

EPOS ERIC

ACTIVITY AND FINANCIAL REPORT 2024



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Table of contents

FOREWORD	5
1. ACTIVITIES AND RESULTS	8
1.1 Operation of the Executive Coordination Office (ECO)	8
1.2 Hosting and Operation of the Integrated Core Services Central Hub (ICS-C)	10
1.3 TCS Governance and Services under the EPOS Delivery Framework	11
1.4 Development of the ICS-TCS System	12
1.5 Sponsored Research Activities	13
1.6 International Cooperation	14
1.7 Communication and Dissemination	15
1.8 EPOS ERIC Boards and Committees	18
1.9 European Projects	20
1.10 Policies	24
1.11 Risk and Performance Management	24
2. FINANCIAL STATEMENTS	25
3. NOTES TO THE FINANCIAL STATEMENTS	29
4. AUDITORS REPORT	46

FOREWORD

In 2024, the European Plate Observing System European Research Infrastructure Consortium (EPOS ERIC) completed the transition to full operational status by adopting the **EPOS ERIC Strategy 2024-2028**. This Strategy is based on the recommendations of the EPOS SP Project (2020-2023) to ensure long-term sustainable operation, and includes **Business Model**, **Science Program**, and **Sustainability Plan**. The entire Strategy is informed by the discussion with the EPOS Community and insights gathered from the EPOS ERIC Scientific Board, guided by the positive conclusions and recommendations received from the External Evaluation Panel (EEP). Communication activities were reorganised to ensure alignment and synergistic action with the EPOS Science Program.

A key highlight for 2024 was the **ESFRI Landmarks Monitoring**, which reconfirmed EPOS' status as an ESFRI Landmark Label. The ESFRI panel evaluation report, issued in June 2024, acknowledged EPOS successful transition to an operational stage, and highlighted its success as a pan-European Research Infrastructure, particularly noting its strong management, broad coverage, and open access capability. Recommendations for the future focus on enhancing data FAIRness, strengthening national node involvement, demonstrating socio-economic impact, and ensuring financial sustainability.

A pivotal development was the **launch of the EU-funded EPOS ON** (EPOS Optimization and Evolution), **project in September 2024**. Directly connected with the new EPOS ERIC Strategy, the project aims at strengthening and evolving the EPOS Research Infrastructure, focussing on achieving long-term sustainability by enhancing its value for scientific and IT communities and addressing societal challenges. A key objective is to expand the EPOS services portfolio and encourage new Thematic Core Services to broaden user access, particularly for Early Career Researchers globally. The **Kick-Off Meeting** organised in Rome (2-3 October) was instrumental to initiate EPOS ON community building and kickstart the project activities.

Engagement with the European Commission to discuss governance, financial sustainability, and international outreach, was also a key highlight. In particular, EPOS ERIC participated in the July 2024 **meeting between the European Commission's ERIC Team and the ERIC Forum Chairs**, as part of an ERIC Forum General Assembly initiative that supports bilateral meetings with the European Commission (EC) to allow ERICs to introduce themselves and discuss specific challenges, questions, and expectations. During the meeting EPOS ERIC highlighted the uniqueness of its approach, explained how it operates, and addressed key challenges and expectations on issues such as governance, financial sustainability, and international outreach. These discussions were insightful and paved the way for continued dialogue and deeper collaboration between EPOS ERIC and the European Commission moving forward.

In 2024, notable outcomes under the Service Coordination Committee's guidance included: a **new format of the Multi-Year Collaboration Agreement (MYCA)** to enhance collaboration between EPOS ERIC and the TCS by extending the duration and combining governance and coordination with data and service provision into a single agreement; and the update of the **TCS Cost Book** to improve information linkage between the 2021 Cost Book, MYCAs, and TCS services on the EPOS Platform and to provide updated TCS operational costs to the General Assembly. The TCS Cost Book is an EPOS ERIC internal document managed by the ECO, detailing costs exclusively for EPOS-related tasks. Also of

importance was the unanimous approval of the **EPOS Data, Data Products, Software, and Services Citation Guide**, expected to increase the citation and visibility of EPOS and the data and services available through its portal.

In 2024, significant strides were made in enhancing the Integrated Core Services Central Hub (ICS-C), with hosting organizations focusing on infrastructure upgrades, security enhancements, and operational optimization, leading to an impressive **99.73% yearly availability**.

Collaborative efforts between ICS and TCS resulted in the successful integration of new web services and the adoption of the **EPOS-DCAT-AP metadata model**.

Sponsored Research Activities advanced the **integration of Machine Learning capabilities within the ICS-C**, establishing a Virtual Research Environment and exploring collaborations for scalable distributed computing solutions, paving the way for a wider uptake of these technologies in the geoscience community.

A key achievement was **strengthening the collaboration with AuScope and EarthScope** through a new tripartite Memorandum of Understanding (MoU). The formalisation of the MoU builds on the existing collaboration between EPOS and AuScope, underpinned by the joint organisation of a TownHall meeting during the European Geosciences Union (EGU) General Assembly 2024, where EPOS and AuScope presented a Position Paper on Building an International Partnership for Solid Earth Research to a comprehensive range of key stakeholders. This event was instrumental in strengthening the links with EarthScope and involving them in the agreement. The resulting MoU was signed in September 2024 and officially presented to the Community in the occasion of the 39th General Assembly of the European Seismological Commission (22-27 September 2024, Corfu, Greece). Thanks to a formulation that allows for the inclusion of additional parties, the MoU designed not only to further the collaboration between the three research infrastructures, but also to extend the partnership to other global initiatives.

Throughout the year, EPOS actively engaged in event organization and maintained a presence at key international and community events. These included the **EGU24** where, in addition to the aforementioned TownHall meeting, EPOS co-organized an ESSI session with ENVRI Hub, and a Splinter Meeting on knowledge translation in collaboration with AuScope. EPOS also participated in the **World Conference on Earthquake Engineering (WCEE)** in Milan, the **G7 Conference on Large Research Infrastructures** in Sardinia, the **OECD Global Science Forum on research infrastructure ecosystems**, the **Base4NFDI User Conference** in Berlin, the **GEO Open Data Open Knowledge (ODOK) workshop** and the **10-year anniversary of CERIC-ERIC**.

The inaugural **EPOS Days**, held in March 2024, provided a platform for the community to outline strategies for enhancing EPOS' scientific relevance and impact. Key actions identified include adopting a science-driven approach, prioritizing user needs, optimizing national investments to advance scientific progress through engagement with national funders, expanding EPOS global influence, and establishing an effective interface with the private sector.

The EPOS ERIC **Gender Equality Plan (GEP)** Working Group assessed the progress of commitments and actions aimed at promoting gender equality within the organization. As part of the internal monitoring

activities the working group reviewed the implementation status of each measure and included the updates in a new version of the [public document](#) available on the EPOS ERIC website.

Other activities included revising and streamlining content on the TCS mini-site, an action started at the end of 2024 with the involvement of the Service Coordination Committee, and finalised in the first half of 2025. This is part of a broader strategy to **increase the engagement of the Service Coordination Committee** and other relevant representatives of the EPOS scientific community in strategic communication and training activities, also implemented in 2024 through the inclusion of Service Coordination Committee members or their delegates in the programme committees of the EPOS Days 2025 and of the first EPOS Summer School, scheduled for March and June 2025, respectively.

Leveraging strong community building and IT advancements, EPOS has significantly expanded its European and international collaborations, resulting in multiple Horizon Europe proposal submissions. These proposals span diverse areas such as climate change adaptation (EOSCLIMA), natural geohazards (GEMINI), the East African Volcanic Observatory (ENDEAVOR), methane emissions (CHESS), and quantum gravimetry infrastructure (EQUIP-G). These initiatives underscore EPOS' dedication to advancing solid Earth science through global partnerships and addressing critical global challenges.

This document presents the activities completed in 2024 to execute the 2024 Annual Activity Plan, which provides the annual framework for implementing the overall strategy. The report is structured into four sections: the first section, entitled "Activities and Results", delivers a comprehensive overview of the activities designed to meet the goals set in the 2024 Activity Plan and Provisional Budget. The second section contains "Financial Statements", including the Balance Sheet, Profit and Loss Account, and Cash Flow Statement. The third section includes "Notes to the Financial Statements", summarising the costs and revenues incurred in connection with the 2024 Activity Plan and Provisional Budget. The fourth section presents the "Auditors Report".

This Report has been approved by the EPOS ERIC Executive Committee (14th April 2025) and adopted by the EPOS ERIC General Assembly (26th May 2025, Resolution No. 1/2025).

1. ACTIVITIES AND RESULTS

The activities performed in 2024 were in accordance with the EPOS ERIC 2024 Activity Plan and Provisional Budget adopted by the EPOS ERIC General Assembly on 7th December 2023 (Resolutions No. 11/2023). Activities and results are detailed in the following paragraphs.

1.1 Operation of the Executive Coordination Office (ECO)

The Executive Coordination Office (ECO), representing the EPOS ERIC legal seat, is responsible for coordinating the EPOS Research Infrastructure, which includes the operation of the Integrated (ICS) and Thematic (TCS) Core Services. The ECO receives financial support from the Host Country, Italy, through the Italian Host Contribution provided by the Representing Entity, the Istituto Nazionale di Geofisica e Vulcanologia (INGV).

The Executive Director has the authority to appoint ECO Staff based on the specific operational and strategic needs of EPOS ERIC. The ECO Staff consists of both employees of EPOS ERIC and personnel seconded through in-kind contributions from INGV, as detailed in Table 1. The ECO Staff are organised into specialised "Units", each responsible for ensuring the continuous and effective operation of the Research Infrastructure. These responsibilities include administration, management, communication, information technology, and legal affairs. The operational sustainability of the EPOS Research Infrastructure is maintained through the coordinated efforts of the Executive Director, the Officers, and the personnel assigned to the respective units.

Additional employees have been integrated into EPOS ERIC throughout the year to enhance its operational capacity. This includes the recruitment of two Software Developers and an IT Project Lead to support the IT Unit, along with an EU Project Specialist to contribute to the project activities of the Management and Operations Unit.

Furthermore, the ECO Staff acts as the secretariat for the EPOS ERIC General Assembly and other governing bodies, ensuring effective communication and procedural alignment between governance and operational functions. In 2024, the ECO organised and followed up on two General Assembly meetings, one Scientific Board meeting, and one Ethics Board meeting. Additionally, six Service Coordination Committee and two Executive Committee meetings were successfully conducted.

Both EPOS ERIC employees and INGV in-kind personnel play an active role in the EPOS Delivery Framework, particularly regarding Horizon 2020 and Horizon Europe projects, as detailed in the "Projects" paragraph. Their involvement is based on their specialised skills and expertise, which align with the strategic objectives of EPOS ERIC.

