

# EPOS ERIC

## ACTIVITY AND FINANCIAL REPORT 2023



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### Foreword

The year 2023, having represented at the same time the opening of the EPOS Operational Phase and the closure of the EPOS ERIC's first 5-year period was peculiar, and crucial, for the EPOS Research Infrastructure.

To accomplish the EPOS mission of *“establish a sustainable and long-term access to solid Earth science data and services integrating diverse European Research Infrastructures under a federated framework”*, over the last couple of decades, an international team of about 600 experts (scientists, IT professionals, governmental representatives) from 26 European countries has worked in synergy on the harmonization and integration of practices, policies, procedures, standards, data and metadata from the various solid Earth science disciplines. This resulted in building the **European Community for solid Earth science** and delivering the **EPOS Data Portal** (<https://www.epos-eu.org/dataportal>), officially launched in April 2023 during the EGU General Assembly in Vienna. The Portal, enabling interoperability of data and products, provides access to high quality-controlled data and services from, currently, ten different disciplines: Seismology, Near-Fault Observatories, GNSS Data and Products, Volcano Observations, Satellite Data, Geomagnetic Observations, Anthropogenic Hazards, Geological Information and Modeling, Multi-Scale Laboratories, and Tsunami. The Portal is the result of a collective work carried out with a co-development approach by following a FAIR data management approach. The Portal source code has been released under a GPL license (<https://epos-eu.github.io/epos-open-source/>) along with a comprehensive developer's guide that is already being used as a reference from other European Research Infrastructure. To date, the EPOS Data Portal has been visited by over 20,000 users from more than 100 countries worldwide, showcasing its ability to cross geographical barriers and attract a diverse international audience. Users converge on the EPOS Data Portal to access multidisciplinary scientific data and products. This, by facilitating collaboration and knowledge exchange on a global scale, ultimately advances research and innovation.

Entering in the Operational Phase required working on a new strategy based on viable solutions to address new challenges for a sustainable operation of the EPOS Research Infrastructure. To this task, the EPOS SP Project (2020-2023) has been specifically designed to explore and deliver several workable solutions. Actually, the EPOS SP project, as one of its primary outcomes, on April 2023 delivered a report on the EPOS Long-term Sustainability. This report encompasses the findings and recommendations on long-term sustainability derived from the entirety of the EPOS SP project activities and ECO has used it as a reference document for drafting the EPOS ERIC Strategy 2024-2028 document. Therefore, a pivotal activity coordinated by the ECO and substantially supported by the Service Coordination Committee, the Scientific Advisory Board and the General Assembly concerned with drafting the **EPOS ERIC Strategy 2024-2028**. After several iterations with the above-mentioned bodies, the document is currently in a very advanced version, and it is composed of the **EPOS Business Model**, with a description of the EPOS architecture, governance, financial and regulatory frameworks, innovation and communication, the **Science Program** describing the community perspective on the EPOS strategy to generate scientific impact, and the **Sustainability Plan** demonstrating the way in which EPOS ERIC can implement the objectives of its Science Program, based on a target scenario of income.

A further crucial activity performed in 2023 focused on the **Scientific Evaluation of EPOS ERIC for 2019-2023**. Following the regulation and EPOS ERIC Statutes (Art.20), after the first 5-year period, concluded in 2023, EPOS ERIC has to be subject to a scientific evaluation of its activities. In April 2023, the EPOS ERIC General Assembly appointed five international external evaluators of the highest quality in science management, Earth Science, and Information Technology to constitute an External Evaluation Panel tasked with the scientific and technical evaluation of the activities of EPOS ERIC during its first 5-year of activities. The evaluation was concluded in November 2023, and a [report](#) was submitted to the EPOS ERIC General Assembly. The report was formally acknowledged during the 21<sup>st</sup> GA meeting in December. Throughout the evaluation period, the EPOS ERIC Executive Committee was responsible for coordinating the scientific evaluation internally, as per the decision of the EPOS ERIC General Assembly.

In 2023, EPOS ERIC also needed to get prepared for the **ESFRI Monitoring of EPOS Landmark**. The ECO participated in one meeting with the ESFRI Monitoring Panel Chair to discuss the procedure, expected timelines and expectations and was in charge of the preparation of all documentation relevant for the monitoring.

Community efforts in 2023 concerned the **renewal of Multi-Year Collaboration Agreements (MYCA) with the TCS for the period 2024-2028** and the finalization of the **Implementing Rules Section 2**. The ECO, in collaboration with the TCS has defined the new collaborative framework in the beginning of 2024. Relevant changes have been introduced in the MYCA with the aim of strengthening collaboration between EPOS ERIC and the TCS, promoting streamlined processes and effective communication. In particular, the duration of the Agreements has been extended from three to five years to ensure a robust legal collaboration for the long-term sustainability of the EPOS Delivery Framework. There is now one single Agreement encompassing both governance and coordination activities, and data and service provision. This consolidation of activities under a single agreement promotes efficiency and fosters a more cohesive working relationship between EPOS ERIC and the TCS. These enhancements underscore our commitment to fostering a productive and enduring partnership between EPOS ERIC and the TCS. Section 2 of the EPOS ERIC Implementing Rules outlines the rules of procedures for the management of the EPOS Delivery Framework. To perform the task of drafting the document, a Working Group composed by members of the ECO, the Service Coordination Committee and the General Assembly was established in November 2021. After a first year dedicated to drafting the document (2022) and several iterations with the concerned bodies (during the year 2023), the Working Group delivered the final version of the EPOS ERIC Implementing Rules Section 2 to the General Assembly for adoption in December 2023.

During 2023, the Executive Coordination Office confirmed its role in bolstering the Executive Director's efforts. The ECO Staff served as the secretariat for the EPOS ERIC General Assembly and the other governing bodies, facilitating seamless communication between governance and operations. This involved the meticulous organization and follow-up of four General Assembly meetings, one Scientific Advisory Board meeting, and one Ethics Advisory Board meeting. Four Service Coordination Committee meetings and four Executive Committee meetings were also successfully conducted.

Finally, a key achievement in 2023 concerns the **enlargement of the EPOS Community**, both in terms of enlarging the scientific community, with the conclusion of the Candidate phase for the TCS Tsunami and its formal establishment as EPOS TCS, and enlarging the ERIC membership, with four new Members joining the EPOS Consortium, namely Spain, Bulgaria, and Croatia and Switzerland which transitioned from Observer status to Member status.

The year 2023 was, of course, dedicated to performing the activities foreseen in the EPOS ERIC 2023 Activity Plan, as detailed in this Report which is structured in four sections:

1. Activities and Results, reporting on the activities performed to accomplish the objectives foreseen in the 2023 Activity Plan and Provisional Budget
2. Financial Statements, composed of Balance Sheet, Profit and Loss Account and Cash Flow Statement;
3. Notes to the Financial Statements, summarizing the incurred costs and revenues taking into account the 2023 Activity Plan and Provisional Budget;
4. Auditors Report.

This Report has been discussed and approved by the EPOS ERIC Executive Committee (7<sup>th</sup> May 2024) and adopted by the EPOS ERIC General Assembly (30<sup>th</sup> May 2024, Resolution No. 4/2024).

Carmela Freda  
Executive Director

## 1. Activities and Results

The activities performed in 2023 were in accordance with the EPOS ERIC 2023 Activity Plan and Provisional Budget adopted by EPOS ERIC General Assembly on 14<sup>th</sup> December 2022 (Resolutions No. 9/2022). Activities and results are detailed in the following paragraphs.

