MISSIONE 4
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ITINERIS

D1.4.2 Report from the Second General Project Meeting, including the list of participants, presentations and report on the main outcome including list of actions for the final year of the project.

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1.EXECUTIVE SUMMARY

This deliverable is prepared in the context of the ITINERIS project, within the Work Package 1 that deals with the coordination and management of the project.

It is a report from the second ITINERIS General project meeting that was held in Rome, which took place in Rome, at the Sala Convegni of the Consiglio Nazionale delle Ricerche, on July 9th and 10th 2024.

The primary objective of this gathering was to foster aggregation and scientific exchange, focusing on the results of activities accomplished within the project thus far. The meeting provided a comprehensive overview of the project's progress, delving into the various Work Packages (WPs) and central themes. Furthermore, it facilitated essential discussions and served as a crucial opportunity to align on strategic objectives and key decisions vital for the project's continued success.

Details regarding the significant participation and a summary of the contributions are provided in the subsequent sections of this report.

A dedicated section was created on the ITINERIS website to provide information to participants and to manage their registration.

To allow a wider participation and to handle the requests of several users unable to participate in person, the meeting was also broadcast in live streaming.

Given the large participation in the sessions, the participation list was managed by WP1 with confirmation of attendance and delivery of the relative name tags.

A large participation was finally registered to the event with about 300 people attending the meeting in person, while the live streaming recorded peaks of over 50 connected users during the day.

The names and affiliations of the participants (in presence) are reported in ANNEX 2.

2.MEETING STRUCTURE AND CONTRIBUTIONS

The meeting was structured over two days, incorporating a mix of plenary and parallel sessions to optimize interaction and result dissemination.

The meeting was also an occasion to realize parallel workshops dedicated to specific topics within WPs; moreover, it allowed focused in-depth discussions within the participant from the different governance board, specifically with the representatives from the different RIs and the administrative and scientific representative from the participating OUs.

2.1 DAY 1: WEDNESDAY, JULY 9, 2024

The institutional greetings from Dr. Francesco Petracchini, Director of the CNR's Dipartimento Scienze del Sistema Terra e Tecnologie per l'Ambiente, opened a comprehensive plenary session. This session featured detailed presentations covering the organizational and governance structure of the project, its administrative set-up and progresses from all the WPs:

- WP1 – Coordination and Management: presented by Giuseppe Gargano
- WP2 – Access to Facilities, FAIR Data, and Related Services: presented by Dr. Carmela Cornacchia and Dr. Ilaria Rosati
- WP3 – ITINERIS Training Programme: presented by Prof. Alberto Basset
- WP4 – Atmosphere: presented by Dr. Lucia Mona
- WP5 – Marine Domain: presented by Dr. Rosalia Santoleri
- WP6 – Terrestrial Biosphere: presented by Prof. Dario Papale
- WP7 – Geosphere – Landsurface: presented by Dr. Giuliana Rossi
- WP8 – Virtual Research Environments and Cross-Disciplinary Activities: presented by Dr. Antonello Provenzale.

The main information illustrated by the speakers and the conclusions formalized during the meeting are reported in the following subchapters.

The slides are available through the following link: **PLENARY SESSION SLIDES**

2.1.1 WP1 - Coordination and management

Presented by Dr. Giuseppe Gargano (CNR-IMAA)

The presentation provided an articulation of ITINERIS's main objectives and its intricate work breakdown structure. The project is tasked with coordinating a complex network of national nodes, drawing from 22 ESFRI/European/National Research Infrastructures spanning Environment, Physical Science, Health & Food domains, and involving 39 distinct Operational Units (OUs). Structured into eight Work Packages (WPs), each comprises multiple activities designed to achieve specific intermediate objectives and deliver planned outcomes.

This inherent complexity underscores the critical need for developing robust monitoring and communication tools and methodologies to ensure effective coordination and seamless project delivery. To manage this intricate framework, a dedicated SharePoint platform is utilized for collecting and organizing data and documentation, facilitating efficient submission processes. This system meticulously tracks the three key monitoring areas: procedural progresses, encompassing initiated and updated procedures; financial advancements, specifically expenditures and costs; and technical progress, demonstrated through activity updates and the achievement of intermediate objectives.

Following this foundational overview, a comprehensive update on the project's current status was provided, highlighting significant progress and detailing the bespoke multi-level monitoring system.

Notably, the presentation emphasized consistent procedural progress. Over 160 calls for fixed-term personnel have been successfully published, leading to 224 hires and committing 90% of the allocated budget. More than 600 procurement procedures for goods, services, and works were initiated, with 410 already awarded, accounting for 72% of the budget commitment.

The discussion also addressed the project's extended duration, which has been lengthened by 6 months, now set to conclude on October 31, 2025. This extension aims to establish revised timelines, providing crucial additional time not only for the successful

implementation of the new training plan within WP3 (necessitated by delays in fixed-term personnel recruitment) but also to ensure the comprehensive achievement of all overarching project objectives.

Concluding the presentation, the critical importance of the communication strategy was underscored. An inclusive and collaborative approach, leveraging diverse channels such as regular meetings, a distinct visual identity, an intranet, a dedicated website, social media presence, and newsletters, has been a key focus. This multifaceted strategy, employing various digital and traditional media channels alongside event-based tools, is meticulously designed to meet specific communication objectives and enhance the adoption and understanding of ITINERIS's value across its diverse target groups. Evidence of these robust communication efforts includes over 200 active SharePoint users, a repository of over 30,000 files related to project implementation, numerous scientific contributions (including articles, abstracts, presentations, and posters), and a website actively used by 220 registered users.

