

2022-23

years in review



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# president's note

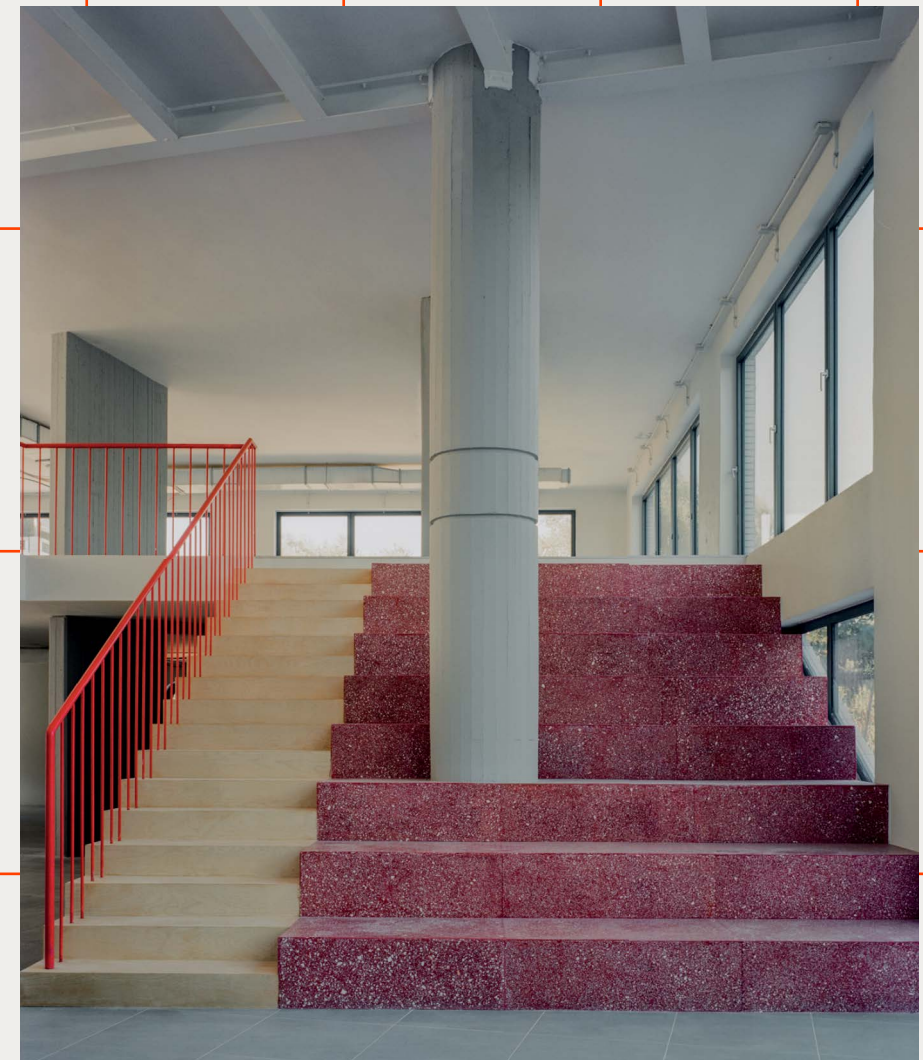


**Prof. Ioannis Emiris**  
PRESIDENT OF THE BOARD  
DIRECTOR GENERAL

Today, technology plays an ever-increasing role in addressing complex challenges but, as always, poses risks for the uninitiated and may deepen inequalities. Athena, the only research center exclusively dedicated to Information and Communication Technologies, is at the forefront of this wave, contributing to a transparent and inclusive AI revolution. We are proud of several breakthroughs, from our leadership for Open Science and Research Infrastructures, often applied to the life sciences, up to the first Greek open Large Language Model. Athena provides an international hub for leading AI experts, including the diaspora, through the creation of Archimedes, and has maintained its tradition of cutting-edge innovation through a number of spinoffs and a strong incubation program. The foundation of the Robotics Institute makes automation one of our focus areas, within the general framework of aligning technology with the goals of sustainable development. Athena is probably the fastest-growing research organization in Greece, which emphasizes our responsibility towards the new generation and our capacity to lead the country's digital transition.

# Profile

Athena conducts outstanding research in Information and Communication Technologies, pursuing solutions to global challenges while addressing local needs, and producing novel and deep technological results with a broad impact on other sciences, industry, and society at large.

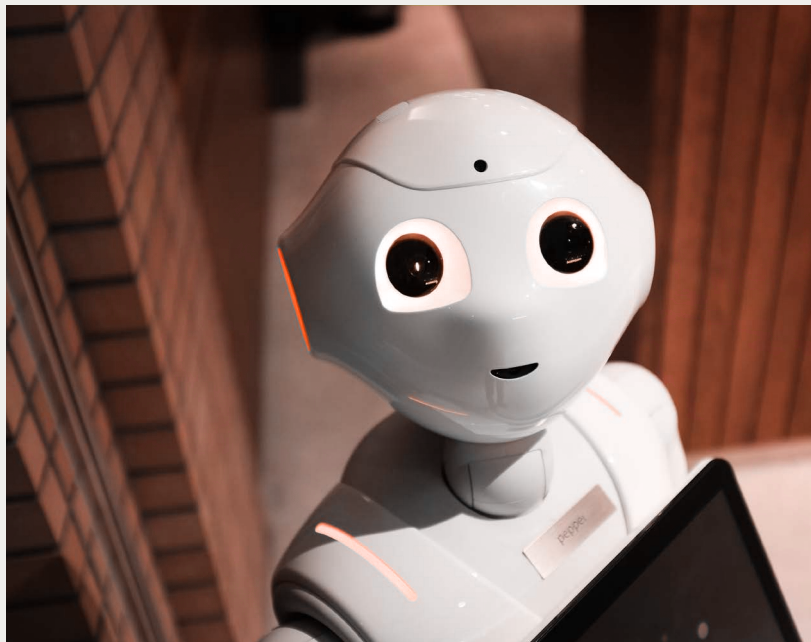




# Mission

Athena's mission is to drive cutting-edge research and innovation in digital sciences and technologies, addressing global challenges and national needs.

We are dedicated to advancing knowledge across a wide range of research disciplines, from informatics and communication to computational sciences and computer engineering. We aim to fuel disruptive technologies and innovation, and to nurture the next generation of digital inventors. Our technological results support a responsible and inclusive digital transformation, and impact fields from engineering and healthcare to social sciences, the humanities, and the environment.



&

Athena's vision is to be a leading research organization for digital innovation in Europe and beyond, recognized for its research excellence as well as technological advancements.

Supported by an exceptional group of globally acclaimed academics, an outstanding administrative support layer, and advanced infrastructure, we shape the future of digital technologies by delivering solutions that drive economic growth, enhance societal well-being, and promote a sustainable society.

# Vision



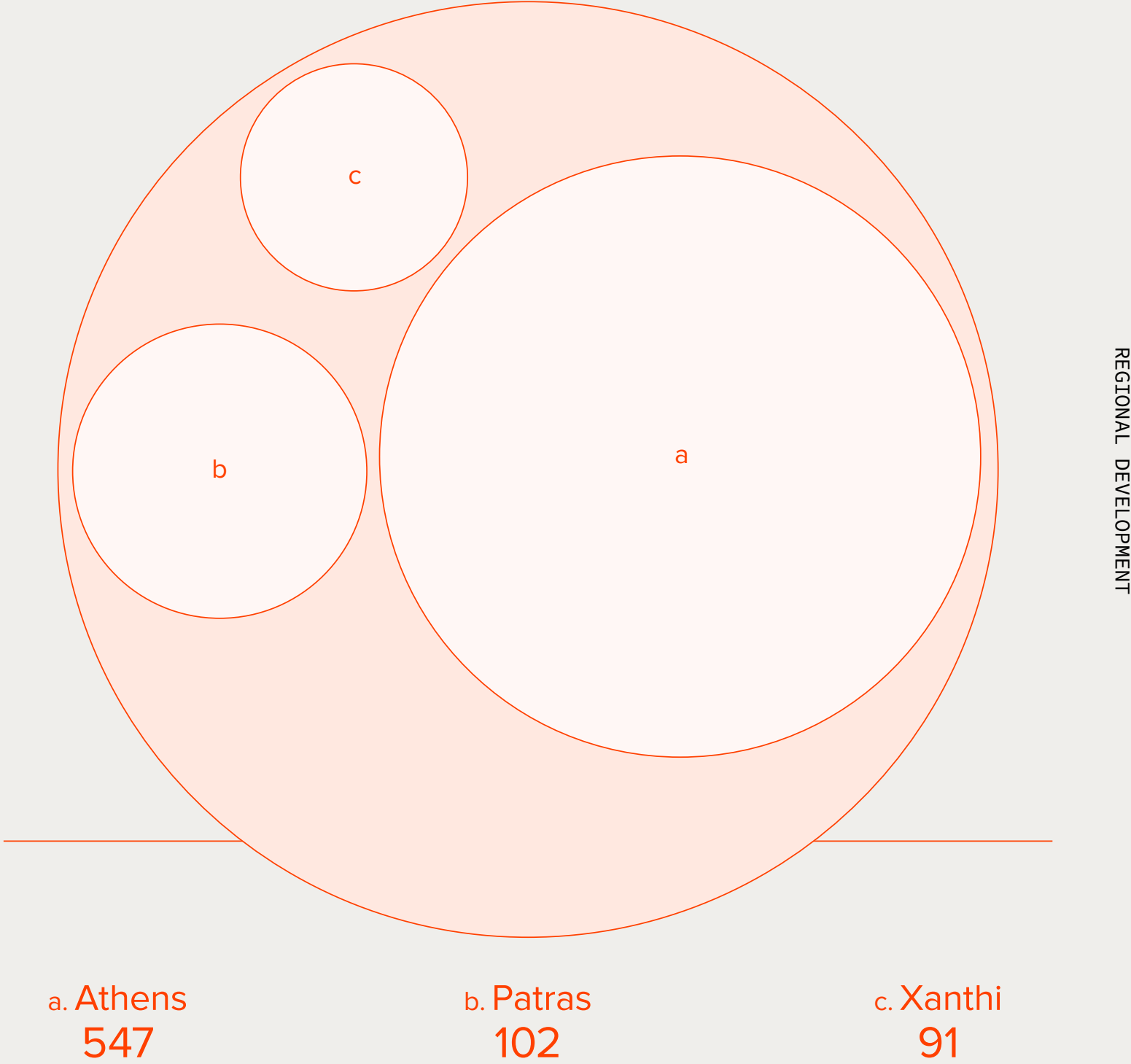
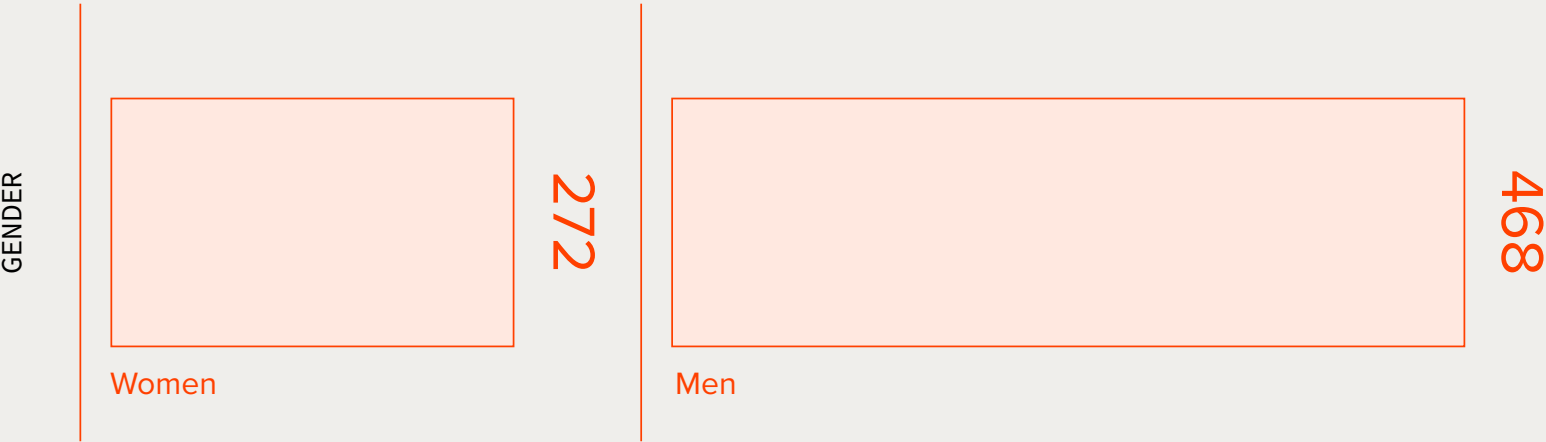
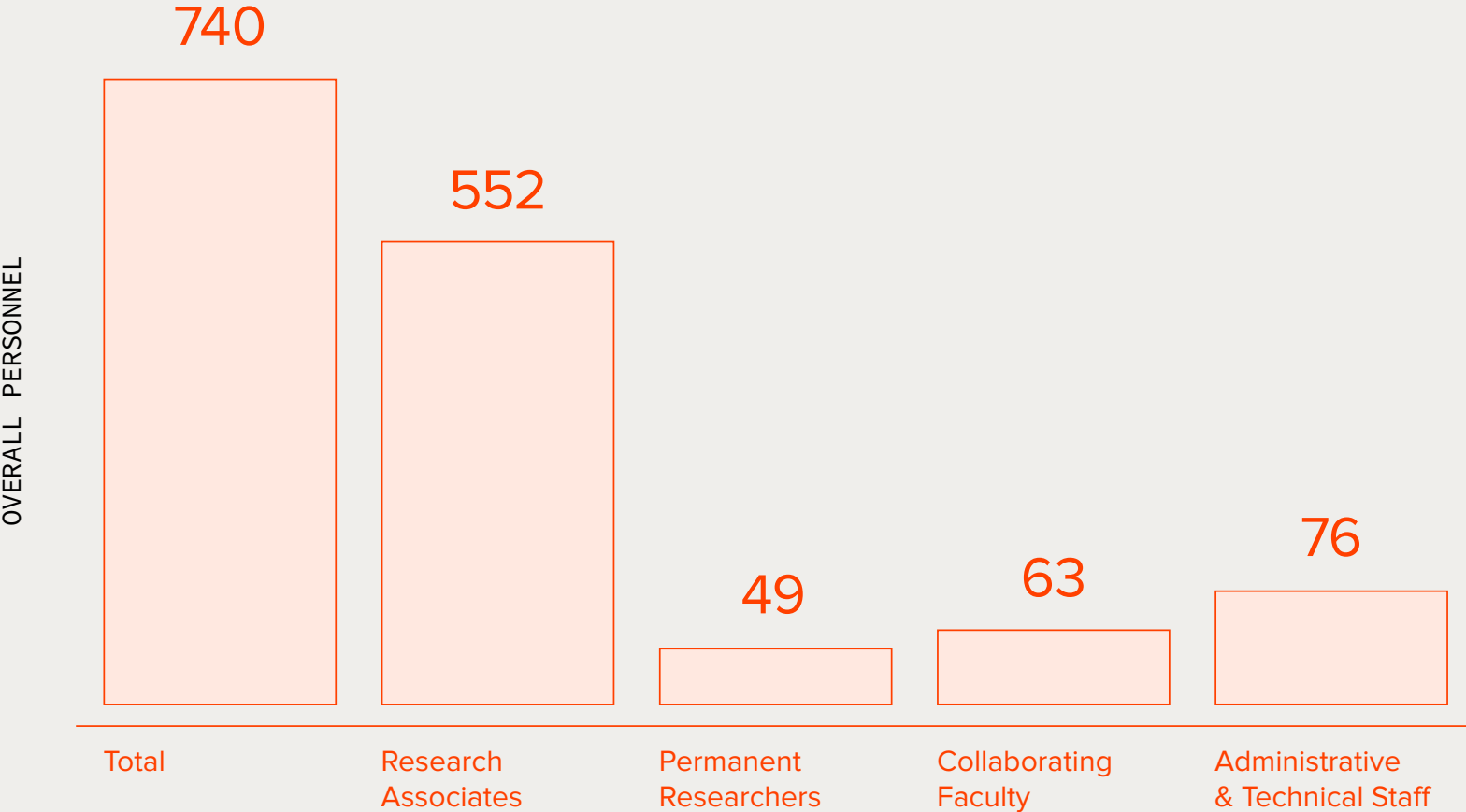
# ATHENA