### 1.1 Operation of the Executive Coordination Office (ECO)

The Executive Coordination Office, representing the EPOS ERIC legal seat, has the role of coordinating the EPOS Research Infrastructure, including the operation of the integrated (ICS) and thematic (TCS) core services. The ECO is financially supported by the Host Country (Italy) through the Italian Host Contribution provided by the Representative Entity (INGV).

The Executive Director appoints the ECO on the identified needs. The ECO is composed of EPOS ERIC employees and personnel provided through in-kind contributions from INGV (Table 1). The ECO Staff is organised in "Units" and ensures the Research Infrastructure's day-to-day operation, performing administration, management, communication, IT, and legal activities. The operation of the EPOS Research Infrastructure is guaranteed by the synergic work of the Executive Director, the Officers, and the Units' Staff. In 2023, a collaborator supported ECO's efforts to ensure EPOS ERIC's participation and interaction in international initiatives that promote e-science cooperation. Over the year, three employees joined EPOS ERIC to complete the Staff of the Communication Unit (one Chief and one Assistant) and Administration Unit (one Assistant).

The ECO Staff serves as the secretariat for the EPOS ERIC General Assembly and the other governing bodies, facilitating seamless communication between governance and operations. In 2023, this involved the meticulous organization and follow-up of four General Assembly meetings, one Scientific Advisory Board meeting, and one Ethics Advisory Board meeting. Four Service Coordination Committee meetings and four Executive Committee meetings were also successfully conducted.

EPOS ERIC employees and INGV in-kind personnel participate in the EPOS Delivery Framework activities, including the Horizon 2020 and Horizon Europe projects, better explained in the "Projects" paragraph, based on their specific skills and expertise.

**Table 1.** 2023 Human Resources Plan detailing person/months (P/M) for each ECO Unit.

	Unit	P/M
EPOS ERIC Employees	Administration	22.0
	Management and Operation	24.0
	Communication	18.5
	IT	24.0
	<b>Sub-Total</b>	<b>88.5</b>
INGV in-kind personnel	Management and Operation	10.5
	Communication	13.0
	IT	16.0
	Legal Liaison	3.0
	<b>Sub-Total</b>	<b>42.5</b>
<b>Total</b>		<b>131.0</b>

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

In the framework of the Multi-Year Partnership Agreement (MYPA) 2023 - 2025 for hosting and operating the ICS-C, the Hosting Organizations UKRI-BGS (UK) and BRGM (France) in 2023 focused on enhancing the Integrated Core Service (ICS-C) infrastructure and ensuring reliable access to the EPOS Data Portal.

In particular, the 2023 work plan was strategically structured to address both immediate and future needs of the ICS-C. Key aspects included upgrading hardware for increased capacity and performance, implementing robust security measures, and fostering a collaborative environment for continued development and operational excellence. The key activities performed in this framework included: **i) Infrastructure Improvement**, hosted at BRGM and BGS, with monitoring services provided by GEUS (as for the Multi-Year Collaboration Agreement (MYCA) 2023 – 2025 and detailed in the 2023 Work Plan) was modernized and expanded; these enhancements were made to support development, staging, and production environments. **ii) Code Management**, the source code version control uses Git with GitLab, enabling seamless deployment pipelines and managing user access across the EPOS development team. **iii) Collaboration Environment**, a collaboration space via the MS Teams platform was provided, which proved crucial during various Hackathon, DevOps, and ICS-TCS events. **iv) Maintenance**, the Operations Team diligently managed daily infrastructure alerts, ensuring the robust performance of object storage, backup systems, and network security. **v) Development and Architecture**, close work with the Development Team to identify improvements and guide the architectural evolution of the ICS-C from a DevOps perspective was undertaken. **vi) Reporting**, regular reporting on web service monitoring, internal infrastructure, and incident reporting ensured transparency and alignment with the EPOS technical objectives. **vii) Strategic Planning, development of annual work plans and capacity plans**, also in the framework of IT Board activities, were aligned with the EPOS strategic goals, focusing on anticipated growth and resource requirements. **viii) Operational Excellence**, high service availability was maintained, achieving an overall annual availability of 99.1%, despite facing challenges with metadata queries performance, which were addressed effectively. **ix) Security and Risk Management**, security monitoring using OSINT and Trivy scans, along with the creation of a risk register, underpinned the commitment to safeguarding the EPOS ICS. **x) Resource Management**, intelligent capacity planning allowed for accurately matching computing resource needs, addressing any performance issues proactively. **xi) Change and Release Management**, adherence to strict quality assurance and deployment procedures, with numerous versions pushed to production, ensured the stability and functionality of the services.

The successful execution of these activities has reinforced the foundational IT operations of the ICS-C, contributing significantly to the broader objectives of EPOS and ensuring the system's readiness to support scientific research and collaboration on a European scale.

### 1.3 TCS Governance and Coordination

Activities aimed at ensuring TCS governance and coordination are performed in the framework of the Multi-Year Collaboration Agreement (MYCA) 2021 - 2023 for TCS Governance and Coordination.

In particular, in 2023, TCS executed activities focused on ensuring: **i) operation of the governance and coordination of the TCS** within the EPOS Delivery Framework; **ii) operation of the communication and dissemination activities** between the TCS and the EPOS ERIC Communication Unit. Additionally, throughout 2023, the TCS worked on the following strategic activities: **i) assessment of the quantity and quality of data and services** provided under the EPOS Delivery Framework, and identification of ways to improve them where needed; **ii) identification of mechanisms to support the long-term sustainability** of the TCS data and service provision; **iii) building strategic partnerships and attracting new partners**; **iv) activities linked to the TNA Working Group**, which is aimed at finalizing the validation of the TNA Facility Access service within the EPOS framework. Further details on the activities performed by each TCS are provided in the concerned MYCA 2023 Work Plan and Technical Report. Activities have been also reported to the Community during the 2024 EPOS Days.

In 2023, TCS Governance and Coordination activities involved thirty-eight national research organizations based in fifteen ERIC Member Countries, one Observer Country<sup>1</sup>, and three European Countries involved in EPOS but not joining the ERIC yet<sup>2</sup>.

### 1.4 TCS Data and Service Provision

Activities aimed at ensuring the provision of data and services are performed in the framework of the Multi-Year Collaboration Agreement (MYCA) 2022 - 2023 for TCS Data and Service Provision

In particular, in 2023, TCS focused on guaranteeing virtual access to data and services provided by diverse service providers under the EPOS framework. The implemented tasks included: **i) setting up and managing data access** via web services, allowing users to search, access, and download data easily; **ii) improving web services** for reliability and availability to ensure they meet performance standards; **iii) making sure that FAIR principles** are applied to data, metadata, and services; **iv) keeping metadata for TCS web services** organized according to EPOS standards; **v) providing user-friendly online documentation** for web services; **vi) adding a secure login system** for services that require authentication; **vii) active participation** in system development and bug fixing and in ICS-TCS interaction workshops; **viii) coordinating technical aspects of services**; **ix) planning to integrate TCS services** into a broader system for wider access; **x) evaluating data quality** available through the EPOS Data Portal. Further details on the activities performed by each TCS are provided in the concerned MYCA 2023 Work Plan and Technical Report. Activities have been also reported to the Community during the 2024 EPOS Days.

In 2023, TCS Data and Service Provision activities involved thirty-five organizations based in fourteen ERIC Member Countries, one Observer Country<sup>3</sup> and five European Countries involved in EPOS but not joining the ERIC yet<sup>4</sup>.