Figure 1. WP1 – Coordination and management

2.1.2 WP2 – Access to facilities, fair data and related services

Presented by Dr. Carmela Cornacchia (CNR-IMAA)
Dr. Rosa Maria Petracca Altieri (CNR-IMAA)
Dr. Ilaria Rosati (CNR-IRET)

The WP2 presentation primarily focused on the development of a sustainable and The WP2 presentation provided a detailed overview of the ongoing efforts to establish a sustainable and strategic framework for accessing distributed National Environmental Research Infrastructures (RIs). A core element of this framework is the ITINERIS HUB (Figure 3), envisioned as a single access point designed to integrate and expand the resources available across participating RIs, thereby enhancing accessibility and fostering multidisciplinary collaborations within the scientific community and with public and private stakeholders, both nationally and internationally.

The presentation detailed a comprehensive analysis of existing RI resource catalogues and the preliminary activities underpinning the development of the ITINERIS user strategy. This included an overview of the current status of the RIs' user communities, derived from a questionnaire completed by both in-session and online participants. A rigorous methodological approach, encompassing empirical surveys, stakeholder consultations, and desk research, was employed to analyze user needs and RI maturity in user engagement and access policies. The findings highlighted significant opportunities for harmonizing methodologies, enhancing data accessibility, fostering cross-sector collaboration, and guiding future environmental research directions based on evolving user needs. Innovative strategies are also being implemented to enhance RI accessibility for the Third Sector, schools, and municipalities, underscoring a user-driven approach as foundational for the long-term sustainability and societal value of RIs.

The presentation also covered initial pilot access initiatives, including the "ACTRIS Pilot TNA Call," which grants Italian users access to all ACTRIS facilities and foreign users

access to Italian ACTRIS facilities, and highlighted ITINERIS's role in facilitating Italian scientists' and students' access to the ECORD infrastructure. Efforts are ongoing to harmonize these access processes.

Finally, an overview of the FAIR-enabling practices adopted by ITINERIS RIs was provided (Figure 4), with an introduction to the FAIR Implementation Profile (FIP), which encloses the first version of the ITINERIS HUB.

Figure 2. WP2 – Access to facilities, fair data and related services.

Figure 3. WP2 – Access to facilities, fair data and related services.

2.1.3 WP3 – ITINERIS Training Programme.

Presented by Prof. Alberto Basset (Università del Salento/CNR-IRET)

A comprehensive overview of the ITINERIS Training Centre and its key components was provided, highlighting its role as the organizational core for all training initiatives.
The training plan detailed the specific courses, target audiences, learning objectives, and the overall schedule for training activities.
A guided tour of the Training Centre was conducted. This platform, likely an e-learning system, serves as the primary tool for delivering course materials, hosting webinars, managing registrations, and tracking participant progress, thereby ensuring wide accessibility and efficient content management.
Finally, the upcoming integration of semantic technologies was presented as a means to enhance communication, streamline resource discovery, and foster collaborative research within the ITINERIS Training Centre.

Figure 4. WP3 ITINERIS Training Programme.

2.1.4 WP4 – Atmosphere

Presented by Dr. Lucia Mona (CNR-IMAA)
Dr. Daniele Contini (CNR-ISAC)
Dr. Benedetto de Rosa (CNR-IMAA)

The presentation outlined the four main objectives of WP4: integration and harmonization within the Italian Network of Environment RIs, and pilot services focusing on aerosol types and sources, Planetary Boundary Layer height and its impact on atmospheric composition, and the impact of natural and anthropic fires.
It was reported that all deliverables are currently on schedule. While purchase procedures are slightly delayed, personnel selection is complete. Dataset production is progressing well, with 30 datasets already produced.
For the Objective 1 (Integration & Harmonization), significant achievements include the deployment of trans-RI instruments, reinforcement of observational capabilities, and the development of digital resources for atmospheric data. This has fostered national community cooperation and mutual resource utilization, exemplified by the use of airborne aerosol measurement instruments.
The presentation highlighted the development of Lidar observation capabilities at AAOT and Gaia Blu for monitoring marine and atmospheric variables and for innovative atmosphere-marine interaction studies.
Progress in this task includes the establishment of a dedicated server, the creation of a dataset of pure dust vertical profiles, and the adaptation of three aerosol typing algorithms to Python for ACTRIS-like lidar data. A high-temporal-resolution aerosol typing methodology has also been developed.
The CIAO Atmospheric Boundary Layer Height (ABLH) Campaign was a key focus, demonstrating successful optimization and validation of the MIPA algorithm for ABLH retrieval, with excellent comparisons against radiosonde data. Future work will address instrumental limitations and explore new case studies. Ongoing research involves comparing in-situ air quality data with vertical structure and analyzing the influence of the Planetary Boundary Layer on the mountain free troposphere.

Upcoming activities include the start of measurements with ITINERIS instruments, continued research, and planned campaigns such as the ITINERIS instruments + ACTRIS MAGA exploratory platform campaign in Rome, and two-site campaigns for pollution studies. Access will be provided to external entities to support WP4 objectives.

The presentation offered an update on the project's progress, highlighting achievements in staffing, procedural advancements, completed deliverables, and various dissemination efforts. Two scientific awards were specifically noted: a Best Poster award and a grant for joint research.

