowance for participating researchers. TRANSNATIONAL ACCESS - Eligibility criteria: 1. The applicants (leader and the majority of the group) must work in an institution established in a European Member State or Associated State;	EUFAR website - home - Transnational Access Activities - Access Offer EUFAR website – Activities – Transnational

	2. The applicants (leader and the majority of the group) must work in a country other than the country(ies) where the legal entity(ies) operating the selected aircraft and/or instrument is(are) established. 3. Only groups that are entitled to disseminate the foreground that they have generated under the project are eligible to benefit from access. Note that the raw data provided to the TA user group by the aircraft and instrument operators remained EUFAR property. No benefit, other than for science (publications), should be made from this data unless prior agreement is given by EUFAR. Aircraft-borne measurements provide an important capability that supports many areas of study in environmental research including (but not limited to): Atmospheric composition and dynamics / Cloud and aerosol properties / Land and water surface properties / Vegetation identification and characterization / Support to space-based observations including calibration and validation. EUFAR members operate a range of specially-adapted aircraft and instruments - see the website for details. Most of EUFAR data was hosted by CEDA (for more information see the EUFAR dataset catalogue record at BADC) and all datasets are openly accessible now hosted by AERIS, the French Data and Services Cluster for Atmosphere.. Interoperability has been set up with other airborne data portals such as SAFIRE + the Data Portal of the French airborne research. All users are required to acknowledge the data providers in any publication based on EUFAR data. During the EUFAR EU funded projects an efficient procedure has been developed and consolidated for evaluation of the eligibility, feasibility and scientific merit of the transnational access proposals. Transnational access overbooking called for additional measures to increase its effectiveness: (i) a new criterion was introduced in the evaluation process: end users participating in the SAC will provide EUFAR with a list of scientific priorities and their representatives in the UGSP will evaluate the pertinence of the selected proposals with respect to these priorities, hence increasing their potential scientific impact; (ii) the SAC members had to inform EUFAR about the most promising opportunities of clustering with already funded cutting edge airborne experiments, for sharing flight costs and the collected data, hence increasing the effectiveness of transnational access in terms of benefit to cost ratio; (iii) enhanced visibility of and up to date planning of the fleet on the website. Early-stage researchers also had the opportunity to take part in flight campaigns via the opportunities proposed in the N6 Education & Training activity (training courses, opportunity to join an existing flight campaign or visit an aircraft operator). In order to continue to provide researchers with a method of access to research aircraft, EUFAR AISBL is currently developing a new process that is referred to as Open Access (OA). In this, funding for the flight hours is provided by the aircraft operators themselves (or their funding partners). Access to the aircraft is granted in exchange for resources provided in-kind by a separate country or agency. These resources may take a number of forms. One possibility is the provision of instrument scientists and engineers to work at the flight facility of one of the current EUFAR aircraft operators. Another alternative may be the development of a new instrument that may be a key to achieving the aims of scientists from the aircraft operator's normal user base. A number of aircraft operators and funding bodies within the EUFAR network have already signed a Memorandum of Understanding to implement this scheme. Any potential users who wish to obtain flight time on one of their aircraft are encouraged to discuss their requirements with the EUFAR Chair.	Access – Eligibility Criteria EUFAR website – home – Access to Facilities EUFAR website – Rescources - Data - Data Access EUFAR2 GA no. 312609 – Final Publishable Summary Report https://www.eufar.net/projects/ta-application/

EUROARGO-ERIC Italian contribution to the Argo programme, Gliders and Drifters		Source
DESCRIPTION	Euro-Argo ERIC is an European Research Infrastructure Consortium that manages and coordinates the European contribution to support 25% of the international global Argo mission. Argo is the world's largest in-situ ocean observation system based on a network of multi-parameter autonomous profiling buoys (Argo float). Euro-Argo ERIC aims to develop a long-term European contribution to the understanding of the oceans, their role in the climate system and their state of health. Argo floats perform measurements along the water column and can be equipped with a variety of sensors to measure temperature, salinity and biogeochemical parameters. The data are used for scientific research and by operational oceanography centres for studies ranging from climate change to monitoring the health of the oceans. Italy is a founding Member of the Euro-Argo ERIC and OGS is the Italian 'representing entity' (officially appointed by MUR). OGS also coordinates the Argo Regional Centre for the Mediterranean and Black Sea (MedArgo ARC). Within ITINERIS, the Italian component of Euro-Argo includes Gliders and Drifters to increase the contribution to the quantitative description of the evolution of ocean state, to characterize specific interested areas and the upper ocean.	Survey
MISSION	Argo must be considered in its ensemble: not only the instruments, but also the logistics necessary for their programming and deployments, field operations, the associated data streams and data centers. That's why Euro-Argo establishes a high level of cooperation between partners in all the implementation aspects: • operation at sea, • array monitoring and evolution, • technological and scientific developments, • improvement of data access for research and operational oceanography (CMEMS), • link to the international management programme, • promotion of Argo Glider and Drifter, enlargement of data users community and help answering its needs.	EUROARGO Website – Objective/Mission Ocean Gliders Global Drifter Program
USER PROFILE	EURO-ARGO Users are Scientific Communities for 70% and other for 30% are: internal for 25%, from RI member Countries 25%, from EU Countries 25%, from other Countries outside Europe 25%.	Survey
	• Users are interested in Argo data as metadata, trajectory and technical data, and especially in getting the vertical profile data from Argo floats. All data are stored in NetCDF format. These Argo netCDF files are available at the Argo GDACs. On the webpage "Data from GDACs" at https://argo.ucsd.edu/data/data-from-gdacs/ is described how to get data from the GDACs. Other ways of accessing Argo data are well described on the Argo data products page, the data visualizations page or the software tools page. In addition, a quick start guide to help users to get started using Argo netCDF profiles is on the webpage https://argo.ucsd.edu/data/how-to-use-argo-files/ where four main topics are described. • Users are interested in glider data such as metadata, and vertical profile data from Ocean Gliders. All the data stored are in NetCDF format and are accessible at https://www.ego-network.org/dokuwiki/doku.php https://cdi.seadatanet.org/search https://nodc.ogs.it/data/rsm/data.html https://marineinsitu.eu/dashboard/ https://www.ocean-ops.org/board • Users are interested in drifter data such as metadata, trajectory, surface velocity components and surface temperatures. These data are stored in a NetCDF file for the period 1986-2016. Data after this period can be viewed and downloaded either via the Global Drifter Program or via the Copernicus In-situ Ocean Tac Dashboard or via OGS website. https://dx.doi.org/10.6092/7a8499bc-c5ee-472c-b8b5-03523d1e73e9 https://www.aoml.noaa.gov/phod/gdp/index.php	ARGO website - Data https://argo.ucsd.edu/data/

	http://www.marineinsitu.eu/dashboard/ https://argo.ogs.it/medsvp/index_project.php	
USER NEED	Access to the research facilities for basic research 30%, Access to the research facilities for applied research 35%, Testing and calibration of instruments/equipment 5%, Other 30%. Scientific, technical, training, logistic and administrative support and assistance are offered at European Level. IPR Rules are applied as follows at European Level: excellence-driven research, collaborative research of academic and industrial users, Collaborative research of academic and industrial users, Use by commercial users, and others. For Argo float data, there are feedback mechanisms, managed at European level, where users can report their experiences, future needs and scientific activities to RI. This, for example, happens during meetings where questionnaires are filled out to assemble feedback and suggestions, both on problems and future needs. Users are always kindly invited to send feedback via email or dedicated web pages. For Gliders and Drifters, it is the data owner who responds to feedback and problems with the data	Survey
USER STRATEGY	➢ All data being part of the Euro-Argo are relayed, made publicly, and freely available within hours after collection. • For Argo data, every effort is made to deliver data with the shortest delays possible and with extensive quality control. The data quality system is composed of two levels: real-time data (less than 24 hours) and delayed mode data. The delayed quality control procedures provide the highest possible data quality • Gliders data are available in real and delay time without any quality control • Drifter data are collected and stored by automatic procedures (preprocessing) executed every morning. The raw data collected by the different drifter designs have their own peculiarity and need to be processed to obtain files with common characteristics from which the decoding procedure can start. Currently, the database includes about 70 different decoding. The scripts which decode the raw data also extract from the database the Metadata of each deployment. Drifter data are automatically edited to remove spikes. The results of the automatic editing are then improved annually by a manual editing process that includes a visual check of all drifter trajectories from the previous year. ➢ Scientific output is tracked and recorded as follows: Euro-Argo data-management assigns DOIs to its documents and datasets for two main objectives: - Citation: in a publication the DOI is efficiently tracked by bibliographic surveys - Traceability: the DOI is a direct and permanent link to the document or data set used in a publication. Statistics are regularly published: https://www.euro-argo.eu/KPIs, https://nodc.ogs.it/catalogs/doi, , https://dx.doi.org/10.6092/7a8499bc-c5ee-472c-b8b5-03523d1e73e9 Meetings are organized to contact and attract new users. It is a kind of routine activity, managed at European level. Euro-Argo provides the means to sustain important outreach activities (web-site, brochures, leaflets, newsbrief, educational materials, etc.). The initiatives about outreach can be found on https://www.euro-argo.eu/Outreach,, https://www.oceangliders.org/events/.	Survey
	• Other attractive actions are implemented through "Argo education" and "Glider events" listed on dedicated web pages. • The Argo users' manual is available online.	Argo website – Education materials https://www.euro-argo.eu/Outreach/Educational-material

		https://www.ego-network.org/dokuwiki/doku.php?id=public:events Argo website – Data – How to use Argo data files – Users' Manual
SERVICE CATALOGUE	The Euro-Argo fleet monitoring tool allows any user to visualise Argo profiling float metadata, ocean measurements, trajectories and technical parameters. It gives access to a fleet dashboard and also provides detailed information on a specific Argo float webpage (by WMO number). • https://fleetmonitoring.euro-argo.eu/swagger-ui.html The Euro-Argo data selection tool is specifically designed for users to select, visualise and download Argo scientific data (profiles files) in different formats. The APIs used by these two web portals are open and publicly available to interested users at the following endpoints OpenAPI (swagger): • https://dataselection.euro-argo.eu/swagger-ui.html They allow any user to retrieve, query and browse Argo data and metadata records. For the glider data: https://nodc.ogs.it/data/rsm/data.html, https://cdi.seadatanet.org/search, https://www.ego-network.org/dokuwiki/doku.php?id=public:events https://argo.ogs.it/glider/history.php? The OGS website, the Global Drifter Program and the Copernicus In-situ Tac Dashboard provide drifter data (metadata, trajectory, surface currents, surface temperature). Of these, the most complete dataset is available on the OGS website, as the other two systems collect data only from one type of drifter, while the OGS database covers all drifter types deployed in the Mediterranean. https://www.aoml.noaa.gov/phod/gdp/index.php http://www.marineinsitu.eu/dashboard/ https://argo.ogs.it/medsvp/index_project.php	Survey
ACCESS MGT PLAN	Argo data are relayed and made publicly and freely available within hours after collection. The management of access is organized at European level. ➢ The Euro Argo Data repository is based on: • Coriolis Data Assembly Centers (DACs) who collect, qualify, process and sent the float data to the Global Data Assembly Center (GDAC) • The Global Data Assembly Centres (GDAC), located in Coriolis/Ifremer/France, is the distribution point of Argo data on Internet and is in charge to provide users with access to the best version of an Argo profile • Three Regional Centres led by Euro-Argo partners, check the consistency of the Argo data for a specified geographical area: Atlantic ARC (A-ARC), Mediterranean and Black Seas ARC (Med-ARC) for which Italy (OGS) has taken the lead , and Southern Ocean ARC (SO-ARC). They also foster the collection of recent CTD data for delayed mode quality control purposes, organize the delayed mode QC of floats, and provide specific Argo products For Glider and Drifter there is not a common management of access which is being improved at international level. Access to the Euro-Argo ERIC is 100% Virtual through Euro-Argo Portal for Argo data, https://www.ego-network.org/dokuwiki/doku.php for Gliders data, different web sites for Drifter data Mid-term and long-term access strategy is managed at European level.	Survey

EUROFLEETS Alliance of European Marine Research Infrastructure		Source
DESCRIPTION	An alliance of European marine research infrastructure to meet the evolving needs of the research and industrial communities. EUROFLEETS+ is an H2020 project funded under the Infrastructures initiative, coordinated by the Marine Institute that brings together a significant group of key marine research actors (in particular research vessel operators) in Europe, North America and Oceania – 42 marine institutes, universities, foundations and SMEs from 24 countries.	EUROFEELTS website - About
MISSION	The Eurofleets+ project will facilitate open access to an integrated and advanced research vessel fleet, designed to meet the evolving and challenging needs of the user community. The specific objectives of the Eurofleets+ project are: 1. Provide efficient, single-point, transnational access to an notable fleet of research vessels and specialised infrastructure for European and international research communities. 2. Facilitate interdisciplinary research groups to access European and global seas and oceans to conduct excellent research, with priority given to new users, early stage researchers, women scientists and researchers from less equipped countries. 3. Develop tools and equipment to meet the evolving challenges of marine research, especially for deep ocean research and exploration, data management, and virtual access. 4. Increase the likelihood of new innovative products, processes or services, important for the optimisation of the European research fleet and for future user needs, through close collaboration with industry. 5. Enable free and open access to data, adding value, advancing knowledge and enabling further innovation. 6. Establish dialogue with stakeholders from key user communities to inform and integrate the development, operation and strategic direction of the European research fleet. 7. Develop a strategic roadmap and long-term sustainability plan for advanced and user-oriented transnational access. 8. Provide comprehensive training and exchange programmes for user communities and professional staff, increase ocean literacy, inspire emerging researchers, and attract women to science through targeted educational activities. 9. Disseminate and communicate the project activities and results to a wide range of interested organizations and individuals to ensure international recognition for Eurofleets+ and an enduring impact	
USER PROFILE	European and international researchers from academia and industry will be able to apply for several access programmes, through a single-entry system. EUROFLEETS+ will prioritise support for research on sustainable, clean and healthy oceans, linking with existing ocean observation infrastructures, and it will support innovation through working closely with industry. Key stakeholders are largely known to the Eurofleets+ consortium due to their involvement in many other relevant initiatives and EU projects in the field of marine science and technology. Target stakeholders will include: infrastructure managers; research vessel operators (ERVO, OFEG, IRSO, UNOLS); researchers and the scientific community; industry, innovators, technology developers; decision-makers, including policy makers, public agencies, funders, planners, science managers/research managers; media, to include science writers, journalists, documentarists; the general public; existing Research Infrastructures (RIs), EU projects and other initiatives (ICOS, EMBRC, EPOS, LifeWatch, Euro-ARGO, JPI OCEANS, AtlantOS, ARICE, EUMarineRobots, SeaDataCloud, EUDAT, EOSC, ODIP and ODIPII, GEOSS, IODE ODP, POGO, EMODnet, R2R, etc.); the World Ocean Council (WOC); the World Meteorological Organization (WMO); representatives of national and European non-governmental organizations; representatives of international non-governmental environment organizations, for example WWF; those involved with ocean observing systems, research and mapping communities	EUROFEELTS website - About Eurofleets website - Engage

