



EGI Council Participant: CNRS

Participating in EGI Impact Report: France

2024

egi.eu

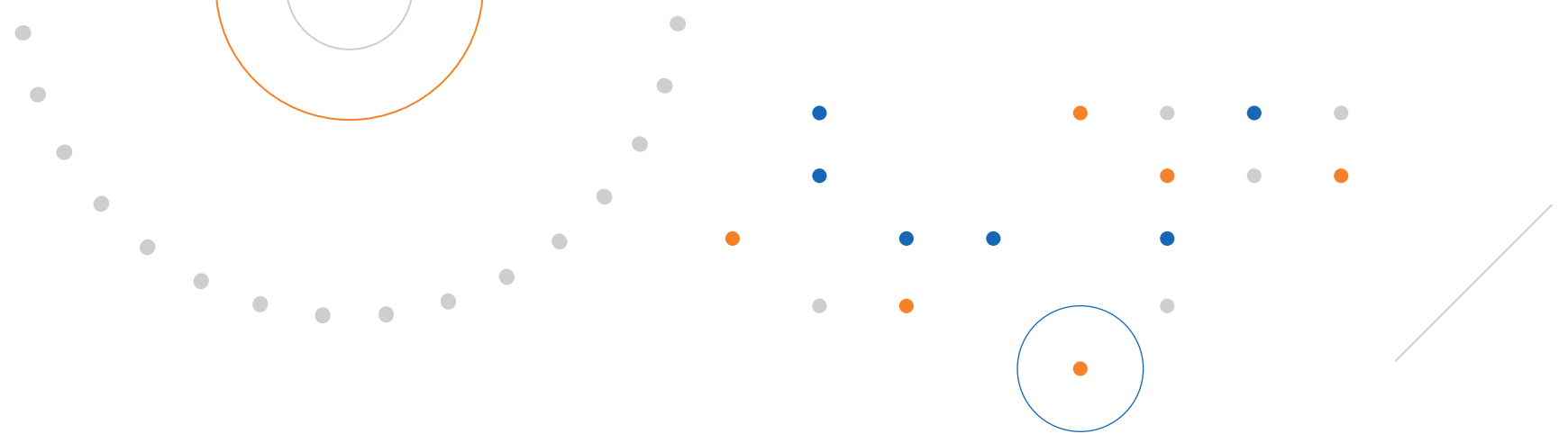


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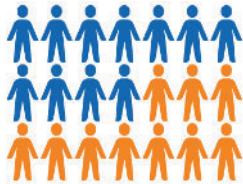
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Methodology

Infographic

+2,890 service users

In 2024, +2,890 researchers from French institutions used the services provided by the EGI Federation



+1,730 publications



The research communities, projects and scientific collaborations from France supported by the EGI led to more than 1,730 peer-reviewed scientific publications

31 Supported communities

In 2024, the French infrastructure supported 31 research communities in the following disciplines: Agriculture, Climate Research, Health and Medicine, Linguistics, Physics



Projects



French partners participate in 21 collaboration projects + iMagine, interTwin, ENVRI-Hub NEXT and SPECTRUM



Country overview

Number of supported publications	1,732
Number of total service users	2,898
Scientific Communities supported	31
Data Centres contributing to the Federation	11
Collaboration projects	25
Total HTC CPU hours delivered	594,421,165
Total Cloud CPU hours delivered	8,951,357