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<sup>1</sup> Belgium, Denmark, France, Greece, Iceland, Italy, The Netherlands, Poland, Portugal, Romania, Slovenia, Spain, Sweden, Switzerland, United Kingdom; Germany.

<sup>2</sup> Czech Republic, Finland, Ireland.

<sup>3</sup> Belgium, Denmark, France, Greece, Iceland, Italy, The Netherlands, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland, United Kingdom; Germany.

<sup>4</sup> Czech Republic, Finland, Hungary, Ireland, Turkey.

## 1.5 Development of the ICS-TCS System

Activities aimed at advancing the ICS-TCS System were overseen collaboratively by the IT Board and the ICS-TCS Interaction Team. Quarterly gatherings of the ICS-TCS Interaction Group where both ICS and TCS representatives were present, delved into technical and scientific intricacies which are vital for the system development 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 2023, four interaction workshops were conducted, primarily in a virtual format, with one physical event held in Naples in September 2023; 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 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 EGU in Vienna, IUGG in Berlin, BeGEO23 in Naples, and IMPROVE Network School in Catania, among others; two training virtual events, including demonstrations of the EPOS Data Portal, also contributed to knowledge dissemination. **iii) Interactions with TCS**, this involved managing requests for TCS users in GitLab and EPOS intranet, as well as preparing and announcing ICS activities requiring TCS participation; discussions and idea-sharing sessions focused on integrating and improving service visualization in the EPOS Data Portal; the ICS-TCS Interaction Team closely followed each TCS, coordinating the testing of new TCS services before implementation into the ICS; this process was facilitated by the adoption of the EPOS-DCAT-AP metadata model, serving as means for 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. **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.

## 1.6 Sponsored Research Activities

The Sponsored Research Activities in 2023 focused on the **integration of ICS-D prototypes with the EPOS Data Portal to provide pre-operational access** and use of existing Virtual Research Environment prototypes in the EPOS ICS-C. The ICS-D's design, development and refinement through iterations has been instrumental in evolving EPOS into a true Multi-Purpose Virtual Research Environment (VRE) encompassing the entire data lifecycle.

The operational plan involved a multi-tier approach, beginning with an in-depth landscape analysis to gauge the current and potential capacities of ICS-D prototypes like Enlighten Web and Jupyter. Concurrent workshops and community consultations with TCS aimed at informing and refining the integration strategies and refining ICS-D prototypes and shaping its future direction were carried out. A pivotal aspect was the development of an ICS-D connector, facilitating interoperable communication between the ICS-D prototypes and the overarching ICS-C system through SWIRRL APIs. Additionally, the latter tasks include assessing and securing necessary resources for ICS-D Hosting, integrating with the EPOS Data Portal AAI, and optimizing resource orchestration for users' effective usage of Virtual Research Environments.

Significant strides have been made in the project's execution phase. The initial task involved assembling and validating a set of features through active community involvement. This entailed examining extant prototypes against community needs and aligning the software's functionalities with the workflows extant in the tsunami data portal and other platforms.

Subsequently, the focus shifted to the ICS-D Connector's creation, a software interface to interoperate the ICS-D prototypes within the existing EPOS technical framework. The connector was conceived to facilitate workflows and data exchanges, marking a technological leap in interoperability.

In parallel, the metadata schema underwent a refinement process to encapsulate generic and service-specific information necessary for the smooth communication between ICS-C and ICS-D components.

The GUI refactoring, in the part related to the access to virtual research environments, was a critical undertaking, designed to enhance user interaction with the ICS-D environments, ensuring a frictionless and intuitive experience.

The operational environment has been established, and the requisite infrastructure, including Kubernetes clusters, necessary for the functional operation of ICS-D prototypes, has been conceptualized and deployed.

The culmination of these tasks is evident in the readiness of the ICS-D architecture within the EPOS Data Portal AAI, and in the **release of two VREs as prototypes, namely Enlighten web and Jupyter notebooks**, paving the way for the VRE's robust utilization.

### 1.7 International Cooperation

EPOS ERIC is guiding a research infrastructure of global dimension and scope, as corroborated by its high visibility in the global landscape of research infrastructures. EPOS has been invited and actively participated in 'Global Dimension of Research Infrastructures' session during the **Spanish EU Presidency conference** in Tenerife in September 2023. This session focused on sustainability and resilience of research infrastructures, exploring their global dimension, and fostering international cooperation and science diplomacy.

Following a strategy of strengthening the EPOS position in the global landscape by establishing partnerships with regional and international initiatives, targeted activities were undertaken during 2023 with the specific objective of establishing and enhancing relationships with other relevant organizations. This approach underscores EPOS' commitment to creating a well-connected and collaborative international network.

In 2023, EPOS persistently worked with other European environmental RIs through direct involvement in the ongoing **EU-funded ENVRI-FAIR and ERIC Forum 2 projects** (see section 1.10). EPOS is also a member of the associated **Board of Environmental Research Infrastructures (BEERi)**, a coordinating body for the cluster of European environmental RIs that aims to provide a unified voice on issues of collective interest and shared strategies for engaging with selected initiatives and opportunities. Activities have also continued within the **Research Data Alliance (RDA)** including through the ESIP/RDA Earth, Space and Environmental Sciences Interest Group that has provided a range of opportunities to promote and share expertise from the EPOS community with other regional and international partners. 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 Memoranda of Understanding 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.

In addition to these regional actions, the EPOS community have also been actively engaged in strengthening existing relationships with other key initiatives including the international **Group on Earth Observations (GEO)** where EPOS is a Participating Organization and an active member of the Data Working Group as well as a contributor several of the GEO Work Programme (GWP activities). To further this active engagement with GEO, EPOS appointed its Scientific Officer as EPOS Principal to GEO. EPOS participated in the EUROGEO Workshop (October 2023) and the GEO Plenary meeting during GEO Week 2023 (November 2023) to further deepen collaboration. The year 2023 was decisive to intensify the collaboration with **AuScope**, as several meetings were held with the aim of drafting a Position Paper on "Building an international partnership for solid Earth research" and organize activities of common interest during the General Assembly of the European Geosciences Union (EGU) in April 2024, including the presentation of the Position Paper to the relevant stakeholders. Moreover, EPOS and **EarthScope** advanced their collaboration by organizing joint meetings and formalizing their collaboration in a proposal submitted by EarthScope to the National Science Foundation (NSF). If the proposal, entitled 'National Geophysical Facility: Advancing Earth Science Capabilities through

Innovation,’ is selected for funding by NSF, it presents an excellent opportunity for collaboration between EPOS and EarthScope.

Development of the EPOS global engagement activities also progressed through a successful international conference, which was planned as part of the EPOS SP project. The international conference took place on 6-7 February 2023 in Natal, Brazil and saw a range of contributors participating both in-person and online. This international meeting aimed to bring together EPOS partners and potential collaborators from countries in **Africa and Latin America** for the purposes of developing mutually beneficial partnerships and extending the EPOS membership to include organizations from these regions.

## 1.8 Communication and Dissemination

The first months of the year 2023 were critical in terms of EPOS communication strategy because of the official launch of the EPOS Data Portal planned to occur in April the 25<sup>th</sup>, in the formal context of a TownHall meeting during the EGU General Assembly. The communication strategy was based on a multi-media campaign developed in three phases: promotional (from January to April), official announcement (April 25 2023 at the EGU General Assembly) and maintenance in the medium-long term (from May 2023). Also, the involvement of EPOS's various stakeholders was ensured, thus making the launch a milestone for the whole EPOS community.