Finally, the presentation emphasized WP4's strong connections with various European and National projects, including PRIN2022 - FEMTO, PRIN2022 - PBHLsat, CAMS21b, C3S2_311, INFN - CSN5 2024 - HardLife, and PRIMARY.

Figure 5. WP4 – Atmosphere

2.1.5 WP5 – Marine domain.

Presented by Dr. Rosalia Santoleri (CNR-ISMAR)

The presentation outlined the core aims of ITINERIS's Marine Domain: to harmonize and integrate Italian marine Research Infrastructures (RIs) to facilitate access to facilities, services, and marine data.

The design and architecture of the IT-IOOS were presented as an integrated system of systems. This design aims to ensure data and service continuity, respond to user needs, and meet requirements for data quality and interoperability. It is envisioned as a single access point for users to the entire ocean database and RI services, encompassing datasets from 11 RIs and ITINERIS integrated marine products. The architecture is modular, allowing for future upgrades and integration of additional sub-systems without disrupting the overall system.

A comprehensive gap analysis was conducted to assess the current state of EOV & ECV observations, as well as data access and time release. This analysis provided a complete picture of observations from the 11 RIs involved in the marine domain.

The presentation detailed the effort to expand Italy's capacity for acquiring and disseminating Near Real-Time (NRT) physical, biogeochemical, and geological ocean variables using research vessels like the Laura Bassi and Gaia Blu. This involves designing Italy's contribution to international research fleets, acquiring and installing autonomous systems on board, developing NRT data quality control and transmission systems, and defining data policy and access procedures for FAIR data release.

The active contribution of ITINERIS to EuroArgo enhancements through various technological innovations was also presented. The project has already increased the number of Argo floats in the Mediterranean Sea. Furthermore, the design and procurement of a new submarine Junction Box (JB) for installation off Capo Passero are in progress, aiming to provide power and optical links to new underwater observation stations.

The project is developing prototype models for data-driven reconstruction of the ocean state. This includes leveraging innovative Artificial Intelligence (AI) tools like Kolmogorov-Arnold Networks to reconstruct vertical profiles from surface data.

The presentation offered an update on the project's progress, highlighting achievements in staffing, procedural advancements, completed deliverables, and various dissemination efforts.
Requirements and design for the IT-IOOS Marine Data Store, Marine Data Portal, and Data Catalogue are also complete, with catalogue integration already initiated.

The immediate next steps include the installation of the IT-IOOS Marine Data Portal, progressive integration of RI sub-systems, installation of acquired instruments, and the development of prototypes and pilot services for cross-infrastructural data integration. Identified risks include potential delays in instrument delivery and additional delays in civil infrastructure work, for which mitigation strategies have been outlined.

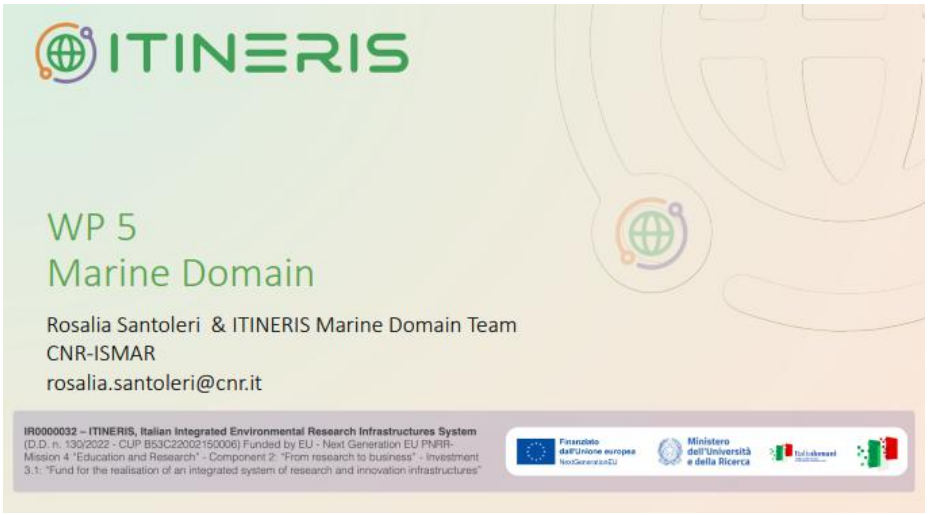

Figure 6. WP5 – Marine domain.

2.1.6 WP6 – Terrestrial biosphere

Presented by Prof. Dario Papale (CNR-IRET)
Dr. Emanuela Pedrazzini (CNR-IBBA)
Dr. Simona Armeli Minicante (CNR-ISMAR)
Dr. Gabriele Guidolotti (CNR-IRET)

This WP6 involves seven Research Infrastructures, which exhibit significant heterogeneity in their aims, scale, readiness, size, and competences, posing a challenge for integration and the overall ITINERIS HUB.

WP6 is structured around four multi-RI integration activities: Nature-Based Solutions, Functional Biodiversity and Changes, Sustainable Agriculture and Biotechnology, and Remote Sensing Calibration and Validation.
The presentation included three specific interventions:

1) Sentinel plants with sensors for environmental stresses, within IBISBA. This segment detailed the use of biosensors in plants, which can monitor different types of stress by guiding the expression of EGFP under stress conditions, and data sharing in the ITINERIS HUB including genetic constructs, sequence data, plant transformation and transgene integration data, and cell biology/expression analysis data.

