



EGI Council Participant: IICT-BAS

Participating in EGI Impact Report

Bulgaria_

www.egi.eu

2025

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Country Overview_

Number of supported publications 313

Number of total service users 161

Scientific Communities supported 10

Data Centres contributing to the Federation 2

Collaboration projects 5

About EGI

EGI is a federation of providers delivering advanced computing, data, and digital services for research and innovation, while driving collaborative development and impact across scientific communities.

The EGI Federation brings together national and international service providers to deliver the computing and data services that research teams rely on across Europe. Working as a coordinated federation, EGI enables research communities to access advanced capabilities in computing, data analytics, and artificial intelligence, while also supporting research and development that pushes the frontiers of digital innovation for science.

Through this collaborative model, EGI helps its members transform emerging technologies and approaches, such as big data, cloud computing, artificial intelligence, digital twins, and FAIR data, into reliable, environmentally and financially sustainable services for research and education. These services are designed to ensure continuity and stability beyond individual projects, enabling scientific communities

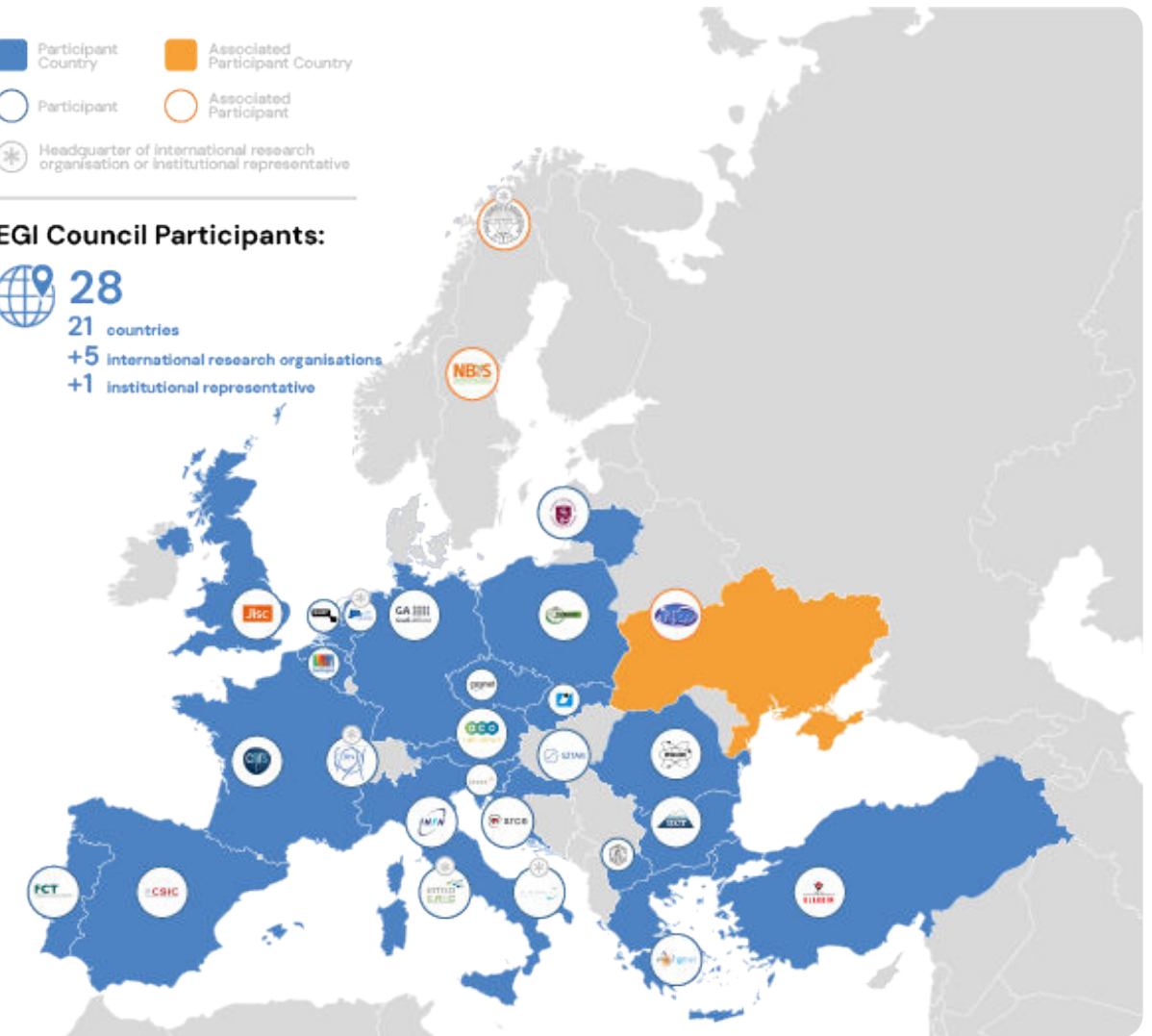
across disciplines, countries, and funding cycles to benefit from ongoing digital innovation. At the same time, the federated infrastructure and its associated R&D activities generate impact across all fields of science, from physics to the humanities, fostering new discoveries and novel research approaches.