An essential action performed during the year concerned the reorganization of the EPOS ERIC Communications Unit which was joined by a new Chief and a new Assistant. This also resulted in the draft of a new operational plan for communications, based on the existing communication strategy and shared with the ECO and the TCS communication contacts. The overarching objectives of the plan are mapped on the EPOS Science Program to ensure a coherent and synergistic action.

Specific activities in the second part of the year focused on the following key areas: **i) Visual identity**, the work on visual identity has 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; in 2023 it led to the revision of the EPOS Visual Identity manual and all relevant templates and to the creation of brand kits for the main brand and for some of the national nodes and TCS. All brand kits are expected to be made available by 2024. **ii) Information materials and website**, an extensive revision of existing communication materials (EPOS brochure, poster, TCS leaflets, national node leaflets) was also started, with the objective of offering ready-to-use printable and digital materials to the EPOS community; the website has been updated with new information and the news and events sections were revamped, but a more extensive revision, that will lead to the complete redesign of the website in 2024 has also started, with a first round of requirements collection carried out during the last quarter of 2023. **iii) Event organization and management**, main events organised in 2023 concerned the EPOS Data Portal launch at the EGU General Assembly and the EPOS’ presence at IUGG in Berlin; then, efforts were also dedicated on the preparation for EGU2024 and the EPOS Days 2024, first large in-person event for the EPOS community after the pandemic, planned for March 2024. The EPOS Days organization, in particular, involved not only the Communications Unit but the ECO as a whole; a complementary activity started in the second half of the year was the creation of a shared dissemination event calendar

with the TCS communication contacts; the objective is twofold: to keep track of local/thematic events and to provide dissemination and communication support whenever needed; through this approach, the EPOS Communications Unit provided support to a number of different events, including conferences, poster sessions, exhibitions, webinars, also it helped drafting abstracts, presentations and posters, sending information materials and branded merchandise, and advertising the event across different media. **iv) Social Media**, social media activities focused on creating and implementing a consistent strategy to re-establish EPOS' existing social media presence on LinkedIn, Facebook and X, which was objectively very limited before 2023; the strategy focused on posting consistently and involving the EPOS Community and led to very good results throughout the year and a positive outlook for the future, but much remains to do to unleash its full potential. **v) Training**, due to the entry in operation of the EPOS Data Portal, training was of a high priority in 2023; onsite training was delivered at diverse conferences such as EGU in Vienna, IUGG in Berlin, BeGEO23 in Naples, and IMPROVE Network School in Catania, among others; furthermore, online sessions were delivered in the second quarter of the year; a reconnaissance activity to discover existing training materials in the TCS was also started as an ICS-TCS interaction pitch and led to the collection of reusable training resources from several TCS; a plan for a train-the-trainers approach was also devised, in order to increase the number of people in the community who are qualified to provide training on the EPOS Data Portal and services. **vi) Employer branding**, to increase attractiveness of EPOS as an employer, the Communications Unit has started an Employer branding and targeted advertising action, highlighting EPOS' key value propositions for prospective employees; first results with the applications to open job positions in 2023 were encouraging and the idea is that in the long term this strategy will benefit not only EPOS ERIC, but also other EPOS members when opening EPOS-related positions and will lead to attract motivated and talented people to EPOS. **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 2023, this action focused on the engagement of the TCS' communication contacts, started already during the preparation of the launch and steadily pursued by setting up regular meetings with the team, providing updates on key communication activities and involving them in relevant ones (e.g., event planning and update of materials); communication contacts in National nodes are also being approached and this activity will be reinforced in 2024 also through the provision of guidelines on specific topics (e.g., the already mentioned Visual Identity Manual and brand kits, or the Social Media Guidelines currently being drafted); in time, tailored engagement strategies for other segments of the EPOS stakeholders will be designed and implemented. Example are strategies to involve Early Career Researchers through dedicated programmes such as travel grants, prizes and targeted events, currently in progress.

## 1.9 EPOS ERIC boards and committees

During 2023, the Executive Coordination Office organized four General Assembly meetings, one Scientific Advisory Board meeting, and one Ethics Advisory Board meeting. Four Service Coordination Committee meetings and four Executive Committee meetings were also successfully conducted.

The **EPOS ERIC General Assembly** devoted substantial attention to the key areas of the EPOS ERIC strategy and sustainability. The aim was to ensure that EPOS is well-equipped to address current needs and challenges, thereby fortifying its ongoing operations and ensuring its expansion. These critical discussions necessitated a thorough examination of the EPOS ERIC financial mechanisms. To this end, a dedicated General Assembly Operations Working Group (OWG) was established in June 2023. The OWG, comprising representatives from the EPOS ERIC General Assembly and supported by the ECO has already met four times in 2023, and its work will continue until the end of 2024. Furthermore, in April 2023, the EPOS ERIC General Assembly appointed the **External Evaluation Panel** tasked with the scientific and technical evaluation of the activities of EPOS ERIC during its first five years. The evaluation was concluded in November 2023, and a report was submitted to the EPOS ERIC General Assembly. The report was formally acknowledged during the 21<sup>st</sup> GA meeting in December. Throughout the evaluation period, the EPOS ERIC Executive Committee was responsible for coordinating the scientific evaluation internally, as per the decision of the EPOS ERIC General Assembly. Additionally, one ECO representative acted as the liaison between the Panel and EPOS ERIC.

EPOS ERIC benefits from two **External Advisory Boards**: Ethics Board and Scientific Board. They offer guidance, oversight, and information to the General Assembly on EPOS ERIC's activities. The Ethics Board convened remotely once in 2023 to discuss and advise on: EPOS Ethical Guidelines, EPOS Digital assets management policies, implementation of the EPOS Gender Equality Plan. The Scientific Board also met remotely once, to discussed and advised on: EPOS Science Program, EPOS Data Portal, and ESFRI monitoring, with a focus on "Scientific Excellence". The ECO provided support to the Boards' activities. During its 21<sup>st</sup> meeting in December 2023, the EPOS ERIC General Assembly acknowledged the reports with the Board's recommendations on the issues discussed over the year.

The Executive Director consulted the **Service Coordination Committee** (SCC) four times by calling devoted meetings, in addition to the consultations made by written procedures to produce and process the EPOS Science Program and prepare the renewal of the TCS's Multi-Year Collaboration Agreements 2024-2028. The SCC was actively involved in the first formal release of the EPOS Data Portal, held on 25<sup>th</sup> April 2023 during the EGU General Assembly in Vienna. The SCC contributed to drafting the EPOS ON proposal submitted to the EC. The SCC also focused on strengthening the relationship with the EPOS ERIC General Assembly by starting with a cycle of TCS presentations during the 21<sup>st</sup> General Assembly meeting. Additionally, the SCC worked to reinforce the community's presence in ethics-related issues by endorsing the nomination of TCS representatives for such matters. Finally, after supporting the Executive Director in assessing the proposal, the SCC fully endorsed the Candidate TCS Tsunami's request to move to the status of EPOS TCS.

The **Executive Committee** held four ordinary meetings to advise the Executive Director on preparing the overall EPOS ERIC relevant documents and activities. These meetings supported and complemented the critical and proactive role played by the SCC in addressing EPOS's challenges.

