



Participating in EGI Impact Report: France 2022

EGI Council Participant: CNRS

egi.eu



Table of Contents

04

Infographic

05

Country
Overview

06

About EGI

10

EGI Contribution to the
country excellence in
science

24

Community
Engagement

08

About
Council
Participant

09

Overall EGI
Impact

25

Participated
Projects

30

Innovation
Impact

33

Infrastructure
Contribution

35

Methodology

38 National institutional members of
supported research communities (table 2)

Infographic

+3400 service users

In 2022, +3400 researchers from French institutions used the services provided by the EGI Federation



+900 publications

The research communities, projects and scientific collaborations from France supported by the EGI led to more than 900 peer-reviewed scientific publications

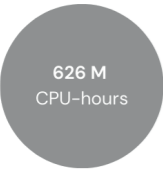
30 Supported communities

In 2022, the French infrastructure supported 30 research communities in the following disciplines: Agriculture, Climate Research, Health and Medicine, Linguistics, Physics



Projects

French partners participate in 20 collaboration projects + EGI-ACE, iMagine and interTwin



Country overview

Number of supported publications 919

Number of total service users 3462

Scientific Communities supported 30

Data Centres contributing to the Federation 19

Collaboration projects 20

Total CPU hours delivered 626,236,186

Unified Middleware Distribution updates pulled 5,712,905 (1.26%)

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

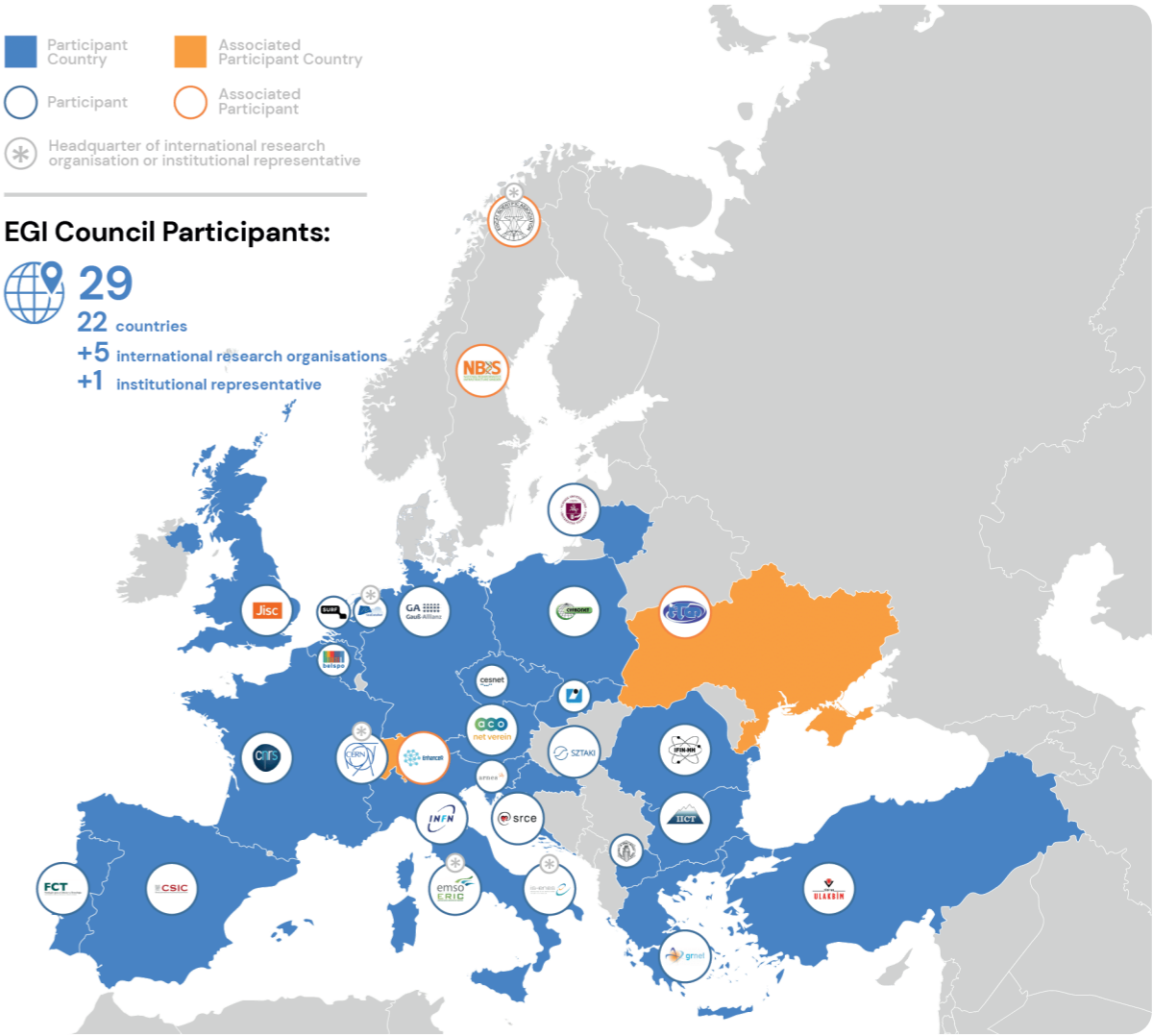
both the public and private sectors in Europe to develop, integrate and deliver digital services for compute and data-intensive research and innovation. As an open initiative with a global outlook, the EGI Federation also connects service providers beyond Europe, following the collaboration needs of the served communities.