## facts

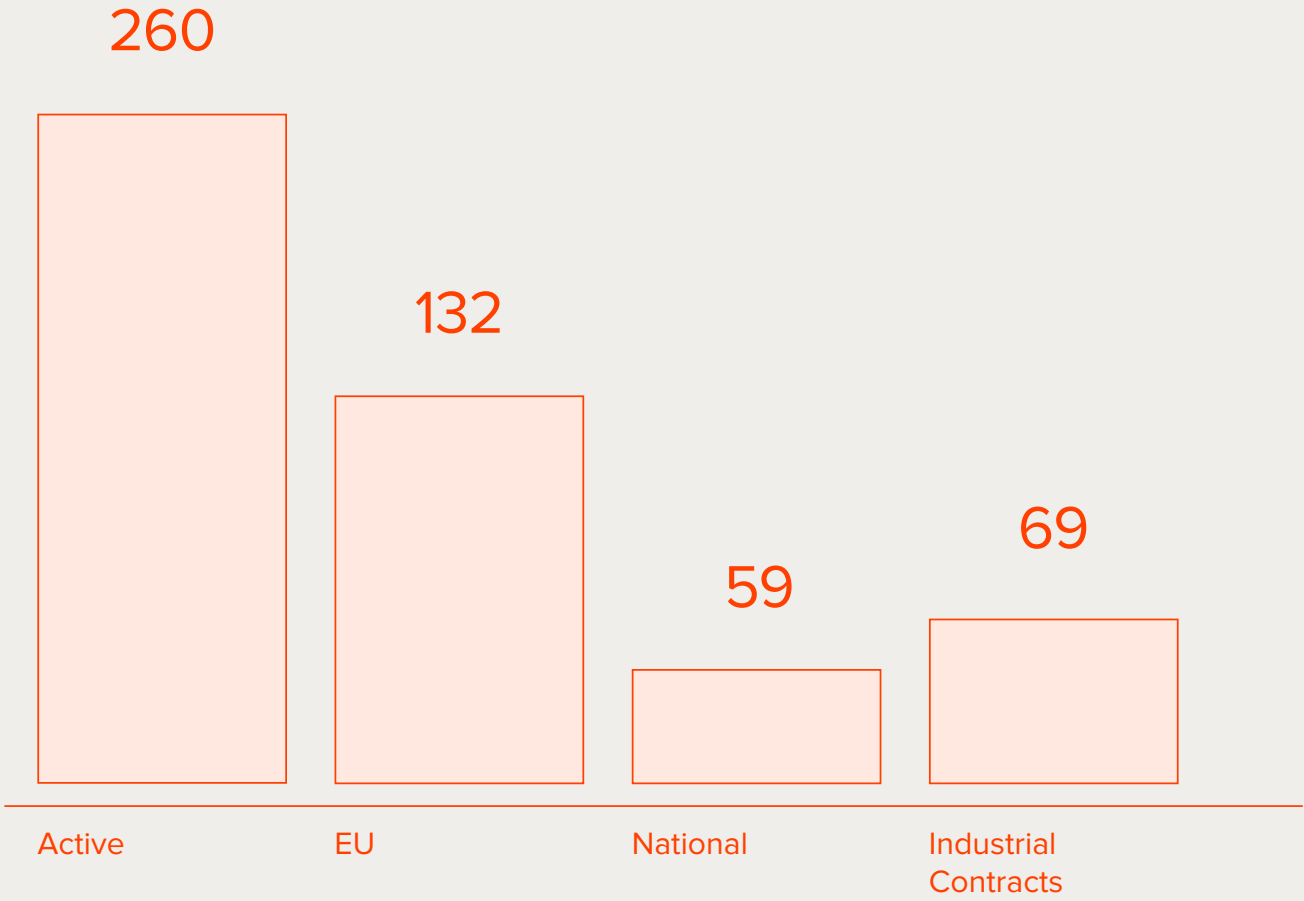
## Athena:

- › The sole research organization in Greece exclusively dedicated to Information and Communication Technologies with special emphasis on interdisciplinary applications.
- › Currently **the fastest growing research organization in Greece** with presence in six Greek Regions serving as digitalization enabler. Athena's personnel grew at a rate of 48% compared to 2020.
- › **Has expanded** in these two years, with the Archimedes Unit, and the Institute of Robotics, in its drive to cover the entire ICT spectrum.
- › Has seen an **annual turnover increase of 20%** since 2021 surpassing €30m in 2023 in which state subsidy has steadily been accounting for less than 10%. Its budget stems primarily from EU sources, but also national competitive funds, as well as industrial contracts.
- › Has received in 2022 an **infrastructure grant** of about €55m within Greece 2.0, supported by RRF, national and EIB funds.
- › Ranks **7th nationally in Horizon Europe funding** attraction compared to other higher educational institutions and research organizations. Considering the size of its permanent staff, Athena should be first per capita.
- › **Has provided support** to over 500 innovative enterprises, has helped accelerate 30 startups, supports today 4 active spinoffs and has overall directly benefited hundreds of entrepreneurs, businesses and organizations.

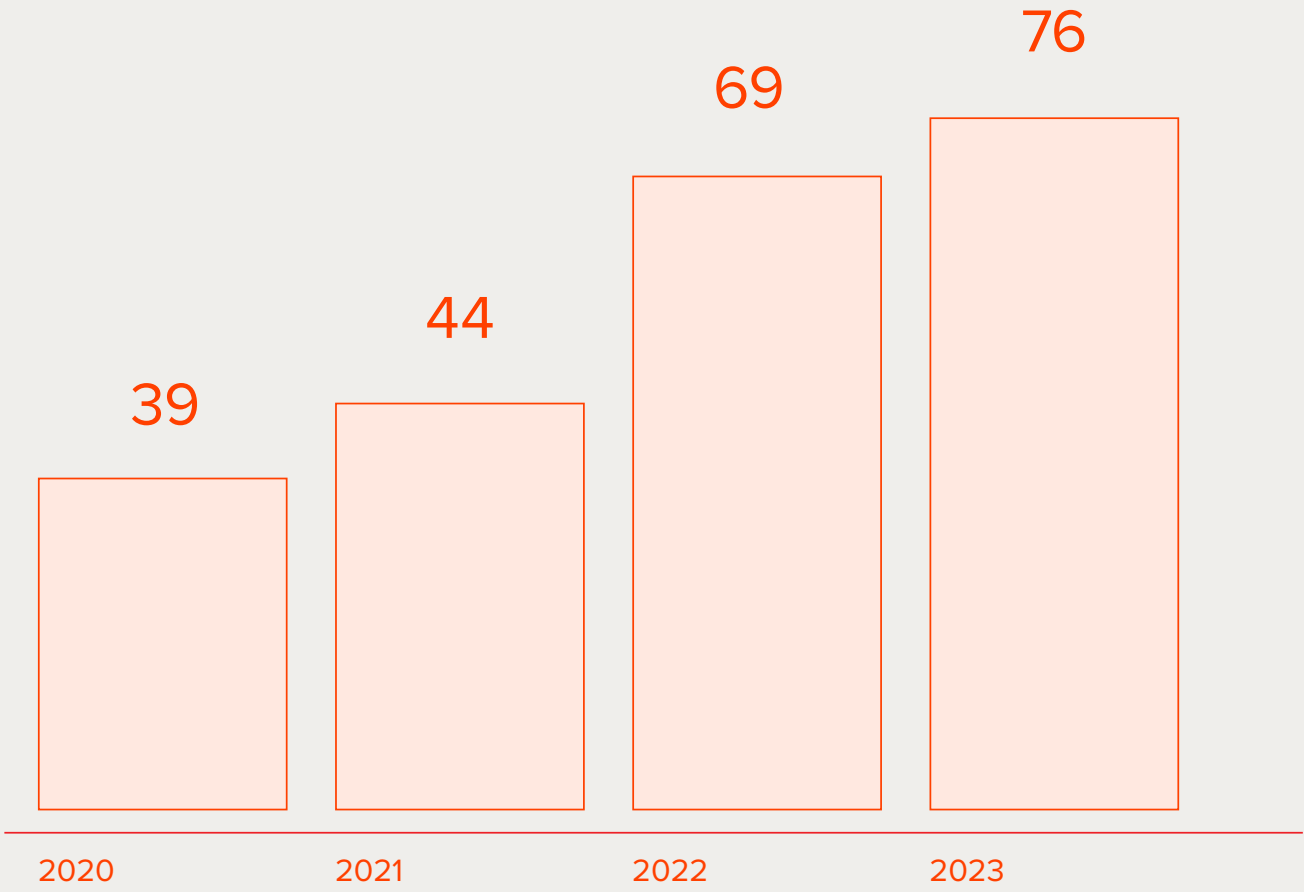
# Facts & Figures



PROJECTS 2022-2023



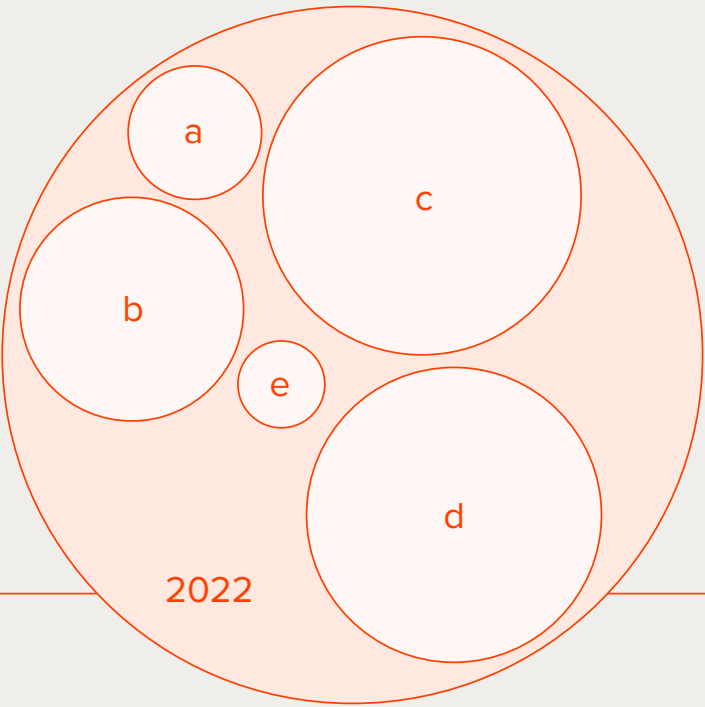
NEW PROJECTS



FINANCIAL DATA

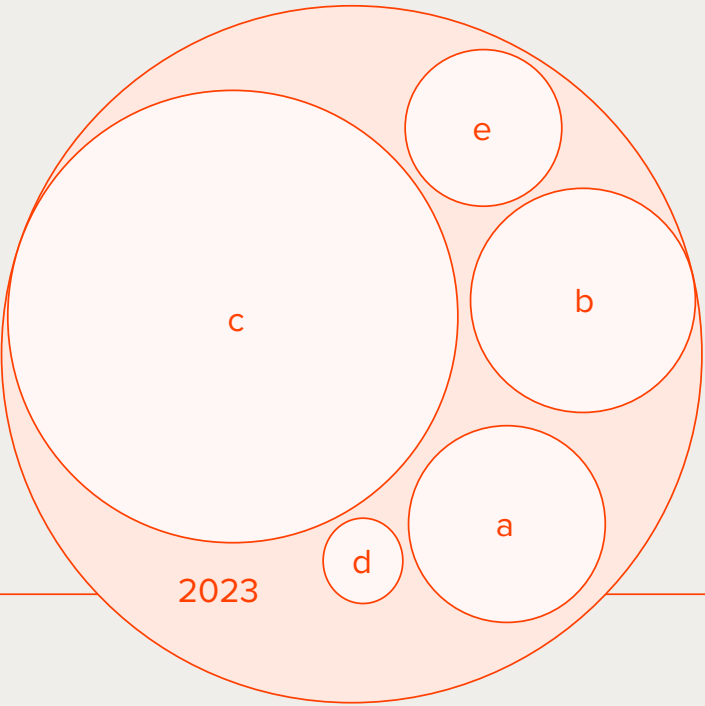
2022: 18.380.000

- a. State and Public Investment Funding: €2.32m
- b. Structural Funds (NSRF): €4.16m
- c. EC (Horizon Europe etc.): €5.34m
- d. RRF: €5.85m
- e. Services and Contract Research: €0.71m