### 1.10 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 SP, European Plate Observing System Sustainability Phase (February 1<sup>st</sup>, 2020 - April 30<sup>th</sup>, 2023). European Programme: HORIZON 2020, EXCELLENT SCIENCE - Research Infrastructures, Developing new world-class research infrastructures topic. The project involved 24 participants from 17 European Countries and aimed at performing activities to ensure the long-term sustainability of the EPOS Research Infrastructure through the following strategic actions: Securing governance and financial sustainability through the entire RI lifecycle; Securing technical sustainability and developing innovation to exploit data and service provision; Establishing and maintaining excellence by preserving and reinforcing the trust of users; Exploiting economic and societal benefits to keep stakeholders engaged. The main achievement of EPOS SP in 2023 was the delivery of the EPOS Long-term Sustainability Report. This report encompasses the findings and recommendations on long-term sustainability derived from the entirety of the EPOS SP project. It outlines key documents necessary for the strategic and operational planning of the EPOS Operational Phase. Many other significant results have been achieved according to the aims of the four strategic actions, for example: 1) As a result of efforts undertaken within the framework of the National Authorities Consultation Board (NACB) aimed at enhancing financial sustainability by expanding the membership of EPOS ERIC, concrete evidence of success in achieving this objective emerged with Switzerland's request to become a member, which the General Assembly approved in April 2023. Furthermore, active communication was undertaken with Spain, which joined EPOS ERIC in June 2023, and Croatia and Bulgaria, both of which were in the process of undertaking national-level actions to request access to join EPOS ERIC and became members in December 2023. Additionally, EPOS SP facilitated the strengthening of ties with other countries, such as Finland, the Czech Republic, Hungary, Ireland, Slovakia, and Turkey. 2) Concerning technical sustainability, efforts were put in during the project to build the EPOS Data Portal further which was officially launched at EGU General Assembly. 3) To assess users' experience, and interactions with user scientists, activities have been focused on improving the technical performance of the EPOS ICS-C. Training and testing activities, including for new thematic communities like Tsunami and Built Environment Data, have been carried out. Feedback from users has informed the introduction of new developments at the ICS level, as well as requests for implementing new features in the EPOS Data Portal. 4) Concerning the value for society, two reports were presented at the beginning of 2023. The first report focused on optimizing EPOS's societal value concerning geo-hazards and risks. It included specific guidelines and recommendations regarding communication strategies and stakeholder engagement, particularly in crisis scenarios. The second report provided recommendations for implementing the EPOS Open Science roadmap, covering aspects such as current preparedness, potential conflicts, and the implications of Open Science for EPOS's long-term sustainability.

### *EPOS ERIC in the role of project beneficiary*

EOSC Future (April 1<sup>st</sup>, 2021 - March 31<sup>st</sup>, 2024; 36 beneficiaries; coordinator ATHENA, Greece). European Programme: HORIZON 2020, EXCELLENT SCIENCE - 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 2023, 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.

DT-GEO, A Digital Twin for GEOphysical extremes (September 1<sup>st</sup>, 2022 – August 31<sup>st</sup>, 2025; 15 beneficiaries; coordinator: CSIC, Spain). Programme: HORIZON EUROPE, EXCELLENT SCIENCE, 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 1<sup>st</sup>, 2022 – August 31<sup>st</sup>, 2025; 44 beneficiaries; coordinator: CONSORTIUM GARR, Italy). Programme: HORIZON EUROPE, 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, intensive-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.

GREAT, The Green Deal Data Space Foundation and its Community of Practice (September 1<sup>st</sup>, 2022 – April 30<sup>th</sup>, 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 2023, EPOS ERIC and its affiliated entities INGV and IG PAS were involved in activities related to the Green Deal Data Community Engagement.

Geo-INQUIRE, Geosphere INfrastructures for QUestions into Integrated REsearch (October 1<sup>st</sup>, 2022 – September 30<sup>th</sup>, 2026; 48 beneficiaries; coordinator: GFZ, Germany). European Programme: HORIZON EUROPE, EXCELLENT SCIENCE, 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 2023, 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 1<sup>st</sup>, 2023 – August 31<sup>st</sup>, 2027; 25 beneficiaries; coordinator: BBMRI-ERIC, Austria). European Programme: HORIZON EUROPE, EXCELLENT SCIENCE, 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 2023, EPOS ERIC engaged in initial activities related to ERICs and the European Science Policy & Research Strategy.

### *EPOS ERIC associate in European Union-funded projects*

ENVRI-FAIR, ENVironmental Research Infrastructures building Fair services Accessible for society, Innovation and Research (January 1<sup>st</sup>, 2019 - June 30<sup>th</sup>, 2023; 39 beneficiaries; coordinator: Forschungszentrum Jülich GMBH, Germany). European Programme: HORIZON 2020, EXCELLENT SCIENCE - Research Infrastructures, Developing new world-class research infrastructures topic. The project aims to advance the findability, accessibility, interoperability, and reusability (FAIRness) of the digital assets provided by research infrastructures and connect them to the emerging European Open Science Cloud. ENVRI-FAIR targets developing and implementing a technical and policy framework to overcome disciplinary boundaries within the ENVRI community. Cross-discipline harmonisation and standardisation, and the implementation of joint data management and access structures, will facilitate truly interdisciplinary Earth system science that is fundamental to addressing today's environmental challenges. In 2023 EPOS ERIC was involved in activities linked to i) defining strategies for alignment with national and international stakeholders; ii) common standard requirements and testbeds for (meta)data services, community standards and cataloguing; iii) training and capacity building; iv) common implementation and support; v) solid Earth subdomain implementation. It should also be noted that EPOS is considered a pioneer Research Infrastructure due to its established mechanisms for delivering policy documents within this framework.

RltrainPlus RESEARCH INFRASTRUCTURE TRAINING PLUS (April 1<sup>st</sup>, 2021 - March 31<sup>st</sup>, 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.

### 1.11 Gender Equality Plan

In 2023, the EPOS ERIC Gender Equality Plan (GEP) Working Group evaluated the progress of commitments and actions to promote gender equality within the organization. The working group discussed the implementation of the EPOS GEP in a dedicated meeting held on July 4<sup>th</sup>, 2023, with the Ethics Board. The Ethics Board provided valuable suggestions, which were incorporated into the revised version of the document. This final version is a [public document](#), available on the EPOS ERIC website.

### 1.12 Implementing Rules – Section 2

Throughout 2023, the Implementing Rules (IR) Section 2 has been further implemented and improved by the IR Working Group considering comments received by the Service Coordination Committee, the Executive Committee, EPOS ERIC legal consultant, and the General Assembly. This collaborative process led to the final version of IR Section 2 being presented to the General Assembly in December 2023 and approved via written procedure in February 2024. The Implementing Rules Section 2 is a key document that outlines the rules of procedure for the management of the EPOS Delivery Framework (i.e., ICS-C Hosting and Operation; role and responsibilities of Thematic Core Services; ICS - TCS Interaction) and for its evolution (i.e., inclusion of new Thematic Core Services, new services, IT developments).

### 1.13 Policies

In 2023, the Policy Working Group focused its activities on two main areas concerning Data Breach Policy and EPOS Data Policy.