The latest [Annual Report](#) provides an extensive overview of the results that have been achieved through our collaborative efforts in 2022.

In 2022, EGI consolidated its ability to serve an expanding group of scientific collaborations. In fact, the Council also approved the participation of ACONet (Austria) and Vilnius University (Lithuania) starting from 2022.

NBIS (Sweden) also joined as an associate participant as of November 2022, helping to provide reliable services to the life sciences community with the cloud resources provided by the EGI, and moreover, to promote the collaboration

with other European research infrastructures, especially for knowledge sharing and development of the e-infrastructure technology for research data and computing intensive science.



Approved EGI Council map from 2022



About CNRS

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 2022 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 2022, the EGI Federation served almost 84,000 users (+7.5%) from around 200 research communities.

EGI users consumed 7 Billion HTC CPU hours (+7,6%), 27.650 Million Cloud CPU hours (~45%), ran 328 M computational jobs (~27%) and published over 2,500 open access publications. Among the largest adopters of EGI services, the research community with the largest number of users is Medical and Health Sciences (+107% annual increase in 2022); the one with the most extensive HTC CPUh consumption is WLCG, while for Cloud CPHh consumption, PERLA-PV is the most notable one.

Moreover, EGI engaged with 19 new scientific communities in 2022; 7 additional research infrastructures EGI collaborates with and support were included in the ESFRI Roadmap in 2022, raising the total number of ESFRI partners/users of EGI to 25.

EGI's contribution to French 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 2022, our federation was used by around 200 scientific communities, and has been accessed by about 84,000 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 3462 researchers from France in 2022. The estimated annual scientific output in 2022 produced by research communities, projects and scientific collaborations from France and supported by the EGI Federation is estimated to amount to over 900 peer reviewed scientific publications. The EGI Federation is currently working with over 40 Research Infrastructures, 30 of which include French partners. These EGI-enabled research infrastructures, their French members and their 2022 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
- IRFU, CEA, Université Paris-Saclay, Gif-sur-Yvette
- LPSC, Université Grenoble Alpes, CNRS/IN2P3
- CPPM, Aix-Marseille Université, CNRS/IN2P3
- IJCLab, Université Paris-Saclay, CNRS/IN2P3
- LPNHE, Sorbonne Université, Université de Paris, CNRS/IN2P3

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 2022

1

32

87

French research collaborations in EGI

EGI supported activities and services

Number of scientific papers published in 2022

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

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)

5

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)

35

French research collaborations in EGI

EGI supported activities and services

Number of scientific papers published in 2022

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 - High-Throughput + Online Storage services
- 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.

3

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

0

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 Nucléaire et de Physique des Particules, CNRS/IN2P3
- Université de 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)

84

French research collaborations in EGI

EGI supported activities and services

Number of scientific papers published in 2022

CTA (Astronomy)

- APC, Univ Paris Diderot, CNRS/IN2P3, CEA/Irfu, Obs de Paris, Sorbonne Paris Cité
- 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)

0

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)

1

French research collaborations in EGI

EGI supported activities and services

Number of scientific papers published in 2022

COMPASS (Physical Sciences)

- Institute of Research into the fundamental laws of universe, 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)

0

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)

34

French research collaborations in EGI

EGI supported activities and services

Number of scientific papers published in 2022

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.