Table 1. 2024 Human Resources Plan detailing person/months (P/M) for each ECO Unit.

	Unit	P/M
EPOS ERIC Employees	Administration	24
	Management and Operation	26
	Communication	22.5
	IT	32.5
	Sub-Total	105
INGV In-kind Personnel	Management and Operation	12.5
	Communication	13
	IT	18
	Legal Liaison	3
	Sub-Total	46.5
Total		151.5

1.2 Hosting and Operation of the Integrated Core Services Central Hub (ICS-C)

In 2024, the Hosting Organizations UKRI-BGS (UK) and BRGM (France) continued to operate and enhance the Integrated Core Services Central Hub (ICS-C) under the framework of the Multi-Year Partnership Agreement (MYPA) 2023-2025. The focus remained on increasing infrastructure capacity, strengthening security, and optimizing operations to ensure stable and reliable access to EPOS services.

Activities were structured across several key areas. The infrastructure, hosted by BRGM and UKRI-BGS and independently monitored by GEUS under a dedicated Multi-Year Collaboration Agreement with EPOS ERIC, was upgraded through hardware renewal and capacity planning to support development, staging, and production environments. Code management continued to rely on GitLab, with improvements in deployment pipelines and access control for the EPOS development team. The collaboration environment, provided via the MS Teams platform, played a crucial role in coordinating DevOps activities and ICS-TCS interaction meetings.

The Operations Team monitored infrastructure performance daily, intervening on storage, backups, and network security as needed. Security measures were strengthened through OSINT monitoring, Trivy scans, and updates to the risk register. A key contribution came from the Development Team and the EPOS IT Officer, who worked with the Hosting Organizations to support the architectural evolution of ICS-C. In 2024, the Architecture Committee was formalized, producing a series of Architecture Decision Records (ADRs) to outline future strategies.

From a performance perspective, overall annual availability reached 99.73%, surpassing the agreed target of 99.54%. Improvements in metadata query performance and database replication management contributed to optimizing system efficiency. Strategic planning activities included drafting the 2024 Capacity Plan, evaluating infrastructure requirements, and defining the 2025 Work Plan and Technical Annex to align with EPOS future objectives.

Operational excellence was maintained through the coordination of the DevOps team, which managed 12 major releases in production and staging along with numerous intermediate updates to enhance system functionality. Change and Release Management followed strict quality assurance protocols, ensuring the stability of deployed versions. Risk and incident management involved continuous updates to the risk register in collaboration with the EPOS IT Officer with structured procedures in place to handle security issues.

The 2024 activities have further strengthened the operational stability of ICS-C, reinforcing the role of IT infrastructure within EPOS and ensuring continued support for the European scientific community.

1.3 TCS Governance and Services under the EPOS Delivery Framework

In 2024, the ECO renewed the collaboration with the TCS through a new collaborative framework, discussed with the Service Coordination Committee, aiming to strengthen collaboration between EPOS ERIC and the TCS. A single agreement encompassing both governance and coordination activities, and data and service provision has been finalized and extended from three to five years to ensure a robust legal collaboration for the long-term sustainability of the EPOS Delivery Framework. The tasks included in the Multi-Year Collaboration Agreement (MYCA) have been defined in collaboration with the Service Coordination Committee in the frame of the TCS Cost Book 2024 update to achieve the objectives outlined in the EPOS Science Program (2024-2028), thereby ensuring the fulfilment of the EPOS Research Infrastructure's mission. The tasks are categorized into the following areas: i) **TCS Governance and Coordination**, which includes tasks related to the governance and coordination necessary for the operation of EPOS services; ii) **TCS Outreach**, focusing on tasks related to the dissemination and training events organized by TCS; iii) **Service Integration on the EPOS Platform**, which covers the technical development and operation of web services to be integrated into the EPOS Platform; iv) **DDSS Stewardship under EPOS**, encompassing tasks related to the integration of data into EPOS to ensure compliance with FAIR principles and EPOS policies, along with data quality management and aggregation.

In 2024, TCS Governance and Services activities involved fifty-seven organizations based in eighteen ERIC Member Countries, one Observer Country¹, and five European Countries involved in EPOS but who have not joined the ERIC yet².

Significant progress was made across various aspects of TCS operations. The TCS successfully updated and made accessible the Data, Data product, Software, and Services (DDSS) through the EPOS Platform, improving the richness and quality of metadata. Through collaboration between TCS, some DDSS were further enriched by processing and integrating relevant data, enhancing their overall quality and accessibility. Efforts to adopt a Persistent Identifier (PID) system were advanced and key collaborations with the ICS team contributed to the integration of web services compliant with a wider range of recognized standards. Furthermore, new web services were integrated, including Geophysical Sources from Inverse Modeling. TCS actively worked on strengthening strategic partnerships, including potential collaborations with the mining industry, while organizing a new webinar on induced seismicity which fostered global engagement. Additionally, collaboration among TCS members led to the submission of proposals for Horizon Europe calls. TCS also maintained their qualified participation in EPOS committees, ensured up-to-date financial planning through the TCS Cost Book update, and developed a robust communication strategy to promote TCS activities. Data management processes were streamlined, ensuring compliance with best practices. The year also saw improvements in service governance, interoperability, and sustainability, preparing for future expansions in the consortium. Details on the activities performed by each TCS during the 2024 are provided in the corresponding MYCA 2024 Work Plan and Technical Report.

¹ Austria, Belgium, Croatia, Denmark, France, Greece, Iceland, Italy, The Netherlands, Norway, Poland, Portugal, Romania, Slovenia, Spain, Sweden, Switzerland, United Kingdom; Germany.

² Czech Republic, Finland, Hungary, Ireland, Turkey.

1.4 Development of the ICS-TCS System

The ICS-TCS System was improved under the joint supervision of the IT Board and the ICS-TCS Interaction Team. Quarterly meetings of the ICS-TCS Interaction Group, attended by representatives from both ICS and TCS, focused on addressing the technical and scientific complexities crucial for its advancement and operation. The University of Bergen coordinates these activities through a dedicated Multi-Year Collaboration Agreement with EPOS ERIC.

The key activities performed in this framework included: **i) Organization of ICS-TCS Interaction Workshops**, throughout 2024, four interaction workshops were conducted, primarily in a virtual format, with one physical event merged with EPOS Days in Rome in March 2024; these workshops provided a platform for in-depth discussions on technical and scientific topics concerning the development and operation of the ICS-TCS System; in addition, mid-term pitch review meetings are organized between each development cycle to check progress in individual pitches and to assure smooth pitch execution. **ii) Participation in Training Activities**, EPOS actively participated in numerous training events, both physical and virtual, aimed at enhancing knowledge and collaboration within the scientific community; these included engagements at diverse conferences such as Nordic Geological Winter Meeting in Göteborg, EGU in Vienna, Congress of the Balkan Geophysical Society in Kopaonik (Serbia), European Seismological Commission GA in Corfu and Geo-Inquire Corinth Summer School in Corinth, among others; three training virtual events, including demonstrations of the EPOS Platform, also contributed to knowledge dissemination. **iii) Interactions with TCS**, this included handling requests from TCS users in GitLab and the EPOS intranet, as well as organizing and announcing ICS activities that required TCS involvement. Discussions and brainstorming sessions focused on enhancing and integrating service within the EPOS Platform. The ICS-TCS Interaction Team maintained close engagement with each TCS, overseeing the testing of new TCS services before their integration into the ICS. This process was supported by the adoption of the EPOS-DCAT-AP metadata model, which facilitated knowledge transfer between TCS and ICS. **iv) Management of issues from the issue-tracking system**, the ICS-TCS Interaction Team handled issues from the issue-tracking system, addressing matters related to developments (requests for new features), inclusion of new DDSS, and software bugs; this involved interaction with the hosting institution of the issue-tracking system to resolve issues promptly. **v) Participation in IT Board activities**, the ICS-TCS Interaction Team provided support to the IT Officer by managing interactions with ICS and individual TCS development teams; this included arranging individual preparatory meetings with TCS and extracting requirements received from feedback at various training activities, integrating them into corresponding development pitches; issues requiring attention from the IT Board, such as alignment with development priorities and the strategic plan, were selected and discussed during IT Board meetings. **vi) Contribution to BackOffice Development**, efforts were made towards the design and functionality of the BackOffice tool for metadata management; this included managing relevant input from various sources (e.g., DDSS Master Table and Cost Book), to ensure effective metadata handling. Additionally, usability testing was conducted to evaluate and refine the user experience, ensuring the tool's effectiveness and ease of use. **vii) Coordination and execution of tasks related to integration of ICS-D prototypes into ICS-C**, the goal was to collect existing Jupyter Notebooks (JNb) focusing on the usage of services already integrated into EPOS ICS.

1.5 Sponsored Research Activities

In 2024 the Sponsored Research Activities (SRA), under the dedicated agreement with KNMI, Cyfronet, and EPOS ERIC, continued to support the development of innovative solutions within EPOS, with a particular focus on integrating Machine Learning (ML) into the ICS-C. The main objective was to enhance the capabilities of the EPOS Platform to support data analysis through ML, providing tools and environments that facilitate the adoption of these approaches within the geoscience community.

An experimental infrastructure was designed and implemented to integrate EPOS data sources with Cloud Computing resources and High-Performance Computing (HPC) environments equipped with GPUs (Graphic Processing Units). At the same time, specific use cases were defined to guide development, ensuring that user needs remained central to technological choices. Such use cases will also drive future developments of the EPOS Platform user interfaces, as they elicit new requirements for allowing users to use ML functionalities.

This led to the creation of a Virtual Research Environment (VRE) developed at KNMI, which was later refined and made replicable through Docker-based containerization. The SWIRRL-API repository was reorganized to improve dependency management and optimize deployment efficiency.

In collaboration with Cyfronet, a dedicated Kubernetes infrastructure was set up to enable scalable computing, deploying the SWIRRL-API software to manage data processing workflows. As a result, new workflows were developed for the preparation of datasets in the Seisbench format, allowing users to create datasets directly from the EPOS Platform resources. Additionally, new metadata resources were registered to make ML datasets and services more accessible within the Platform. Initial experiments validated the integration of the framework, testing seismic event detection tools and phase association via Seisbench.

