

2020 & 2021  
ANNUAL REPORT

NATIONAL DOCUMENTATION CENTRE







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2020 & 2021

ANNUAL REPORT

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# NATIONAL DOCUMENTATION CENTRE

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2020 & 2021  
ANNUAL REPORT



*For most of 2020 & 2021, the activities of the National Documentation Centre (EKT) were carried out under the unprecedented conditions created due to the emergence of the COVID-19 pandemic and the forced increase in the use of digital technologies in our internal operation and in the provision of services.*

*In the broader context, this two-year period proved to be a catalyst for the advancement of digital transformation in Research, Development and Innovation activities, areas which are also included in our sphere of activity, and had wider implications for the design and implementation of our major development projects.*

*At EKT, an organisation with institutional memory and history, we know and understand the numerous dimensions, opportunities and difficulties involved in the continuous process of digital transformation of organisations and businesses. EKT's own digital transformation has taken centre stage and contributed to the ongoing work of digital documentation and curation of the digital content and metadata we gather from the extensive network of science and culture stakeholders, with our main goals being dissemination of knowledge, access to scientific knowledge for all citizens and its further exploitation.*

*At the same time, as a National Authority of the Hellenic Statistical System and a policy documentation research organisation, we have designed and implemented actions for the effective governance of public data that we both collect as primary data and draw from other public authorities in order to strengthen our strategic objective of providing policy makers with evidence and data for the planning and evaluation of the policies that fall within our institutional role.*

*With a critical institutional role, a high level of expertise, personnel with appropriate skills and technologically sound infrastructures, we implement a wide range of activities in order to respond to the needs of the academic and research communities, educators, scientific and cultural bodies, policy makers, businesses and organisations in both the public and private sectors.*

*This Annual Report describes in detail all of our services and actions in our three pillars of activity; the new challenges and perspectives that appeared during the reporting period and the development goals we have set for the next programming period.*

*We hope that this Annual Report sufficiently captures our overall activity and fully informs you about our services, actions, and effectiveness. Moreover, we look forward to your response through our ever-open channels of communication*

*Evi Sachini, Director of EKT*

*Argyris Peroulakis, Chairman of EKT's Board of Directors*

# KNOWLEDGE & DATA TO STRENGTHEN INNOVATION, DIGITAL ECONOMY, SOCIETY

*At EKT, we place the dissemination of knowledge and the provision of authoritative data at the centre of decision-making processes for policy makers, the research and academic communities, the business community and public authorities.*

*Evi Sachini | EKT Director*

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At the National Documentation Centre (EKT), we promote knowledge, research, innovation and digital transformation through services, activities and projects aimed at ensuring the availability of appropriate data for those in charge, in timely fashion and in an appropriate form for use in upcoming decisions that require authoritative evidence.

At EKT, we systematically collect a huge volume of statistical and empirical data on Research, Development and Innovation, process them within the legal and regulatory framework and make them available to policy makers, the research and academic communities, the business community and the wider public. Our general objective is to support the exercise of policy and its evaluation in order to align the country with the wider European policies and strategies.

Digital transformation is at the heart of our activities as we measure and capture the Greek research, technology, development and innovation system,

the country's digital capability and the quality and depth of the changes taking place. A further priority is the promotion of the scientific knowledge produced in Greece, the support of young leading researchers and the systematic recording of the highly specialised scientific personnel, including its mobility, its special characteristics and its skills.

We continue to systematically support the innovation and digital transformation of businesses and organisations operating in critical sectors such as Digital Technologies, Healthcare, Shipping, Tourism, Culture and the Circular Economy with networking, transport, technology and advisory guidance. Taking advantage of the international network and the significant capabilities of the Enterprise Europe Network, with a modern toolbox for digital innovation and appropriate diagnostic tools and the exploitation of big data, we provide specialised digital innovation management services. Additionally important is our contribution, as the National Contact Point for Horizon Europe, to the strengthening of research and innovation,

to the successful participation of Greek institutions in this as well as to the orientation of Greek researchers in the digital economy.

As it is an organisation of the wider public sector, EKT has not only accumulated experience and expertise in the collection, aggregation, organisation, documentation and dissemination both within and outside the country, but also in the digital preservation of scientific, technological and cultural information. Thus, the governance of public data is a central process for introducing innovation and 'aligning' the public sector with the modern needs of society.

We act systematically to improve access to the knowledge stock of science and culture as we have a huge volume of important scientific and cultural data as Open (Linked) Data organised and made available based on International Interoperability Standards.

With high-level information collection, aggregation, organisation and documentation services, we implement processes (collection, migration, cleaning, standardisation, semantic annotation, storage, disposal) of data in modern technological infrastructures for the aggregation of cultural and scientific content. In collaboration with reputable institutions, we create a 'digital public space', open and accessible to all, for the development of a single digital cultural experience. We bring together aspects of cultural heritage and contemporary culture - tangible and intangible -, archives and collections from major institutions, providing immediate and efficient access to hundreds of thousands of digital records.

In co-operation with reputable institutions, we are creating a 'digital public space', open and accessible to all, for the development of a single digital cultural experience. We are connecting the pieces from cultural heritage, contemporary culture - tangible and intangible, archives and collections from major institutions, providing direct and effective access to

hundreds of thousands of digital documents.

At EKT, we work for the access of all citizens to scientific knowledge by contributing to the digitisation of science and research and the dissemination of scientific knowledge and research results. We promote the principles of Open Access by supporting initiatives and institutions working in Science Communication. We participate in the international dialogue conducted within the framework of the Organisation for Economic Co-operation and Development (OECD) and the European Union (EU) on issues related to Open Data, research infrastructures, digital transformation.

## Digital services

It is a fact that in the era of digital transformation, not only the technological means change, but also the processes of each organisation. Services that were provided on a small scale and individual communities of users are now being systematised and developed with a digital framework and development perspective by EKT personnel in collaboration with contractors selected through competitive processes. With the modernisation of technological infrastructures and personnel selected on merit in order to have the appropriate skills, at EKT, we implement a wide range of projects in order to respond to the needs of the academic and research communities, educators, scientific and cultural bodies, policy-making bodies, businesses and organisations in both the public and private sectors.

In the two years 2020 - 2021, we used our digital capabilities in order to improve information for the users, communities and key players of the innovation system, to present them with funding opportunities, to support their networking at national and international level and to offer them the appropriate research tools to assess innovation

potential. The webinars we organised attracted the interest of thousands of people. This is the thinking behind the new platform of the 'Knowledge and Partnership Bridges' initiative, which primarily serves the networking of the country's specialised scientific personnel and their interconnection with the Greeks of the diaspora. In 2022, we are implementing an ambitious plan to develop large-scale digital services to support entrepreneurship with a focus on innovation and digital transformation.

## Human resources: EKT's comparative advantage

The efficiency and productivity noted in our three pillars of activities, namely the production of statistics, the digitisation of science and culture as well as innovation, depends on the quality of human resources, developed digital skills and acquired know-how. EKT, with the large development and research projects it implements, contributes not only to the creation of highly specialised jobs but also to the development of skills that are a legacy for the country's future development.

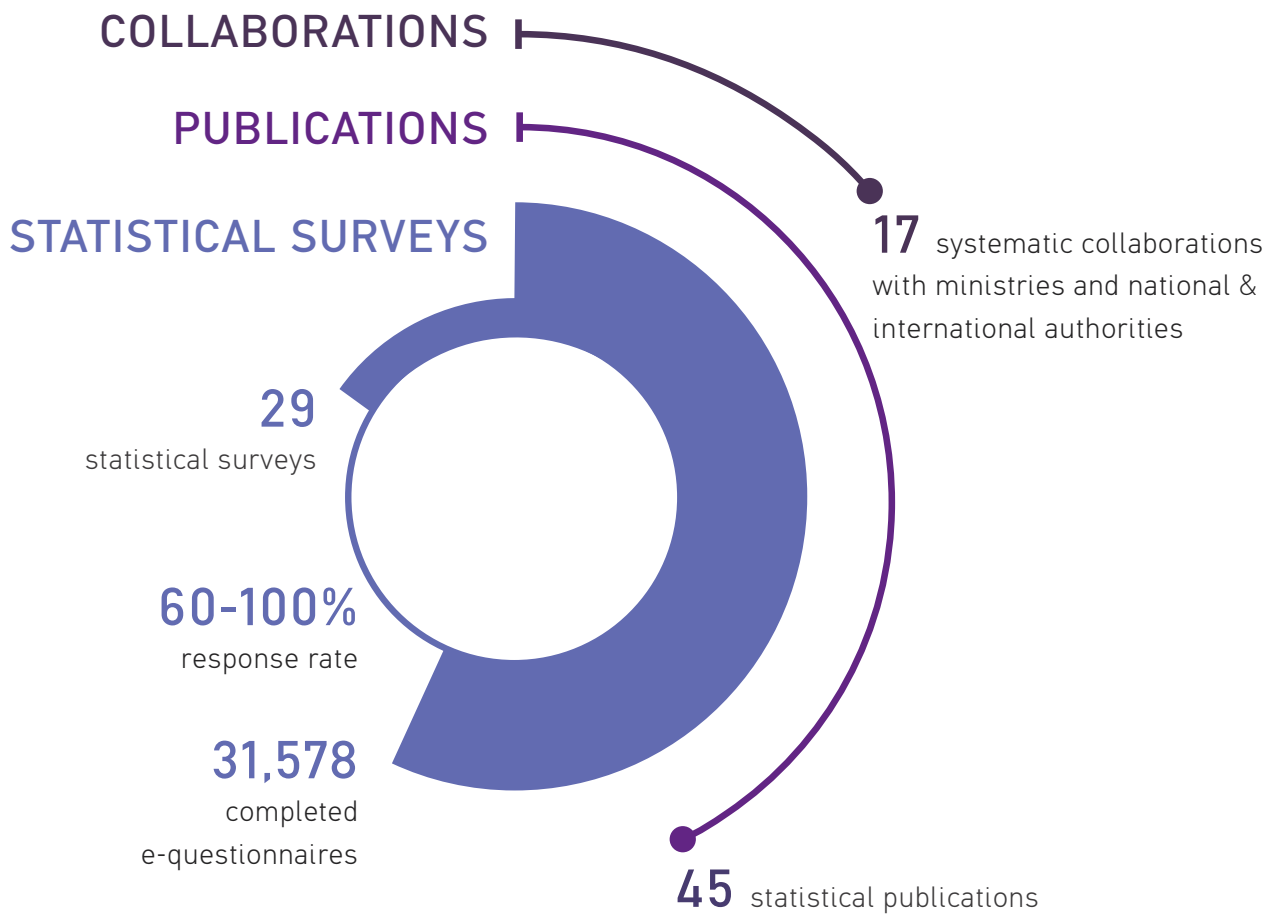
Today, our human resources include - among other personnel - data analysts, policy analysts, statistical analysts and statistical documenters, all of whom work continuously to collect, analyse and process data, present an interpretation of the results, draw conclusions and disseminate these data or the metadata of scientific and cultural content both within the country and abroad.

## National Recovery and Resilience Plan 'Greece 2.0': The role of EKT

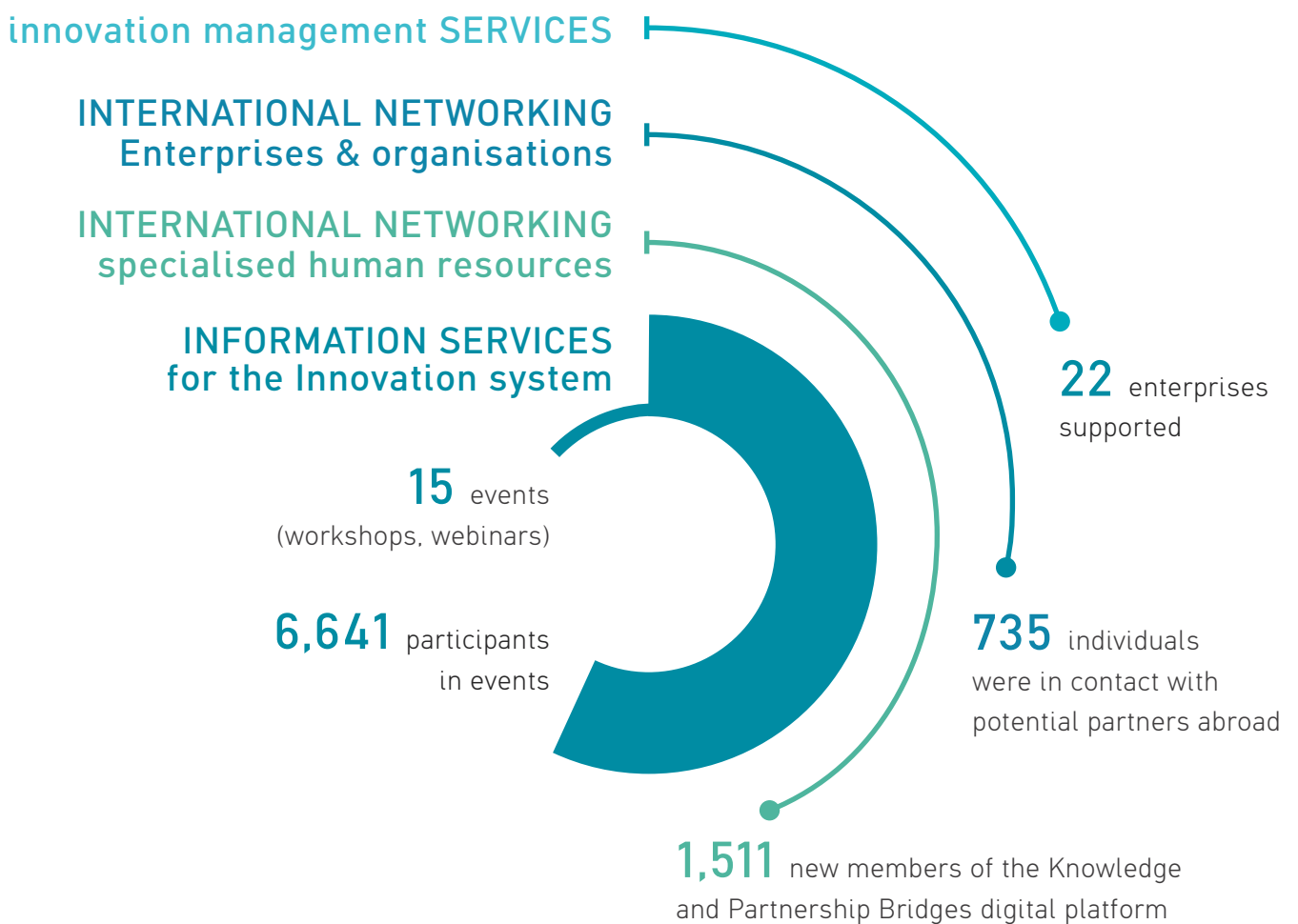
At EKT we are implementing one of the first 12 projects that have been included in the National Recovery and Resilience Plan 'Greece 2.0' - 'Development of the institution, infrastructure, capabilities and capacities for the governance of public data, their availability for reuse and the provision of relevant services in the public and private sector in Greece.' The project encompasses a set of actions required in order to effectively support the implementation of the strategy of the Ministry of Digital Governance regarding the economy and policy of data and the digital transformation of the public and private sector; the strengthening of the effectiveness of digital governance and to enable EKT to evolve into a body implementing these policies with a focus on reuse and further use of public data. The aim is to create the conditions for providing the public, citizens and businesses with effective services.

The objectives of the project include EKT's developing as a public interest organisation that will effectively facilitate and mediate in the transition to the digital transformation of the country; the development of the appropriate infrastructure with capabilities and capacities for public data governance and the availability for reuse of public (open) data and their further use in the provision of services in the public and private sectors. With a focus on public data, actions are designed to serve both the public sector (public administration to provide services for citizens and policy implementation) and the private sector (data economy).

# Metrics 2020 & 2021



# Innovation 2020 & 2021



# eContent 2020 & 2021

E-PUBLICATIONS  
FOR ACADEMIC  
COMMUNICATION

**35** new publications  
(journals, conference  
proceedings, books)  
at ePublishing@EKT

**3,066** new articles

SCIENTIFIC  
AND CULTURAL  
ORGANISATIONS  
ECOSYSTEM

**600**

Collaborating  
organisations  
(Universities, Research  
Centres, Museums,

NATIONAL ARCHIVE  
OF PhD THESES

**3,938** new theses available  
on didaktorika.gr platform



ACCESS  
TO CULTURAL  
GOODS

**218,738** new digital records  
on SearchCulture.gr

**14** new  
organisations on

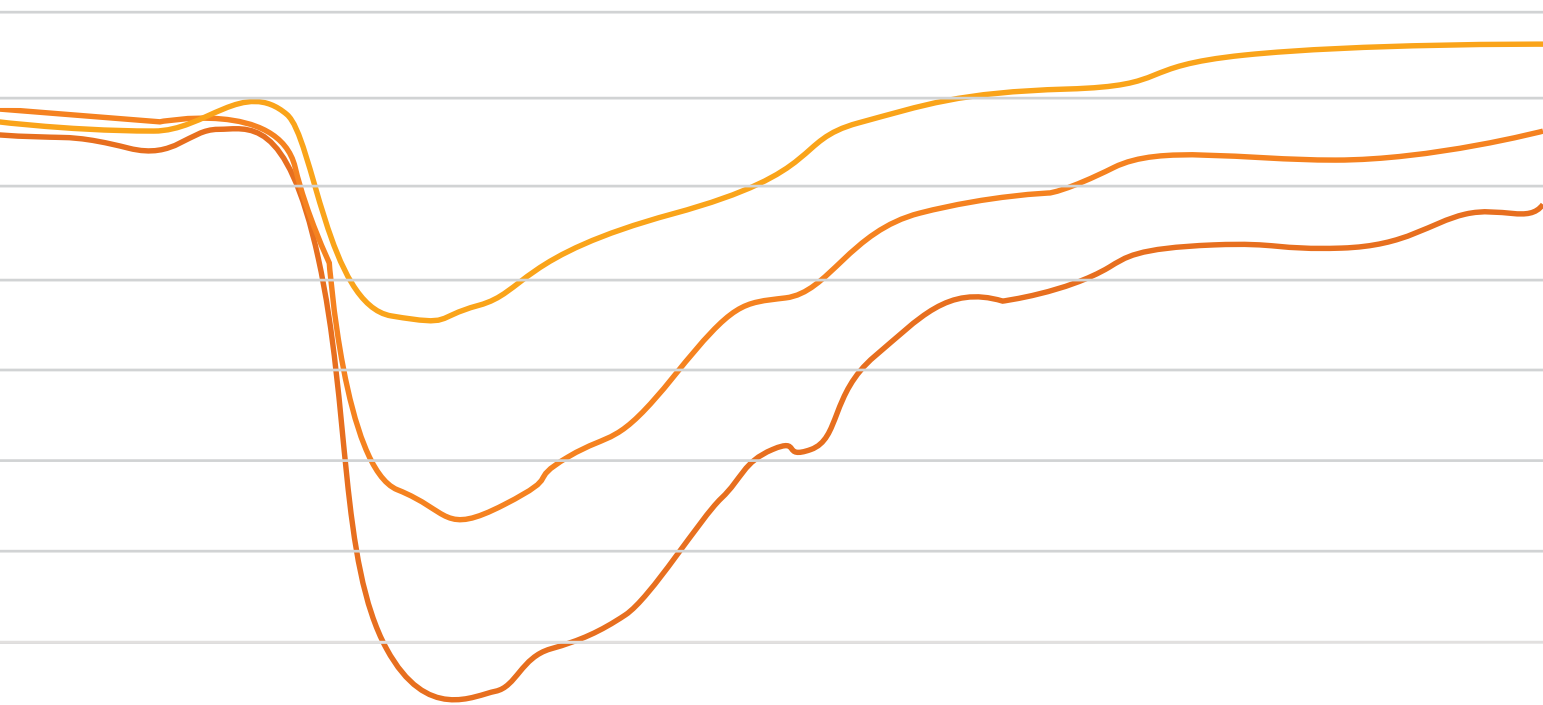
**20**  
thematic exhibitions

ORGANIZING &  
PROMOTING LIBRARY  
CONTENT

**526,932**  
new bibliographic  
records

**37** new library  
catalogues on  
openABEKT

INDICATORS & STATISTICS  
ON RESEARCH & DEVELOPMENT,  
INNOVATION AND DIGITAL ECONOMY



**E**KT, periodically collects and analyses data that measure and capture important dimensions of the country's research, development, innovation and digital economy system. An effective statistical mechanism, linked to the European Statistical System, producing a wealth of evidence, indicators and insights of great value to policymakers, researchers and businesses that can be used in decision-making, research and policy design for the transformation of society and the economy.