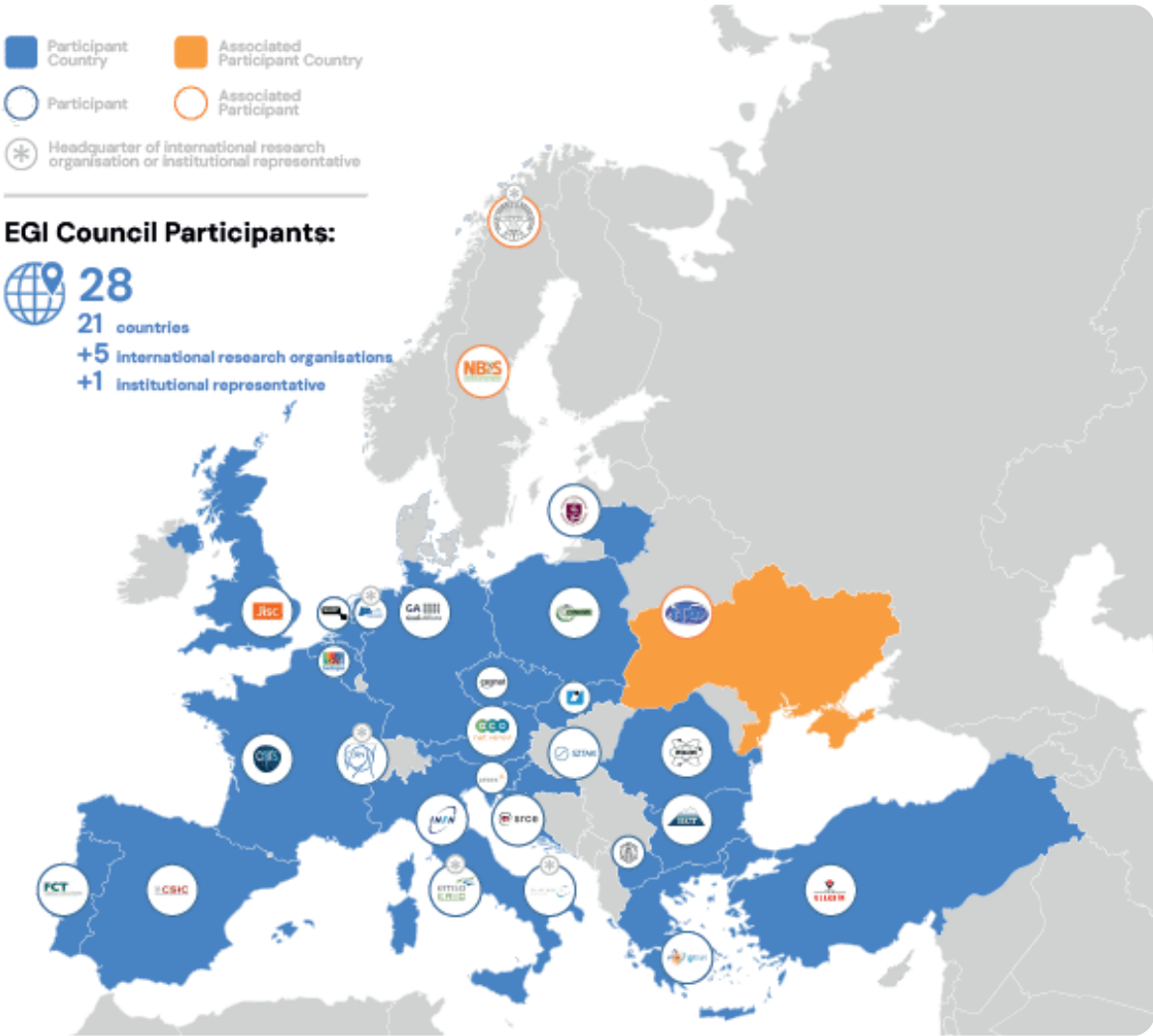
About EGI

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 2024.



Approved EGI Council map from 2024



About CNRS and France-Grilles

The French National Centre for Scientific Research (CNRS) is among the world's leading research institutions. Its scientists explore the living world, the matter, the Universe, and the functioning of human societies in order to meet the major challenges of today and tomorrow.

Internationally recognised for the excellence of its scientific research, the CNRS is a reference in the world of research and development, as well as for the general public

Overall EGI impact

France Grilles coordinates the French participation to the EGI Federation; France Grilles is represented by CNRS in the EGI Council. France Grilles promotes the building and operation of a multidisciplinary national Distributed Computing Infrastructure open to all sciences and to developing countries in France. This report provides an overview of the activities of France Grilles in EGI, and the impact that was achieved thanks to this participation. The annual membership fee contributed by France Grilles to the EGI Foundation in 2023 was 90,000 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 France 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 2024, our federation was used by over 260 scientific communities, and has been accessed by around 116.000 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 2,898 researchers from France in 2024. The estimated annual scientific output in 2024 produced by research communities, projects and

scientific collaborations from France and supported by the EGI Federation is estimated to amount to around 1,730 peer reviewed scientific publications.

The EGI Federation is currently working with over 40 Research Infrastructures, 32 of which include French partners. These EGI-enabled research infrastructures, their French members and their 2024 scientific output (publications) are detailed in the following pages of the report.

French research collaborations in EGI

AMS-02 (Particle Physics)

- LAPP Annecy
- LPSC Grenoble

ALICE (High-Energy Physics)

- LPC Université Blaise Pascal Clermont-Ferrand II,
- LPSC Université Joseph Fourier, Grenoble
- Centre de Calcul-IN2P3, Lyon
- IPN Université Claude Bernard Lyon
- Université de Nantes,
- IJCLab Université Paris-Sud,
- CEA IRFU Saclay,
- IPHC Université de Strasbourg

ATLAS (High-Energy Physics)