The 2024 SRA strongly contributed and influenced the implementation of the EPOS ERIC ICS-D by designing an architecture that integrates data offered by the EPOS Platform, cloud resources hosting data science tools, and resources for high performance computing required for the training of ML models. A crucial aspect of the 2024 activities was the exploration of computational resources integration from different stakeholders. ECO and the IT Board conducted a feasibility study to identify scalable distributed computing solutions, exploring collaborations with European Grid Infrastructure (EGI), Cyfronet, Italian universities (e.g., University of Turin), and national computing centers (e.g., CINECA). This study aims to ensure the long-term sustainability of scientific computing activities within EPOS, paving the way for further international partnerships. The structured integration of these resources represents a key step in the evolution of the EPOS ecosystem, making computational services more accessible and better suited to the needs of the scientific community.

The 2024 activities have laid the groundwork for a more data-driven approach within EPOS, with the goal of progressively expanding the ML infrastructure, improving service scalability, and strengthening collaboration with domain experts. The involvement of HPC providers and academic institutions will be crucial to consolidating these developments, facilitating the adoption of ML techniques in EPOS.

1.6 International Cooperation

In 2024 EPOS made significant strides in fostering international collaborations and advancing geoscience research through key initiatives and partnerships.

EPOS has continued to engage with relevant regional initiatives and organizations, namely ESA, Copernicus, EuroGeoSurveys, ECCSEL ERIC, EUMETNET, EUREF, JERICO, by strengthening the formalized relationships already created through Memorandum of Understanding (MoU) and similar forms of agreement. These collaborations aim to facilitate the exchange of scientific data based on FAIR data principles, as well as the sharing of practices, experiences, and solutions for the sustainable functioning of the infrastructure. Main highlights for 2024 regarding these existing MoUs include the development of two-year work plans (2024-2025) with EUREF and EUMETNET. With EUREF, the work plan focuses on harmonizing GNSS standards, mapping operational activities, and optimizing services. With EUMETNET, the focus is on interconnecting GNSS operations, ensuring long-term sustainability of GNSS-based data and services, and increasing synergies through mutual participation in key meetings. Both collaborations involve virtual meetings and joint presentations at relevant events.

For the collaboration with the Group on Earth Observations (GEO), of which EPOS is a Participating Organization, EPOS submitted proposals for ministerial tracks and side events for the GEO Global Forum, to be held in Rome in 2025. With the GEOSS platform undergoing significant upgrades and the recently drafted GEO in-situ data strategy open for community consultation, EPOS has started to look into federation opportunities with the EPOS Platform. A meeting to advance this activity is foreseen for the first half of 2025 at EGU25.

In 2024 EPOS and AuScope further strengthened their collaboration by carrying out significant joint activities. A highlight of the year was their collaborative effort at the 2024 European Geosciences Union (EGU) General Assembly where EPOS and AuScope organized a Town Hall event to present the Position Paper on "Building an International Partnership for Solid Earth Research" to a broad audience of key stakeholders. This event not only underscored the importance of international cooperation but also emphasized the need for a global approach to solid Earth science. The EGU also provided a unique opportunity to establish connections with EarthScope, the US non-profit organization dedicated to advancing global geophysical research. As a result of these ongoing efforts, EPOS formalized a new Memorandum of Understanding (MoU) in September 2024 with both AuScope and the EarthScope Consortium, that aims to further enhance collaboration between European, Australian, and US research infrastructures while expanding the partnership to include other global initiatives. The collaboration seeks to promote international partnerships, fosters open science, and enable more inclusive and equitable geoscience research worldwide. As a part of the MoU activities, several actions were started including the organisation of a workshop on the interoperability between the three Research Infrastructures, to be held at EGU2025, and a dedicated session and strategic meeting to be held at the 2025 edition of the EPOS Days. These activities also involved GNS NZ³, New Zealand's counterparts of EPOS, AuScope and EarthScope, with the objective to widen the multilateral MoU in the next few years.

³ <https://www.gns.cri.nz/>

1.7 Communication and Dissemination

During 2024, the EPOS ERIC Communications Unit continued to implement the operational plan for communications⁴. The plan, finalised in 2023, is based on EPOS existing communication strategy and mapped to the EPOS Science Program to ensure a coherent and synergistic action and was shared with the ECO and the TCS communication contacts.

Specific activities focused on the following key areas:

i) Visual identity, the work on visual identity furthers the revision of the visual identity manual, with the long-term objective of reinforcing and rationalizing the usage of the EPOS main brand and family branding (i.e., the national nodes and TCS' coordinated visual identity) across countries and communities, while increasing overall brand visibility and recognition. Additionally, the visual identity for the EPOS ON project was defined and a visual identity kit made available to project participants. EPOS ON visual identity is based on the EPOS one, with distinctive visual elements, to make the project easily identifiable while highlighting the link with the EPOS RI.

ii) Information materials and website, following the communication operational plan, the unit continued the revision of existing communication materials (EPOS brochure, poster, TCS leaflets, national node leaflets) and new ready-to-use printable and digital materials were offered to the EPOS Community; the Unit continued to update the website with news and other information. A notable activity was revising and streamlining all the TCS mini-sites' content, started at the end of 2024, with changes to be implemented in the first half of 2025. The action was discussed with the Service Coordination Committee and involved the communities to update the content. The requirements for the new website, including the content architecture and the definition of user personas, were completed and will lead to a tender to select a professional contractor that will implement the new site.

iii) Event organization and management, the main event organised in 2024 was the EPOS Days 2024⁵, held on 11-14 March 2024 in Rome. The event, the first large gathering for the EPOS Community, attracted 138 participants, more than initially anticipated. Collected feedback from the audience and the Service Coordination Committee was very positive and it was agreed to hold the event yearly. Based on the received feedback, some improvements were done in view of the EPOS Days 2025, notably the appointment of a Programme Committee with representatives from the TCS (including two Early Career Researchers) and the national nodes working alongside ECO personnel. The organisation of the 2025 edition started in August and continued throughout the second half of the year with registrations opening in December. Other major event-related activities in 2024 included 1) the organisation of EPOS participation in EGU24⁶, which included booth presence, a scientific session in collaboration with the ENVRI community, a Townhall meeting on global collaboration of geoscientific RIs, and a Splinter Meeting on Knowledge Translation, both organised in collaboration with AuScope in the framework of the existing MoU. 2) the organisation of EPOS participation to the World Conference on Earthquake Engineering (WCEE)⁷ in Milan, in collaboration with Eucentre and

⁴ <https://zenodo.org/records/14860590>

⁵ <https://events.epos-eu.org/event/16/>

⁶ <https://www.egu24.eu/>

⁷ <https://www.wcee2024.it>

the Built Environment Data (BED) community. EPOS' presence involved participation in sessions and a booth presence. 3) the EPOS ON Kick-Off Meeting⁸, held in Rome on 2-3 October, was dedicated to start the building of the project community and kickstart activities. On a smaller scale, the EPOS communication unit was also involved in the organisation of a science-industry workshop on November 21-22 in Dublin, to foster collaboration between science and industry in the field of high-temperature and near-magma geosciences. The workshop, in the framework of EPOS ON WP2 activities, was organised in collaboration with the Krafla Magma Testbed (KMT)⁹ and the Improve European Training Network¹⁰ project, and it was a good opportunity for EPOS to interact with industry players and Early Career Researchers. The Unit continued updating the shared dissemination event calendar (created during 2023) with the TCS communication contacts, to keep track of local/thematic events and to provide dissemination and communication support whenever needed; through this approach, we were able to provide communication support for a number of different events organised by the community, including conferences, poster sessions, exhibitions, and webinars. As a part of its work, the EPOS Communication Unit also supported the Executive Director and other ECO members in their participation in key events throughout the year (e.g. through the provisioning/streamlining of slides and scripts for speeches), including the G7 Conference on Large Research Infrastructures¹¹ in Sardinia, the Base4NFDI User Conference in Berlin¹², and the GEO Open Data Open Knowledge (ODOK) workshop in China¹³, the OECD Global Science Forum on research infrastructure ecosystems, and the 10-year anniversary of CERIC-ERIC¹⁴, all of which took place between September and November 2024.

iv) Social media, social media activities focused to further reinforce EPOS' existing social media presence on LinkedIn, Facebook, and X, building on the social media strategy defined in 2023, which focusses on posting consistently and involving the EPOS Community to help multiplying the impact and extend followers. At the end of the year, EPOS took the decision to cease all activities on X, deemed to be no more in line with the values that EPOS and its community uphold. Because of this decision, the focus of EPOS social presence moved to LinkedIn, which has shown a very positive trend, while additional platforms (e.g. Bluesky) are being evaluated for the future.

v) Training, user engagement through training and demonstration activities remained among EPOS' top priorities in 2024. Onsite training and demonstration activities were delivered by piggybacking conferences such as EGU24 in Vienna, WCEE in Milan and ESC in Corfu, among others. Several online sessions focussing on the EPOS Platform were organised throughout the year. In the framework of the Skills4EOSC project, a full set of FAIR-by-design training materials, spanning from Research Data Management basics for geoscientists to the usage of the EPOS Platform through thematic scientific use cases were created and made available on Zenodo¹⁵. The materials offer a complete toolkit for anyone in the EPOS community and beyond who would like to organise training sessions on these topics, including detailed trainers' notes and a training facilitator guide.

⁸ <https://events.epos-eu.org/event/18/>

⁹ <https://kmt.is/>

¹⁰ <https://www.improve-etn.eu/>

¹¹ <https://www.cnr.it/it/eventi/allegato/14047>

¹² <https://events.gwdg.de/event/658/>

¹³ <https://earthobservations.org/events/geo-symposium-and-odok-workshop>

¹⁴ <https://www.ceric-eric.eu/events/10-years-of-eric/>

¹⁵ <https://zenodo.org/records/14797589>

vi) Employer branding, in 2024 we continued employer branding activities, to increase the attractiveness of EPOS as an employer and drive skilled and motivated professionals to apply to job positions opened in 2024. Results in terms of quality and relevance of the applications continue to be encouraging, however the full potential of this strategy will be unleashed in time, ultimately benefiting not only EPOS ERIC, but also other EPOS members.

vii) Community building and engagement, EPOS is a complex and multifaceted universe encompassing many different actors throughout different countries and communities; the engagement of all these diverse components and stakeholders is pivotal to achieving success in any communication and outreach activities; for this reason, a stakeholder engagement action cross-cutting all specific activities is the key to achieve best results in this field; in 2024 the EPOS Communication Unit continued to engage with the TCS' and National Nodes' communication contacts. Attention was also posed in involving the Service Coordination Committee and TCS chairs or their delegates in communication-related activities (an example being the appointment of programme committees with members from the TCS for the EPOS Days and the 1st EPOS Summer School, to be held in June 2025). A major focus for 2024 was commencing the definition, in the framework of the EPOS ON project, of a complete plan for user engagement, especially focussed on the Early Career Researchers. The plan, to be delivered at the beginning of 2025 to the European Commission, serves as one of the project deliverables of the EPOS ON project and includes two major highlights for next year: 1) the organisation of an Early Career Researchers session at the EPOS Days 2025 and 2) the definition of the concept and programme of the first EPOS Summer School¹⁶, scheduled for the last week of June 2025 at Espai Cràter in Olot, Spain. Connected to the engagement of the scientific community is also the publication of the EPOS Data products Software Services Citation Guide (see section 1.11 Policies) as well as the creation of Zenodo communities for EPOS¹⁷ and the EPOS ON project¹⁸ (the latter being a part of the EU Open Research Repository). The communities, now being advertised across the communities, will be used to make EPOS-related outputs more visible and FAIR.

viii) Internal communication, during 2024, the Communication Unit addressed, in collaboration with the Unit Chiefs, the issue of improving internal communication and streamline workflows through a dedicated tool. Different task management and collaboration tools were examined and the choice settled on a mix of Monday (for task management) and Slack (for instant communication and collaboration), as the two are easily integrable. The Communication Unit was instrumental to create a first configuration of the Monday environment, and all units started to use the tool, with the Unit Chiefs and other relevant people in the ECO providing feedback to improve the organisation of the different areas. While, as usual with the adoption of new tools, there is room for further improvement in terms of structure and usage, the response of the ECO team was very positive, and first results are encouraging.