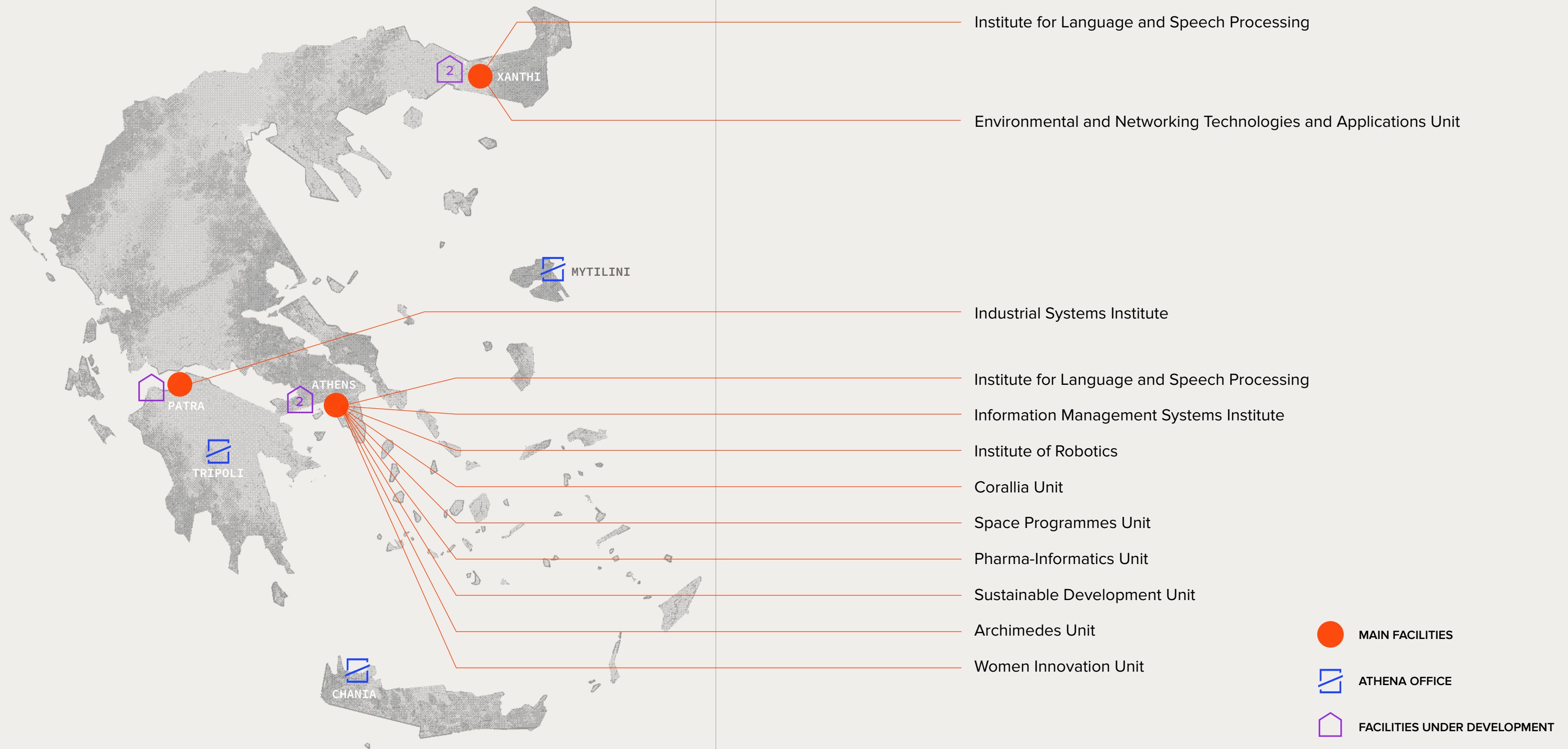
2023: 21.440.000

- a. State and Public Investment Funding: €3.02m
- b. Structural Funds (NSRF): €4.06m
- c. EC (Horizon Europe etc.): €10.58m
- d. RRF: €1.63m
- e. Services and Contract Research: €2.15m





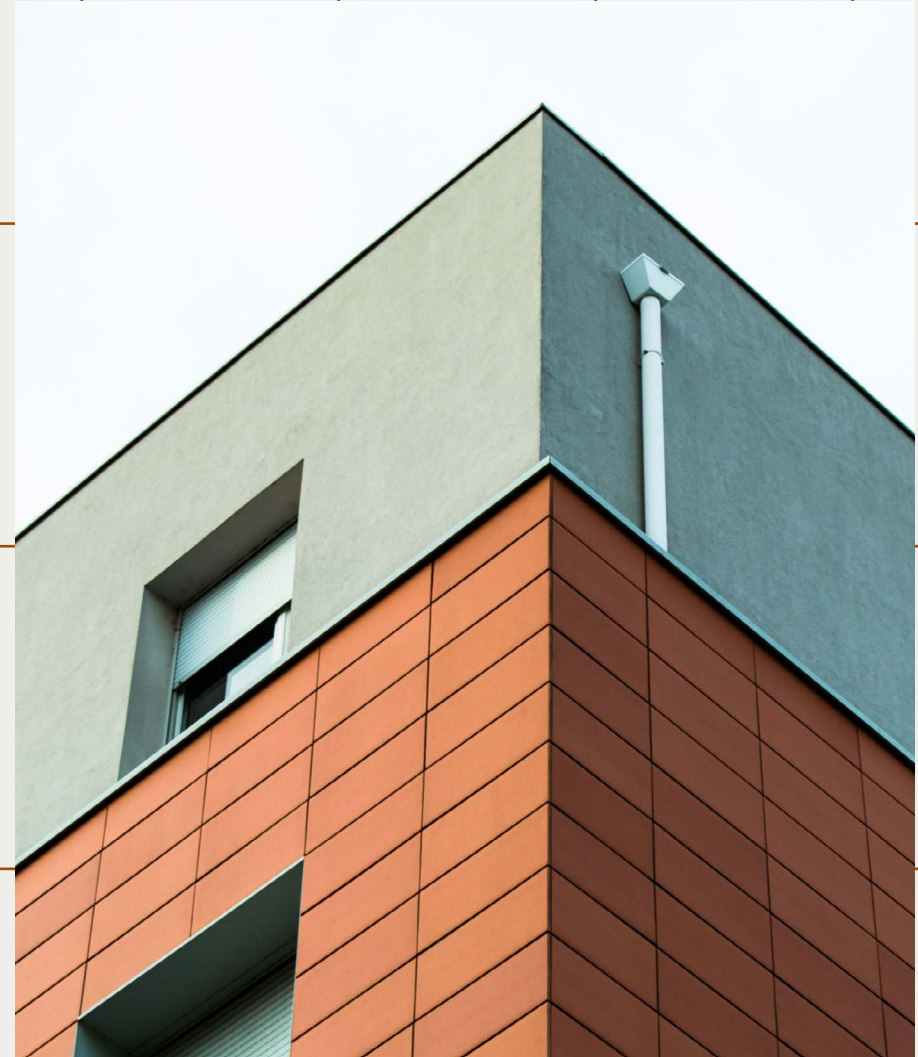
# Blooming Research and Innovation activities





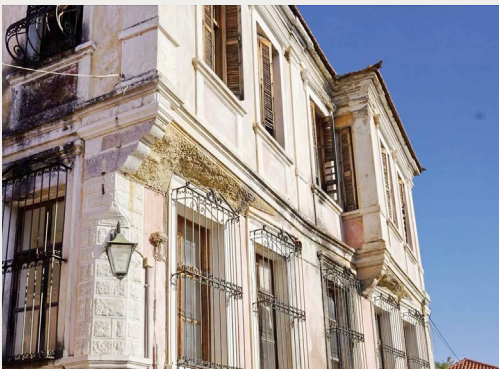
# highlights

We Invent the Future with vision, persistence and excellence. We are proud of both our major achievements and the small everyday steps we take forward.





The years 2022–2023 marked the beginning of an Infrastructure Upgrade supported by the Recovery and Resilience Fund (RRF), the European Investment Bank (EIB), and the Development Program of the Ministry of Development, totaling about €55m.



# Excellence & Development

## An ambitious Infrastructure Upgrade Program Under Way

1. Complete renovation for the existing building in Marousi, Athens. Major interventions encompass the construction of a new amphitheater, and the improvement of computing facilities. The upgraded facility will be compliant to Zero-carbon directives.
2. The construction of a new building in Patras next to the Patras Science Park is going to address the long-standing housing needs of Athena in Patras. The new building includes an amphitheater, and both experimental and Living-Lab-type laboratories.
3. The acquisition of a new building in Athens, that will serve as the new headquarters for Athena.
4. Configuration of the surrounding premises at the Athena building in Xanthi.
5. Restoration of the neoclassical building of Athena in the historic Old Xanthi, establishing it as a new landmark of the city.

# Archimedes Unit on Artificial Intelligence, Data Science and Algorithms

**Archimedes** is a landmark initiative led by **Professor Christos Papadimitriou** (Columbia University), **Professor Constantinos Daskalakis** (MIT) and **Professor Timos Sellis** (RMIT, NTUA). The main goal of the Unit is to create a hub of excellence for basic and applied research in AI, in collaboration with Greek and foreign Universities, allowing junior researchers to work together with senior scientists. The Unit is initially funded with over €21M by the Recovery and Resilience Facility.

## Institute of Robotics is now a reality!

The primary objective of the newly established **Institute of Robotics** is to promote the science and technology of robotics in the age of AI through coordinated efforts and close collaboration with the Greek robotics community. These activities will include establishing Makerspaces and promoting scientific and technological excellence in robotics in partnership with universities, research centers, businesses, and industries.

## Establishment of the Women Innovation Unit

The Unit implements the objectives of the **Greek Innovation Lab for Women**, #GIL4W. It provides funding and business support to innovative startups of women, strengthen STEM initiatives in education, and encourage young girls to choose professions related to ICTs.

## Establishment of two new spinoffs

**AVISENSE** was created in collaboration with the University of Patras, supporting AI Solutions for Autonomy, Visualization and Interactive Sensing for autonomous driving. It transforms how vehicles communicate with drivers, introducing perception and interaction technologies that elevate awareness through XR.

**AGORA LABS** is working on the development of advanced blockchain, privacy-preserving computation and Federated Learning technologies to enhance international health data sharing, usage and collaboration. It bridges the fields of clinical medicine and secure data management.





# ESA BIC: a major stepstone for Space Industry in Greece

European Space Agency Business Incubation Center, operated by the Corallia Unit, aims to strengthen the Greek space ecosystem with the introduction of 5 new successful space-related startups yearly. The startups exploit space tech in non-space markets (spinoff) or become suppliers to the space sector (spin-in). ESA BIC Greece is supported by the Ministry of Digital Governance and more than 70 other organizations.

# United Nations SDSN Global Climate Hub

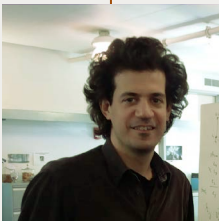
The Hub, hosted by Athena and Athens University of Economics and Business, aims at Sustainable Development by providing scientific recommendations to combat the climate crisis and prevent further deterioration. It uses extensive data and expert technologies to implement country-specific plans for adoption by society.

# European Digital Innovation Hubs

Athena substantially contributes to digital transformation by developing cutting-edge technologies for the health sector (SmartHealth), AI solutions for regions in Energy and Environment, Supply Chain and Mobility, Culture and Tourism (SmartAttica), innovative services to public administration (digiGOV-innoHUB).



# Personal Highlights



Prof. Costis Daskalakis, as chair, and Prof. Timos Sellis as a member, were honorably appointed in the Greek national High Level Advisory Committee for AI, established by decision of the Prime Minister.



Dr. Georgia Koutrika was elected as a member of the VLDB Endowment Board of Trustees. This is the largest organization promoting and exchanging scholarly work in databases and related fields throughout the world.



Prof. Eleni Kaldoudi was elected President of the European Alliance for Medical and Biological Engineering and Science (EAMBES).

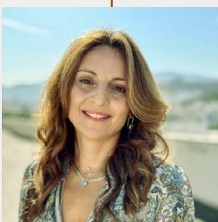


Prof. Ioannis Emiris was appointed as member of the Scientific Advisory Panel of the Computation-based Science and Technology Research Center (CaSToRC) of The Cyprus Institute.

Scientific and Technological advancement requires resources and infrastructures. But people are the most crucial factor. And Athena can proudly acknowledge that its staff and collaborators are among the best in the field



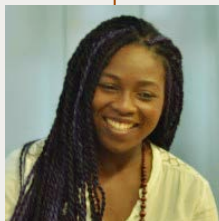
Prof. Yannis Ioannidis, former Athena President, was elected President of the Association for Computing Machinery (ACM), the world's largest association of professionals in Informatics.



Prof. Phoebe Koundouri has been awarded the Excellence in Science Award 2023 by the Academy of Athens for her contribution to the advancement of the Science of the Marine Environment.



Prof. Minos Garofalakis was elected a regular member of Academia Europaea for his contribution to Informatics.



Dr. Ebun Akinsete was among the recipients of the Global 50 Women in Sustainability Awards for 2023.



# institutes & units

The structure of Athena mirrors both its development history and the complexity in the fields of Digital Technologies and their applications.





# Institute for Language and Speech Processing



The Institute for Language and Speech Processing (ILSP) conducts interdisciplinary research in two broad fields: language, and all its instantiations from speech to embodied interaction, and culture. With its excellent positioning in the European Language Technology and Digital Culture scenes, ILSP nurtures long-standing collaborations with highly reputed research centers world-wide. Its state-of-the-art infrastructure for language and cultural data management allows for experimentation in and evaluation of new methods and techniques in its fields of research and development.

During these two years, ILSP made substantial progress in natural language processing, speech and language impairments assessment and treatment, conversational AI, virtual and augmented reality, smart agriculture, archaeological GIS, accessibility and inclusivity in cultural heritage, sign language technology, and research infrastructures for language resources and technologies. Two highlights are the implementation of the Common European Language Data Space (LDS), where ILSP acts as the main technical partner, and the publication of a Strategic Research, Innovation and Implementation Agenda for achieving Digital Language Equality in Europe by 2030.

In the coming years, ILSP will continue working on

- › developing LLMs and multimodal LLMs tailored for the Greek language
- › formulating and implementing a National Strategy to enhance the AI-readiness of the Greek Language
- › supporting, enriching and investing in language resources infrastructures, such as CLARIN:EL, the European Language Grid and the European LDS
- › exploring explainable AI and cost-effective AI
- › driving innovation in Digital Cultural Heritage and Preservation
- › ensuring the AI/AR readiness of iconic archaeological and cultural sites in Greece



# Industrial Systems Institute

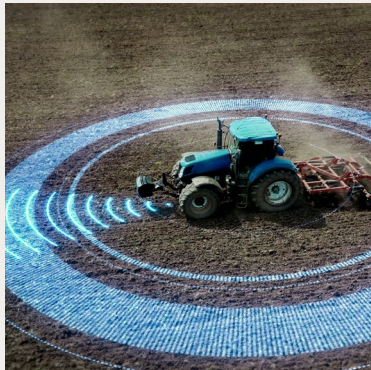


The Industrial Systems Institute (ISI) conducts excellent basic research and exploratory development on Information and Communications technologies for the Greek and European industry. The focus of ISI is on cutting-edge technologies for industrial operations and enterprise environments, with its prime concern towards innovation, growth and competitiveness of the Greek industry.