In particular, concerning the Data Breach Policy, requirements have been included in the EPOS ERIC Agreements; this ensures that procedures for managing data breaches and promptly notifying the EPOS ERIC Data Protection Officer (DPO) are now established in the frame of the Agreements, EPOS ERIC is signing with the different stakeholders; the Group also worked on the development of comprehensive Data Breach Guidelines intended to be collaboratively implemented and agreed upon with the Executive Coordination Office and the Service Coordination Committee; the main objective is to delineate the responsibilities of institutions, with a specific focus on reinforcing the role and obligations of EPOS ERIC in managing data breaches effectively. Concerning the EPOS Data Policy, a thorough examination of the existing EPOS Data Policy, initially released in 2018, was conducted by the Group; as a result of this assessment, it was recommended that an update be considered in 2024 in collaboration with the SCC; the proposed update emphasizes enhancements in addressing issues such as anonymous access and user authentication, especially within the context of utilizing EPOS Data Portal workspaces. Additionally, the Group drafted the EPOS Data, Data products, Software and Services (DDSS) Citation Guide discussed and approved by Service Coordination Committee.

## 2. Financial Statements

Balance Sheet - Assets and liabilities at 31.12.2023				
		2023		2022
<b>ASSETS</b>		<b>5.627.812</b>		<b>4.851.275</b>
<b>NON CURRENT ASSETS</b>		<b>68.917</b>		<b>-</b>
Tangible assets (plant, property and equipment)		55.539		-
Intangible assets		13.378		-
Long term credits		-		-
<b>CURRENT ASSETS</b>		<b>5.558.895</b>		<b>4.851.275</b>
Stocks		-		-
Short term credits		83.952		33.759
- credits for members' statutory contribution in cash	50.000		-	
- other current credits and receivables	33.952		33.759	
Cash and cash equivalents		5.470.694		4.802.996
Prepayments and accrued income		4.249		14.520
<b>EQUITY AND LIABILITIES</b>		<b>5.627.812</b>		<b>4.851.275</b>
<b>EQUITY</b>		<b>(2)</b>		<b>-</b>
Capital and other permanent contributions from Members		-		-
Reserves		(2)		
Accumulated profits		-		-
<b>NON-CURRENT LIABILITIES</b>		<b>56.849</b>		<b>31.458</b>
Long-term financial debts and loans		-		-
Other long-term debts and liabilities		-		-
Employee's severance indemnity		56.849		31.458
Long-term provisions		-		-
<b>CURRENT LIABILITIES</b>		<b>5.570.965</b>		<b>4.819.817</b>
Short-term financial debts		1.290.173		765.881
Advance payments for externally funded projects		213.396		209.717
Other short-term debts and liabilities		1.355.439		997.019
Deferred income and accrued expenses		2.711.957		2.847.200
- 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)			
- accrued expenses	188		59	

Rome, 08/05/2024

EPOS ERIC  
The Executive Director  
*Carmela Freda*

PROFIT AND LOSS ACCOUNT					
		2023		2022	
Revenues			6.161.890		4.261.900
	National and international grants and contributions		3.422.011		2.975.148
	• monetary contribution of EPOS ERIC Members	1.864.000		1.484.000	
	• host premium cash contribution	1.100.000		700.000	
	• contribution project externally funded	322.639		223.085	
	• use of carry over of previous years (+)	135.372		568.063	
	• carry over of the year (-)				
	Contributions in-kind		2.739.873		1.281.292
	• contributions in kind by hosting country	224.862		228.311	
	• contributions in kind by partner	2.515.011		1.052.981	
	Other revenues		6		5.460
Operating costs			6.127.665		4.239.094
	Costs for raw materials, supplies and goods	7.478		6.074	
	Costs for services	605.313		535.204	
	Staff costs	576.407		534.458	
	Costs of rents, concessions and royalties for trademarks	22.874		6.119	
	Contributions TCS	1.801.182		1.630.445	
	Contributions ICS-C	301.793		245.103	
	Contributions SRA	71.969			
	Other operating costs	776		399	
	Resources committed in-kind to EPOS from contributors	2.739.873		1.281.292	
Ebitda (Earning before Interests, Taxes, Depreciations and Amortizations)			34.225		22.806
Depreciation			9.506		-
Write-downs for impairment of tangible and intangible assets			-		-
Ebit (Earnings before interests and taxes)			24.719		22.806
Financial income and expenses			(238)		(68)
	Financial income		-		-
	Financial charges (-)		(238)		(68)
Income from investments			-		-
Value adjustments to financial assets			-		-
Result before tax			24.481		22.738
Income tax			24.481		22.738
Result for the year			-		-

Rome, 08/05/2024

EPOS ERIC  
The Executive Director  
*Carmela Freda*

## Statement of Cash Flows

### *Financial statements as at 31/12/2023*

#### Financial Statement - Indirect method

	Amount as at 31/12/2023	Amount as at 31/12/2022
<b>A) Financial flow from operations (indirect method)</b>		
Net profit (loss) for the year	-	-
Income taxes	24.481	22.738
Interest expenses/(income)	233	68
(Dividends)		
(Capital gains)/Capital losses resulting from asset disposal	-	-
<b>1) Profit (loss) for the year before income taxes</b>	<b>24.714</b>	<b>22.806</b>
Adjustments for non-monetary elements with no offset in working capital		
Accruals to provisions	25.391	18.937
Depreciation of assets	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	-	-
<b>Total adjustments for non-monetary items with no offset in net working capital</b>	<b>34.897</b>	<b>18.937</b>
<b>2) Financial flow before changes to the net working capital</b>	<b>59.611</b>	<b>41.743</b>
Changes in net working capital		
Decrease/(Increase) of inventories		
Decrease/(Increase) of credits towards contributors]- Members	(50.000)	-
Decrease/(Increase) of credits towards other contributors	(354)	-
Increase/(Decrease) in payables due to suppliers	(23.281)	(67.066)
Decrease/(Increase) in accrued income and deferred expenses	10.271	(13.679)
(Increase)/Decrease in accrued liabilities and deferred income	(135.243)	(568.004)
Other decreases/(Other increases) of net working capital	385.541	14.222
<b>Total changes in net working capital</b>	<b>186.934</b>	<b>(634.527)</b>
<b>3) Financial flow after changes to the net working capital</b>	<b>246.545</b>	<b>(592.784)</b>
Other adjustments		
Interest collected/(paid)	(233)	(68)
(Income taxes paid)	(24.481)	(28.048)
Dividends collected		
(Use of provisions)		
Other collections/(payments)	(2)	
<b>Total other adjustments</b>	<b>(24.716)</b>	<b>(28.116)</b>
<b>Financial flow from operations (A)</b>	<b>221.829</b>	<b>(620.900)</b>

<b>B) Financial flow from investing activities</b>		
<b>Tangible fixed assets</b>		
(Investments)	(61.700)	
<b>Disinvestments</b>		
<b>Intangible fixed assets</b>		
(Investments)	(16.723)	
<b>Disinvestments</b>		
<b>Financial fixed assets</b>		
(Investments)		
<b>Disinvestments</b>		
<b>Financial assets not classified as noncurrent</b>		
(Investments)		
<b>Disinvestments</b>		
(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)	(78.423)	
<b>C) Financial flow from financing activities</b>		
<b>Loan capital</b>		
Increase/(Decrease) in short-term payables due to banks		
New loans - Contribution quotas due to the Partners	524.292	287.154
(Reimbursement of loans - Payment to the Partners)		
<b>Equity</b>		
Increase in paid share capital		
(Capital reimbursement)		
Disposal/(Purchase) of treasury shares		
Cash flow from financing activities (C)	524.292	287.154
Increase (decrease) in cash and cash equivalents (A ± B ± C)	667.698	(333.746)
<b>Effect of exchange rates on cash and cash equivalents</b>		
<b>Cash and cash equivalents at the beginning of the year</b>		
bank deposits	4.799.403	5.131.088
cheques		
Cash and equivalents on hand	3.593	5.654
Total cash and cash equivalents at the beginning of the year	4.802.996	5.136.742
<b>Of which, not freely usable</b>		
<b>Cash and cash equivalents at the year end</b>		
bank deposits	5.469.582	4.799.403
cheques		
Cash and equivalents on hand	1.112	3.593
Total cash and cash equivalents at the end of the year	5.470.694	4.802.996
<b>Of which, not freely usable</b>		
Balance difference	-	-

Rome, 08/05/2024

EPOS ERIC  
The Executive Director  
Carmela Freda

### **3. Notes to the Financial Statements**

#### **Foreword**

On October 30<sup>th</sup>, 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 2023 Activity Plan and Provisional Budget adopted by EPOS ERIC General Assembly in December 2022 (Resolutions No. 9./ 2022).

