

EPOS ERIC

ACTIVITY AND FINANCIAL REPORT 2022



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Foreword

After having successfully concluded the Implementation Phase in 2019, EPOS entered in the so-called pre-Operational Phase (POP, 2020-2022) which was transitional to the Operational Phase (starting in January 2023). This transition was governed by a Strategic Plan with the overarching objective of constructing and operating the EPOS Delivery Framework in a sustainable way. Indeed, the POP aimed at i) the construction of the EPOS Delivery Framework respecting the EPOS architecture and its key elements (i.e., ECO, ICS and TCS); ii) testing the operation of the infrastructure considering the different frameworks (governance, legal, technical, financial) developed during the Implementation Phase to ensure interoperability and access to data and services through the EPOS Data Portal. Therefore, the year 2022 represented a landmark in the EPOS Research Infrastructure lifecycle for consolidating all conditions necessary for efficaciously entering into operation.

To successfully complete the POP, the whole EPOS Community at all governance levels (i.e., General Assembly, Scientific Advisory Board, Ethics Advisory Board, Service Coordination Committee, Executive Committee, Executive Coordination Office, Hosting Organizations) has been engaged in demonstrating that the EPOS RI works and is capable of entering in its fully Operational Phase in 2023.

In 2022, two documents were identified as critical for a successful Operational Phase, namely the Science Program (2023-2027) and the Long-term Sustainability Plan (2023-2027), to guide the EPOS Research Infrastructure in the forthcoming years.

Drafting the EPOS Science Program required several iterations with the Service Coordination Committee and the EPOS ERIC Scientific Advisory Board during 2022 before being presented to the EPOS ERIC General Assembly in December 2022. The final version, benefitting from all inputs received after any of these iterations will be ready in 2023. The Long-term Sustainability Plan will follow after completion of the Science Program, benefitting as planned from the results of the EPOS SP project (ending April 2023) coordinated by EPOS ERIC. For example, EPOS SP conducted a *landscape analysis*, mapping and examining the organization and the functioning of the EPOS Delivery Framework; a *gaps and added values analysis*, to identify existing gaps and added values in relation to the EPOS design and implementation; a methodology for the *risk management*, aimed at updating and revising existing and potential risks of the Operational Phase and at implementing mitigation actions and contingency plans; a methodology for the *assessment of impact*. These studies will be exploited for drafting and delivering the EPOS Long-term Sustainability Plan in 2023.

Moreover, the year 2022 was of course dedicated to perform the activities foreseen in the EPOS ERIC 2022 Activity Plan, as detailed in this Report.

Other crucial activities performed in 2022 focused around the opening of the EPOS Data Portal in January 2023 and around its official launch, planned in April 2023. To this task, a specific communication strategy to support the launch has been defined. Year 2022 was essential to identify the various targets and the multimedia campaign (digital, social, event, press) to be developed in 2023. Moreover, to the goal of making the EPOS Data Portal fully operational, the EPOS Policy Working Group finalized all necessary policy documents.

In 2022, the ECO supported all EPOS ERIC boards and committees in organizing their meetings, namely, three meetings of the General Assembly, one Scientific Advisory Board and three Ethics Advisory Board

meetings, five meetings of the Executive Committee, and six Service Coordination Committee meetings (4 ordinary and 2 Special Topic Meetings).

Alongside the ordinary decisions and the discussions on the sustainability of EPOS during the Operational Phase, the EPOS ERIC General Assembly discussed and outlined the preparatory work for the EPOS ERIC Five-years Scientific Evaluation. Five Experts, "evaluators of the highest quality", with experience in management, Solid Earth Sciences and Information Technology, were selected to sit on the Evaluation Panel.

The EPOS ERIC Scientific Board provided valuable inputs on the Science Program and the EPOS Data Portal. Emphasis was also given to the EPOS communities, an indispensable element for the success of EPOS ERIC.

The EPOS ERIC Ethics Board met three times in 2022. The first meeting focused on the "EPOS ERIC Guidelines", and allowed the ECO to collect feedback and address the drafting of the first version of the EPOS ERIC Guidelines. The primary outcome was to agree on the issues related to the EPOS's responsibility for accessing and using data and services; dealing with multiple users of the Ethical Guidelines, and the ethical implications in improving information to society. The Board also provided massive help in formulating the Gender Equality Plan. The general structure was discussed during the July ordinary meeting. Then a second extraordinary meeting was organized to address the main topics to report in the EPOS Gender Equality Plan and to export the principle of inclusiveness to the broader community.

The EPOS ERIC Service Coordination Committee held six meetings in 2022. Alongside the ordinary meetings, two additional sessions, namely Special Topic Meetings (STM), were organized. During the first STM, the Community examined the implementation of the Integrated Core Services – Distributed (ICS-D) as a powerful tool to complete the EPOS data lifecycle and the initiation of a joint project implementing the ICS-D under the Sponsored Research Activities (SRA) was agreed. The second STM focused on Ethics and it was organized under the EPOS ERIC Ethics Board's recommendations. It records one of EPOS's significant steps forward in engaging the EPOS Community in Ethics issues. It has resulted from a joint effort of the Executive Coordination Office (ECO), experts in Ethics subjects involved in EPOS SP and the SCC. The meeting benefitted from the massive participation of EPOS ERIC Ethics Advisory Board members. Professor Ortwin Renn, EPOS ERIC Ethics Board member and Keynote speaker, introduced the ethical issue of science, specifically the relevance of risk and uncertainty in a scientific assessment.

During 2022 the EPOS Focus Groups (European Open Science Cloud; Environmental Research Infrastructures; Group on Earth Observations) meet regularly and the meeting's outcomes have been reported and discussed during the Service Coordination Committee meetings. Discussions mainly focused on activities for (i) mapping the level of involvement of the EPOS community in the respective initiatives; (ii) identifying the main pillars of activities and the level of engagement to maximize the EPOS benefit in interacting with these initiatives; (iii) strengthening the EPOS presence in relevant Boards and Committee by identifying an EPOS representative who ensures alignment with the EPOS strategy.

Finally, a key achievement in year 2022 concerns the enlargement of the EPOS ERIC membership: two more country Members and one Observer joined the Consortium, namely Austria and Sweden and Germany, respectively.

This report is structured in four sections:

- Activities and Results, reporting on the activities performed to accomplish the objectives foreseen in the 2022 Activity Plan and Provisional Budget and necessary for successfully entering in the Operational Phase in 2023;
- Financial Statements, composed of Balance Sheet, Profit and Loss Account and Cash Flow Statement;
- Notes to the Financial Statements, summarizing the incurred costs and revenues taking into account the 2022 Activity Plan and Provisional Budget;
- Auditors Report.

