MISSIONE 4
ISTRUZIONE
RICERCA

D 3.14 Report: Second activity report of Activity 3.8

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1. INTRODUCTION

The deliverable 3.14 was planned to be released within the framework of the ITINERIS project and it is part of the activities of the Work Package (WP)3 concerning the activities organized in the second year of the project by all the OUs involved in Activity 3.8.

This deliverable is included into the Intermediate Objective 3.8 and it is produced under the responsibility of the Operative Unit (OU) of the National Research Council, Research Institute on Terrestrial Ecosystems (CNR-IRET).

The primary objective of Deliverable 3.14 is to provide a comprehensive overview of the training programs and activities updated to December 2024. The operational framework is managed by technologists assigned to the WP3 Training Centre, who oversee the entire course lifecycle, from thematic identification to resource allocation.

The document is structured in 5 chapters, including this chapter, beginning with this introductory section. Chapter 2 outlines the key operational activities and milestones achieved during the second year, including logistical procurement and the digitization of metadata for training resources. Chapter 3 provides a detailed overview of the training program, describing the specific courses developed and their learning objectives. Chapter 4 presents the technical and strategic framework for the ITINERIS Semantic Training Platform on Environmental Sciences. Finally, Chapter 5 provides the list of acronyms used throughout the report.

2. ACTIVITIES DEVELOPED IN THE SECOND YEAR OF THE PROJECT

During the second year of the project, we reached a key operational milestone with the successful awarding of the tender for the logistical and administrative management of the ITINERIS training program. This procurement (CIG: B0C25D1EDD) specifically addresses the requirements of Activity 3.8 with the primary goal to centralize essential logistical tasks, including travel arrangements, accommodation, catering, and the administrative management of lecturer contracts. By consolidating these services, we have significantly mitigated the administrative burden on Operating Units.

The full scope of the training program for Activity 3.8 is detailed in Chapter 3. Throughout this period, the team has focused also on developing the remaining Digital Training Objects (DTOs) originating from activities 3.6, 3.7, and 3.8. To ensure long-term sustainability and accessibility, all DTOs are being enriched with metadata following the FAIR principles. These metadata records are being integrated into both the ITINERIS and LifeWatch metadata catalogues and follow a metadata schema based on the EOSC Training Profile 5.0, appropriately adapted as specified in Deliverable D2.5 (Catalogue of data and services - Specification document).

The workflow for metadata creation involves:

Providers: WP3 technologists responsible for specific courses and resources.

Compilers/Authors: Individual resource providers who supply the detailed technical data.

Status: Metadata for completed course groups has been digitized and is currently awaiting final validation and publication.

Finally, as of December 2024, we have launched the procurement procedures for the development of the ITINERIS Semantic Training Platform on Environmental Sciences (detailed in Chapter 4), designed to serve as an interpretative compass within the landscape of environmental data and knowledge, enabling users to both consume and contribute new content. This ecosystem is supported by a streamlined metadata system that facilitates the seamless contextualization and reuse of every resource, ensuring long-term accessibility.

Moreover, the already existing resources, with appropriate Creative Commons licenses for standardized use and publication, that are currently hosted on the ITINERIS training platform will be connected to this new platform ensuring training continuity between the various WP3 training activities and digital resources.

3. TRAINING PROGRAMME DEVELOPED IN THE SECOND YEAR OF THE PROJECT

The training courses of Activity 3.8 focused on providing needs for Research Infrastructures (RI) employees involved in science communication with a program designed to offer six learning-by-doing courses and two intensive practical courses (courses n.7 and 8) with all the training materials produced and courses made permanently accessible through the ITINERIS Training Platform. The practical courses are planned to be led by RI employees who had completed the preceding training, and were specifically targeted towards stakeholders. The total number of training course is subject to an adjustment, with the possibility of increasing the curriculum up to a maximum of 10 courses to meet specific staff demands and infrastructure requirements. This flexibility is designed to ensure a comprehensive integration of all critical facets of scientific communication, anyway, this report considers the updates for the second year, reflecting the decisions and programs updated at December 2024. The expanded program can covers the development of advanced public speaking techniques tailored for diverse audiences, the creation of engaging visual materials such as scientific posters and presentations, and the strategic management of social media and podcasts to ensure effective digital outreach. Furthermore, the curriculum encompasses specialized training in science journalism, providing participants with the necessary skills to draft professional communication strategies and build robust implementation plans for long-term impact.

The operational framework was driven by the assigned WP3 Training Centre technologists, who provided comprehensive oversight of the course lifecycle. This role involved a detailed preparatory phase, including identifying key themes of interest for the Research Infrastructures and partner institutes, selecting qualified instructors, and managing the temporal and spatial allocation of resources (course's location selection, hotel scouting, catering arrangements,..). The entire organization was executed in close synergy with Forma.Lab S.r.l., the service provider selected via the tender to handle the secretariat and logistical duties, with the CNR-IRET Lecce unit acting as the focal node for the Training Centre.