11

ELI-NP (Nuclear Physics)

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

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

75

EMPHASIS (Agriculture)

- INRA

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

0

EMSO (Oceanography)

- IFREMER
- CNRS

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.

0

French research collaborations in EGI

EGI supported activities and services

Number of scientific papers published in 2022

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

0

HESS (Astroparticle Physics)

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

7

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)

85

French research collaborations in EGI

EGI supported activities and services

Number of scientific papers published in 2022

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:

- EGI 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.

66

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)

125

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
- niversity 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)

52

French research collaborations in EGI

EGI supported activities and services

Number of scientific papers published in 2022

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)

51

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)

11

French research collaborations in EGI

MINKE (Oceanography)

- IFREMER
- SERVICE HYDROGRAPHIQUE ET Océanographique de la Marine
- Université Aix-Marseille
- Laboratoire Nationale de Métrologie et d'Essais

EGI supported activities and services

The collaboration with EGI started back in 2021. The services from the EGI federation that the experiment uses include:

- EGI HTC services from 1 EGI federated site from ES
- 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 2022

0

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)

14

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

0

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

5

French research collaborations in EGI

SeaDataNet (Oceanography)

- IFREMER

EGI supported activities and services

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.

Number of scientific papers published in 2022

1

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, Germany, 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.

56

French research collaborations in EGI

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

EGI supported activities and services

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)

Number of scientific papers published in 2022

0

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.

14

French research collaborations in EGI

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

EGI supported activities and services

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, Germany, 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.

Number of scientific papers published in 2022

148

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)

6

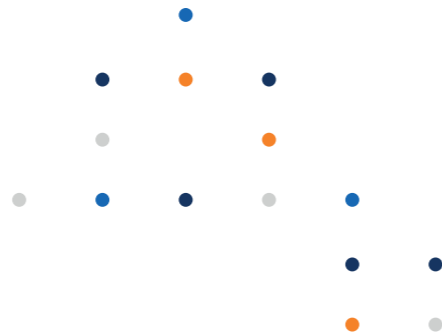
Community Engagement




During 2022, EGI organised several trainings and tutorials involving the community. In particular, expert speakers from France participated in 2 webinars and tutorials organised by EGI. Moreover, there were 19 France participants to the EGI Conference 2022.

Participated projects

The EGI Foundation coordinated one Horizon 2020 projects, EGI ACE (January 2021–June 2023). Moreover, it leads two Horizon Europe Projects, iMagine (September 2022–December 2025) and interTwin (September 2022–August 2025). Furthermore, the EGI Federation was involved in 8 additional projects, increasing the innovation potential of its participants.

The EGI Federation participates in Horizon 2020 and Horizon Europe projects together with French 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	Participating beneficiaries from the country
	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.	<ul style="list-style-type: none">• ESRF – European Synchrotron Radiation Facility,• ILL – Institut Max Von Laue – Paul Langevin
	EGI contributes to EOSC-LIFE by supporting the creation and operation of a life science AAI (LS AAI) that is fully interoperable with the EOSC AAI.	<ul style="list-style-type: none">• Ecrin European Clinical Research Infrastructure Network• European Marine Biological Resource Centre• European Research Infrastructure Consortium• Institut National De Recherche Pour L’agriculture, L’alimentation Et L’environnement• Sorbonne Universite• Institut National De La Santé Et De La Recherche Médicale• Centre Européen De Recherche En Biologie Et Médecine
	EGI is involved in the work ensuring the integration of the TRIPLE solution into the EOSC; also, it collaborates to the sustainability and innovation activities by setting up the processes to prepare maturity assessment and innovative agile management. Last but not least, it guides the implementation of the EGI AAI service in TRIPLE.	<ul style="list-style-type: none">• CNRS• DARIAH ERIC
	EGI supports the European research infrastructure for open-access publications in the social sciences and humanities.	<ul style="list-style-type: none">• CNRS• DARIAH ERIC
	EGI contributes to the EOSC data catalogue services for EU Photon and Neutron national RIs, in particular to the integration of the metadata catalogue services into EOSC and to the technical documentation about the integration. Moreover, it works on the EOSC Data Analysis Services and the provision of training activities through the EOSC platforms.	<ul style="list-style-type: none">• Synchrotron Soleil Société Civile