This Report has been discussed and approved by the EPOS ERIC Executive Committee (27th March 2023) and adopted by the EPOS ERIC General Assembly (20th April 2023, Resolution No. 2/2023).

1. Activities and Results

Activities performed in 2022 are in accordance with the EPOS ERIC 2022 Activity Plan and Provisional Budget adopted by EPOS ERIC General Assembly in December 2021 (Resolutions No. 10/2021). Activities and results are detailed in the following paragraphs.

Implementation and Operation of the Executive Coordination Office (ECO)

The Executive Coordination Office (ECO), representing the EPOS ERIC legal seat, has the central role of coordinating the EPOS Research Infrastructure, including the operation of the integrated (ICS) and thematic (TCS) core services. The ECO Staff ensures the Research Infrastructure's day-to-day operation, performing administration, management, communication, IT, and legal activities. The ECO is entirely supported by the Italian Host Contribution. The ECO Staff, appointed by the Executive Director on the identified needs, includes (Table 1): i) personnel employed by EPOS ERIC; ii) personnel provided by way of in-kind contributions from the Representing Entity (INGV); iii) consultants. The ECO staff is organized into four different "Units" and is complemented by the three Scientific, IT, and Capacity Building Officers. Therefore, the coordination of the EPOS Research Infrastructure, including the operation of the integrated (ICS) and thematic (TCS) services, is guaranteed by the synergic work of the Executive Director, the Officers, and the Staff of the Units. The ECO is also supported by consultants for financial, legal and governance affairs and by external collaborators assisting for the i) EPOS ERIC participation in and interaction with international initiatives fostering international cooperation on e-science; ii) design of effective procedures for the EPOS Service Activation, as part of the EPOS ERIC service delivery plan; iii) performance of communication activities for the EPOS Data Portal Launch.

In 2022 EPOS ERIC opened three job positions to complete the personnel Staff of the Communication Unit (one Chief and one Assistant) and Administration Unit (one Assistant). The selected personnel will take the role in 2023. EPOS ERIC employees and INGV in-kind personnel are involved in the EPOS Delivery Framework activities, including the Horizon 2020 and Horizon Europe projects (see "Projects" paragraph) according to their specific skill and professionalism.

Table 1. 2022 Human Resources Plan detailing person/months (P/M) for each ECO Unit.

	Unit	P/M
EPOS ERIC Employees	Administration	12
	Management and Operation	24
	Communication	20
	IT	24
	Sub-Total	80
INGV in-kind Employees	Management and Operation	12
	Communication	18.5
	IT	12
	Legal Liaison	3
	Sub-Total	45.5
Total		125.5

Hosting the Integrated Core Service Central Hub (ICS-C)

According to the General Assembly decision (Resolution No. 8/2021), the negotiations with the Hosting Countries (UK and France) and Hosting Organizations (UKRI-BGs and BRGM) for hosting and operation of the ICS-C as a key component of EPOS ERIC, ended on January 31st 2022. Following that decision, a Multi-Year Partnership Agreement (MYPA) should have been established to regulate the joint initiative of EPOS ERIC and the Hosting Organizations to host and operate the ICS-C inside the EPOS ERIC Perimeter. MYPA should have entered into force in July 2022 and have a duration of three years. According to the General Assembly decision, the necessary condition for finalizing the MYPA is having received the UK Mandate Letter. As reported to the General Assembly during its 17th meeting (13-14 December 2022), the letter was still under preparation by BEIS. Despite the impossibility of formalizing the agreement, both involved parties, namely the EPOS ERIC ECO and the Hosting Organizations worked on making ready all necessary documents. Indeed, i) the core legal text of the MYPA (Version 4.0 - 19 May 2022) has been agreed by BRGM, BGS and EPOS ERIC and revised by BEIS; ii) the Technical Annex (2022 – 2025), Work Plan (01/07/2022 – 31/12/2022) and Capacity Planning (12 months) have been finalized. Moreover, the MYCA 2022-2025 for monitoring the EPOS ERIC Integrated Core Service Central Hub (ICS-C) and concerned annexes have been finalized as well.

Maintenance of TCS Governance and Coordination Service (including TNA)

The EPOS ERIC General Assembly approved the activation of the TCS Governance and Coordination Service and endorsed the Executive Director to negotiate a Multi-Year Collaboration Agreement (MYCA, 2021 – 2023) with each TCS in 2020. The agreements include an annual Work Programme in which activities and allocated resources for running the TCS Governance and Coordination are detailed. In December 2021, the EPOS ERIC General Assembly, by adopting the EPOS ERIC 2022 Provisional Budget and related 2022 Activity Plan¹, endorsed the Executive Director to sign the 2022 work programmes of the MYCA for TCS Governance and Coordination.

In 2022 the ECO negotiated and finalized the work programmes with each of the TCS having a Consortium Agreement in place. As a result, work programmes for TCS Governance and Coordination with all the current EPOS TCS have been signed by EPOS ERIC. The 2022 work programmes included activities and allocated resources for (i) running the TCS Governance and Coordination; (ii) participating to the ICS-TCS Interactions, contributing to the Pilot Operational Testing; (iii) developing the framework for Transnational Access (TNA); (iv) performing outreach and dissemination activities to ensure the engagement of the TCS in sharing and adopting the EPOS Communication Plan. These work programmes involve forty-six organizations based in eleven ERIC Member Countries², two Observer Countries³ and four European Countries involved in EPOS but not joining the ERIC yet⁴. In 2022, the ECO also defined the key activities and related EPOS ERIC contributions for the MYCA 2023 work programmes. The 2023 activities and EPOS ERIC contribution proposal have been discussed and approved by the Service Coordination Committee and by the Executive Committee in November 2022.

¹ EPOS ERIC General Assembly Resolution No. 10/2021

² Belgium, Denmark, France, Iceland, Italy, The Netherlands, Poland, Portugal, Romania, Sweden, United Kingdom.

³ Germany, Switzerland.

⁴ Czech Republic, Ireland, Finland, Spain.

Enabling Data and Service Provision

In December 2021, the EPOS ERIC General Assembly approved the activation of the TCS Data and Service provision⁵ and authorized the Executive Director to sign collaboration agreements with TCS for access to solid Earth science Data and Services under the EPOS framework.