Coordinated by the EGI Foundation, the Federation operates through a shared IT platform that connects hundreds of providers with research groups across Europe and beyond. By aligning and aggregating national capacities with European and global priorities, EGI ensures that researchers can seamlessly access digital resources and expert support. Together, EGI and its members establish a strong and lasting foundation for open, collaborative, and data-intensive science, strengthening Europe's capacity for research and innovation.



EGI Council Participants:

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



Council Participant IICT-BAS

About IICT-BAS

Institute of Information and Communication Technologies – BAS is the coordinating entity of NCHDC. The National Center for High-performance and Distributed Computing (NCHDC) provides computing resources and software services for research and innovation to the individual researchers and scientific groups in Bulgaria. The main objective of the NCHDC is to provide stable and reliable services in a sustainable way, in the long term, with maximum flexibility, exceptional cooperativity and understanding of users from different disciplinary fields, which pose problems specific to them and need support for the use of electronic infrastructure. This is an extremely difficult task requiring experienced, highly knowledgeable and motivated e-Infrastructure specialists in order to match the NCHDC infrastructure to modern hardware and software developments.

Overall EGI Impact

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 2025, the EGI Federation served around 150,000 users (+29%). EGI users consumed 8 Billion HTC CPU hours (+8%), 43 Million Cloud CPU hours (-19%), ran over 351 Million computational jobs (-12%) and published over 2,300 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 2025, the one with most extensive Cloud CPU/h consumption is WeNMR.

Moreover, EGI engaged with 219 scientific communities, including SMEs and business pilots, and 41 Research Infrastructures

EGI Contribution to Excellence in Science in Bulgaria

IICT-BAS coordinates the Bulgarian participation to the EGI Federation. IICT-BAS coordinates NCHDC, that provides computing resources and software services for research and innovation to the individual researchers and scientific groups in Bulgaria. This report provides an overview of the activities of IICT-BAS in EGI, and the impact that was achieved thanks to this participation. The annual membership fee contributed by SURF to the EGI Foundation in 2024 was 28,750 EUR.

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 2025, our federation has been accessed by over 150,000 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.

The services of the EGI federation have been used by 161 researchers from Bulgaria over the year. The estimated annual scientific output produced by research communities, projects and scientific collaborations from Bulgaria and supported by the EGI Federation in 2025 is estimated to amount to over 310 peer reviewed scientific publications. The EGI Federation is currently working with almost 50 Research Infrastructures, 10 of which include Bulgarian partners. These EGI-enabled research infrastructures, their Bulgarian members and their scientific output (publications) are detailed in the following pages of the report.

Bulgarian Research Collaborations in EGI

ALICE (High Energy Physics)

- Institute For Advanced Physical Studies (Iaps), Sofia

EGI Supported Activities and Services

ALICE has been supported since 2012 as part of the EGI – WLCG collaboration. Federated services delivered include:

- **Software support**
- **Infrastructure and Operations Services** (infrastructure)

- catalogue, **Software Distribution Services** (UMC, CMD, operations documentation)
- **Operations Coordination** (middleware deployment campaigns, procedures, innovation of tools)

- **Security Services and Activities** (CSIRT, Software vulnerability group, international security coordination, policies, IGTF distribution)

43 SCIENTIFIC PAPER(S) PUBLISHED IN 2025

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43 SCIENTIFIC PAPER(S) PUBLISHED IN 2025

Bulgarian Research Collaborations in EGI

CTA (Astronomy)

- Astronomy Department of Faculty of Physics, Sofia University
- Institute for Nuclear Research and Nuclear Energy, BAS

EGI Supported Activities and Services

The CTA experiment has been using compute resources from EGI partners for more than a decade. The services from the EGI federation that CTA uses include:

- EGI HTC services from 9 EGI participant countries (CZ, DE, IT,

- FR, ES, NL, RO, PT, SI) **Software distribution services** (UMC, CMD, operations documentation)
- **Operations coordination** (middleware deployment campaigns, procedures, innovation of tools)
- **Security services and activities** (CSIRT,

Software vulnerability group, international security coordination, policies, IGTF distribution)

0 SCIENTIFIC PAPER(S) PUBLISHED IN 2025

Bulgarian Research Collaborations in EGI

CLARIN (Linguistics)

- CLaDA-BG, Bulgarian Academy of Sciences

EGI Supported Activities and Services

CLARIN thematic services has been supported by EGI since 2018. CLARIN has a Service Level Agreement with EGI, using the following services:

- EGI Cloud (Compute + Online Storage) for hosting the Virtual Language Observatory

- (VLO)
- Technical support
- Service integration

0 SCIENTIFIC PAPER(S) PUBLISHED IN 2025

Bulgarian Research Collaborations in EGI CMS (High Energy Physics) - University of Sofia INRNE - Institute for System Engineering and Robotics, Sofia, Bulgarian Academy of Sciences	EGI Supported Activities and Services CMS has been supported since 2012 as part of the EGI – WLCG collaboration, formally agreed in an MoU. Federated services delivered in the context of the WLCG MoU include Software support (consultancy to users and system administrators, (software maintenance and	- validation) Infrastructure and operations Services (infrastructure catalogue, accounting repository and portal, helpdesk, monitoring, operations portal, AAI) - Software distribution services (UMC, CMD, operations documentation) - Operations coordination (middleware deployment campaigns,	procedures, innovation of tools) Security services and activities (CSIRT, Software vulnerability group, international security coordination, policies, IGTF distribution)	135 SCIENTIFIC PAPER(S) PUBLISHED IN 2025
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Bulgarian Research Collaborations in EGI ELI-BEAM (Physical Sciences) Institute of Electronics of the Bulgarian Academy of Sciences	EGI Supported Activities And Services ELI works with EGI since 2016 on exploring and validating approaches for off-site computing and data management. ELI-Beams setup a High Throughput Compute Service on EGI resources	and works with EGI providers on - Refining the user requirements and translating these to e-infrastructure requirements, and - Identifying and validating services from EGI that can	be relevant for ELI (besides HTC and compute). Mobilising already existing HTC compute, cloud compute and storage resources from EGI for ELI piloting and demonstration activities.	
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Bulgarian Research Collaborations in EGI ELI-NP (Nuclear Physics) University of Ruse "Angel Kanchev"	EGI Supported Activities And Services ELI works with EGI since 2016 on exploring and validating approaches for off-site computing and data management. ELI-NP setup a High Throughput Compute Service on EGI resources and works with EGI providers on	- Refining the user requirements and translating these to e-infrastructure requirements, and - Identifying and validating services from EGI that can be relevant for ELI (besides HTC and compute).	Mobilising already existing HTC compute, cloud compute and storage resources from EGI for ELI piloting and demonstration activities.	90 SCIENTIFIC PAPER(S) PUBLISHED IN 2025
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Bulgarian Research Collaborations in EGI LifeWatch (Biodiversity and Ecosystem Research) Agricultural University–Plovdiv	EGI Supported Activities and Services The LifeWatch experiment has been using compute resources from EGI partners since 2018. The services from the EGI federation that LifeWatch uses include: EGI Cloud services from 2 EGI federated sites from ES and PT	- Software distribution services (UMC, CMD, operations documentation) - Operations coordination (middleware deployment campaigns, procedures, innovation of tools) - Security services and activities (CSIRT,	Software vulnerability group, international security coordination, policies, IGTF distribution)	0 SCIENTIFIC PAPER(S) PUBLISHED IN 2025
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Bulgarian Research Collaborations in EGI SeaDataNet (Oceanography) AISBL: IO-BAS Bulgarian Academy of Sciences, Institute of Oceanology	EGI Supported Activities And Services Since 2021, the SeaDataNet community is represented in the EGI Council by MARIS.. The SeaDataNet community is consuming cloud compute resources through EGI from the INFN-Bari	site (Italy) since early 2022. The cloud compute delivery is secured with an EGI Service Level Agreement for SeaDataNet since November 2023	0 SCIENTIFIC PAPER(S) PUBLISHED IN 2025
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Bulgarian Research Collaborations in EGI WeNMR (Structural Biology) - Medical University of Sofia - Institute of Biophysics and Biomedical Engineering at the Bulgarian Academy of Science	EGI Supported Activities and Services ThWeNMR is supported by EGI since 2011 and has a Service Level Agreement since 2016. The EGI Services used by the community include: High-Throughput, Cloud + Online Storage services from 23 EGI federated sites from NL, IT, FR, DE, PL,	UK, the Asia Pacific region, IberGrid (Spain and Portugal), the Latin America region. - EGI Workload Manager - Trust and identity management with Check-in	10 SCIENTIFIC PAPER(S) PUBLISHED IN 2025
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Participated Projects