- LAPP, Université Grenoble Alpes, Université Savoie Mont Blanc, CNRS/IN2P3, Annecy
- LPC, Université Clermont Auvergne, CNRS/IN2P3, Clermont-Ferrand
- IRFU, CEA, Université Paris-Saclay, Gif-sur-Yvette
- LPSC, Université Grenoble Alpes, CNRS/IN2P3, Grenoble INP
- CPPM, Aix-Marseille Université, CNRS/IN2P3, Marseille
- IJCLab, Université Paris-Saclay, CNRS/IN2P3, 91405, Orsay
- LPNHE, Sorbonne Université, Université de Paris, CNRS/IN2P3, Paris

EGI supported activities and services

The AMS-02 experiment on the International Space Station has been using compute resources from EGI for more than a decade. The services from the EGI federation that AMS-02 uses include:

- EGI HTC services from sites in Italy and CERN
- 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)

ALICE 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, including:

- 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)

ATLAS 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, including:

- 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)

Number of scientific papers published in 2024

1

47

126

French research collaborations in EGI

EGI supported activities and services

Number of scientific papers published in 2024

AUGER (Astronomy)

- Institut de Physique Nucléaire d'Orsay (IPNO)
- Laboratoire de Physique Nucléaire et de Hautes Energies (LPNHE),
- Univ. Grenoble Alpes, CNRS, Grenoble Institute of Engineering Univ. Grenoble Alpes

The Pierre Auger Observatory has been using compute resources from EGI partners for more than a decade. The services of the EGI federation that the Auger observatory benefits from 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)

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BELLE (High-Energy Physics)

- Institut Pluridisciplinaire Hubert Curien (IPHC) Strasbourg
- Irene Joliot-Curie Laboratoire des 2 Infinis (IJCLab)
- Centre de Physique des Particules de Marseille

The BELLE experiment has been using compute resources from EGI partners since 2016. The services from the EGI federation that BELLE benefits from 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)

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BIOMED (Life Sciences)

- CNRS-IPHC
- CNRS-Creatis
- BME-IIT
- INSERM

The Life Science Grid Community is supported by EGI for more than one decade and have an Service Level Agreement since 2016. The EGI Services used by the community include:

- EGI Cloud services
- EGI Workload Manager
- From 2021 the community is one of the Data Space providers supported in the EGI-ACE Horizon 2020 project.

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French research collaborations in EGI

EGI supported activities and services

Number of scientific papers published in 2024

CLARIN (Linguistics)

- CNRS

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

EGI services:

- EGI Cloud (Compute + Online Storage) for hosting the Virtual Language Observatory (VLO)
- Technical support
- Service integration

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CMS (High-Energy Physics)

- CMS (High-Energy Physics)
- IRFU, CEA, Université Paris-Saclay
- Institut Pluridisciplinaire Hubert Curien (IPHC), Université de Strasbourg
- Laboratoire Leprince-Ringuet, Ecole Polytechnique
- Centre de Calcul de l'Institut National de Physique Nucleaire et de Physique des Particules, CNRS/IN2P3
- Université de Lyon, Université Claude Bernard Lyon

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, including:

- 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)

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French research collaborations in EGI

EGI supported activities and services

Number of scientific papers published in 2024

CTA (Astronomy)

- APC, Univ Paris Diderot, CNRS/IN2P3, CEA/Irfu, Obs de Paris, Sorbonne Paris Cité, France
- CEA/DSM/IRFU, CEA-Saclay
- Centre de Physique des Particules de Marseille (CPPM), Aix-Marseille Université, CNRS/IN2P3, Marseille
- Côte d’Azur Observatory
- Institut de Planétologie et d’Astrophysique de Grenoble, INSU/CNRS, Université Joseph Fourier
- Institut de Recherche en Astrophysique et Planétologie
- Laboratoire d’Annecy-le-Vieux de Physique des Particules, Université de Savoie, CNRS/IN2P3
- Laboratoire Leprince-Ringuet, École Polytechnique (UMR 7638, CNRS)
- Laboratoire Univers et Particules de Montpellier, Université Montpellier 2, CNRS/IN2P3
- LPNHE, University of Pierre et Marie Curie
- Observatoire de Paris, LUTH, CNRS, Université Paris Diderot
- Université Paris-Sud, Institut de Physique Nucléaire d’Orsay
- University of Bordeaux for the CENBG

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)

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Comet.j-parc.jp (Physical Sciences)

- CC-IN2P3, Lyon, France
- Laboratoire de Physique Corpusculaire de Caen
- Laboratoire de Physique de Clermont
- Laboratory of Nuclear and High Energy Physics, Paris
- Institut de Physique des 2 Infinis de Lyon

The collaboration with EGI started back in 2015. The services from the EGI federation that the experiment uses include:

- EGI HTC services from 7 EGI federated sites from FR and UK
- 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)

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French research collaborations in EGI