2) From physical to FAIR digital specimens: methods and perspectives of the RI DiSSCo in the ITINERIS project, within DiSSCo. This presentation outlined the involvement of various Operational Units (OUs) in ITINERIS, such as IRSA, IBBR, ISMAR, and UNIFI, in contributing to the Distributed System of Scientific Collections (DiSSCo). It described different levels of digital specimen records and activities related to the digitization of Italian Natural History Collections (NHCs), focusing on Italian flora and fauna, with approximately 150,000 samples already digitized by May 2023 and planned publication on GBIF from autumn 2024. Another activity involves mining and mapping functional biodiversity in "in vivo"

and "ex situ" research collections, with over 50,000 records digitized following DarwinCore standards and available through the DiSSCo-IT portal on GBIF.
Future perspectives include joint data papers, the creation of the "DiSSCo-IT Portal" on GBIF, linking with other RIs and the National Biodiversity Future Centre (NBFC) platforms, and establishing a National Network of Natural Science Collections.

3) The Castelporziano observatory cluster: an example of cross-RIs collaboration, within ICOS and eLTER. This section presented the Presidential Estate of Castelporziano as a significant site for environmental monitoring, characterized by typical Mediterranean ecosystems. It highlighted a large-scale natural disaster involving pine dieback due to alien parasites, leading to a reforestation plan and a potential large-scale experiment for ecosystem restoration and rewilding. The cluster includes Eddy Covariance Sites for monitoring carbon balance, water, and energy, with operational ICOS stations and ready sites for mixed deciduous oak forests and rewilding/reforestation. This presents an opportunity for a long-term ecosystem monitoring system, open to participation from other researchers and RIs, with data collected to be shared through the ITINERIS HUB, specifically fluxes and meteorological data via the ICOS Carbon Portal or ICOS Italian HUB.

The overall status of WP6 indicates that common data solutions found within this diverse WP could be applicable to other domains. The link with the Virtual Research Environments (WP8) still has large potential. Data collection is ongoing and is the primary priority, with strong interaction expected with the HUB. Delays in some OUs and RIs were noted, and a detailed action plan will be prepared and presented to the Executive Board.

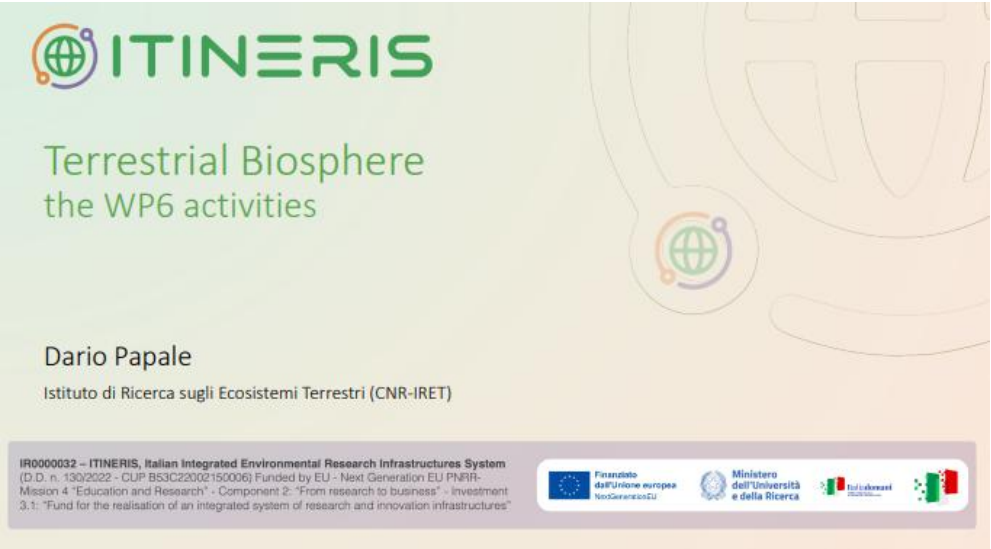

Figure 7. WP6 – Terrestrial biosphere.

2.1.7 WP7 – Geosphere-Landsurface

Presented by Dr. Giuliana Rossi (OGS)
Dr. Valeria Giampaolo (CNR-IMAA)
Dr. Ilaria Catapano (CNR-IREA)

Significant progress was reported across several integrated activities of WP7.
Efforts to improve access to ECORD infrastructure have advanced with data from scientific drilling cores being managed through a GeoNetwork metadata catalogue, ensuring findability and interoperability with the ITINERIS data HUB.
A prototype online database for pyroclastic unit data from Italian volcanoes has been developed and is now displaying stratigraphic, geochemical, and geochronological information. For IODP scientific borehole data, physical catalogues of wells and samples are being compiled, with initial digital data stored for later integration.
Regarding SMINO observations, a calibration laboratory is being actively set up, including the acquisition of key components like a vibration table and laser device. Acquisitions of fiber interrogators and an Ocean Bottom Seismograph are underway. For geophysical observations on the subsurface, new NuSeis Geophones are being acquired

and tested at the PITOP facility, alongside the acquisition of fiber cables and interrogators. In airborne geophysical observations, very high-resolution magnetic and GPR drones have been acquired and are slated for testing, with tenders open for additional sensors.
Initial tests of geophysical equipment, such as Syscal Terra for groundwater mapping and microtremor signal estimation in urban areas, have been successfully conducted. InSAR vertical displacement monitoring for soil deformation and landslides in Potenza and Tito is ongoing.
For the Earth Observation Infrastructure using Airborne SAR (CNR-IREA), activities include reviewing and training on new software and adapting focusing algorithms for the Airborne SAR system. Preliminary tests with multi-channel multi-frequency GPR have been conducted, informing data processing strategies, and ongoing research is adapting interferometric SAR chains and optimizing GPR through advanced processing.
Finally, for the integrated platform for surface movements monitoring (UNIFI ATLAS), the development of a platform to distribute data for observing and forecasting ground deformations is progressing. This includes the display of planimetric and 3D data, real-time monitoring, and a dashboard for emergency management, with examples of forecasting models being showcased for test sites like Friuli Venezia Giulia.