¹⁶ <https://events.epos-eu.org/event/26/>

¹⁷ <https://zenodo.org/communities/eposeu>

¹⁸ https://zenodo.org/communities/epos_on

1.8 EPOS ERIC Boards and Committees

The year 2024 signified a shift in the leadership of the EPOS ERIC governance, which was formalised concurrently with the renewal of the Executive Director's mandate for a term of three years.

The **General Assembly** convened on two separate occasions during its 22nd and 23rd meetings, which were conducted on May 30th and December 16th and 17th, respectively.

During its 22nd meeting, the General Assembly approved the EPOS ERIC Strategy for the period spanning 2024 to 2028, which comprises the Science Program alongside the Sustainability Plan. While recognising the prevailing challenges also posed by the global economy, the long-term sustainability of EPOS ERIC has remained a focal concern for the initiatives of the EPOS ERIC General Assembly. With support from the *Operations Working Group*, which convened on four occasions during the year, these efforts have been aimed at facilitating assistance to its members while identifying solutions that align the long-term sustainability objectives of EPOS ERIC with the financial challenges faced by member countries in fulfilling their obligations within the Consortium, especially amid the transition from contributed to nominal membership fees. During the 22nd meeting, a restructuring of the two advisory boards, namely the Ethics and Scientific Boards, was also finalised. In the context of contributions to solid Earth science, the General Assembly reaffirmed the scientific significance of the EPOS RI by endorsing the initiative to engage with Thematic Core Services through the participation of Community representatives who exhibited their activities during the 23rd General Assembly meeting. In December 2024, the General Assembly undertook a reorganisation and extension of the mandate of the Operations Working Group until 2025. Furthermore, the Assembly acknowledged the Panel Report on EPOS, as presented during the ESFRI Landmarks Monitoring, published on June 2024, which validates that EPOS retains its status as an ESFRI Landmark Label, and the reports submitted by the External Advisory Boards, which detailed recommendations regarding the issues addressed throughout the year.

The **Ethics Board** convened in Rome on 16th and 17th July to deliberate and provide guidance on several matters, including the participation of the EPOS Community in ethical considerations through the establishment of a dedicated Ethics Working Group. The agenda included the previous EPOS Ethical Guidelines, now recognised in two separate documents: the EPOS ERIC Code of Ethics and the EPOS Community Position Paper on Ethics. The meeting also addressed the implementation of the EPOS ERIC Gender Equality Plan, the EPOS Inclusive Language Guidelines, the EPOS ERIC Code of Conduct, and the implications of Artificial Intelligence (AI) for the EPOS Platform.

The **Scientific Board** convened remotely on October 9th to deliberate and provide guidance regarding the optimal strategies for implementing the recommendations derived from the 2023 EPOS evaluations, which were conducted by both the Five-Year External Evaluation and the ESFRI Landmark monitoring panels.

The **Service Coordination Committee** undertook significant activities during 2024. A new Chair was selected for a one-year term, and some changes were also acknowledged in its composition. The Service Coordination Committee met six times and was also consulted by the ECO through written protocols to gather and analyse the necessary information for updating the TCS Cost Book in partnership with TCS representatives. Among the notable outcomes for the Service Coordination Committee in 2024, the unanimous approval of the EPOS Data, Data Products, Software, and Services

Citation Guide is particularly significant. Additionally, the inaugural edition of the EPOS Days presented a valuable opportunity for the Service Coordination Committee members to disseminate a formal statement underscoring the scientific community's commitment to advancing EPOS ERIC. This Community Statement outlines strategies to elevate EPOS scientific relevance and impact, focusing on several key actions: embracing a science-based approach, prioritising a user-centred perspective, optimising national investments to enhance scientific progress while fostering discussions with national funders, increasing EPOS global influence, and establishing an effective interface with the private sector. The Service Coordination Committee was also deeply involved in revising and streamlining content on the TCS mini-site.

The essential and proactive role undertaken by the Service Coordination Committee in addressing the challenges faced by EPOS has been supported and complemented by the **Executive Committee**, which convened four regular meetings to provide guidance to the Executive Director in the preparation of the overall EPOS ERIC pertinent documents and activities.

Finally, **Internal Working Groups** were established in 2024 by the Executive Director to formulate data policies, evaluate risks, monitor performance, and address ethical considerations in EPOS.

1.9 European Projects

EPOS ERIC is involved in several European Union-funded projects (Horizon 2020, Horizon Europe and Digital Europe Programmes) to ensure sustainability, reinforcing the solid Earth science community, and enhancing knowledge-sharing and cooperation between research infrastructures and other international organizations.

EPOS ERIC in the role of project coordinator

EPOS ON, EPOS Optimization and Evolution (September 1st, 2024 – August 31st, 2027; 31 beneficiaries; coordinator EPOS ERIC, Italy). European Programme: HORIZON EUROPE, EXCELLENT SCIENCE, European Research Infrastructures, Developing, consolidating, and optimising the European research infrastructures landscape, maintaining global leadership topic. Based on the achievements of the previous EU projects on the design, implementation, and pre-operation of the EPOS RI, the EPOS ON project will support the consolidation of the infrastructure and pave the way for its further evolution. The project will enable the EPOS RI to meet long-term sustainability conditions for operation, relying on its ability to create value for the scientific and IT communities and to produce new insights for contributing to societal challenges related to risk management and environmental impact reduction. EPOS ON aims to enhance the EPOS services portfolio and develop new institutional and scientific collaborations by fulfilling the needs of different communities and by encouraging the establishment of new EPOS Thematic Core Services. This will provide the necessary impulse to expand access to data and services to a wider pool of users, in particular Early Career Researchers, at both the European and global scale. User engagement will also increase thanks to the new generation of processing and workflow services developed during the project. EPOS ON is also devoted to shortening the gap between science and the private sector by enabling knowledge transfer and technological innovation. As a result, EPOS ON will reinforce the EPOS capability to unite scientific communities and countries, reducing fragmentation in the European Research Area. EPOS ON offers a timely opportunity for the optimization and evolution of the EPOS RI and reflects the strong commitment of its community to boosting EPOS impact.

EPOS ERIC in the role of project beneficiary

EOSC Future, (April 1st, 2021 - March 31st, 2024; 36 beneficiaries; coordinator ATHENA, Greece). European Programme: HORIZON 2020, Excellent Science, European Research Infrastructures, Development, deployment and operation of ICT-based e-infrastructures topic. The project aims to integrate, consolidate and connect e-infrastructures, research communities and initiatives supporting open science to advance the EOSC platform of services (EOSC-Core, EOSC-Exchange, Interoperability Framework). The project also seeks to reveal the potential of European research by connecting the major stakeholders in the EOSC ecosystem, developing scientific use cases in collaboration with the communities, engaging the broader EOSC community, and increasing its visibility. In 2024, EPOS ERIC and its Linked Third Parties INGV, KNMI and CNR-IREA were involved in activities related to the definition of the architecture, interoperability guidelines and frameworks needed for the EOSC-Core and EOSC capabilities and integration of community services and products into EOSC, and, in particular, the Integration of EOSC-Core Services into European research practice.

GREAT, The Green Deal Data Space Foundation and its Community of Practice (September 1st, 2022 – April 30th, 2024; 22 beneficiaries; coordinator IDC ITALIA SRL, Italy). European Programme: DIGITAL EUROPE, DIGITAL Coordination and Support Actions. The project, funded under Digital Europe, aims to establish the Green Deal Data Space Foundation and its Community of Practice. It will deliver a roadmap for implementing and deploying the Green Deal Data Space, an infrastructure that will allow data providers and initiatives to openly share their data to tackle climate change in a multidisciplinary manner. In 2024, EPOS ERIC and its affiliated entities INGV and IG PAS were involved in activities related to the Green Deal Data Community Engagement.

DT-GEO, A Digital Twin for GEOphysical extremes (September 1st, 2022 – August 31st, 2025; 15 beneficiaries; coordinator CSIC, Spain). Programme: HORIZON EUROPE, EXCELLENT SCIENCE, European Research infrastructures, The innovation potential of European Research Infrastructures and activities for Innovation and Training topic. The project will deploy a prototype Digital Twin (DT) on geophysical extremes consisting of interrelated Digital Twin Components (DTCs) dealing with geohazards from earthquakes (natural or anthropogenically induced), volcanoes, and earthquake/landslide-triggered tsunamis, with long-term vision towards Destination Earth. EPOS ERIC was mainly involved in activities related to the identification and metadata preparation of architectural components of the workflows.

Skills4EOSC, Skills for the European Open Science Commons: Creating a Training Ecosystem for Open and FAIR Science (September 1st, 2022 – August 31st, 2025; 44 beneficiaries; coordinator CONSORTIUM GARR, Italy). Programme: HORIZON EUROPE, European Research infrastructures, Consolidating and Developing the Landscape of European Research Infrastructures, The Innovation Potential of European Research Infrastructures and Activities for Innovation and Training, Supporting an EOSC-ready digitally skilled workforce topic. The project brings together leading experiences of national, regional, institutional and thematic Open Science and Data Competence Centres from 18 European countries with the main goal of unifying the current training landscape into a common and trusted pan-European ecosystem, to accelerate the upskilling of European researchers and data professionals in the field of FAIR and Open Data, Data Science, and Scientific Data Management. EPOS ERIC and its affiliated entities, INGV and UIB, were involved in activities related to Open Science training for evidence-based policy and public administration, and Open Science skills for RIs and communities.