EGI supported activities and services

Number of scientific papers published in 2024

COMPASS (Physical Sciences)

- Institute of Research into the fundamental laws of univere, IRFU

COMPASS has been supported since 2017 as part of the EGI WLCG collaboration, formally agreed in an MoU. Federated services delivered in the context of the WLCG MoU, including:

- 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)

2

DUNE (Astroparticle Physics)

- Astroparticule et Cosmologie – Université Paris Diderot (APC)
- Institut de Physique Nucléaire de Lyon (IPNL)
- Laboratoire d’Annecy-le-Vieux de Physique des Particules, CNRS/IN2P3 and Université de Savoie Mont Blanc (LAPP)
- Laboratoire de l’accélérateur linéaire (LAL)
- Laboratoire de Physique Subatomique et de Cosmologie, University of Grenoble Alpes/ CNRS/ Grenoble INP/ LPSC-IN2P3 (LPSC)
- Le centre Commissariat à l’énergie atomique Paris-Saclay (CEA/Saclay)

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

- EGI HTC services from 6 EGI participant countries (CH, CZ, ES, FR, NL, UK)
- 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)

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French research collaborations in EGI

EGI supported activities and services

Number of scientific papers published in 2024

ELI-BEAM (Physical Sciences)

- CNRS-CEA;
- Pierre et Marie Curie University;
- Paris Sud University – France

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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ELI-NP (Nuclear Physics)

- Institut de Physique Nucleaire, Orsay,
- IZEST Ecole Polytechnique , France;
- Centre National de la Recherche Scientifique / Commissariat a l'Energies Alternatives / L'Ecole Polytehnique / L'Institute d'Optique Graduate School / L'Universite de Paris Sud , France;
- Centre National de la Recherche Scientifique (LULI – Laboratoire d'Utilisation des Lasers Intenses), France

ELI has been working 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

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EMSO (Oceanography)

- IFREMER
- CNRS

EMPHASIS has been supported through the establishment of a Data Space in the EGI-ACE project. Since 2017 EMPHASIS using the following services from EGI:

- EGI Check-in
- EGI Cloud Compute
- EGI Online Storage
- EGI DataHub
- Technical support
- Software integration and piloting

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EMPHASIS (Agriculture)

- INR

The collaboration with EGI started back in 2017 when 4 cloud providers of the EGI Federation agreed to support the EMSODEV project during the design and implementation of the EMSODEV Data Portal.

EMSO-ERIC setup the EMSO ERIC Data Management Platform on the EGI providers in order to harmonize the data sets following Oceansites specifications, FAIR principles, and EOSC guidelines.

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French research collaborations in EGI

EGI supported activities and services

Number of scientific papers published in 2024

FUSION (Fusion)

- French Atomic Energy Commission (CEA)
- University of Strasbourg

The Fusion community has been using compute resources from EGI partners since 2018. The services from the EGI Federation used by the community include:

- EGI Cloud Compute
- EGI Online Storage

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HESS (Astroparticle Physics)

- Laboratoire Univers et Particules de Montpellier, Université Montpellier
- APC, AstroParticule et Cosmologie, Universite Paris Diderot, CNRS/IN2P3
- Laboratoire Leprince-Ringuet, Ecole Polytechnique
- LUTH, Observatoire de Paris
- LPNHE, Universite Pierre et Marie Curie Paris
- DSM/Irfu, CEA Saclay, F-91191 Gif-Sur-Yvette Cedex, France
- Universite Bordeaux 1, CNRS/IN2P3, Centre d'Etudes Nucleaires de Bordeaux Gradignan
- Laboratoire d'Annecy-le-Vieux de Physique des Particules, Universite de Savoie
- Aix Marseille Université

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

- EGI HTC services from 3 EGI participant countries (DE, FR, PL)
- 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)

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ILC (High-Energy Physics)

- Irfu – CEA/Saclay,
- IJCLab – CNRS/IN2P3,
- CPPM – CNRS/IN2P3,
- IJCLab – CNRS/IN2P3
- + many others

The ILC experiment has been using compute resources from EGI partners since 2004. The services from the EGI federation that ILC experiments uses include:

- EGI HTC services from 27 EGI federated sites from IL, DE, FR, ES, NL, PL, UK
- 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)

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French research collaborations in EGI

EGI supported activities and services

Number of scientific papers published in 2024

INSTRUCT (Structural Biology)

- Instruct Centre FR1
- Instruct Centre FR2
- IGBMC-CERBM

The WeNMR structural biology community is supported by EGI since 2011 and have an Service Level Agreement since 2016. WeNMR is part of INSTRUCT and operates online Virtual Research Environments on top of the EGI services. The EGI Services used by the community include:

- High-Throughput, Cloud + Online Storage services from 23 EGI federated data centres from the Netherlands, Italy, France, Belgiany, UK, Poland, the Asia Pacific region, IberGrid (Spain and Portugal), Italy, the Latin America region.
- EGI Workload Manager
- Trust and identity management with Check-in
- Technical support: WeNMR benefited from continual support through dedicated support activities in various EGI flagship projects: EGI-Engage, EOSC-hub and EGI-ACE.

