

GRNET

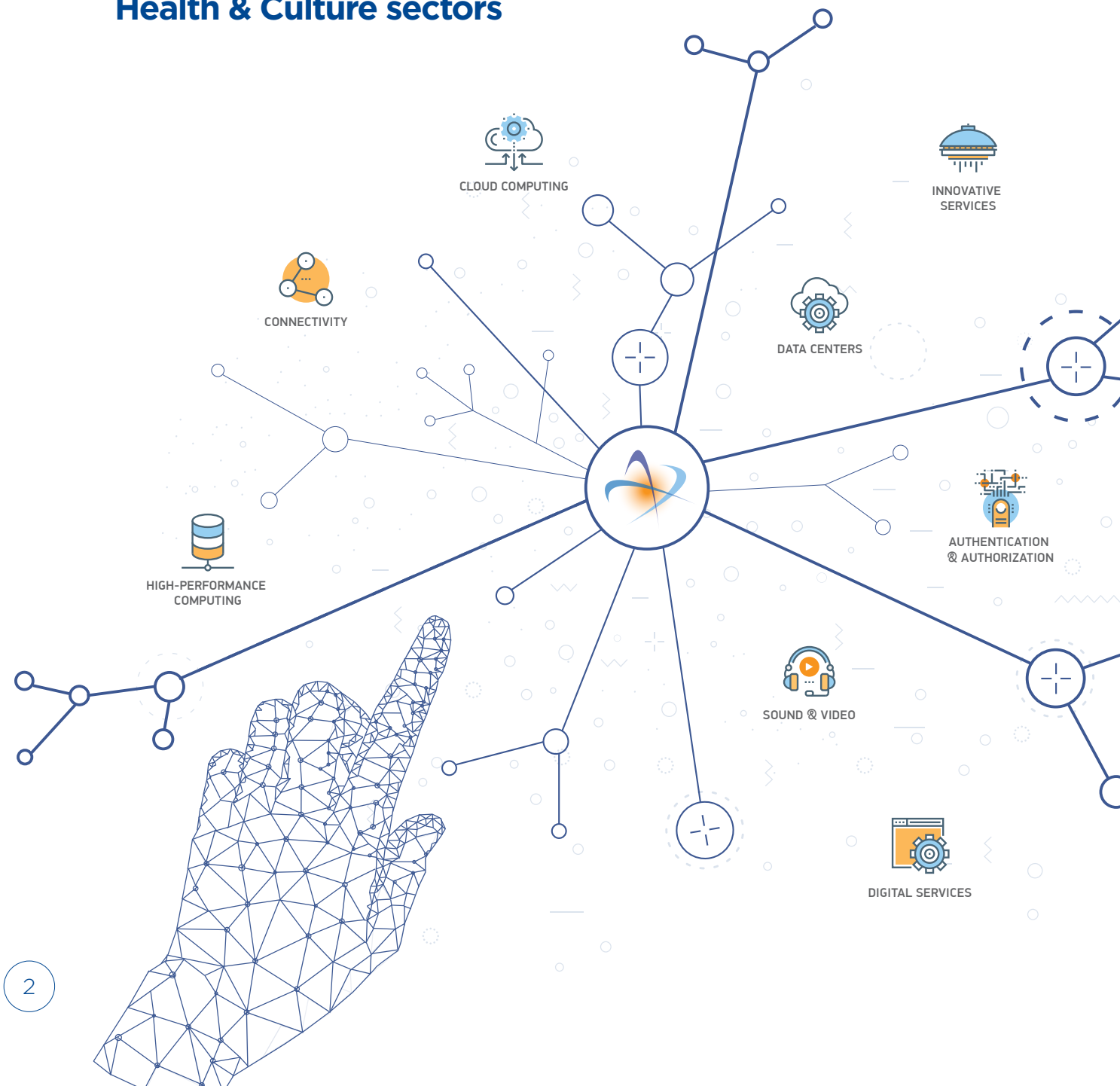
Advanced Digital Technologies

for Public Administration,
Education, Research, Health &
Culture sectors

GRNET

National Infrastructures for Research and Technology

Advanced Digital Technologies for Public Administration, Education, Research, Health & Culture sectors



The role of GRNET

GRNET S.A. – National Infrastructures for Research and Technology, operating since 1998, is one of the largest public sector technology companies in Greece. Since August 2019 operates under the auspices of the Ministry of Digital Governance.