To this end, ISI works in the following emerging areas of applied research:

- › Cyber-physical Systems and Industrial IoT
- › Industry 4.0 and smart manufacturing
- › Connected and autonomous vehicles,
- › Cybersecurity and protection of cyber-physical and industrial systems,
- › 5G/6G networks and communications
- › Smart cities, Circular Economy and Sustainability
- › Advanced Materials and structures
- › Digital Health and Well-Being.

The long-standing issue of building infrastructures of the Institute will be resolved with the construction of a new building, with its implementation commencing in the forthcoming period. The goal of ISI in the coming years is to strengthen its profile and extroversion through expanding its collaborations, further improving its publication track record, organizing outreach activities with the regional industry, supporting joint postgraduate academic and industrial programs, and the creation of new spinoffs, following its first spinoff (AVISENSE).



# Information Management Systems Institute



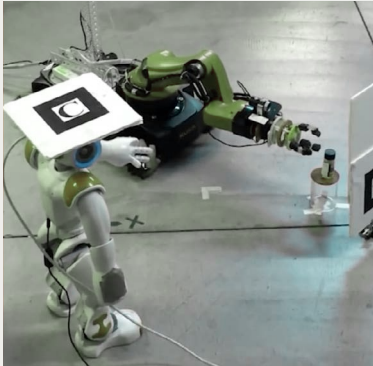
The Information Management Systems Institute (IMSI) conducts cutting-edge scientific research and exploits research results in the development of novel core technologies, prototypes, applications, and products including information and knowledge management, large-scale information systems and applications, databases and Big Data management systems, cloud-based platforms and services, Machine Learning and knowledge-extraction technologies, and Digital Curation.

MSI organically co-operates with the industry, the public sector, and the academia through research and development projects, in order to transfer new technological solutions for the exploitation and management of data.

IMSI main areas of interest include

- › Distributed Information Systems and Web Information Systems, with focus on scalability and efficiency issues formulating and implementing a National Strategy to enhance the AI-readiness of the Greek Language
- › Information integration, interoperability of information systems
- › Semantic Web and ontology management
- › Business and Database intelligence systems, with focus on implementation and optimization
- › Management of geographical information, with focus on spatial and spatiotemporal data management techniques
- › Scientific databases and Digital Libraries, with focus on biological and environmental data management, and data preservation and provenance

# Institute of Robotics



The Institute of Robotics (IRO) was founded in 2023 to promote the science and technology of robotics in the age of AI through coordinated efforts and close collaboration with the Greek robotics community. These efforts will include establishing Maker-spaces and promoting scientific and technological excellence in robotics in partnership with universities, research centers, businesses, and industries.

IRO activities center around three directions, responding to the needs of Greek society and international developments:

- › Robotics for Safety and Rescue
- › Outdoor Robotics
- › Healthcare Robotics and Social Robotics

The institute goals are to advance and sustain basic research in both theoretical and application problems whose fundamentals lie in the intersection of various fields of applied sciences and technology such as robotics, informatics, communications, and cognitive systems.

Emphasis is given on theoretical and algorithmic problems as well as novel multidisciplinary applications, including techniques of robot perception & interaction, computer vision, signal processing, speech communication, machine learning, and cognitive modeling of information from humans and computers.



# Archimedes Unit



Archimedes Unit on AI, Data Science and Algorithms is a vibrant research hub connecting the global AI and Data research community, fostering groundbreaking research in Greece and beyond, thus attracting talent and winning the challenge of brain gain.

Its dedicated core team, comprising lead researchers, affiliated researchers, Postdocs, PhD fellows and interns, is committed to advancing basic and applied research in AI, and its supporting disciplines, including Algorithms, Statistics, Learning Theory, and Game Theory.

By collaborating with Greek and foreign Universities and Research Centers, Archimedes disseminates its research findings fostering knowledge exchange and providing enriching opportunities for students. Leveraging AI to address real-world challenges, Archimedes promotes innovation within the Greek ecosystem and extends its societal impact. Established in January 2022 with support from the “Greece 2021” Committee, Archimedes is funded for its first 4 years by the Recovery and Resilience Facility.



# Sustainable Development Unit



The Sustainable Development Unit (SDU) engages in cutting-edge research to enable the transition to resilience and sustainability, through the implementation of UN Agenda 2030 (17 SDG's), the Paris Agreement and the European Green Deal. SDU focuses on interdisciplinary systems research and the delivery of innovative solutions for the transition to a green, digital, job-based and fair future.

The work on its large interdisciplinary team focuses on the inter-dependencies between research and innovation, the economy, the society, the environment, policy-making and politics. The thematic priorities of the Unit include Climate Change Mitigation and Adaptation, Sustainable Blue Growth, Water-Food-Energy Nexus, Circular Economy, and Sustainable Finance.

SDU was selected as one of the EU Climate Pact Partners to advance climate action efforts across the EU.



# Space Programs Unit



The principal objective of the Space Programs Unit (SPU) is to foster participation of Greece in all aspects of membership in the European Space Agency (ESA) and assist the nation’s competitiveness in space engineering and science in the national, European and international domains.

The principal thrust of SPU is to marshal the high technology, entrepreneurial, and institutional resources available in Greece in pursuit of projects relating to space activities that have the potential of high payoff in the technical, defense, and commercial arenas. Emphasis is placed in promoting involvement of Greek industry in space programs.

# Environmental and Networking Technologies and Applications Unit



The Environmental and Networking Technologies and Applications Unit (ENTA) is dedicated to promoting fundamental and applied research in all aspects of contemporary environmental and networking problems.

The main thrust of ENTA is the research and the development of new modern technologies of environmental actions, networking facilities and AI that aim at societal prosperity and the management of natural and anthropogenic disasters. These research fields include the development of space networking protocols for inter-satellite communications, communications with the earth, and remote sensing. ENTA cooperates with the agricultural production sector for monitoring atmospheric pollution, the change in climate of the region, and assists with knowhow in determining the energy and carbon footprint of its exporting produce.

# Pharma –Informatics Unit



The Pharma Informatics Unit (PIU) is involved in all the computational work needed during the stages of discovery, development and application of pharmaceutical products into clinical practice.

Its scope is to carry out research related to computational and informatics aspects of all stages of drug development from discovery to clinical studies. In recent years, PIU has focused primarily in pharmacokinetics and pharmacodynamics of drugs, aiming to build in-silico drug trials that complement or replace clinical ones; rationalization of the mechanisms underlying new molecular entities for the discovery and targeted optimization of compounds as candidate drugs; computational models to predict physicochemical properties, or adverse biological effects of drug candidates.

# Women Innovation Unit



The Women Innovation Unit (WIU) promotes the issues of innovation and Entrepreneurship concerning women in Greece, supporting the strategies of the Greek innovation Lab for Women (#GIL4W) nationwide. The Unit was established by the Ministry of Labor and Social Affairs, and the Ministry of Development under the guidance of the General Secretariat for Research and Innovation.

WIU aims to promote gender equality and eliminate stereotypes by collaborating with the national and European innovation ecosystem, transferring high-tech knowledge to Greek society, particularly to women across all education and professional levels.

# Corallia Unit

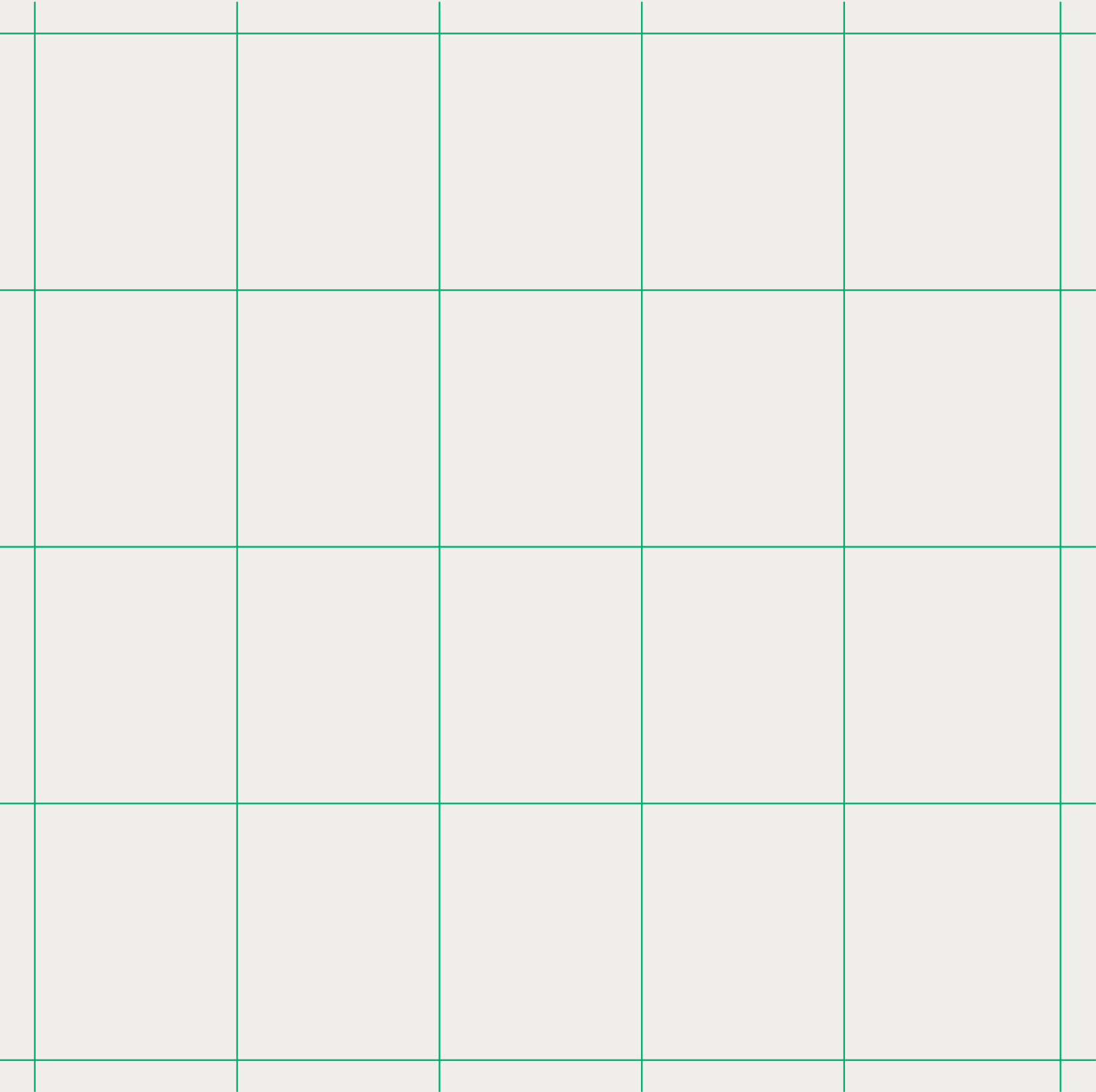


Corallia is an incubator, youth entrepreneurship accelerator, and multi-Cluster facilitator established in 2005. It has played a major role in the development of the Greek startup ecosystem. Corallia is one of the main pillars of the Greek innovation environment and a think-tank that underpins national development plans in Greece. To this date, Corallia has successfully established business-support structures, having worked with more than 500 innovative enterprises.

Furthermore, it has established three high-tech clusters, an attractive proposition for investors, who have so far pumped over €500m of private and foreign investment into the ecosystem. In the past few years, it has established an ESA Business Incubation Center, thus emphasizing support to companies in all aspects of space technology. Corallia is acknowledged as the best European Regional Development Fund project of Greece for the previous 15 years by the European Commission and DG Regional Development.

Corallia has led the Technology Cluster ecosystem in Greece since 2006. It has developed 3 major clusters, creating significant added value to their respective industrial sectors.

- › **gi-Cluster**  
Gaming and Creative Technologies and Applications
- › **mi-Cluster**  
Nano/Micro-electronics-based Systems and Applications
- › **si-Cluster**  
Space Technologies and Applications





# research & development

R&D is at the core of Athena. Creating new knowledge, ideas, methodologies, technologies, platforms and integrated solutions is what we do best! Computer Science and Digital Technologies cover a wide range of research and development areas, making significant contributions across all sectors of human activity.





# Technology Areas

The diverse work carried out at Athena falls into broad fields corresponding to technological advancements.

## What we do



# Artificial Intelligence

Athena performs both fundamental and applied research on AI with the twofold aim of (a) advancing the state of the art in various fields of AI, producing high quality research and open-source software; more specifically, our groups develop novel methods on Deep Learning, Distributed and Embedded AI, and LLM, (b) solving industrial problems by adapting AI methods to real world requirements, including, Medical Imaging, NLP and Speech Recognition, and Fintech while aiming at Fairness, and Explainability.



XMANAI places the power of Explainable AI at the service of manufacturing. It will help the manufacturing value chain to shift towards the AI era by coupling AI “glass box” models with complex asset management technologies.



IntelComp is a Competitive Intelligence Cloud/HPC Platform which offers services to public administrators and policy makers across Europe in the field of Science, Technology and Innovation policy.



CPSoSaware creates self-aware cyber-physical systems of systems that detect and respond to physical and cyber environment changes, helping to avoid information overload, and reduce management complexity in the automotive and manufacturing domains.



HumanE-AI-Net brings together top European RTOs, HEIs and key industrial champions into a network of excellence that develops robust, trustworthy AI systems capable of understanding and interacting with humans in complex social settings, while respecting human autonomy and self-determination.



PREMIERE develops and validates a comprehensive ecosystem of digital applications, powered by leading edge AI, XR and 3D technologies, to support the whole lifecycle of performing arts productions in a remote manner.



AutoFair envisions improving the AI algorithms towards fairness and accountability, while educating end-users on relevant risks. It draws on knowledge from computer and data sciences, control theory, optimization as well as ethics and law.

- › NeuIPS 2023 - Machine Unlearning,’ (powered by Google), International competition. Won by S. Karypidis and N. Komodakis. The algorithm belongs to the top 1% of all solutions proposed. [Archimedes]
- › 1st place in “ImageCLEFmed Caption”. AI international competition won by researchers at Archimedes and AUEB for the fifth consecutive year. Mentors: I. Androutopoulos and G. Moschovis. [Achimedes]

## AWARDS

# Data analytics and Information systems

Athena is highly active in the field of Data and Information Systems. Its efforts are particularly focused on the systems and infrastructures for Big Data processing and interactive analytics, including large-scale Machine Learning. The developed technologies address several key challenges, such as big data scale, heterogeneity, dynamic nature, and privacy. Significant effort is dedicated to distributed computing, including Cloud and edge computing as well as knowledge management, semantic web, and Data Mining. By leveraging the outcomes of this research, Athena supports both general-purpose digital Research Infrastructures and specialized thematic ones, with a focus on Open Science, Health and Biotechnology, and Digital Curation.