	(GEBCO, UNCLOS, Habitat Mapping, etc.); legislators, regulators; and key marine users.	
USER NEED	EUROFLEETS+ will extend and enhance the capabilities of the European research vessel infrastructure, bringing new perspectives, new ideas, and new research and innovation tracks. Through competitive Calls, researchers will be able to access the entire North Atlantic, Mediterranean, Black Sea, North Sea, Baltic Sea, Pacific Southern Ocean and Ross Sea. In addition to ship time, researchers will also have access to new AUVs and ROVs. A unique portable telepresence system will enable remote access by researchers and diverse end users including the public; a first for Europe. In addition to comprehensive transnational access activities, the project will undertake joint research in challenging and highly relevant areas, including deep ocean research and exploration, data management, and enabling future virtual access. To ensure that the European research fleet meets the needs of evolving ocean observations, taking into account the role of research vessels as part of the wider European Ocean Observing System (EOOS), Eurofleets+ will cooperate closely with European and international fixed and mobile observatory communities and remote sensing communities, including EMSO, ONC (Canada), DONET (Japan), ECSSOS (China), MACHO (Taiwan), I MOS (Australia), OOI (USA), OceanSITES, EuroGOOS, JERICO-Next, and environmental data information Copernicus ocean forecast Mercator Ocean and marine meteorology JCOMMOPS, and Global climate observing system like Go Ship, as well as with the Atlantic Ocean Research Alliance (AORA) and Atlantic Seabed Mapping International Working Group (ASMIWG). An initial register of stakeholder needs will be created, of relevance to a catalogue of high quality and integrated services. Stakeholder dialogue will be fostered through three main approaches: • semi-structured interviews: focused on the identification of the stakeholder's offer and need, on the overlaps between stakeholder and Eurofleets+ missions and strategy, on the mutual collaboration opportunities; • a web-based discussion forum: a discussion platform will be established on the Eurofleets+ website to enable interested parties to interact with project participants; this will gather all relevant stakeholders and RV operators in one virtual place and will connect the work done for the interviews with those for the preparation of the international workshops; • two international workshops: • Workshop 1: Combining fixed and mobile ocean observing systems and their link with satellite observations (July 2020), with the aim to connect the main operators and stakeholders for the benefit of greater coordination that will undoubtedly translate into efficiency and more and better data and connecting to public/society concerning climate change for example – integrating fixed observatories + vessels – portable observatories; • Workshop 2: Synergies with the Atlantic Mapping program linking with AORA, EMODnet bathymetry and Belém statement (January 2021), with the aim to bring together different stakeholders with a broad industry spectrum (marine biotechnology, ocean energy, telecom, seabed mining, pharmaceuticals, etc.) that have a high potential for sustainable jobs and blue growth. In addition, to the two workshops, a series of smaller meetings will be held as virtual meetings such as audio-conferencing, multimedia conferencing, screen sharing etc., aiming to prepare the various stakeholders for a fruitful exchange of information and coordinated actions to foster the cross-fertilization between different research infrastructures in the Marine Domain to achieve a productive and large second and final workshop. Lastly, a strategic agenda will be produced to frame stakeholder engagement and define common priorities between the different players. The agenda will be a living document, to define key global challenges, scope, potential for different types of joint actions and clustering, geographical coverage, and duration: Short (less than 3 years), Medium (5-6 years), and Long (10 years). The agenda will be updated based on stakeholder needs identified through dialogue in order to agree on Global Challenges to be addressed in the long-term (10 years) through the research vessel infrastructure. It will consider EU and International policies such as	EUROFEELTS website - About Eurofleets website - Engage

	the Sustainable Development Goals and the Ocean Investment Platform from the World Ocean Council (WOC), and key initiatives promoted by the Intergovernmental Oceanographic Commission (IOC) and UNESCO such as United Nations Decade of Ocean Science for Sustainable Development (2021 – 2030).	
USER STRATEGY	The project is likely to create excitement and interest in marine research communities, in particular given the unprecedented access to European and global seas and oceans. Plans for open science will provide access to new data and information for scientists from different domains. The number of days of ship time has been increased relative to previous projects, and new user groups will be sought; from emerging early stage researchers, to those from less equipped countries, to increased participation by women scientists. Advanced IT systems, a multi-functional website, and robust logistical management will provide seamless integration of services and easy access for user groups.	EUROFEELTS website - About
SERVICE CATALOGUE	Eurofleets does offer a Cruise data Sets Catalogue. Eurofleets also offers an overview of all infrastructures offered within the EUROFLEETS+ calls, including their operational areas. The Eurofleets+ joint research activities include the following activities: • Advancing the data management processes. Implementation of an active open data management strategy and associated procedures including adoption of SeaDataNet standards will ensure capture, transmission and publishing of information about the cruises, their data collection, and involved researchers, and data collected underway and processed later in time. Publication will take place through the EVIOR portal (European Virtual Infrastructure in Ocean Research – an integral part of the Eurofleets+ website) and the larger community SeaDataNet and EMODnet portals. The shipboard data management system, the (near) real-time transfer to shore, and the EVIOR portal for receiving and publishing metadata and data, will be advanced from their current state. The advanced version of the shipboard data management system will be successively piloted on board selected research vessels, and after evaluation, configured at a major number of Eurofleets+ research vessels. The functionalities of the EVIOR portal will be reviewed, improved and expanded, including providing researchers with unique cloud computing and analytical technologies for interacting with the research vessel metadata and data. • Investigating and developing equipment and rigs for deep sea operations from vessels, Exploration of the deep sea is a major challenge and opportunity in marine research. Rigs and related technologies are fundamental to the study of the sea as they are needed to deploy equipment. Therefore Eurofleets+ will conduct investigations concerning deep sea research from vessels aiming at achieving interoperability of rigs to be able to deploy different equipment, enabling installation of mobile equipment when needed, and facilitating sharing and installation of equipment across different ships. • Developing innovative methods and strategies for intelligent exploration, mapping and control using cooperative navigation. Innovative methods and strategies will be analysed and developed for intelligent exploration, mapping and control using cooperative navigation. New technologies will be developed for Autonomous Surface Vehicles (AUVs) and Autonomous Underwater Vehicles (ASVs) and the innovations will be validated prior to field testing during operational cruises.	Eurofleets website – Cruise Data - Cruise Data Sets Catalogue Eurofleets website – Access – Infrastructures – By Type Eurofleets website - Research
ACCESS MGT PLAN	The Eurofleets+ project will facilitate open access to an integrated and advanced research vessel fleet, designed to meet the evolving and challenging needs of the user community. European and international researchers from academia and industry will be able to apply for several access programmes, through a single-entry system. Eurofleets+ will prioritise support for research on sustainable, clean and healthy oceans, linking with existing ocean observation infrastructures, and it will support innovation through working closely with industry. EUROFLEETS+ accessible Research Vessels: The project will enable access to a unique fleet of 27 state-of-the-art research vessels (13 Global/Ocean and 14	EUROFEELTS website - Access

	Regional) from European and international partners. Through competitive calls, Eurofleets+ will provide a wide geographic coverage, with access to: Mediterranean and the Black Sea; Baltic Sea and North Sea, North Atlantic (incl. Greenland and Norwegian seas), and Pacific Southern Ocean and Ross Sea. EUROFLEETS+ accessible embarked equipment: Researchers will have access to cutting edge equipment, which includes 7 ROVs and 5 AUVs. A unique portable telepresence system will enable remote access by researchers and diverse end users including the public; a first for Europe. Three access programmes will be launched in Eurofleets+: 1) Ship-time and Marine Equipment Application (SEA programme) for access to the vessels and marine equipment through a full ship-time application, for which there will be a minimum of two calls, with „ocean“ and „regional“ vessels. 2) Co-PI programme specifically aimed at early career researchers to implement their own research together with experienced scientists in Eurofleets+ scheduled cruises. The Co-PI programme will be open to applications in a continuous running call. Remote Transnational Access (RTA programme) to provide researchers with remote access to samples or data from a Eurofleets + fleet vessel. RTA programme applications will be submitted in a continuous running call. Remote access will allow smaller projects, sample or data needs, to be addressed, when this can be accomplished with one day of ship time.	

GeoSsciences IR Infrastruttura di Ricerca per la Rete Italiana dei Servizi Geologici		Source
DESCRIPTION	GeoSciences IR is a Research Infrastructure for the Italian Network of Geological Services (RISG), among the ISPRA coordination network, the Italian Geological Service, and the Regional Geological Services.	GeoSciences IR website – Il Progetto
MISSION	Updating and sharing the territorial geological knowledge are crucial for the entire Earth Sciences community. With GeoSciences IR we aim to enhance collaboration and integration among the infrastructures dealing with geology at a national and regional level, through the sharing of open data and services in a permanent cloud RI, according to FAIR principles and INSPIRE standards, also capable of promoting skills useful for monitoring and controlling the territory.	GeoSciences IR website - Home
USER PROFILE	The Italian Network of Geological Services (RISG), composed by ISPRA, the Italian Geological Service and the Regional Geological Services. Geologists from Regional Services who use this RI for methods, technological trends, and innovative solutions.	GeoSciences IR website – Il Progetto
USER NEED	Updating methods, technological trends and innovative solutions concerning geoscience.	
USER STRATEGY	Creation of harmonised and validated datasets. Online sharing of thematical information for a correct interpretation of cartographic representation. Dissemination of e-learning modules for the technical-scientific updating of users. Creation of data visualization and complex analysis procedures.	GeoSciences IR Website – Work Packages
SERVICE CATALOGUE	The publication of datasets will be implemented through interoperability services that will facilitate their availability, within the national RNDT catalogue (National Catalog for Spatial Data) and the INSPIRE European Geoportal, with the aim of offering users homogenous datasets with the same minimum information content at each level.	
ACCESS MGT PLAN	The data and products will be validated with respect to the FAIR principles and therefore, except for particular exceptions, they will be made available under the Open license (CC-BY 4.0).	

IBISBA Industrial Biotechnology Innovation and Synthetic Biology Accelerator		Source
DESCRIPTION	IBISBA, as distributed research infrastructure, coordinates a network of European biotechnology platforms to deliver end-to-end innovation services in the field. To achieve this, IBISBA actively develops standards and promotes interoperability between facilities. Data is at the core of IBISBA's ambitions, with data generation, management and sharing being central features. As a leading research infrastructure in its field, IBISBA is also actively embracing advanced technologies, such as AI and cloud technologies, to better design and control biomanufacturing processes. IBISBA's overarching ambition is to federate Europe's strengths in biotechnology, creating a strong Unique Selling Proposition for the EU in international competition and contributing to reaching many Sustainability Development Goals The Italian node IBISBA-IT is a partnership (JRU) between 4 CNR Institutes – IBBR NA (coordinator), IBBA MI-LO, ISA, and ISPAAM, 7 Universities - Federico II NA, Milan-Bicocca MI, Insubria VA, Alma Mater Studiorum BO, La Tuscia VT, and the FIIRV Foundation VA. Within IBISBA, IBISBA-IT occupies a well-defined position in the areas of the Synthetic Biology, Green Chemistry, Sustainable Bioenergy, and Functional Food. The focus of IBISBA-IT is to develop new molecules through the enzyme/protein discovery and engineering, and the development of new bioprocesses for applications in circular bioeconomy.	Survey
MISSION	IBISBA is a pan-European research infrastructure dedicated to Industrial Biotechnology. We provide a single access point to researchers from academia and industry across the globe to integrated services for end-to-end bioprocess development. By federating European expertise and state-of-the-art research and development facilities, we promote standardisation and best data practices as core elements of service reproducibility and interoperability. In doing so, IBISBA accelerates the production and translation of cutting-edge knowledge into innovation for biomanufacturing.	IBISBA website - About
USER PROFILE	In the framework of the EU Transnational Access Programme, IBISBA has provided subsidised access to a diverse set of users from academia and industry worldwide. They can be described as follows: • 64% scientific community, 36% private sector • 67% users from RI member countries, 21% users from other European countries, 12% users from other countries outside Europe	Survey
USER NEED	60% access to the research facilities are done for applied research, while 40% access to research facilities are done for industrial research	Survey
USER STRATEGY	IBISBA One-Stop-Shop is conceived to offer customers a smooth browsing experience, the ability to compile a service wish list and access to an application form. Submission of the form to IBISBA initiates a business process allowing the customer to contact a business developer, and via this person, an array of research facilities. Likewise, the service is the entry point for access to bespoke integrated service workflows that are designed to meet client's project needs.	Survey
SERVICE CATALOGUE	IBISBA Service Catalogue includes experimental facilities, equipment, access to data and products, remote services, training.	Survey
	IBISBA services cover the following domains: • PROTEIN DISCOVERY AND ENGINEERING • BIOPROCESS DEVELOPMENT OPTIMIZATION • PRODUCTION STRAIN DEVELOPMENT • TEA/LCA • OMICS & ANALYTICS Detailed information on services in each domain are well explained in the Service Catalogue published online on "One-Stop-Shop"	IBISBA website – Services – One-Stop Shop
ACCESS MGT PLAN	In the framework of the EU Transnational Access Programme, IBISBA has provided subsidised access to a diverse set of users from academia and industry worldwide. A Single Access Point to Services is provided as follows: • Discovery & Engineering of Bioparts • Strain Development • Bioprocess Development & Optimisation	Portfolio IBISBA Knowledge Hub