Project title	Scope of collaboration	Participating beneficiaries from the country
	EGI contributes to the project activities related to innovation management, policy development, and project activities and results communications and dissemination.	<ul style="list-style-type: none">• IRD/LEGOS Institut De Recherche Pour Le Développement
	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	<ul style="list-style-type: none">• Ecole d’Economie De Paris• CNRS
	EGI leads the processes related to setup and operate of testbed infrastructure, the Edge/cloud/HPC orchestration, to secure resource access and user management. It also works on the commercial exploitation and sustainability plan and on dissemination activities.	<ul style="list-style-type: none">• 3D Medlab• Montimage Eurl
	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.	<ul style="list-style-type: none">• IMT Transfert
	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.	<ul style="list-style-type: none">• Universite Paul Sabatier Toulouse III• Watermann Jurgen• Centre National d’Etudes Spatiales – CNES

Project title	Scope of collaboration	Participating beneficiaries from the country
	The EGI Foundation is leading the technical requirements, service layer design and integration with the platform defining and describing. Additionally, EGI Foundation participates to build Vertical Matchmaking and hardware marketplace and to Open Call Management.	<ul style="list-style-type: none"> Thales Six Gts France Sas
	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.	<ul style="list-style-type: none"> CNRS Sorbonne Universite
	EGI Foundation leads the task on the analysis of the existing computation infrastructures with a special view on health research and will propose a reference architecture for computational services to serve the Health Research and Innovation Cloud ecosystem.	<ul style="list-style-type: none"> Ecrin European Clinical Research Infrastructure Network
	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.	<ul style="list-style-type: none"> UNIVERSITE PARIS CITE
	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.	<ul style="list-style-type: none"> CEA

Project title	Scope of collaboration	Participating beneficiaries from the country
	In the project, EGI focuses on 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 task for the development of a sustainability model to maximize the project and collaborates in the activities to integrate EuroScienceGateway in EOSC.	<ul style="list-style-type: none"> CNRS Universite Paris Cite
	EGI will contribute to supporting HPC, Cloud and Edge, and on the strategic engagement with the European AI Ecosystem and connected communities!	<ul style="list-style-type: none"> HUB FRANCE IA
	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.	<ul style="list-style-type: none"> CEA



Innovation impact

The EGI Federation is the innovation driving force in EGI, continuously improving the service offering. Participation in EC funded projects supports the innovation process; EGI members take part in EC projects with the EGI Foundation, contributing valuable technical implementation contributions.

In addition, the EGI Federation fosters the innovation processes in EGI by offering services for all EGI participants and their affiliates. EGI members fees and EC-funded projects support the running and operation of the internal services.



Project and legal entity involved	Role in the project	Funding received (Jan 2021 June 2023)	
		EC Funding	EGI Foundation contribution to service delivery
EGI-ACE CNRS	Provide the EGI Operations Portal, Deliver Cloud Compute service in the EGI Federated Cloud, Participate in the Green computing activities	€ 376,669	€ 172,238
EGI-ACE CREATIS	Deliver the Virtual Imaging Platform (VIP) in EOSC.	€ 115,625	n.a.
EGI-ACE IPSL	Deliver the DIRAC Workload Manager Service in the EOSC Compute Platform	€ 55,625	n.a.
TOTAL		€ 547,919	€ 172,238

Project and legal entity involved

Role in the project

Funding received (Sep 2022 Dec 2025)

EC Funding

EGI Foundation contribution to service delivery

iImagine
IFREMER

Application development and service delivery for aquatic image analysis with Machine Learning techniques

€ 103,750

n.a.

iImagine
SU

Application development and service delivery for aquatic image analysis with Machine Learning techniques

€ 341,250

n.a.

iImagine
UL-LIEC

Application development and service delivery for aquatic image analysis with Machine Learning techniques

€ 113,938

n.a.

interTwin
CERFACS

Provide use case for Climate Change Digital Twin

€ 242,188

n.a.

interTwin
CNRS

Provide use cases for Climate Change Digital Twin and High Energy Physics

€ 322,500

n.a.

TOTAL € 1,123,626 n.a.

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-APC (GRIF: Grille de Recherche d'Ile de France), GRIF-IPNO, GRIF-IRFU, GRIF-LAL, GRIF-LLR, GRIF-LPNHE, IN2P3-CC (IN2P3, Lyon), IN2P3-CC-T2 (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), IN2P3-LPSC (Laboratoire de Physique Subatomique et de Cosmologie de Grenoble), IN2P3-SUBATECH (IN2P3,Nantes, SUBATECH), OBSPM (Observatoire de Paris Meudon).