ExtremeXP introduces an experimentation-driven approach to data analytics, aiming to deliver accurate, precise, and trustworthy insights. It enhances decision-making across critical domains like crisis management, predictive maintenance, smart mobility, cybersecurity and situation awareness



INFORE addresses the challenges posed by huge datasets and paves the way for real-time, interactive extreme-scale analytics and forecasting. It facilitates early detection of undesired outcomes, optimizing resource utilization.



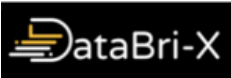
TRUSTEE develops a secure, trustworthy, and privacy-preserving computing platform that aggregates interdisciplinary data repositories across sectors such as healthcare, education, energy, space, and automotive.



STELAR designs and develops a Knowledge Lake Management System for turning raw data lakes into knowledge lakes providing intelligent data discovery, AI-ready data, and semantic interoperability, applied to smart agriculture and food safety.



SciLake Creates, interlinks, and maintains Scientific Knowledge Graphs (SKGs), enhancing knowledge discovery and research reproducibility in areas like neuroscience, cancer research, transport research, and energy research.



DataBri-X advances data-sharing ecosystems by developing tools and services that support the entire data lifecycle. The project focuses on enhancing data interoperability, discoverability, and integrity, facilitating the creation of trustworthy data spaces and platforms.

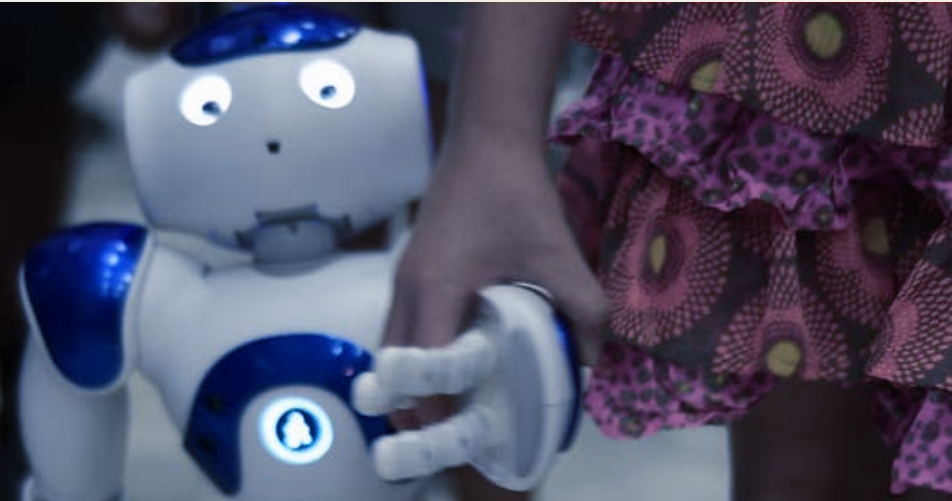
## AWARDS

- › IEEE MDM Test-of-Time (2008-2022) Award won by M. Terrovitis (IMSI) and N. Mamoulis (Archimedes) for the paper “Privacy Preservation in the Publication of Trajectories”, in Proc. IEEE MDM 2008.
- › ACM DOLAP 2023 Test-Of-Time Award won by A. Simitsis (IMSI) et al. for his work “Conceptual modeling for ETL processes”, in the 5th Int’l Workshop on Design, Optimization, Languages and Analytical Processing of Big Data (DOLAP 2002).
- › EDBT 2023 Test-Of-Time Award won by G. Koutrika (IMSI) for her work “HIL: A High-Level Scripting Language for Entity Integration”, in the 16th International Conference on Extending Database Technology (EDBT 2013).



# Robotics and Autonomous Systems

We envision a future where autonomous systems safely and effectively collaborate with humans, enhancing individual and societal well-being. Our work includes robot perception and interaction, connected robot-environment interactions, multimodal audio, speech, and language processing, addressing issues like explainable AI, and swarm intelligence. Our results yield a wide range of real-world applications supporting connected and (trusted) autonomous vehicles, precision agriculture, emergency response, and collaborative decision-making.



**PILLAR-Robots** develops algorithms to increase the autonomy and domain independence of robots during autonomous learning, leading them to acquire knowledge and skills for operating in real applications.



**SPLASH** The ‘Signal Processing for physical-Layer design of joint Sensing, communication, and control for aerial vehicles’ project offers advanced algorithms that integrate the functionalities of sensing, control, and communications modules in wireless networks’ physical-layer design.



**I-Walk** develops a new pioneering robotic system that provides a range of mobility and cognitive support functions for the elderly and motor-impaired people.



**AGRO4+** creates a complete, “intelligent” system of agricultural production based on the management of inputs in a field according to the real needs of cultivation.



**UFO** finances collaborative projects from European SMEs that develop products and services which combine Small Flying Objects, embedded nano and digital technologies, Key Enabling Technologies and data analysis.



**CAVSense** is targeting the feasibility to implement hybrid Simultaneous Localization and Mapping approaches in a given map of the environment, based on the output of a multitude of sensors installed in a car.

- › Best Paper for Novelty, PETRA-2023, won by M. Konstantinou, G. Retsinas and P. Maragos for “Enhancing Action Recognition in Vehicle Environments with Human Pose Information”, in Proc. International Conference on Pervasive Technologies Related to Assistive Environments. [IRO]

AWARD

# Speech and Image Processing, and Communications

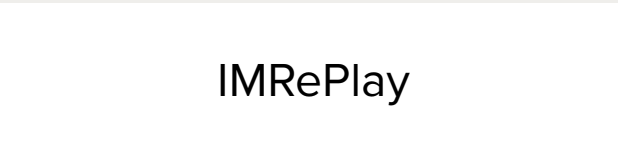
Our work covers advanced speech and language technologies, image processing, computer vision, XR/AR, and communications including IoT, and 5G/6G network management. Over the past two years, we have addressed real-world problems, such as enhancing speech and language methods, improving disaster management, advancing virtual laboratories using XR technologies, and improving industrial IoT applications in smart environments.



Plan-V is a state-of-the-art Speech and Language Therapy platform for both patients and Speech and Language Therapists, streamlining remote intervention, assessment and monitoring.



ESTIA enhances the management and preservation of the cultural heritage, limit the risks of fire incidents, provide training, coordination and support to authorities, protect inhabitants, suppress structural damages, and promote cultural events.



IMRePlay develops advanced signal processing and machine learning technologies for personalized music playlists and recommendations to enhance user entertainment and psychological well-being.



6G-BRICKS delivers a new 6G facility, that brings breakthrough cell-free and RIS technologies. Novel unified control paradigms based on Explainable AI and Machine Reasoning are explored.



ARGUS (Non-destructive, scalable, smart monitoring of remote cultural treasures) aims at advancing in the development of digital tools for the preventive preservation of effective remote monitoring of built heritage assets.



FIDAL advances Evolved 5G and paves the way for 6G technologies by conducting large-scale field trials. It develops open architectures deploying testbeds in Greece, Norway, and Spain to validate innovative applications and services.

- › BRONZE award at the DEI BITE Awards Innovation Competition in the category “Health”, won by Plan-V platform in 2023. (ILSP)

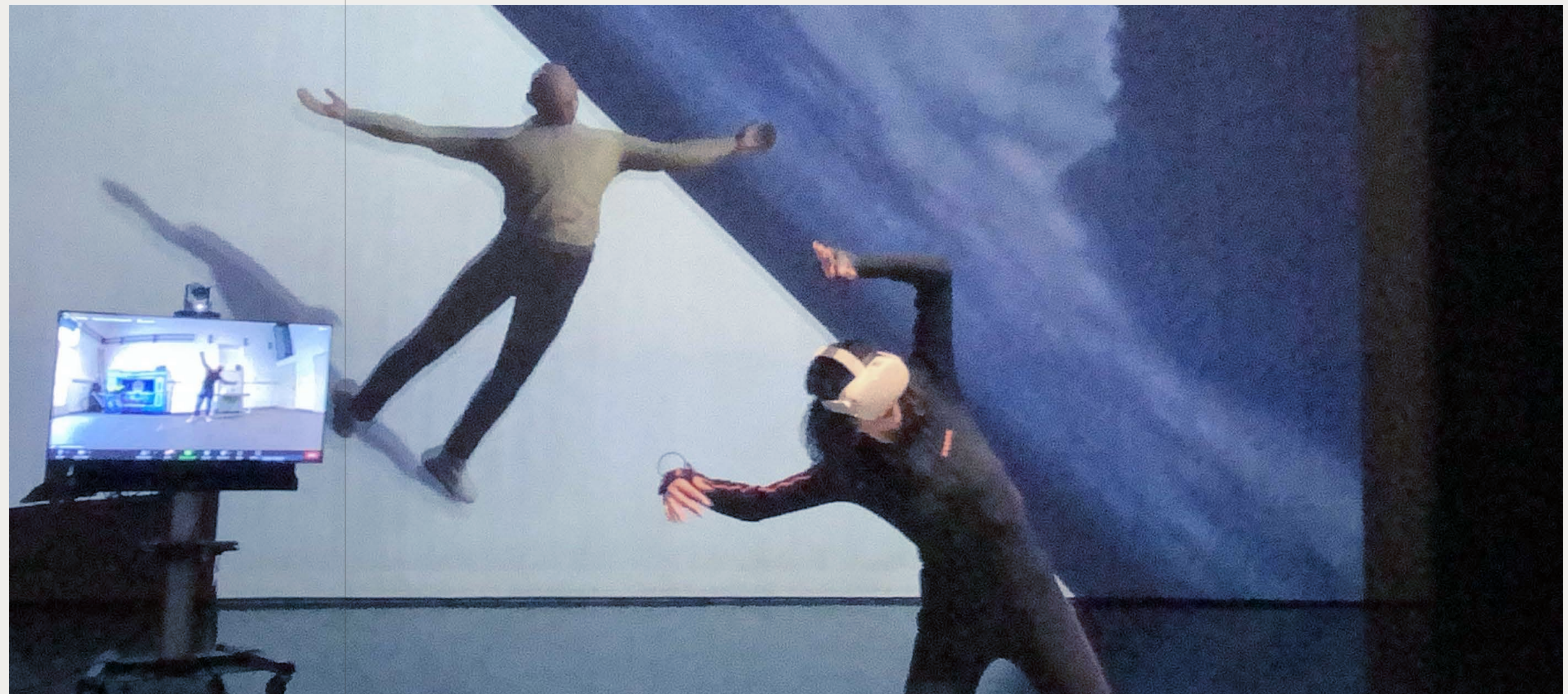
AWARD



# Application Areas

Our technology-application nexus keeps shifting and expanding every day. We are constantly adapting our work and priorities to emerging needs.

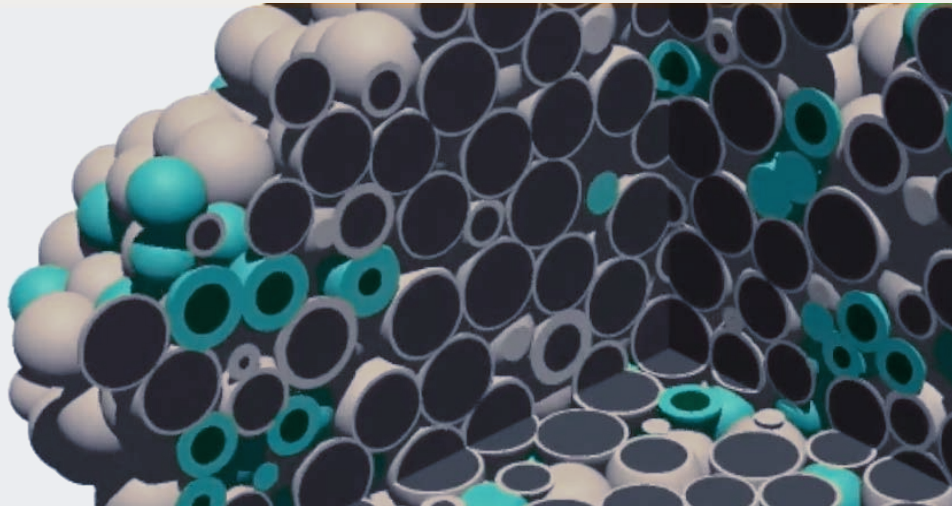
## How we create impact





# Digital Health and Life Sciences

As Life Sciences, Health, and Pharma become increasingly digital and data-driven, Athena offers valuable expertise to overcome emerging challenges in these areas, often also by participating in relevant RIs. Athena leverages cutting-edge technologies such as AI, ML, and federated learning across diverse domains - from cardiology and neuroscience to personalized elder care and inclusive diagnostics. Its expertise in privacy preservation strategies and technologies is crucial for enabling cloud-based analytics involving health data. This includes developing design and governance principles for health information systems, as well as data anonymization.



The [Human Brain Project](#) (HBP) was a ten-year FET project with a budget of €1B, gained an in-depth understanding of the complex structure and function of the human brain. HBP scientists employed highly advanced methods from computing, neuroinformatics, and AI.



[DataTools4Heart](#) improves the lifestyle of patients suffering from cardiovascular diseases. It develops a comprehensive, federated, privacy-preserving toolbox for data reuse in cardiology, to be used by researchers and hospitals across the world.



[CYMEDSEC](#) delivers novel security-by-design solutions for the oversight of 'Internet of Medical Things' (IoMT) devices, including connected in vitro diagnostics. It employs optimisation of guidelines, standards, and risk management.



[OSTEONET](#) personalizes therapies and enables better preventive care for the elderly. It develops reliable and sustainable in vitro 3D cell models of aged bone tissue alternative to animal tests which often fail to capture human-specific features.



[EDITH](#) capitalises on the developments of digital technologies, HPC, and access to healthcare data in Europe, with the mission of defining a roadmap to go from separated single organ systems, to data-driven and knowledge-driven multiscale and multiorgan whole-body twin.



[De-Sign](#) creates an online detection tool for dementia in deaf populations. The tool will result in the adaptation and weighting of the already existing BSL-CST protocol/tool in Austrian and Greek sign languages. The platform will be extensible in other languages.

## AWARDS

- › Honorary Award in the 8th Medical Tourism Symposium 2022, given to Athena for its digital applications and socially beneficial technologies that improve the lives of millions of people.
- › 1st place at the IFMBE Scientific Challenge 2022 won by G. Drosatos (ILSP), and P. Efraimidis (ILSP), for their paper “Predicting Early Dropouts of an Active and Healthy Ageing App”.
- › 1st place for N. Alimpertis, A. Tsekouras, and P. Macheras (PIU) at the conference Population Approach Group in Europe 2023 (La Coruña, Spain) for the study “The estimates for the absorption rate constant in pharmacokinetics and pharmacometrics are wrong: A new era based on the finite absorption time concept rises.”

