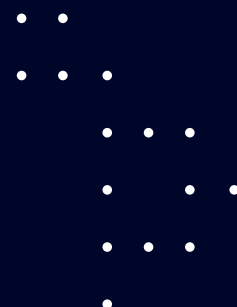EGI Council Participant: MARIS for SeaDataNet

Participating in EGI Impact Report: MARIS for SeaDataNet
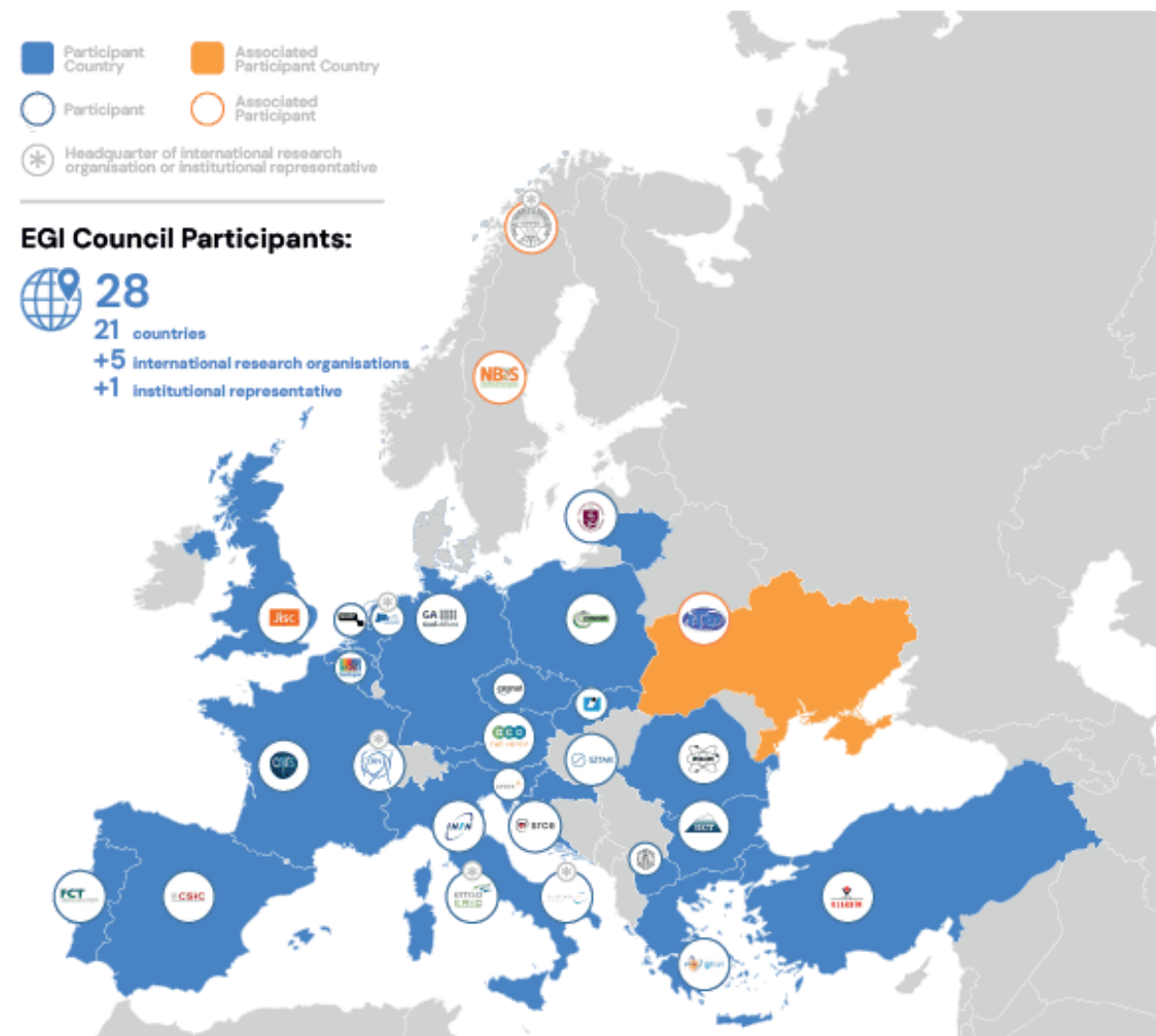
2024

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About EGI

EGI is the federation of computing and storage resource providers united by a mission of delivering advanced computing and data analytics services for research and innovation.
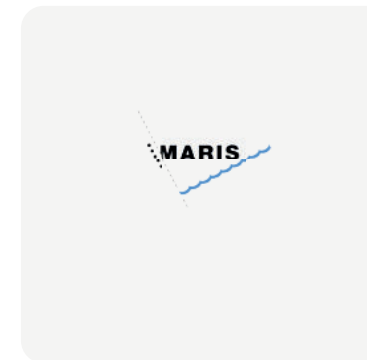
The EGI Federation believes that all researchers should have seamless access to services, resources and expertise to collaborate and conduct world-class research and innovation. The EGI Federation is coordinated by EGI Foundation, an organisation with headquarters in Amsterdam. The Foundation offers a service federation and management platform, enabling the data centres to harmonise and integrate their services by connecting to a common hub. Moreover, it engages with international research communities using these services in order to understand and satisfy their demands for advanced computing for research.