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## AN EFFECTIVE STATISTICAL MECHANISM

The organisation produces European and national statistics of European and national statistics that reflect the Greek system of Research, Technology, Development, Innovation (RDI) and dimensions of the digital transformation of the economy. With a focus on the application of good statistical practices and the wide dissemination of the indicators produced, an effective statistical mechanism can operate, which produces timely, accurate and reliable data. In addition, it directly supports the capture of emerging issues, examining specific parameters based on the country's priorities and international trends.

EKT produces the European Statistics of Research & Development and Innovation for Europe, conducting annual surveys and following strict methodological criteria in line with the obligations undertaken as a National Authority of the Hellenic Statistical System. The data are integrated into Eurostat databases and are drawn from international organisations such as the OECD, the EU, the World Bank, etc for analysis and comparisons at European and global level.

The indicators we produce as part of the country's official statistics are used to monitor European and international policies and are published in Scoreboards (The European Innovation Scoreboard, The Digital Economy and Society Index [DESI], Sustainable development in the European Union – Monitoring report on progress towards the SDGs in an EU context, etc). At the same time, we produce national statistics and indicators that cover important aspects of the research, innovation and digital economy. These include bibliometric statistics for scientific publications of Greek organisations in international journals, the statistics for PhD holders, the statistics for the participation of women in R&D and the

statistics for the Digital Transformation of Greek enterprises.

Policy makers are among the main users of EKT statistics. As a mechanism for monitoring public policies, the exercise and evaluation of policies in a neutral, systematic and reliable way is strengthened. Using indicators, EKT supports the monitoring of the national and regional Smart Specialisation Strategies and the Operational Programme 'Competitiveness, Entrepreneurship and Innovation (EPAnEK)' and a series of financial interventions for young scientists and researchers.

With significant activity in the production of new 'experimental' statistics in areas of high interest, EKT is expanding statistical research in critical areas of its institutional role, collecting new data and producing indicators that monitor the international statistical agenda, applied policies, and support for the design of targeted initiatives.

In the extraordinary circumstances of the pandemic, EKT functioned exemplarily as a fully digitised organisation. With electronic statistical production processes, modern informational statistical systems and infrastructures for the dissemination of results, EKT responded effectively to its role as the National Authority of the Hellenic Statistical System.

## RESULTS



**29**

statistical surveys  
28 national scale,  
1 international



**>31.000**

completed e-questionnaires



**60%-100%**

survey response rate



**100%**

timely publication  
of European statistics  
and data transmission



**17**

regular collaborations  
with ministries  
and other authorities



**45**

publications  
with results  
of statistical surveys

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## FOCUS ON STATISTICAL DATA

Official statistics are classified as a public good. EKT, as the National Statistical Authority, is working on ways to make statistical surveys easier and simpler for participants and the results understandable for different audiences not just experts. For this reason, modern information tools such as articles, specialised analyses, infographics, animation, etc are utilised. EKT maintains statistical confidentiality and determines ways to make the data available for further exploitation and alternative interpretations

In 2021, the implementation of an innovative project, regarding the enhancement of EKTs mechanism for the public dissemination of statistical information and related knowledge capital was initiated, allowing for integrated digital data services to be utilised for evidence-based policies. EKT's strategic objective is the timely and widespread availability not only of statistical data and indicators, but above all of the information, knowledge and expertise associated with them, as an 'interconnected body of knowledge' which will enhance the understanding of the available data and the wider environment they describe, by different communities.

In conducting the project, the large amount of Research, Technology, Development, Innovation (RDI) and data on the Digital Economy that is systematically collected, along with administrative

data from external public sources, are compiled in a unified way. This includes organising the data, transforming them, linking them, making them available for further use and storing them

The compilation of the data is complemented by the development of an infrastructure that supports combinatorial statistical processing, the production of processed data for public use, framing with additional information and finally, the availability of integrated digital data services for public administration bodies, researchers, businesses and citizens, with the necessary specialisation and adaptation according to their needs.

The provision of digital data services uses state-of-the-art technologies, modern digital tools and visualisation mechanisms. Specialised reports are also provided, while combinatorial search, navigation, tiered provision of data and other knowledge material, as well as specialised user support will be possible.

## Renewed metrics.ekt.gr

In 2021, the metrics.ekt.gr website was redesigned and enriched. The visitor can not only be informed about all recent publications, statistics and indicators in the fields of science, technology and digital economy, but can also navigate more easily in the updated content. A new addition to the renewed website is the 'Digital Business Transformation' section, which has been at the heart of EKT's survey and statistical activity since 2019.

The screenshot displays the metrics.ekt.gr website interface. At the top, there is a navigation bar with the 'Metrics' logo and 'National Documentation Centre' branding. Below this, a featured article titled 'The geographical, scientific and professional mobility of Greek doctorate holders' is highlighted with a world map graphic. The main content area is organized into sections: 'European Statistics' (Innovation, Research & Development, Government Budget for R&D), 'National Statistics' (Digital Transformation, Regional Indicators, Scientific Publications, Doctorate Holders, Women in R&D, Research Activities), and 'Policies Monitoring' (Smart Specialisation Strategy - RIS3, Young Researchers). A data summary bar at the bottom of the dashboard provides key figures: 72,6% innovative enterprises in Greece (2019-2020), 1.51% of GDP R&D expenditure in 2020, 1,681 new PhDs in 2020, 18,557 Greek scientific publications in international scientific journals in 2020, and 1,623.4 ME€ Government funding for R&D in 2021 (initial budget). A 'News' section follows, containing four articles with brief summaries and dates. The footer includes the EKT logo, 'MetricsEKT', a feedback icon, and copyright information for 2023.

# STATISTICAL PROGRAMME 2020

RESEARCH & DEVELOPMENT STATISTICS	REFERENCE YEAR	PUBLICATION OF RESULTS
Key R&D expenditures and personnel indicators - final figures	2018	
Monitoring indicators RIS3 T4201	2018	
Key indicators on R&D expenditures & personnel -preliminary data	2019	
<b>STATISTICS ON GOVERNMENT BUDGET APPROPRIATIONS FOR RESEARCH &amp; DEVELOPMENT (GBARD INDICATOR)</b>		
Government appropriations for R&D in the provisional budget with analysis of 14 socio-economic objectives	2019	
a. Government appropriations for R&D in the provisional budget with analysis of 14 socio-economic objectives 2019	2019	
b. National public funding of state co-ordinated R&D		
<b>STATISTICS ON INNOVATION IN ENTERPRISES</b>		
Key indicators on innovation in enterprises used for Innovation Scoreboard	2016 -2018	
Monitoring indicators RIS3 T4207	2016 -2018	

Analytical series of indicators on enterprise innovation	2016 -2018	
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## STATISTICS ON DIGITAL TRANSFORMATION OF GREEK ENTERPRISES

Digital transformation of Greek enterprises 2016-2018	2019	
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## STATISTICS ON PARTICIPATION OF WOMEN IN R&D

Indicators on participation of women in R&D	2011 -2017	
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## SCIENTIFIC PUBLICATIONS FROM GREEK INSTITUTIONS IN INTERNATIONAL JOURNALS

Monitoring indicators RIS3T4224	2018	
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Analytical series of bibliometric indicators on the whole country, institution categories and individual institutions	2004 -2018	
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## STATISTICS ON DOCTORATE HOLDERS

Statistics on doctorate holders from Greek Universities	2019	
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# STATISTICAL PROGRAMME 2021

RESEARCH & DEVELOPMENT STATISTICS	REFERENCE YEAR	PUBLICATION OF RESULTS
Key R&D expenditures and personnel indicators - final figures	2019	
Monitoring indicators RIS3 T4201	2019	
Key indicators on R&D expenditures & personnel -preliminary data	2020	
<b>STATISTICS ON GOVERNMENT BUDGET APPROPRIATIONS FOR RESEARCH &amp; DEVELOPMENT (GBARD INDICATOR)</b>		
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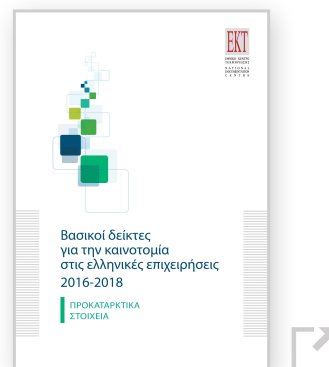
## STATISTICS ON DIGITAL TRANSFORMATION OF GREEK ENTERPRISES

Digital transformation of Greek enterprises 2020: Impact of COVID-19 epidemic	2020	
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## STATISTIC ON DOCTORATE HOLDERS

Statistic on doctorate holders from Greek Universities	2020	
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## Innovation in Greek enterprises

The Community Innovation Survey (CIS) is the official European statistical survey on measuring innovation. It is one of the flagship European statistical surveys, through which a plethora of data are collected in order to identify the level of innovation and the innovative characteristics of the enterprises of the EU countries, and more broadly, their national economies, through the European Innovation Scoreboard..

The survey is conducted every two years in all EU member countries through a single standard questionnaire, in accordance with European legislation, the methodological guidelines of the Oslo manual (OECD/Eurostat 2018) and Eurostat guidelines, ensuring the high quality and comparability of the indicators. Data are collected on product innovations (goods or services), business process innovations, introduction of new products to the business and the market, strategies, knowledge flows and collaborations of businesses, public funding that supports their innovative activities and the obstacles faced by enterprises in developing innovations.

In 2020, we published the innovation indicators on enterprises in Greece with reference to the period 2016-2018 in a publication with statistics and result tables. The results of the CIS 2016-2018 survey were announced at pan-European level by Eurostat. The indicators of the 2016-2018 period were also used as result indicators (7 indicators) for the ranking of the country in the European Innovation

Scoreboard 2021, while 7 more indicators describe the structural characteristics of the national innovation system in the Innovation profiles dimension.

In May 2021, the new survey on Innovation in Greek enterprises started with reference to the period 2018-2020. The survey questionnaire has been updated by Eurostat with the co-operation of statistical authorities from 7 Member States, including EKT. The questionnaire is based on the conceptual framework introduced by the revised Oslo manual (OECD/Eurostat 2018) from the previous survey cycle and includes significant improvements to the questions on innovation and innovative activities of enterprises, while addressing issues related to climate change and the environmental benefits of innovations.

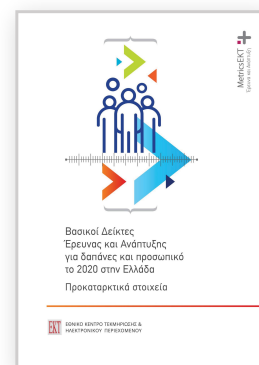
The survey population consisted of more than 14,500 enterprises with 10 or more employees in various sectors of economic activity. With the co-operation of the Hellenic Statistical Authority (ELSTAT) and the support of its 228 external partners, the collection of the data was completed in September 2021. The validation and relevance of the data collected will follow and the first preliminary results will be published in the second quarter of 2022.

## Research & Development Expenditures and Personnel

The official European Research & Development - R&D statistics produce indicators on R&D expenditure and personnel employed in R&D activities in a country, broken down into four areas of activity: business (BES), higher education (HES), government sector (GOV) and private non-profit institutions (PNP).

R&D statistics are among the official mandatory statistics of the EU Member States. Of particular importance, as they indicate the focus of economies on research, R&D indicators are widely used to meet the monitoring needs of national and international policies such as Smart Specialisation Strategies, at national and regional level, the Sustainable Development Goals, in particular pillar '9 - Industry, Innovation and Infrastructure' the European Semester for the macroeconomic stability of the EU Member States, the continuous orientation of the EU countries towards R&D. R&D expenditure is included in GDP

The R&D statistical surveys are conducted every year, March - June, on all entities that are known to implement or may implement R&D (R&D performers and potential R&D performers). EKT has developed and maintains Registries of Greek entities with R&D activities, in all individual areas of activity - BES, GOV, HES and PNP. In conjunction with the collection of data through questionnaires, aiming to reduce the burden on respondents, reduce collection time and simultaneously improve



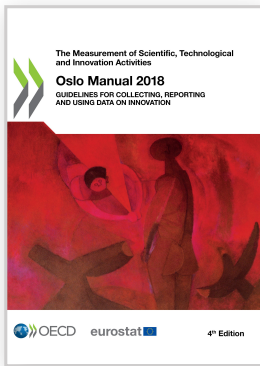
the quality of the data, EKT makes use of administrative data provided by the Ministry of Education & Religion, the Ministry of Culture & Sports, the Ministry of Health, the MIS Special Service, GRNET, IKY etc.

The indicators are published and the relevant data are transmitted to Eurostat by EKT in two phases on an annual basis as defined by the relevant European Regulations. Preliminary figures for the previous year are published each October, while final figures are published in June of the following year.

In June 2020, the final figures for the key indicators on expenditure and personnel in Research and Development for 2018 were published in statistical publications and results tables.

In October 2020, the preliminary data for 2019 was published, and in June 2021, the full analytical series of all variables based on the final data for 2019 was published.

In October 2021, the preliminary figures for 2020 were published.



## Greek version of Oslo Manual

The Oslo Manual is an official OECD and Eurostat publication, defining the concepts and methodology for recording and measuring the dimensions of business innovation. Since it was first published in 1992, it has been the methodological guide on which the national and international questionnaires on these subjects are structured - it is the internationally established conceptual framework of reference.

With the aim of introducing the relevant concepts, reasoning and practices of recording innovation in the Greek public debate, in 2020, and in consultation with the OECD, EKT began work on the translation of the manual into Greek. This initiative will be completed in the first half of 2022 with the publication of the handbook in digital and printed form.

## Government budget allocations for Research & Development (GBARD indicator)

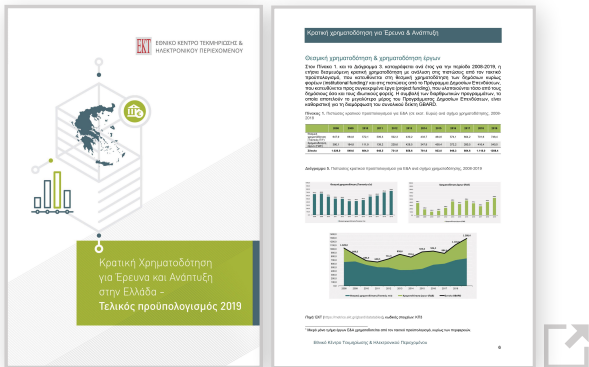
Long-term Government funding to strengthen Research and Development (R&D) activities is an important competitiveness factor, both in the European and in the wider international environment, and highlights the priority and targeting of public policies in R&D.

Direct government funding is measured through the GBARD indicator (Government Budget Allocations for Research and Development).

The GBARD indicator is one of the official mandatory statistics for the EU member states. It records the annual appropriations registered in the government budget for R&D purposes and targets, within a country and abroad (European and international research organisations, transnational research programmes) public bodies, businesses, non-profit institutions, etc.

We collect the data for the GBARD index on an annual basis from all Ministries, General Secretariats and Regions, recording the credits available for R&D in both branches of the state budget: Ordinary Budget (OB) and Public Investment Programme (PIP).

In accordance with the relevant European Regulations, the figures are published in two phases:



in June of each year, the figures for the previous year's provisional budget are published and in December, the figures for the final budget are published.

In 2020, the figures for the 2019 state R&D appropriations were published: in June, the provisional budget figures and in December, the final budget figures.

In June 2021, the 2020 government R&D appropriations figures were published based on the 2020 provisional budget, and in December the final budget figures.

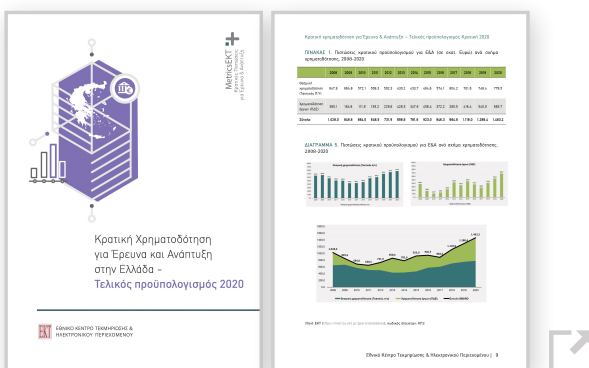
In addition, EKT systematically processes and transmits data to the OECD on the tax exemptions provided enterprises for R&D by the Greek state.

Tax exemptions constitute the indirect state support of R&D and, although they are not part of the mandatory European statistics, they are receiving more and more interest from the international community.

More specifically, since 2007, the OECD has introduced the annual collection of data from member states and partner economies on the tax incentive schemes applicable in each of them. On this basis, it has developed uniform measurement and analysis methodologies to provide qualitative and statistical data on the use, costs and effects of tax incentives for R&D.

It should be noted that the tax incentive data for R&D provided by EKT for the OECD comes from primary data of the General Secretariat for Research and Innovation (GSIC), which is processed by EKT and completes the standard analytical questionnaire for all countries that has been created. The data provides information on the current tax incentive legislation for R&D, such as the type and number of incentives provided, the applicable tax rates and the operating mechanism of the tax incentives.

The data transmitted by EKT are included in the relevant publications and in the OECD database and are used for comparative information on the design of tax incentives in selected economies, including Greece.



### DIGITAL TRANSFORMATION OF GREEK ENTERPRISES

In recent years, the international statistical community has started to implement a series of actions to strengthen the required evidence base for monitoring and shaping the digital transformation of countries. As the National Authority of the Hellenic Statistical System, EKT aligns with international developments and includes in the produced statistics data that capture important aspects of the digital transformation in Greece. In this direction, two statistical publications have already been published, while the third is planned for 2022.

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### Digital Transformation of Greek enterprises (2016-2018)

For the first time in Greece, EKT collected primary data from Greek enterprises on the strategies and business practices directly related to their digital transformation. The data were collected as part of the statistical survey on Innovation in enterprises for the period 2016-2018, which was carried out on 12,213 enterprises at the end of 2019.

In June 2020, the publication with the results of the survey was published. The data record the place of digital transformation in the strategic planning of Greek enterprises and capture their main areas of digital transformation.

In addition, evidence is provided on the adoption of digital methods of organising work, the importance companies attach to enhancing the digital skills of their personnel, and the use of digital practices to strengthen their market position



## Digital Transformation of Greek enterprises 2020: Impact of COVID-19 pandemic

At the end of 2020, a year marked by the COVID-19 pandemic, the lockdown and the obligatory increase in the use of digital technologies, EKT carried out a survey with the aim of capturing the difficulties faced by dynamic Greek enterprises, enterprises investing in Research and Development, and to record the strategies they adopt and the digital technologies and practices they use to cope. The aim of the survey was also to highlight the digital processes and practices that were necessarily adopted and ultimately proved to be significant, indicating a continued orientation towards a more digital enterprise. The survey was carried out under the statistical study on Research and Development in Greek enterprises and collected data from 631 enterprises from all over Greece.