In 2022, the ECO, supported by financial and legal consultants and collaborators, activated the negotiations to implement and finalize the agreements for the TCS Data and Service Provision for 2022-2023. The main topics of the negotiation with the TCS concerned the structure of the agreements (bilateral, multilateral, bilateral with support of third parties), cash contribution level, indirect costs percentage and in-kind contribution. The agreements include an annual Work Programme detailing activities and allocated resources for (i) TCS data and service provision; (ii) participation of TCS representatives in ICS-TCS interaction workshops; (iii) technical coordination of services; (iv) integration plans into ICS-C for TCS services currently distributed through TCS portals only; (v) assessment by the TCS of the representativeness of the data provided through the EPOS Data Portal.

As a result, in 2022 five Multi-Year Collaboration Agreements for TCS Data and Service provision were signed with the designated Service Providers for the following TCS: Anthropogenic Hazards; GNSS Data and Products; Near Fault Observatories; Satellite Data; Seismology.

These agreements involve twenty-five organizations based in eight ERIC Member Countries⁶, two Observer Countries⁷ and three more Countries involved in EPOS but not joining the ERIC yet⁸.

In 2022, the ECO also defined the activities and related resources for the 2023 Work Programmes of the MYCA TCS Data and Service Provision to be proposed in the EPOS ERIC 2023 Activity Plan to the General Assembly in December 2022. The proposal to the General Assembly was supported by the Service Coordination Committee and by the Executive Committee (November 2022). The overall approach was discussed and endorsed, including the steps for defining a sustainable approach for ensuring the long-term sustainability of the EPOS Research Infrastructure.

IT Development of the ICS-TCS System and Community Meetings

Activities focused on the development of the ICS-TCS System are led by the IT Board in collaboration with the ICS-TCS Interaction Team. The latter met quarterly to discuss technical-scientific issues aimed at developing and operating the ICS-TCS System under the guidance of the University of Bergen which, by signing a dedicated Multi-Year Collaboration Agreement, is in charge of coordinating the ICS-TCS activities. In 2022, technical activities discussed during the ICS-TCS Interaction workshops included, for instance, improvement, consolidation and extension of the metadata catalogue and major enhancements of the EPOS ICS-C Data Portal in preparation for the opening of the EPOS Data Portal planned in January 2023. In particular, in 2022, the IT Development of the ICS-TCS System focused on:

⁵ Minutes of the 14th EPOS ERIC General Assembly meeting (15th - 16th December 2021).

⁶ Belgium, France, Greece, Italy, The Netherlands, Poland, Portugal, United Kingdom.

⁷ Germany, Switzerland.

⁸ Hungary, Spain, Turkey.

- i) Gathering requirements and suggestions from: a) each TCS on requirements by data and service providers, b) from the ICS Team on requirements by developers and c) from the ICS-C Operational Team on requirements by the Hosting countries.
- ii) Performing User Testing sessions to test the functionalities of the EPOS Data Portal by domain experts and collecting feedback on its usability through online questionnaires; several surveys were conducted to evaluate the EPOS Data Portal including collection of information on user background, impressions about the first experience with the Portal, the ability to find and explore data of interest, and evaluation of the user interface usability and its functionalities; moreover, involvement of young researchers in a dedicated user testing session organized in Rome, provided invaluable insights that were essential for enhancing the usability of the EPOS Data Portal.
- iii) Performing ICS-TCS Interaction Workshops (duration one week), where all requirements, collected in activities i) and ii) above, evolved into actual development activities; this was done using the so-called shape-up methodology; there were four workshops in total in 2022, three virtual and one hybrid - organized in Bergen (Norway). Main activities were aligned with 2022 Annual Plan (prepared by IT Board) and concerned the execution of the Pilot Operation Testing (POT) activities (i.e., User testing of ICS and TCS portals, technical testing of ICS services, technical testing of TCS services and technical testing of ICS-TCS integration), as well as to refactoring of the EPOS Data Portal.
- iv) Performing ICS Hackathon meetings where IT developers collaborated with ICS-C Operational team and ICS-TCS interaction Team to discuss the key aspects and high priority issues related on the EPOS technical architecture and EPOS Data Portal; there were four such meetings in total, two virtual and two hybrid events organized in Rome, which resulted in significant improvements of the overall system, including the ICS components and the user interface. These improvements have contributed to the delivery of a more reliable and robust system for end-users.

Sponsored Research Activities

The EPOS ERIC Strategic Plan 2020-2022 included support for ERIC sponsored actions dedicated to the consolidation of the TCS role and visibility, and engagement of the community on specific technological and scientific topics. Following the EPOS ERIC Scientific Board recommendations, in 2022 a dynamic interaction took place (February – June) in the frame of the Service Coordination Committee for defining a proposal focused on a topic of common interest aligned with the EPOS strategy and community requirements. As a result, the Service Coordination Committee endorsed a proposal on Sponsored Research Activities (SRA), which was acknowledged by the Executive Committee in June 2022. The SRA proposal was focused on the integration of ICS-D prototypes into the ICS-C to provide pre-operational access and use of existing ICS-D prototypes in the EPOS ICS-C. This requires on one hand a stronger integration of the ICS-C with ICS-D, on the other hand, the participation of the TCS for raising requirements and testing the usage of the final product.

In parallel, the ECO, supported by financial and legal consultants and collaborators, worked to define the SRA legal agreement that sets out the collaborative framework defining the terms and conditions under which the SRA participant organizations shall work in collaboration for their mutual benefit and for improving the integration of ICS-D prototypes into ICS-C. A negotiation process followed till the end

of the 2022 between EPOS ERIC and the concerned organizations focused on: the structure of the agreements (multilateral with the support of third parties involved as participants), cash contribution level, indirect costs percentage, and in-kind contribution. This process was a step forward for the finalization of the SRA Agreement in early 2023.

International Cooperation

In line with the collaboration strategy for establishing partnerships with regional and international initiatives to strengthen the EPOS position in the global landscape of solid Earth research infrastructures, a number of targeted activities were undertaken during 2022 with the specific objective of establishing and enhancing relationships with other relevant organizations.

Within the regional context, EPOS has continued to work closely with other European environmental RIs both through direct involvement in the ongoing EU-funded ENVRI-FAIR project, which aims to address specific aspects of open science and to deliver data and services in a form that can be used and re-used as widely as possible. 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 as well as 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. A proposed RDA Community of Practice for solid Earth system data will shortly provide a further opportunity to engage with a larger cohort of relevant partners and initiatives that can potentially yield new collaborative relationships.