GRNET provides networking, cloud computing, HPC, data management services and e-Infrastructures and services to academic and research institutions, to educational bodies at all levels, and to all agencies of the public sector.

GRNET holds a key role as the coordinator of all e-infrastructures in Education and Research. With more than twenty years of specialized experience, GRNET advises the Ministry of Digital Governance on issues relating to the design of advanced information systems, e-Infrastructures and services. GRNET contributes to the country's Digital Transformation via in-depth analysis, technological studies, standard solutions and specialized know-how, serving hundreds of thousands of users on a daily basis in the strategic fields of **Public Administration, Education, Research, Health** and **Culture**.

It is responsible for promoting and disseminating network and computing technologies and applications, as well as for promoting and implementing Greece's Digital Transformation goals and policy. GRNET leverages the national educational and research activity, striving towards the development of applied and technological research in the fields of telecommunication networks and computing services.

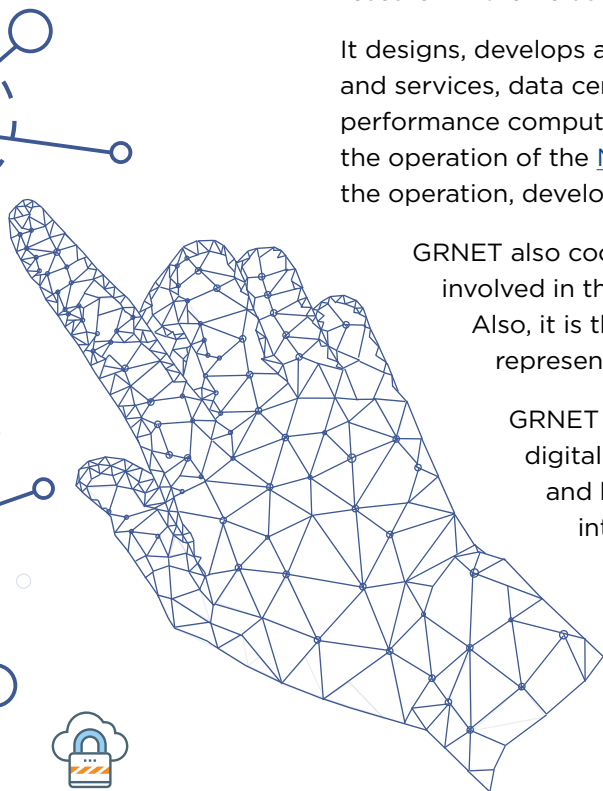
It designs, develops and maintains advanced computer & networking infrastructures and services, data centers, a nation-wide fiber optic network and a high-performance computer system ([HPC-ARIS](#)). Key current initiative highlights include the operation of the [National Competence Center for HPC \(EuroCC@Greece\)](#) and the operation, development and promotion of the [National Academy of Digital Skills](#).

GRNET also coordinates and participates in Open Science projects, and is involved in the formulation of the National Artificial Intelligence Strategy.

Also, it is the Euro QCI (Quantum Communication Infrastructure) national representative.

GRNET develops synergies with other agencies which provide digital services in the Greek public sector, by sharing best practices and know-how on advanced information systems. It provides international interconnection through the pan-European GÉANT network, and is the National Research and Education Network (NREN).

It manages the Greek Internet Exchange (GR-IX), the national infrastructure that interconnects the most important internet companies in the country (e.g. internet service providers, cloud, hosting, VoIP, etc.).



SECURITY

GRNET's Infrastructures and Services

GRNET covers the computer systems interface, operation and services needs of all Organisations it supports.