# Language and Culture

Our work in this area spans a wide range of innovative projects aimed at preserving and promoting cultural heritage, enhancing educational experiences, and safeguarding the digital presence of the Greek language and its technological support in the AI era. Over the past two years, we have undertaken initiatives such as promoting Elefsina as the European Capital of Culture 2023, developing autonomous guided tours of underwater archaeological sites, in addition to solutions to augment the reception of music through innovative archives, and advancing the use of sign language in education.



European Language Grid (ELG) developed and deployed a scalable cloud platform which acts as a one-stop-shop for Language Technologies (LT). It provides, in an easy-to-integrate way, access to hundreds of commercial and non-commercial LT for all EU languages.



Through a multidisciplinary approach that combines technology and humanities, APTOS develops, standardizes and evaluates an innovative methodology that enables visually impaired persons appreciate and understand the cultural reserve through an interactive experience based on tactile sense and hearing.



A flagship project for the promotion of Elefsina (Eleusis) as the European Capital of Culture 2023, through a set of novel digital systems for enriching the visit in the archaeological site and the museum of Elefsina.



EASIER improves Deaf - hearing communication by developing technologies for the automatic translation of sign languages into spoken or written language and vice versa, supporting multiple signed and spoken languages in the EU.



Warmest optimizes maintenance procedures in cultural and natural heritage sites through the introduction of new technologies to collect data and new tools to analyse them, creating a novel Decision Support System.



European Language Equality (ELE and ELE2) supports the European Language Equality Programme, in the form of a strategic research, innovation and implementation agenda, and develops a roadmap for achieving full digital language equality in Europe by 2030.

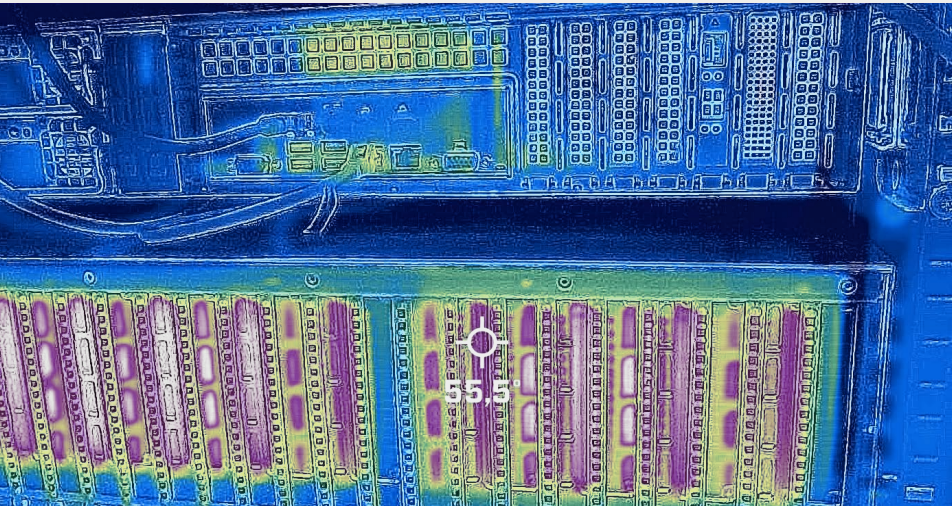
- › GOLD award at the DEI BITE Awards, in the category “Tourism/Culture” for myEleusis for the application of AR/VR technologies and the creation of a rich and comprehensive virtual visit experience to the archaeological site and museum of Eleusis. (ILSP)

## AWARDS



# Smart Manufacturing

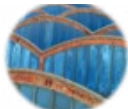
Athena offers comprehensive technological solutions and tools aligned with Industry 4.0, leveraging advanced technologies like AI, IoT, digital twins, and big data analytics to optimize processes, enhance efficiency, and enable sustainable operations. We integrate intelligent systems to monitor, control, and improve manufacturing in real time, ensuring adaptability and precision in sectors ranging from renewable energy, space and smart buildings, to biomanufacturing and agri-food.



**EnerMan** reduces the energy consumption of various components of manufacturing systems. It creates an energy sustainability management framework to predict energy trends using industrial processes, equipment and energy cost models.



**UNDERPIN** creates a Pan-European data space for holistic asset management in critical manufacturing industries, in the refinery and renewable energy domains.



**DEMONSTARTE** performs the full-scale testing of 3 air-frame section demonstrators, two metallic and a thermoplastic fuselage panel with an integrated stiffening structure, to demonstrate structural integrity, supported by advanced simulation correlated with experimental data.



**MORE** enhances the management and analysis of vast volumes of sensor data in the renewable energy sector, improving also forecasting, prediction, and diagnostics for RES.



**BIOINDUSTRY 4.0** advanced biomanufacturing processes by integrating cutting-edge technologies such as A, digital twins, and advanced process sensors.



**TempSens**: Development of innovative system of temperature RFID Sensors for the agri-food cold supply chain. Project aims to offer IoT architecture solution that will help agro-food and logistics companies to ensure the quality of the transported.

- › The digital innovation champion S3FOOD, won the European Cluster Partnership award (Corallia). The S3FOOD project has shown that smart sensor technologies and advanced data management can address critical challenges in small and medium-sized food processing companies.

## AWARDS

# Sustainable Development

Athena contributions to these fields encompass policy enhancement, technological innovation and educational initiatives. Our research emphasizes the integration of modern technologies in environmental conservation and sustainable practices, illustrating a strategic approach to addressing global challenges. Special focus is given on advancing agricultural practices through cutting-edge ICT technologies. This commitment reflects Athena’s expertise in explainable AI, remote sensing, and multispectral imaging.



DOORS links science, policy and industry with 35 institutions from the Black Sea region and other European countries addressing the human and climate change impacts on damaged ecosystems of the Black Sea. [SDU]



ARSINOE shapes the pathways to resilience by bringing together the Systems Innovation Approach (SIA) and the Climate Innovation Window (CIW) to build an ecosystem for climate change adaptation solutions



NEANIAS develops and integrates innovative services into the European Open Science Cloud (EOSC) to address challenges in atmospheric, underwater, and space research.



SEAWise provides a fully operational approach for European Ecosystem Based Fisheries Management based on persistent networks and co-designed innovation.



SUSTAINABLE develops and validates advanced edge AI systems serving as Decision Support Systems (DSS) for precision agriculture. It integrates real-time data analysis and machine learning, to enhance crop productivity and resource efficiency.



TRANS-Lighthouses understands the strengths and limitations in the design and implementation of nature-based solutions. It creates new governance models and aims to locally support nature-based projects and solutions.

- › MENA MARITIME ACCELERATOR was awarded at the Bravo Sustainability Dialogue & Awards 2023 in the ‘Collaborations’ Category, among 250 submissions. Its objective is to expedite the green transformation of the maritime and port industry by sustainable solutions.
- › GALATEA project won the WestMED Award in the “Sustainable Consumption and Production” category at the WestMED stakeholders’ conference, 2023. Its innovation support mechanism is designed to be replicated by other Mediterranean countries and their maritime clusters. [Corallia] GALATEA project won the WestMED Award in the “Sustainable Consumption and Production” category at the WestMED stakeholders’ conference, 2023. Its innovation support mechanism is designed to be replicated by other Mediterranean countries and their maritime clusters. [Corallia]

## AWARDS



# Research Infra- structures

Athena plays a leading role in European and National RIs, with 13 related projects active in 2022-23. In particular, Athena participates in 6 RIs from the ESFRI Roadmap, some of which are under the legal and operational framework of an ERIC (European Research Infrastructure Consortium). Key activities involve the design, implementation and maintenance of data infrastructures for RIs, addressing efficiency and scalability issues, and including techniques and systems for complex information flow processing tailored to heterogeneous computation and data storage environments. Athena has a strong focus on producing reliable, high-quality digital assets, facilitating their archiving and long-term maintenance.



**EBRAINS 2.0** RI Developed as a legacy of the Human Brain Project, EBRAINS 2.0 provides a digital infrastructure that accelerates collaborative brain research across the fields of neuroscience, brain health, and brain-related technologies, harnessing multimodal neuroscientific and clinical data, and digital twin technologies.



**CLARIN RI (ERIC)** is a digital infrastructure which provides access to a broad range of language data and tools to support research in the humanities and social sciences. In CLARIN ERIC, Athena leads the National Consortium (NC) of Greece.



**IBISBA RI** is the European RI dedicated to Industrial Biotechnology and Biomanufacturing. Athena is a member organization of IBISBA.



**ARIADNEplus** aimed at enhancing the integration and accessibility of archaeological research data across Europe, building upon the foundations of the original ARIADNE project.



**DARIAH-EU RI (ERIC)** enhances and supports digitally enabled research and teaching across the arts and humanities. It facilitates collaboration across disciplines, institutions, and borders to address complex questions in the humanities and cultural studies.



**INSPIRED RI** is a national RI focusing on Structural Biology. It integrates studies on bioactive macromolecule interactions and biomarker identification, offering services primarily in biology, diagnostics, and pharmacology.



**ELIXIR RI** coordinates, develops and enhances life science resources across Europe so that researchers can more easily find, analyse and share data, exchange expertise, and implement best practices.



**Europeana Cloud** created a robust cloud-based infrastructure for managing and storing metadata and digital content related to Europe's cultural heritage.



**StR-ESFRI** provides support to ESFRI in achieving its goals, increasing its operational capacity to monitor the EU RI landscape and implement the European Research Area (ERA)-related activities, including the upcoming ERA Policy Agenda, where RIs is one of its key actions.

# Open Science

Athena has a long tradition of supporting Open Science and the [European Open Science Cloud \(EOSC\)](#) by uniting Information Technologies, research support, and policy professionals to deliver core policies, training, and services for the transition towards a digital and democratised research in Europe.

Via [OpenAIRE](#), a key implementer of EOSC, Athena serves the Open Science mandate. OpenAIRE is a Partnership of 50 organizations to promote open scholarship and improves discoverability, accessibility, shareability, reusability, reproducibility, and monitoring of data-driven research results, globally. OpenAIRE operates a European e-infrastructure offering a set of public services.

Athena leads the Open Science community in Greece, in collaboration with academic libraries (HEAL-Link) and the Greek OpenAIRE NOAD (National Open Access Desk). Together with the Hellenic Data Service - HELIX, the Greek OpenAIRE NOAD assisted the establishment of the Hellenic Open Science Initiative. Athena has led efforts in developing key outputs, such as the shared proposal for a national Open Science Plan.



## Did you know?

OpenAIRE builds and maintains the largest Scholarly Communication Knowledge Graph across Europe to enhance discovery, measure the impact of research results, and build new services: <https://graph.openaire.eu/>. OpenAIRE has core tools to support Open Science compliance, such as ARGOS for Data Management Planning or FAIR Validator to assess outputs against the FAIR principles.



Moreover, Athena leads major Open Science and EOSC initiatives and projects:

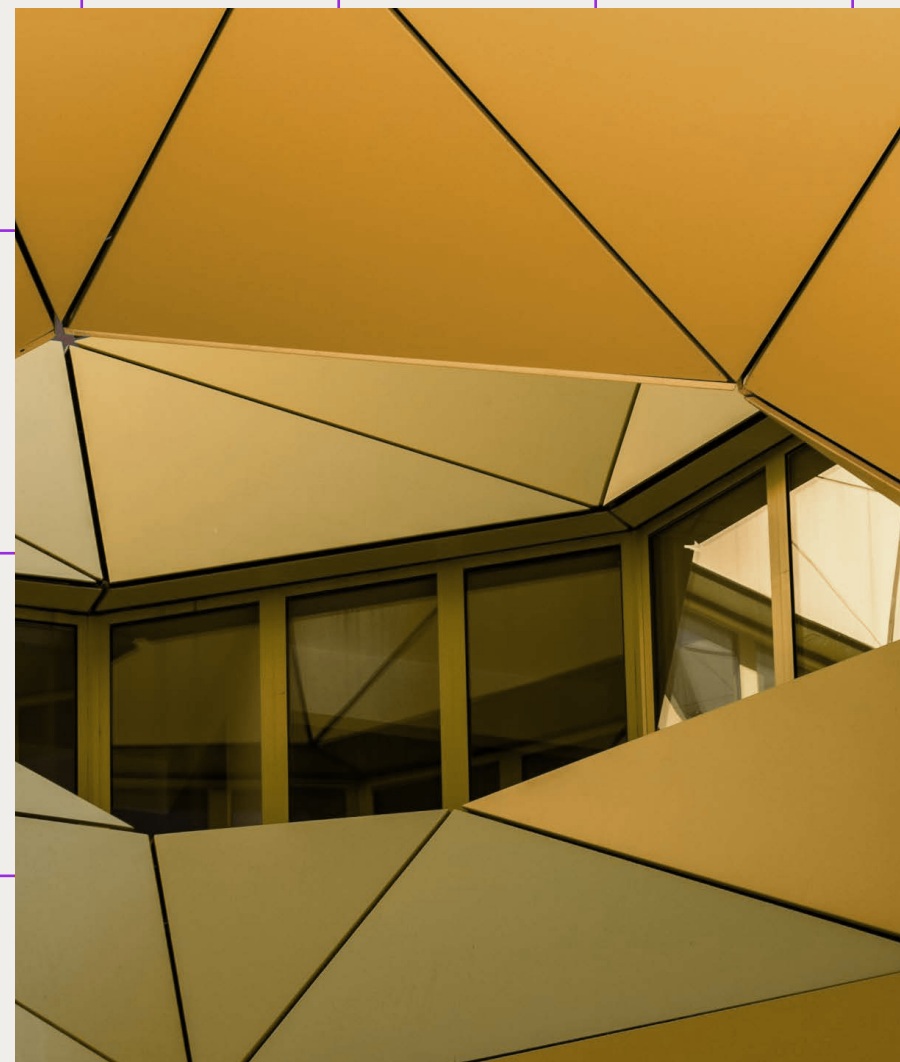
- › Athena has supported the [European Open Science Cloud](#) from its early stages, participating in various governance structures and projects, and by contributing to policy recommendations, infrastructure development and support for EOSC Executive Board Working Groups.
- › The Open Science Agora consortium, led by Athena, leads efforts towards the [EOSC EU Node](#), a platform that primarily supports multi-disciplinary multinational research, promoting the use of FAIR data and supplementary services in Europe and beyond.





# innovation

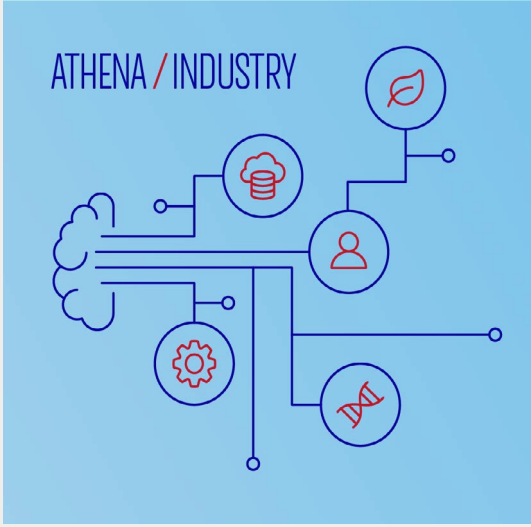
Athena's mission critically includes systematic activities to bring value to the output of its R&D activities. Innovation lies at the heart of how our Center views its quest to offer economic and social value driven by science and technology.