EPOS has continued to engage with a range of relevant regional initiatives and organizations including ESA, Copernicus, EuroGeoSurveys, ECCSEL ERIC as well as a number of similar bodies in other regions such as AuScope, with a number of formalized relationships being created through Memoranda of Understanding and similar forms of agreement.

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, work has recently begun to explore opportunities for exposing the EPOS data services via the GEOSS Platform as a solid Earth data provider. This activity aims to create an exemplar for other potential in-situ data providers to the GEOSS Platform by demonstrating the process for connecting to the GEOSS Platform and providing wider access to key datasets for a range of applications at different levels of granularity. EPOS involvement in GEO continues to be underpinned by a dedicated internal EPOS ERIC Focus Group, which promotes a coordinated approach to GEO among the members of the EPOS ERIC consortium.

Development of the EPOS global engagement activities has also been progressed through two highly successful international conferences, which were planned as part of the EPOS SP project but delayed due to the global COVID-19 pandemic. The first of these events took place on 11 – 13 July 2022, and

saw a range of contributors participating both in-person in Cape Verde as well as online. The second conference recently took place on 6-7 February 2023 in Natal, Brazil following a similar format. These 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.

Communication, Dissemination and Outreach

Communication, dissemination and outreach activities have been performed according to the EPOS Communication Plan 2022. It was planned to connect the pre-Operational Phase and the Operational Phase starting in 2023 with the release of the EPOS Data Portal. The strategies and practices adopted focused mainly to reinforce the EPOS Community, made of scientists, students, institutions, and other stakeholders that can benefit from the services the upcoming EPOS Data Portal can offer. For this reason, the communication effort in 2022 included the participation and the organization of several scientific conferences and meetings. The main intervention areas were: i) EPOS visual identity consistency ii) Internal communication iii) Social media communication; iv) Dissemination and outreach events; v) Production of outreach materials; vi) Data Portal launch strategy and operations.

EPOS visual identity consistency

In order to build a coherent communication impact, the homogenization of EPOS community graphic layouts and logos was implemented and encouraged across every EPOS national and thematic communities. This was applied to letters, documents, presentations, videos for both internal and external communication. The same principle was applied during public events and meetings, where often EPOS attended with booth, stands roll up etc. During these occasions, every EPOS visual exposition was accurately designed to establish a clear and impactful distinctive identity.

Internal communication optimization

The internal communication aimed at facilitating the interaction between the ECO and Community has been strengthened by scheduling regular meetings, encouraging, whenever possible, those in presence to re-connect with the community after the long-time apart. Furthermore, in order to optimize the functionalities of the Intranet, a survey has been created and circulated among all users and consequently a process of improvement to be concluded by the first semester 2023 has started.

Social media communication

An accurate social media strategy was implemented, to better coordinate and homogenize the official EPOS ERIC public outcomes. A social media editorial plan has been set up. The main actions focused on increasing the followers of EPOS social accounts, by engaging first of all the ECO/TCS/ICS members to get them interact with EPOS social media accounts. In addition, a set of guidelines for a more efficient social media communications have been shared with the Community, inviting to promptly provide materials from events and/or meetings they participated to (photos, information, tag of other participants) that in addition to the use of appropriate tags to relevant known pages/profile and the constant and consistent use of appropriate hashtags, assured a richer and “alive” flow of communication, that granted an increase in the interactions.

Dissemination and outreach events

In 2022, EPOS has participated in the European Geosciences Union (Vienna, Austria) with a booth to promote the Infrastructure and the EPOS Data Portal. This event provided an opportunity to meet scientists and researchers and to increase the EPOS potential stakeholder's community. Furthermore, EPOS ERIC attended and/or gave visibility to many different scientific conferences and meetings, such as the ESFRI 20th Anniversary Conference, the Living Planet Symposium 2022 of ESA, the Third European Conference on Earthquake Engineering and Seismology (3ECEES), the European Researchers' Night in Italy, the 1st International Geodiversity Day.

Outreach materials

During 2022, new EPOS outreach materials were developed and distributed during conferences, events and internal meetings. This includes a novel series of videos, planned to be part the EPOS Data Portal launch plan. These videos aimed to give an overview of the thematic areas encompassed by the thematic communities of EPOS and all the data and services the EPOS Data Portal can offer. All these materials have been made with the collaboration of the TCS communities, involved and actively engaged in the communication activities. Brochures, flyers and merchandise have also been delivered and they are now available for the different needs of the community ([Outreach materials](#)). Furthermore, two numbers of the 65^o volume of Annals of Geophysics journals ([Annals of Geophysics](#)) were specifically dedicated to the EPOS Research Infrastructure and the thematic communities. The manuscripts concerned general aspects of the infrastructure, including a description of the EPOS Delivery Framework, strategies to address its sustainable operation, solutions to tackle FAIR data management and the harmonization of national strategies with the EPOS ERIC pan-European governance. These publications have provided the EPOS community with the opportunity to give an in-depth description of the EPOS Research Infrastructure and highlight its multidisciplinary, whilst also promoting the Delivery Framework to a wider audience.

Data Portal launch strategy and operations

A specific communication strategy to support the launch of the Data Portal has been defined. Starting with the identification of the various targets, a complex multimedia campaign (digital, social, event, press) has been developed in three phases, leading to the launch scheduled on April the 25th at the European Geosciences Union (Vienna, Austria): i) Promotional (December 2022-April 2023); ii) Launch (April 2023); iii) Maintenance (from May 2023).

European Union Projects

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

EPOS ERIC in the role of Project Coordinator

EPOS Sustainability Phase (EPOS SP) Project (February 1st, 2020 - April 30 2023). The project involves 24 participants from 17 European Countries and aims at performing activities for ensuring the long-term sustainability of the EPOS Research Infrastructure through the following strategic actions:

1. Securing governance and financial sustainability through the entire RI lifecycle
2. Securing technical sustainability and developing innovation to exploit data and service provision
3. Establishing and maintaining excellence by preserving and reinforcing the trust of users
4. Exploiting economic and societal benefits to keep stakeholders engaged.