In April 2021, the survey results were published. The publication captures how the pandemic has affected business activity and highlights the type of strategies adopted by the majority of businesses to deal with the crisis caused by the pandemic, accelerate digital practices and strengthen their digital transformation. Finally, it reflects the priority of the majority of enterprises regarding the strengthening of the digital skills of their personnel.



## Digital Transformation of Greek enterprises 2018-2020: Cutting-edge technologies

In 2021, as part of the official statistical survey on Enterprise Innovation for the period 2018-2020, which was conducted on more than 14,500 enterprises, EKT investigated the digital transformation of enterprises by collecting data on the use of cutting-edge technologies expected to define the digital future in the coming years such as artificial intelligence, big data analytics technologies, 5G technologies, cloud computing and cyber security.

At the same time, the evolution of the strategic positioning of enterprises in matters of digital transformation, the effect of digital technologies on the introduction of innovations and the business practices directly linked to digital transformation were recorded. The relevant statistical publication is scheduled to be published in the second quarter of 2022

# Scientific publications of Greek institutions in international journals

The national statistics for the scientific publications of Greek institutions in international journals uses a large volume of bibliometric (micro) data registered in relevant international databases of scientific publications. Based on the number of publications of Greek institutions and the number of their citations by the international scientific community, EKT produces a series of bibliometric indicators.

To calculate the indicators, the most valid methodological approaches in the field of bibliometric analysis are followed, while specialised software applications, developed over time with internal know-how, are used to process the primary data and calculate the bibliometric indicators (cleaning, thematic categorisation, normalisation, calculation, graphical display).

In September 2020, the indicators for the scientific publications of Greek institutions during the period 2004-2018 along with a number of interactive diagrams and tables were published in the electronic edition that includes the presentation of the results. Microdata were drawn from the Web of Science database. The indicators, which refer to the whole of Greece and its international ranking, to individual categories of institutions and to individual institutions, reflect the impact indicators for scientific publications, highlight the research fields in which the scientific community of the country is active and the scientific



networks that are created for the realisation of common research objectives.

Apart from the established indicators, the publication, includes, for the first time, indicators for bibliometric performance by Region, for scientific publications in international open access journals and new high impact indicators.

In line with EKT's statistical programme, the next scheduled publication is for the second quarter of 2022, covering the period 2006-2020.

**5 Open Access Publications**

This section presents bibliometric indicators referring to open access scientific publications by Greek institutions. Specifically, access presents data on those scientific articles published in international open access journals that are included in the Web of Science (category of Open Access Journals) and classified in the last category.

The following table summarises bibliometric indicators for Open access scientific publications in 2018 and 2018 (quarter and share to total publications). Data refer also to the most recent bibliometric indicators for Open access scientific publications in 2018 and 2018 (quarter and share to total publications). Data refer also to the most recent bibliometric indicators for Open access scientific publications in 2018 and 2018 (quarter and share to total publications).

INDICATORS		2018	2018
Number of open access publications		1,814	5,148
Number of citations to open access publications		15,211	15,144
Number of citations to open access publications		944,004	944,004
Number of citations to open access publications		43,072	70,333
Share % of citations to open access publications in total citations		10.0%	10.0%

COLOR	Organization	2018 2018	2018 2018	2018 2018	2018 2018
	Enterprises	191	994	288	1,822
	Other Scientific Institutions	41	144	102	387
	Other Public Institutions	67	274	74	455
	Other Public Research Institutions	182	2,425	483	2,569
	Private Higher Institutions	176	1,739	346	1,947
	Private Non-Profit Institutions	132	1,330	171	1,989
	Public Institutions	197	1,962	928	4,327
	Research Center's sponsored by the OSRF	1,312	12,914	1,869	21,687
	Universities	5,231	50,028	4,992	60,053



# Statistics on doctorate holders

Highly skilled human resources, led by PhD holders, are central to the design of public policies for work, innovation and, more broadly, the transition to knowledge-intensive economies. To assist in the design of appropriate public policies, based on real evidence and documentation, EKT has produced and published, since 2015 and on an annual basis, the national statistics on PhD holders of Greek universities.

It is a census survey based on primary data given by the PhD holders themselves in the relevant electronic questionnaire that accompanies the submission of their thesis to the National Archive of PhD Theses (N.A.P.D.) at EKT.

In accordance with EKT's annual statistical programme, in 2020 the statistics for those awarded PhDs in 2019, and in 2021 the statistics for those awarded PhDs in 2020 were published.

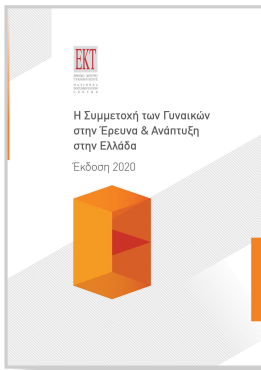
These statistical publications present detailed data, by University and by Region, on the number, gender, age and nationality of new PhD holders, their scientific fields of specialisation, the level of education of their parents, the duration of doctoral studies and the basic source of their funding, as well as data on their international mobility.

In 2021, the questionnaire for the statistical survey for new PhD holders was upgraded, with significant improvements to the questions and the electronic



completion platform, while new questions and variables were added that record the digitalisation of science. The first relevant statistical results are expected to be published in the second half of 2022





## Participation of Women in Research & Development

Through a series of activities and actions, EKT actively supports the goal of equal participation of women in the research and innovation system. At the statistical level, EKT monitors and records the position of women in Research and Development activities in the relevant national statistics produced annually.

The two most recent publications published by EKT in 2020 and 2021 include statistics on women as part of the country's young doctorate holders, academia, research personnel, and their participation in European and nationally funded projects. EKT publications' aim to be a tool for planning national policies and a point of reference for the position of female researchers in the field of research, technology, innovation and development in Greece and function complementary to established European publications. In 2020, as the statistical representative of Greece for the collection of data and the transmission and validation of the data concerning the country, EKT participated in the flagship publication of the European commission 'She figures 2021'. The report is produced every three years under the auspices of the European commission's Directorate-General for research and innovation and presents the level of progress made in relation to the achievement of the goal of gender equality in the fields of research, technology and innovation. EKT acted as the statistical representative for Greece in three consecutive editions: 2015, 2018, and 2021.

## Regional RDI indicators

Applying the established indicators that are used throughout the European Union and allow comparison with national and European averages, EKT contributes to highlighting the competitive advantages of Greek regions in the fields of research and innovation.

At the regional level, EKT specifies whether the statistics produced concern European or national statistics, and present a picture of the Greek regional research and innovation systems in a dedicated section on the EKT's main website.

The relevant EKT publications list a wealth of data on the regional performance in Research and Development (R&D), business innovation, scientific publications in international journals, PhD holders and participation in European projects.

In 2021, in line with the growing need of public policies for the availability of indicators at a more detailed geographical level, EKT initiated the implementation of a project, funded by the European Commission/Eurostat, with the aim of mapping regional innovation profiles. In collaboration with the Hellenic Statistical Authority, the sampling frame of the research on business innovation was redesigned and enriched, so that it is possible to produce indicators for business innovation profiles, even in the smallest Greek regions. The results will be published within 2022.

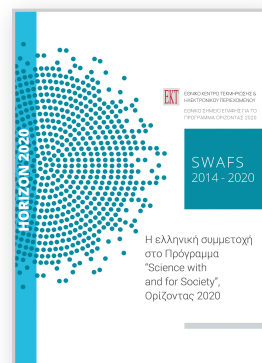
## Greek survey activity under European projects

The support of the participation of Greek bodies from the academic, research and business environment within the financial frameworks of the European Commission for Research and Innovation is one of EKT's main activities. In addition, on an annual basis, analytical data on the performance of Greek institutions in European programmes are collected and presented in special publications. The publications are based on the processing of data published in the European Commission's e-CORDA database and on data primarily collected by EKT through its role as a National Contact Point.

In 2020, the figures for Greek participation during the period 2014-2019 were published, and in 2021 the figures for the entire period of the implementation of Horizon 2020, 2014-2020, in the following programmes:

- Europe in a changing world: Inclusive, Innovative and Reflective Societies
- Health, Demographic Change & Wellbeing
- Future Emerging Technologies
- Marie Skłodowska Curie Actions
- Science with and for Society
- European Research Council (ERC)
- Information & Communication Technologies
- Secure, Clean and Efficient Energy

The publication 'EKT as a National Contact Point of Horizon 2020. Activity Report 2014-2020' was also published.



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## DOCUMENTATION & POLICY EVALUATION

A central issue in the implementation of public policies, at national, European and international level, is the monitoring of the progress made towards the objectives set by measuring and reporting relevant indicators. With a key objective of providing documented data on timely assessment of achievements or delays, monitoring mechanisms and bodies such as EKT, collect and systematise information and evidence, process relevant knowledge material and systematically feed this to policy-making bodies and individual user communities (businesses, research community).

EKT through its statistical activity, produces a series of indicators on Greece that are used to monitor European and international policies (Sustainable Development Goals, European Semester, European Research Area, Europe 2020) and are published in Scoreboards (European Innovation Scoreboard, Digital Economy and Society Index - DESI).

At national level, EKT produces the indicators through which the smart specialisation strategy and the operational programme 'competitiveness, entrepreneurship and innovation' (EPANEK) are monitored at national and regional level, as well as a series of financial tools of the European Social Fund concerning young scientists and researchers. The indicators capture the progress of implementation, allow any corrective and/or improvement measures to be taken and help to document the impact on wider objectives that have been set.

## Indicators for monitoring Smart Specialisation Strategy

The Research and Innovation Strategy for Smart Specialisation (RIS3), a central European development strategy, is designed, developed and evaluated using evidence-based policy.

As the competent Statistical Authority, EKT has been producing the indicators concerning the monitoring of the implementation of the Smart Specialisation Strategy in Greece and its 13 Regions since 2016. On the basis of the data collected, the monitoring indicators of the national and the corresponding regional RIS3 strategies, the EPAnEK and the Regional Operational Programmes are compiled. The actions are implemented within the framework of the operation 'Establishment of a Monitoring Mechanism of the implementation of RIS3 National Strategy - Collection and processing of Indicators' financed by the Operational Programme 'Competitiveness, Entrepreneurship and Innovation' (EPAnEK) (ESPA 2014-2020).

RIS3 monitoring indicators are published in detailed tables by Region on an annual basis and on specified dates on the corresponding section of EKT's official site <https://metrics.ekt.gr/ris/datatables>

In addition, EKT collaborates with the EU's Joint Research Centre on specific issues of regional development and understanding and managing industrial transitions. In 2021, the results of a JRC study, in which EKT participated, on Greece's industrial transition to renewable energy sources, batteries and their applications in the mobility, agriculture, shipping and defence sectors were published.

## Indicators monitoring Specialised Human Resources

Since 2017, EKT has been operating as 'a monitoring mechanism', collecting information and data in order to provide documented evidence to evaluate the support actions for young scientists financed by the Special Secretariat for the Management of European Social Fund Programmes.

The mechanism is being developed within the framework of the Sub-Project 'Evaluation Mechanism of 4 actions of the O.P. Human Resource Development, Education & Lifelong Learning 2014-2020' for the period 2018-2020 and examines the following actions:

- Strengthening of Human Research Personnel through the Implementation of Doctoral Research
- Support for Postdoctoral Researchers
- Acquisition of Academic Teaching Experience for Young Scientists with PhDs
- Support for researchers with an emphasis on young researchers

The total number of beneficiaries (5,500 individuals over the period 2017-2021) makes this specific category of actions one of the largest financial interventions for research content for the current programming period. EKT conducts primary census surveys, with high response rates of 70%-90%, on all beneficiaries, i.e. PhD candidates, post-doctoral researchers, young teaching -scientists and members of new research groups, 'established' and young scientists).

The primary surveys are carried out in two phases: the first concerns the identification of the beneficiaries, and the second the evaluation of the relevant financial interventions, considering their effects on the other constituent parts of the national research and innovation system such as the academic and research community, business



and public administration. The results of each action are published on EKT's website and that of the O.P.'Human Resource Development, Education and Lifelong Learning 2014-2020'

In 2021, with the completion of the first phase of the monitoring mechanism for the period 2018-2020, the main results of the evaluation of the actions were published, in the form of visualized summaries (infographic) at the following link: <https://metrics.ekt.gr/en/human-resources/publications>

In 2021, the 'Mechanism for Monitoring and Evaluation of 4 Actions of the O.P. Human Resource Development, Education & Lifelong Learning 2014-2020' was published. Using empirical evidence, the publication specifies the concept of documented public policy planning in Greece, through the highlighting of a specific and successful case study EKT implemented. It presents the monitoring mechanism developed at EKT in collaboration with the Special Secretariat for the Management of European Social Fund Programmes, which gave support to the improvement of the financial interventions that had been designed, creating a virtuous cycle of administrative feedback.

Additionally, the aim of the publication was to highlight not only a specific way of approaching the benefits of evidence-based public policy planning, but also the importance of monitoring and feedback mechanisms to achieve the desired indicators and results.

# STATISTICS FOCUSING ON LEADING ISSUES

## Census survey of the careers and geographical mobility of doctorate holders

During 2020, the largest census of the professional and geographical mobility of Greek PhD holders was carried out. The statistical survey targeted all Greek PhD holders, regardless of their current country of residence, and was carried out in collaboration with the Regional Development and Policy Research Unit (RDPRU) of the University of Macedonia. With data that captures the professional career and geographical mobility of Greek PhD holders, the research is the first reliable statistical record of the brain drain phenomenon.

There was great response to and participation in the survey as the questionnaire was completed by more than 10,000 Greek PhD holders living in various countries.

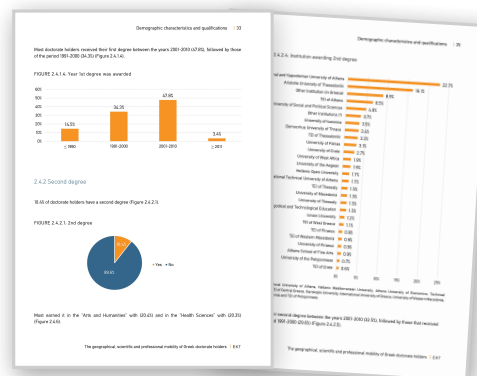
The statistical work related to correctness and relevance checking and the subsequent processing of the large volume of data collected was completed in the first half of 2021.

The results of the research were published in 2021 in an analytical publication in which the data are presented in sections based on the geographical mobility of Greek PhD holders as follows: a. they have never worked outside Greece, they live in Greece, b. they worked for some time abroad but now live in Greece, c. they live abroad, they worked abroad, they returned to Greece,



but now they live and work abroad.

The publication records a number of dimensions concerning the careers of PhD holders in academia, their employment in the business sector, the relevance of their professional employment to their scientific field, their financial earnings and, in general, their quality of life. Special emphasis is placed on geographical mobility to and from Greece after obtaining their PhD and, in the cases of PhD holders working abroad, on maintaining ties with Greece, their intention to return and conditions required for their return.





## COVID-19 and young Greek researchers

In the spring of 2020, EKT carried out a large field survey to capture the impact of the COVID-19 pandemic and the lockdown on the daily life of Greek researchers. The study was among the first to be carried out in Greece and internationally aiming to highlight the real conditions under which the country's researchers were working, and to launch targeted policies and actions based on data to strengthen them. The differences in the effects of the pandemic in relation to gender and scientific fields, an assessment of the prospects of their research activity in the future and more generally the position of science in the public debate were examined.

For the survey, a specially designed electronic questionnaire was sent to 4,557 researchers participating in actions of the European Social Fund through the Operational Programme 'Human Resource Development, Education and Lifelong Learning' (NSRF 2014-2020). Participants were mainly young scientists who are receiving funding in order to prepare a doctoral thesis, to conduct post-doctoral research, to form research groups or to gain academic teaching experience.

Data collection took place between April 15 and May 5, 2020, and the questionnaire was completed by 2,323 individuals, of whom 51.4% were men and 48.6% were women. The relevant publication was published in May 2020.



## Survey of Technology Transfer Offices in Greece

The dimensions, administrative structure and performance of Technology Transfer Offices in Greek universities and research centres active in the health sector, along with the problems they face, were the subject of a major investigation carried out by EKT. The result was the first unified and methodologically documented statistical survey on these specific structures, through which the systematised recording of their performance is attempted, with statistics, indicators and a series of qualitative dimensions.

The survey was carried out as part of related actions of the European Institute of Innovation and Technology in the field of Health (EIT Health), in which EKT participates. It was conducted from November 2019 to May 2020. 15 organisations (nine universities and six research centres) which administer schools, departments and institutes in the fields of Medicine and Health Sciences participated.

Research results were shared with policy makers to optimise these intermediary mechanisms, strengthen basic research and disseminate new scientific knowledge to the wider economy. A second cycle is being planned which will address all the universities and research centres of the country with the aim of covering all scientific fields.

## OBJECTIVES 2022-2023

EKT actively participates in the discussions on and shaping of new trends in measuring research and innovation activities at European and international level. It leverages the know-how gained from its collaboration with leading international organisations, improves its statistical processes, and makes full use of the data it collects. It continuously seeks to enrich the public dialogue with critical components that help to better understand the innovative practices and processes of digital transformation in Greece and Europe.

In this context, EKT's objectives for the production of statistics in the two years 2022-2023 cover the country's obligations in terms of compliance with European Regulations, while at the same time incorporate new dimensions based on the needs for data availability at national level, as well as statistical priorities, digital requirements, and the major technological, economic and social issues, the measuring of which concerns statistical organisations worldwide.

- Commitment to the responsible management and dissemination of statistical data produced by European and national statistics, with the aim of increasing their use by individual user communities, while maintaining trust.
- Provision of integrated digital services for documented data to serve public administration bodies and user communities and support the exercise of public policies.
- Continuation of the production of statistics in ways that ensure compliance with the quality regulations and methodological requirements of the Greek and European Statistical System
- Establishment of the new national statistics for the digital transformation of Greek enterprises with an emphasis on issues of concern to the international community such as cutting-edge technologies and digital skills.
- Focus on the area of artificial intelligence, and producing special publications that highlight the scientific activity of Greek researchers using data from statistics on scientific publications in international journals, PhD holders, participation in research projects.
- Development of new national statistics for the research activity of Greek institutions under funded projects, both European and national, with various indicators that will capture the participation, competitive advantages, excellence and networking of Greek institutions.
- Expand national statistics on women's participation in R&D by conducting new targeted surveys and collecting data on the positions of responsibility they hold.
- Production and publication of new variables for national statistics on PhD holders, capturing new dimensions related to digitalisation of science, professional careers, international mobility, etc.



- Further specialisation and pilot publication of RDI statistics at a more detailed geographical level than NUTS2 (NUTS 3: small regions for specific diagnoses, Regional Units etc.)
- Production of new statistics measuring the degree of bureaucracy and simplification of administrative procedures to support the Bureaucracy Observatory and document the National Programme for Simplification of Procedures.
- Emphasis on the integrated governance of administrative data collected from public sources for EKT's statistical purposes, with the aim of improving their collection procedures and their further combined use in order to ultimately reduce the burden of completing questionnaires by respondents.
- Actions for the compilation of 'data registers' concerning enterprises, public organisations, research activity, specialised human resources and outputs/results, from the individual statistical (micro) data bases available to EKT and from external public data sources.
- Consolidation and linking of microdata from different, and as yet unprocessed sources, with the aim of exploiting the 'hidden' value that the data contains and producing new statistics that can highlight new patterns, trends and behaviours.
- Reinforcement of the focused actions implemented by EKT to improve the understanding and highlight the importance of its statistics by the entities from which data is collected.
- Raising awareness among individual user communities about the use of statistics and understanding the broader concepts within which they are collected. Particular emphasis will be placed on the broader communication of contemporary conceptual frameworks for innovation and the clear conceptualisation of emerging technologies such as Artificial Intelligence.
- Development of quality digital skills of EKT's human resources and partners, with the enhancement of capacities for analysis and interconnection of big data.