# Innovation is all about transformation and collaboration!

We provide both inward-focused support within the centre and outward-facing innovation services, contributing to the development of a competitive economy. The Technology Transfer and Intellectual Property (IP) Offices collaborate closely with motivated researchers, helping them leverage their knowledge, technologies and inventions, and create synergies with industry and acceleration platforms. Corallia, on the other hand, mainly focuses on fostering sustainable innovation ecosystems through the management of clusters, incubators, and entrepreneurship programs.



# Entrepreneurial Mode Activated!

- › Four active **spinoffs**, of which two were founded in 2022-2023.
- › One new European Patent filed.
- › Athena is a founding member of **Science Agora**, a Technology Transfer Hub aspiring to offer a one-stop-shop for innovation, teaming up with NCSR Demokritos, Athens U Economics and Business, National Technical U Athens, and Institute of Communication and Computer Systems.
- › Two teams supported by the Science Agora / Google PoC program. One of them, **FRESQO**, won the €30k PoC grant.
- › Internal PoC program helped two teams advance their work to TRL 7.
- › Five Athena teams work with KEMEL, the Greek Network of Volunteer Managers, to transform research outcomes to a sustainable business.



# Enabling Innovation

- › [Athena Industry Day](#), 1st December 2023. The day the business community connected with the researchers and research outcomes of Athena. Athena welcomed representatives from more than 20 companies from various sectors at Impact Hub Athens. The event included flash talks from researchers and industry representatives, and extensive networking with prescheduled 1-to-1 meetings.
- › Meeting the Market: [Thessaloniki International Trade Fair](#), September 2023. Interaction with several industrial, policy making and civil society agents.
- › 2nd Signal Processing Society Entrepreneurship Forum at [ICASSP 2023](#): Signal processing entrepreneurs and researchers shared entrepreneurship journeys and discussed challenges in translating research into commercial applications.
- › June 2023: [The STARTAB Entrepreneurship Programme](#) was delivered by Corallia through a grant by Prince’s Trust International. Participants, through a specialized Entrepreneurship Course, gain hands-on experience in starting and running a business.
- › [Corallia Space Investors’ Day](#), held in the framework of Tech Tour SouthEast 2023: 200 participants, including European investors, business partners, and experts, came together to engage with high-potential and investment-ready Space Tech companies.

ATHENA / INDUSTRY DAY

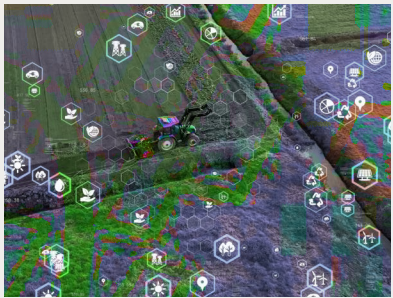
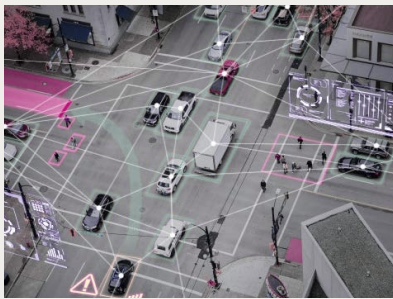


STARTAB

Corallia Space Investors' Day

# Technology transfer pathways

- › For [Amnesia](#), dedicated to data anonymisation, techno-economic reports, an initial business plan and technology valuation, were developed in collaboration with E&Y.
- › Feasibility study of re-localization techniques on a PoC level was carried out in [Panasonic Automotive \(PASSEU\) Autonomous Vehicle](#).
- › Our technology for improving the Detect-and-Avoid functionality in Autonomous aerial Vehicles, received €10k for PoC [FIRA-DAV](#), and coaching support.
- › [UnPark](#), a platform for the support of patients with Parkinson’s disease, received a €10k grant for PoC and coaching services.
- › [Carbonfoot technology for measuring the carbon footprint](#), received PoC services supported by Google, through Science Agora open competition.
- › [APTOS](#), which allows visually impaired and blind people to experience content by tactilely exploring 3D printed objects, filed its first European patent.





# Innovation Acceleration

Athena is playing a transformative role in supporting SMEs and startups through its dynamic hubs and accelerators. With a commitment to fostering technological advancement, Athena empowers emerging businesses across diverse sectors - from space technologies to green innovation - by providing them with essential resources such as training, mentoring, and access to funding.



**INNORBIT:** Promotes startups in space technologies through hackathons, acceleration programs, and incubation



**METASTARS:** Supports European SMEs in the aerospace and defense sectors by funding the development of Green Technology Innovation Services



**SURE5.0:** aids SMEs in transitioning to Industry 5.0 in the Mobility, Transport and Automotive, Aerospace and Defence, and Electronics sectors by enhancing sustainability and resilience.



**S3FOOD:** launched two Open Calls for Vouchers, supporting 58 projects with €2.8m, involving 75 SMEs from 8 countries to implement digital solutions in the food processing.



**UFO:** helps European SMEs develop products and services using Small Flying Objects and related technologies across six emerging industries.



**Greek CUBESATS I-Orbit Validation** promotes Greek SMEs and academia entities' opportunity to design, build, test, launch and operate up to 12 CubeSats, using as far as possible Hellenic Aerospace Industries facilities for assembly, integration and testing the CubeSats.



**MENA Maritime Accelerator:** accelerates the green transformation of the maritime industry, connecting ports with startups globally to promote Climate Neutrality and Resilience.



**BRIGAIID Connect Association:** BRIGAIID Connect Association is a research-driven incubator converting climate adaptation ideas into solutions, supporting over 120 innovations and providing technical and market readiness assessments.



**Black Sea Accelerator** scales sustainable Blue Economy businesses in the Black Sea from TRL 4 and beyond by enhancing market analysis and offering matchmaking with investors.



**EIT Climate-KIC Hub's** Greek chapter is managed by Athena and contributes to the advancement of climate adaptation and mitigation. It enables the innovation performance of Southern and Central Eastern Europe by strengthening the capacity of their innovation enablers.



**GALATEA** aims at promoting cross-border and cross-sectoral collaborations between SMEs in Blue Growth, for business acceleration. It supported 23 innovative projects with €2.5m involving 42 SMEs from 5 countries and provided 49 coaching services to 30 SMEs.

# Spinoffs

Athena and its researchers operate with a strong entrepreneurial spirit, which has led to the creation of more than 10 spinoff companies over the years, including Innoetics that was acquired by Samsung in 2019. During 2022-2023, four Athena spinoff companies were especially active.



**SYMBIOLABS** provides innovative services and digital applications to support industries and policy makers in their transition to the Circular Economy.

It introduces the concept of Circular Intelligence, applying Business Intelligence and Big Data technologies to offer services like intelligent decision support for waste management and valorisation, digital tools for Industrial Symbiosis, data reports for industry's environmental footprint, and optimization tools to manage raw materials, waste and by-products.



**AVISENSE** establishes collaborative, efficient, and AI-empowered intelligence within dynamic groups of connected and automated vehicles emphasizing efficiency in both data and energy consumption.

It employs cooperative, active, transfer, and federated machine learning paradigms as well as explainability, model compression, and acceleration techniques in order to ensure the optimal performance on diverse learning methods, while AI transparency ensures its systems operate at their best.



**OPIX** provides state-of the-art consulting services plus in-house big data, knowledge management, deep learning, and AI solutions so as to assist organizations in taking the right decisions fast and reliably.

Additionally, Opix's data-driven solutions combine data analytics, policy, economic, and social knowledge, which are being applied to a wide range of sectors.



**Agora Labs** aims to create a new real-time health data ecosystem where high-quality data is accessible and seamlessly interconnected to fuel faster and safer innovation.

Its vision is a world where healthcare systems are transformed, and patients experience groundbreaking advancements in care. Agora Labs solves privacy so that researchers and engineers can deliver products built on real-world evidence, keeping the data under the full and exclusive control of the clinical center.

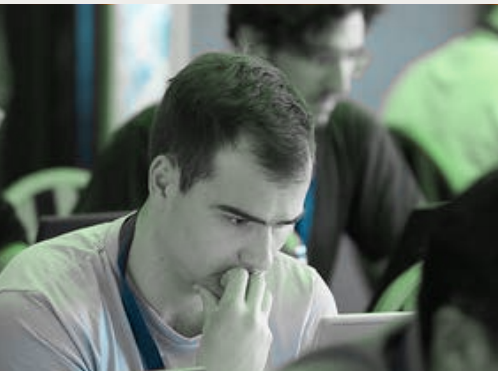
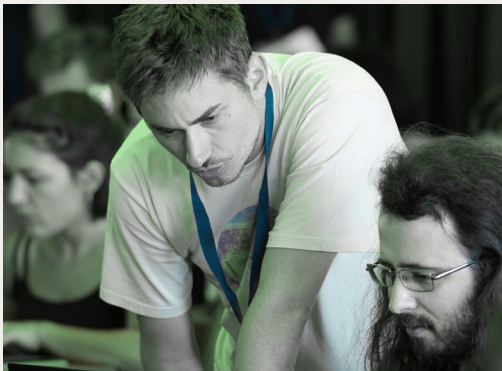


# education

Education drives our mission, fostering talent through advanced programs, research mentorship and continuous learning opportunities.



Education is at the core of Athena’s activities. From co-organizing post-graduate studies programs to co-supervising PhD theses, up to providing students the chance to work on real-life projects, Athena is a lively educational hub, attracting high numbers of both aspiring scientists at all levels of their career and mature professionals looking for training, upskilling and knowledge exchange.



4 post-graduate programs

75 PhD and >30 MSc students

11 Summer Schools

10 Educational Hackathons

20 Webinars

>400 pupils

Post-graduate programs

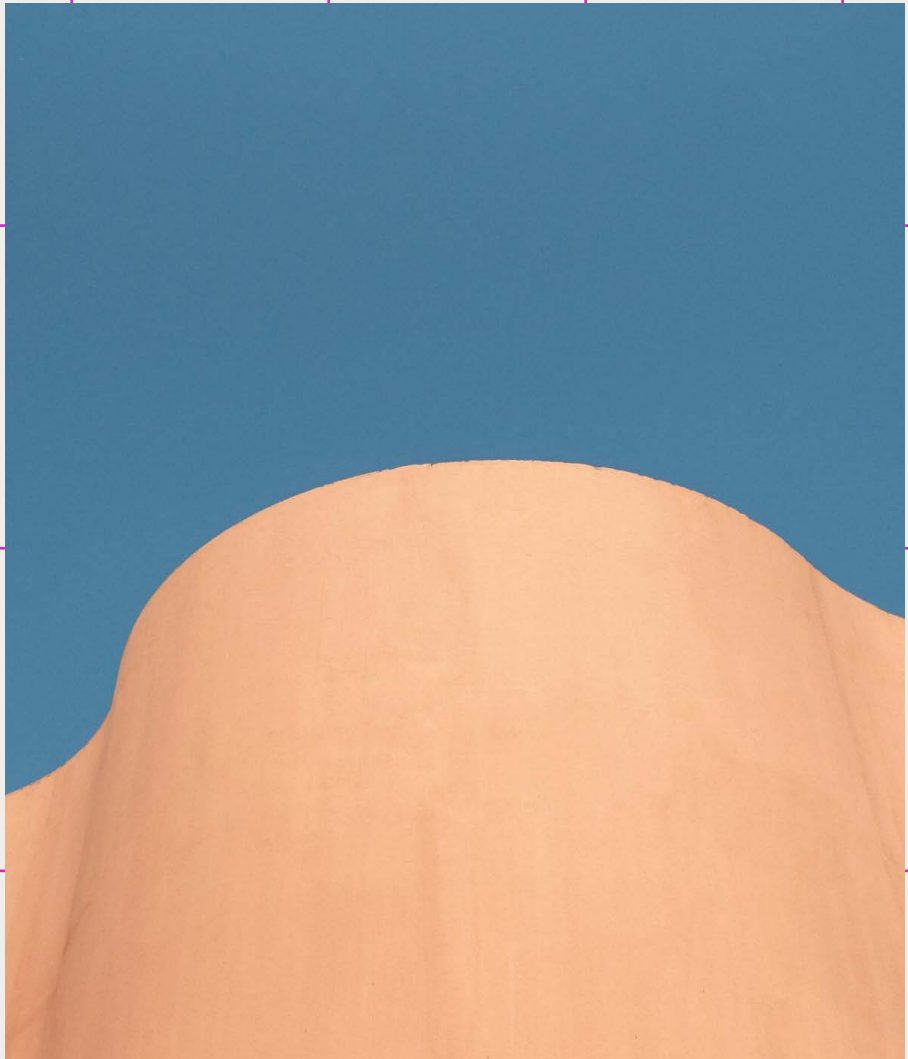
- › Data Science and Information Technologies - National and Kapodistrian University of Athens (NKUA), Biomedical Research Foundation of the Academy of Athens (BRFAA)
- › Biomedical Informatics - Democritus University of Thrace (DUTH)
- › Language Technology - National and Kapodistrian University of Athens, (NKUA)
- › Quality Journalism and New Technologies Krems University (Astria)





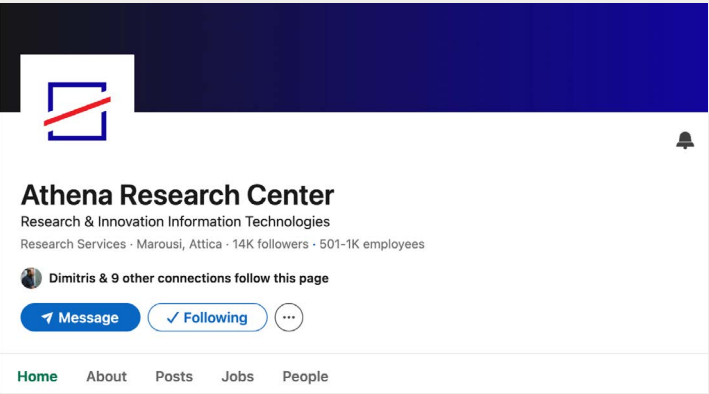
# outreach & collaborations

Creating awareness and expanding impact.





Athena employs a multi-layered outreach strategy to effectively communicate its activities, achievements, and advancements to audiences both within Greece and internationally. At the core of this strategy is a comprehensive set of dissemination tools, including Athena’s website, social media platforms, and various below-the-line initiatives such as meetings, events, webinars, etc.