The EPOS SP main achievement in 2022 was the delivery to EPOS ERIC of all propaedeutic documents for drafting and delivering the EPOS Long-term Sustainability Plan in 2023; moreover, many other significant results have been achieved according to the aims of the four strategic actions, as for example:

1. As a result of the efforts performed in the framework of the National Authorities Consultation Board (NACB), three countries - Austria, Sweden, and Germany - joined EPOS ERIC in October 2022, with Finland and Spain also beginning the process of joining and Croatia expressing interest in joining EPOS ERIC. The NACB operations have been planned to be continued during the Operational Phase, after the end of the project. Additionally, one round of interviews with the EPOS TCS have been organized on financial, governance and legal issues with connections to their sustainability. The outcomes of two surveys focusing on the sustainability of the EPOS Delivery Framework with service providers and data providers have been analysed. Furthermore, the mapping of national mechanisms to support the EPOS RI has been completed.
2. Concerning technical sustainability, the design and development of a new web interface for the management of TCS metadata started in 2022; a proof of concept has been implemented to expose TCS using turtle files structured under a DCAT model and to increase connectivity to other infrastructures.
3. To assess users' experience, a survey has been conducted to build several use cases from a geoscientist point of view; also, the ethical implications of existing and future EPOS services have been analysed through surveys to assess the awareness of ethical considerations within the EPOS community.
4. Concerning the value for society, a comprehensive report was produced to outline the current and future value of EPOS for society, which included recommendations for improving value in the future; also, an overview of specific conditions relevant for the collaboration between EPOS and the private sector have been delivered.

EPOS ERIC in the role of project Beneficiary (Horizon 2020 and Horizon Europe projects)

EOSC Future (April 1st, 2021 - September 30th, 2023; 36 participants; coordinator ATHENA-Greece). The project aims to integrate, consolidate and connect e-infrastructures, research communities and

initiatives supporting open science with the aim of advancing 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 thematic communities, engaging the broader EOSC community, and increasing its visibility. In 2022, EPOS ERIC and its Linked Third Parties INGV, KNMI and CNR-IREA were involved in activities related to i) definition of the architecture, interoperability guidelines and frameworks needed for the EOSC-Core and EOSC capabilities, an integration point for research infrastructures, providers and researchers; ii) integration of community services and products into EOSC, and, in particular, the Integration of EOSC-Core Services into European Research Practice.

Geo-INQUIRE Project (October 1st, 2022 – September 30th, 2026; 48 participants; coordinator GFZ-Germany). 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 2022, EPOS ERIC was mainly involved in the activities related to the access and harmonization of integrated research infrastructure services for the next generation of data, services, and products.

DT-GEO Project (September 1st, 2022 – August 31st, 2025; 15 participants; coordinator CSIC-Spain). 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 (2026 onwards) towards Destination Earth. In 2022, EPOS ERIC was mainly involved in activities related to the identification and metadata preparation of architectural components of the workflows.

Skills4EOSC Project – (September 1st, 2022 – August 31st, 2025; 44 participants; coordinator CONSORTIUM GARR-Italy). The project brings together leading experiences of national, regional, institutional and thematic Open Science (OS) and Data Competence Centres from 18 European countries with the 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. In 2022, 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 thematic communities.

GREAT Project – (September 1st, 2022 – February 29th, 2024; 22 participants; coordinator IDC ITALIA SRL-Italy). The project, funded by the Digital Europe program, aims to establish the Green Deal Data Space Foundation and its Community of Practice which builds on both the European Green Deal and the EU's Strategy for Data. The project 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 2022, EPOS ERIC and its affiliated entities INGV and IG PAS were involved in activities related to the Green Deal Data Community Engagement.

EPOS ERIC associate in European Union-funded projects

ERIC FORUM Project (January 1st, 2019 - December 31st, 2022; 25 participants; coordinator BBMRI ERIC-Austria). The project aims to reinforce coordination and networking, support on shared challenges, facilitate ERICs in preparation and increase ERIC participation as stakeholders in policy actions. In 2022 EPOS ERIC was involved in the activities concerning i) the ERIC Forum Governance Model; ii) operations, administration, human resources and finance of ERICs; iii) evaluation and impact assessment; iv) the role of ERICs in European science policy and research strategy.

ENVRI FAIR Project (January 1st, 2019 - June 30th, 2023; 39 participants; coordinator Forschungszentrum Jülich GMBH – Germany). 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 the development and implementation of a technical and policy framework to overcome disciplinary boundaries within the ENVRI community. Cross-discipline harmonisation and standardisation, together with 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 2022 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. Indeed, in 2022 EPOS has been invited to a training session organized by the ENVRI-FAIR project on 30th November 2022, to show examples of policy documents, and compare the different approaches with other Environmental Research Infrastructures.

ENRIITC Project (January 1st, 2020 - December 31st, 2022; 10 participants; coordinator Spallation Source ERIC - Sweden). The project aims to establish a pan-European network of Industrial Liaison and Contact Officers (ILOs/ICOs) to improve the RI-industry cooperation.

RltrainPlus Project (April 1st, 2021 - March 31st, 2025; 15 participants; coordinator Università degli Studi Milano-Bicocca-Italy). 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.

Participation in new European project proposals

With the role of a beneficiary, EPOS ERIC participated in the drafting of the proposal related to the **ERIC FORUM 2 Project**, topic HORIZON-INFRA-2023-ERIC-ART195-IBA Coordination and Monitoring of the European Research Infrastructure Consortia (ERICs). This will strengthen the overall coordination between the ERICs and contribute to the long-term sustainability of the joint efforts.

In 2022, EPOS ERIC started a discussion within the Service Coordination Committee (SCC) on the possibility to submit as a Coordinator a **project proposal in the framework of HORIZON-INFRA-2023-DEV-01-03** “Consolidation of the RI landscape – Individual support for evolution and long-term sustainability of pan-European research infrastructures” topic. The proposal idea and main concept design have been presented to the EPOS ERIC GA during the 17th meeting on December 2022.

Gender Equality Plan

In 2022, EPOS ERIC established a Working Group to draft the EPOS ERIC Gender Equality Plan (GEP), which is a collection of commitments and actions aimed at promoting gender equality within the organization through structural change. A first draft of the GEP was presented to the EPOS ERIC Ethics Board, a survey was launched to analyse and assess the current status of the organization, and the results were collected and analysed starting from the end of September. A second dedicated meeting with the EPOS ERIC Ethics Board was organized to discuss and collect suggestions and comments on the document draft. At the end of the drafting process, the EPOS ERIC GEP was acknowledged by the Executive Committee and the EPOS ERIC Ethics Board on November 17th, 2022. Finally, the EPOS ERIC General Assembly acknowledged the document in December 2022 during the 17th General Assembly meeting. The GEP is a public document available on the [EPOS ERIC website](#).