It offers:

- A nation-wide fiber optic network offering connectivity services amongst different institutions as well as inter-institutional departmental connectivity in Greece and abroad
- [High Performance Computing System \(HPC-ARIS\)](#)
- Infrastructures (6) data centers
- [The National Competence Center for HPC](#)
- [The National Academy of Digital Skills](#)
- [The Greek Internet Exchange GR-IX facilitating the exchange of Internet traffic \(IP\)](#)
- Internet, cloud computing, high-performance computing, authentication and authorization services, security services, as well as audio, voice and video services.

List of GRNET Digital Services: <https://grnet.gr/en/services-az/>

List of European & National Projects GRNET coordinates or participates: <https://grnet.gr/en/projects/>



GRNET interconnects

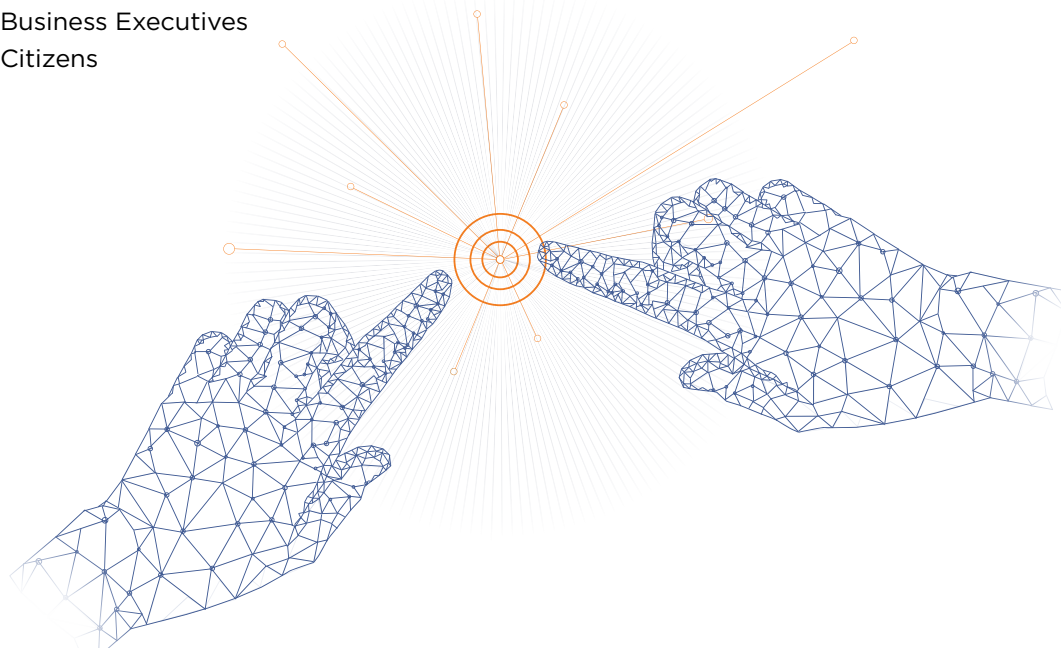
The GRNET network connects and offers services and infrastructures to Institutions and Government bodies:

- Universities, Ecclesiastic Academies
- Educational Institutions
- Research Institutions and Centers
- The Pan-Hellenic School Network
- Content Agencies
- Museums, Libraries and other Cultural Institutions
- Public Hospitals
- Public Administration

GRNET's Users

GRNET's infrastructures and services as well the GRNET network are used daily by hundreds of thousands of users:

- Members of the Academic and Research Community (professors, researchers, administrative and technical personnel - NOC Network Management Centers)
- Students
- Public Hospital Personnel
- Public Administration Personnel
- Business Executives
- Citizens



Benefits for all

GRNET offers an integrated environment of cutting-edge technologies, model solutions and specialized know-how contributing to the:

- Digital Transformation of the Public Administration and the enhancement of the citizen's overall service experience provided by the hellenic government;
- shaping of new models of cooperation among public agencies, research and education communities, citizens and businesses;
- enhancement of the educational processes and improvement of the educational experience;
- empowerment of the research community and the growth of research activity in the country;
- extroversion of the Greek R&E community by ensuring equal participation in ICT global actions;
- optimization of the Health sector and improvement of citizens' overall experience;
- optimization in the use of Greek State resources within Public Administration, Education, Research, Health and Culture sectors.