The mission of EGI is pursued by coordinating and provisioning an international federated infrastructure that pools together service providers from both the public and private sectors in Europe to develop, integrate and deliver digital services for compute and data-intensive research and innovation. As an open initiative with a global outlook, the EGI Federation also connects service providers beyond Europe, following the collaboration needs of the served communities.

The latest Annual Report provides an extensive overview of the results that have been achieved through our collaborative efforts in 2023.
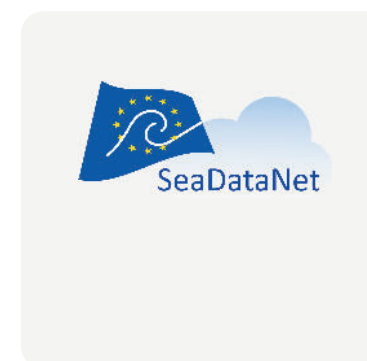
EGI Council Participants:

28
21 countries
+5 international research organisations
+1 institutional representative

Legend:
- Participant Country
- Associated Participant Country
- Participant
- Associated Participant
- Headquarter of international research organisation or institutional representative

Approved EGI Council map from 2024

About MARIS

Mariene Informatie Service MARIS BV (MARIS) mission is to improve the overview of and access of data, information and knowledge about the sea. The MARIS foundation was established in 1989 and set up the MARIS company, which has been active since 1996. MARIS develops and manages projects and internet systems for management and provision of marine and ocean data.

About SeaDataNet

SeaDataNet is a distributed Marine Data Infrastructure for the management of large and diverse sets of data deriving from in situ of the seas and oceans. Professional data centres, active in data collection, constitute a Pan-European network providing on-line integrated databases of standardized quality. The on-line access to in-situ data, meta-data and products is provided through a unique portal interconnecting the interoperable node platforms constituted by the SeaDataNet data centres. The development and adoption of common communication standards and adapted technology ensure the platforms interoperability.

The quality, compatibility and coherence of the data issuing from so many sources, is assured by the adoption of standardized methodologies for data checking, by dedicating part of the activities to training and preparation of synthesized regional and global statistical products from the most comprehensive in-situ data sets made available by the SeaDataNet partners. Data, value added products and dictionaries serve wide uses: e.g. research, model initialisation, industrial projects, teaching, marine environmental assessment.

Overall EGI impact

On Behalf of SeaDataNet, MARIS contributes to the Federation's mission to deliver open solutions for advanced computing in research and innovation, coordinating and provisioning an international federated infrastructure that pools together service providers from both the public and private sector in Europe to develop, integrate and deliver digital services for compute-and data-intensive research and innovation. In particular MARIS contributes to facilitating access to general & specialised ICT resources at pan-European scale and to making expert support teams across Europe accessible. The annualmembership fee contributed by MARIS to the EGI Foundation in 2024 was 10,000 EUR.

The EGI Federation is composed of e-infrastructure providers from national and community initiatives, forming one of the largest distributed computing infrastructures for researchers in the world, integrating about 1,243,400 CPU cores and over 1,4 Exabyte of storage space from hundreds of data centres.

In 2024, the EGI Federation served around 116,000 users (+23%). EGI users consumed 7,4 Billion HTC CPU hours (+5.7%), 62,7 Million Cloud CPU hours (-23,5%), ran over 402 M computational jobs (+8%) and published over 2,560 open access publications.

As of the previous year, the research community with the largest number of users is Medical and Health Sciences, while the community with most extensive HTC CPU/h consumption is CMS.

From the scientific communities engaged in 2024, the one with most extensive Cloud CPU/h consumption is WeNMR.

Moreover, EGI engaged with a total of 249 scientific communities; 11 SMEs and business pilots, and 2 additional Research Infrastructure included in the ESFRI Roadmap, raising the total of number of ESFRI partners/users of EGI to 25.

EGI contribution to SeaDataNet excellence in science

EGI federates hundreds of resource centres that are located at participant countries, organizations and at collaborating e-Infrastructures worldwide. This federated infrastructure supports data- and compute-intensive research across Europe and the world. In 2023, our federation was used by over 260 scientific communities, and has been accessed by around 95,000 users.

Research Infrastructures and multi-national research collaborations are the largest adopters of EGI Services, the main contributors of thematic portals, and operate community-specific compute, storage and data systems based on EGI federation capabilities.