#### **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 in 2023.

### 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.

Anyway, for in-kind contribution accounting procedures and valorization, IPSAS Principle n. 23 was applied.

## Assets

### Non-current Assets

Balance as at 31/12/2022	Balance as at 31/12/2023	Difference
-	68.917	68.917

### Tangible Assets

Balance as at 31/12/2022	Balance as at 31/12/2023	Difference
-	55.539	55.539

The composition is as follows:

Description	Initial cost	Investment /disinvest.	Final cost	Amortization/ Depreciation	Amortization/ Depreciation fund	Residual value
<b>Tangible Assets</b>						
Office furniture	1.043	46.403	47.446	2.785	3.828	43.618
Garden furniture		6.390	6.390	383	383	6.007
Pc and printers	80	6.571	6.651	657	737	5.914
Mobile phones	390	-	390	-	390	-
Other minor fixed assets		2.336	2.336	2.336	2.336	-
<b>Total</b>	<b>1.513</b>	<b>61.700</b>	<b>63.213</b>	<b>6.161</b>	<b>7.674</b>	<b>55.539</b>

In the column called initial cost (**€1.530**), are highlighted costs of some not relevant assets acquired and fully amortized in 2022.

### Intangible Assets

Balance as at 31/12/2022	Balance as at 31/12/2023	Difference
-	13.378	13.378

Description	Initial cost	Investment /disinvest.	Final cost	Amortization /Depreciation	Residual value
<b>Tangible Assets</b>					
Leasehold improvements	-	16.723	16.723	3.345	13.378
<b>Total</b>	-	<b>16.723</b>	<b>16.723</b>	<b>3.345</b>	<b>13.378</b>

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 31/12/2022	Balance as at 31/12/2023	Difference
4.851.275	5.558.895	707.620

### 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	50.000			50.000
<i>Other current credits and receivables</i>				
- Advances to suppliers	20.352			20.352
- Tax advances	12.055			12.055
- Contribution to collect	1.538			1.538
- Other receivables	7			7
TOTAL	83.952	-	-	83.952

The balance sheet item "Advances to suppliers" represents the part of the expenses prepaid to suppliers.

### 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 31/12/2022	Balance at 31/12/2023	Difference
Bank deposit (Intesa San Paolo)	4.799.403	5.469.582	670.179
Prepaid credit cards	3.593	1.112	(2.481)
TOTAL	4.802.996	5.470.694	667.698

*Prepayments and Accrued Income*

Balance at 31/12/2022	Balance at 31/12/2023	Difference
14.520	4.249	(10.271)

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 31/12/2022	Balance at 31/12/2023	Difference
31.458	56.849	25.391

*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 31/12/2022	Balance at 31/12/2023	Difference
31.458	56.849	25.391

This item represents the actual debt of EPOS ERIC at 31/12/2023, to employees in force at that date (n. 8 employees) and it is made up as follows:

Description	
Initial value	31.458
Severance accrued during the year	25.495
Severance paid during the year	-
Tax	(104)
End value	56.849

At 31/12/2023 advances have not been required by employees.

The number of employees has been decreased in 2023 as follows:

Description	n.
Employees as at 01/01/2023	5
Recruitment in 2023	3
Resignation in 2023	
Employees as at 31/12/2023	8

#### *Long-term provisions*

No values are entered for these items.

#### *Current Liabilities*

Balance at 31/12/2022	Balance at 31/12/2023	Difference
4.819.817	5.570.965	751.148

#### *Short-term financial debts*

Balance at 31/12/2022	Balance at 31/12/2023	Difference
765.881	1.290.173	524.292

This item includes:

- the contribution quotas due to the Partners for their participation in the EPOS SP Project, of which EPOS ERIC is the Coordinator (Euro 1.289.926)
- the contribution quotas due to one Partner for their participation in EOSC Future (Euro 247)

### *Advance payments for externally funded projects*

Balance at 31/12/2022	Balance at 31/12/2023	Difference
209.717	213.396	3.679

This item includes the residual prepayment, referred to EPOS own contribution, received from EU for participation to:

- EOSC Future project Euro 11.619
- GEO Inquire project Euro 9.203
- DT GEO project Euro 107.507
- GREAT project Euro 28.592
- SKILLS4EOSC project Euro 50.508
- ERIC FORUM 2 project Euro 5.966.

### *Other short-term debts and liabilities*

Balance at 31/12/2022	Balance at 31/12/2023	Difference
997.019	1.355.439	358.420

Debts are valued at their nominal value.

The composition of the aforementioned amounts is as follows:

Description	Balance at 31/12/2022	Balance at 31/12/2023	Difference
Debts to providers and collaborators	80.565	57.284	(23.281)
Debts to social security institutions	15.186	24.903	9.717
Tax liabilities	39.697	23.685	(16.012)
Contribution to be paid	813.704	1.199.927	386.223
Payables to employees and E.D.	47.867	49.640	1.773
<b>TOTAL</b>	<b>997.019</b>	<b>1.355.439</b>	<b>358.420</b>

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.

The item "Contribution to be paid" includes debts to entities involved in the TCS Governance and Coordination, TCS Data and Service Provision, ICS-TCS Interaction activities and Sponsored Research Activities (SRA), regarding cash contribution accrued but not paid as at the end of the year.

The item “Payables to employees and ED” includes deferred remuneration for holidays and work permits.

#### *Deferred Income and Accrued Expenses*

Balance at 31/12/2022	Balance at 31/12/2023	Difference
2.847.200	2.711.957	(135.243)

The item breaks down as follows:

Description	Deferred income	accrued expenses	Total
<b>Value as at 01/01/2023</b>	<b>2.847.141</b>	<b>59</b>	<b>2.847.200</b>
deferred income 2023	-	-	-
use of carry over from previous years	(135.372)		(135.372)
accrued expenses (+/-)		129	129
<b>Value as at 31/12/2023</b>	<b>2.711.769</b>	<b>188</b>	<b>2.711.957</b>

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 years concerning activities included in the 2023 EPOS ERIC Annual Activity Plan and Provisional Budget as adopted by the EPOS ERIC General Assembly in December 2022 (Resolutions No. 9/2022). Therefore, this item doesn't represent a liability towards any third parties but only, and better, the EPOS own funds available to finalize the EPOS ERIC Strategy 2024-2028 that the General Assembly will approve in 2024, in continuity to the previous ones, already concluded.