Regarding participation, the team managed the identification, recruitment, and communication flow with participants. As documented in the bi-monthly reports and intermediate project objectives, the participant pool is primarily targeting staff members specialized in scientific communication within Research Infrastructures and Institutes. Furthermore, the program is open to ITINERIS PhD students to enhance their professional preparation and maximize their contribution to the specific RIs in which they are involved. In specific instances, the enrolment is also extended to PhD students from universities participating in WP3, ensuring a collaborative and cross-disciplinary learning environment. The support provided to participants was holistic, here are listed some of the actions provided by the technologists:

- Pre-Course: communicational and logistical assistance, administration of entry-level knowledge tests (when needed), registration on the relative course area on the ITINERIS training platform;

- During Course: on-site reception, training guidance provided also by the selected classroom tutors from Forma.Lab S.r.l., provision of the assessment exam via the ITINERIS training platform;
- Post-Course: continued assistance up to the issuance of certificates signed by the WP3 Leader, Prof. Alberto Basset, support for reimbursement of expenses when incurred.

To ensure high quality standards, a rigorous feedback mechanism was implemented. At the end of each event, every participant completed a comprehensive survey via the ITINERIS training platform. The survey consists of 37 questions organized into four distinct sections: (1) Course Goals and Overall Evaluation, (2) Teaching Quality, (3) Teaching Materials and Resources, and (4) Organizational Aspects. It includes 24 multiple-choice questions (rated on a scale of 1 to 5) and 13 open-ended questions to capture qualitative feedback.

Be advised that the number, titles, and delivery methods and training modules of the courses are subject to evolution or changes relative to the submission date of this document. for the most up-to-date schedule and details, please refer directly to the ITINERIS training platform accessible via the ITINERIS Hub or at the following Link: https://training.itineris.cnr.it.

TRAINING PROGRAMME

Course N.1

Title: Science communication: principles and foundations

Description: This course is aimed at researchers and technicians interested in acquiring new skills and tools to effectively communicate their research results. Through a combination of frontal lectures and practical activities, participants will learn to effectively use storytelling in communicating science to different audiences and how to visualise data according to different needs. They will have the chance to practice and improve their public speaking skills and will be introduced to outreach activities and the opportunities given by public engagement. Moreover, the course will introduce techniques for addressing globally recognized challenges such as climate change and risk communication.

The course is structured into nine modules and two different macro areas, an in-class lessons with practical exercises and a one full day field activity.

Training objectives: The course aims to improve skills in using storytelling in science communication; using and visualising data to shape stories of public interest; improving public speaking skills and becoming familiar with fundamentals of risk communication.

Course N.2

Title: Mastering Communications in RIs: from strategy to implementation

Description: This course provided a comprehensive training on how to communicate effectively Ris and how to draft a communication strategy and build an implementation plan. The program covers also technical aspects like website design and CMS management, and

practical skills for event management. Additionally, it delves into advanced topics such as using Zenodo for European projects, structuring communication for project proposals, and navigating European Commission reporting platforms to document impact.

The course is structured with an introduction to website design and CMS and a focus on event management, two modules on how to communicating Projects, spanning from proposal to implementation and a session dedicated to measuring the impact through web traffic analytical tool.

Training objectives: The course aims to provide skills on structure communication strategy and plan, list the website design and main content management system (CMS), explore elements of project communication and dissemination, analyse tools for project publication tracking through the FAIRness lens and identify web traffic metrics and analytical tools.

Course N.3

Title: Communication methods for scientific journalism

Description: This course provided researchers to navigate the scientific media landscape with confidence. While the goal isn't to turn them into a journalist, it provides the practical tools and foundational knowledge needed to translate complex research activities into easy and engaging public narratives. By demystifying how science becomes news, it helps participant to understand the "inner workings" of the scientific media.

The course is structured into four modules on introduction to Science Communication; fundamentals of science journalism; identify and proposing Science news; interacting with the Media.

Training objectives: The course aims to improve the communication of researchers and technicians, manage correctly the interactions of scientific environment with the media and understand the public perception of science environment.

Course N.4

Title: The art of communication: Presentations design

Description: This course is designed to equip researchers and technician with both theoretical and practical tools to effectively share and communicate scientific results. The program covers the fundamentals of science communication, the use of media, branding, and the organization of live and online events. The course combines theory and hands-on experience to turn complex content into clear and engaging messages.

The course is structured in four days programs with modules on science communication topics through real use cases scenarios, building project communication plan and strategy

using Lego Serious Play, graphic design & branding images, motion graphics, video e visual storytelling with many practical workshop.

Training objectives: The course aims to provide participant with theoretical and practical skills in key nodes of scientific communication, bridge the gap between scientific contents and audiences, and, establish a clear and unified identity for scientific research and projects to strengthen their impact and visibility.