	IBISBA Knowledge Hub is a better way to manage data, a free and open platform for easier research data management based as follows: • Organise & Structure Organise documents and data to easily manage your research project • Manage Access There is a lot of flexibility and control over who can see, download or edit your items • Standardise research data Use available standards to describe your dataset and make it ready for publication • Publish & Share data Publish your data and link them to your scientific article	
	A common feature of most distributed research infrastructure is the operation of a single access portal, often referred to as a One-Stop-Shop. IBISBA's One-Stop-Shop was launched in the framework of the IBISBA 1.0 project. The document describing the access management plan is in preparation. IBISBA One-Stop-Shop is conceived to offer customers smooth browsing experiences, the ability to compile a service wish list and access to an application form. Submission of the form to IBISBA initiates a business process allowing the customer to contact a business developer, and via this person, an array of research facilities. Likewise, the service is the entry point for access to bespoke integrated service workflows that are designed to meet client's project needs. Type of access includes: Physical access: for 45%, Remote access for 45%, Virtual access for 10%. Access modes are provided as follows: Excellence-driven Access for 50%, Market-driven Access: for 50%	Survey

ICOS Integrated Carbon Observation System		Source
DESCRIPTION	ICOS RI is a distributed research infrastructure operating standardised, high-precision, and long-term observations and facilitating research to understand the carbon cycle and to provide necessary information on greenhouse gases. ICOS-based knowledge supports policy- and decision-making to combat climate change and its impacts. ICOS is the European pillar of a global GHG observation system. It promotes technological developments and demonstrations, related to GHGs, by the linking of research, education and innovation. The key points of ICOS RI's vision define the strategic focus areas (SFAs): Sustainability, Scientific excellence, Societal impact, Global cooperation and Innovation.	ICOS Strategy
MISSION	ICOS mission is to produce standardised, high-precision and long-term observations and facilitate research to understand the carbon cycle and to provide necessary information on greenhouse gases. ICOS promotes technological developments and demonstrations related to greenhouse gases by linking research, education and innovation. With ICOS high-precision data, ICOS aims to support policy - and decision -making to combat climate change and its impacts.	ABOUT
USER PROFILE	The ICOS strategy defines three categories of groups: • Operators: ICOS personnel employed at the host institutions of the National Networks and Central Facilities and at ICOS ERIC who are involved in ICOS activities and in producing ICOS outputs • Users: Scientists or organisations who use ICOS data, publish papers, and communicate their findings • Stakeholders: People, organisations or groups who benefit from the knowledge created by ICOS (impact of ICOS). In addition, the following interest groups have been identified for ICOS RI: • *Practitioners*: organisations taking up the knowledge produced by the users into their own activity to produce an action, a policy, a product. • *Enablers*: Organisations making the activities of ICOS possible (or not). • *Frame-makers*: Organisations setting the frames in which ICOS develops its activities • *General Public*: This category includes citizens and opinion-makers or influencers.	ICOS MGT PLAN
USER NEED	ICOS needs to be agile and open to respond to new requirements and opportunities. Therefore, ICOS wants to have a permanent dialog with its users to optimize its observations and its data provision. Although the ICOS user community is very diverse, some core user groups ICOS users can be clearly identified. ICOS will actively follow the scientific developments and resulting observational needs of these identified user groups in common projects and in conferences and will make use of its own biannual science conference to optimise data streams towards users and network design. ICOS clearly aims also at user communities beyond Europe and will participate in respective conferences at other continents. ICOS will inform the users on the precision and the relevance of the measured parameters and provide analyses of the data. User feedback will sharpen the strategic aims and provide novel ideas for the spatial distribution of observational sites as well as the applied methods. ICOS will be open for improvements in spatial density, representativeness, set of measured parameters, precision and accuracy. New user groups may occur for ICOS data as well as for the stations themselves.	ICOS STRATEGY: USER FEEDBACK
USER STRATEGY	Solid access management system including: - solid mechanism of exchange with users (e.g. operational single entry point for access, assistance to users; established catalogue of services for users), - IPR policies fully established, - dissemination programmes in place - KPI on ICOS data and user expectations.	ESFRI ICOS RI LANDMARK MONITORING – Report of the Monitoring Panel ICOS MGT PLAN
SERVICE CATALOGUE	The main service provided by ICOS is access to station data, provided by the Carbon Portal. The datasets are available in different quality-level formats, from raw, near real-time data for ground-based stations, to reviewed and accuracy certified data and products. Generally, the full series of data are available for each labeled station. The access to any of this data is free and open to any user, and	ESFRI ICOS RI LANDMARK MONITORING – Report of the Monitoring Panel

	available for any use, as defined by the license adopted (Creative Commons Attribution 4.0 International license (CC BY 4.0) in the Data Policy. In addition, data products are created for different audiences, widening the target users from non-experts to advanced users. This is the case of the implementation of data access and analysis in a Virtual Research Environment based on Jupyter Hub, making use of Restful API services, which facilitated computational intensive analysis, and interoperability with other systems. ICOS is well positioned to comply with FAIR principles, which is a priority for the RI. Regarding the Intellectual Property Rights, it is clearly defined that ICOS Data, databases and ICOS data related tools that the ICOS National Facilities and the ICOS Central Facilities have collected, organized and/or created to fulfill the requirements of ICOS Data generation and processing belong to them. ICOS doesn't provide or promote physical access to measurement stations as a service due to the concern of creating local disturbance; however, the RI makes stations available for co-location with other RIs or for instrumentation to support related research.	
ACCESS MGT PLAN	ICOS has a very well documented data management policy (DMP: "ICOS improved data lifecycle' – November 2020), which addresses all relevant topics extensively and adequately. ICOS handles its data services in a very mature way. The DMP also contains a comprehensive description of the data handling architecture, relying on the EUDAT set of services, known as B2SAFE and B2FIND, and using the capacities of two geographically separated datacenters (CSC, Finland, and Julich, Germany). On request ICOS provided more detail on the resilience of this architecture and set of services. B2SAFE is a trusted repository service and is part of the EOSC e-infrastructure services. It is used in the ICOS Carbon Portal to store all data objects (currently over 2 million). ICOS keeps and actually use only the local copies stored at Carbon Portal, at each Thematic Centre, and of each of these copies ICOS keeps one or more independent copies in different servers at different buildings, so ICOS does not critically depend on the B2SAFE service, that keeps for use two copies of the data in the two separate datacenters. Each ICOS data object is identified in the ICOS data system by its own digital checksum using encryption technology, so we can always check whether a data object is a one-to-one copy of the original data by recalculating the checksum and comparing with the identifier. In the unlikely case that the B2SAFE service would stop there are alternatives and there would be ample time to either replace it with another trusted repository or we could even continue without. B2FIND is another EOSC service that publishes metadata on data and some of the ICOS data is also published through this B2FIND channel, but that is additional to their own data publishing through the Carbon Portal, that is indexed not only by B2FIND, but also by for example Google Data Search, GEO, GoFAIR and potentially any other open data service that wants to give access to our open and rich metadata on ICOS data. In order to further improve the data services ICOS uses several feedback mechanisms to collect user requirements and experiences (see chapter 4. USER STRATEGY & ACCESS POLICY). General principles for accessing ICOS Data, database and ICOS Data Related Tools are described in the ICOS Data Policy document also providing information about Intellectual Property RightsAll in all we highly regard the way in which ICOS deals with its e-infrastructure needs. We have no specific recommendations. ICOS's portal describes also how to use ICOS Data as follows: • How to search ICOS data • How to visualise data • About the landing page • About the shopping cart system • Download ICOS data • How to cite and acknowledge ICOS data • Help for advanced users, sharing of our code at Github and raising issues • MyCP user account	ESFRI ICOS RI LANDMARK MONITORING – Report of the Monitoring Panel ICOS data policy document How to use ICOS Data

JERICO Joint pan-European Research Infrastructure for Coastal Observations		Source
DESCRIPTION	JERICO-RI is an integrated pan-European multidisciplinary and multi-platform research infrastructure dedicated to a holistic appraisal of coastal marine system changes. It is seamlessly bridging existing continental, atmospheric and open ocean RIs, thus filling a key gap in the ESFRI landscape. JERICO-RI establishes the framework upon which coastal marine systems are observed, analysed, understood and forecasted. JERICO-RI enables open-access to state-of-the-art and innovative facilities, resources, FAIR data and fit-for-purpose services, fostering international science collaboration.	JERICO website - home
MISSION	The objective of the Joint pan-European Research Infrastructure for Coastal Observations (JERICO) is to design, implement and operate a pan-European Research Infrastructure, dedicated to set up a system of observations and related services for European coastal seas. JERICO is an essential component of the worldwide efforts to a better understanding of coastal marine systems and aims at being the future coastal component of the European ocean observing effort, as part of the Global Ocean Observing System. JERICO seeks to improve the knowledge on how coastal marine systems respond to global and local drivers and aims at closing the critical gap of not having an integrated European Research Infrastructure addressing the complexity of marine coastal systems. JERICO has not yet established a formal Italian node but the Italian contribution to JERICO is coordinated by the CNR (National Research Council) and includes the OGS (National Institute of Oceanography and Experimental Geophysics).	Survey
USER PROFILE	Mainly academia and industry, represented as follows: Scientific community 60%; Education 12.5%; Private Sector 27.5%.	Survey
USER NEED	Access rules 1. Access provision User groups will benefit of 'free of charge' access to one or more infrastructures, or a part of them (i.e. installation), offered in the JERICO-S3 TA program during four Calls, planned once per year from 2020 to 2023, if their proposals pass the evaluation and selection phases. 2. Eligibility of user groups In compliance with Article 16.1 (Rules for providing trans-national access to research infrastructure) of the Grant Agreement (European Commission, 2015), a user group is eligible when the following conditions are satisfied: a) The access must be transnational, i.e. the user group leader and the majority of the users in the group must work in a country other than the country(ies) where the installation is located. b) Only user groups that are allowed to disseminate the results they have generated under the action may benefit from the access, unless the users are working for SMEs. c) Access for user groups with a majority of users not working in an EU or associated country is limited to 20 % of the total amount of units of access provided under the grant. 3. Modality of Access Unless otherwise specified, access to a specific infrastructure (or a specific installation that is part of an infrastructure) by a user group is to be intended as a concession granted to use the infrastructure to collect specific data following the implementation of a specific automated measuring system. A written contract or agreement between the "Access Provider" and the "End User" will delineate the actions to be undertaken, the resources that will need to be allocated, the length of planned user stays (if any), and the period of use. It will also define the rights and obligations of all the Parties involved, including eventual provisions for early termination of the conferred access. Unless otherwise stated (e.g. for the use of gliders), the measuring system shall be provided by the user group. Whenever possible, the start and end of an access interval will be set by the access provider to coincide with times scheduled for the ordinary maintenance of the installation in the interests of financial economy (e.g. limiting the costs of vessel-time needed to access the infrastructure, etc.).	JERICO website – Transnational Access – Access rules

	It is mandatory that user groups interact directly with the managers of the infrastructures/installations they wish to use during the preparation of proposals to verify the particulars of access to the infrastructure/installation they wish to use, and to verify the feasibilities of the proposed projects and address practical concerns. 4. Support to user groups Besides the access conceded free-of charge, the user groups will receive logistical, technical and scientific support by the access provider, and any special training required to use the assigned infrastructure. Users will receive a financial contribution for travel and subsistence costs for visiting infrastructures, if justified. Funds for shipping users' equipment are also available, and the amount conceded will be evaluated case-by- case. A comprehensive nominal reference amount of 3000-6000 € is available to each project. The effective grant assigned to a project will be considered case- by-case depending on the type of access, the types and number of facilities requested, the length of stay, and the costs in the visited country. 5. Post-access requirements I. At the stipulated end of the access project, the user group leader must submit a report describing the resulting technical and preliminary scientific outputs within 30 days (see Annex 3). The report will be published on the JERICO-S3 web site, and will be made available to the European Commission if requested. The receipt and approval of this report will be required to finalize any and all financial support received by the user group, as indicated in the relevant TA End-user Agreement. II. Any publications or patents resulting from the JERICO-S3 TA project must be reported to the host institute and the JERICO-S3 TA office. Furthermore, all such publications or patents shall acknowledge the support of the European Commission's H2020 Framework Programme under grant agreement No. 871153, JERICO-S3 Transnational Access program, and the host institute. III. Access beneficiaries undertake to reply promptly to all the requests of the JERICO-TA coordinator and the TA office relating to their access activities.	
	Support and assistance are offered to users as follows: • scientific knowledge on the dynamics characterizing the location of the facilities • technical in terms of specifically devoted user interfaces to process data • special training required to use the facilities • logistics in terms of travel and instrument shipping costs covered • administrative in terms of the correct procedures to get expenses reimbursements	Survey
USER STRATEGY	TA facilities and VA services are indicated in the JERICO website. TA calls are advertised on the JERICO website, on the JERICO facebook and linkedin pages and on specific JERICO newsletters that JERICO partners circulate among their contacts. A recent participation to the European Maritime Day showed the JERICO TA potential to attract private users. According to the TA contracts, any publications or patents resulting from the JERICO-S3 TA project must be reported by the users to the host institute, the JERICO-S3 TA office and the JERICO coordinator. Furthermore, all publications or patents resulting from the access must acknowledge the support of the host institute and of the European Commission's H2020 Framework Programme under the grant agreement funding the JERICO-S3 Transnational Access program. According to the TA contracts, users must submit a report describing the resulting technical and preliminary scientific outputs within 30 days from the end of the TA experiment. The report is published on the J-S3 website and it can be made available to the European Commission upon request. The receipt and approval of this report is one of several other conditions to obtain reimbursement of user expenses from the JERICO coordinator. According to the TA contracts, users must also fill in the information collected in the European Commission MS Access database and an online questionnaire. Users must send a copy of this questionnaire to the host institute and the JERICO coordinator within 30 days following completion of the TA experiment.	Survey