Sectors of GRNET expertise:

**Advanced Digital Technologies
for Public Administration, Education,
Research, Health and Culture**



Digital Transformation of the Public Administration

GRNET, holds a key role in designing advanced information systems and e-Infrastructures, and acts as an advisor to the **Ministry of Digital Governance** in design and implementation of Digital Transformation Strategy for the Greek Public Sector. It analyses, specifies and supports the implementation of the objectives set within the 'National Digital Transformation Strategy namely the 'Bible' for the Public Sector.

GRNET utilises its experience and know-how, further conducts thorough analyses and studies, provides standard solutions achieving the interoperability amongst all Public Administration sector's information systems, and contributes to the improvement of existing as well as the creation of new digital public services, for the benefit of citizens.

In parallel, GRNET invests in collaboration with teams of executives offering different scientific and professional expertise, while it is active in the production and application of flexible methodology analysis tools, organizes workshops and hackathons, develops specifications and implements medium-term and short-term activities on behalf of the Ministry of Digital Governance. Thus, it produces added value, contributing this way to the strengthening of the role of the Public Sector, aiming to improve service provision for citizens and businesses. It holds an active role in the design and operation of the Single Digital Portal, gov.gr, the main portal utilized by all citizens and businesses wishing to access public digital services.

In the context of the country's Digital Transformation, the **National Academy of Digital Skills (NADS)** was created, an online portal that aims to provide access to knowledge necessary for the development of digital skills of citizens, both at personal and professional level. The National Academy of Digital Skills, developed by the Ministry of Digital Governance, is filled with training courses, from a variety of professional training providers in a wide range of subjects and topics of interest, and is offered free of charge for all users. GRNET is responsible for all content enrichment, development and promotion of NADS to all citizens.

GRNET produces added value in strengthening the role of the Public Sector, aiming to improve service provision for citizens and businesses.

For more about GRNET's contribution to Digital Transformation:
<https://digigov.grnet.gr/en>

Digital Innovation in Education

GRNET introduces new, advanced methods in the educational process that enhance the experience of students, faculty members and administrative personnel of Universities, Ecclesiastical Academies (EA) and other schools. Through constant development of e-services, GRNET offers modern solutions in areas such as education, students' internship, student care, as well as in the organization and support of internal processes deployed by the educational institutions.

GRNET seamlessly provides a variety of key computing and networking services. Indicatively, some of the services developed and provided to the academic and research community include the availability of academic books ([EUDOXUS](#)), the election and development of University and EA professors of the country ([APELLA](#)), the support of a single academic identity card in a plastic or a smart card form ([ACADEMIC IDENTITY](#)), the support of Student Internship ([ATLAS](#)),

the payment of the housing allowance, the creation of a wireless internet access roaming network ([Eduroam](#)), and the conducting of election processes by e-voting for elections of Rectors, single-member bodies and Directors of Clinics, Laboratories and Museums through [ZEUS Digital Voting-Elections](#). Also, the implementation and operation of a system for direct, live and interactive access to audiovisual material of high cultural and scientific value ([DIAVLOS](#)) and a system for high quality and interactive web conferencing ([e:Presence](#)).

It provides support at all levels –from Network Operation Centers (NOCs) to end users – responding and resolving promptly to all needs thus providing better service to all users (<https://grnet.gr/contact-us/support>).

GRNET infrastructures and services in the field of Education: <https://grnet.gr/en/education/>

Advanced Technologies for Research

GRNET offers an integrated technological environment for the development of scientific research. It combines advanced networking and computing infrastructures and services that provide researchers with innovative techniques and new research capabilities. Secure high-speed networking, cloud computing and storage resources, cloud computing infrastructures, IaaS public cloud, Virtual Machines, Networks and Storage ([oceanos](#)) and high-performance computing system to support extremely demanding scientific applications ([HPC-ARIS](#)), and big data management services are indicatively some of the systems and services developed and provided by GRNET in the field of research in multiple scientific fields.