Geo-INQUIRE, Geosphere INfrastructures for QUestions into Integrated REsearch (October 1st, 2022 – September 30th, 2026; 48 beneficiaries; coordinator GFZ, Germany). European Programme: HORIZON EUROPE, EXCELLENT SCIENCE, European Research infrastructures, Opening, Integrating and Interconnecting Research Infrastructures topic. The project, in strong cooperation with EPOS, will provide virtual and trans-national service access to data and numerical models and workflows with HPC resources for monitoring and simulation of the dynamic processes in the geosphere at unprecedented levels of detail and precision. In 2024, EPOS ERIC was mainly involved in activities related to the access and harmonization of integrated research infrastructure services for the next generation of data, services, and products.

ERIC Forum 2, Second implementation project for the ERIC Forum (September 1st, 2023 – August 31st, 2027; 25 beneficiaries; coordinator BBMRI-ERIC, Austria). European Programme: HORIZON EUROPE, EXCELLENT SCIENCE, European Research infrastructures, Coordination and Monitoring of the European Research Infrastructure Consortia (ERICs) topic. This project aims to structure the

cooperation between ERICs, support the implementation of the ERIC Regulation and ERICs services and consolidate the integration of the ERICs in the European Research Area by deepening the ERIC Forum's contribution to research policies. In 2024, EPOS ERIC engaged in initial activities related to ERICs and the European Science Policy & Research Strategy.

ENVRI-Hub NEXT, ENVironmental Research Infrastructures delivering an open access Hub and NEXT-level interdisciplinary research framework providing services for advancing science and society (February 1st, 2024 - January 31st, 2027; 18 beneficiaries and 3 affiliated entities; coordinator EGI Foundation, The Netherlands). European Programme: HORIZON EUROPE, EXCELLENT SCIENCE, European Research Infrastructures, Consolidation of the RI landscape – development of complementarities, synergies and/or integration between a set of pan-European research infrastructures topic. ENVRI-Hub NEXT develops and implements the open access hub to the data and services provision framework of the Cluster of Environmental Research Infrastructures (ENVRI) and connects the environmental research community to the European Open Science Cloud. The overarching goal of ENVRI-Hub NEXT is to consolidate and advance the robust conceptual and technical structure established by the ENVRI-Hub to empower the ENVRI Science Cluster to provide interdisciplinary data-driven services. These services will support climate change research, including the development of mitigation and adaptation measures and strategies, and the assessment of the climate change risks. Through this platform ENVRI-Hub NEXT will facilitate the integration of the environmental sciences community into EOSC, guided by the concept of Essential Climate Variables. In direct answer to the Call Topic, ENVRI-Hub NEXT expands the frontiers of multidisciplinary environmental sciences by fostering operational synergies between ENVRI RIs and developing and utilising complementarities in their data and services provision. The joint forces of ENVRI and e-infrastructures allow for the integration of cutting-edge information technology, alignment with the EOSC architecture, and efficient resource allocation for the advancement of a more integrated, productive, and globally competitive ENVRI Science Cluster. The ENVRI-Hub NEXT consortium brings together the key ESFRI Landmarks (ACTRIS, AnaEE ERIC, EPOS ERIC, EuroArgo ERIC, IAGOS AISBL, ICOS ERIC, LifeWatch ERIC) and ESFRI Projects (eLTER) participating in ENVRI-FAIR, the ENVRI information technology development and support providers from the University of Amsterdam, SeaDataNet as the key marine data infrastructure, FMI for the close relationship to EOSC Association and stakeholders, and the EGI Foundation and members of the EGI Federation to implement the operation of the services and the integration with EOSC Core.

EPOS ERIC associate in European Union-funded projects

RltrainPlus, RESEARCH INFRASTRUCTURE TRAINING PLUS (April 1st, 2021 - March 31st, 2025; 15 beneficiaries; coordinator Università degli Studi Milano-Bicocca, Italy). European Programme: HORIZON 2020, EXCELLENT SCIENCE - Research Infrastructures, Strengthening the human capital of Research Infrastructures. The project brings together research infrastructures, facilities, business management schools and European universities in a new innovative concept to transform the access and empowerment of human resources for national and international scientific facilities in Europe.

European project proposal submitted and funded by the European Union

EQUIP-G, European QUantum Infrastructure Project for Gravimetry (submitted in October 2024; 19 beneficiaries; coordinator CNRS, France). European Programme: HORIZON EUROPE, CLUSTER 4. Aligned with the objective of strengthening EU's strategic autonomy and competitiveness, EQUIP-G proposes to deploy a network of quantum gravimeters in Europe. This will represent the first step towards establishing the terrestrial segment of the pan-European quantum gravimetry infrastructure, revolving around a shared instrumentation facility (Instrumental Park). For this purpose, quantum gravimeters, dual quantum gravi-gradiometers and an onboard quantum gravimeter will be employed. These instruments will be comprehensively tested before being deployed in the field. The project will demonstrate, through innovative measurement strategies, the ability of the quantum gravity network to contribute to EU priorities, such as green deal, energy management and risk mitigation. Metrological oversight will ensure that all collected quantum gravity data will be SI traceable. Data will be managed in line with the FAIR principles and with a long-term perspective to establish a TCS for gravimetry within EPOS. EQUIP-G will engage in strong community building, aimed at involving the whole European gravimetry community in the development of the long-term Instrumental Park initiative that will extend beyond the end of the project, democratizing the use of quantum gravity devices produced in Europe.

Other European project proposal submitted under Horizon Europe in 2024

- **EOSCLIMA** EOSC for the Mission on Adaptation to Climate Change (HORIZON-INFRA-2024-EOSC-01)
- **GEMINI** Global Earth Modelling Initiative for Natural geohazards and their Impacts (HORIZON-INFRA-2024-TECH-01)
- **ENDEAVOR** ENabling the Deployment of the East African Volcanic ObseRvatory (HORIZON-INFRA-2024-DEV-01)
- **CHESS** ENHANCED QUANTIFICATION AND UNDERSTANDING OF NATURAL AND ANTHROPOGENIC METHANE EMISSIONS AND SINKS (HORIZON-CL5-2024-D1-01)

1.10 Policies

In 2024, the EPOS Policy Working Group focused its activities on two main areas: the revision and deepening of the EPOS Data Policy and the development of a survey on Data Management Plans and Practices. Concerning the update of the EPOS Data Policy, the Working Group focused on defining the structure of the document and initiated its implementation. The updated policy establishes core principles for the provision, sharing, access, use, and exploitation of data, ensuring efficient management and utilization across the infrastructure as well as providing clear guidance on stakeholder responsibilities to ensure effective handling of data. In 2024, the Work Group also launched a survey focused on Data Management Plans and Practices within the Service Coordination Committee. The primary aim of the survey is to map and gather insights into the current data management practices of organizations within the EPOS Delivery Framework. It seeks to identify areas where further support may be required to improve compliance and alignment with the EPOS Data Policy and the EPOS ERIC Digital Assets Management Policy. Both the updated Data Policy and the outcomes of the survey will be shared with the Service Coordination Committee in 2025.

Connected to this activity is also the completion of the EPOS Data, Data products, Software and Services (DDSS) Citation Guide¹⁹, which sets out the provisions regarding the proper citation of the EPOS Platform and relevant datasets, data products, software or service when publishing research outputs (i.e. publications, services, and any other derivative products), in compliance with the EPOS Data Policy and the EPOS Digital assets management policy. The EPOS DDSS Citation Guide also informs the way citations are implemented on the EPOS Platform, which now provides a “cite as” field for each of the DDSS.

1.11 Risk and Performance Management

In December 2023, EPOS ERIC elaborated a Risk Management Policy to establish a structured framework for risk management. This process is supported by a Risk Register, a Risk Assessment Data Table, and a Risk Severity Heat Map. In 2024, a process to identify risks for the Research Infrastructure (RI) was initiated. Risks have been identified across key dimensions related to the construction and operation of EPOS RI and are further classified into Risk Groups linked to EPOS functions, ensuring an interconnected approach. The EPOS ERIC Risks will be formalized within 2025. For performance monitoring, in 2024 EPOS ERIC has evaluated the Key Performance Indicators (KPIs) proposed by ESFRI, adopting those applicable while introducing additional KPIs to address EPOS-specific objectives. Identified KPIs and Qualitative Indicators (QI) span key categories, including Enabling Scientific Excellence, Community Building, Adding Value for Society, Dissemination and Training, and Optimizing Management and Resources. To ensure continuous monitoring and reassessment of risks and performance indicators, the EPOS ERIC Executive Director, together with the Chiefs of the EPOS ERIC Units, established a dedicated Working Group on Risk and Performance Management at the end of 2024. This group oversees these activities, ensuring alignment with EPOS objectives.

¹⁹ <https://zenodo.org/records/15022118>, now in its second edition.

2. FINANCIAL STATEMENTS

Balance Sheet - Assets and liabilities at 31.12.2024				
		2024		2023
ASSETS		5.168.582		5.627.812
NON CURRENT ASSETS		76.521		68.917
Tangible assets (plant, property and equipment)		66.487		55.539
Intangible assets		10.034		13.378
Long term credits		-		-
CURRENT ASSETS		5.092.061		5.558.895
Stocks		-		-
Short term credits		16.333		83.952
- credits for members' statutory contribution in cash	-		50.000	
- other current credits and receivables	16.333		33.952	
Cash and cash equivalents		5.068.728		5.470.694
Prepayments and accrued income		7.000		4.249
EQUITY AND LIABILITIES		5.168.582		5.627.812
EQUITY		(2)		(2)
Capital and other permanent contributions from Members		-		-
Reserves		(2)		(2)
Accumulated profits		-		-
NON-CURRENT LIABILITIES		73.061		56.849
Long-term financial debts and loans		-		-
Other long-term debts and liabilities		-		-
Employee's severance indemnity		73.061		56.849
Long-term provisions		-		-
CURRENT LIABILITIES		5.095.523		5.570.965
Short-term financial debts		51.247		1.290.173
Advance payments for externally funded projects		761.476		213.396
Contributions to be paid		1.137.129		1.199.927
Other short-term debts and liabilities		203.404		155.512
Deferred income and accrued expenses		2.942.267		2.711.957
- deferred income for members' statutory contribution in cash (carryover)				
financial year 2019	1.345.181		1.345.181	
financial year 2020	1.574.532		1.574.532	
financial year 2021	495.491		495.491	
financial year 2022	(568.063)		(568.063)	
financial year 2023	(135.372)		(135.372)	
financial year 2024	230.366			
- accrued expenses	132		188	