	Access to infrastructures is a key service provided by JERICO and is currently a very important point in the JERICO business plan development. The mid- and long-term strategies rely all on the future funding models for the physical access, namely: a) co-funding model; a benefit-in-kind (BIK) model and c) a industry funding model.	
SERVICE CATALOGUE	The JERICO-RI catalogue contains a structured overview of involved coastal platforms and developed services to access processed data. They are all searchable via a metadata search (free search or via facets). Where available, URL's will be provided to access more detailed information and the data itself.	JERICO website – Data – Jerico RI Catalogue
	JERICO is not in the ESFRI Roadmap yet and is currently designing its services in both the JERICO-S3 and JERICO-DS projects. At the moment JERICO is providing the "JERICO-CORE service" as a single- point entry for getting access to JERICO coastal marine data. Furthermore the "Transnational Access service" is providing physical and remote access to about 60 JERICO facilities including some calibration laboratories. In addition, the JERICO Virtual Access provides access to about 20 European coastal ocean services. JERICO is shaping its governance to consider its future services (for example new Offices and/or Centers for calibration and validation of coastal ocean models and satellite products). The "access to data service" can be found at the following link https://www.jerico-ri.eu/jerico-ri-catalogue/#/map while the following link provides access to the JERICO-CORE services https://ui.core.jerico-ri.eu. In addition, lists of the JERICO facilities for the Transnational Access and for the Virtual Access services are available at the following links, respectively: https://www.jerico-ri.eu/ta/jerico-facilities-in-ta and https://www.jerico-ri.eu/virtual-access.	Survey
ACCESS MGT PLAN	The JERICO access policies and procedures are currently under revision and focus of different deliverables like "TA: Policies and Procedures document" (D13.3 J-S3) and "Outlined JERICO virtual resources Access and Security policies" (D3.1 J-DS). JERICO is also refining its governance model and dedicating an "Access Office/Center" to the organization and management of access. The Virtual Access Metrics System (VAMS) tool was created to monitor the access to each Virtual Access service. Access to data is provided via the JERICO-CORE i.e. the unified central hub of JERICO to discover, access, manage and interact with all JERICO resources. JERICO-CORE also integrates Transnational Access. Examples of JERICO data repositories are the EU High Frequency radar Node and the SOCIB Data Repository. Examples of JERICO calibration facilities are the Ifremer Metrology Laboratory and the Poseidon Calibration Lab. Examples of JERICO observational platforms are the Corsica Channel Mooring and the SmartBay Buoy. Other fundamental JERICO installations are the VLIZ coastal observatory and the PLOCAN facility which demonstrate the JERICO multiplatform and multidisciplinary approaches. Transnational Access (TA) to more than 60 coastal facilities is provided following the evaluation and selection of proposals in response to different calls during the J-S3 project. The selection of the proposals is conducted by a panel of experts and is based on scientific excellence, innovation and impact criteria. Accessing the facilities means getting access to the best available equipment and platforms but also to personnel. A J-S3 TA office is based at the Marine Institute in Ireland and manages all administrative TA aspects. The TA office receives and registers the proposals and assists the Selection Panel in the evaluation and selection processes and in the production of related documentation. The access includes logistical, technical and scientific support by the access provider, and any special training required. Virtual Access (VA) to about 20 JERICO services does not follow a specific process as it is granted for free to all users through communication networks. The Transnational Access (TA) contract regulating physical and remote access enforces TA users to provide the JERICO coordinator and one of the J-S3 data centers interfaced with SeaDataNet or CMEMS- Institute TAC, with all metadata and raw data collected during the TA experiment. This is one of several other conditions to obtain reimbursement of user expenses from the JERICO coordinator. The same contract establishes that access to data collected during the TA experiment may be granted to third parties. Accesses provided: Physical 37.5%; Remote 37.5%; Virtual 25%. Excellence Driven 75%; Wide Access 25%.	Survey

	The TA evaluation is excellence-driven and based on the following criteria: 1) scientific and/or technological excellence of the user group; 2) scientific and technical value of the project; 3) quality of the work plan; 4) potential for seeding links with industry and/or potential application to stakeholders; 5) European relevance and interests for the scientific community. Each of the five criteria can reach a maximum score of 5 points for a total maximum of 25 points. Only proposals reaching a minimum total score of 15 points are considered for acceptance. For the physical and remote accesses, there are three different ways to calculate the access costs: with Unit Cost, with Actual Cost, and with a combination of the previous two. Unit Cost under JERICO is the access cost per unit of time, where the unit of time depends on the facility and can be a day or a week or a 6-month period along which the facility is made available for TA. For the virtual access, a general cost is recognized just to make data available while a specific access unit for the VA is not defined. All transnational Access (TA) is excellence-driven and funded by the European Commission via the H2020 J-S3 Transnational Access program. TA proposals are selected by a selection panel consisting of independent international experts. The evaluation is based on scientific excellence, innovation and impact, namely according to the following equally-important criteria: 1) scientific and/or technological excellence of the user group; 2) scientific and technical value of the project; 3) quality of the work plan; 4) potential for seeding links with industry and/or potential application to stakeholders; 5) European relevance and interests for the scientific community. For its level of maturity JERICO does not currently have additional costs for the RI directly related to the access program. However, in the H2020 J-S3 project a small budget is dedicated to each facility and for each partner for both TA and VA managements. Furthermore, additional budgets are for the leaders of the WPs dedicated to TA and VA and for supporting the bureaucratic activities of the JERICO coordinator (TA contract preparation and signing, pre-financing procedures, etc...). Only 'free of charge' access to JERICO facilities is offered in the JERICO-S3 TA program during the different calls if proposals pass the evaluation and selection phases. No selection is present for the VA program to enforce the wide access mode. Selection applies only to the TA program. TA proposals are selected by a panel consisting of independent international experts. The selection panel is helped by an internal TA management team that ensures formal compliance with access rules and technical quality. The panel assesses all proposals received and selects the users that should benefit for access. Priority is given to users that have not previously used the installation and are working in countries where no equivalent research facilities exist. According to EU requirements, special attention is paid to gender balance in order to promote equal opportunities in the implementation of the TA activities. According to the TA contracts, the host institute must send a written confirmation to the users fifteen days before the experiment starts. The host institute needs to notify the user for the needs regarding the insurance policy and the applicable safety rules on-site no later than 10 days before the experiment. according to the TA contracts, all background, data and information received by users from the host institute during the TA experiment which are not related to the TA experiment of the users must be considered to be confidential.	

LIFEWATCH European Research Infrastructure Consortium		Source
DESCRIPTION	LifeWatch is a distributed ERIC dedicated to biodiversity and ecosystem research to explore new frontiers in ecological science and support society in addressing planetary challenges. It offers a comprehensive suite of e-science resources and services for scientists studying biodiversity, ecological processes, and the impacts of environmental changes. While LifeWatch ERIC core business focus on providing digital facilities for the curation, access, analyses and modelling of data, the gathering of data and related services is demanded by the eighth national nodes (aka Distributed Centres: Belgium, Bulgaria, Greece, Italy, the Netherlands, Portugal, Slovenia, Spain), that are free to set up their digital infrastructure and contribute in-kind to the functioning of the ERIC. LifeWatch ERIC effort is, then, towards integration of the data provided, and building Virtual Research Environments (VRE) and their components (e.g. web services, workflows) in order to provide high quality computing facilities for the analyses and modelling of these data. All digital resources produced by LifeWatch ERIC, and in part those produced by national nodes and other initiatives connected to them, are accessible from the LifeWatch ERIC metadata catalogue. Italian participation in LifeWatch is supported and promoted by a Joint Research Unit (JRU) made up of 35 institutions among universities, research centres, national agencies and private entities, and it is led by the National Research Council (CNR), namely LifeWatch Italy. Its activity focuses on the development and management of tools and services designed to cover the entire data lifecycle, from acquisition to visualisation and analysis. Data and their associated metadata are accessible by the LifeWatch Italy Data Portal. The use of semantic artefacts for the annotation of meta(data) promotes their harmonisation and integration. The discoverability and accessibility of data and other digital resources is also provided by the LifeWatch Italy Semantic Platform based on a main semantic model that describes different resources and their metadata, as well as on meaningful links between controlled vocabularies and these resources. The semantic artefacts produced by LifeWatch Italy are deposited on EcoPortal, a repository for semantic resources maintained by LifeWatch ERIC. LifeWatch Italy also produces and maintains web services and VREs for the analysis of FAIR data, and other platforms for the training and networking of the scientific community and other stakeholders. Most of these digital facilities are hosted at the Data Centre of University of Salento and managed by the CNR Research Institute on Terrestrial Ecosystems (CNR-IRET) in Lecce, Italy.	LIFEWATCH website – Who we are
MISSION	LifeWatch ERIC aims to accelerate the research efforts of the scientific community by delivering a European state-of-the-art e-Science Research Infrastructure on biodiversity and ecosystem research that: • provides access to, and support for, key scientific services by applying cutting-edge ICT technology, • enables reproducible analytics, • is co-designed and co-created with the user communities and • is tuned with the needs for research that provides key insights for society, in particular science-based policy.	LIFEWATCH website – Who we are
USER PROFILE	LifeWatch Italy serves a diverse community of stakeholders that includes researchers and academics interested in various aspects of biodiversity (e.g. conservation, monitoring, modelling, etc.), biodiversity managers (e.g. Natural reserves managers, administrative bodies), global initiatives (e.g. IUCN list assessors), data-oriented researchers (e.g. data managers, data scientists, data stewards, etc.) and citizens interested in ecology and biodiversity (primary schools students, teachers, citizen scientists and non-professional scientists, etc.). LifeWatch Italy offer digital services primarily through open access or light registration, requiring only a minimum amount of information in accordance with GDPR policies. As a result, users are not systematically profiled at present.	
USER NEED	LifeWatch Italy do not map users' needs in a systematic way. Typically, LifeWatch Italy users fall into two categories: - Users who upload digital content: These users need to store the digital assets they produce in a trusted repository, making them available to the wider	

	community for reuse in an interoperable manner and ensuring proper citation when others utilize their content. - Users who utilize/reuse content available on LifeWatch Italy: These users require an interface with varying levels of accessibility depending on their IT skills, allowing them to combine and analyze available digital content effectively. When engaging in specific projects or activities, LifeWatch Italy collaborates with project partners to co-develop new services. These developments are highly user-oriented, and needs mapping is conducted either before the project initiation or at its early stage. This may include new services, but also training programmes, capacity building activities, technical and conceptual workshops.	
USER STRATEGY	Generally, the national nodes follow the strategies outlined by the ERIC. LifeWatch ERIC is currently developing a Strategic Networking Plan based on key target categories of user communities and beneficiaries of the services offered. Currently, the LifeWatch Italy strategy for co-development with users involves active collaboration within specific projects. During these engagements, an iterative process is typically adopted, working closely with the scientific community involved in the project or related to the specific topic being addressed. This iterative approach allows for feedback gathering, solution refinement, and ensuring that resulting products or services effectively meet the needs of users. In this context, it is worth noting that LifeWatch Italy recently released the LifeWatch Italy Community Platform, a dedicated virtual space where people who share the same goals, interests, or motivations can connect and build relationships, business and scientific opportunities. The Community facilitates the networking activities among registered members, that are able to create and manage working groups adding their peers based on their scientific skills. Working groups also include different tools for supporting networking activities such as calendar, repository, forum, blog, wiki, polls, brainstorming, and conference calls.	
SERVICE CATALOGUE	LifeWatch Italy supports its users in managing their digital products throughout the entire (meta)data cycle, in accordance with FAIR principles. It offers a full portfolio of digital services, dedicated to different steps of the data lifecycle management and dedicated to different users communities. In particular, it offers Virtual Access to: 1. The LifeWatch Italy Data Portal is a national data infrastructure facilitating data sharing for biological and environmental research and making it accessible and reusable. It allows the review and validation of data, verifying syntax and taxonomy, assured by the alignment against curated taxonomic backbones (Italian checklists, Catalogue of Life, WoRMS, GBIF). 2. The LifeWatch Italy Metadata Catalogue provide access to different kinds of objects: audio, datasets, scripts, Virtual Research Environments, workflows, services and research sites. The resources are described with extensive metadata in human and machine-readable format. 3. The LifeWatch Italy Semantic Platform allows to search and access the LifeWatch Italy resources with the help of semantically enriched queries. It is based on a main semantic model that describes different resources and their metadata, as well as meaningful links between controlled vocabularies for Biodiversity and Ecosystems domain and resources of LifeWatch Italy. The platform is powered by a semantic search engine that can be used in two modes: simple or structured. 4. LifeWatch Italy DataLabs, a collaborative coding platform for biodiversity and ecosystem research. It allows the collaborative creation of scripts in R, Matlab and Python. The platform is integrated with the LifeWatch Italy Data Portal and Metadata Catalogue allowing to publish research products (e.g., scripts, datasets, etc.) and deploy web services in a single place by means of user-friendly interfaces. 5. The Phytoplankton Virtual Research Environment (Phyto VRE) is a working environment supporting researchers in phytoplankton data computation and analyses. It provides services in order to facilitate the identification of the species, the calculation of demographic and morphological traits and to execute phytoplankton traits analyses. To run the web services included in the VRE users can upload their own data files, structured according to the Phytoplankton Data Template, or can select demo data files provided by LifeWatch Italy. The aim is to produce harmonized data and perform comparative analyses. The available workflows are: Atlas of Phytoplankton; Atlas of Shape; Phytoplankton Traits Thesaurus; Traits Computation; Size Class Distribution; Size Density Relationships.	