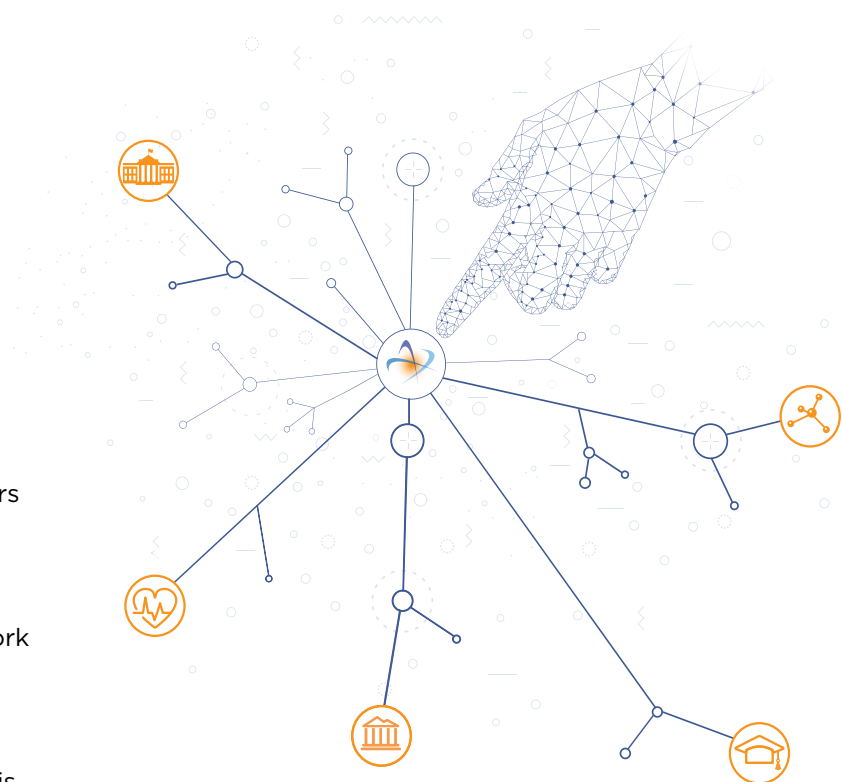
GRNET infrastructures and services in the field of Research: <https://grnet.gr/research/>

Digital capability for Health

GRNET provides innovative e-services and e-Infrastructures to hospitals, blood centers and blood donor services. It offers high speed internet connection to public hospitals (1 Gbps to 10 Gbps), ensuring fast and secure storage, access and data exchange and high-speed secured network connection with the world's leading research centers.

GRNET infrastructures and services in this field indicatively include: the creation of a new advanced data center for Health sector based within the University of Crete ensuring fast and secure storage and retrieval of medical imaging data, the development of a wireless wi-fi access service and roaming network (eduroam), a directory of hospital users for secure service access ([AAI-DELOS](#), [Directory Service](#)), central e-services for the management of national blood donors registrations and the issue of a blood donor ID ([EMA](#)) through modern, reliable and user-friendly procedures for the blood donors, the blood donor services and the blood centers of the country, the development and availability of a medical online inter-library loan service for medical articles ([DIADOSIS](#)), a backup storage service and remote access to imaging data ([Harmoni](#)), as well as the development of an [Artificial Intelligence/Deep Learning system](#) for rapid and reliable diagnosis of Covid-19 through medical imaging. The above GRNET actions empower the scientific hospital staff in conducting their research and medical work. At the same time, the overall citizen experience is significantly improved whereas valuable resources are saved for the Greek State.

GRNET infrastructures and services in the field of Health: <https://grnet.gr/en/health/>



Accessing Culture via modern technologies

GRNET collaborates with major cultural, educational and research institutions and provides access to live and recorded digital webcasts of lectures, seminars, artistic and other events, via [DIAVLOS](#) GRNET's live streaming service. Thus, it contributes to the development and dissemination of high-quality, added-value educational, research and cultural audiovisual content, regardless of geographical distance, free of charge, for thousands of end users.

Furthermore, GRNET offers to selected historic and cultural venues wireless infrastructure for accessing "[eduroam](#)", the world-wide roaming access service. Thus, it facilitates access to information about the visited venues using modern mobile devices, for visiting students, researchers and professors from universities across the world.