PROFIT AND LOSS ACCOUNT					
			2024		2023
Revenues			6.143.504		6.161.890
	National and international grants and contributions		3.606.595		3.422.011
	• monetary contribution of EPOS ERIC Members	2.104.000		1.864.000	
	• host premium cash contribution	1.100.000		1.100.000	
	• ECO cash contribution	250.000		-	
	• contribution project externally funded	382.961		322.639	
	• use of carry over of previous years (+)	-		135.372	
	• carry over of the year (-)	(230.366)		-	
	Contributions in-kind		2.520.596		2.739.873
	• contributions in kind by hosting country	259.225		224.862	
	• contributions in kind by partner	2.261.371		2.515.011	
	Other revenues		16.313		6
Operating costs			6.100.305		6.127.665
	Costs for raw materials, supplies and goods	11.045		7.478	
	Costs for services	574.707		605.313	
	Staff costs	672.341		576.407	
	Costs of rents, concessions and royalties for trademarks	23.461		22.874	
	Contributions TCS	1.908.972		1.801.182	
	Contributions ICS-TCS	72.460		57.886	
	Contributions ICS-C	265.128		243.907	
	Contributions SRA	49.886		71.969	
	Other operating costs	1.709		776	
	Resources committed in-kind to EPOS from contributors	2.520.596		2.739.873	
Ebitda (Earning before Interests, Taxes, Depreciations and Amortizations)			43.199		34.225
Depreciation			12.944		9.506
Write-downs for impairment of tangible and intangible assets			-		-
Ebit (Earnings before interests and taxes)			30.255		24.719
Financial income and expenses			(389)		(238)
	Financial income		-		-
	Financial charges (-)		(389)		(238)
Income from investments			-		-
Value adjustments to financial assets			-		-
Result before tax			29.866		24.481
Income tax			29.866		24.481
Result for the year			-		-

Statement of Cash Flows

Financial statements as at 31/12/2024

Financial Statement - Indirect method

	Amount as at 31/12/2024	Amount as at 31/12/2023
A) Financial flow from operations (indirect method)		
Net profit (loss) for the year	-	-
Income taxes	29.866	24.481
Interest expenses/(income)	162	233
(Dividends)		
(Capital gains)/Capital losses resulting from asset disposal	-	-
<i>1) Profit (loss) for the year before income taxes</i>	<i>30.028</i>	<i>24.714</i>
Adjustments for non-monetary elements with no offset in working capital		
Accruals to provisions	30.714	25.391
Depreciation of assets	12.943	9.506
Writedowns due to impairment		
Adjustment of value of financial assets and liabilities of derivative financial instruments not involving cash transactions		
Other increasing/(decreasing) adjustments for non-monetary items	-	-
<i>Total adjustments for non-monetary items with no offset in net working capital</i>	<i>43.657</i>	<i>34.897</i>
<i>2) Financial flow before changes to the net working capital</i>	<i>73.685</i>	<i>59.611</i>
Changes in net working capital		
Decrease/(Increase) of inventories		
Decrease/(Increase) of credits towards contributors - Members	50.000	(50.000)
Decrease/(Increase) of credits towards other contributors	17.618	(354)
Increase/(Decrease) in payables due to suppliers	24.989	(23.281)
Decrease/(Increase) in accrued income and deferred expenses	(2.751)	10.271
(Increase)/Decrease in accrued liabilities and deferred income	230.310	(135.243)
Other decreases/(Other increases) of net working capital	508.185	385.541
<i>Total changes in net working capital</i>	<i>828.350</i>	<i>186.934</i>
<i>3) Financial flow after changes to the net working capital</i>	<i>902.036</i>	<i>246.545</i>
Other adjustments		
Interest collected/(paid)	(162)	(233)
(income taxes paid)	(29.866)	(24.481)
Dividends collected		
(Use of provisions)		
Other collections/(payments)	(14.502)	(2)
<i>Total other adjustments</i>	<i>(44.530)</i>	<i>(24.716)</i>
Financial flow from operations (A)	857.506	221.829

B) Financial flow from investing activities		
Tangible fixed assets		
(Investments)	(20.546)	(61.700)
Disinvestments		
Intangible fixed assets		
(Investments)		(16.723)
Disinvestments		
Financial fixed assets		
(Investments)		
Disinvestments		
Financial assets not classified as noncurrent		
(Investments)		
Disinvestments		
(Acquisition of company branches net of cash and cash equivalents)		
Sale of company branches net of cash and cash equivalents		
Cash flow from investing activities (B)	(20.546)	(78.423)
C) Financial flow from financing activities		
Loan capital		
Increase/(Decrease) in short-term payables due to banks		
New loans - Contribution quotas due to the Partners	(1.238.926)	524.292
(Reimbursement of loans - Payment to the Partners)		
Equity		
Increase in paid share capital		
(Capital reimbursement)		
Disposal/(Purchase) of treasury shares		
Cash flow from financing activities (C)	(1.238.926)	524.292
Increase (decrease) in cash and cash equivalents (A ± B ± C)	(401.966)	667.698
Effect of exchange rates on cash and cash equivalents		
Cash and cash equivalents at the beginning of the year		
bank deposits	5.469.582	4.799.403
cheques		
Cash and equivalents on hand	1.112	3.593
<i>Total cash and cash equivalents at the beginning of the year</i>	<i>5.470.694</i>	<i>4.802.996</i>
Of which, not freely usable		
Cash and cash equivalents at the year end		
bank deposits	5.066.042	5.469.582
cheques		
Cash and equivalents on hand	2.686	1.112
<i>Total cash and cash equivalents at the end of the year</i>	<i>5.068.728</i>	<i>5.470.694</i>
Of which, not freely usable		
Balance difference	-	-

3. NOTES TO THE FINANCIAL STATEMENTS

Foreword

On October 30th, 2018, EPOS ERIC was granted by the European Commission.

The Financial Statements are composed of the Balance Sheet, Profit and Loss Account and Cash Flow Statement and are complemented by the Notes to the Financial Statements (these Explanatory Notes) and by the Activity and Results description (Chapter 1) that details performed activities and achieved results as for the EPOS ERIC 2024 Activity Plan and Provisional Budget adopted by EPOS ERIC General Assembly in December 7th 2023 (Resolution No. 11/2023).

Accounting Criteria

These Financial Statements have been compiled in conformity with the IPSAS (International Public Sector Accounting Standards), international accounting standards issued by the International Public Sector Accounting Standard Board (IPSASB), and in process of being adopted by the European Commission within the meaning of Council Directive No 2011/85/EU of 8 November 2011, on requirements for budgetary frameworks of the Member States.

The decision voluntarily to adopt an accounting system that can be connected to international principles is consistent with the process of harmonisation started some time ago by the EU Commission, but not yet completed. For this purpose, it is relevant to recall the “Report from the Commission to the Council and the European Parliament towards implementing harmonised public sector accounting standards in Member States. The suitability of IPSAS for the Member States”, published in March 2013.

The IPSAS can in general function as a basis for a harmonised accrual-basis accounting standard passing through its transformation into EPSAS (European Public Sector Accounting Standards). The aforementioned EU Directive states that by 14 December 2018, the Commission shall make public a review of the sustainability of the Directive (see art.16).

EPOS ERIC is set up as an international organization with scopes of general interest typical of an entity referable to the public sector. EPOS ERIC should therefore be able to relate to its members in different countries in a common language. This should be adopted in all matters and at all levels, and thus also in the model of presentation of economic-financial topics that support annual accounts and budgets.

The use of international accounting standards referable to the public sector, taking into account the specific character and scopes of EPOS ERIC, adequately conformed to the legal characteristics of the Entity and to its functions and scope, allows the development of well-defined best practices, the impact of which on the financial aspects is measurable and effective. The use of international accounting standards, in fact, allows information on the Financial Statements to be presented in a common way for users/stakeholders of different nationalities.

By adopting these international standards, it is ensured that:

- the information is relevant, reliable, comparable and understandable;

- the terminology used is common, appropriate and explanatory among Members and for similar international organizations outside Europe;
- the Financial Statements are auditable by the International Standard of Audit by auditors from different nations;
- a host country change - and thus any site change - is not relevant for the comparability of information and models, books and records of the accounting system;
- the accounting system is able to present the in-kind contribution model, and to provide analytical accounting for projects and separate accounting for economic activities.

The aim of the Financial Statements is to provide information on the assets and liabilities, the profit or loss and changes in the financial structure of the Consortium, useful to a wide range of users.

The Financial Statements are prepared within a general-purpose framework.

The Financial Statements are compiled in accordance with the principles of clarity and transparency and provide a correct and exhaustive framework of information on property relations, as well as economic and financial relations, implemented by the Consortium in carrying out its activities. They are compiled taking into account international accounting standards for public sector (IPSAS) and integrated in order to be consistent with the legal and effective structure of EPOS ERIC and its scopes. Of the various options allowed by IPSAS 1, the Consortium has chosen to present the layout of the balance sheet distinguishing between current and non-current items, and the layout of the profit and loss account classifying the expenses by nature, adding some information on destination, when relevant.

In its drawing-up, the following principles have been observed.

The items have been evaluated prudently, taking into account the perspective of the continuity of the activities, as well as the economic function of an asset or liability.

Only incomes and expenditures related to the financial year have been accounted, independently of the day of encashment or payment.

The risks and losses related to the financial year have been accounted for, even if known after the end of the financial year.

These Notes have been compiled with the aim of clarifying, completing and analyzing the information contained in the balance sheet and in the profit and loss account, in addition to providing information on the applied evaluation criteria, on movements that have taken place, and changes in various assets and liabilities.

These Notes are an integral part of the financial documents; they serve to present the Financial Statements and provide descriptive and schematic information with particular reference to property aspects, as well as economic and financial aspects of the overall management.

Evaluation Criteria

The Financial Statements are compiled in accordance with the principles of clarity and transparency and provide a correct and exhaustive framework of information on property relations, as well as

economic and financial relations implemented by the Consortium in carrying out its activities. They are compiled taking into account international accounting standards for public sector (IPSAS), applied coherently with the legal nature of an ERIC and with its scopes.

Balance Sheet

Items in the Balance Sheet are classified into/distinguished as current/non-current.

Assets

Assets have been classified as current assets when:

- they have been realised during the normal operating cycle of the institution;
- they are cash or equivalent complement not restricted in its use;
- collection is due within 12 months from the balance sheet date.

Assets realisable within the operating cycle have been classified as current. Non-current assets shall include tangible assets and intangible assets (in general, all assets not related to the operating cycle and realisable after 12 months from the balance sheet date).