	6. The LifeWatch Italy Training Catalogue hosts the metadata of relevant learning resources so that these can be shared, searched, discovered, accessed and reused. The LifeWatch Italy training catalogue's accurate and descriptive metadata allow all users to find the most appropriate and well-suited educational resources for their needs. Metadata are based on a subset of the IEEE Standard for Learning Object Metadata (IEEE 2002) that has been customised in order to be compliant with the EOSC Training Resource Profile - Data Model. The detail page of each single metadata record includes all the descriptive information and, on the right side of the page, a button "Start the course" that allows to access the resource and hence to start the training. 7. The LifeWatch Italy Citizen Science platform is a place for sharing knowledge, tools, training material and other resources for participatory projects in biodiversity and ecosystem research. It is a platform that facilitates citizens involvement in scientific activities and it includes different sections to provide: basic knowledge on citizen science, on its potential and applications; best practices and tutorials on the development and management of citizen science projects; a catalogue of citizen science projects with an open-source webGIS for viewing initiatives on a map-based interface; a tool for creating mini-sites for citizen science projects; a customisable web application supporting citizen science activities related to the collection of geo-referenced observations; integration between various components and services of LifeWatch Italy. 8. This Virtual Museum is an information and learning tool primarily devoted to high school and university students. 9. EcoPortal serves as a repository for semantic artefacts in the ecological domain, supporting a diverse community of stakeholders including researchers, vocabulary managers, data managers, data scientists, and ontology developers. Its purpose is to support and facilitate the creation, management, mapping, and alignment of FAIR semantic artefacts. The maintenance and management of the repository and its integrated functionalities is a joint responsibility between LifeWatch ERIC and LifeWatch Italy. EcoPortal supports anyone willing to upload or create new semantic artefacts related to the ecology realm. 10. VocBench is a web-based, multilingual, collaborative development platform for managing OWL ontologies, SKOS(/XL) thesauri, Ontolex-lemon lexicons and generic RDF datasets. VocBench is powered by the Semantic Turkey Knowledge Acquisition and Management framework. It has been integrated in the last release of EcoPortal, and allow the collaborative editing and creation of semantic artefacts. Within ITINERIS, LifeWatch Italy aims at enlarging its offers by providing Remote Access at the URT IRET Lecce in collaboration with the University of Salento. The facilities that will be available are: 1. The aquarium system, including six racks of up to 18 aquaria each, will be completely updated allowing remote access to users enabled to remotely modify and adapt to field conditions water salinity, temperature and flow rate, if needed, in the aquaria and to control main physico-chemical water parameters. 2. The confocal system, that will be updated for remote access, equipped with more advanced image-analysis system and integrated with the LIFEWATCH PYTHO-VRE eservices. 3. 2 series of thermostatic rooms for experimental studies on functional biodiversity responses to climate change, makes available to the access the updated facilities for the data production on the following traits: a) individual level metabolic rates of aquatic organisms, including primary producers through high precision Strathkelvin systems for respiration rate assessment; b) individual space use behavior (i.e., patch selection, use, giving-up and density, homerange size) both in the lab, extending and updating an innovative Noldus system and in the field, at the LTER site of the Aquatina lagoon, with individual tracking methodologies in connection with the European Fish Tracking Network; c) individual trophic niche within food web networks using stable isotope and NGS methodologies. The implementation of an intranet connectivity of all equipment with the LIFEWATCH-Italy National Hub of Biodiversity and Ecosystem Research Data ensure real time data storage.	
ACCESS MGT PLAN	All LifeWatch resources are accessible by means of Virtual Access through the LifeWatch ERIC and LifeWatch Italy Metadata Catalogues.	https://www.lifewatchitaly.eu/e

	Metadata are always freely accessible, without any restriction. All LifeWatch ERIC and LifeWatch Italy resources access and usage is guaranteed under an open licence agreement (Creative Commons). LifeWatch Italy default data usage licence agreement for all uploaded objects is a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International ("CC BY-NC-SA 4.0 International") licence. To use LifeWatch Italy services, a free of charge registration is required, collecting only name, last name, email address and username.	n/data-policy-eng/

LNS Laboratori Nazionali del Sud		Source
DESCRIPTION	The Laboratori Nazionali del Sud are one of the Largest Research infrastructures in Southern Italy. The LNS activities are mainly concerned with the fundamental research in the field of **Nuclear Physics, Nuclear Astrophysics and Particle Astrophysics**, but also of **Applied Research**, such as Accelerator Physics, Plasma Physics, Nuclear Physics applied to Medicine, to Biology and Cultural Heritage, radiation monitoring, irradiation of components for aerospace industry. At the LNS two particle accelerators, a Superconducting Cyclotron and a Tandem, provide ion beams from Hydrogen to Lead with energies up to tens of MeV per nucleon. It is also possible to produce radioactive ion beams applying the in-flight fragmentation method. Nuclear matter properties are studied by using big detector apparatuses (e.g. CHIMERA and MAGNEX) and dedicated apparatuses that can be installed in one of the available experimental halls. Theoretical Physics studies are also carried out in the same research fields. Beams are used both for fundamental research and for applied research, biophysics, Nuclear medicine (CATANA) and Cultural heritage studies (LANDIS). LNS is one of the leading institutions in experimental Particle Astrophysics, hosting the large undersea research infrastructure worldwide: the **KM3NeT/ARCA (www.km3net.org)** detector aimed at the detection of high-energy astrophysical neutrinos. ARCA, recognized in the ESFRI Roadmap will be completed before 2030.	LNS website - home
MISSION	The Laboratori Nazionali del Sud (LNS) is one of the four National Laboratories of Istituto Nazionale di Fisica Nucleare (INFN). Founded in 1976, employs around 150 among researchers, engineers, technicians and administration staff and hosts about 100 among PhD students, university students and associated members from International Universities and research Institutes. Research activities are mainly oriented towards Nuclear and Applied Physics and Nuclear and Particle Astrophysics. The LNS are also an advanced technological pole for development of different types of tools for research. LNS provides ion beams for fundamental and applied nuclear physics, operating two accelerators: a Tandem Van de Graaff with maximum terminal voltage of 15 MV, and a Superconducting Cyclotron, now in refurbishment. The two accelerators allow to produce and accelerate heavy ion beams in a very wide range of mass (from hydrogen to lead) and energy (1-80 MeV per a.m.u.), providing the possibility of investigating on different properties of nuclear matter with several types of reaction. Together with the main laboratory site, located inside the University Campus of the town of Catania, the LNS owns and manages since early 2000's two marine infrastructure on which the ITINERIS WP5, Activity 7 builds up: one, located at the port of Catania; the other one, located in Portopalo di Capo Passero (Siracusa). The Catania infrastructures hosts the Western Ionian node of EMSO-ERIC, the FOCUS-ERC experiment and other multidisciplinary seafloor observatories (Onde, SMO). The shore infrastructure hosts the power supply and data transmission and acquisition systems, a subsea electro-optical cable from shore to 2100 m water depth, offers connection to deep sea experiments though ROV mateable connectors. The Catania harbor laboratory is also used for assembling and testing the components of Astroparticle Physics (KM3NeT) and marine science. The Capo Passero infrastructure hosts the shore station for power supply and data transmission and data acquisition for the KM3NeT /ARCA detector and EMSO-ERIC nodes. Two electro-optical cables, 100 km long, allow connection to hundreds of subsea nodes, through 68 fibers and proving more than 100 kVA power supply, distributed through a subsea network of cables and junction boxes. This is one of the largest undersea infrastructures worldwide.	LNS website – About - Introduction
USER PROFILE	Specific user profile can be traced within the Transnational Access Form as follows: • UNI=University, RES=Public Research Organisation, SME=Small or Medium Enterprise, PRV=Other and/or profit or non-profit Private Organisation, OTH = Other Organisation • UND = Undergraduate, PGR = Post-graduate (student with a first University degree or equivalent), PDOC = Post-doc researcher, TEC = Technician, EXP = Experienced researcher (professional researcher).	LNS Website – Documents – Transnational Access Form

USER NEED	Safety procedures: Eng. Francesco Noto (Head of Health and Safety Service) Physical access and guesthouse booking: Mrs. Virginia Potenza Target Laboratory (targets, thin films, chemistry support...): Dr. Antonio Massara Electronics (use of modules from LNS pool, detector test laboratory, support for electronic problems): Mr. Pietro Litrico Access to LNS-network, LNS data acquisition system: Dr. Emidio Giorgio Multidisciplinary use of Marine Infrastructures: Dr. Giorgio Riccobene (ITINERIS INFN PI and EMSO-JRU INFN rep) Ion Beam Support: Dr. Danilo Rifuggiato (Head of Accelerator Division) Radiation protection: Mr. Salvatore Russo (Head of the Radiation Protection Service) Experimental Setup (scattering chamber, mechanics, vacuum problems..): Mr. Daniele Rizzo	LNS website – User – User Support
USER STRATEGY	The Users Committee of the Laboratori Nazionali del Sud is a support link for the LNS users, mainly discussing the development proposal of the Laboratory, the technical, administrative and logistical problems of the users. The Committee is also an advisory board for the LNS management. The Committee is composed by five members elected every two years by the assembly of the LNS users. The LNS users assembly are all people that in the last three years have participated to experiments related to various LNS activities (including activities in Catania harbor and Portopalo laboratories) or involving the use of the main LNS facilities as the Tandem and Cyclotron accelerators. The User Committee have to inform the users about all news, initiatives, problems of the LNS via the existing LNS users database. On the other side the members collect requests, list of problems, suggestions for improvements, etc coming from the users and report them to the related LNS divisions or the LNS management, helping to find a possible solution. The User Committee is also a consultative committee of the LNS Director. The coordinator of the User Committee is invited to attend the meetings of the LNS Consiglio di Laboratorio as an observer. The User Committee organizes each year the meeting of the LNS users, a one-day meeting in which the status of LNS research, new projects and users requests are discussed. The members have also the possibility to organize or support dedicated workshops related to important decisions, facility developments and upgrades that can have a big impact on the LNS users activity. At present (2023 – 2024) the User Committee is composed by the following members: Elena Geraci - coordinator (University of Catania and INFN-Catania, Italy) Antonio D'Amico (NIKHEF, the Nederlands) Chiara Guazzoni (Politecnico di Milano and INFN-Milano, Italy) Sara Palmerini (University of Perugia and INFN-Perugia, Italy) Antonio Trifirò (University of Messina and INFN-Catania, Italy) and can be contacted through the mailing list lnsusers@lns.infn.it. To promote and support outreach and dissemination activities. LNS also offers support through the "Public Engagement" group of the Laboratori Nazionali del Sud has the task of organizing various events promoted by the laboratories as study days or initiatives for the dissemination of information about research activities, orientation for students and interaction with the public. The group, created in March 2016, works together with the Scientific Information Service of the laboratories.	LNS User commettee LNS website – About – Public Engagement
SERVICE CATALOGUE	Services currently offered by the infrastructure (Marine Science): • Access to electro-optical cables fibers for connection of gauges and/or laser - based devices (dark fibers or single wavelengths) • Access to electro-optical cable electrical conductors for power transmission • High speed connection from shore lab to GARR/GEANT networks • Support in design, construction and deployment of deep-sea probes and observatories • Support in design and implementation of infrastructures to LNS deep sea networks	LNS website – User – Transnational Acccess

	• Through Itineris: access to specific user ports of nodes for connection of probes or sea-floor observatories • Support in design and maintenance of electronics equipment through Electronics laboratory • Support to construction of apparatuses through Mechanical workshop • IT support (hardware, software) for data acquisition, networking and storage	
ACCESS MGT PLAN	In order to have access to LNS there are simple procedures to be followed, basically consisting in some forms to be filled in. This procedures concerns: • Those who perform (even occasionally) and for any reason, activities with ionizing radiation risk; • People taking part in experiments, research groups or guests who use the LNS facilities (Accelerators, experimental apparatuses, TestSite CT or Portopalo di Capo Passero, etc.) even if they don't perform activities with radiation risk. The attached form 1 must be filled in and signed with handwritten signature by the employer and sent by post or PEC. If it is transmitted by ordinary e-mail, the signature must be electronically certified. The forms, filled in and signed, must be submitted to LNS via email to ufficio protocollo and, in case of radiation activities, to servizio di radioprotezione, at least 20 days before the user's programmed activity starts. It will not be granted access if the modules are not delivered in time before the activity or whether they are incomplete or incorrect. Occasional visitors who performs activity during periods shorter than a week and do not use LNS structures or who come to LNS during guided tours, seminars, meetings, workshops, conferences, etc. do not need to produce any documentation, but rather they will simply provide a personal identification document to the gateman at the LNS entrance, indicating a reference person (LNS personnel or affiliate) to be contacted. Guest workers who wish to access the LNS radiation-controlled areas or to carry out activities with ionizing radiation risk (using X-ray machines or radioactive sources or materials) must be authorized by their employer, classified for the purpose of radiation protection, trained by radiation risks and insured for accidents during activities at LNS. In this respect, they have to submit the following documents, delivering them to the radiation protection service at least before the start of the activities. The forms are specific for non-INFN workers and INFN workers: • Annex RP1 for non-INFN workers (employees of Universities, research Institutes, external companies or other organizations). It has to be written on headed paper and signed by the employer and by the worker. • Annex RP2 for INFN workers. LNS will provide specific information relating to the risk to which workers will be exposed during their activities at the Laboratories, as well as personal dosimeters and any other necessary protective equipment. In radiation classified areas, access is normally allowed to exposed (classified) workers only, in compliance with medical fitness dated not before then 1 year and with radiation protection training. Not exposed Workers (not classified), may enter the controlled area only if authorized from time to time by the Radiation Expert or by the Radioprotection Service, who will grant access depending on the doses, activity of the workers and time spent inside areas. In such cases, access card and personal dosimeters may be assigned. However, these workers must be previously informed and trained on the radiation risks inherent to their activity. For external companies staff that have a contract with LNS who need to access in classified radiation areas, without exposing themselves to the risk present in the areas concerned (not exposed workers), must submit the form Annex RP3. The request for access can also be demanded for a period including several experiments (not after the end of the calendar year following the submission of the request). In any case, any change to the data reported must be immediately communicated. Guests of the LNS Guesthouse please refer to the procedures for guests not affiliated to any INFN department and for the INFN-affiliated personnel. Other access policies can be found within the Transnational Access Procedure	LNS website – User – Access Info LNS website – User – Transnational Access