INTEGRATED SERVICES  
FOR DIGITAL TRANSFORMATION  
AND STRENGTHENING  
THE INNOVATION SYSTEM



EKT is permanently and strategically connected with the actors of the domestic innovation system. In this context, and taking into account the general demand for a digital transition, we support the digital transformation and the strengthening of the development dynamics of the ecosystem.

For this purpose, we develop modern integrated services aimed at meeting specialised development needs. Businesses, academic institutions, research and development organisations have access to networking, mentoring, information and training services.

EKT personnel systematically record the needs of the innovation system's actors, consult databases and specialised knowledge networks. They leverage national actions and EU programmes to support entrepreneurship, research and innovation. They combine programmes and actions that benefit Greek small and medium-sized enterprises. They establish good practices and inform interested parties about funding opportunities.

Following the necessary acceleration of the organisation's digital transition due the pandemic, all services are now also provided digitally. This has further allowed their provision to be scaled up to a larger population.

EKT's accumulated experience on the subject and the creative assimilation of European and international trends and good practices has increased our efficiency and operational capacity. It has also maximised the impact of the services provided, the organisation of which is based on the following pillars of activity:

- the establishment of structures and procedures for the constant support of actors in the innovation system
- the formation of modern digital tools and digital infrastructure of a public nature and with a wide operational scope
- the selection of the most appropriate and important domestic and European networks and initiatives to promote innovation
- ensuring stable co-operative relations with strategic partners, and
- ensuring the organisation has the appropriate executive personnel.

## NETWORKING SERVICES

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### Support for partnership development

- Provided within the framework of the Enterprise Europe Network for innovative SMEs seeking international technological and/or business partnerships to expand their prospects.
- Registered members of the digital platform [knowledgebridges.gr](https://www.knowledgebridges.gr) of the Knowledge and Partnership Bridges Initiative can submit requests for the development of business, research and training partnerships.

### Support for communities and networks of specialised knowledge

- The service is provided within the framework of the Enterprise Europe Network and concerns the organisation of business missions and the support of the participation of Greek entities in international events and business meetings.
- Specifically for the health sector, companies, research organisations, academic institutions and health units can participate in EIT Health programmes for networking and developing innovative products and services.

## ADVISORY GUIDANCE SERVICES

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### Support for access to European research and innovation programmes

- Provided for researchers, businesses, research and development organisations through EKT's role as a National Contact point for Horizon Europe

### Specialised support

- Provided for innovative small and medium-sized enterprises and start-ups registered on the digital platform of the Knowledge and Partnership Bridges Initiative <https://www.knowledgebridges.gr> and include digital innovation management methods, training

seminars and advisory support actions with the aim of a rapid transition to the next stage of business development and growth.

### Self-diagnostic tools

- Provided by specialist consultants who use certified tools and methodologies to assess the level of digital capability and innovation in businesses and organisations, seeking to advise on the best ways to make use of the identified capabilities

## INFORMATION AND TRAINING

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### Training service

- It includes workshops and events with experts, executives from the European Commission, public administration, the business world, and cover topics of research, innovation, digital transformation, networking and business development.
- In the health sector specifically, students can participate in special EIT Health training programmes.

### Information and updates

- Provided by consultants of the Enterprise Europe Network, the National Contact Points for Horizon Europe and the Initiative Knowledge and Partnership Bridges for Enterprises and organisations



**735** individuals came into contact with potential partners abroad



**48** business meeting events (co)organised by EKT



**34** successful business partnerships



**809** requests were met under Enterprise Europe Network and the National Contact Point



**440** organisations benefited from EKT services



**22** Enterprises supported in innovation management



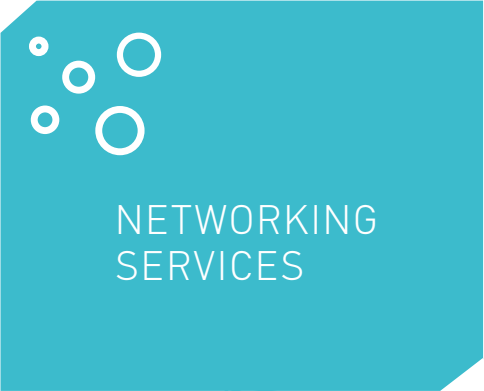
**6,641** participants in **15** webinars



**16,116** members in the Knowledge and Partnership Bridges online network



**1,511** new members in the knowledgebridges.gr digital platform



## NETWORKING SERVICES



Horizon Europe, the European Commission's framework programme for research and innovation, emphasises the digital transformation of society and the Economy. EKT has a primary role as National Contact Point in the 'Health' and 'Digital technologies, Industry and Space' clusters and in the programme 'Marie Skłodowska-Curie Actions': supporting organisations, businesses, academics and research bodies; from identifying funding opportunities through to submitting proposals, implementing projects and exploiting research results.



The world's largest business support network, with 3,000 experts from 600 organisations in more than 60 countries, provides integrated information services, innovation management, networking, access to new markets and financing tools. In the next period (2022-2025), the Greek node of the network will further develop its services, aiming to improve the competitiveness of small and medium-sized enterprises and to strengthen their economic, social and environmental footprint.



## CONSULTANCY & GUIDANCE SERVICES



## INFORMATION AND TRAINING SERVICES



One of the largest public-private partnerships for healthcare innovation and digital transformation: a unique network of 150 leading companies, universities, research and development centres, institutes and health units. EKT is the hub of EIT Health in Greece. Since 2017, it has supported more than 75 startups to participate in business acceleration programmes, while over 400 Greek students have attended educational programmes.



The European consortium to support deep technology start-ups. EKT had a central role in training and mentoring the top teams that emerged from a competition involving a total of 250 researchers, entrepreneurs, and businesses from 36 countries. Businesses received consulting services in strategy development, marketing plan implementation, financial management and the utilisation of financial tools, as well as networking and partnership development.

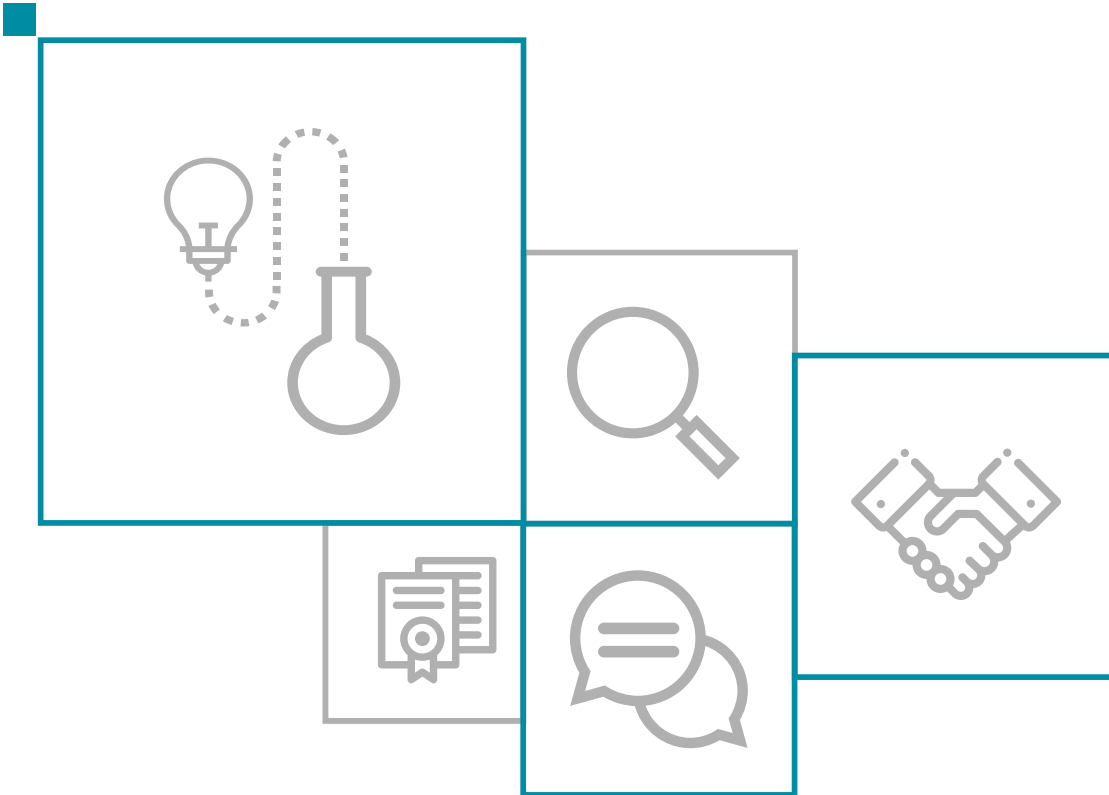


Knowledge and Partnership Bridges is a networking hub of highly qualified Greek scientists from all over the world. The Initiative is implemented by EKT and emphasises the transfer and use of knowledge and skills acquired by Greeks abroad. The connection of Greeks abroad with the country, but not necessarily their return, is the noticeable difference when compared to other corresponding national and international initiatives.

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## SUCCESS STORIES

#EENCanHelp





It is a great moment when a researcher has an innovative technology in their hands and is able to take it to market after three decades of research. At EKT, we are proud to have helped the research team of Constantinos Dimopoulos, emeritus professor of Biochemistry and Food Chemistry at the National and Kapodistrian University of Athens, with integrated technology transfer services to patent and develop the result of primary research into an industrial product.

The head of the group got in touch with EKT advisor Giorgos Megas in March 2021 at the successful EIT Health workshop co-organised by EKT and the Centre for Innovation and Entrepreneurship 'Archimedes', NKUA. Prof. Dimopoulos turned to EKT's Innovation and Networking Unit seeking support for the exploitation of the group's research results in order to develop an innovative food supplement with anti-inflammatory and anti-thrombotic action.

After targeted meetings, the needs of the researchers were clarified and the specific goal of concluding a commercial agreement with an industrial company was set. This is precisely where the Enterprise Europe Network could help. At the same time, the need to cost the concept/patent was highlighted and this was carried out by an EIT Health consultant specialising in the field of Biotechnology.

The required search profile for a commercial partner was then drawn up and posted on the Enterprise Europe Network platform with the title 'A fraction of natural inhibitors of the inflammatory and thrombotic mediator Platelet-Activating-Factor, suitable for food supplement with anti-inflammatory, anti-thrombotic action is offered for commercial exploitation.'

Four companies expressed interest and exploratory discussions began. It was a great moment for all of us to see the possibility of the manufacturing of pure laboratory research. In December 2021, after eight months of intensive consultations and close co-operation between the EKT advisor and the research team, an agreement was signed with the French company PHARMA-RECHERCHE which is to start production of the product.

The path to success requires specialised knowledge, good communication and leveraging the right networks and business support infrastructure. The way in which EKT responded in this particular case opens the way for other innovative research groups. It is an excellent example of linking research carried out in academic institutions with production and industry.

## HIGHLIGHTS

## #innovationEKT



EKT's presence was clearly evident at GSRT's first information day on the new Horizon Europe programme. Christina Pascual and Giorgos Megas, EKT National Contact Points, presented the services provided by the organisation for researchers, academic institutions and businesses in the 'Health' and 'Digital technologies, Industry and Space' clusters and the 'Marie Skłodowska-Curie Actions' programme. The presentation was attended by more than 500 researchers, representatives of organisations, businesses and institutions.

With the support of EKT and the Enterprise Europe Network, Greek businesses can attract highly skilled human resources. This is the case with Dimitris Christaras who returned to Greece with a scholarship from the Marie Skłodowska-Curie Actions (MSCA) programme and is conducting research at the Athens Eye Hospital. A success story, both for him and for EKT, which inspired the creation of a video published in February 2021 on the organisation's social media.

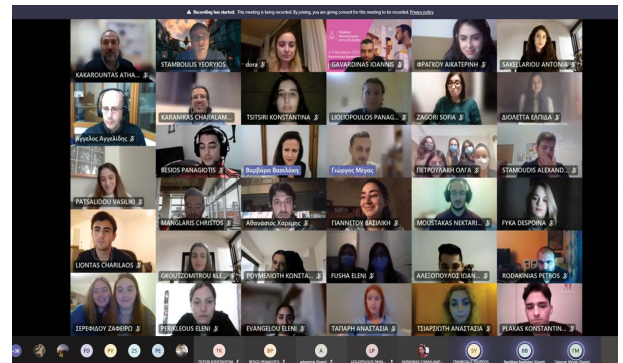


Themis Alissafi is a researcher at the Medical Biological Research Foundation of the Academy of Athens. She studies the elucidation of molecular and cellular mechanisms that control the functioning of the regulatory networks of the immune system. In 2020, she received a major grant from the European Research Council (ERC) under the Starting Grants programme. EKT supported the submission of her research proposal, providing advisory services from initial submission to presentation, and continued to provide the researcher with advisory support for the further development of the proposal.



Artificial Intelligence pioneers from Israel shared their experience with Greek health experts in an online workshop organised by EKT and EIT Health. The discussion focused on leveraging big data and artificial intelligence to improve healthcare. The event was attended by business executives, public sector executives, ICT industry researchers, start-ups and healthcare providers. Keynote speakers were Liron Freind-Saadon, Director of Healthcare Development at NVIDIA-Israel, and Dr Gal Noyman, Director of Development at Data Science Group and DSG Medical.

Innovation Days 2020, organised for the third year by EKT in collaboration with the University of Thessaly, were a great success. Seventy students, divided into 22 groups, were trained in the development and presentation of innovative ideas under the guidance of university professors and expert advisors. The winning teams consisted of Bioinformatics students, Electrical Engineers, Computer Engineers and Mechanical Engineers.



EKT systematically updates the Greek business community as well as research and academic bodies that contribute to innovation in the health sector about the EIT Health programmes. Six startups, whose products are expected to have a significant impact on the future of medicine and health, received support from EIT Health in 2020. The unique European network of leading companies, universities, research and development centres, institutes and health units contributes to accelerating over 120 startups every year in Europe, including Greece.

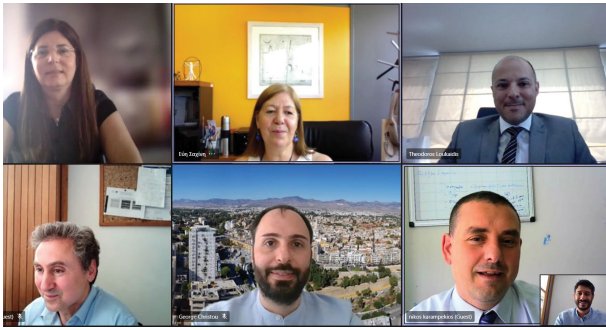


EKT participated in the event, 'Innovation in Greece and the bodies that support it', organised by the NBG Business Seeds programme of the National Bank and the Athens Centre for Entrepreneurship and Innovation (ACEin) of the Athens University of Economics and Business, the Archimedes Centre of the National Kapodistrian University of Athens, Uni.fund, Metavallon and Bayer Hellas. Representatives of the organisation presented actions and initiatives that have been successfully implemented in recent years and informed the public about the services offered to businesses and researchers.

With the main goal of connecting Greek scientists and business people around the world, exchanging knowledge and strengthening their co-operation, the Knowledge and Partnership Bridges Initiative launched the upgraded knowledgebridges.gr networking platform. In a friendly, easy-to-use and interactive environment, the registered members have access to targeted networking services. In particular, specialised solutions are offered to those looking for partners, useful information on financial opportunities, scholarships and studies in Greece, as well as guidance from qualified consultants for participation in educational programmes for further professional and personal development.



The first pan-European competition for Deep-Tech Startups held in Greece had the full support of EKT and the STARTUP3 project consortium. After a long training and development process, five outstanding enterprises came first. Among them were two Greek enterprises! These were RTSafe and Magos. The other top five were Centiloc, Fauna and Detektia. EKT successfully organised the final tender phase. A total of 250 researchers, entrepreneurs, start-ups and high-tech SMEs from 36 countries participated in the competition. The top 25 companies that took part in the training and competition programme and reached the semi-final stage strengthened their presence in the markets in which they operate



With the basic aim of further strengthening the Research and Innovation ecosystems as well as expanding their co-operation in areas of common interest, EKT and the Research and Innovation Foundation of Cyprus proceeded to sign a Memorandum of Understanding. The two organisations joined forces with the aim of facilitating synergies between organisations from the two countries. The focus was on co-operation for the submission of proposals to the new EU programme for Research and Innovation 'Horizon Europe' and EKT's initiative 'Knowledge and Partnership Bridges'

The participation of Greek entities in the international event of technological and business B2B meetings at the HANNOVER MESSE exhibition was supported by EKT in its role as co-ordinator of the Enterprise Europe Network - Hellas. The event was organised by the Enterprise Europe Network and took place online in April 2021. Businesses and research institutions had the opportunity to meet potential partners and establish technological, research and commercial collaborations. Since 2002, more than 5,000 stakeholders have taken part in targeted bilateral meetings at this event which has contributed to several international corporate agreements.



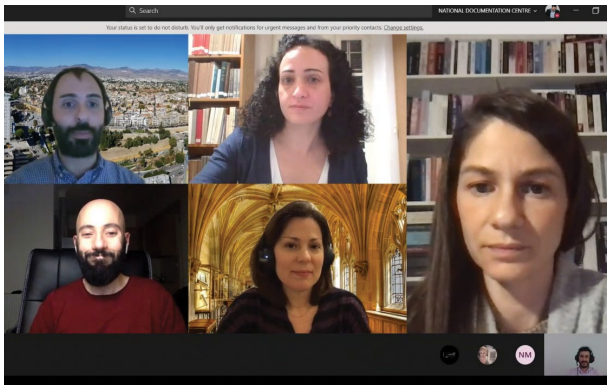
In March 2021, EKT participated with a talk in a webinar on European digital innovation hubs and their collaboration with the Enterprise Europe Network. The webinar was organised by the European network DIHNET and the European Commission.



Seven Greek teams distinguished themselves in the pan-European #EUvsVirus hackathon held in April 2020 with the aim of immediately developing innovative solutions to deal with the COVID-19 pandemic. In seven of the solutions that stood out there was Greek participation, with one of them, Sewers4COVID, being included in the six major winners of the competition. EKT - in collaboration with domestic innovation system organisations such as the Archimedes Centre of the Athens University of Economics and Business, the Centre for Entrepreneurship & Innovation of the Athens University of Economics and Business, the NBG Business Seeds initiative, the Onassis Foundation and Bayer Hellas - supported the Greek teams that participated in the competition #GreeceVsVirus that preceded the pan-European event, an initiative of the Ministry of Digital Governance.

The equal participation of women in research, innovation and business is among the EU's priorities. Despite some positive results, there is a long way to go to reduce inequalities and improve the position of women. Through a series of activities and actions, EKT actively supports the participation of women in research, innovation and entrepreneurship. Particularly in EIT Health, it has supported many start-ups run by women. In March 2021, the Women Entrepreneurship Bootcamp, a training and networking programme with expert advisors and investors to strengthen women's entrepreneurship, was successfully held.