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JUNO (Neutrino Observatory)

- Centre d'Etudes Nucléaires de Bordeaux Gradignan
- Centre de Physique des Particules de Marseille
- Laboratoire des Physique des 2 Infinis Irène Joliot-Curie, Paris
- Institut Pluridisciplinaire Hubert Curien, Université de Strasbourg
- SUBATECH, CNRS/IN2P3, Université de Nantes, IMT Atlantique

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

- EGI HTC services from 4 EGI federated data centres from France, Italy, Russia and China.
- 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)

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French research collaborations in EGI

EGI supported activities and services

Number of scientific papers published in 2024

KM3NET (Neutrino Observatory)

- Astroparticle and Cosmology Laboratory (APC).
- Centre for Particle Physics of Marseille (CPPM),
- Institut Pluridisciplinaire Hubert Curien (IPHC),
- Université de Strasbourg,
- Université de Haute Alsace,
- Mediterranean Institute of Oceanography (MIO)
- SUBATECH research laboratory
- University of Montpellier
- LPC Caen

The Km3Net experiment has been using compute resources from EGI partners since 2013. The services from the EGI federation that Km3Net uses include:

- EGI HTC services from 2 EGI federated sites from IT and PL
- 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)

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LHCb (High-Energy Physics)

- Annecy-Le-Vieux, LAPP
- Clermont-Ferrand, LPC
- Paris, LPNHE
- Marseille, Univ. Aix-Mars. II/CPPM
- Orsay, IJCLab
- Laboratoire Leprince-Ringuet (LLR)

LHCb has been supported since 2012 as part of the EGI WLCG collaboration, formally agreed in an MoU. Federating services delivered in the context of the WLCG MoU, including:

- 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)

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French research collaborations in EGI

EGI supported activities and services

Number of scientific papers published in 2024

LSST (Astronomy)

- Institut National de Physique Nucleaire et de Physique des Particules (IN2P3)

The LSST survey federates High Throughput Compute (HTC) resources from France and the UK and run an analysis campaign in 2020 to prepare for the opening of the Vera C. Rubin Observatory. The campaign consumed over 11 million CPU-hour in 2020 to analyse generated images, imitating the telescope images that are expected to become available from 2023. The LSST compute federation benefited from the following EGI services:

- 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)

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NA62 (High-Energy Physics)

- Centre National de la Recherche Scientifique,
- Centre de Physique de Particules de Marseille CPPM

The NA62 experiment has been using compute resources from EGI partners since 2012. The services from the EGI federation that NA62 uses include:

- EGI HTC services from sites in the UK, Italy, Belgium and CERN
- 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)

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OPENCoastS (Ocean Engineering)

- CNRS-UR

OPENCoastS has been using compute resources from EGI partners since 2018. The services from the EGI federation that OPENCoastS uses include:

- EGI Cloud services from 2 EGI federated sites from ES and PT
- EGI AAI Check-in

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French research collaborations in EGI

EGI supported activities and services

Number of scientific papers published in 2024

PANOSC (Photon and Neutron)

- ESRF – European Synchrotron Radiation Facility,
- Institut Laue–Langevin (ILL)

PaNOSC has been using compute resources from EGI partners since 2018. The services from the EGI federation that OPENCoastS uses include:

- EGI Cloud services from 2 EGI federated data centres from CZ and DE
- EGI AAI Check-in
- EGI Notebooks
- EGI DataHub

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SeaDataNet

- IFREMER Institut Français de Recherche pour l'Exploitation de la MER

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.

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SKA (Radioastronomy)

- National Center for Scientific Research

The Square Kilometre Array (SKA) is an intergovernmental radio telescope project being planned to be built in Australia and South Africa. 8 countries that participate in SKA are also represented in the EGI Council (France, 2023y, Italy, Portugal, Spain, Switzerland, The Netherlands and the United Kingdom). Between 2017-2019 SKA worked with the EGI federation in the AENEAS Horizon 2020 project. The collaboration resulted in recommendations on how to:

- organize federated service management within the SKA European Science Data Centre (ESDC) and across multiple SKA Regional Centres to address the management of the SKA community-specific services.
- federate the ESDC services with existing e-Infrastructure federated services (Identity Provisioning, Authentication and Authorization, tools for federated service management)
- collect SKA and e-Infrastructures requirements to federate and eventually enhance existing federation services.