LAURA BASSI R/V OGS Research Infrastructure		Source
DESCRIPTION	In 2019, thanks to a dedicated funding program by the Ministry of University and Research (MUR), Italy acquired a research ship with ice-breaking capabilities to conduct research activities in the polar regions. The research vessel was named after Laura Bassi, the first woman in the world to obtain an official academic professorship, and she did this at the University of Bologna in the 18th century. The vessel is owned by the National Institute of Oceanography and Applied Geophysics (OGS) in Trieste and receives funds to conduct research activities from the National Research Program in Antarctica (PNRA). It also serves the polar scientific community thanks to an agreement between the major Research Institutes in Italy working in the polar regions and those managing the polar infrastructures (OGS, CNR and ENEA). The use of the R/V Laura Bassi has also been included in the strategic planning of the Italian Arctic Research Program (PRA). The R/V Laura Bassi made its first expedition to the Ross Sea (Antarctica) in the austral summer of 2019-2020. An extensive instrumental upgrade to the vessel is currently underway, to convert it into a modern multipurpose scientific platform that can serve different scientific communities working on various research fields, including physical, chemical and biological oceanography, paleoceanography, geophysics, marine geology and atmospheric physics and chemistry.	https://www.ogs.it/en www.isp.cnr.it/index.php/en/infrastructures/r-v-laura-bassi
MISSION	The main objective of the R/V Laura Bassi is to provide scientific and logistical support to the Italian polar missions and at the same time to enable oceanographic and geophysical research by the researchers of the institute and the national and European scientific community at a global level and in particular at a polar level. In line with the polar vocation of the Trieste research system, polar research is a historical pillar of OGS activities. It began in 1971 and has been ongoing since 1988 with funding from the National Antarctic Research Program (PNRA) and the recent Arctic Research Program (PRA). Research in the polar areas is a priority for Italy, a member of the Antarctic Treaty and an observer of the Arctic Council, as it is fundamental to understand the mechanisms regulating the global environment, topics covered by the Ocean and Cryosphere in a Changing Climate (2019) and the Horizon Europe Framework Programme (2021-2027). As its polar research strategy, OGS pursues a multidisciplinary approach on both poles, with activities involving the use of OGS infrastructures and exploiting the existing data assets in collaboration with other research institutions and Italian and foreign universities. OGS researchers are among the coordinators and members of the main national and international committees such as, for example, the Scientific Committee on Antarctic Research (SCAR), the International Arctic Science Committee (IASC), the National Scientific Commission for Antarctica (CSNA), the Arctic Scientific Commission (CSA) and the Arctic Table of the Ministry of Foreign Affairs and International Cooperation (MAECI). The geological, geophysical, seismological, oceanographic, biological and logistic skills of OGS have been developed during the 13 scientific campaigns in Antarctica and the 4 in the Arctic carried out with its own research vessels (N/R OGS Explora and N/R Laura Bassi), with the participation in national and international research projects on board oceanographic vessels of other countries, and with the management of the Italo-Argentine seismometric network and the management of marine observation systems in the Arctic. Of particular scientific importance is the contribution of OGS to the scientific drilling activities of the Antarctic continental margin within the International Ocean Discovery Program (IODP), participating in defining the objectives of the SCAR programs, coordinating the drilling of two expeditions and participating in other expeditions. Since the 1990s, OGS has been managing the worldwide multichannel seismic data library (Antarctic Seismic Data Library System, SDLS) in collaboration with the U.S. Geological Survey until a few years ago and currently with the Lamont-Doherty Earth Observatory of Columbia University (NY, USA). OGS also manages the network of permanent seismological stations in the Antarctic Peninsula and in Tierra del Fuego in collaboration with Argentina,	https://www.ogs.it/en https://www.isp.cnr.it/index.php/en/

	contributing with the collected data to international scientific research. Moreover, OGS collaborates in the High North Program of the Italian Navy Hydrographic Institute, which guarantees a scientific collaboration space in the Arctic with the oceanographic ship Alliance. OGS's polar research is by nature strongly interdisciplinary, embracing the four scientific and technological research facilities, and is depends closely on the coordinated use of the Institute's research infrastructures. For the polar sciences, OGS extensively uses numerical modelling of ocean circulation, polar ice caps, and lithospheric response to the evolution of the Antarctic continent and its surrounding ocean basins, as well as petrophysical modelling and geophysical data inversion techniques. The "Polar Areas" mission is developed according to five scientific priorities that cover the different areas of expertise of the organisation: • Solid Earth and cryosphere; • Monitoring Polar ocean; • Mapping subglacial lithosphere; • Paleoclimate and climate change; • Protection of polar ecosystems.	
USER PROFILE	Research Vessel LAURA BASSI is a Marine Infrastructure of OGS (National Institute of Oceanography and Applied Geophysics). OGS is characterised by a notable capacity to attract external funds for third-party research activities, for the management of intellectual property, for technology transfer and for relations with the main industrial players, mainly in the sea, energy, environment, security and new technologies sectors. OGS's activities on behalf of third parties take the form of targeted research or service projects on behalf of public and private entities, supporting research activities on behalf of private companies only when they include important aspects of technological innovation and knowledge advancement. Maritime infrastructures are used for seabed and subsurface characterisation (seabed mapping), physical, chemical and biological oceanography. The use of the research vessel Laura Bassi for third-party activities is promoted only in the context of major international projects.	OGS website – Activities – Innovation - Applied research and services
USER NEED	The research vessel Laura Bassi is the only icebreaker vessel owned by a public institute in Italy available for national research. The Laura Bassi is a PC5 class A icebreaker and was purchased on 9 May 2019, following the grant awarded to OGS by the 2018 Finance Act, to replace the historic OGS research vessel Explora, which had carried out no fewer than 13 campaigns in Antarctica and the Arctic. The new ship was flagged and registered with the Trieste district as a major ship on 7 June 2019, and in 2020 obtained the "Polar Code" certification. To date, it is the first and only Italian-flagged ship to have obtained this certification. The main objective of the R/V Laura Bassi is to provide scientific and logistical support to the Italian polar missions and at the same time to enable oceanographic and geophysical research by the researchers of the institute and the national and European scientific community at a global level and in particular at a polar level. The ship has been designed as a special vessel, combining both cargo and scientific research capabilities in an optimal way. The ship has a tonnage of 4028 tons, is 80 metres long and 17 metres wide, and has a dynamic positioning system that guarantees high maneuverability and an accuracy in the order of 1 meter at a given point. Its particularly robust planking structure allows operating in ice-covered seas without fear of structural damage. The cargo capacity of the R/V Laura Bassi is defined first and foremost by the size of the (heated) cargo hold, which has a volume of 3,000 m3, and by the cargo capacity of the deck and flight deck, which can accommodate more than 14 ISO 20 containers. Overall, the ship can carry a load of approximately 800 tons. During the XXXV Italian Expedition to Antarctica (2019-2020) in the National Antarctic Research Program (PNRA), the ship was engaged for the first time in the Ross Sea area, both to transport material, fuel and personnel and for a series of oceanographic research campaigns. In January 2023, during the oceanographic campaign of the 38th Italian Expedition of the National Antarctic Research Program (PNRA), the ship reached the	OGS website – Infrastructures – Maritime Infrastructures – Research Vessel Laura Bassi

	southernmost point ever reached by a ship, in the Bay of Whales at latitude 78° 44,280' S.	
USER STRATEGY	The research vessel Laura Bassi is part of the European Eurofleets+ programme, the alliance of European marine research infrastructure.	www.ogs.it/en/research-vessel-laura-bassi
SERVICE CATALOGUE	As an OGS Marine Infrastructure, the Research Vessel Laura Bassi offers the following services. Laboratory Facilities (fixed and temporary): • 1 Wet lab, 1 Dry Lab CTD/Plankton sampling: • SBE911 CTD with 24 bottles rosette sampler • 12 bottles clean rosette sampler Multi-Beam(s)/ Sub Bottom profiling: • MBES shallow water: 200 to 400 kHz Kongsberg EM2040C MKII mounted on EM16 seapath pole 380 with MRU 5 and DGNSS receiver • MBES deep water: 30 kHz Hull mounted Kongsberg EM 304 1 x 2 with ice windows with MRU 5 and DGNSS receiver • Hull mounted Parametric Kongsberg Topas PS18 with ice window Fisheries Echo Sounders/Sonar: • ADCP: High resolution: hull mounted 150 kHz RDI Ocean Surveyor ADCP with ice tank • Low resolution: hull mounted 38 kHz RDI Ocean Surveyor ADCP with ice tank • SBES Simrad EA600 – hull mounted • Simrad EK80 and catch monitoring hydrophones. • Available models and frequencies are as follows: • ES18 (18 kHz), ES38-7 (38 kHz), ES70-7C (70 kHz) , ES120-7C (120 kHz), ES200-7C (200 kHz), ES333-7 (333 kHz) USBL: • 1 HiPAP Coring/Sampling Capabilities: • 18 m long piston corer with LAunch and Recovery System (LARS) • Gravity corer (5m Max length) • Box Corer • Grab Winches: • Electric winch for SSS and CTD-Rosette • Electric winch for coring • Electric winch for seismic • Hydraulic winch for net trawling and mooring operations Note: by summer 2023 a new Baltic room will be realized that will be equipped with a new LARS system for port side CTD-Rosette operations. Communications: • Satellite VSAT system for internet connection (Ku and C band) and Iridium Certus (backup) • Network 4G • Starlink Special features: • Multi Channel Seismic Meteorology sensors: • Solar radiation: DeltaT Device Ltd SPN1 pyranometer (global and diffuse irradiance) • PAR radiation: Kipp & Zonen PQS1 Photosynthetically Active Radiation (PAR) radiometer • Infrared radiation: Kipp & Zonen SGR4 pyrgeometer • Wind: Campbell CSAT3B 3-D sonic anemometer • Sky Camera: Alcor-System Alphea 3 CW All Sky camera system	www.ogs.it/sites/default/files/2022-04/Laura%20Bassi%20specifiche%20tecniche_2.pdf RV Laura Bassi - Vessel Profile

	• Greenhouse gas sensors: LGR Ultraportable Green Gas Analyzer (CH_4 – CO_2 – H_2O) Suitable for: morphobatymetry, Sub bottom profiling, Seismic, Oceanography, Biology and Multipurpose.	
ACCESS MGT PLAN	Technical details and availability of the Laura Bassi RV are prescribed by PNRA and Polar Research Infrastructure Network - POLARIN (incoming)	https://www.pnra.ag/it/nave-laura-bassi

SIOS - Dirigibile Italia Svalbard Integrated Arctic Earth Observing System		Source
DESCRIPTION	Dirigibile Italia is one of the multidisciplinary research stations managed by the CNR, providing support to numerous national and international research projects. The station, inaugurated in 1997, is located in the village of Ny-Ålesund (78°55' N, 11°56' E), on Spitsbergen Island, in the Svalbard archipelago. CNR- DSSTTA managed the station in the past, but is has now been assigned to the Institute of Polar Sciences (since July 2020). The station participates in the INTERACT and SIOS access programs, making its spaces and means available to countries that do not have access to the Arctic so they can carry out research projects. Dirigibile Italia is a 323 m2 structure, 170 of which are used as laboratories and offices. The base is open throughout the year to provide support to research activities.	Survey
	The Svalbard Integrated Arctic Earth Observing System (SIOS) is an international observing system for long-term measurements in and around the Norwegian archipelago of Svalbard addressing Earth System Science questions.	SIOS website: home
MISSION	SIOS is a collaborative effort to develop and maintain a regional observational system for long term measurements in and around Svalbard. The observing system and research facilities offered by SIOS build on the extensive observation capacity and diverse research infrastructure provided by many institutions already established in Svalbard. The core of SIOS is based on existing and new infrastructure owned by members. A fundamental objective for SIOS is to supply added value to all the investors beyond what their own investments would provide alone. The integration and structuring of coordinated observations with clear scientific goals are the means used by SIOS to achieve an understanding of ongoing environmental change. Investments based on a mutually agreed roadmap to develop infrastructure shall further facilitate this process. The mission of SIOS is to: • Develop an efficient observing system • Share technology, knowledge experience and data • Close knowledge gaps • Decrease the environmental footprint of science The vision is achieved and the mission fulfilled with the three pillars of operations: 1. Joint activities, 2. Services and 3. Sustainability.	SIOS Strategy 2026
USER PROFILE	Users of Research Infrastructures can be individuals, teams or research institutes. Teams can include researchers, PhD candidates, students and technical staff that participate in the research.	SIOS Access Policy
	Users belong to scientific community (80%), Education (15%), Private sector (5%). They are internal users (50%), users from RI member countries (40%), users from other European countries (9%), users from other countries outside Europe (1%).	Survey
USER NEED	SIOS is aiming at a more efficient use and a better integration of the observing system based on a distributed data management system, an open access program that includes logistical support, as well as training and education activities. Working groups, task forces and other SIOS components pursue these aims in direct and structured dialogue with scientists, user groups, policy-makers and other porters of societal and scientific needs.	SIOS vision, mission, and objectives
	Among the services that the [DIRIGIBILE ITALIA] base provides are: • 6 beds; • a chemistry laboratory equipped with a laminar flow hood and an extraction hood, a precision balance, ultrapure water dispenser, freezer etc; • an equipped electronics and mechanics laboratory and other workspaces; • storage spaces; • 3 snowmobiles, equipped with trolleys for transporting material, as well as the necessary suits, boots and helmets; • an electric car; • 3 fat-bikes with trolley; • radios for communication between people in the field and for their safety. Connected to the station are the scientific platforms: • CCT: a 33 m high meteorological tower equipped with instrumentation for the study of the processes in the lower boundary layer;	Survey