Course N.5

Title: Podcast and video for science communication

Description: This course provided a complete journey through video podcast creation, guiding participants from the initial concept to the final broadcast. It allow participants to master the essentials skills of audio storytelling, professional recording, and post-production, with a specific emphasis on educational formats and communication useful for the research infrastructures.

The course is structured into four days with theory with hands-on practice that allow to develop an original video podcast project and publish it on major platforms. Additionally, the program covers digital marketing to ensure the content reaches the widest possible audience.

Training objectives: Participants design and structure an effective podcast series focus on their specific discipline while mastering fundamental audio storytelling and hosting techniques. They learn to correctly use professional recording equipment and manage the entire audio post-production process. Finally, they publish and promote their podcast projects on major platforms to ensure their research reaches a global audience.

Course N.6

Title: Science communication in the Digital Era: social media

Description: This training course is designed for researchers and early career scientists who want to improve their ability to communicate effectively the research infrastructures' activities through the relative social media. The course provides practical tools to develop a personal or institutional online presence, build visibility and engage with many target audiences.

The course is structured into five microtips: Science on Social Media, digital identity as a Researcher, communication strategy for research projects and institutions, writing and producing for digital formats, information disorder and digital risks.

Training objectives: The course aims to allow participants to understand the role and influence of social media in shaping science communication for research infrastructures;

apply the key principles of branding; understand and plan the key nodes of a communication strategy for research projects or institutions; learn the basics of how to write content for social media; understand the most common public communication risks on digital platform.

Course N.7

Title: Scientific communication toward stakeholders and public

Description: This intensive, advanced-level practical course provides a strategic opportunity for Research Infrastructure personnel (specifically those who have completed the preceding course 1-6) to apply and refine their science communication competencies. Participants will be tasked with delivering lectures on their specific research areas to a target audience of stakeholders, primarily teachers and students from primary and secondary schools. This hands-on approach is designed to bridge the gap between theoretical knowledge and real-world engagement.

Course N.8

Title: Citizens in science for a healthier and more sustainable global Earth system

Description: Thanks to the advanced ITINERIS training program in science communication, the research infrastructure personnel will act as a bridge between academia and society. Lecturers leverage the full spectrum of communication skills acquired in previous modules (1-6) to break down technical language barriers. By decoding inherently complex environmental research lines, they reshape them into clear, inspiring, and perfectly tailored messages for teachers, students, and engaged citizens. Through the mastery of storytelling and conceptual simplification, participants transform global health and sustainability topics into deeply engaging narratives. By employing empathetic, impact-oriented language, they ensure that scientific research resonates with the public's daily lives and concerns.

4. ITINERIS SEMANTIC TRAINING PLATFORM ON ENVIRONMENTAL SCIENCES

The ITINERIS Semantic Training Platform on Environmental Sciences is designed as a cutting-edge instrument for knowledge transfer and active citizen engagement. Its primary target is the school community (students and teachers), identified as a key stakeholder to ensure the long-term impact and widespread dissemination of the outputs produced by Environmental Research Infrastructures.

The development of the platform is managed through a specific tender procedure, published on October 31, 2024, with a total allocated budget of €561,600.00. The technical and financial evaluation of the bids is expected to conclude by January 2025, followed by the contracting phase in the subsequent months.

Objectives and Functionalities

The core objective is to ensure the timely, structured, and continuous transfer of scientific knowledge on key general interest topics, maintaining the legacy of the resources produced beyond the formal conclusion of the ITINERIS project. By adopting a "*science communication and knowledge navigation" approach*, the platform facilitates the systematic dissemination of multidisciplinary research activities and materials.

Platform's users act as both spectators and protagonists in the cultural and knowledge exchange, with the ability to upload digital content. This process is streamlined by simplified, user-friendly metadata, which is reviewed and validated by backend administrators to ensure quality standards. Consistent with FAIR principles and the project proposal, a significant portion of the training materials produced during activities 3.6, 3.7, and 3.8, that are currently available on the ITINERIS training platform (https://training.itineris.cnr.it); will be accessible and reusable, strictly adhering to the relevant Creative Commons Licenses.

The platform is engineered to host a wide range of heterogeneous digital content, including documents (.pdf), presentations (.ppt), videos (.mp4), images and podcasts, in fact, within the framework of Activity 3.8, the production of a series of scientific talks is designed to serve as a strategic compass for the digital journey. These talks are intended to escort users through the currents of digital knowledge, providing the necessary interpretive keys to effectively navigate through various training resources and course groups. The ultimate goal is to transform resources access into a guided and immersive learning experience across the vast sea of the digital knowledge of the Semantic Training Platform.

5. LIST OF ACRONYMS

CIG: Tender Identification Code

CMS: Content Management System

FAIR: Findable, Accessible, Interoperable and Reusable

OU: Operative Unit

RI: Research Infrastructure

WP: Work Package