With an impressive participation of Greeks from all over the world, the series of webinars 'Real Skills for Scientists' started in October 2020 and successfully continued until the end of 2021. It was an important initiative of EKT, which highlighted the interest of the Greek scientific and research community for the development of social and professional skills, as well as the potential of leveraging Greeks abroad. The founding values of the Knowledge and Partnership Bridges initiative, implemented by EKT, were applied to this specific action, which included targeted seminars for each scientific discipline (Positive Sciences, Life Sciences, Communication and Information Sciences, Social Sciences and Humanities). Researchers, academics and professionals with impressive CVs shared their experiences and offered their advice on developing skills and careers in the international academic, research and business environment. The webinars 'Real Skills for Scientists' attracted the interest of thousands of undergraduate and postgraduate students, PhD candidates, post-doctoral researchers, young researchers of all scientific fields, and university students of all levels. The seminars were held in collaboration with R.E.A.L. Science and the Research and Innovation Foundation of Cyprus.

A Co-operation Agreement was signed in February 2021 between the Region of Attica and EKT, with the aim of establishing permanent tactical and operational co-operation between the two organisations, and maximising the benefit of the actions implemented and related to research, innovation, entrepreneurship and the utilisation of financial resources & tools for development and prosperity in Attica.



HELLENIC REPUBLIC  
REGION OF ATTICA



NATIONAL DOCUMENTATION CENTRE



## GOALS 2022-2023

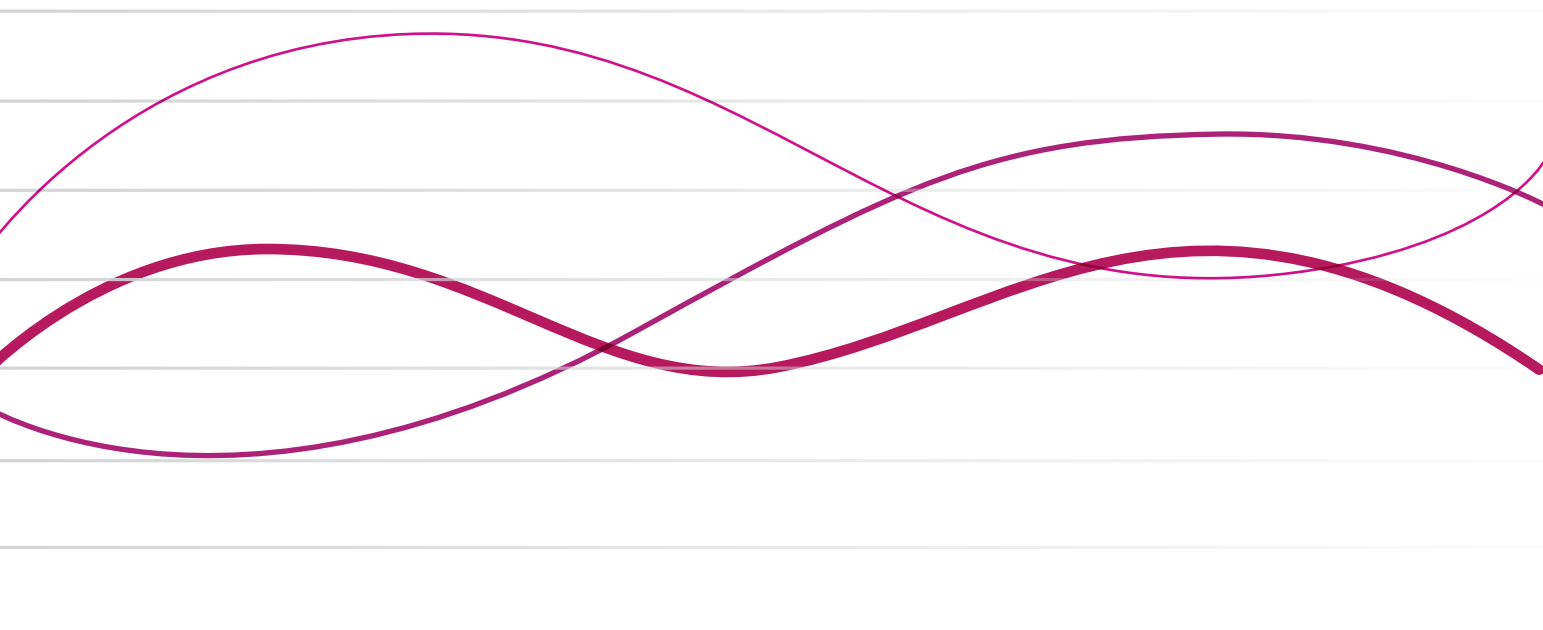
EKT has set the following goals in seeking to continue the provision of high-quality services to strengthen the digital transformation and innovative potential of the country's productive organisations, along with the reuse of public data, for the two-year period 2022-2023:

- **Creating a digital platform to support digital transformation, innovation and business development**  
Implementation of a project within the context of the Recovery Fund with the aim of providing integrated specialised services for businesses to strengthen innovative potential and digital skills, business scale-up, the use of financial tools, networking and extroversion for all actors of the Greek innovation system.
- **Exploitation of public RDI data for the provision of targeted services**  
Leverage cutting-edge digital technologies (artificial intelligence, high-performance computing, data analytics, cybersecurity) to make available and comprehensible 'real data' about the country's business and innovation system collected and aggregated in EKT's systems. At the same time, endeavour to leverage public data from other organisations that are highly interested in development.
- **Configuration of collaborative space**  
Configuration of a suitable collaborative space that enables the physical presence of start-ups and/or mature businesses, the implementation of events, speeches and actions related to digital transformation and innovation, as well as the use of EKT's data in clean data rooms. Such mixed spaces and actions will accelerate and act as boosters for EKT's general purposes, amalgamating the terms 'data space' & 'data incubator'



- **International presence and participation in digital innovation hubs**  
Continue and deepen the organisation's international presence and participation in initiatives and actions to support the digital transformation, the innovation ecosystem and entrepreneurship. Properly continue the planned implementation of the projects already undertaken by the organisation and seek new projects that contribute to the overall goals of the organisation (eg skills). Among them, participation in the creation of a European digital hub through the Smart City approach in the Region of Attica.
- **Networking and strengthening ties with the Greek diaspora**  
Planning and implementation of actions for the networking and interconnection of the domestic scientific, research and business community with the Greek diaspora.
- **Implementation of institutional collaborations**  
Collaboration with domestic academic and research institutions to improve technology transfer and mediation services as well as the utilisation of research results. Synergies with public and private organisations, as well as business institutions that promote innovation.

# CONTENT AND KNOWLEDGE FOR ALL



The main goal for most of EKT's workforce and activities is to open nation-wide access to the scientific knowledge and cultural heritage in order for it to be further exploited for the common good. EKT's eContent pillar of activities includes technologically robust large-scale infrastructures which effectively support Public Data Governance Systems, SaaS Content Organisation Services offered to a multitude of organisations, growing networks of organisations and communities of practice, supported by research activity for new evidence-based practices, dissemination of specifications and standards for all the stages of digitisation, implementation of open access policies and sharing culture, albeit with respect for personal data and data confidentiality, strengthening the skills of those involved in the wider ecosystem

At EKT, the focus is access for all citizens to scientific knowledge and cultural goods. EKT develops data governance systems, modern content infrastructures and user-friendly cloud computing services open to the communities of learning, research and creativity. By establishing uniform specifications and documentation standards, we promote a digital culture of openness and collaboration. We make a vital contribution to the formation and digital transformation of an ecosystem of stakeholders that mobilise, interoperate and co-shape a single digital experience.

Expanding services and content infrastructure with more than 2 million digital items, EKT collects, documents and disseminates content produced by scientific and cultural institutions, with the aim of preservation and re-use. EKT thus provides access to authoritative information sources for research, education and lifelong learning.

At the same time, participating in projects, actions and initiatives, at national and European level, means that EKT has a constant presence in matters concerning: Open Science, Open Access, Scholarly Communication, Scientific Communication and Science and Culture Data Governance.

# DIGITAL PLATFORMS, PORTALS & SOURCES OF CULTURAL & SCIENTIFIC CONTENT

Our key missions include the collection, aggregation, hosting, documentation, dissemination and long-term preservation of reputable digital content produced by the Greek scientific, research and cultural communities. With the view that knowledge is a public good and documentation is a value-adding process, EKT, in collaboration with reputable institutions, develops platforms and sources which enable navigation and search of scientific and cultural content.

An ever-expanding  
Ecosystem of Science &  
Culture Organisations collaborating



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## DIGITAL PLATFORMS FOR CULTURAL & SCIENTIFIC CONTENT

In the years 2020-2021, important steps were taken towards the digital transformation of the interconnected ecosystem of science and culture, with the aim of producing real value for the organizations, the economy, citizens and society.

As part of EKT's institutional role, it provides new and more effective solutions for the unobstructed flow of authoritative, quality information in the digital public space. Today, on EKT's Open Search platforms a number of scientists and citizens make use of hundreds of thousands of semantically linked items from a large number of institutions. Characterized by interdisciplinarity and strategic planning and aided by cutting-edge technologies such as machine learning, artificial intelligence and neural networks, EKT ensures that public data, culture and knowledge flow freely, openly and are accessible to every citizen seeking reliable information, lifelong learning and entertainment.

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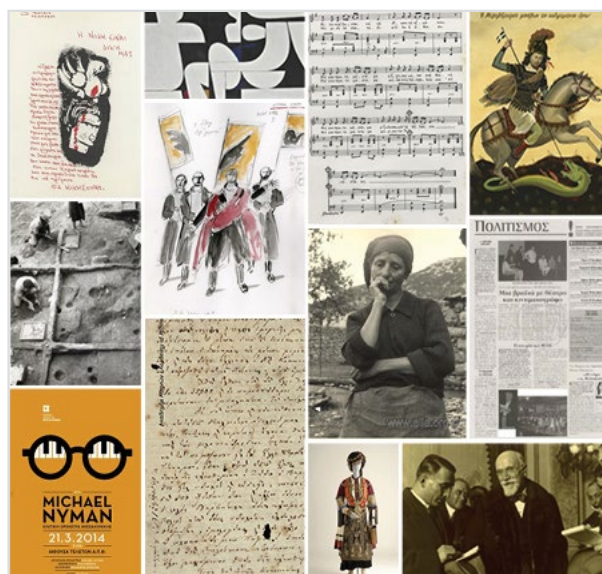
SearchCulture.gr



The National Aggregator for Digital Cultural Content, SearchCulture.gr, is an online platform that provides central access and supports a unified search for digital cultural objects whose custodians are Greek cultural content providers. It is the accredited national aggregator for the European digital library Europeana

SearchCulture.gr collects reputable cultural content from cultural institutions, museums, archives, libraries, art galleries, archaeological ephorates, and other organisations and makes it available for further use while respecting the rights of the authors and the policies of each organisation.

With the main goals of disseminating cultural knowledge with the least possible restrictions, creating new channels for understanding culture and heritage, as well as ensuring the access of the research and academic communities and citizens to public cultural goods, SearchCulture.gr brings together digital items from prominent collections, while digitisation projects are constantly expanding available content. At the same time, SearchCulture.gr contributes to the promotion of Greek culture, supplying Europeana with Greek digital content.



## Digital curation of collections for improving search and navigation

SearchCulture.gr provides access to more than 717,000 digital items and offers its visitors a dynamic experience of exploring the digital content it collects (archaeological monuments, historical documents and manuscripts, folklore objects and relics, works of fine art, religious works of art, cartographic material, intangible cultural heritage items and books).

Every day, more than 1,000 people visit the platform to explore large and diverse datasets belonging to 96 digital collections of 72 different institutions (museums, archives, antiquities ephorates, municipalities, cultural institutions, art galleries, research centers and libraries). The large and heterogeneous volume of data requires finding ways to make it simple and easy for users to search and navigate it.

The curation process which facilitates navigation on the aggregator includes normalisation,

homogenisation and enrichment. Our aim is for all public cultural data to be open with clear licences for their further use, quality checked, interoperable, accessible to all and easily exploitable, with clear instructions for their further use. A specialised curation workflow using state-of-the-art semantic and machine-learning technologies was developed to ensure this level of quality.

A data enrichment process is followed, which combines systematic data curation with the use of machine learning tools for the semantic enrichment of the collections in terms of document types, chronologies, historical periods and topics.

Combined with the rest of the enrichments in topics, types, dates and more facilitate navigation in SearchCulture.gr and strengthening research in Greek culture, art and history. New, complex questions can now be posed by citizens, humanities scholars, teachers looking for specific course content, journalists or researchers studying a topic,

a time period or an event in Greek history.

With the digital curation of all the aggregated digital content on SearchCulture.gr, cultural records are enriched with more metadata that increase their value. At the same time, a significant and growing body of authoritative information is being circulated at national level, content that is reusable by the research community, educators and anyone interested.

In 2021, a detailed user guide of SearchCulture.gr was published. This outlined the multiple possibilities of navigation and content search that the national aggregator of digital cultural content offers its visitors.



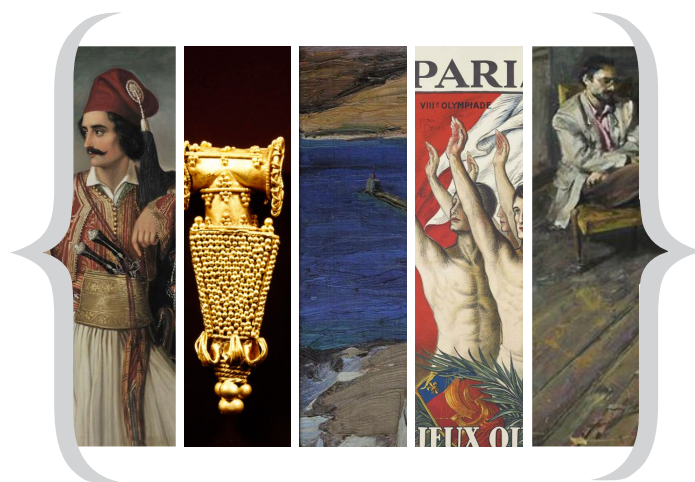
## Thematic exhibitions & Significant Persons in Greek History

### Two new functionalities for content discovery

In the spring of 2020, with the onset of the pandemic, authoritative digital content emerged as a valuable public good for e-education, learning, entertainment. Responding to the increased need for digital access to quality cultural content, we improved the navigation experience on SearchCulture.gr portal by launching Thematic Exhibitions. This functionality is particularly useful for humanities researchers, teachers, students and students looking for authoritative content, organized in a way that can be easily used in the educational process.

Olympic Games, Theofrastos Sakellaridis, Seascape, Karagiozis, Children's portraits, Caves of Greece, Delphic Festivals, are just some of the titles of the exhibitions. The exhibitions are sets of items with semantic relevance, which are brought together from different collections to tell stories of particular interest. This new feature highlights the range and variety of historical, artistic, archaeological, social and scientific topics that one can explore on the portal.

In November 2020, the first collaborative Thematic Exhibition titled 'Greek Customs: 190 years of institutional life' was created, which offers access to numerous documents that tell customs history and the operation of the Greek customs, illuminating at the same time wider aspects of the Greek public administration, politics and economy. The exhibition is based on a book published by the Independent Public Revenue Authority (AADE) that highlights the evolution of the Customs Service and its connection with major changes in the country at an institutional, economic and technological level, on the occasion of its 190 years of operation.



During the years 2020-2021, we engaged in a massive curatorial project, which launched a new functionality on SearchCulture.gr: an entities-based search and navigation feature, of the digital collections aggregated on the portal. For the first time, records relating to 8,000 persons, which played an important role in Greek history, arts and culture with their work, records that were scattered throughout many different digital archives, are now accessible from one single point.

The new functionality offers two new ways to search: a user can search for a person and locate all records on SearchCulture.gr such as works of art, music, theatre or writing, which this person has created. Alternatively, one can search for all records, which reference this person, i.e. photos, documents, portraits, references in texts, etc. There are multiple possibilities for presenting the results and filters to define the search as much as the user wants.

In this way, important personalities of Greek history and culture, such as artists, politicians, activists and creators, are showcased and their work becomes more easily searchable. At the same time, historical and biographical research is greatly facilitated as correlative evidence is found, i.e. evidence referring to the person being researched, which provides a conceptual framework sought by a historian or scholar.

## New collaborations and content at SearchCulture.gr

Over 2020-2021, more than 200,000 new records were ingested into SearchCulture.gr, coming from historical, folklore and community archives and museum collections of art, history and technology. New collaborations include the National Bank of Greece Educational Foundation, the Municipal Gallery of Larissa-Katsigras Museum, the Municipal Gallery of Agrinio, the Jewish Museum of Greece, the Ekaterini Laskaridis Foundation, the Benaki Museum, the University of the Aegean-Mandamados Historical Archive, and the Group Telecommunications Museum OTE.

With the addition of the digital collections of the The Cultural Foundation of the National Bank of Greece and the two Municipal Galleries of Larissa and Agrinio to SearchCulture.gr, the content related to the visual arts has been significantly enriched.

Adding to the content of the already existing art collections (of the National Gallery, the Averoff Gallery, the Frissiras Museum, and other organisations with visual arts collections) the Artists' Archives of the Cultural Foundation which also include entire archives-donations of artists, such as that of Yannis Moralis and Demosthenes Kokkinides. With this addition, a critical volume of arts content has opened up in the digital space of co-existence and dialogue between artists, eras and artworks, connecting the dots of Greek art throughout its long history.

The collection of the Municipal Art Gallery of Larissa includes paintings and engravings from the mid-19th



to the mid-20th century, representative of the trends and experimentations of modern Greek art, while the collection of the Municipal Art Gallery of Agrinio covers the visual arts scene of the second half of the 20th century.

The collection of the Jewish Museum of Greece, with a variety of historical and folklore material, captures the Greek-Jewish heritage, while the digital collections of the Ekaterini Laskaridis Foundation include important research material on the history of Byzantium and modern Greece.

The Chinese and Korean Collection of the Benaki Museum, which joined SearchCulture.gr in 2021, is a unique representation of the heritage of Chinese ceramics from the Neolithic period to the 19th century in Greece, while the Historical Archive of the Mandamados Community concerns the Ottoman community archive of the 19th century of Mandamados Lesvos with court decisions, jurisprudential documents and archival material collected by the community since 1894.

Finally, the collections of the OTE Museum increased the material culture content on SearchCulture.gr, with items representing the most important milestones in the evolution of telecommunications in the world and in Greece, from the first telephones to the first computers.



## OpenArchives.gr



OpenArchives.gr is the largest Greek online portal for finding reputable scientific content produced by research, science and education organisations. OpenArchives.gr collects the metadata of scientific documents from the websites and repositories of the organisations, applies advanced digital curation and semantic enrichment procedures - procedures that allow intelligent search and navigation of the content - and publishes them on the open web portal.

The content is updated at regular intervals in order to keep it synchronised with the different databases and repositories of its providers and includes: grey literature, undergraduate and postgraduate theses, doctoral dissertations, educational materials, articles in Open Access scientific journals, monographs, conference proceedings, scientific data sets and archives. The content covers the entire range of scientific areas. The system's architecture makes it possible to search and access content that is distributed throughout individual digital libraries, institutional repositories and online collections.

## Enriched content and new functional upgrades

In 2020-2021, 49,984 new records were added to OpenArchives.gr, coming from 20 collections of 17 institutions. The total content aggregated is 769,984 items, from 95 collections of 78 organisations. Featuring institutions and their collections at a common search portal, contributes to the prominence of their content, increases the access of users to their infrastructures and facilitates the dissemination of their work.

With 607,404 visits over the two years 2020-2021, OpenArchives.gr is the main source for researchers, students, teachers, scholars and any citizen looking for reputable scientific content.