In the reference period, the EGI Foundation was leading seven Horizon Europe Projects, two of which started in 2025:

- iMagine (September 2022–December 2025)
- interTwin (September 2022–August 2025)
- ENVRI-Hub NEXT (February 2024–January 2027)
- EOSC Beyond (April 2024–March 2027)
- EOSC Data Commons (April 2025–March 2028)
- RI-SCALE (March 2025–February 2028)

- SPECTRUM (January 2024–June 2026)

Furthermore, the EGI Federation was involved in 6 additional projects, increasing the innovation potential of its participants.

The EGI Federation participates in Horizon 2020 and Horizon Europe projects together with Dutch institutions to facilitate the uptake and use of e-infrastructure services for science. A summary of these projects, the involved institutes and the scope of the collaboration is provided in the next table.



Project Title



Scope of Collaboration

EGI provides advanced cloud computing, notebooks, applications-on-demand, file transfer, and data archiving services to support ANERIS's research infrastructure. It contributes technical expertise to EOSC

integration processes and the development of a sustainable business model. EGI leads key technical tasks including the computing continuum infrastructure (T5.1), overall integration and EOSC synergies (T5.5), and innovation management (T6.3), while supporting virtual

research environments for genomics analysis, imaging-biooptics, and participatory sciences.

Participating beneficiaries from the country

- PENSOFT PUBLISHERS

Project Title



Scope of Collaboration

EGI contributes to developing a detailed technical roadmap, conducting state-of-the-art analysis, and designing a modular architecture framework for data monetization. It supports the definition of KPIs for fair dataset

valuation, business cases for data sharing platforms, and pilots for framework deployment. EGI also advances non-monetary data value dimensions, validation testing, standardization activities, and coordination with the Data Spaces Support Centre.

Participating beneficiaries from the country

- PRAVO I INTERNET FOUNDATION

Project Title



Scope of Collaboration

EGI advances the deployment and growth of common European data spaces by developing interoperable data sharing environments that enable secure reuse across sectors while upholding EU values and principles..

Participating beneficiaries from the country

- Sofia University

Project Title



Scope of Collaboration

EGI supports defining interoperability standards with EOSC and the broader landscape, while leading the design of sustainable services beyond the project lifetime. It delivers a federated cloud environment and EGI

Notebooks for scalable workflow development, data analysis, and sharing within the PITHIA e-science centre.

Participating beneficiaries from the country

- Borealis Global Designs Eood

Project Title	Scope of Collaboration	Participating beneficiaries from the country
	EEGI leads WP6 on Services Provision, researching unified access policies and a single access point for distributed RI resources. It contributes to financial modelling and business cases (WP3), impact strategies (WP4),	dissemination (WP5), and the Italian central Hub (WP8). CENTER FOR THE STUDY OF DEMOCRACY

Infrastructure Contributions

The EGI Federation offers two complementary compute capabilities: the High-Throughput Compute (HTC) federation and the Cloud federation. 1 Bulgarian data centre contribute to these federations:

HTC Federation:

- BG05-SUGrid (Univeristy of Sofia (Faculty of Mathematics and Informatics, Faculty of Physics))

The data centres provided 1 service endpoints. With the help of the EGI Security Vulnerability Group, the Bulgarian site avoided 49 critical vulnerabilities in foundational software systems during the year.

Methodology_

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

Users

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

- EGL 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 EGL services in different ways (e.g., by using Services for Federation or Services for Research).
- EGL 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 2025, there were 196 VOs in EGL. EGL Virtual Organisations (VOs) can rely on different technical and non-technical mechanisms to manage

their own members. Depending on their choice, the EGL Federation coordinator (EGL 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 EGL Foundation uses the following mechanisms to obtain information about the VO users:

- Obtain user number statistics from the EGL Operations Portal for VOs, where the members register personally in a 'VO membership management' system that is either operated by EGL or can be accessed by EGL.
- Obtain user number statistics from Community VRE REST APIs for VOs that operate Virtual Research Environments (VREs) on top of EGL 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. EGL 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

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



EGL Membership Impact Report

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EGL Foundation

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