	• Gruvebadet Atmospheric Laboratory: in-situ aerosol chemical and physical observations; • Mooring Dirigibile Italia: sea water observations, including temperature, salinity, current and others. Data is uploaded and made freely available at the Italian Arctic Data Center. No measures are in place to attract users or to target specific types of users.	
USER STRATEGY	The observing system and research facilities offered by SIOS build on the extensive observation capacity and diverse world-class research infrastructure provided by many institutions already established in Svalbard. This includes a substantial capability for utilising remote sensing resources to complement ground-based observations. From this solid foundation, SIOS envisions a significant contribution to the systematic development of new methods and observational design in Svalbard. This knowledge can advance other observational networks in the Arctic and elsewhere.	SIOS vision, mission, and objectives
	Support/Assistance offered to users includes Scientific, Technical, Training, Logistic, Administrative. In terms of feed-back mechanisms in place where the users can report their experiences and future needs, and their scientific activities, back to the RI, Dirigibile Italia provides Direct contact with the station managers.	Survey
SERVICE CATALOGUE	Services are provided by SIOS Knowledge Centre or by member institutions: • Access and logistical services - The SIOS access services provide coordinated access to the various scientific facilities and equipment owned by SIOS members. Logistical services are coordinated sharing of logistical support and possibilities as well as requests for support. • Remote sensing services - Remote sensing services are designed to offer researchers a single-point of contact for ground-, airborne-, and satellite-borne information for Svalbard while drawing on the combined knowledge of the network of SIOS partner institutions. The service coordinates commissioned remote sensing data processing to make geoinformation products available via the SIOS data access portal. • Data management services - The SIOS Data Management System (SDMS) is providing a unified interface to data that are produced using SIOS related infrastructure and third-party datasets that are of relevance to the SIOS scientific community. This is a distributed data management system where SIOS partners operating their own data centre are connected to SDMS using specific technological and documentation standards.	SIOS Strategy 2026
	Connected to the station are the scientific platforms: • Climate Change Tower: a 33 m high meteorological tower equipped with instrumentation for the study of the processes in the lower boundary layer; • Gruvebadet Atmospheric Laboratory: in-situ aerosol chemical and physical observations; • Mooring Dirigibile Italia: sea water observations, including temperature, salinity, current and many others available, in the Kongsjorden. Data is uploaded and made freely available at the Italian Arctic Data Center (IADC, https://iadc.cnr.it). The station is equipped for calibration of gas flux devices (CO2, WV, CH4). • Together with INRIM we manage also a temperature calibration chamber.	Survey
ACCESS MGT PLAN	SIOS promotes open access to infrastructure to Users wishing to conduct research activities (monitoring or field campaigns) on Access refers to the legitimate and authorised physical, remote and virtual admission to, interactions with and use of Research Infrastructures and to services offered by RI Providers to Users. subjects related to Earth System Science in and around Svalbard. The Access Programme is a plan for access to SIOS RI. It is based on the concept of excellence-driven access, where admittance is obtained via application to SIOS. Regular Calls for Access will be based on, but not restricted to, a set of prioritised themes outlined by SOAG. The SIOS access principles are as follows: • There will be access to SIOS infrastructure through a SIOS Access Programme to which all members will contribute; • SIOS members shall allocate an agreed fraction of the capacity of their facilities and infrastructure to the SIOS Access Programme; • SIOS members shall contribute to the running of the SIOS Access Programme;	SIOS Access Policy

	• Access is provided to members and non-members through applications to the Access Programme; • The SIOS Access Programme will be dedicated to Earth System Science and be in line with SIOS priorities; VI. SIOS-KC will manage the SIOS Access Programme in partnership with the Research Infrastructure Coordination Committee (RICC). More about Accessing the Artic can be found on INTERACT III Project by EU H2020	
	Access call is launched usually during October each year. The proposals are received within a month. The evaluation is usually done before Christmas by the panelists. We ask to everyone making use of the station, to provide data and metadata thought IADC. Types of access provided: • Physical – 90% • Remote – 5% • Virtual – 5% The evaluation of the proposal is managed by a group of scientist, members of the Svalbard Working Group of CNR (GdL Svalbard), headed by the CNR-ISP director. Currently the IADC portal as a backend tool to manage the proposals. We are working to split this part from that of the data and metadata. For what concern INTERACT and SIOS the scientific evaluation is done by their panels, while we approve the proposals from the logistic point of view. Access models implemented are Excellence-driven Access (50%), Wide Access (50%). Access opportunity promotion is through Direct dissemination via email to relevant contacts. track and record the scientific output of the users resulting from the access are done by Monitoring acknowledgments As specific post access provisions in place, Access report is planned. Provision of metadata and data is recommended. Access to the research facilities for basic research (60%), Access to the research facilities for applied research (20%), Testing and calibration of instruments/equipment (5%), Training (5%), Education (10%).	Survey

SMINO Northeast Italy Monitoring System		Source
DESCRIPTION	The Seismological Research Center (SRC) of the National Institute of Oceanography and Applied Geophysics (OGS) operates the North-Eastern Italy Terrestrial (Seismic and Geodetic) Monitoring System (SMINO), which allows the recording of data for the monitoring and study of seismic activity and crustal deformation in Northeast Italy. SMINO is an infrastructure of national importance (PNIR 2021-2027) and consists of a network of 43 seismometer sensors and a network of more than 150 accelerometers and 19 GNSS stations (as of March 15, 2022). SMINO works closely with national and international networks in neighboring countries on the basis of framework agreements on real-time data exchange. Information on seismic events is disseminated to the public via a dedicated web portal (Real Time Seismology - RTS). The recorded waveforms are accessible via the OASIS database and the European Integrated Data Archive (EIDA) as well as via the RTS website itself. The CRS also has a mobile laboratory (Mobile Lab) for rapid post-event interventions and maintains a pool of tools for temporary network installations.	SMINO website OGS website – Sismological and Geodetic Infrastructures – Northest Italy monitoring system
MISSION	SMINO enables the monitoring and study of seismicity in northern Italy, as required by the law establishing the CRS (399/1989) following the 1976 Friuli earthquake. By collecting, analysing and interpreting geophysical and seismological data, disseminating knowledge and information to society and improving awareness, SMINO contributes to research studies aimed at understanding Earth processes and predicting their changes. As the infrastructure of OGS, SMINO is consistent with the principles of the UNESCO Recommendation on Open Science, as well as with the objectives of the National Plan for Open Science of the Ministry of University and Research. providing findable, accessible, interoperable and reusable (FAIR) data.	OGS website – The Institute – Vision, Mission and Values OGS website – About us – Strategic Vision 2023-2032
USER PROFILE	SMINO's users are mainly scientists, public and private stakeholders, general public.	OGS website – The Institute . Center for Seismological Research
USER NEED	SMINO provides users with the following data: • Earthquake locations in real-time • Seismic waveforms • Metadata of the stations • Seismic bulletins • ShakeMaps • Ground motion parameters • Catalogue of local focal mechanisms • Moment tensors Geodetic database	SMINO website – For Seismologists OGS website – About – Documents – 2023/2025 Plan
USER STRATEGY	The data managed by the SMINO infrastructure is mainly real-time earthquake information, site and waveform data, geodetic data, seismic waveform data and the corresponding metadata. Specifically, the real-time seismology of northeast Italy and the bulletin of the seismometric network of northeast Italy are interconnected. The former provides real-time data, while the latter serves as a storage archive after a validation process. Both websites display information in a relational manner. OASIS is the information system developed by OGS to organise, archive and make accessible all seismological instrumental data. OASIS consists of a database, a dual archive of digital waveforms and a web interface built on a dedicated and redundant hardware infrastructure. OASIS is based on the open source DBMS MySQL and is divided into two parts: sites and waveforms. The archive of continuous waveforms is managed by the Antelope system from Boulder Real Time Technologies (BRTT) with its proprietary database called DATASCOPE. The web application was developed in the Java language and Tomcat is the web technology on which OASIS runs. The OASIS website provides descriptions of networks and archived data, consultation and query tools, and data download functions. In addition, the data is also available through EIDA Italia, the Italian node of the European Integrated Data Archive, which stores and disseminates seismic waveforms collected by Italian and foreign data providers and managed by INGV. The bulletin of the Seismometric Network of Northeast Italy is published under CC	OGS website – The Institute . Center for Seismological Research

	BY 4.0. The data from OASIS and FReDNet are distributed under CC BY SA 2.0. EIDA data are available via the various services and are published under CC BY 4.0.	
SERVICE CATALOGUE	SMINO has various websites that enable the retrieval of (meta) data. In fact, the data are available through the Real-Time Seismology of North-East Italy, the Bulletin of the Seismometric Network of North-East Italy, the Archive System of Instrumental Seismology (OASIS) and the Friuli Regional Deformation Network (FReDNet). These websites are all accessible via the dedicated SMINO website. In addition, the seismic waveform data are available via the EIDA Italy website Data management, archiving, utilisation and access services are provided through the development of a set of thematic infrastructures for data accessibility and management. SMINO offers seismologists a also ShakeMaps and a catalogue of focal mechanisms.	OGS website – Activities – Innovation – Applied research and services SMINO website – For seismologists – Catalogue of focal mechanisms
ACCESS MGT PLAN	The websites which SMINO enables data retrieval do not require an authentication or authorization service. The exception is OASIS, which informs that waveform data can be accessed with three levels of authorization. The first level is for internal users and allows free access to all OASIS data. The second level is dedicated to project partners and makes certain datasets accessible via a restricted login. Finally, the third level offers free access to only a subset of the entire dataset. Another specific case is the FReDNet network. In order to access the data, the user must explicitly declare that they have read and accepted the conditions for accessing and using the data of the FReDNet network. After the declaration of acceptance of the conditions for accessing the data, the website offers two possible alternatives for accessing the data. The first option is via HTTPS/FTP, where you search for the data manually and download it via FTP. The second option is a simplified access with a guided RINEX data file construction and immediate download.	SMINO website – For Seismologists OGS website – About us – Strategic Vision 2023-2032

6. DATA ANALYSIS and FIRST RESULTS

Starting from the information in section 6, the data analysis stepped forward to an overall one, focusing on how the ITINERIS RIs approach and manage their respective user strategy.

To the aim of harmonizing vision, methods and tools applied by the ITINERIS RI Partners in terms of User Strategy, it is essential to focus on how the RIs profile their users, welcome and satisfy their needs, define and provide a user strategy, arrange and share a user catalogue, implement an access management plan.

User Profile

In this section, the user profiles of each RI are outlined. They are the collection of attributes and information associated with each RI's users with the aim of identifying the typology and the main characteristics of the user's.

In terms of USER PROFILING, both the desk research and the survey give us a very interesting landscape about the categories of users engaged in conceiving or creating new knowledge. Figure 4 shows that 62% of users belong to the scientific community, 15% comes from the private sector, 12% from education and only 7% from public institutions and 4% from others.

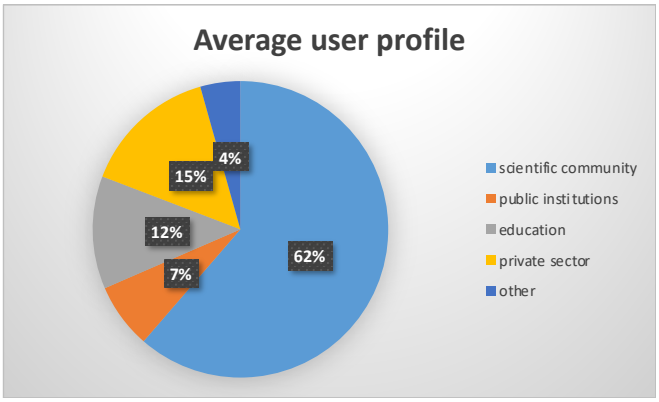

Figure 5:Average user profile

Equally interesting is the analysis of the geographical distribution of the users nationality. As shown in

Figure 6, 44% of the users belong to the RIs owner institutions, 30% come from RI member countries, 19% from other European countries and only 7% from outside Europe.