The content of the collections of OpenArchives.gr covers all scientific thematic areas and presents great diversity and heterogeneity. Aiming at the best highlighting of the content as well as the facilitation of users in the search and discovery of material, EKT makes systematic efforts to enrich and classify it, using established vocabularies and thesauri of terms.

In the two years 2020-2021, we added two new fields to OpenArchives.gr: 'EKT Type' and 'EKT Chronology'. Users can search the entire content and filter the results based on type of content and by time criteria. This was implemented by using the Platform for publishing semantic resources as Linked Open Data, which includes an original and highly user-friendly tool for bulk semi-automatic semantic enrichment and content homogenisation.

In addition, with the aim of increasing the scientific content of OpenArchives.gr, the Guide 'Interoperability specifications for the standardised publication of scientific digital resources and their inclusion in OpenArchives.gr' was published, addressed to scientific and research organisations that wish to include their content on OpenArchives.gr'.

It should be noted that there are two ways of publishing data on OpenArchives.gr: through Web API, which allows third-party applications

to search and view records hosted in the Aggregator, and as Linked Data, thus contributing to the World Semantic Web.

## Audience research

### Learning from user communities

In order to better understand the needs of OpenArchives.gr users, an online survey was carried out with a structured questionnaire. The aim was to draw conclusions based on which the future extensions of the portal will be planned. The results of the survey, in which 340 people participated, with particularly positive comments, were extremely interesting.

As expected, the vast majority come from academia: professors, researchers, and students looking for scholarly articles, monographs, and PhD theses for their research or writing a scholarly paper. Also, OpenArchives.gr has a significant number of regular users as 82% visit it at least two-three times a year, of which 48.7% more than four times a year. Their interest mainly focuses on the archives of the humanities and social sciences and the arts, while the interest in the natural sciences, health sciences, veterinary

medicine and agriculture is below 15%. The vast majority (88%) are looking for something specific, and just 11% are browsing content in general. 40% use advanced search filters in their research in addition to simple search. Users say they are quite to very happy with the search results (81%) and 98% say they would recommend it to others.

In terms of suggestions for improving the system, the most common is that users would like to be able to search results with access to the digital document itself. Users also stated that they would like access to more content, access to open datasets for data mining, and being able to see a researcher's publications.



## Developing a Machine Learning Model

The further development of OpenArchives.gr takes advantage of the possibilities offered by Artificial Intelligence, specifically Machine Learning. In this context, an infrastructure is being designed which will automatically classify the documents of OpenArchives.gr according to the scientific fields to which they belong under the supervision of EKT information scientists.

Artificial Intelligence technologies for the thematic categorisation of the content on OpenArchives.gr will be applied from May 2021. A Machine-learning model and an alternative Deep Learning model (Neural Network) are being developed by EKT scientists for the automatic categorisation of OpenArchives.gr records and are being 'trained' by a team of information scientists.

During the first stage, the EKT Subjects across Scientific Disciplines which has also been developed by EKT is used as a basis for the categorisation of documents. It is bilingual and includes 480 terms organised into 3 hierarchical levels (e.g. 1st is Agricultural Sciences and Veterinary Medicine - 2nd is Agricultural Biotechnology - and 3rd is GMO Technology) and is based on the OECD FORD

Research and Development classification fields. For each of the terms, EKT scientific personnel match a sufficient number of articles from the database of OpenArchives.gr, while an article can belong to more than one scientific category.

The aim is to manually create a curated reference base of approximately 5,000 articles classified into individual scientific categories, which will be used to train the algorithm. This algorithm, taking into account the individual fields and characteristics of each article, will then be required to classify other standard digital documents into one or more scientific categories.

This process will introduce a vital new method in semantic annotation for the large volume of scientific content aggregated at OpenArchives.gr and will improve the quality of search results for the user.

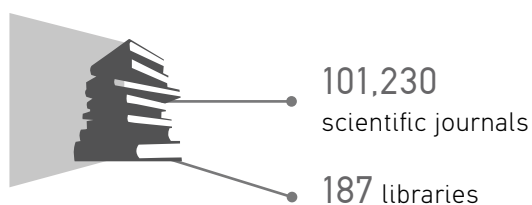
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## The National Union Catalogue of Scientific Journals (ESKEP)

The National Union Catalogue of Scientific Journals (ESKEP) collects the bibliographic data of the scientific journals that the Greek libraries have in their collections. ESKEP, which was compiled for the first time in 1983, is a unique search tool for available journals, printed and electronic, in Greek scientific libraries..

Interlibrary Loan System operates in tandem with ESKEP. This enables libraries - members of the National Network of Science & Technology Libraries co-ordinated by EKT, to search for a specific periodical from the collection of the network's libraries and to order a digital copy of an article online. Thus, the multiple use of the national collection of scientific journals is achieved and the operating costs of the libraries are reduced.

101,230 scientific journals from the collections of 187 libraries have been incorporated into the ESKEP catalogue. During 2020-2021, 1,640 orders for full texts were made between the member libraries



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## DIGITAL PLATFORMS AND SOURCES

Digital collections and repositories, library catalogues, doctoral theses, scientific journals, conference proceedings and books are available on the EKT infrastructures, which is based on the principles of Open Access and Open Science. The aim is to reuse this digital content in research, education & lifelong learning.

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## National Archive of PhD Theses

The National Archive of PhD Theses was established in 1985, since when it has been maintained and made available by law by EKT. The Archive collects in digital form doctoral theses completed at Greek universities, as well as those completed by Greek nationals at universities abroad and have been recognised by the Hellenic National Academic Recognition and Information Center (Hellenic NARIC). EKT maintains the archive through an information system that ensures the availability and maintenance of metadata and digital files and the extraction of the required statistics that allow for its improvement.

Through the online platform of the National Archive of PhD Theses, internet users have access to all metadata of PhD theses as well as their digital file. The platform offers navigation, simple and advanced search, as well as functions of online reading and downloading of the digital theses file. The results of original, high-level scientific research are made directly accessible to all through the Archive.

The National Archive of PhD Theses is made use of by EKT, in its institutional role as the National Authority of the Hellenic Statistical System, for the production of the national statistics on holders of doctoral degrees from Greek universities on an annual basis.

During the reporting period, the system of collecting and presenting statistics was redesigned.



## e-Publishing platform ePublishing@EKT

Through the ePublishing@EKT platform, users can find all about the services we provide for the digital publication of scientific journals (eJournals) and the hosting of practical conferences (eProceedings) and books (eBooks) . At the same time, the platform integrates functionality that ensures navigation and a single search for all the scientific content published through our services.

The platform offers scientists reputable scientific content under Open Access terms, and improves academic collaboration and communication, while upgrading the quality of publications and publishing practices to align with European and international good practices and policies in scholarly communication, digital research and scientific publications.

Visitors to the ePublishing@EKT platform (visits now amount to 4 million/year) gain access, in a direct and friendly way, to a multitude of Greek publications in more than one language. They can carry out specialised searches based on keywords, the author and scientific field or they can simply read online, in multiple formats, the material that interests them.

At the same time, visitors are informed about how to leave comments, new practices for open science and online tools for managing the research process.

The great increase in its use, reflected in the traffic figures of the last two years, proves its value to academic and research bodies.

From the main page of the ePublishing@EKT platform, the user has direct access to all new publishing collaborations and recent publications; from the publisher page, they can navigate to all the publications of each partner organisation; from the scientific fields section they can view all publications per field in a single space.

At the end of 2021, the ePublishing@ EKT platform included 56 scientific journals with 16,930 articles, 9 conference proceedings series with 38 volumes of proceedings and 2,309 articles, as well as 26 books from 10 publishing houses. During the two years 2020-2021, through our publishing services, 12 new journals were published, and 3 new series of conference proceedings and 20 new books were published. The total number of publishers was 61.

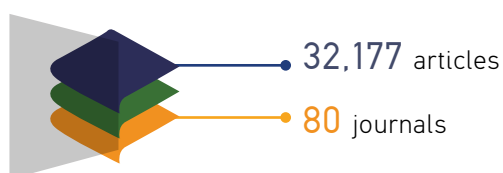


## Social Sciences & Humanities Index (GRISSH)

The Social Sciences & Humanities Index (GRISSH) collects, documents, preserves and provides access to reputable Greek scientific publications in Social Sciences and Humanities.

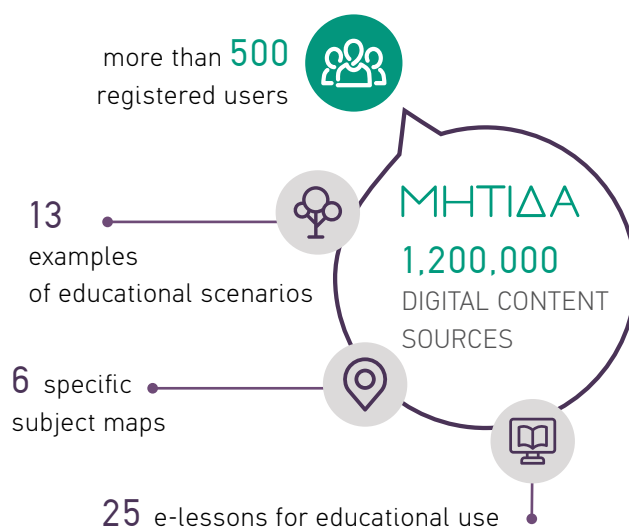
Scientific journals and articles from Social Sciences and Humanities are indexed in GRISSH and, where possible, access to the full text is ensured.

The Index supports functions for searching the content with a word and/or key phrase, navigation by subject category, journal title, author, publisher and applies combined search filters to limit the results, view metadata in journals and articles and the full digital document.



## Online Learning Repository for Rich Educational Resources (MITIDA)

MITIDA is a specially designed digital platform to support the collaborative activity of the educational community and promote student-centered, active, non-formal learning. Using a set of modern tools and the freely accessible digital resources available at EKT, teachers and professors of primary and secondary education can collaborate, experiment and create digital interactive educational content themselves through the platform, thus contributing to the strengthening of the teaching. Using primary material from EKT repositories and other open data sources, exemplary applications were developed in the following broad thematic areas: 'Modern Greek History and Culture', 'Ancient and Byzantine History and Culture', 'Natural and Urban Environment'



# EKT's Digital Repositories Catalogue

The Catalogue of Digital Repositories includes repositories of organisations with which we have long-term co-operation in support of the organisation and availability of their digital collections.

The Digital Repository Catalogue includes collections of primary sources, with scientific archives, cultural resources and educational content openly available for use and sharing.




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Repository Of National Council for radio & Televisio

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Acropolis Education Resources Repository

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Learning Resources Repository  
Museum of Cycladic Art

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FOSS Repository/ Open Technologies Alliance (GFOSS)

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Helios Repository National Hellenic  
Research Foundation

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THEOPHRASTUS Institute of Mediterranean  
& Forest Systems Repository

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The Historical Archive of Greek Refugees -  
Kalamaria Municipality

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TECHNI Macedonian Art Society Repository

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Repository of Deliverable NSRF Tertiary  
Education Scholarship Actions 2017-2020

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REPOSITORY of the Hellenic Confederation  
of Commerce and Entrepreneurship-Archives  
of Commerce and Entrepreneurship

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The Parthenon Frieze Repository

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Committee for the Support of Libraries Repository

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School of Visual and Applied Arts  
Aristotle University Thessaloniki Repository

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Sortiris Kakisis Archive

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National Quality Infrastructure System (NQIS) Repository

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## REPOSITORY OF NATIONAL COUNCIL FOR RADIO & TELEVISION

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Acropolis Restoration Service Repository

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Digital Collections of Municipal Library  
of Patras Repository

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The EPLO Law & Governance Archive e-Public  
Law - European Public Law Organisation (EPLO)

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Oeconomics, the Centre of Planning  
and Economic Research Repository

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Ariadne - EKT Institutional Repository

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OBSERVATORY of the Refugee & migration  
crisis in the Aegean Repository

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Constantinos Simitis Foundation Archive

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Asklepius- Institutional Repository  
for Health Sciences of Aslepicio Voulas

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Ergani - Historical Archive of the Aegean

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Euterpe: Greek songs for schools - Digital  
Music Anthology

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Pandektis National Hellenic Research Foundation

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About Libraries

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e-stories chest box - Digital local history stories  
from Serres

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Digital Library of EPEAEK & EPDBM

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The repository of the National Council for Radio and Television (NCRTV) was developed to serve the management of the public documents published by the NCRTV, the bodies it supervises and their stations, and at the same time to function as a means of information, primarily, for the stations (radio-television, internet, satellite) in matters of ethics and programme content.

For this purpose, extensions were made to our repository infrastructure at EKT and internal organisation specifications of the organisation were implemented in order to support the functions of archiving, navigation, search and dissemination of NCRTV's public documents covering: Instructions, Recommendations, Indications, Opinions, Announcements, Press Releases, Consultations, Decisions, Stations, Agencies.

In addition, new functionalities were developed, both in terms of content submission and management, as well as in terms of presentation, so as to serve advanced functions of search, presentation and semantic linking of content and to support online access, advanced search and dynamic dissemination of the repository content. More than 10,000 documents have already been included in the NCRTV repository

## ARIADNE – EKT’s institutional repository

Ariadne, our institutional repository at EKT, is an infrastructure providing open online access to all content and data produced by the organisation. Studies, activity reports, statistical publications, periodicals, surveys, development and innovation policy publications, working papers, journal and conference publications, presentations, videos and audio-visual material from EKT events are all available in Ariadne.

Ariadne operates with the latest version of MIT’s DSpace open software platform, with significant extensions and customisations made by EKT to ensure the optimal organisation of content, as well as advanced search and indexing functions in the Greek language. At the same time, common metadata formats are adopted, controlled vocabularies are integrated and interoperability requirements are ensured. In this way, Ariadne meets the most modern standards of semantic content sharing and knowledge dissemination.

The objectives of the repository include collecting and preserving all the results of EKT’s activities in whatever form they may be, and making them available to the general public based on the principles of Open Access and Open Science.

The Ariadne repository already includes more than 3,200 records and this rich material is available in a fully organised digital environment with single access, dynamic navigation and advanced search. The video library collection has more than 2,300 videos from conferences, info days, seminars, workshops, interviews and events we have organised or supported.



## NSRF Tertiary Education Grantee Repository

We organised and implemented the 2017-2020 NSRF Tertiary Education Action Grants Repository, which collects, maintains and displays the deliverables of the beneficiaries of the co-financed NSRF Actions of the Special Secretariat for the Management of EKT Programmes of the Ministry of Development and Investments, in the higher education sector of the period 2017- 2020.

The Repository content is organised into three collections. The first includes young doctorate holders, the second postdoctoral researchers and the third the members of research groups. The content of the Repository includes the following types of scientific output that have

arisen as a result of the participation of the beneficiaries in the specific NSRF Actions: (a) Doctoral theses, (b) Articles in scientific conferences, (c) Publications in scientific journals.

The Repository is addressed not only to the scientific community but also to society more broadly. Therefore, its content is immediately and freely accessible in such a way that allows an overview of the productive activity of young researchers. The repository already includes 919 items deposited by the researchers themselves. The repository was developed under the Action 'Evaluation of NSRF Tertiary Education actions' (O.P. 'Development of Human Resources, Education and Lifelong Learning 2014-2020', with co-financing from Greece and the European Union - European Social Fund).

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## REPOSITORY Digital Collections of Municipal Library of Patras

The repository Digital Collections of the Municipal Library of Patras is an online site for gathering and organising the cultural heritage of the city of Patras, with the aim of systematically organising and making it available for educational, research and cultural purposes. It already includes 2,739 records about the social, economic, political and cultural life of the region, reflecting the historical development of the city over the centuries. Books, magazines, newspapers, photographic and historical archives, postcards, works of art, posters, diaries, are some of the primary

historical documents, which can be a general and historical research tool for anyone interested.

The digitised cultural content is intended for all residents of the Municipality of Patras and the wider region, from citizens to researchers, students and schoolchildren. It can also be used by public and educational bodies, legal entities of public law (NPDD), cultural clubs and associations.

## ABOUT LIBRARIES

In collaboration with Konstantinos Staikos, EKT created a digital encyclopaedia about the world of libraries, from antiquity to the present day. The main goal is the organised recording and highlighting of the history of libraries and their collections which is presented in a friendly and direct way, as well as the creation of a hub for the collection of rich material, information, research and the interconnection of library people within Greece and globally.

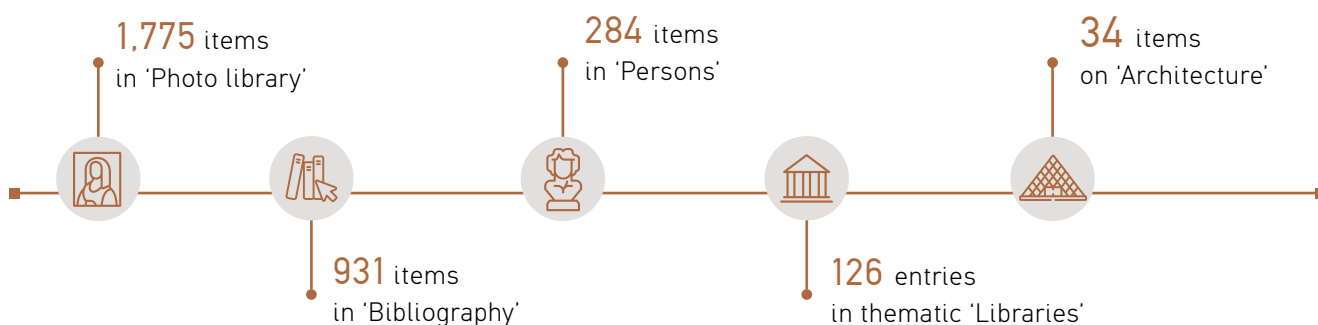
The digital encyclopaedia 'About Libraries' ([www.aboutlibraries.gr](http://www.aboutlibraries.gr)) is a space for original research and the collection of important and rare archival and other material, which focuses on presenting unique collections and personalities associated with libraries in the East and West from antiquity to today. The content in the first phase comes from the personal collection of K.Sp Staikos, book collector and historian, with long-term and systematic research on the architecture, history and content of libraries, as well as publishing and printing activity.

We developed a modern technological infrastructure, incorporating an appropriate documentation scheme. It curated and structured the content in thematic units with the possibility of alphabetical, chronological and geographical

view, satisfying a variety of research requirements. At the same time, it applied the appropriate practices for the organised and methodologically sound production of new content, according to modern library standards and information representation models.

The digital encyclopaedia 'About Libraries' includes more than 3,150 processed and documented items in Greek, which are accompanied by useful bibliographic references and a rich visual collection (miniatures of manuscripts, woodcuts, copper engravings, lithographs, paintings, representations and photographic depictions of sculptures and architectural works, etc.).

For the next phase, EKT plans on enriching the records referring to Greek libraries. This will be based on data and content selected by the libraries themselves, about the history, architecture, archives and the persons connected with them. The goal is to highlight and make this valuable material available to the research community, the educational community, and the wider public.



# HELIOS - repository of National Hellenic Research Foundation

An easy-to-use, electronically enriched with 2,040 new document records and digitally transformed repository infrastructure now enables the scientific personnel of the National Hellenic Research Foundation (NHRF) to showcase their important and internationally recognised work.

Following the current international developments in the fields of Open Science and Academic Communication and applying the European standards for the provision of research data, we undertook the transformation of the platform for the collection, organisation and provision of digital content into a uniform electronic repository infrastructure for Greek data. The repository 'Helios' has been available from the NHRF since 2008.

In the 'Helios' repository, which collects and makes available the scientific work of the three Institutes of the NHRF (Institute of Historical Research, Institute of Chemical Biology, Institute of Theoretical and Physical Chemistry) and the actions of EKT (until December 2019), there are 9,583 edited and normalised records. The content of 'Helios' is organised into collections, according to the NHRF structure and activities. Scientific publications in international journals, research papers, conference announcements and proceedings, monographs, events, video lectures, educational material, research data, multimedia and educational material are available in a modern



digital environment and presented in a direct and friendly manner.