### Profit and Loss Account

#### Revenues

Balance at 31/12/2022	Balance at 31/12/2023	Difference
4.261.900	6.161.890	1.899.990

The item breaks down as follows:

Description	Balance at 31/12/2022	Balance at 31/12/2023	Difference
Membership Fee	1.484.000	1.864.000	380.000
Host premium cash contribution	700.000	1.100.000	400.000
Contribution project externally funded	223.085	322.639	99.554
use of carry over of previous years	568.063	135.372	(432.691)
- carry over of the year			
<b>National and international grants and contributions accrued in financial year</b>	<b>2.975.148</b>	<b>3.422.011</b>	<b>446.863</b>
<b>SUB TOTAL</b>			
<b>Contribution in kind</b>	<b>1.281.292</b>	<b>2.739.873</b>	<b>1.458.581</b>
<b>Other revenues</b>	<b>5.460</b>	<b>6</b>	<b>(5.454)</b>
<b>TOTAL</b>	<b>4.261.900</b>	<b>6.161.890</b>	<b>1.899.990</b>

“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 2023;
- the host premium cash contribution from INGV attributable to the financial year;
- the cash contribution from UE regarding the activities carried on EPOS SP, on EOSC Future, DT Geo, Geo Inquire, Skill4EOSC, GREAT projects attributable to the financial year in proportion to the costs incurred by EPOS ERIC in 2023.

“Contribution in kind” item identifies:

- the 2023 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 224.862);
- the 2023 in kind contribution made available by Hosting Organizations engaged in the “ICS-C Hosting and Operation”, “TCS G&C”, “TCS D&SP”, “ICS-TCS Interaction” and “SRA” activities (Euro 2.515.011).

“Other revenues” (in 2022 € 5.453 as a positive contingency) includes item referring only to small rounding.

## 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 31/12/2022	Balance at 31/12/2023	Difference
6.074	7.478	1.404

### *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 31/12/2022	Balance at 31/12/2023	Difference
Executive Director (remuneration and social security contribution directly by EPOS)	142.750	144.912	2.162
Intranet network	10.000	2.500	(7.500)
Maintenance	-	1.528	1.528
Transport and shipping	-	4.480	4.480
Travel costs for employees, collaborators, and bodies	47.173	72.533	25.360
Legal, fiscal, labour consultancy and accountant services	72.177	65.281	(6.896)
Advertising and communication	42.824	115.385	72.561
Support to international activities	29.079	22.150	(6.929)
Support to activation procedures	73.598	69.686	(3.912)
Other administrative collaborations	10.361	7.110	(3.251)
Auditors fees	15.900	14.500	(1.400)
Telephone and communication utilities	3.363	1.841	(1.522)
Workshops, seminars and publications	70.996	60.654	(10.342)
Training		4.088	4.088
Prepaid meals	14.356	15.155	799
Bank charges	2.561	2.969	408
Postal charges	66	23	(43)
Other services		518	518
<b>TOTAL</b>	<b>535.204</b>	<b>605.313</b>	<b>69.591</b>

### *Staff Costs*

This item includes the cost of staff directly employed in EPOS ERIC.

At 31/12/2023 EPOS ERIC has n. 8 people hired with the status of employee.

Staff costs includes:

Description	31.12.2022	31.12.2023
Salaries	356.742	382.160
Subsistence allowance	35.260	35.068
Fringe benefits		7.506
Social security charges	116.190	126.178
Severance indemnities	26.266	25.495
<b>TOTAL</b>	<b>534.458</b>	<b>576.407</b>

### *Costs of rents, concessions and royalties for trademarks*

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

Balance at 31/12/2022	Balance at 31/12/2023	Difference
6.119	22.874	16.755

Description	31.12.2022	31.12.2023
Licences	4.521	13.688
Equipment hire	1.598	9.186
<b>TOTAL</b>	<b>6.119</b>	<b>22.874</b>

### Contributions

The item "Contributions" concerns:

Description	Balance at 31/12/2023
TCS Governance and Coordination	722.348
TCS Data and Service Provision	1.078.834
<b>TOTAL TCS</b>	<b>1.801.182</b>
ICS-TCS Interaction	301.793
<b>TOTAL ICS</b>	<b>301.793</b>
Sponsored Research Activities	71.969
<b>TOTAL SRA</b>	<b>71.969</b>
<b>TOTAL</b>	<b>2.174.944</b>

### Other Operating Costs

This item concerns stationery and other small administrative expenses.

Balance at 31/12/2022	Balance at 31/12/2023	Difference
399	776	377

### Resources committed in-kind to EPOS ERIC by contributors

Description	Balance at 31/12/2023
INGV – Istituto Nazionale di Geofisica e Vulcanologia – Staff cost	224.862
INGV – Istituto Nazionale di Geofisica e Vulcanologia – Other costs	-
<b>SUB TOTAL</b>	<b>224.862</b>
TCS Governance And Coordination	371.899
TCS Data and Service Provision	1.376.401
ICS-TCS Interaction	747.440
SRA	19.271
<b>SUB TOTAL</b>	<b>2.515.011</b>
<b>TOTAL</b>	<b>2.739.873</b>

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 valorized 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 valorization 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
<b>Intangible Assets</b>		
Leasehold improvements	20,00%	3.345
<b>Total intangible assets</b>		<b>3.345</b>
<b>Tangible Assets</b>		
Furniture	12,00%	3.168
PC and printers	20,00%	657
Others	100,00%	2.336
<b>Total tangible assets</b>		<b>6.161</b>

#### *Financial Income and Expenses*

Description	Balance at 31/12/2022	Balance at 31/12/2023	Difference
Financial income	-	-	-
Financial charges	(68)	(238)	(170)
<b>TOTAL</b>	<b>(68)</b>	<b>(238)</b>	<b>(170)</b>

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 2023 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 24.481.

### *Events after the Reporting date*

Following IPSAS 14, this paragraph reports about events that have occurred between the reporting date (December 31<sup>st</sup> 2023) and the date when these Financial Statements have been approved by the Executive Director and thus are authorized for delivery.

On February 2022 the Soviet Army invaded Ukrainian territory and the war is still going on. On October 2023, the Israel-Palestine conflict began, and it is still going on, the same.

It is relevant to state that these events, as the previous year regarding the COVID pandemic, can be classified among the "non-adjusting events after the reporting date" and that it does not influence the assessing of the appropriate assumption of the ongoing concern of EPOS ERIC.

Rome, 08 May 2024

## 4. Auditors Report

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

**INDIPENDENT AUDITOR'S REPORT**

Financial Statements as of December 31<sup>st</sup>, 2023

*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.*

EBRS/CVSP/sac - RC104012023BD2243

The BDO logo is located in the bottom right corner of the page. It consists of the letters "BDO" in a white, bold, sans-serif font, with a horizontal line underneath the letters. The logo is set against a red triangular background that points towards the bottom right corner of the page.

**BDO**

### Report on the audit of the financial statements

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

#### Report on the financial statements

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##### Opinion

We have audited the financial statements of EPOS - ERIC (the Consortium), which comprise the statement of financial position as at December 31<sup>st</sup>, 2023, 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 31<sup>st</sup>, 2023 and of its financial performance and its 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.

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##### 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.

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##### Other matters

The financial statements for the year ended December 31<sup>st</sup>, 2023 were audited on a voluntary basis, since an audit the financial statements of EPOS - ERIC is not required by Italian law.

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##### Directors' 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, 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.

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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 and 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 management;
- Conclude on the appropriateness of management'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 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 24<sup>th</sup>, 2024

BDO Italia S.p.A.  
  
Signed by  
Emmanuele Berselli  
Partner

*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.*