Figure 8. WP7 – Geosphere Landsurface.

2.1.8 WP8 – Virtual Research Environments and cross-disciplinary activities

Presented by Dr. Antonello Provenzale (CNR-IGG)
Dr. Eugenio Trumpy (CNR-IGG)

Substantial progress was showcased in the development and functional implementation of the Virtual Research Environments (VREs). The core achievement lies in the successful establishment of a VRE system that effectively integrates data, information, and knowledge originating from diverse Research Infrastructures (RIs) across the atmospheric, marine, terrestrial biosphere, and geosphere domains, all aimed at tackling complex scientific and societal challenges.

A fundamental component demonstrating robust progress is the D4Science e-Infrastructure, which serves as the underlying network of hardware and software resources. This infrastructure is actively supporting collaborative and data-intensive science, facilitating shared access to various facilities for researchers globally. Crucially, the ITINERIS D4Science Gateway (itineris.d4science.org) is fully functional, acting as the primary portal for users to request access to the VREs and manage file uploads to their workspaces.

Specific VREs highlighted significant advancements:

- The Critical Zone (CZ) VRE has matured considerably, now boasting 28 active members. It has successfully published 149 datasets within its catalogue and made 11 processes and models readily available to users. Furthermore, it incorporates social networking features and offers a variety of machine and service types, including RStudio configurations and Linux/Python/Julia/Notebooks environments, to support diverse analytical needs. This VRE is actively acquiring and publishing data, including CO2 fluxes from various monitoring sites and hosting relevant R and Fortran/Python codes for analytical tasks.
- Similarly, the Isotope VRE is fully operational with 13 members. It represents the first comprehensive suite specifically designed for isotope data management, manipulation, harmonization, and analysis. This VRE facilitates data upload, querying, external site exploration, various data plotting functionalities (binary,

ternary, normalized diagrams), and data modeling, with capabilities for downloading figures and data.

Beyond these core VREs, progress was also presented in specialized VRE applications. An exemplary case is the VRE dedicated to the Investigation of the temporal variation of Chlorophyll-a (Chl-a) and net primary production (NPP) in aquatic components.

Similarly, substantial progress is evident in the development of a dedicated digital environment for Carbon-related data and dynamics. This platform is being designed to store spatially explicit carbon-related datasets, fostering enhanced data sharing, comprehensive analysis, and innovative research.

Figure 9. WP8 - Virtual Research Environments and cross-disciplinary activities.

2.2 DAY 2: THURSDAY, JULY 10, 2024

The second day of the meeting commenced with a concentrated focus on the implementation and data-centric aspects of the ITINERIS HUB. This session delved into its foundational mission, design, and key components, emphasizing its role as a singular access point for environmental research data and services.

Later in the day, the wrap-up presentation offered a comprehensive summary of the ITINERIS project's overall progress. It highlighted pivotal actions emerging from the plenary discussions and delineated critical considerations for future project phases.

The afternoon session transitioned into several parallel tracks designed to foster extensive knowledge exchange and disseminate achieved results. These sessions featured both Poster and Short Oral Presentations, providing a platform to showcase and elaborate upon relevant contributions and activities carried out across the various Work Packages.

2.2.1 ITINERIS HUB

Presented by Dr. Carmela Cornacchia (CNR-IMAA), Dr. Giuseppe Gargano (CNR-IMAA), Dr. Ilaria Rosati (CNR-IRET), Dr. Claudio Dema (CNR-IMAA), Dr. Ermann Ripepi (CNR-IMAA)

The ITINERIS HUB was presented as the singular access point for a comprehensive collection of knowledge, data, analytical tools, and services provided by Italian Research Infrastructures (RIs) within the environmental scientific domain. A primary challenge it aims to address is overcoming the diverse maturity levels among different RIs, some of which already offer open access data and services, while others do not. To ensure interoperability and integrate best practices while introducing innovative features tailored to user requirements, a thorough study of existing solutions was conducted.

The main features and tools of the HUB were detailed, with particular emphasis on the ITINERIS Catalogue. This was described as the primary user tool, serving as a comprehensive online registry equipped with advanced search capabilities and detailed metadata to facilitate easy access to knowledge, data, analytical tools, and services.

The presentation underscored the critical importance of Technical, Organizational, Legal, and, notably, Semantic Interoperability. Semantic interoperability, vital for unambiguous data meaning and machine computability, was highlighted as a fundamental principle of the FAIR (Findable, Accessible, Interoperable, Reusable) guidelines. Approaches to achieving this within ITINERIS include collecting and FAIRifying existing semantic artifacts (such as controlled vocabularies and ontologies) used by RIs, and actively developing new ITINERIS semantic artifacts.