# Communication

15,000+ followers on LinkedIn

6,000+ followers on Facebook

1,800+ followers on X

450 posts across Social Media channels

>1 million impressions in LinkedIn

4.000 Newsletter subscribers

Press, broadcasts, web and beyond

- › Timos Sellis talks to Markos Veremis for “Innovative Greeks”.
- › Eleni Petra talks to Epixeiro.gr about a smart way to measure the carbon footprint of our daily habits.
- › Elli Papadopoulou talked to GEANT Magazine “Connect” on Open Science.
- › Ioannis Emiris, speaks to Insider about “The foundations for innovation in digital technologies.
- › Vassilis Katsouros with a full-page in Kathimerini.
- › AVISENSE team discusses the Greek contribution to autonomous mobility for Kathimerini.
- › Nasos Katsamanis, introduces himself to Marianna Lee, journalist, and discusses his research interests, namely, AI and human-machine interaction.
- › Ioannis Emiris, our President, and Yannis Ioannidis, former Athena President, discuss Open Science in ERT News at the occasion of a Meeting with European Open Science Cloud in Greece.

Media Footprint



Athena keeps a very active schedule of scientific, educational, networking, commercial and outreach events. These events vary in scope and scale and are either in-person or online or even hybrid, in Greece and abroad.



# Events

More than 160 events

>40 project kick-offs

25 conferences

>35 webinars

>10 Exhibitions

>10 summer/winter schools

>15 Fairs/Festivals

>30 infodays

in >20 countries

>50.000 people participated/engaged



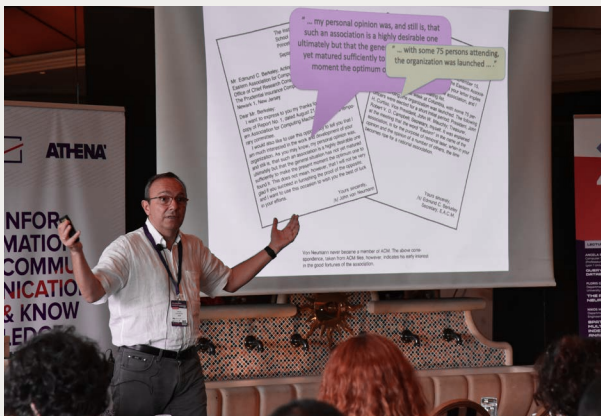
Athens Science Festival 2023  
10-12 October 2023, Technopolis

Visitors met our researchers who introduced them their most impressive achievements and cutting-edge technological developments.



ACM Summer School 2023  
10-14 July 2023, Royal Olympic Hotel

The 4th ACM Europe Summer School on Data Science, hosting 60 students from all over the world, focused on Data Management, Deep Learning and Big Data Processing.



EOSC National Tripartite Event  
6 October 2022, Innovathens

Co-organized by Athena and GRNET, the event launched a debate regarding Greece's participation in the European Open Science Cloud, the importance and adoption of a national policy for Open Science and the role of Research Infrastructures.



Thessaloniki International Fair  
10-18 September 2022, HELEXPO

Athena maintains a regular participation at the Thessaloniki International Fair aiming to inform potential partners and the public on our research activities and innovative industrial applications.



R2R Meetup  
3-4 May 2023, Xylokastro – Sikyon hotel

We organized the first scientific Summit for the research community of Athena, articulated around a mix of keynote talks, technical discussions, poster and demo presentations, covering all scientific and technological areas encountered in our work. It included sessions on innovation, outreach policies, and strategic choices for the future.



EIT Climate KIC Climathons

A two-day ideathon aimed at attracting and raising awareness about issues related to climate change. It is one of the initiatives of EIT Climate-KIC, supported by EIT and implemented by SDU. From 2019 to 2023, it has been organized in more than 14 cities across Greece.



DARIAH Annual Conference 2022/  
STORYTELLING  
May – June 2022, Evgenides Foundation

The DARIAH Research Infrastructure Annual Event emphasized the powerful role of storytelling in the arts and humanities.



BEYOND Expo 2022  
September – October 2022, Thessaloniki

Research achievements related to Industry 4.0, cyber-physical systems, autonomous interactive systems, system security and cyber security, as well as research perspectives on 6G technologies were presented.





Athena’s collaboration efforts include joint research projects funded through competitive grants, service provision and joint R&D initiatives, scholarships for fellows and short secondments, and sharing resources to tackle bigger challenges.

Additionally, Athena participates in various networks to strengthen connections with key research, innovation, and policy communities. These partnerships not only boost visibility but also allow Athena to contribute to addressing important societal challenges in areas of mutual interest.

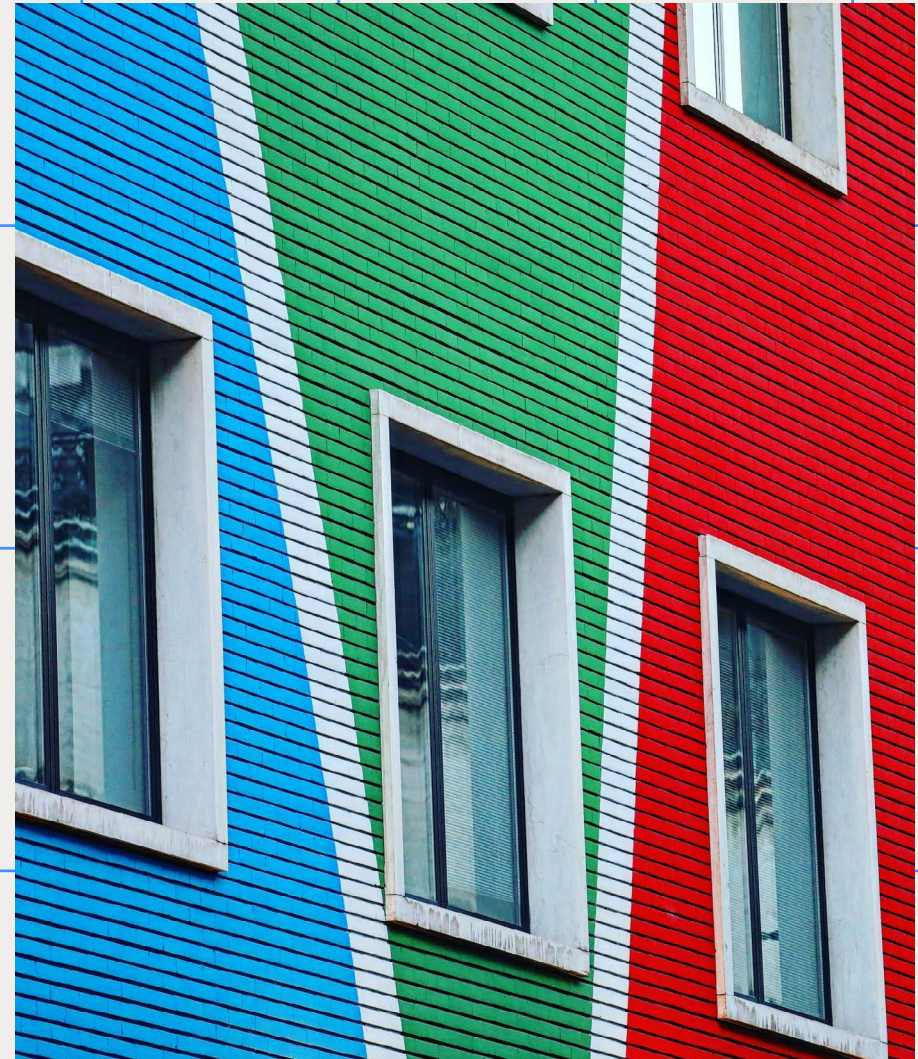
# Partners and Networks





# diversity & inclusion

Athena is fostering an international, diverse, and inclusive working environment through the implementation of its Gender Equality Plan supported by the Gender Equality Board, established in March 2021, as well as the Women Innovation Unit.





The Centre has taken significant steps to strategically integrate the gender dimension into its procedures and practices, through the implementation of its Gender Equality Plan. Equality is promoted and encouraged through various initiatives, including participation in women’s networks, support for female entrepreneurship, and addressing gender biases in computer science and engineering.

Conferences, Workshops, Training and Research

- › On International Women’s Day 2022, the “Break the Bias in Science and Technology” conference was organised by the Gender Equality Board and the Innovation Unit for Women.
- › Voices Training School, July 2023, “Breaking the Bias”: 50 young researchers learned about the importance of including gender and an intersectional approach in STEM research and received tools on how to do it.
- › On International Women’s Day 2023, the #IAmRemarkable workshop organized through Google’s global initiative, aimed at empowering working women.
- › June 2023: “Inclusion and Diversity in Engineering”, ICASSP, Rhodes. Participation with a keynote speaker in the distinguished PROGRESS workshop for Promoting Diversity in Signal Processing and STEM.

More general activities for international diversity include relationships with countries beyond Europe and North America, namely representing Africa, the Middle East, and Far East. We report visits by her Excellency the Ambassador of Nigeria and a Deputy Director of Pan-Atlantic University, Nigeria, academics from Tunisia and Lebanon coordinating an international MSc program, and a delegation of the Chinese embassy, the latter being followed up by invited visits of our researchers to China.

Networks



- › 1st place at ETHICAI=LABS Hackathon
- Vivian Stamou’s team, won first place at the Hackathon organized by the Goethe Institute in Sofia as part of the ETHICAI=LABS program. The 5-member team from Greece, Croatia, and Bulgaria, received funding to develop their idea on “Gender Biases in AI”.

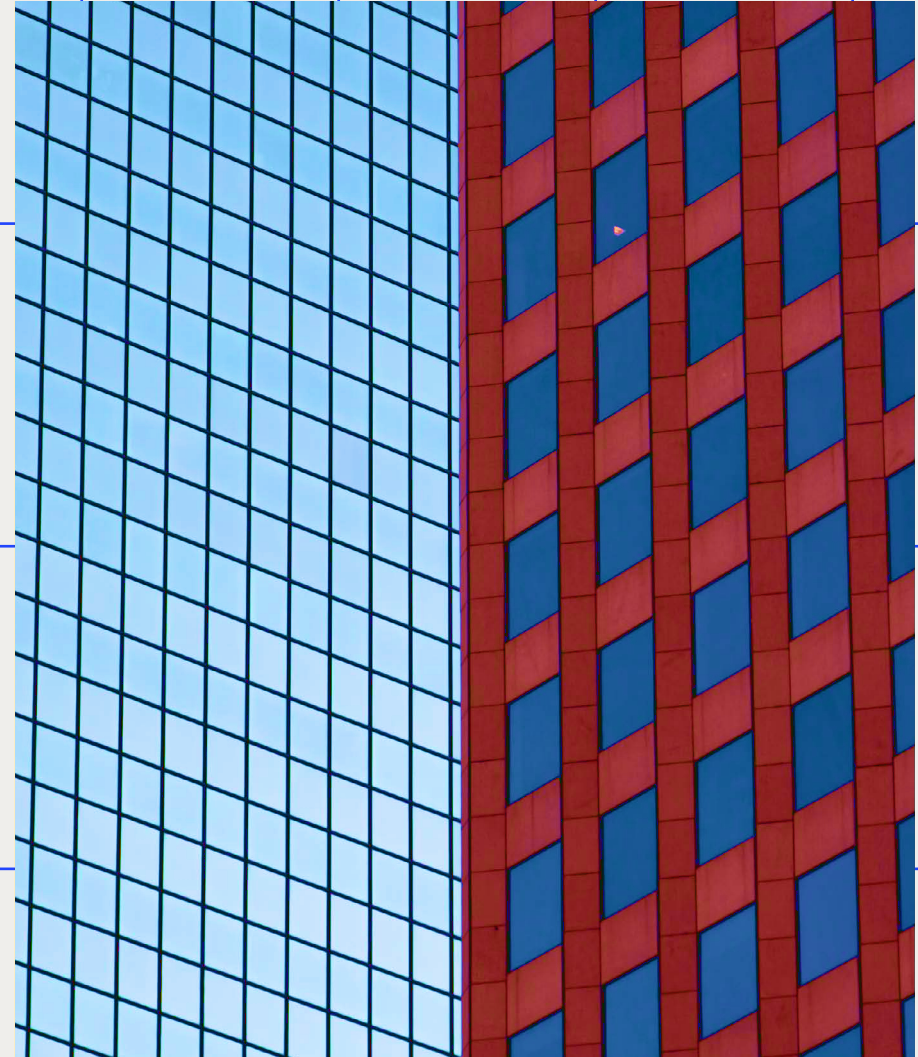


AWARD



# strategic outlook

Managing growth to safeguard scientific  
excellence, strengthen innovation and  
enhance talent and collaborations.



## Cross-disciplinary research excellence

Athena shares the human-centric approach of the EU on developing digital technologies that work for citizens. We wish to strengthen basic research since we believe that it provides sound foundations for applied breakthroughs as well as innovation. We aim to intensify the cross-disciplinary nature of our work by strengthening synergies within the Center and by expanding thematically, while fostering collaborations with research teams from the academic and the industrial sectors, nationally and internationally, and by connecting more actively with European Facilities.

## Talent attraction and retainment

Athena wishes to attract and retain high quality national and international talent both for research and for administration positions. For this, we offer a framework of research excellence with strong support services, and a modern, balanced work environment. We develop repatriation support measures, Postdoc fellowship schemes, and PhD/MSc joint programs with esteemed national and international universities. This is tightly knit to our international outreach that aspires to enlarge today’s global presence and establish Athena as an international research hub.

## Quality of working environment, ensuring equality and diversity

For the past few years, we witnessed steady and significant growth which needs to be managed for Athena to continue offering excellent support to research while maintaining a positive work environment where all employees feel valued and engaged. We plan to establish more regular employee feedback mechanisms and a more comprehensive internal evaluation process, to allow us to address any concerns or challenges. Lastly, we plan to integrate more inclusive procedures in our strategic agenda, ensuring diversity and equality, and we are working towards balancing male / female staff ratio.

## Innovation culture

Innovation actions run by Athena take different forms, ranging from commercialising results through licensing, to participation in a company, up to spinoff creation. Our goal is to maintain the current pace of spinoff creation while continuing to support the existing ones. This requires building and expanding the innovation support instruments that already exist. At the same time, we aim to consolidate joint undertakings with industry, including industrial doctorates and joint labs, and to create strategic industrial partnerships prioritising high-readiness sectors.

## Investment in people and infrastructure

Athena will further strengthen and diversify its revenue streams. We plan to put more emphasis on large lighthouse and flagship projects, while partnerships with industry are definitely a direction allowing growth. Financial resilience shall allow Athena to adequately support non-permanent staff, which constitutes the large majority of employees. Athena’s major concern today refers to the lack of appropriate building infrastructure. We expect this issue to be settled through the current RRF-funded infrastructures project.

# Inventing the future