Implementing Rules – Section 2

In 2021, the Executive Director established the Implementing rules Working Group for elaborating Section 2 of the EPOS ERIC Implementing Rules. Section 2 outlines the rules of procedure for the management of the EPOS Delivery Framework for: (i) Integrated Core Services (ICS); (ii) Thematic Core Services (TCS); (iii) Management of TCS activities through Collaboration Agreements; (iv) ICS – TCS System; (v) Sponsored Research Activities (SRA); (vi) Policies. Members of the Working Group are representatives from Executive Coordination Office (ECO), Integrated Core Service (ICS), Thematic Core Services (TCS). In 2022, the Working Group met seven times, to draft and consolidate the first version of the Implementing Rules Section 2 presented to the EPOS ERIC General Assembly in December.

Policies

In 2020, the Executive Director established the Policy Working Group with the objective to elaborate the EPOS policies to ensure that EPOS data and services are managed and used in ways that maximize public benefit following FAIR principles (Findability, Accessibility, Interoperability, and Reusability). The Working Group encompasses different areas of expertise including legal, technical, policy, communication, and management. In 2022, the Working Group worked on consolidating the EPOS Digital Assets Management Policy document considering comments received by the Service Coordination Committee. The document includes policies on (i) Asset Management (Curation, Provenance, Quality Assurance, Licensing, Citation/Acknowledgement); (ii) Security (Physical Security, Authentication, Authorization, Disaster Recovery), (iii) Cookie; (iv) EPOS ICS-C Terms and Conditions; (v) Privacy. Due to their relevance for the EPOS Delivery Framework, these policies have been also included in Chapter 6 “Policies” of the EPOS ERIC Implementing Rules Section 2 “Terms of Reference for the EPOS Delivery Framework.”

2. Financial Statements

as of December 31st, 2022

Balance Sheet

Balance Sheet - Assets and liabilities at 31.12.2022				
	2022		2021	
ASSETS		4.851.275		5.147.579
NON-CURRENT ASSETS		-		-
Tangible assets (plant, property, and equipment)		-		-
Intangible assets		-		-
Long term credits		-		-
CURRENT ASSETS		4.851.275		5.147.579
Stocks		-		-
Short term credits		33.759		9.996
- credits for members' statutory contribution in cash	-		-	
- other current credits and receivables	33.759		9.996	
Cash and cash equivalents		4.802.996		5.136.742
Prepayments and accrued income		14.520		841

EQUITY AND LIABILITIES		4.851.275		5.147.579
EQUITY				
Capital and other permanent contributions from Members		-		-
Reserves				
Accumulated profits		-		-
NON-CURRENT LIABILITIES		31.458		18.683
Long-term financial debts and loans		-		-
Other long-term debts and liabilities		-		-
Employee's severance indemnity		31.458		18.683
Long-term provisions		-		-
CURRENT LIABILITIES		4.819.817		5.128.896
Short-term financial debts		765.881		478.726
Advance payments for externally funded projects		209.717		543.980
Other short-term debts and liabilities		997.019		690.986
Deferred income and accrued expenses		2.847.200		3.415.204
- 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)			
- accrued expenses	59		-	

Cornelia Fiedler

Profit and Loss Account

PROFIT AND LOSS ACCOUNT					
			2022		2021
Revenues			4.261.900		2.725.633
	National and international grants and contributions		2.975.148		1.801.416
	▪ monetary contribution of EPOS ERIC Members	1.484.000		1.484.000	
	▪ host premium cash contribution	700.000		648.934	
	▪ contribution project externally funded	223.085		163.973	
	▪ use of carry over of previous years (+)	568.063		-	
	▪ carry over of the year (-)			(495.491)	
	Contributions in-kind		1.281.292		924.215
	▪ contributions in kind by hosting country	228.311		317.922	
	▪ contributions in kind by partner	1.052.981		606.293	
	Other revenues		5.460		2
Operating costs			4.239.094		2.710.210
	Costs for raw materials, supplies and goods	6.074		46	
	Costs for services	535.204		478.391	
	Staff costs	534.458		312.219	
	Costs of rents, concessions and royalties for trademarks	6.119		8.557	
	Contributions TCS	1.630.445		666.975	
	Contributions ICS-C	245.103		319.371	
	Other operating costs	399		436	
	Resources committed in-kind to EPOS from contributors	1.281.292		924.215	
Ebitda (Earning before Interests, Taxes, Depreciations and Amortizations)			22.806		15.423
Depreciation			-		470
Write-downs for impairment of tangible and intangible assets			-		-
Ebit (Earnings before interests and taxes)			22.806		14.953
Financial income and expenses			(68)		(2)
	Financial income		-		-
	Financial charges (-)		(68)		(2)
Income from investments			-		-
Value adjustments to financial assets			-		-
Result before tax			22.738		14.951
Income tax			22.738		14.951
Result for the year			-		-

Cornelia Freda

Statement of Cash Flow

as of December 31st, 2022

Financial Statement - Indirect method		
	Amount as at 31/12/2022	Amount as at 31/12/2021
A) Financial flow from operations (indirect method)		
Net profit (loss) for the year	-	-
Income taxes	22.738	14.951
Interest expenses/(income)	68	2
(Dividends)		
(Capital gains)/Capital losses resulting from asset disposal	-	-
1) Profit (loss) for the year before income taxes	22.806	14.953
Adjustments for non-monetary elements with no offset in working capital		
Accruals to provisions	18.937	16.020
Depreciation of assets	-	470
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	-	-
Total adjustments for non-monetary items with no offset in net working capital	18.937	16.490
2) Financial flow before changes to the net working capital	41.743	31.443
Changes in net working capital		
Decrease/(Increase) of inventories		
Decrease/(Increase) of credits towards contributors - Members	-	-
Decrease/(Increase) of credits towards other contributors	-	-
Increase/(Decrease) in payables due to suppliers	(67.066)	90.483
Decrease/(Increase) in accrued income and deferred expenses	(13.679)	5.981
(Increase)/Decrease in accrued liabilities and deferred income	(568.004)	495.491
Other decreases/(Other increases) of net working capital	14.222	864.335
Total changes in net working capital	- 634.527	1.456.290
3) Financial flow after changes to the net working capital	- 592.784	1.487.733
Other adjustments		
Interest collected/(paid)	(68)	(2)
(income taxes paid)	(28.048)	(6.489)
Dividends collected		
(Use of provisions)		
Other collections/(payments)		
Total other adjustments	(28.116)	(6.491)
Financial flow from operations (A)	(620.900)	1.481.242