Cloud Federation: IN2P3-IRES (Institut Pluridisciplinaire Hubert Curien), UNIV-LILLE (Universite de Lille)

The data centres provided 76 service endpoints and delivered 626,236,186 CPUhours in total to EGI communities in 2022. The data centres responded to 205 support tickets through the EGI Helpdesk.

The most active international user groups of the French compute resources were:

- ATLAS 47.91%,
- CMS 18.61%,
- ALICE 15.73%,
- LHCb 14.90%,
- BELLE 0.74%

The French sites pulled 5.712.905 (1.26%) Unified Middleware Distribution updates from the EGI Software Repository and, with the help of the EGI Security Vulnerability Group, avoided 44 critical vulnerabilities in foundational software systems during 2022

Methodology

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

- Infrastructure contributions, infrastructure usage by research communities: [EGI Accounting System](#)
- List of research publications by supported research communities (table 1)

AMS-02
<https://ams02.space/publications>

ILC
https://inspirehep.net/literature?sort=mostrecent&size=25&page=1&q=international%20Linear%20Collider%20&earliest_date=2021--2021

ALICE
<https://alice-publications.web.cern.ch/publications>

INSTRUCT
<https://instruct-eric.eu/content/publications-list>

ATLAS
<https://cds.cern.ch/collection/ATLAS%20Papers?ln=en>

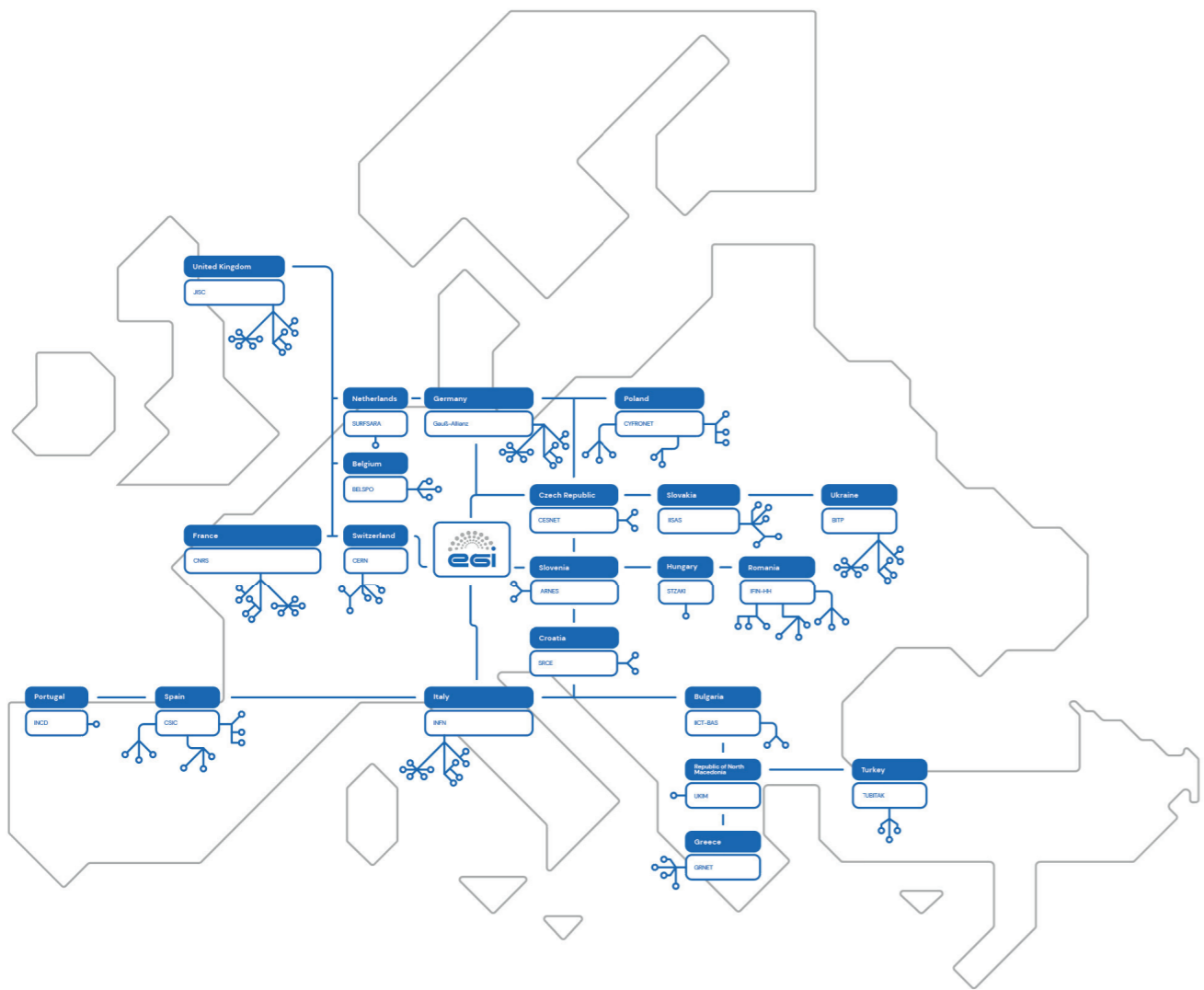
JUNO
<https://inspirehep.net/>

AUGER
<https://www.auger.org/science/publications/journal-articles>

KM3NET
<https://www.km3net.org/about-km3net/publications/publication/>
https://inspirehep.net/literature?q=collaboration:KM3NeT_year:2021

BELLE
<https://belle.kek.jp/belle/publications.html>; https://inspirehep.net/literature?q=collaboration:belle_year:2021

LifeWatch
<https://www.lifewatch.eu/catalogue-of-virtual-labs/medobis/publications/>



Map of the Data Centres of the EGI Federation

BIOMED

<https://vip.creatis.insa-lyon.fr/documentation/>

LOFAR

<http://old.astron.nl/radio-observatory/lofar-science/>