SeaDataNet research collaborations in EGI

EGI supported activities and services

SeaDataNet (Oceanography)

- Royal Belgian Institute of Natural Sciences
- Flanders Marine Institute
- University of Liège, GeoHydrodynamics and Environment Research (ULg-GHER)
- AISBL: IO-BAS Bulgarian Academy of Sciences, Institute of Oceanology
- Institute of Oceanography and Fisheries
- IFREMER
- Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research
- ENEA
- INGV
- ETT SpA (SCAI Group)
- OGS
- Dutch institute for Delta Technology (DELTARES)
- Marine Information Service (MARIS)
- Royal Netherlands Institute for Sea Research
- Institute of Oceanology, Polish Academy of Sciences (IOPAN)
- IHPT Instituto Hidrografico
- NIMRD National Institute for Marine Research and Development "Grigore Antipa"
- Agencia Estatal Consejo Superior de Investigaciones Científicas (CSIC Central Organisation)
- National Institute of Biology (NIB) - Marine Biology Station
- Institute of Marine Sciences, Middle East Technical University (IMS-METU)
- Ukrainian scientific center of Ecology of Sea (UkrSCES)
- British Oceanographic Data Centre (BODC)

SeaDataNet has been supported by EGI partners in the EOSC-hub project in the setup and validation of a data access service on federated cloud resources. Since 2021 the SeaDataNet community is represented in the EGI Council by MARIS, and works with several EGI members in the EGI-ACE Horizon 2020 project. In EGI-ACE SeaDataNet and EGI partners from Spain are setting up and operating a WebOcean Data Analysis service in the EGI cloud federation, and deliver the service in EOSC.
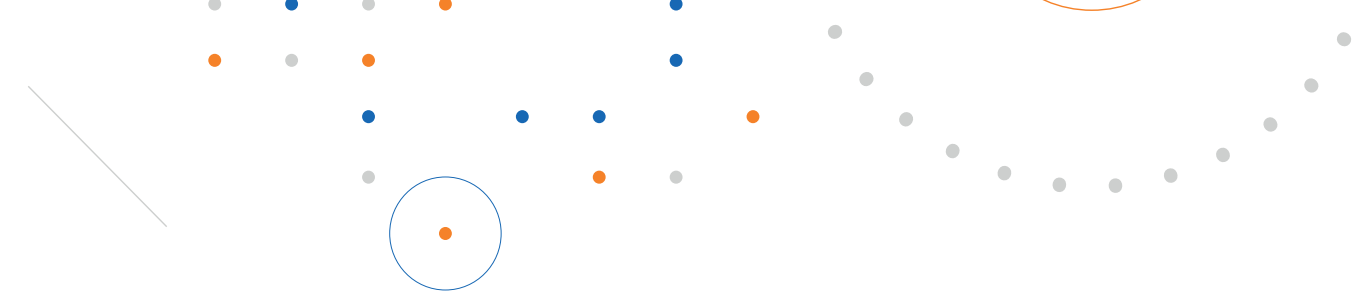
Services from EGI and Providers

The SeaDataNet community is consuming cloud compute resources through EGI from the INFN-Bari site (Italy) since early 2022.

The SeaDataNet community consumed approximately 16,000 CPU-hours per month since then, over 424,000 CPU-hours in total until the end of 2023.

The cloud compute delivery is secured with an EGI Service Level Agreement for SeaDataNet since November 2023.

Methodology

Data for this impact report has been collected from the following sources.

Users

EGI uses the following methodology to capture the number of EGI users who rely on EGI services

- EGI serves users in the form of 'communities', called 'Virtual Organisations' (VO in short). A VO's members can range from one to tens of thousands. Members of a VO benefit from and use EGI services in different ways (e.g., by using Services for Federation or Services for Research).
- EGI establishes knowledge about its VOs as part of the user community support lifecycle; therefore, baseline information about VOs is collected through the Customer Relationship Management process (CRM).

At the end of 2024, there were 135 VOs in EGI.

EGI Virtual Organisations (VOs) can rely on different technical and non-technical mechanisms to manage their own members. Depending on their choice, the EGI Federation coordinator (EGI Foundation) has to follow different, corresponding approaches to know the number of members in a given VO, and to obtain additional information about these members (e.g. their 'country'). The EGI Foundation uses the following mechanisms to obtain information about the VO users:

- Obtain user number statistics from the EGI Operations Portal for VOs, where the members register personally in a 'VO membership management' system that is either operated by EGI or can be accessed by EGI.
- Obtain user number statistics from Community VRE REST APIs for VOs that operate Virtual Research Environments (VREs) on top of EGI resources. Those VREs implement a specific API to report users (e.g., WeNMR, Virtual Imaging Platform (VIP), NBIS).
- Obtain user number statistics from interviews with VO coordinators for VOs coordinated by one person.

Publications

Publications are collected from each community's public repository, if existing. Additional details are checked with the VO coordinators during the interviews to complement this information. EGI also consults OpenAIRE services to countercheck the data. You can check the list of repositories for each VO here (requires login): https://operations-portal.egi.eu/vo/#collapseVoListOther.

Institutional members supporting research communities

EGI relies on the information on each community's website to list institutions supporting research communities at the national level. Additionally, EGI appreciates the feedback from its national representatives to refine and improve those lists.

EGI Membership
Impact Report

egi_einfra   **EGI Foundation**   **EGI**

www.egi.eu