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B) Financial flow from investing activities		
Tangible fixed assets		
(Investments)		(470)
Disinvestments		
Intangible fixed assets		
(Investments)		
Disinvestments		
Financial fixed assets		
(Investments)		
Disinvestments		
Financial assets not classified as noncurrent		
(Investments)		
Disinvestments		
(Acquisition of company branches net of cash and cash equivalents)		
Sale of company branches net of cash and cash equivalents		
Cash flow from investing activities (B)		(470)
C) Financial flow from financing activities		
Loan capital		
Increase/(Decrease) in short-term payables due to banks		
New loans - Contribution quotas due to the Partners	287.154	-
(Reimbursement of loans - Pymment to the Partners)		(514.397)
Equity		
Increase in paid share capital		
(Capital reimbursement)		
Disposal/(Purchase) of treasury shares		
Cash flow from financing activities (C)	287.154	(514.397)
Increase (decrease) in cash and cash equivalents (A ± B ± C)	(333.746)	966.375
Effect of exchange rates on cash and cash equivalents		
Cash and cash equivalents at the beginning of the year		
bank deposits	5.131.088	4.168.916
cheques		
Cash and equivalents on hand	5.654	1.451
Total cash and cash equivalents at the beginning of the year	5.136.742	4.170.367
Of which, not freely usable		
Cash and cash equivalents at the year end		
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 end of the year	4.802.996	5.136.742
Of which, not freely usable		
Balance difference	-	-

Cornelia Fries

3. Notes to the Financial Statements

Foreword

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

The Financial Statements are composed of the Balance Sheet, Profit and Loss Account and Cash Flow Statement and are complemented by the Notes to the Financial Statements (these Explanatory Notes) and by the Activity and Results description (Chapter 1) that details performed activities and achieved results as for the EPOS ERIC 2022 Activity Plan and Provisional Budget adopted by EPOS ERIC General Assembly in December 2021 (Resolutions No. 10/2021).

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 harmonization 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 harmonized 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 harmonized 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 realized 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 realizable 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 realizable 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 from 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 recognized 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 2022.

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 of 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 account 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 31/12/2021	Balance as at 31/12/2022	Difference
-	-	-

Tangible Assets

Balance as at 31/12/2021	Balance as at 31/12/2022	Difference
-	-	-

The composition is as follows:

Description	Initial cost	Investment /disinvest.	Final cost	Amortization/ Depreciation	Amortization/ Depreciation fund	Residual value
Tangible Assets						
Office furniture	1.043	-	1.043	-	1.043	-
pc and printers	80	-	80	-	80	-
mobile phones	390	-	390	-	390	-
Total	1.513	-	1.513	-	1.513	-

The tangible assets owned by the Consortium is equal to Euro 1.513; the depreciation process was completed in 2021.

Intangible Assets

No values are entered for these items.

Long terms credits

No values are entered for these items.

Current Assets

Balance as at 31/12/2021	Balance as at 31/12/2022	Difference
5.147.579	4.851.275	(296.304)

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
Advances to suppliers	700			700
Tax advances	14.951			14.951
Contribution to collect	18.108			18.108
Other receivables	-			-
TOTAL	33.759	-	-	33.759

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 31/12/2021	Balance at 31/12/2022	Difference
Bank deposit (Intesa San Paolo)	5.131.088	4.799.403	- 331.685
Prepaid credit cards	5.654	3.593	(2.061)
TOTAL	5.136.742	4.802.996	(333.746)

Prepayments and Accrued Income

Balance at 31/12/2021	Balance at 31/12/2022	Difference
841	14.520	13.679

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

- Copernicus – Booth rental 2023 (Euro 11.529)
- Harpa Italia – sw licence (Euro 1.956)
- Dropbox – sw licence (Euro 998)
- Tophost - internet domine (Euro 37)

Equity and Liabilities

Equity

Non-current Liabilities

Capital and Other Permanent Contributions from Members

No values are entered for these items.

Reserves

No values are entered for these items.

Accumulated Profits

No values are entered for these items.

Non-current liabilities

Balance at 31/12/2021	Balance at 31/12/2022	Difference
18.683	31.458	12.775

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 31/12/2021	Balance at 31/12/2022	Difference
18.683	31.458	12.775

This item represents the actual debt of EPOS ERIC at 31/12/2022, to employees in force at that date (n. 5 employees) and it is made up as follows:

Description	
Initial value	18.683
Severance accrued during the year	26.266
Severance paid during the year	(13.204)
Tax	(287)
End value	31.458

At 31/12/2022 advances have not been required by employees.

The number of employees has been decreased in 2022 as follows:

Description	n.
Employees as at 01/01/2022	6
Recruitment in 2022	1
Resignation in 2022	(2)
Employees as at 31/12/2022	5

Long-term provisions

No values are entered for these items.

Current Liabilities

Balance at 31/12/2021	Balance at 31/12/2022	Difference
5.122.896	4.819.817	(303.079)

Short-term financial debts

Balance at 31/12/2021	Balance at 31/12/2022	Difference
478.726	765.881	287.155

This item includes:

- the contribution quotas due to the Partners for their participation to EPOS SP Project of which EPOS ERIC is Coordinator (Euro 765.634)
- the contribution quotas due to one Partner for their participation to EOSC Future (Euro 247)

Advance payments for externally funded projects

Balance at 31/12/2021	Balance at 31/12/2022	Difference
543.980	209.717	(334.263)

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

- EOSC Future project Euro 2.022
- GEO Inquire project Euro 35.589
- DT GEO project Euro 172.106

Other short-term debts and liabilities

Balance at 31/12/2021	Balance at 31/12/2022	Difference
690.986	997.019	306.033

Debts are valued at their nominal value.

The composition of the aforementioned amounts is as follows:

Description	Balance at 31/12/2021	Balance at 31/12/2022	Difference
Debts to providers and collaborators	147.695	80.565	(67.130)
Debts to social security institutions	18.813	15.186	(3.627)
Tax liabilities	27.145	39.697	12.552
Contribution to be paid	467.265	813.704	346.439
Payables to employees and E.D.	30.068	47.867	17.799
TOTAL	690.986	997.019	306.033

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 as at the end of the year.

The item "Tax liabilities" includes debts for VAT (INTRA-12), withheld taxes for employees and collaborators and the debt for IRAP (Italian direct tax on personnel).

The item "Contribution to be paid" includes debts to entities involved in the TCS Governance and Coordination, TCS Data and Service Provision and ICS-TCS Interaction activities, regarding cash

contribution accrued but not paid as at the end of the year.

The item "Payables to employees and E. D." includes the remuneration of the month of December and deferred remuneration for holidays and work permits.