The technical and architectural choices for the ITINERIS HUB and Catalogue were also presented, firmly rooted in open-source technologies like CKAN and GeoNetwork, which are widely recognized in the international community and already utilized by many ITINERIS RIs.

To ensure a unified catalogue, standardized metadata schemas are being adopted, including ISO 19139 for datasets and EOSC metadata profiles for services, VREs, research products, and training resources.

A key component highlighted was the ITINERIS Data Hub, specifically designed to facilitate data discovery through an intuitive web interface for searching geospatial data across multiple catalogs. Features like robust metadata editing capabilities, and an interactive web map viewer based on OpenLayers, were also emphasized.

Significant progress was reported on a Proof of Concept (PoC) for the ITINERIS Data Hub, which commenced with the Atmospheric domain. This PoC, successfully demonstrated and now accessible online, integrates data from ACTRIS ARES. This initial implementation has provided invaluable lessons regarding data ingestion via REST API, efficient data parsing, and the critical necessity of data format standardization for all ITINERIS-handled data. The experience gained from integrating ACTRIS ARES data has directly informed the selection of standards for both the ITINERIS Data Hub and Catalogue, including methods for metadata harvesting by API and dedicated code for ICOS (using SparQL).

2.2.2 DISCUSSION AND CONCLUSIONS

The wrap-up presentation, provided a comprehensive summary of the ITINERIS project's progress, highlighted key actions stemming from the plenary discussions, and outlined critical considerations for future steps.

The project has consistently advanced, successfully achieving its foreseen objectives through the active participation and effective teamwork demonstrated by all partners and participants.

The speech of the scientific coordinator Dr. Gelsomina Pappalardo underlined and gave the perspective to align on the strategic objectives and the next phases of the project.

Looking ahead, as the project progresses, sustained and consistent interaction across all Operational Unit (OU), Work Package (WP), and coordination levels is paramount. This collaborative effort is crucial for ensuring the timely completion of all activities and for proactively addressing any potential risks. The timely preparation of monitoring information is becoming increasingly vital; it enables the early identification of issues at the WP/activity level, allowing the Executive Board to promptly discuss risks and implement mitigation actions.

Intensified collaboration among Work Packages and coordination activities by WP1 and WP2 are also considered essential to foster discussions that will ensure harmonization and facilitate proposed integrations with the overarching ITINERIS HUB and its Catalogue of Resources.

Finally, acknowledging some noted delays, particularly concerning the installation of acquired instruments and unstarted procedures, it was highlighted the need to prioritize and complete all pending procedures well in advance of the project's conclusion. This proactive approach will ensure that all related scientific activities can be fully realized.

The presentation concluded with a strong acknowledgment of the active participation and effective teamwork demonstrated by all project participants and the Research Performing Organizations (RPOs) hosting the ITINERIS RIs. Special recognition was given to the Italian Environmental RIs scientific community and, particularly, to the CNR for its continuous support in coordinating such a demanding and ambitious project.

2.2.3 SHORT ORAL PRESENTATION AND POSTER SESSIONS

On the second day of the meeting, the afternoon was dedicated to intensive knowledge sharing.

24short oral presentation sessions were held in the Sala Marconi of the CNR, providing the opportunity to present and discuss the main project results.

Concurrently, a vibrant Poster Session was set up in the conference room corridors. A total of 110 posters were showcased on 15 screens, with each poster referent providing a dedicated presentation of approximately 15 minutes.

The slides from both the oral presentations and the posters are accessible via the provided link: POSTER SESSION and SHORT ORAL PRESENTATION SESSION

ANNEX 1 – AGENDA

ITINERIS

2nd GENERAL PROJECT MEETING
SALA CONVEGNI CNR | ROMA

AGENDA 09/07/2024

SESSIONI PARALLELE				
10:00 12:30	Workshop WP4 (Sala Convegni*)	Workshop WP5 (Sala Golgi*)	Workshop WP6 (Sala Taurini*)	Workshop WP7 (Sala Silvestri*)
	Sala con posti limitati. La partecipazione ai Workshop è riservata su invito dei WP leader			

SESSIONE PLENARIA		
12:00 14:00	Registrazione Foyer Sala Convegni	
12:30 14:00	Pranzo	
14:00 14:10	Saluti e apertura lavori	**Gelsomina Pappalardo** (CNR)
14:10 14:20	WP1 – COORDINATION AND MANAGEMENT	**Giuseppe Gargano** (CNR)
14:20 14:40	WP2 – ACCESS TO FACILITIES, FAIR DATA AND RELATED SERVICES	**Carmela Cornacchia** (CNR) **Ilaria Rosati** (CNR)
14:40 15:00	WP3 – ITINERIS TRAINING PROGRAMME	**Alberto Basset** (CNR)
15:00 15:30	WP4 – ATMOSPHERE	**Lucia Mona** (CNR) Interventi di: D. Contini (CNR), G. D'Amico (CNR)
15:30 16:00	Coffee break	
16:00 16:30	WP5 – MARINE DOMAIN	**Rosalia Santoleri** (CNR)
16:30 17:00	WP6 – TERRESTRIAL BIOSPHERE	**Dario Papale** (CNR) Interventi di: S. Armeli Minicante (CNR), E. Pedrazzini (CNR), G. Guidolotti (CNR)
17:00 17:30	WP7 – GEOSPHERE-LANDSURFACE	**Giuliana Rossi** (OGS) Interventi di: I. Catapano (CNR), V. Giampaolo (CNR), G. Gigli (UNIFI)
17:30 18:00	WP8 – VIRTUAL RESEARCH ENVIRONMENTS AND CROSS-DISCIPLINARY ACTIVITIES	**Antonello Provenzale** (CNR) Interventi di: E. Trumpy (CNR), G. Coro (CNR), P. Bove (CNR), S. Marta (CNR), F. Caparrini (CNR), S. Gennaro (CNR), G. Vaglio Laurin (CNR), P. Di Giuseppe (CNR), E. Perrone (CNR), T. Semeraro (CNR), , L. Liberatore (CNR), J. Titocci (CNR), F. Monti (CNR)