GRNET infrastructures and services in the field of Culture: <https://grnet.gr/en/culture/>

Green Policy

Energy efficient infrastructures and best practices for the annual reduction of greenhouse gas emissions.

GRNET implements “green” technologies in its networking and compute infrastructure, in order to minimize its yearly greenhouse gas emissions’ footprint. To this end, it deploys energy-efficient equipment and develops monitoring tools for measuring energy consumption in real time. GRNET’s “green” data center at Louros River in Epirus achieves unprecedented, energy savings as it operates entirely on renewable energy sources. River water is used for the air conditioning system, essential taking advantage of its very low temperature, in order to cool the hosted IT systems, a solution implemented for the first time in Greece.

Moreover, GRNET has installed a data center serving the needs of the hospitals of the entire country, in a building offered by the University of Crete, in the area of Knossos, Heraklion. It has proceeded to several electric power saving interventions and to the production of renewable energy resources within the framework of a wider power saving strategy and environmental awareness for the academic community and the wider public sector.

A PV system of 100KWp was installed for energy compensation in low net metering. The project “Upgrading the energy footprint of the University of Crete and the National Health Data Centre”, the University of Crete in collaboration with GRNET, proceeds to the installation of two PV systems of 300 and 200 KWp, the first of which is connected to the National Health Data Centre power metering (virtual metering);

For more information <https://grnet.gr/company/environmental-policy/>

GR-IX

The Greek Internet Exchange

GR-IX is a neutral and independent Internet Exchange which facilitates internet traffic exchange and accelerates the growth of the Greek Internet. It interconnects all major Internet players in Greece, namely Internet service providers, content providers, cloud providers etc. GR-IX is owned and operated by GRNET which, being a non-profit, state-owned company, guarantees the neutrality and independence of the Internet Exchange.

More: <https://www.gr-ix.gr/>



GRNET external relations

International Partnerships, Collaborations & e-Infrastructures

GRNET activity expands beyond borders.. Through international partnerships and the coordination of EC co-funded projects, it creates opportunities for know-how development and exploitation, and contributes, in a decisive manner, to the development of Research and Science in Greece and abroad. GRNET's extroversion ensures access to international research and educational eInfrastructures and services, for users worldwide to benefit from Information and Communication Technologies. Thereby, mutually beneficial synergies among research and educational communities may be established.

GÉANT

<http://www.geant.org>

European collaboration on e-infrastructures and services for Research and Education.

PRACE

<http://www.prace-ri.eu>

Partnership for Advanced Computing in Europe.

ARIADNE foundation

<http://www.ariadne-eu.org>

Integrating existing archeological data infrastructure across Europe to explore research methodologies.

EPIC

<https://epic.grnet.gr/>

European Persistent Identifiers Service.

COPERNICUS Data Hubs

<https://sentinel.esa.int/web/sentinel/sentinel-data-access>

Collects, stores and provides access to data from the Sentinel satellites of the Copernicus Earth Observation program.

EGI.eu

<https://www.egi.eu>

Federated e-Infrastructure set up for the provision of advanced computing services for Research and Innovation.

EUDAT CDI

<https://www.eudat.eu>

Collaborative Data Infrastructure.

ETP4HPC

<http://www.etp4hpc.eu>

European Technology Platform for High Performance Computing.

EURO-IX

<https://www.euro-ix.net>

The European Internet Exchange Association for strengthening and improving the connections within the Internet Exchange Point (IXP) community.

EOSC Association

<https://eosc.eu/>

The European Open Science Cloud Association (EOSC).

Administration - Financing

The dynamic development of GRNET is primarily due to the valuable funding received from the Greek State and the European Union.

Moreover, the quality of GRNET 's overall work is a result of the dedication and professionalism of its specialized personnel and associates, who share the same values and goals, such as innovation in infrastructures and digital service provision.

GRNET operates under the auspices of the **Ministry of Digital Governance**.



GRNET - NATIONAL INFRASTRUCTURES FOR RESEARCH AND TECHNOLOGY

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