'Helios' is available to all members of the scientific and educational community, to researchers of the Humanities and Sciences, and to any citizen interested in looking for material related to these scientific disciplines. Although only the personnel of the NHRF (research and scientific) have the right to deposit material in the infrastructure of the repository, all potential visitors can register and use it

The digitally upgraded infrastructure of the 'Helios' repository that we have redeveloped as part of the project 'Collection, dissemination and exploitation of the 'Competitiveness, Entrepreneurship and Innovation' (EPANEK) of the NSRF 2014-2020, co-financed by Greece and the European Union - European Regional Development Fund, integrates new functions of introduction, exploration, findability and presentation of content. These advanced features greatly facilitate the process of submitting new material and make it more efficient for potential users to search and explore digital content.

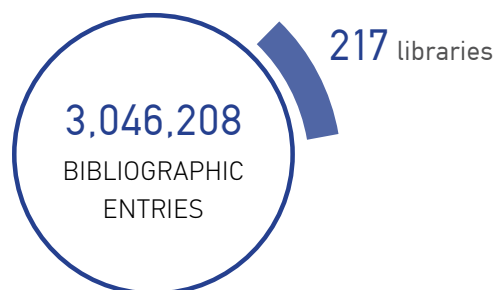
## UNION CATALOGUE of openABEKT libraries

The openABEKT Union Catalogue takes advantage of the technological capabilities of the openABEKT service, providing access under a common interface to all the content of the libraries receiving the service. The openABEKT integrated cloud service for catalogue management and library operations has been developed according to the Software as a Service (SaaS) model and is available online from EKT's cloud infrastructure.

The openABEKT Unified Directory collects, indexes and presents in real time and in a single graphical environment the records of all entities that use openABEKT. Through this function users are able to carry out a single online search in the catalogues of hundreds of libraries, refine their results with multiple criteria and compare

and select material according to their needs.

Co-operating libraries can showcase their content while enjoying data exchange services that drastically reduce the time and cost of original cataloguing.



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## CATALOGUE OF JOURNALS in the EKT Digital Library

The Catalogue of Journals in the EKT Digital Library includes 12,593 titles of journals of reputable international publishers, in all fields of knowledge, in electronic format and which are accessible through the National Union Catalogue of Scientific Journals (ESKEP).

A Catalogue of Open Access Journals in which the urls of Open Access journals are collected and classified is updated and maintained by EKT.

Access to the catalogue is possible from the EKT Digital Library website.

For internet users, it is also possible to search databases, books and sources on the internet, while electronic services related to the search of international bibliography, citation index and bibliometric indices and the ordering of full texts is offered.

## Dedicated website for scientific information related to COVID-19

In March 2020, we created the special information website 'COVID 19: Scientific Information', with the aim of offering valid information for the research community and every citizen interested in the developments of scientific research into the COVID-19 pandemic.

Constantly updated by our information scientists and aiming to highlight valid scientific opinions and data, the website includes open access scientific publications from reputable international journals examining a range of critical issues of

concern for experts and society regarding the new virus, the evolution and consequences of the pandemic, and the dimensions of the phenomenon at a social, economic and political level. The website also includes a section with publications by Greek researchers, as well as a list of organisations in Greece and abroad that provide scientific information on COVID-19, links to videos and podcasts, sources of scientific data, maps and graphs.



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## DIGITAL SCIENTIFIC CONTENT MANAGEMENT SERVICES

According to our institutional mandate, EKT offers a range of state-of-the-art quality services adapted to international standards and related to digital content, science and culture. Capitalising on the achievements of technology and adapting to today's trend of digitalisation of public services, we meet the information and data needs of the academic, research, educational and business communities as well as policy makers.

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### Online Submission of Doctoral Theses

The Online Submission of Doctoral Theses System was developed to meet the requirements set by law for the establishment of the National Archive of PhD Theses. The System allows the Secretariats of the Greek Universities, the National Recognition Information Centre (NARIC) and PhD students to deposit the metadata and the digital file of a thesis exclusively electronically in a direct and friendly way, guiding them with detailed instructions. The main goal of the System is the electronic filing and management of theses in order to compile the National Archive accurately. The paperwork and administrative burden is thus significantly reduced and time is saved, as all actions are now performed electronically, simplifying and speeding up the process of submitting theses.

In 2021, the Doctoral Theses Submission System was redesigned and implemented with the primary aim of its full digitisation, taking into account Law 4765/2021, in which it is stated that ASEP's notices for filling positions of permanent personnel and personnel with private employment contracts, grading of the doctoral degree will be awarded to holders of a doctoral degree in a scientific field listed as acceptable, according to the classification of the Archive.

The classification of scientific fields of the National Archive of PhD Theses, a bilingual hierarchical vocabulary, now includes three levels: main scientific field, specific scientific field, specialised scientific field



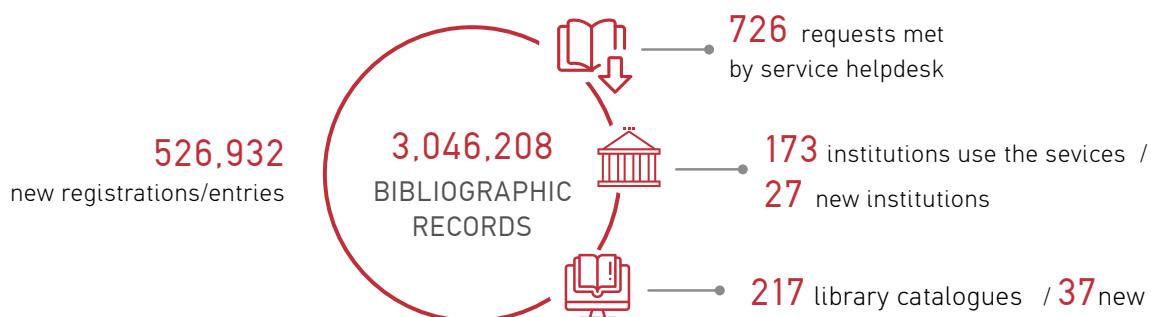
## OpenABEKT Service for library catalogues

The openABEKT integrated cloud service is for catalogue management and library operations developed as Software as a Service (SaaS) and is available online from EKT's cloud infrastructure. Through the openABEKT service, each collaborating organisation (library, archive, museum, information centre, etc) can organise, manage and make available in real time all their documents online. As part of this service, we provide, among other things: provision of storage space in the EKT cloud infrastructures, backup services and long-term preservation of the content and high availability cloud infrastructures with high internet connection speeds.

The service allows the library community and the wider ecosystem of scientific and cultural institutions to organise their collection catalogues and services for their public, while improving communication between them. At the same time, it offers a friendly working environment for the personnel of an organisation, while fully responding to the growing needs of the public

for modern online services.

During 2020-2021, which coincided with the period of restrictive measures imposed due to the COVID-19 pandemic, libraries leveraged the capabilities of the openABEKT service in order to remain operational and serve their public remotely. In this way, their employees were able to determine workflows for enriching content in the catalogues. For their part, library users used the library's online catalogues to locate and order the books they were interested in. The feedback and satisfaction of the collaborating organisations is particularly encouraging both for the continuation and the upgrading of the service.



## Services for digital publishing of scientific journals and hosting conference proceedings & books

The main objective of the services for the digital publication of scientific journals and hosting of conference proceedings & books and their availability through the ePublishing@EKT platform is the electronic publication and distribution of reputable scientific publications and the expansion of openly available digital scientific content. These services fully cover the publishing needs of the scientific community and contribute to the digital transformation of the publishing activity of scientific journals in Greece.

The services primarily target reputable scientific publishers, research institutions of the country, ethnographic institutions and cultural organisations which choose to make their scientific output (journals, conference proceedings, books) available with Open Access. They are aimed particularly at academics and research organisations wanting to create a new scientific journal from the start, as well as those wishing to transfer their publishing activity to a new upgraded electronic environment.

At the same time, direct promotion and dissemination of the scientific work and the direct access of wider groups of users to the new scientific knowledge produced in Greece is ensured.

The service for the digital publication of scientific journals is provided through an online environment of electronic scientific publications, of high quality and technical specifications, covering all stages of the publishing process. The publishers of scientific journals, among other things:

a) upgrade and systematise publishing processes, and standardise publication workflows at all levels,

b) have online management of processes at all stages of publishing activity through the open software OJS (Open Journal Systems),

c) allow authors online submission of papers and monitoring of the publishing process,

d) provide their readers with a friendly environment for navigation, specialised search, reading and uploading of publications,

e) have the metadata of their publications available through specialised information and social networking tools ( eg RSSfeed).

By leveraging the conference proceedings & book hosting service, publishers ensure the long-term preservation of digitised records, multiply the value of the books and the influence of the conferences and make their data open to the online public. In this way, the readership of their publications increases, promoting research and the efficient research process.

For this purpose, we assign a DOI to each article (in scientific journals and books), thereby registering the publications of researchers, scientists and academics in indexing bases (Scopus) and contributing to their progress.

The content of the publications included in the ePublishing@EKT platform feeds metadata, indexes, catalogues and aggregators in Greece and internationally, which support unified search and smart content distribution, so that we fulfil our role as a national disseminator of knowledge.

Over the next period, the EKT ePublishing platform is being upgraded and expanded to offer publishers new functionalities to facilitate their administrative tasks, and users' upgraded services to more

## Service for inclusion of collections in SearchCulture.gr & OpenArchives.gr Portals

efficiently search and find digital material.

The ePublishing services provided for publishers of scientific journals, conference proceedings and books increased the number of digitally published journals and by extension the publications available with Open Access, a fact that was highly appreciated by the country's academic and research community and reflected in the millions of visits and readings.

Over the two years 2020-2021, 35 new publications were published through the EKT publishing services. These included 12 new journals, 3 new series of conference proceedings and 20 new books. In addition, 3,066 new articles were published in scientific journals and conference proceedings. Within the framework of these services, 470 requests were met. The total number of publishers at the end of 2021 was 61.



The digital portals SearchCulture.gr and OpenArchives.gr are based on a robust network of organisations that provide organised digitised cultural and scientific content. In terms of inclusion on the platforms, we support institutions that have digital collections and wish to include them. We undertake, among other things, processes of digital curation and semantic interconnection of metadata for intelligent search and navigation of the content. At the same time, digital cultural collections are made available through the European digital library Europeana.

We have published Guides with Interoperability Specifications, which are addressed to organisations wishing to include their digital content in the two portals. By following uniform basic interoperability specifications, compatible with international standards and good practices, the aim is to ensure the quality and long-term availability of the result of digitisation projects at national level.

The aim of this service at SearchCulture.gr and OpenArchives.gr is to contribute to increasing the findability, reuse and international promotion of the Greek digital scientific and cultural content of the institutions (museums, archives, libraries, antiquities offices, other cultural bodies, universities, research centres, foundations and scientific societies, etc.) that include their material in the two portals.

In December 2021, the number of organisations that contributed content to the national SearchCulture.gr amounted to 72 (14 new organisations in the two years 2020-2021), while in OpenArchives.gr it amounted to 78 (17 new organisations in the two years 2020-2021).

## Vocabulary publication service at Semantics.gr

Semantics.gr is an infrastructure we have developed at EKT for the creation, curation, semantic linking and publication of vocabularies, thesauri, taxonomies and authorities (to which we refer to generally as "vocabularies"), in any format, and publishing them as Open Linked Data.

In the era of data economy it is crucial that data is authoritative and available according to the latest publishing technologies that allow machines to understand the meaning of the data so that they can process it using logical sequences. The technologies of the semantic representation of knowledge allow the unambiguous identification of an entity on the World Wide Web, the interconnection between related terms (eg 'vessel' and 'vase') or the disambiguation between the homophone words i.e. marry and merry.

Semantics.gr as a service, developed at EKT, allows reputable organisations (scientific, cultural, wider public sector, etc.) to publish a vocabulary on the Semantic Web and to easily create and establish their own vocabularies. At the same time, organisations can leverage existing published vocabularies to document and semantically enrich their digital databases and collections, thereby increasing the quality and validity of documentation, reducing its cost, and improving the interoperability of their systems.

Semantics.gr provides a friendly environment with easy-to-use forms for the publication of semantic resources in any subject with which an organisation is regularly involved in, for example, terminology for archaeology or art history, natural sciences, medical terminology, lists of persons or vocabularies and registers in the area of business or public services.

To date, 49 vocabularies have been created and published covering various topics such as: types of cultural objects, time periods in Greek history, subject headings, scientific fields, etc. Most of them have been developed by EKT and European project partnerships, such as Triple and CatRIS. Many of them are original Vocabularies, while others enrich existing ones (eg UNESCO thesaurus, Library of Congress Subject Headings, Library of Congress Classification) with Greek renderings. Vocabularies have been used in the semantic enrichment of the EKT digital infrastructures (National Archive of PhDTheses, ePublishing, Ariadni, SearchCulture.gr, OpenArchives.gr).

Our goal is for Semantics.gr to be a central public platform where authoritative vocabularies are published for use and reuse by institutions, the scientific and educational communities and the general public.

## Interlibrary loan service EDETB

Through the interlibrary loan service, libraries - members (academic, research institutions, hospitals, special, etc.) of the National Network of Scientific and Technological Libraries (EDETB), are able to search and locate the libraries of the network whose collections include a particular journal. Then, through the service, they can order an online copy of an article from the libraries that have it, and both client libraries and supplier libraries can monitor the progress of their orders at any time.

The goal of the service is for EDETB member libraries to expand their narrow operational boundaries and to benefit from the multiple use of the national collection of scientific journals.

Through the service, multiple use of the national collection of scientific journals is achieved and the operating costs of libraries are reduced.

In the 2020-2021 period, 1,640 requests for orders of full texts were submitted to the 144 libraries of EDETB. Of these, 1,275 requests were fulfilled. 215 of them were submitted to and met by EKT.

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## Scientific Information Services

The EKT Digital Library of Science, Technology and Culture provides access to collections with international and Greek content, such as journals, books, databases, doctoral theses, and offers users personalised scientific information services. The basic user services include: access to international bibliography, citation index and bibliometric indexes, the ability to order texts, articles and publications, use of an Electronic Reading

Room and a helpdesk. In March 2020, scientific information services were adapted to fit in with the extraordinary circumstances of the pandemic and continued to be provided online.

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## NETWORKING, TRAINING, PUBLICATIONS, PROJECTS

Our main mission at EKT is the streamlined operation of the national e-infrastructure, which ensures friendly access to reusable authoritative content of science and culture, ensures the collection and availability of data, while offering a multitude of services for the research, academic, educational and business communities. In this context, we promote networking, training and the co-operation of the organisations involved in the development and reuse of scientific knowledge in order to strengthen the exploitation of research results and promote innovation, digital transformation and economic growth.

### Events - Webinars

Over the 2020-2021 period, EKT was actively involved in the public debate on Open Access, Open Science and Digital Content. The following are examples of this active involvement: In November 2020, we organised the 'International Conference on Open Science and Academic Communication in the Social Sciences and Humanities' as part of our participation as a partner in the OPERAS project. In December 2020, Semantics.gr was presented at the 26th Panhellenic Congress of Academic Libraries: 'The role of Libraries during special conditions. In May 2021 we organised the webinar 'Building Communities for the Promotion of Open Scholarly Communication in Social Sciences and Humanities'. In May 2021, we participated with a speech at the Transnational Forum 'Greece-Cyprus 2021-2027: Bilateral co-operation in the field of Digital Cultural Heritage and Regional Development - New challenges, New perspectives.'

During the two-year reporting period, two webinars were held for cultural institutions and the visual arts communities. The purpose of the first webinar, which took place in December 2020, was to give information about the national cultural content aggregator platform SearchCulture.gr. The seminar was attended by 250 people, representatives of cultural institutions, workers in museums, libraries, archives, ministries, local government, academics and researchers from all over Greece. EKT personnel and representatives of organisations talked about the benefits of joining the aggregator, which, subsequently, led to an interesting

discussion highlighting the great interest of the community in SearchCulture.gr.

The second online seminar, in the form of an online discussion with prominent personalities of the visual arts, took place in May 2021. The seminar looked at the art of Engraving and presented the new thematic exhibition of SearchCulture.gr 'The art of engraving in modern Greece '.

*'It is a shared endeavour. It is this democratic nature of the digital space and the technology itself that enables overlap and increases the possibilities of communication, collaboration and co-creation.'*

*Dr. Evi Sachini, EKT Director*

## Newsletters

Greater interconnection  
with the cultural and research community

Activities and services for digital scientific and cultural content have an important place in information campaigns for our user communities. A range of articles and topics on digital portals, platforms and resources and digital content services, are included in EKT's monthly Newsletters sent to more than 40,000 recipients. The EKT Newsletter also includes sections presenting the new scientific journals, conference proceedings and books available on the [epublishing@EKT](mailto:epublishing@EKT) platform, the virtual exhibitions and news of SearchCulture.gr and the events we have organised or participated in.

From July 2020, we began to publish a Newsletter with topics related to the national aggregator of cultural content SearchCulture.gr. The aim is to give information about new content and functionalities and more generally about the digital transformation of the global cultural space. The recipients of the Newsletter are its visitor communities, representatives of the cultural institutions participating in it and technical contractors.

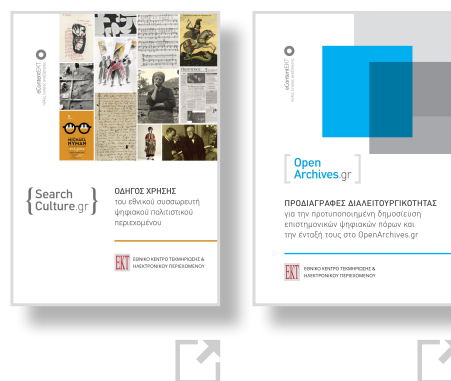
During 2020-2021, three newsletters were published which were sent to approximately 500 recipients. In addition, three Press Releases were published - with significant impact in the Media - and more than 80 articles were posted on the EKT website and social media.

## Publications - User guides

Our role in the Open Science ecosystem was outlined in a special publication (White Paper released in April 2020. The movement that has developed around Open Science is aimed not only at the free circulation of scientific research results, but also the free access to the entire scientific process in all its stages. The publication 'The role of EKT in the Open Science ecosystem' describes the developments in the international environment of Open Science, the infrastructures and the projects we undertake at EKT related to Open Science and our future actions in its promotion in the Greek space.

In parallel with the digital site [aboutlibraries.gr](http://aboutlibraries.gr), the 'About Libraries' publication was published in Greek and English and is available online. The publication includes some of the emblematic libraries of the country: the National Library of Greece, a monastic, a municipal, a private and a university library all being examples of the material included on the digital site. The publication was mailed to more than 1,300 libraries and other organisations in Greece and abroad and is available to anyone interested.

In 2020, two guides were published on standard management of cultural content in the digital space. The guides are addressed to cultural institutions and project sponsors whose object is the digitisation and online availability of cultural records. These guidelines document the necessary openness, interoperability and quality requirements for content delivery systems, available metadata and digital archives that maximise the discoverability, exploitation and reuse of their digital cultural collections and enable their inclusion in the National Aggregator for



Cultural Content SearchCulture.gr and in Europeana.

The first Guide is more concise and includes the 'Basic interoperability standards for the inclusion of collections in the National Aggregator of Digital Cultural Resources' making it easy, even for old systems, to integrate the specifications that make them interoperable with the national aggregator SearchCulture.gr and give new searchability and findability capabilities of collections.