Liabilities

Liabilities have been considered current liabilities when:

- a) they are extinct in the course of the normal operating cycle of the institution;
- b) extinction is due within 12 months of the balance sheet date.

Other liabilities, i.e., those not related to the operating cycle and all other institutional liabilities, are classified as current if their extinction is due within 12 months from the balance sheet date. Otherwise, they are recognised as non-current liabilities.

Deferred Incomes and Accrual Expenses

This item includes the amount of funds received during the year and not yet fully used by 31.12 for the purposes for which they were intended. They will therefore continue to produce utility in coming years, for the same purposes. This item represents the carry-over for balances of the subsequent year to that under review. In this regard, the Consortium is obliged to operate in future years in fulfilment of the mandate assigned by the Member States (when they commit themselves to contribute the Consortium with their Membership fees), and by the Italian Ministry of University and Research, who assigned, through the Italian Representing Entity (INGV), the financial funds (FOE) under which some EPOS ERIC activities were carried out during this financial year. Accrual expenses are expenses incurred and assessed on accrual basis but not yet paid.

Profit and Loss Account

The drawing-up of the profit and loss account is regulated by the IPSAS, integrated and conformed to be consistent with the characteristics and scopes of EPOS ERIC.

Incomes

Incomes are increases in benefits connected to the administrative year.

Costs/Expenses

Costs/expenses are decreases of economic benefits of the administrative year. The analysis of costs has been explained in the overview of profit and loss accounts using a classification based on their nature.

In-kind Contributions

Contributions in-kind are included in the Financial Statements on the basis of specific detailed reports produced by the Entity who provided them.

In-kind, non-monetary, contributions will be distinguished (when realized) between:

- 1) those strictly related to the cost of the production factors (exhausting their utilities during the ordinary cycle).
- 2) those strictly related to covering investments (in intangible and tangible assets), if any.

In any case, for in-kind contribution accounting procedures and vaporization, IPSAS Principle n. 23 was applied.

Assets

Non-current Assets

Balance as at 31/12/2023	Balance as at 31/12/2024	Difference
68.917	76.521	7.604

Tangible Assets

Balance as at 31/12/2023	Balance as at 31/12/2024	Difference
55.539	66.487	10.948

The composition is as follows:

Description	Initial cost	Investment /disinvest.	Final cost	Amortization/ Depreciation	Amortization/De preciation fund	Residual value
Tangible Assets						
Office furniture	47.446	2.630	50.076	5.726	9.553	40.523
Garden furniture	6.390		6.390	767	1.150	5.240
Pc and printers	6.651	17.916	24.567	3.106	3.843	20.724
Mobile phones	390		390	-	390	-
Other minor fixed assets	2.336		2.336	-	2.336	-
Total	63.213	20.546	83.759	9.599	17.272	66.487

Intangible Assets

Balance as at 31/12/2023	Balance as at 31/12/2024	Difference
13.378	10.034	(3.344)

Description	Initial cost	Investment /disinvest.	Final cost	Amortization/ Depreciation	Residual value
Intangible Assets					
Leasehold improvements	13.378	-	13.378	3.344	10.034
Total	13.378	-	13.378	3.344	10.034

The item refers to expenses for irrigation system and garden maintenance at the INGV headquarters.

Long terms credits

No values are entered for these items.

Current Assets

Balance as at 31/12/2023	Balance as at 31/12/2024	Difference
5.558.895	5.092.061	(466.834)

Stocks

No values are entered for these items.

Short-term Credits

The balance is divided according to the deadlines of the credits:

Description	Within 12 months	Over 12 months	Over 5 years	Total
<i>Credit for members' contribution in cash</i>				
Member residue	-			-
<i>Other current credits and receivables</i>				
- Advances to suppliers	5.758			5.758
- Tax advances	-			-
- Contribution to collect	10.575			10.575
- Other receivables	-			-
TOTAL	16.333	-	-	16.333

The balance sheet item "Advances to suppliers" represents the part of the expenses prepaid to suppliers. The balance sheet item "Contribution to collect" represents the contribution still to be collected for EU project (Skills4EOSC project).

Cash and Cash Equivalents

The balance represents cash at the bank at the end of the financial year. It represents liquid assets, cash equivalents and prepaid cards at the end of the year.

Description	Balance at 31/12/2023	Balance at 31/12/2024	Difference
Bank deposit (Intesa San Paolo)	5.469.582	5.066.042	(403.540)
Prepaid credit cards	1.112	2.686	1.574
TOTAL	5.470.694	5.068.728	(401.966)

Prepayments and Accrued Income

Balance at 31/12/2023	Balance at 31/12/2024	Difference
4.249	7.000	2.751

The item mainly represents prepaid expenses whose utility is postponed to the next year, referred to licenses and internet domain.

Equity and Liabilities

Equity

Capital and Other Permanent Contributions from Members

No values are entered for these items.

Reserves

No values are entered for these items with the exception of rounding to the euro unit.

Accumulated Profits

No values are entered for these items.

Non-current Liabilities

Balance at 31/12/2023	Balance at 31/12/2024	Difference
56.849	73.061	16.212

Long-term financial debts and loan

No values are entered for these items.

Other Long-term Debts and Liabilities

No values are entered for these items.

Employee's severance indemnity

Balance at 31/12/2023	Balance at 31/12/2024	Difference
56.849	73.061	16.212

This item represents the actual debt of EPOS ERIC at 31/12/2024, to employees in force at that date (n. 12 employees) and it is made up as follows:

Description	
Initial value	56.849
Severance accrued during the year	30.714
Severance paid during the year	(14.325)
Tax	(177)
End value	73.061

At 31/12/2024 advances have not been required by employees.

The number of employees has been increased in 2024 as follows:

Description	n.
Employees as at 01/01/2024	8
Recruitment in 2024	5
Resignation in 2024	(1)
Employees as at 31/12/2024	12

Long-term provisions

No values are entered for these items.

Current Liabilities

Balance at 31/12/2023	Balance at 31/12/2024	Difference
5.570.965	5.095.523	(475.442)

Short-term financial debts

Balance at 31/12/2023	Balance at 31/12/2024	Difference
1.290.173	51.247	(1.238.926)

This item includes:

- the contribution quotas due to the Partners for their participation in the:
 - EPOS ON Project – INCDFP-RA Euro 51.000
 - EOSC Future Project – IREA-CNR Euro 247

Advance payments for externally funded projects

Balance at 31/12/2023	Balance at 31/12/2024	Difference
213.396	761.476	548.080

This item includes the prepayments received from EU for participation to:

EU Project EOSC FUTURE	€ 20.742
EU Project GEO INQUIRE	€ 18.662
EU Project DT-GEO	€ 88.107
EU Project GREAT	€ 281
EU Project ERIC FORUM 2	€ 403
EU Project ENVRI-HUB	€ 33.360
EU Project EPOS ON	€ 599.919

Contributions to be paid

Balance at 31/12/2023	Balance at 31/12/2024	Difference
1.199.927	1.137.129	(62.798)

This item includes the final payments due to:

IICA 2021 (BGS)	€	64.876
SRA 2023 (KNMI)	€	13.138
TCS GNSS - UBI 2024	€	81.400
TCS SEISMOLOGY - UCL EFEHR 2024	€	40.800
TCS SEISMOLOGY - CSEM 2024	€	57.500
TCS SEISMOLOGY - ORFEUS 2024	€	58.431
TCS AH - IG PAS 2024	€	35.700
TCS GEOMAGNETIC - LULEA 2024	€	18.400
TCS GIM - EURO GEO SURVEY 2024	€	50.431
TCS MSL - UU 2024	€	36.616
TCS NFO - INGV 2024	€	67.669
TCS SATELLITE DATA - CNR-IREA 2024	€	139.000
TCS VOLCANO - INGV 2024	€	58.800
TCS TSUNAMI - GFZ 2024	€	26.902
ICS-TCS INTER - UiB 2024	€	72.460
ICS-C Hosting - BGS 2024	€	120.000
ICS-C Hosting - BRGM 2024	€	120.000
ICS-C Monitoring - GEUS 2024	€	25.119
SPONSORED RESEARCH - ACH 2024	€	24.872
SPONSORED RESEARCH - KNMI 2024	€	25.014

Other short-term debts and liabilities

Balance at 31/12/2023	Balance at 31/12/2024	Difference
155.512	203.404	47.892

Debts are valued at their nominal value. The composition of the aforementioned amounts is as follows:

Description	Balance at 31/12/2023	Balance at 31/12/2024	Difference
Debts to providers and collaborators	57.284	82.272	24.988
Debts to social security institutions	24.903	26.454	1.551
Tax liabilities	23.685	29.125	5.440
Payables to employees and E.D.	49.640	65.553	15.913
TOTAL	155.512	203.404	47.892

The item “Debts to providers and collaborators” includes debts to third parties, mainly related to services received, accrued but not paid as at the end of the year. The item “Debts to social security institutions” includes the amount of social security contributions related to employees, accrued but not paid at the year's end. The item “Tax liabilities” includes debts for VAT (INTRA-12), withheld taxes for employees and collaborators and the debt for IRAP (regional tax). The item “Payables to employees and ED” includes deferred remuneration for holidays and work permits.

Deferred Income and Accrued Expenses

Balance at 31/12/2023	Balance at 31/12/2024	Difference
2.711.957	2.942.267	230.310

The item breaks down as follows:

Description	
Deferred income	
Value as at 01/01/2024	2.711.769
deferred income 2024	230.366
use of carry over from previous years	
Value as at 31/12/2024	2.942.135
Accrued expenses	
Value as at 01/01/2024	188
accrued expenses (+/-)	(56)
Value as at 31/12/2024	132
Total deferred income and accrued expense at 31/12/2024	2.942.267

The balance sheet item "Deferred income" measures the portion of the contribution funded by the Members for the activities of the EPOS ERIC, deferred to next year, concerning activities included in the 2024 EPOS ERIC Annual Activity Plan and Provisional Budget as adopted by the EPOS ERIC General Assembly. It is significant to note that the carryover used in 2022 and 2023 increased by € 230.366 in 2024.