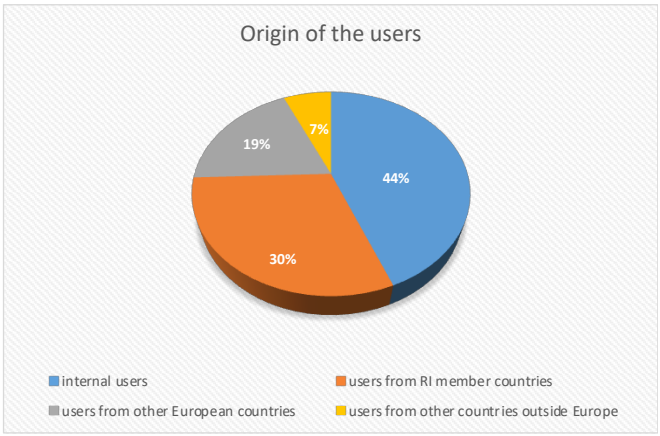

Figure 6:Origin of the users

Basically, the desk analysis confirms the survey results with ITINERIS RI's users mostly coming from the European academic and scientific area, in line with the mission of the RI to favor excellence in science. It is necessary to highlight that these users are not part of the internal RI's science communities or RI's operators but they are proper external users (see for example "user" definition for ACTRIS, ICOS, …). This preponderant area is followed by private and only in very specific institutional sectors, still in Europe and less in the rest of the world. Relevant efforts have been made by some RIs in promoting a coordinated approach between different user sectors, by fostering the availability of digital platforms and the Non Governamental Organisations involvement. Rarely but significantly, journalists, documentarists, territorial environmental organizations and even schools and citizens have also been involved.

User Need

This paragraph reports the specific requirements and expectations of users that the RIs should fulfill to provide value and enhance their research experience. According to the data collected, the main objectives pursued by users are related to fundamental researches (35%), to applied researches (34%), followed by education and training purposes (13%). Secondary objectives are represented by industrial research (8%), and testing and calibration and training (both equal to 3%). (Figure 6)

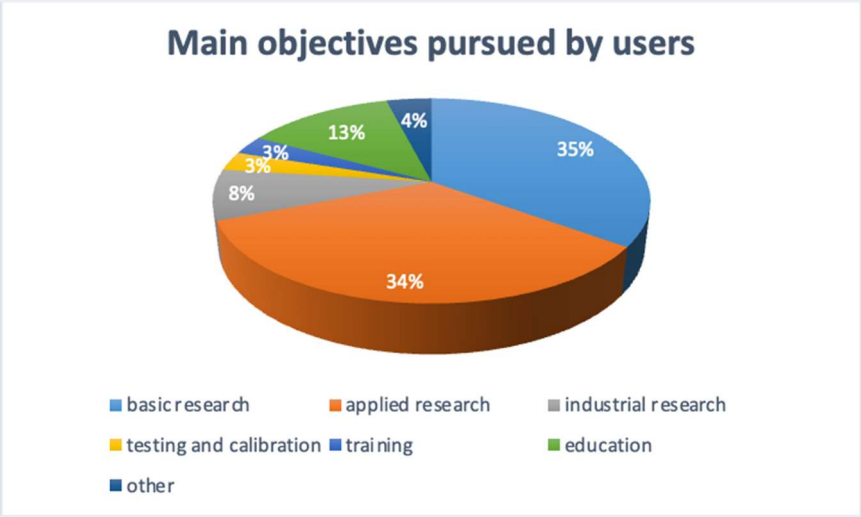

Figure 6: Main services requested by users

Figure 7 shows that scientific and technical supports are the most offered types of service, followed by the managerial one.

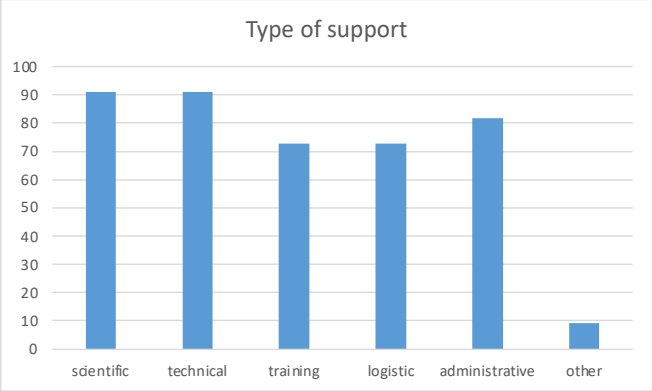

Figure 7: Types of support offered by Ri respondents.

As evidenced by Table 6, different types of support are offered by RIs respondents based on the different levels of technological maturity.

	scientific	technical	training	logistic	administrative	other
ACTRIS	yes	yes	yes	yes	yes	na
ATLAS	yes	yes	yes	no	no	no
CETRA	yes	yes	no	no	yes	no
DANUBIUS-RI	yes	yes	yes	yes	yes	no
DiSSCo	no	no	no	no	no	no
eLTER-RI	yes	yes	yes	yes	yes	no

EU IBISBA	yes	yes	yes	yes	yes	no
Euro-ARGO	yes	yes	yes	yes	yes	yes
JERICO	yes	yes	yes	yes	yes	no
SIOS-DIRIGIBILE ITALIA	yes	yes	yes	yes	yes	no

Table 5: Type of support offered by Ri respondents.

The desk analysis also highlights that RIs involved in the ITINERIS put in place tools and services, share data and information, offer facilities and experiences to satisfy users' expectations. Most RIs offer physical, remote and virtual access with open programs and logistical support such as guest houses, health and safety procedures, technical and scientific facilities, training and administrative help including reimbursements, equipped laboratories and communication services, also encouraging and welcoming users' feedback managed through web and email questionnaires.

Keeping a constant and constructive dialogue with users is also key for an ITINERI RI, so seminars, conferences, meetings, networking workshops, interviews, bulletins and shake maps, discussion forums and surveys are often launched and set in a propositional approach.

User strategy

The adoption of a **USER STRATEGY** is crucial for supporting research and innovation and for ensuring positive socio-economic impacts at local and global level. It has to include a complex suite of tools, competences, services and procedures. This requirement is a challenge for ITINERIS since the 22 ITINERIS RIs are extremely different. Ideally, user strategy implies a continuous engagement with users at every level, in a sort of interactive cycle always oriented towards enhancing RI excellence. Attraction of the users, integration of competence and skills, exchange of experience, provision of basic and tailored service and feedback management, are five essential ingredients.
Within the ITINERIS RI experience, a correct design and implementation of the user strategy can guarantee RI itself with an efficient and high-quality data delivery, scientific output properly tracked, virtuous funding and co-funding models, human resources development, interoperability between national and transnational RI, driving transformative change. To attract users, ITINERIS RI shall apply creative solutions such as using blogs, interactive exhibitions, press conferences and releases, annual activity reports of activities openly accessible also through the web. Coherence among values, objectives and research results is another key element for ensuring successful long-term RI activities

in which user strategy is a fundamental tool. In fact, it facilitates innovation, distributes highly functional networks, widens accessible portfolios, promotes integrate and conductive working culture, synergic relations and integrative governance structure.

Service catalogue

Services offered by the ITINERIS RIs are usually listed in their web portals, although they are accessible also in situ, by training or through data management and remote services. In terms of **SERVICE CATALOGUE** some of the RIs involved in the ITINERIS Project offer user-friendly options and cross-search functions to allow quick exploration of their databases. Almost all the RIs involved have a service catalogue, although only a few of them already respect the standards expressed in the glossary, while the majority have already planned their potential upgrading soon and only 4 still don't have one. Almost all the RIs offer data access through their portal, simply mentioning the option available. In one case, the RI service catalogue includes a metadata catalogue, a semantic platform, a collaborative coding platform, a phytoplankton virtual research environment, a training catalogue, a citizen platform, a virtual museum and eco-portal services.

Access Management Plan

As regards the desk analysis results, a proper ACCESS MANAGEMENT PLAN (AMP) is not common among the RIs involved; only ACTRIS has such a comprehensive and public document. So, the practices on Access management can be deduced from strategic documents or periodic reports updates. Mostly of these documents are open, although many include restricted and personalized ones. In one case, beside its AMP, the RI has also a proper access policy.

The respondent RIs expressed a large diversity of types of access (physical, remote, virtual) offered to users, the survey data integrated with desk analysis offer the panorama reported in the **Errore. L'origine riferimento non è stata trovata.**following table.

	RI	VIRTUAL	PHYSICAL	REMOTE
1	ACTRIS	X	X	X
2	ATLAS	X	X	X
3	ANAEE		X	X
4	CETRA		X	
5	DANUBIUS	X	X	X
6	DISSCO	X	X	X
7	ECORD	X	X	X
8	ELTER	X	X	X
9	EMPHASIS	X	X	X
10	EMSO		X	

11	EUFAR		X	X
12	EUROFLEETS		X	X
13	EUROARGO	X		
14	GEOSCIENCE	X		
15	IBISBA	X	X	X
15	ICOS	X	*	
17	JERICO	X	X	X
18	LIFEWATCH	X	*	
19	LNS		X	
20	N/R LAURA BASSI		X	
21	SIOS	X	X	X
22	SMINO		X	

Table 6: Type of access offered by ITINERIS RIs.

Only one (Euro-ARGO) is characterized by exclusively virtual access while DANUBIUS has in this type of its prevalent quota. Only ATLAS has predominant remote access, Eu IBISBA and JERICO have the same quotas for physical and remote access. All the others have physical access as their major type.

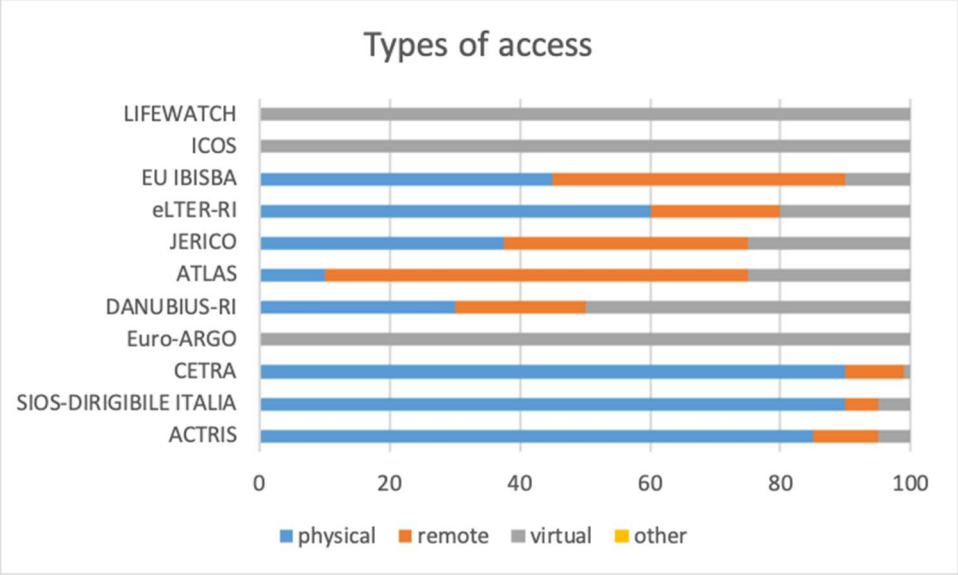

Figure 8: Different types of access for each respondent RIs.

Figures 8 - 9 show the relative percentages of different types and modes of access for each RI, with clear answer in the survey.

It has to be noted that some RIs are evolving their offer in terms of type of access. ICOS sites have only offered virtual access so far, but, recently, some ICOS Italian sites co-located with ACTRIS platforms have started experimenting with physical access within the EU project ATMO-ACCESS. Furthermore, Lifewatch Itay (that is an e-infrastructure) is planning to test the physical and remote

access within ITINERIS.

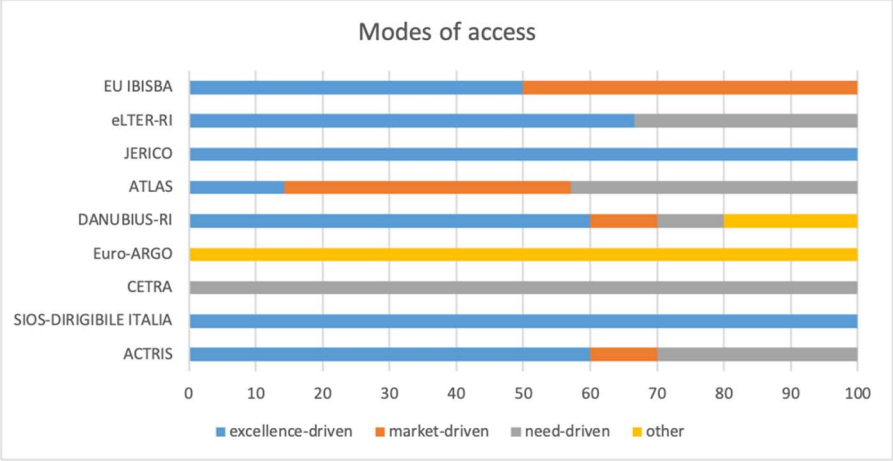

Figure 97: Different modes of access

7. TOWARDS THE ITINERIS USER STRATEGY

This deliverable sets the foundation for the complete definition of ITINERIS user strategy, as the preconditions for its long-term sustainability.

ITINERIS aims at making the 22 Italian research infrastructures participating in the project a coordinated network of environmental RIs to support high-quality services to be more accessible and to enable collaboration among users across different scientific domains fostering the advancement of knowledge, education and innovation and, therefore, RIs exploitation.

Being ITINERIS in its early stage of planning and implementation, the user community, current and potential, shall still be identified. ITINERIS is intended to promote a holistic, cross-disciplinary approach to the Earth System and its changes, allowing users to benefitting from the integrated system of RIs and enabling each RIs to meet the need of a wider user community. So, the ITINERIS user base is not simply the sum of each single RI user group. ITINERIS aims at generating a multiplier effect by further broadening the user base including new users from the general public, policy makers, private sector and society and intercepting different needs.

Finally, ITINERIS is planning to dedicate sufficient resources to communicate the ITINERIS added value to users in order to raise interest and engagement. This deliverable is a living document that will be fed from project activities developing new services and specific actions for user engagements that will be put in place.

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