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French research collaborations in EGI

EGI supported activities and services

Number of scientific papers published in 2024

Solid Experiment (High-Energy Physics)

- LPC Caen, ENSICAEN, Université de Caen, CNRS/IN2P3
- SUBATECH, CNRS/IN2P3, Université de Nantes
- LAL, Univ Paris-Sud, CNRS/IN2P3, Université Paris-Saclay
- LPC Clermont, CNRS/IN2P3, Université Clermont Auvergne

The collaboration with EGI started back in 2017. The services from the EGI federation that the experiment uses include:

- EGI HTC services from 2 EGI federated sites from BE and UK
- 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)

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VIRGO (Astrophysics)

- Centre national de la recherche scientifique
- Artemis, Université Côte d’Azur, Observatoire de la Côte d’Azur, CNRS
- ESPCI, CNRS
- GIPSA-Lab
- Grand Accélérateur National d’Ions Lourds
- Institut des Hautes Etudes Scientifiques
- Institut des Nanosciences de Paris
- Institut des Nanotechnologies de Lyon
- Institut d’Astrophysique de Paris
- Institut Fresnel, Aix Marseille Université, CNRS, Centrale Marseille
- L2IT, Laboratoire des 2 Infinis – Toulouse, Université de Toulouse, CNRS/IN2P3, UPS
- Laboratoire Kastler Brossel, Sorbonne Université, CNRS
- Laboratoire Lagrange, Université Côte d’Azur, Observatoire Côte d’Azur, CNRS
- Laboratoire Univers et Théories
- NAVIER
- Observatoire de Paris
- + many others

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

- EGI HTC services from 8 data centres from France, Italy, The Netherlands, Spain and UK
- 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)
- Since 2021 Virgo works with EGI in the EGI-ACE Horizon 2020 project to evaluate and adopt data analysis, federated authentication-authorisation and data management services for thematic applications.

5

French research collaborations in EGI

EGI supported activities and services

Number of scientific papers published in 2024

WeNMR (Structural Biology)

- CNRS – UNIVERSITY PARIS SACLAY
- ANSES – FRENCH AGENCY FOR FOOD, ENVIRONMENTAL AND OCCUPATIONAL HEALTH & SAFETY
- INSTITUTE FOR ADVANCED BIOSCIENCES
- UNIVERSITÉ DE RENNES
- Institute PASTEUR
- Institute of Analytical Sciences
- Ecole Polytech
- European Institute of Chemistry and Biology
- Mitovsac
- IPBS
- Université de Paris
- CRI
- INSTITUT DE BIOLOGIE STRUCTURALE
- SORBONNE UNIVERSITY
- ICOA
- CANTHER
- IBMC
- INRAE
- and many others

WeNMR 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 the Netherlands, Italy, France, 2023y, UK, Poland, the Asia Pacific region, IberGrid (Spain and Portugal), Italy, the Latin America region.
- EGI Workload Manager
- Trust and identity management with Check-in
- Technical support: WeNMR benefited from continual support through dedicated support activities in various EGI flagship projects: EGI-Engage, EOSC-hub and EGI-ACE.

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XENON (Dark Matter Physics)

- Laboratoire de l’Accélérateur Linéaire,
- Laboratoire de Physique Nucléaire et de Hautes Energies
- Subatech, Nantes

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

- EGI HTC services from 4 EGI federated data centres from France, Italy, the Netherlands and Israel
- 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)

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Service Level Agreements

During 2024, French providers including CNRS, IN2P3-CPPM, CREATIS-INRA-LYON, IN2P3-IRES, GRIF, and UNIV-LILLE supported 11 Service Level Agreement for international scientific communities via EGI, delivering Cloud Computing, Online Storage, HTC and Workload Manager services.

Community Engagement

During 2024, 11 participants from France joined the EGI2024 conference and delivered 7 talks in it.

Participated projects

The EGI Foundation leads five Horizon Europe Projects, three of which started in 2024:

- iMagine (September 2022–December 2025)
- interTwin (September 2022–August 2025)
- ENVRI-Hub NEXT (February 2024–January 2027)
- EOSC Beyond (April 2024–March 2027)
- SPECTRUM (January 2024–June 2026)

Furthermore, the EGI Federation was involved in 3 additional projects, increasing the innovation potential of its participants.

The EGI Federation participates in Horizon 2020 and Horizon Europe projects together with Austrian 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.



interTwin



ENVRI-Hub
NEXT

eosc | BEYOND



Project title Scope of collaboration

Participating beneficiaries from the country



EGI is contributing to the architectural design and implementation of open distributed software to ensure that AI4Europe evolves as a distributed ecosystem. EGI is also providing its expertise on physical resources, usability, development of systems, distributed systems and new technologies to develop mechanisms for the AI tools to deploy/make use of private/public Cloud and HPC resources.