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Ministero dell'Università e della Ricerca

SESSIONE PLENARIA		
09:30 11:00	ITINERIS HUB	**Carmela Cornacchia** (CNR) **Giuseppe Gargano** (CNR) **Claudio Dema** (CNR) **Ermann Ripepi** (CNR) **Ilaria Rosati** (CNR)
11:00 11:30	Coffee break	
11:30 12:30	ITINERIS HUB	**Carmela Cornacchia** (CNR) **Giuseppe Gargano** (CNR) **Claudio Dema** (CNR) **Ermann Ripepi** (CNR) **Ilaria Rosati** (CNR)
12:30 13:00	Wrap-up e conclusioni	**Gelsomina Pappalardo** (CNR)
13:00 14:30	Pranzo	

SESSIONI PARALLELE				
14:30 15:00	**Poster** (Corridoio multimediale)	**Short oral presentation** (Sala Polifunzionale e Sala Videoconferenze)		
15:00 15:30			**Workshop WP8** (Sala Convegni*)	**Workshop WP3** (Sala Silvestri*)
15:30 16:00				
16:00 16:30				
16:30 17:00				
17:00 17:30			**Sala con posti limitati. La partecipazione ai Workshop è riservata su invito dei WP leader*	

ANNEX 2 – LIST OF PARTICIPANTS

Name Surname	OU	Name Surname	OU	Name Surname	OU
Alessandro Fiore	DISTEBA -	Roberto Corsanici	CNR IBE	Caterina Mapelli	CNR-IMAA
Ludovico Lezzi	Universit‡ Salento	Daniela D'Esposito	CNR IPSP	Elena Benedetta Masi	UNIFI
Francesco Giangrande	University Salento	Fausto Ferraccioli	OGS	Daniela Meloni	ENEA
Lucrezia Luciani	CNR-IBBA-Milano	Lorenzo Cecchi	UNIFI-SMA	Giandomenico Pace	ENEA
Nora Zannoni	CNR ISAC	Stefano Di Natale	UNIFI-SMA	Claudio Dema	CNR-IMAA
Camilla Perfetti	CNR-ISAC	Enrico Fracassi	UNIFI-SMA	David Brankovits	CNR - IRSA
Marco Picone	ISPRA	Elisabetta Lori	UNIFI-SMA	Franco Lucarelli	INFN
Zeinab Arianpouya	University Salento	Andrea Lami	CNR IRSA	Caterina Mapelli	CNR-IMAA
Sherry Kyamagero	University of Bozen	Nikolaos Papagiannopoulos	CNR-IMAA	Elena Benedetta Masi	UNIFI
Matteo Salvadori	IGG-CNR	Alessandro Fiore	DISTEBA -	Daniela Meloni	ENEA
Mattia Sabatini	Università di Napoli	Ludovico Lezzi	Universit‡ Salento	Giandomenico pace	ENEA
Domenico De Paola	CNR-IBBR	Francesco Giangrande	University Salento	Claudio Dema	CNR-IMAA
Jaime Pitarch	CNR-ISMAR	Lucrezia Luciani	CNR-IBBA-	David Brankovits	CNR - IRSA
Elena Paoletti	IRET FI	Nora Zannoni	CNR ISAC	Nadia Russo	IREA CNR
Leonardo Lazzara	CNE - IRET	Camilla Perfetti	CNR-ISAC	Letizia Costanza	CNR-IGG
Massimiliano Assante	CNR-ISTI	Marco Picone	ISPRA	Antonella Buono	CNR-IMAA
Paolo Pettinari	CNR-ISAC	Zeinab Arianpouya	University Salento		
Silvio Marta	CNR -	Sherry Kyamagero	Universityof Bozen		
Walter Stefanoni	CNR-IRET	Domenico De Paola	CNR-IBBR		
Nadia Russo	IREA CNR	Roberto Corsanici	CNR IBE,		
Letizia Costanza	CNR-IGG	Mattia Sabatini	Universià Napoli		
Antonella Buono	CNR-IMAA	CNR-ISMAR Enrico Fracassi	UniFi-SMA		
Antonello Provenzale	CNR	UniSalento Elisabetta Lori	UniFi-SMA		
Andrea Travan	OGS	UniBz Andrea Lami	CNR-IRSA		
Ermelinda Bloise	ISAC Lecce	CNR-IGG Nikolaos Papagiannopoulos	CNR-IMAA		
Emilio Lapenna	CNR-IMAA	UniParthenope Caterina Mapelli	CNR-IMAA		
Francesca Caparrini	CNR	CNR-IBBR Elena Benedetta Masi	UniFi		
Giovanna Inserra	CNR ISMAR	CNR-IBE Daniela Meloni	ENEA		
Davide Vernazzani	ISMAR CNR	UniBz Giandomenico Pace	ENEA		
Marcello Felsani	CNR-ISMAR	CNR-IGG Claudio Dema	CNR-IMAA		
Matteo Salvadori	IGG-CNR	UniParthenope David Brankovits	CNR-IRSA		