Deferred Income and Accrued Expenses

Balance at 31/12/2021	Balance at 31/12/2022	Difference
3.415.204	2.847.200	(568.004)

The item breaks down as follows:

Description	Deferred income	accrued expenses	Total
Value as at 01/01/2022	3.415.204	-	3.415.204
deferred income 2022	-	-	-
use of carry over from previous years	(568.063)		(568.063)
accrued expenses		59	59
Value as at 31/12/2022	2.847.141	59	2.847.200

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 2020-2022 EPOS ERIC Strategic Plan as adopted by the General Assembly in December 2019 (Resolution No.9/2019) and in the EPOS ERIC 2023 Activity Plan and Provisional Budget 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 above-mentioned Strategic Plan.

Profit and Loss Account

Revenues

Balance at 31/12/2021	Balance at 31/12/2022	Difference
2.725.633	4.261.900	1.536.267

The item breaks down as follows:

Description	Balance at 31/12/2021	Balance at 31/12/2022	Difference
Membership Fee	1.484.000	1.484.000	
Host premium cash contribution	648.934	700.000	51.066
Contribution project externally funded	163.973	223.085	59.112
use of carry over of previous years		568.063	568.063
- carry over of the year	(495.491)		495.491
National and international grants and contributions accrued in financial year SUB TOTAL	1.801.416	2.975.148	1.173.732
Contribution in kind	924.215	1.281.292	357.077
Other revenues	2	5.460	5.458
TOTAL	2.725.633	4.261.900	1.536.267

“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 2022;
- the 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, Eric Forum, Skill4EOSC, EU GREAT projects attributable to the financial year in proportion to the costs incurred by EPOS ERIC in 2022.

“Contribution in kind” item identifies:

- the 2022 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 228.311);
- the 2022 in kind contribution made available by Hosting Organizations engaged in the “TCS G&C”, “TCS D&SP”, “ICS-TCS Interaction”.

“Other revenues” item refers to a contingent asset and 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 it was not possible to call for the exemption, the cost of VAT is 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 and office stationery.

Balance at 31/12/2021	Balance at 31/12/2022	Difference
46	6.074	6.028

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 31/12/2021	Balance at 31/12/2022	Difference
Executive Director assigned by INGV	35.770	-	(35.770)
Executive Director (remuneration and social security contribution directly by EPOS)	118.781	142.750	23.969
Intranet network	10.000	10.000	
Website	35.975	-	(35.975)
Other software assistance	1.480		(1.480)
Traslations	1.420	-	(1.420)
Travel costs for employees, collaborators, and bodies	5.267	47.173	41.906
Legal, fiscal, labour consultancy and accountant services	69.758	72.177	2.419
Advertising and communication	47.490	42.824	(4.666)
Support to international activities	29.235	29.079	(156)
Support to activation procedures	74.500	73.598	(902)
Other administrative collaborations	7.500	10.361	2.861
Auditor fees	15.800	15.900	100
Telephone and communication utilities	2.937	3.363	426
Workshops, seminars and publications		70.996	70.996
Training	11.002		(11.002)
Prepaid meals	9.045	14.356	5.311
Bank charges	2.054	2.561	507
Postal charges	343	66	(277)
Other services	34		(34)
TOTAL	478.391	535.204	56.847

Staff Costs

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

At 31/12/2022 EPOS ERIC has n. 5 people hired with the status of employee.

Staff costs includes:

Description	31.12.2021	31.12.2022
Salaries	228.781	356.742
Subsistence allowance		35.260
Social security charges	67.399	116.190
Severance indemnities	16.039	26.266
TOTAL	312.219	534.458

Costs of rents, concessions and royalties for trademarks

This item represents the cost for software licenses.

Description	Balance at 31/12/2022	
TCS Governance and Coordination	8.557	
TCS Data and Service Provision	712	
TOTAL	8.557	

Contributions

The item "Contributions" concerns:

Description	Balance at 31/12/2022
TCS Governance and coordination	918.435
TCS Data Service Provision	712.010
TOTAL TCS	1.630.445
ICS-TCS Interaction	124.480
ICS-C	120.623
TOTAL ICS	245.103
TOTAL	1.875.548

Resources committed in-kind to EPOS ERIC by contributors

Description	Balance at 31/12/2022
INGV – Istituto Nazionale di Geofisica e Vulcanologia – Staff cost	228,311
INGV – Istituto Nazionale di Geofisica e Vulcanologia – Other costs	-
SUB TOTAL	228,311
TCS Governance and Coordination	306,371
TCS Data and Service Provision	534,730
ICS-C	164,444
ICS-TCS Interaction	47,436
SUB TOTAL	1,052,981
TOTAL	1,281,292

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.

Other Operating Costs

This item concerns stationery and other small administrative expenses.

Balance at 31/12/2021	Balance at 31/12/2022	Difference
436	399	(37)

Depreciation (of Tangible and Intangible Assets)

Depreciation is calculated on the basis of the useful life of the asset and its use in production.

The assets purchased in previous years were fully depreciated.

Description		Depreciation
Tangible Assets		
PC and printers	100,00%	0
mobile phones	100,00%	0
Total tangible assets		0

Financial Income and Expenses

Description	Balance at 31/12/2021	Balance at 31/12/2022	Difference
Financial income	-	-	-
Financial charges	(1)	(68)	(67)
TOTAL	(1)	(68)	(67)

The item “Financial charges” includes exchange rate costs.

Income from Investments

No values are entered for these items.

Events after the Reporting date

Following IPSAS 14, this paragraph reports about events that have occurred between the reporting date (December 31st 2022) 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.

It is relevant to state that this event, 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.

The remaining information on performed activities and achieved results related complementing the Notes to the 2021 Financial Statements is described more in detail in Chapter 1.

Taxation

In 2022 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 22.738.

Rome, 29 March 2023

Carmela Freda



Executive Director

4. Auditors Report

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

INDEPENDENT AUDITOR'S REPORT

Financial Statements as of
December 31st, 2022

Protocollo RC104012022BD1024

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.



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

Opinion

We have audited the financial statements of EPOS - ERIC (the Consortium), which comprise the statement of financial position as at December 31st, 2022, the statement of income, the statement of cash flows for the year then ended and explanatory notes to the financial statements, including a summary of significant accounting policies.

In our opinion the financial statements give a true and fair view of the financial position of the Consortium as of December 31st, 2022 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.

Basis of opinion

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

Other matters

The financial statements for the year ended December 31st, 2022 were audited on a voluntary basis, since an audit the financial statements of EPOS - ERIC is not required by Italian law.

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.

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

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Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but 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 non 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, March 24th, 2023

BDO Italia S.p.A.

Signed by
Fabio Carlini
Partner

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