- Université Paris Cité



EGI contributes with the services Cloud computing, Notebooks and Applications on demand, FTS, data archiving. It participates to the EOSC Integration processes and the sustainability business plan.

- EMBRC
- CNRS



EGI leads the activities on Communication Dissemination and Exploitation Management and significantly contributes to the technical guidance and architecture definition, trust policy harmonisation and interoperability, validation activities, and to the preparation of the Compendium and recommendations.

- DARIAH



EGI contributes with the services Cloud computing, Notebooks and Applications on demand, FTS, data archiving. It participates to the EOSC Integration processes and the sustainability business plan.

- IFREMER
- MERCATOR OCEAN
- SORBONNE UNIVERSITE
- IRD
- EMBRC
- IEEE FRANCE SECTION
- POKAPOK
- OceanScope



EGI coordinates the task dedicated to the Single Sign-On access with the EGI Check-in service.

- ESF European Science Foundation
- UNIVERSITE D'AIX MARSEILLE



EGI, as a very active player in the Data Space landscape in Europe, joined the project as Associated and collaboration Partner and participates in the Strategic Stakeholder Group (SSG) that will act as a think-and-do-tank to support the project in delivering to the policy objectives.

- CEA

Project title Scope of collaboration

Participating beneficiaries from the country



EGI works on integrating datasets, tools, and workflows from the broader landscape into ECHOES. It supports the technical framework and infrastructure with a scalable, secure storage and compute infrastructure. Also, EGI provides an authentication and authorisation infrastructure (AAI) for the single entry point in the cloud environment. Last but not least, EGI contributes to the project's long-term sustainability, leverages ECCCH's advocacy and open innovation by engaging with the private sector.

- CNRS
- Fondation des Sciences du Patrimoine
- Conseil international des monuments et des sites (ICOMOS)
- DARIAH
- SPARNA



EGI contributed to the design, operation and interoperability of EOSC Core services, to running the EOSC Digital Innovation Hub, as well as to resource strategy and the processes for onboarding new groups to EOSC. EGI was responsible for requirements collection and analysis for both the EOSC Back Office and Front Office. It also leads all operational aspects of the EOSC Portal. Finally, EGI played a leading role in developing the EOSC SMS.

- CNRS
- DARIAH
- ESRF
- INSTITUT MAX VON LAUE - PAUL LANGEVIN
- ECRIN European Clinical Research Infrastructure Network
- EMBRC



EGI contributes to the Federation sustainability model and the expansion of the DIH ecosystem. Moreover, it collaborates to the development and maintenance of the service catalogue, to the training programme, and to the dissemination and outreach of the project activities and results.

- IMT Transfert



Within EUCAIM, EGI works on the development of the platform core services in addition to supporting the creation of the platform central storage and infrastructure. Moreover, EGI leads the activities around the design and implementation of a federated learning and data analysis infrastructure, and ensures access to HPC/Cloud resources across Europe.

- Collège des Enseignants en Radiologie de France
- CNRS
- French Institute for Research in Computer Science and Automation
- LIMICS
- Medexprim
- Owkin



EGI Foundation collaborates to the definition of the technical requirements, to the authentication and authorisation infrastructure of the project, and will support the project services onboarding to the EOSC Marketplace.

- Bibracte EPCC



EGI leads the development of new functionality to bring support for new computing and storage systems and to deliver meta scheduling of computing jobs in a distributed infrastructure delivered by EOSC providers and beyond. EGI also leads the activities for the development of a sustainability model to maximize the project and collaborates in the activities to integrate EuroScienceGateway in EOSC.