Name Surname	OU	Name Surname	OU
Andrea Travan	OGS	Daniela D'Esposito	CNR-IPSP
Ermelinda Bloise	CNR-ISAC	Fausto Ferraccioli	OGS
Emilio Lapenna	CNR-IMAA	Lorenzo Cecchi	UniFi-SMA
Francesca Caparrini	CNR-IGG	Stefano Di Natale	UniFi-SMA
Giovanna Inserra	CNR-ISMAR	Enrico Fracassi	UniFi-SMA
Davide Vernazzani	CNR-ISMAR	Elisabetta Lori	UniFi-SMA
Marcello Felsani	CNR-ISMAR	Andrea Lami	CNR-IRSA
Alessandro Fiore	UniSalento	Nikolaos Papagiannopoulos	CNR-IMAA
Ludovico Lezzi	UniSalento	Caterina Mapelli	CNR-IMAA
Francesco Giangrande	UniSalento	Elena Benedetta Masi	UniFi
Lucrezia Luciani	CNR-IBBA	Daniela Meloni	ENEA
Nora Zannoni	CNR-ISAC	Giandomenico Pace	ENEA
Camilla Perfetti	CNR-ISAC	Claudio Dema	CNR-IMAA
Marco Picone	ISPRA	David Brankovits	CNR-IRSA
Zeinab Arianpouya	UniSalento	Franco Lucarelli	INFN
Andrea Travan	OGS	Mariasilvia Giamberini	CNR-IGG
Ermelinda Bloise	CNR-ISAC	Flavio Monti	CNR-IRET
Emilio Lapenna	CNR-IMAA	Daniela D'Esposito	CNR-IPSP
Francesca Caparrini	CNR-IGG	Fausto Ferraccioli	OGS
Giovanna Inserra	CNR-ISMAR	Lorenzo Cecchi	UniFi-SMA
Davide Vernazzani	CNR-ISMAR	Stefano Di Natale	UniFi-SMA
Marcello Felsani			
Alessandro Fiore			
Sherry Kyamagero			
Matteo Salvadori			
Mattia Sabatini			
Domenico De Paola			
Roberto Corsanici			
Sherry Kyamagero			
Matteo Salvadori			
Mattia Sabatini			

ANNEX 3 - PICTURES FROM THE MEETING


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LA LUCE DELLA SCIENZA CERCO E TI RISPETTO


LA LUCE DELLA SCIENZA CERCO E IL BENEFICIO
Energia pulita
Sostenibilità
Vito Volterra, 1931
→ Ensure user-friendly and well-documented resources and services to research communities;
→ Contribute to the cultural development of future generations of both Ris' users and employees;
→ Represent nationally/internationally recognised and reference 'Knowledge Competence Centres' to civil societies and citizen at large
Training needs
Ritrair
EOSC Future
EUDAT
ENVRI
LifeWatch ERIC
Consiglio Nazionale delle Ricerche


Marine domain
Terrestrial biosphere
Cross-disciplinary activities
Geosphere
Atmospheric domain
The activities of WP8 use data, information and knowledge generated by the individual RI to create a system of Virtual Research Environments (VRE), and provide services where RIs from different domains are harmonized to deal with scientifically and societally relevant topics.
This systemic approach will support the Italian role in several RIs and help taking a leading role to address complex,
"Muoiono gli imperi, ma i teoremi di Euclide conservano eterna giovinezza"
Vito Volterra, 1931
"Voi siete qui per un'opera che non è solo di studio di una scienza [...], ma è anche e soprattutto di formazione del pensiero, di elevazione delle menti, di maturazione delle coscienze"
Gustavo Colonnetti, 1944
Consiglio Nazionale delle Ricerche
Patrimonio culturale
Transizione ecologica
Energia pulita
Sostenibilità
7.6 Integrated platform for surface movements monitoring
Infrastruttura di Ricerca ATLAS
LA SCIENZA CERCO E L BENEFICIO


The OUs involved in ITINERIS
ITINERIS
DISSCO
Quality Indicators:
Minimum
Informations about
a Digital Specimens
(MIDS)
Goal
To
Reach
ITMAR
UNIFI
IBBR
IRSA
"Muoiono gli imperi,
ma i teoremi di Euclide
conservano eterna
giovinezza"
Vito Volterra, 1931
Patrimonio culturale
Transizione ecologica
Energia pulita
Sostenibilità
Consiglio Nazionale delle Ricerche
LA LUCE DELLA SCIENZA CERCO E L BENEFICIO
Next steps
The future work will consist of:
Producing new or updated FIPs for the various components of the ITINERIS HUB
Extending this practice to other national RIs or information management systems developed in ITINERIS
To provide a detailed and rigorous description of the FAIR-enabling practices adopted by different nodes and their level of FAIR convergence and connectivity.
Italian Marine Data Center
Helen Arctic Data Center
Data Hub FIP
Catalogue FIP
Training Centre FIP
VRE FIP
Access Platform FIP
Other national RIs
"Voi siete qui per un'opera
che non è solo di studio di
una scienza [...],
ma è anche e soprattutto
di formazione del pensiero,
di elevazione delle menti,
di maturazione delle
coscienze"


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