[lofar-papers/lofar-papers](#); <https://lofar-surveys.org/publications.html>, or [https://ui.adsabs.harvard.edu/search/q=full%3A\(%22designed%20and%20constructed%20by%20ASTRON%22\)%20OR%20title%3A%22LOFAR%22%20year%3A2021-2021%20property%3Arefereed%20-bibstem%3A\(%22AN%22%20OR%20%22MNRAS.tmp%22\)&sort=date%20desc%2C%20bibcode%20desc&p_=0](https://ui.adsabs.harvard.edu/search/q=full%3A(%22designed%20and%20constructed%20by%20ASTRON%22)%20OR%20title%3A%22LOFAR%22%20year%3A2021-2021%20property%3Arefereed%20-bibstem%3A(%22AN%22%20OR%20%22MNRAS.tmp%22)&sort=date%20desc%2C%20bibcode%20desc&p_=0)

CTA

<https://www.cta-observatory.org/science/library/>

LCHb

<https://cds.cern.ch/collection/LHCb%20Papers?ln=en>

CLARIN

<https://beta.clarin.openaire.eu/search/advanced/research-outcomes?sortBy=resultdateofacceptance,descending&type=publications&year=range2021:2021>

LSST

<https://ui.adsabs.harvard.edu/> with year:2021 author:("LSST*" OR "Vera C. Rubin*") collection:astronomy property:refereed

CMS

<http://cms-results.web.cern.ch/cms-results/public-results/publications/CMS/index.html>

NA62

<https://cds.cern.ch/collection/NA62%20Papers?ln=en>

DUNE

<https://inspirehep.net/literature?q=collaboration:DUNE+year:2021>

OPENCOASTS

http://opencoasts.inec.pt/index_en.php

EISCAT_3D

<https://eiscat.se/scientist/publications/>

PANOSC

<https://www.panosc.eu/publications/>

ELI-BEAM

<https://www.eli-beams.eu/publikace/>

SeaDataNet

<https://www.seadatanet.org/Publications/Scientific-publications>

ELI-NP

https://www.eli-np.ro/scientific_papers.php

SKA

[https://ui.adsabs.harvard.edu/search/fq=%7B!type%3Daqp%20v%3D%24fq_database%7D&fq_database=database%3A%20astronomy&q=pubdate%3A%5B2021-01%20TO%202021-12%5D%20title%3A\(SKA\)&sort=date%20desc%2C%20bibcode%20desc&p_=0](https://ui.adsabs.harvard.edu/search/fq=%7B!type%3Daqp%20v%3D%24fq_database%7D&fq_database=database%3A%20astronomy&q=pubdate%3A%5B2021-01%20TO%202021-12%5D%20title%3A(SKA)&sort=date%20desc%2C%20bibcode%20desc&p_=0)