- CNRS
- Université Paris Cité

Project title

Scope of collaboration

Participating beneficiaries from the country

	EGI contributes to the definition of requirements, metrics, specifications and pilots for the assessment of thematic services and platforms	• INRAE • INRIA
	Within the project, EGI will conduct an environmental impact landscape assessment within the EGI federation and in partnership with FRIs to identify best practices and opportunities related to environmental sustainability. The project will develop an environmental metrics publication system for digital service providers and energy-aware brokering logics for scientific workflows running on EGI HTC, cloud, container and AI services. EGI will develop an environmental impact self-assessment questionnaire for Research Infrastructures. Finally, EGI will assist with project communications and will provide consultancy and training for service providers within and beyond EGI on methods and approaches to lower their environmental impact.	• Sorbonne Université • Greenspector
	EGI plays a key role in IRISCC by leading communication, dissemination, engagement, and exploitation efforts (WP1), including stakeholder mapping and promotion of the service catalogue. In WP3, EGI supports knowledge exchange and user training by developing climate risk training modules and providing access to its training and computing infrastructure.. For WP6, EGI helps assess integrated knowledge services by aligning access policies, analysing AAI services, and contributing to FAIR and interoperability frameworks.	• CNRS • AnaEE-ERIC • EMBRC • CERFACS
	EGI works on the deployment and operation of a FAIR federated data repository, promoting enhanced exploitation of project outputs (data and results). It also provides expertise in order to formulate a strategy regarding data preservation. In particular, EGI will implement a DataHub and a Data preservation service for the project.	• Sorbonne Université • CNRS
	In the project, EGI co-designs and deploys AI models on edge resources, enhancing capacity through its federation's computational and storage resources. EGI expands resource allocations, provides a two-tier e-infrastructure for validation and large-scale data processing, and ensures sustainable setups by coordinating national funding. EGI addresses data management challenges, integrates distributed storage solutions, and connects PHENET with the European Open Science Cloud.	• INRAE • INRAE Transfert SAS • UNIVERSITE D'ANGERS • GROUPE D'ETUDE ET DE CONTROLE DES VARIETES ET DES SEMENCES • HIPHEN • GEOSYS • UNIVERSITE D'AIX MARSEILLE • C.I.R.A.D. EPIC • ANALYSIS AND EXPERIMENTATION ON ECOSYSTEMS ERIC

Project title

Scope of collaboration

Participating beneficiaries from the country

	The EGI Foundation supports the project in defining interoperability standards among the participating facilities, and with the broader landscape, including EOSC, and leads the design of sustainable services and activities that will last beyond the project. EGI members deliver a federated cloud environment with a cloud-based 'EGI Notebooks' service for the PITHIA e-science centre to offer a scalable and customisable web environment for writing workflows, exchanging workflows, accessing, analysis and sharing of data.	• Universite Paul Sabatier Toulouse III • Watermann Jurgen • Centre National d'Etudes Spatiales – CNES
	EGI is one of the main contributors to the design and definition of the EOSC architecture and the federated service management framework, and coordinates service pilots participates by the scientific demonstrators. EGI also contributed to the definition of the governance framework and to the works on Rules of Participation. In the project EGI will enhance the SoBigData platform with two services: Jupyter Notebooks and the Workflow manager Galaxy	• Ecole d'Economie de Paris • CNRS
	EGI leads the work on Services Provision, which collects information about the services that the RI can provide and creates a plan for a unified single access point RI, including access policies for the distributed resources. EGI also contributes to the development of the financial aspect of the future RI, defines the business cases and the cost book, supports the strategy and enhance the impact of the RI, contributes to the Dissemination and Communication plans (WP5), and to the creation of the Italian central Hub for the preparation phase.	• Ecole d'Economie de Paris
	EGI contributes to the GAP analysis, User needs and requirements, Definition of System Requirements and Technical Specifications, and Security, in addition to the Self-sovereign Identity Management and Dissemination and Communication. EGI coordinates the task dedicated to Policy recommendations on Distributed Infrastructures, Secure Data Exchange & Data Spaces.	• CEA

Infrastructure contributions

The EGI Federation offers two complementary compute capabilities: the High-Throughput Compute (HTC) federation and the Cloud federation. 17 French data centres contribute to these federations:

HTC Federation:

- AUVERGRID (Clermont University)
- CREATIS-INSALYON (Universite de Lyon, CREATIS biomedical imaging research laboratory)
- GRIF (GRIF: Grille de Recherche d'Ile de France)
- IN2P3-CC (IN2P3, Lyon)
- IN2P3-CPPM (Centre de Physique des Particules de Marseille)
- IN2P3-IPNL (Institut de Physique des 2 Infinis de Lyon, CNRS)
- IN2P3-IRES (Institut Pluridisciplinaire Hubert Curien)
- IN2P3-LAPP (Laboratoire d'Annecy de Physique des Particules)
- IN2P3-LPC (IN2P3-LPC, Clermont-Ferrand)

Cloud Federation:

- IN2P3-IRES (Institut Pluridisciplinaire Hubert Curien)
- UNIV-LILLE (Universite de Lille)

The data centres provided 11 service endpoints and delivered 594,421,165 HTC CPUhours and 8,951,357 Cloud CPUHours to EGI communities in 2024. The data centres responded to 251 support

tickets through the EGI Helpdesk. The most active international user groups of the French compute resources were:

- ATLAS 51.54%
- CMS 19.46%
- LHCb 17.3%,
- ALICE 9.01%
- BIOMED 0.83%
- BELLE 0.62%

With the help of the EGI Security Vulnerability Group, the French sites avoided 50 critical vulnerabilities in foundational software systems during 2024.

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.

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

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