Profit and Loss Account

Revenues

Balance at 31/12/2023	Balance at 31/12/2024	Difference
6.161.890	6.143.504	(18.386)

The item breaks down as follows:

Description	Balance at 31/12/2023	Balance at 31/12/2024	Difference
Membership Fee	1.864.000	2.104.000	240.000
Host premium cash contribution	1.100.000	1.100.000	
ECO cash contribution		250.000	250.000
Contribution project externally funded	322.639	382.961	60.322
use of carry over of previous years	135.372		(135.372)
- carry over of the year		(230.366)	(230.366)
National and international grants and contributions	3.422.011	3.606.595	184.584
Contribution in kind	2.739.873	2.520.596	(219.277)
Other revenues	6	16.313	16.307
TOTAL	6.161.890	6.143.504	(18.386)

“National and international grants and contributions” item identify:

- the cash contribution (statutory membership fees) for the financial year allocated by the Members for the Consortium’s and attributable to 2024;
- the host premium cash contribution from INGV attributable to the financial year;
- the ECO cash contribution from INGV;
- the cash contribution from UE regarding the activities carried on and attributable to the financial year in proportion to the costs incurred by EPOS ERIC in 2024 as follow:

DT GEO project	€	104.817
GEO INQUIRE project	€	47.466
SKILLS4EOSCP project	€	18.750
GREAT project	€	2.847
ERIC FORUM 2 project	€	5.563
ENVRI-HUB project	€	30.938
EPOS ON project	€	172.581

“Contribution in kind” item identifies:

- the 2024 in kind contribution for cost of staff made available by INGV according to the Italian bid to host the legal seat. This contribution has been calculated with reference only to the costs of personnel assigned to EPOS ERIC by INGV (Euro 259.225), increased in comparison to 2023;
- the 2024 in kind contribution made available by Hosting Organizations engaged in the “ICS-C Hosting”, “ICS-C Monitoring”, “TCS”, “ICS-TCS Interaction” and “SRA” activities (Euro 2.261.371).

“Other revenues” includes:

- Euro 11.075 contribution TCS GIM estimated in the previous financial year and not due;
- Euro 5.000 fee to a collaborator estimated in the previous financial year and not due.

Costs

The Consortium, in the context of purchases realized, and within the limits of the Statute, may use VAT exemptions granted on the basis of Article 143(1)(g) and Article 151(1)(b) of Council Directive 2006/112/EC, and in accordance with Articles 50 and 51 of Implementing Regulation (EU) No. 282/2011 of the Council, and on the basis of Article 12 of Directive 2008/118 /EC.

When the exemption was not possible to call for, the VAT was included in the cost to which it refers.

Operating Costs

Costs for Raw Materials, Supplies, Consumables and Goods

This category includes costs incurred for the supply of consumables, office stationery, and conference gadgets.

Balance at 31/12/2023	Balance at 31/12/2024	Difference
7.478	11.045	3.567

Costs for Services

It has been decided to detail the item service costs, to facilitate the clarity of these Financial Statements, into the following categories of expenses:

Description	Balance at 31/12/2023	Balance at 31/12/2024	Difference
Executive Director (remuneration and social security contribution directly by EPOS)	144.912	174.270	29.358
Intranet network	2.500		(2.500)
Maintenance	1.528	12.198	10.670
Transport and shipping	4.480	2.559	(1.921)
Travel costs for employees, collaborators, and bodies	72.533	96.721	24.188
Legal, fiscal, labour consultancy and accountant services	65.281	45.786	(19.495)
Advertising and communication	115.385	1.520	(113.865)
Support to international activities	22.150		(22.150)
Support to activation procedures	69.686	53.171	(16.515)
Other administrative collaborations	7.110	4.500	(2.610)
Auditors fees	14.500	12.002	(2.498)
Telephone and communication utilities	1.841	238	(1.603)
Workshops, seminars and publications	60.654	125.976	65.322
Training and other personnel costs	4.088	10.806	6.718
Prepaid meals	15.155	31.076	15.921
Bank charges	2.969	3.829	860
Postal charges	23	55	32
Other services	518		(518)
TOTAL	605.313	574.707	(30.088)

Staff Costs

This item includes the cost of staff directly employed in EPOS ERIC. At 31/12/2024 EPOS ERIC has n. 12 people hired with the status of employee.

Staff costs include:

Description	31.12.2023	31.12.2024
Salaries	382.160	466.018
Subsistence allowance	35.068	25.380
Fringe benefits	7.506	
Social security charges	126.178	150.229
Severance indemnities	25.495	30.714
TOTAL	576.407	672.341

Costs of rents, concessions and royalties for trademarks

This item represents the cost for software licenses, equipment rental and rent rooms.

Balance at 31/12/2023	Balance at 31/12/2024	Difference
22.874	23.461	587

Description	31.12.2023	31.12.2024
Licences	13.688	19.665
Equipment hire	9.186	3.796
TOTAL	22.874	23.461

Contributions

The item "Contributions" concerns:

Description	Balance at 31/12/2024
TCS (*)	1.908.972
ICS-TCS Interaction	72.460
ICS-C (**)	265.128
Sponsored Research Activities (SRA)	49.886
TOTAL	2.296.446

(*) including 23.622 euro incurred in 2024 but referred to previous years

(**) including 8 euro incurred in 2024 but referred to previous years

Other Operating Costs

This item concerns stationery and other small administrative expenses.

Balance at 31/12/2023	Balance at 31/12/2024	Difference
776	1.709	933

Resources committed in-kind to EPOS ERIC by contributors

Description	Balance at 31/12/2024
INGV – Istituto Nazionale di Geofisica e Vulcanologia – Staff cost	259.225
INGV – Istituto Nazionale di Geofisica e Vulcanologia – Other costs	-
SUB TOTAL	259.225
MYCA TCS	1.361.991
ICS-TCS Interaction	9.858
ICS-C Hosting	864.324
ICS-C Monitoring	6.280
Sponsored Research Activities (SRA)	18.918
SUB TOTAL	2.261.371
TOTAL	2.520.596

Contributions have been accounted on the basis of International Public Sector Accounting Standard No. 23. This accounting standard is focused on contributions from non-exchange transactions, which have the following characteristics:

- are non-reciprocal transfers;
- are transfers of non-monetary nature to or from entities acting on the basis of a specific agreement;
- are made or received on a voluntary basis and valorised following a cost basis criterion;
- in particular for services contributed in-kind, these are accounted even in the costs and in the revenues of the receiving Entity, depending on the fact that it is possible and objective to give a proper valorisation to them.

Depreciation (of Tangible and Intangible Assets)

Depreciation is calculated on the basis of the useful life of the asset and its use in production. Depreciation for the first financial year is reduced to half.

Description	Depreciation	
Intangible Assets		
Leasehold improvements	20,00%	3.345
Total intangible assets	3.345	
Tangible Assets		
Furniture	12,00%	6.493
PC and printers	20,00%	3.106
mobile phones	100,00%	0
Others	100,00%	0
Total tangible assets	9.599	
Total Depreciation	12.944	

Financial Income and Expenses

Description	Balance at 31/12/2023	Balance at 31/12/2024	Difference
Financial income	-	-	-
Financial charges	(238)	(389)	(151)
TOTAL	(238)	(389)	(151)

The item "Financial charges" includes exchange rate costs.

Income from Investments

No values are entered for these items.

Value adjustments to financial assets

No values are entered for these items.

Income tax

In 2024 EPOS ERIC carried on only non-commercial activities, but, since is subject to Italian fiscal legislation, it has to calculate IRAP. About this tax, EPOS ERIC adopts the "remuneration system" (art.10 of Legislative Decree 446/1997); this system provides that the tax base is determined from the sums

paid for salaries of the employees, for incomes assimilated and for remuneration paid for coordinated and continuous collaborations or for activities of self-employment not practiced professionally. IRAP calculated for the current year amounts to Euro 29.866.

Events after the Reporting date

Following IPSAS 14, this paragraph reports on events between the reporting date (December 31, 2024) and the date when these Financial Statements were approved by the Executive Director, authorising them for delivery.

In February 2022, the Russian Army invaded Ukrainian territory, and the war is still ongoing. In October 2023, the Israel-Palestine conflict began, and it remains unresolved as well. It is relevant to state that these events, like those regarding the COVID pandemic, can be classified as “non-adjusting events” after the reporting date and do not influence the assessment of the appropriate assumption of the ongoing concern of EPOS ERIC.

Rome, 24 April 2025

4. AUDITORS REPORT

**European Plate Observing System
European Research Infrastructure Consortium
(EPOS - ERIC)**

INDEPENDENT AUDITOR'S REPORT

Financial Statements as of December 31st, 2024

This report has been translated into English from the original, which was prepared in Italian and represents the only authentic copy, solely for the convenience of international readers.

CCRZ/CVSP/scr - RC104012024BD2241

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Report on the audit of the financial statements

To the Consortium Members of
European Plate Observing System European Research Infrastructure Consortium (EPOS - ERIC)

Opinion

We have audited the financial statements of EPOS - ERIC (the Consortium), which comprise the statement of financial position as at December 31st, 2024, the statement of income, the statement of cash flows for the year then ended and explanatory notes to the financial statements.

In our opinion the financial statements give a true and fair view of the financial position of the Consortium as of December 31st, 2024 and of its operation and cash flows for the year then ended in accordance with the international accounting standards IPSAS (International Public Sector Accounting Standards) issued by the International Public Sector Accounting Standard Board.

Basis of opinion

We conducted our audit in accordance with International Standards on Auditing (ISA Italia). Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of this report. We are independent of the Consortium in accordance with ethical requirements and standards applicable in Italy that are relevant to the audit of financial statements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Other matters

This report is not issued under any legal requirement since, for the year ended December 31, 2024, the Consortium was not subject to the audit under Italian law.

The Executive Director's responsibility for the financial statements

The Executive Director is responsible for the preparation of financial statements that give a true and fair view in accordance with the international accounting standards IPSAS (International Public Sector Accounting Standards) issued by the International Public Sector Accounting Standard Board, and, within the limits of the law, for such internal control as the Executive Director determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Executive Director is responsible for assessing the Consortium's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Consortium or to cease operations, or has no realistic alternative but to do so.

Bari, Bologna, Brescia, Cagliari, Firenze, Genova, Milano, Napoli, Padova, Roma, Torino, Verona

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Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but it is not a guarantee that an audit conducted in accordance with International Standards on Auditing (ISA Italia) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of the audit in accordance with International Standards on Auditing (ISA Italia), we exercise professional judgment and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risk of material misstatement of the financial statements, whether due to fraud or error; design and perform audit procedures in response to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations or the override of internal control;
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Consortium's internal control;
- Evaluate the appropriateness of accounting principles used and the reasonableness of accounting estimates and related disclosures made by the Executive Director;
- Conclude on the appropriateness of the Executive Director's use of the going concern and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Consortium's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Consortium to cease to continue as a going concern;
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions in a manner that achieves fair presentation.

We communicate with the Executive Director, identified at the appropriate level as required by the ISA Italia, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Rome, April 24th, 2025

BDO Italia S.p.A.

Signed by
Cristiano Carrozzo
Partner

<i>This report has been translated into English from the original, which was prepared in Italian and represents the only authentic copy, solely for the convenience of international readers.</i>