EMSO-ERIC

from the community representative; SLA <https://documents.egi.eu/document/3539>

SNO+

<https://snoplus.phy.queensu.ca/results/collaboration-papers.html>

FUSION

<https://documents.egi.eu/public/ShowDocument?docid=3484>

VIRGO

<https://pnp.ligo.org/ppcomm/Papers.html>

HESS

<https://www.mpi-hd.mpg.de/hfm/HESS/pages/publications/>

WeNMR

<https://explore.openaire.eu/> advanced search project outcomes. field to search "project" enter project name; Citation of HADDOCK web server: https://scholar.google.nl/scholar?hl=en&as_sdt=2005&cites=10355645612647046441&scipsc=&as_ylo=2021&as_yhi=2021; Citations of the AMBER web portal publication: https://scholar.google.com/scholar?as_ylo=2021&hl=en&as_sdt=0.5&sciott=0.5&cites=6696812766870837905&scipsc=; Citations of the FANTEN web portal publication: https://scholar.google.com/scholar?as_ylo=2021&hl=en&as_sdt=0.5&sciott=0.5&cites=10578718345045994565&scipsc=; Citations of the DISVIS/POWERFIT web portals publication: https://scholar.google.com/scholar?as_ylo=2021&hl=en&as_sdt=2005&cites=6482114501244947208&scipsc=; Citations of the SpotON web portal: https://scholar.google.com/scholar?as_ylo=2021&hl=en&as

Ice-Cube

<https://icecube.wisc.edu/science/publications/>

XENON

<https://inspirehep.net/literature?q=collaboration:XENON+year:2021>

National institutional members of supported research communities (table 2)

AMS-02 https://ams02.space/collaboration/institute	ILC https://linearcollider.org/team/
ALICE https://alice-collaboration.web.cern.ch/General/Members/List_Institutes.html	INSTRUCT https://instruct-eric.eu/countries
ATLAS https://atlas.cern/discover/collaboration	JUNO https://juno.ihep.ac.cn/collaboration.php
AUGER https://www.auger.org/collaboration/institutions , https://www.auger.org/collaboration/funding-agencies	KM3NET https://www.km3net.org/about-km3net/collaboration/members/
BELLE https://belle.kek.jp/bdocs/collaboration.html	LifeWatch https://www.lifewatch.eu/organisation-governance/
BIOMED https://vip.creatis.insa-lyon.fr/	LOFAR https://www.astron.nl/telescopes/
CTA https://www.cta-observatory.org/about/cta-consortium/	LCHb https://lhcb-public.web.cern.ch/en/collaboration/Collaboration-en.html
CLARIN https://www.clarin.eu/content/participating-consortia	LSST https://www.lsstcorporation.org/international-contributors

CMS https://cms.cern/collaboration/cms-institutes	NA62 https://greybook.cern.ch/experiment/detail?id=NA62
DUNE https://lbnf-dune.fnal.gov/about/countries-and-institutions-participating-in-dune/	OPENCOASTS http://opencoasts.lnec.pt/index_en.php
EISCAT_3D https://eiscat.se/wp-content/uploads/2016/12/EISCAT-Organogram-202x.jpg ; https://eiscat.se/scientist/document/information/	PANOSC https://www.panosc.eu/partners/
ELI-BEAM https://www.eli-beams.eu/about/cooperation/science/	SeaDataNet https://www.seadatanet.org/About-us/SeaDataNet-AISBL/Members
ELI-NP https://www.eli-np.ro/scientific_collaborations.php	SKA https://www.skatelescope.org/participating-countries/
EMSO-ERIC http://emso.eu/organization/	SNO+ https://snoplus.phy.queensu.ca/collaboration.html
FUSION https://documents.egi.eu/public/ShowDocument?docid=3484	VIRGO https://apps.virgo-gw.eu/vmd/public/institutions
HESS https://www.mpi-hd.mpg.de/hfm/HESS/pages/collaboration/	WeNMR https://documents.egi.eu/document/2751
Ice-Cube https://icecube.wisc.edu/collaboration/institutions/	XENON https://science.purdue.edu/xenon1t/?page_id=27



EGI Membership Impact Report

Contact us

Science Park 140
1098 XG Amsterdam
Netherlands

Phone:
+31 (0)20 89 32 007

Email:
contact@egi.eu



egi_einfra



EGI Foundation



EGI

www.egi.eu