The second and more detailed Guide, 'Interoperability and Content Quality Specifications for Publishing Online Digital Cultural Content' covers a broader topic, touching on all of the up-to-date best practice for digitisation and availability of digital resources online, such as unique identifiers, open licence use and digitisation specifications

In the spring of 2021, the new 'Guide to the use of the SearchCulture National Aggregator of Cultural Content' was published. The guide consists of two sections: the first is addressed to the personnel of institutions that have digitised and made available the documents of their cultural collections, and the second to those who visit the national aggregator platform for digital cultural content. Promoting interoperability and documentation standards. At the beginning of 2021, the new guide 'Interoperability specifications for the optimal publication of scientific digital resources and their inclusion in OpenArchives.gr' was published.





It covers the basic specifications for interoperability and documentation of digital content - metadata and digital files - that digital repositories must meet in order to allow the optimal availability of their collections on OpenArchives.gr, the largest Greek digital portal for searching and navigating scientific content. The guide is addressed to scientific and research organisations, such as universities, research institutions and centres, scientific companies and publishers of scientific content, but also more broadly, to organisations that produce and make available electronically the results of the research process, such as grey literature, scientific articles and publications in scientific journals, scientific data, etc.

On the occasion of the redesign of the Online Submission System for Doctoral Theses in April 2021, a new Guide for the use of the System was published in order to aid personnel of the Secretariats of Greek HEIs and NARIC and PhD holders apply the procedures of submitting theses to the National Archive of PhD Theses, in an easy and direct way, guiding them through the successive steps.

## Promoting interoperability and documentation standards

In the two-year period 2020-2021, compliance with basic digital content interoperability specifications as determined by EKT was included in the two new Calls for the digitisation of cultural resources of the NSRF's EPANEK Operational Programme: Call 118 'Creation, Promotion and Exploitation of Digital Cultural Resources' and Call 03 'Digital Culture Projects'. The updated specifications are initially addressed to funding bodies to be used by the Managing Authorities of the NSRF Operational Programmes in the calls they announce so that the co-financed projects are implemented with quality and sustainability.

The aim is to adopt, at the national level, basic uniform specifications for digitisation, online availability of content, openness and interoperability and to have an access point that makes the whole of the national cultural heritage searchable in a unified way. Potential beneficiaries of the Calls were required to adopt the 'Basic Interoperability Standards for the Inclusion of Collections in the National Aggregator of Digital Cultural Resources' published by EKT and to make the generated metadata and preview files of their digitised collection available to the National Aggregator for Digital Cultural Resources SearchCulture.gr.

By following basic uniform interoperability specifications, compatible with international standards and good practices, the aim is to ensure the quality and long-term availability of the result of the digitisation projects and to achieve the wide online dissemination of Greek cultural heritage both in Greece and internationally.

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## DEVELOPMENT ACTIONS FOR DIGITAL CONTENT

Through our participation in national and European projects and in co-operation with the relevant decision-makers, EKT actively contributes to the dissemination of knowledge, the exploitation and further use of digital content produced in the country, the establishment of interoperability standards, the formation of uniform policies and standards, and in general to accelerating the digital transformation of science and culture organisations for the benefit of the citizens.

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## Infrastructure for collecting, documenting and disseminating digital content

In April 2020, the implementation of the three-year project 'National Research Information and Technology System: Digital Content Aggregation, Documentation and Dissemination Infrastructure ensuring interoperability, long-term preservation and open access' began under the Operational Programme 'Public Sector Reform' (ESPA 2014-2020, with the co-financing of Greece and the European Union - European Regional Development Fund).

The aim of the project is to ensure the required capacity at the national level to address strategic challenges in content and data aggregation and preservation. Particularly important is the added value of the project in terms of open access and free availability of digital content and data, following scientific documentation, for their further use by the research and educational community, the business community, creative industries and the general public. The results of the project will substantially contribute to the digital transformation of organisations and institutions of science and culture.

As part of the project, all our digital content infrastructures and services are being technologically upgraded and operationally aligned with international standards and specifications. At the same time, new services and functionalities are being developed for better exploitation and reuse of the available scientific and cultural content, and for the optimal response to the modern needs of users.

A key step in this direction is the strengthening of interoperability between cultural and scientific content aggregators. We are implementing a subject agnostic meta-search portal that will perform unified searches on all the content

that is aggregated on the SearchCulture.gr and OpenArchives.gr portals.

## European Projects for Open Science and Academic Communication

At EKT, we have long been involved in some of the most important European projects related to digital content, Open Access, Open Science and academic communication. We monitor and co-shape developments at the European level and contribute catalytically to the promotion of Open Science and academic communication in the country.

In the two years 2020-2021, we participated in the European projects OPERAS and TRIPLE, which aim, primarily, to promote academic communication in the Social Sciences and Humanities as well as its further digital transformation.

Under the two projects, there was extensive discussion and research into the most suitable business plans for Open Access and Open Science, the best practices regarding the process of academic publication (services provided to authors, peer review, metrics, digital preservation, etc.), the use of Open Access licences and other related issues. The European project OPERAS-P (OPERAS-Preparation) (funding: Horizon 2020) was successfully completed in June 2021. The object of the project was to carry out the preparatory

work for the integration of the OPERAS network (Open Access in the European Research Area through Scholarly Communication) into the pan-European ESFRI infrastructure network and the preparation of the institutions and the infrastructures they support for the implementation of the upgrades envisaged by ESFRI, as well as the development of the OPERAS research infrastructure.

We participated in the OPERAS-P project, with the aim of creating and supporting a forum for user communities, while also actively participating in the information actions to promote Open Access and the interconnection of different communities (researchers, publishers, librarians, policy makers) which are involved in the Open Science project. At the same time, we participated in the mapping survey of the landscape of open academic communication in Europe, emphasising: (a) the identification of the institutions and groups that (should) have a say in this process and (b) the recognition of the needs of the users, mainly the researchers. We also had an important role in the formulation of the strategy for finding new partners and the expansion of the joint venture.

The European project TRIPLE (Transforming Research through Innovative Practices for Linked interdisciplinary Exploration) (funding: Horizon Europe, ongoing until March 2023), aims to address the problems faced by research in the Social Sciences and Humanities (SSH). Some of these problems include: the little use and reuse of the generated data, the limited possibilities of interdisciplinary co-operation and the problem of multilingualism in scientific publications, as it is customary in the SSH for publications to be made in the native language of the authors and not in an international language (eg English). At the heart of TRIPLE is the creation of the GoTriple digital platform, which aims to search, find and reuse material (publications, data, etc.) as well as to network researchers at a pan-European level. It is an innovative multilingual content

search platform for SSH, already in beta, providing a single access point for searching and reusing research resources related to SSH: publications and research data, research project descriptions and researcher profiles. These resources are automatically imported into the GoTriple platform by aggregators and providers (of publications, data, etc.), after they have first been semantically enriched. We are one of the main content providers, as the Greek digital content for SSH located in EKT's infrastructures is gradually made available on the platform.

In addition to providing content, we have an important role in creating and controlling the processes through which data and metadata are collected and homogenised on the GoTriple platform, both from existing databases and from new ones that will be added during the operation of the platform. We contribute both to finding best practices for this process and to addressing problems that arise when implementing these practices. The correct categorisation of data and metadata in the nine languages (English, French, German, Spanish, Greek, Portuguese, Italian, Croatian, Polish) managed by the platform is crucial. We have an active role in this endeavour, creating vocabularies that correlate scientific terms in different languages.

An important part of the TRIPLE project is to identify the needs of users and their expectations from such an infrastructure so that these are taken into account in the final version of the platform. We contribute to this process, both with the expertise we have in the design and operation of such infrastructures and with the knowledge and research we carry out not only within the project but also independently on Open Science and the needs of users.

EKT is one of the founding members of the OPERAS research infrastructure, which since June 2021 has been included in the ESFRI European research infrastructure map. The OPERAS infrastructure (Open Access in the European Research Area through Scholarly Communication) constitutes a research infrastructure for the support and promotion of Open Science, as well as the improvement of academic communication in the Social Sciences and Humanities (SSH). Its mission is to co-ordinate and unite existing infrastructures in a federation to best serve the needs of SSH researchers on the European continent. It consists of 53 members from 16 European countries.

WE have a long-term collaboration with the PKP (Public Knowledge Project), which was strengthened in the two years 2020-2021, after the signing of a memorandum of co-operation in 2018, with the aim of implementing new actions to improve scientific communication and strengthen Open Access. PKP is an international non-profit initiative that aims to improve the quality of scientific publications and promote Open Access to the results of publicly funded research. PKP has two journal publishing software (OJS - Open Journal Systems) and book publishing (OMP - Open Monograph Press). EKT, one of the most active institutional partners of PKP at the international level, participates in the work of the community supporting OJS for the publication of Open Access journals, contributing to its development and the translation of its interface into Greek.

The two software OJS and OMP are used on the e-publishing platform [Publishing@EKT](mailto:Publishing@EKT).

## Projects contributing to the increase of Greek cultural content in European

In December 2020, the European project 'Europeana Common Culture,' in which we participated as an accredited National Aggregator through the SearchCulture.gr infrastructure was completed. 24 organisations from all over Europe participated in the project, co-ordinated by the Europeana Foundation.

The project aimed to increase and improve the Open Access content in the European digital library Europeana, the co-operation of national aggregators, the harmonisation of policies, technologies and network infrastructures and the dissemination of Europeana's work.

We participated by sharing expertise on issues related to EKT's experience, for example in the procedures for semantic curation of content in the aggregator and the highlighting of Greek content in the European context. We published numerous articles on Europeana's publicity channels highlighting aspects of Greek cultural heritage, and collaborated with project partners contributing digital material to the dozens of Thematic Exhibitions created to tell European stories from many different perspectives that aimed to highlight not only the diversity and pluralism, but also co-operation between the people of Europe.

Upon completion of the project, we had gathered, normalised and semantically enriched 500,000 documents from 49 providers, increasing the country's authoritative Greek content in Europeana by 300,000 new documents.

Since September 2021, we have participated in the European project 'CRAFTED: Enrich and promote traditional and contemporary crafts'. The aim of the project is to support the preservation of traditional arts for future generations by gathering, enriching and promoting knowledge resources artefacts of tangible and

intangible cultural heritage and folk-art items. The project seeks to connect modern creativity with the economy and development, drawing inspiration from traditional applied arts such as weaving, pottery, embroidery, metallurgy, woodcarving, knitting, sericulture, silversmithing, spinning, weaving and dyeing. Modern technologies such as machine learning and artificial intelligence will be leveraged by project partners for semi-automatic annotation of digital artifacts, which will improve the retrievability of poorly documented material.

As part of the project, more than 180,000 items from all over Europe will be made available to Europeana and the richness and variety of traditional techniques and skills will be highlighted. We will make more than 5,500 documents of Greek institutions available and will overall improve the quality of the documentation of the folklore collections it has in Europeana. With the completion of the project, we aim to improve, quantitatively and qualitatively, the Greek content available in Europeana, particularly the folk art and intangible heritage collections.

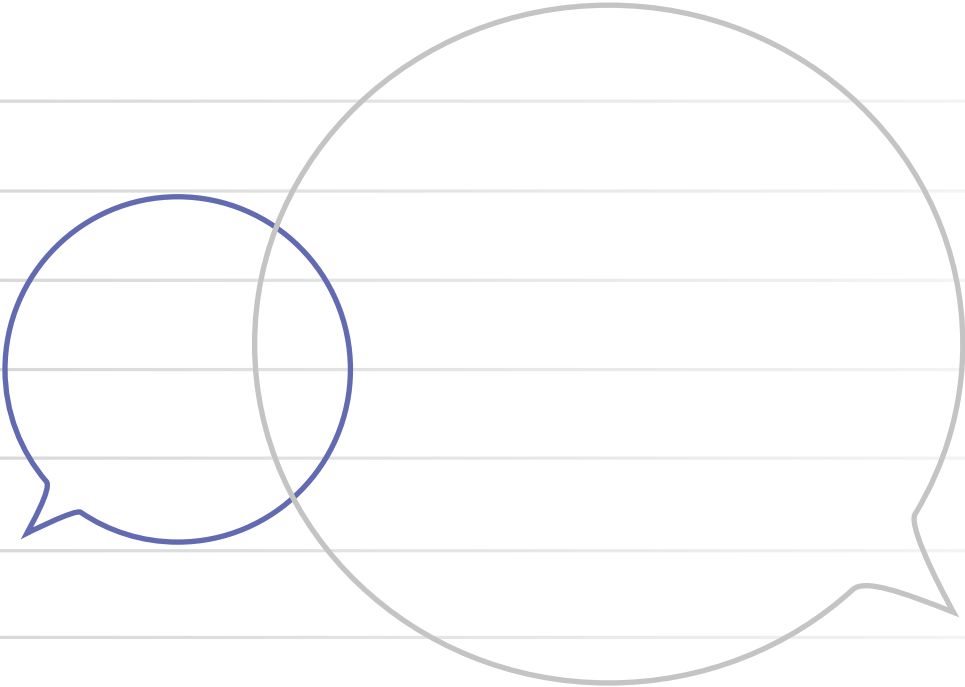


## GOALS 2022-2023

- Raising awareness of and support for Greek content providers, archives, museums and libraries, for the disposal of their digital collections in terms of interoperability and following international standards and good practices.
- Expanding the network of organisations that include their metadata in the SearchCulture.gr aggregator and increasing the Greek digital content in the European Digital Library Europeana.
- Increasing the number of reputable organisations, from whose systems the OpenArchives.gr aggregator draws content for the integration of the portal into the European Open Science Cloud (EOSC) and other European infrastructures.
- Technological and operational upgrade of EKT's national content infrastructures. Use of artificial intelligence technologies for the organisation and linking of data. Publication of guides on operators' use of digital content services.
- Technological upgrade of the ePublishing Service and improvement of the services provided for publishers and readers. Increasing available journals, books and conference proceedings through new publishing partnerships.
- Technological upgrade of the National Archive of PhD Theses (NAPhD) for more efficient use of content, with new functionalities and improvement of user interactivity.
- Operation of the Unified System of Semantic Vocabularies Semantics.gr as an integrated infrastructure of interconnected IT resources for the publication of vocabularies, authorities and thesauri, and its provision as a public remunerative service for organisations.

- Development of interoperability of Semantics.gr with the NAPHD, the Ariadne Repository and the ePublishing service in order to strengthen the interconnection of metadata with the use of unified vocabularies and lists of natural persons and collective bodies.
- Development of a unified infrastructure for use by public interest entities to create, publish and establish vocabularies, thesauri, lists of established names and other semantic resources as Open Linked Data.
- Interaction with user communities to evaluate and improve the online services provided.
- Interaction with user communities to evaluate and improve the online services provided.

# COMMUNICATION AND NEW CHALLENGES





Digital transformation is a continuous process of knowledge and technology transfer, a process of paradigm shift. Communication plays a central role in the discovery of new territory and the transmission of new information. EKT's communication strategy seeks to meet the challenges of open access to knowledge, raising citizen awareness of the value of open data, training data producers, and providing targeted information for policy makers and innovation system actors. The focus is always on the dissemination and further use of the generated knowledge in matters of research, science, innovation, culture and entrepreneurship.

During the two years 2020-2021, interaction with user communities was strengthened with a large increase recorded in both the traffic and the use of services and infrastructure such as the National Archive of PhD Theses, the OpenArchives.gr and SearchCulture.gr portals, the ePublishing@EKT platform and the knowledgebridges.gr platform.

In the spring of 2020, a scientific information website was created dedicated to the COVID-19 pandemic. At the same time, we opened a new page in the public debate by redesigning the 'Innovation, Research and Digital Economy' journal. In addition, a series of webinars focusing on digital skills was launched in May 2020. In total, 12 webinars and online trainings were carried out with the participation of 18,000 people.

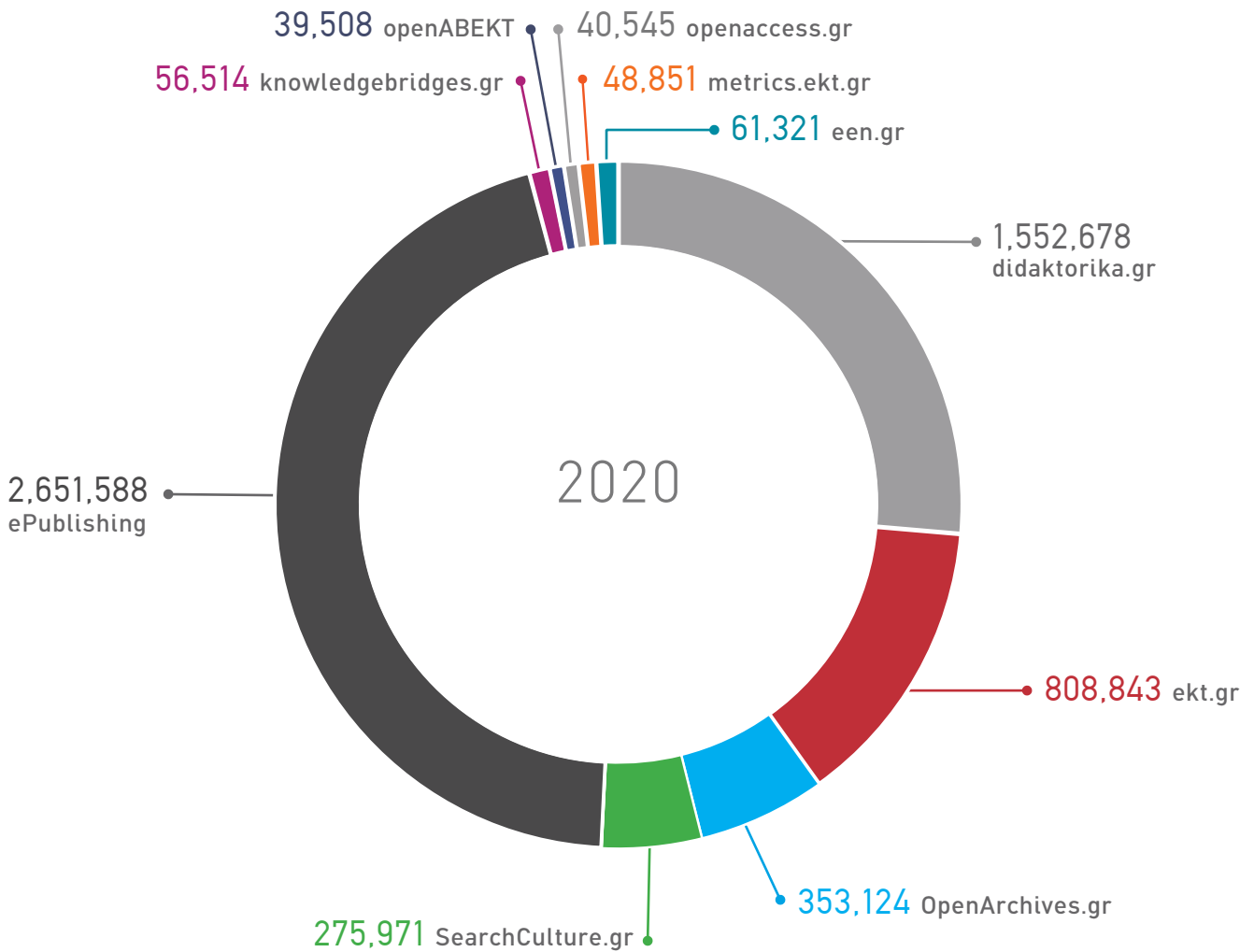
In addition, emphasis was placed on the promotion of our actions through EKT's pages on social media as well as on information through targeted online campaigns via thematic newsletters, significantly contributing to the increase of followers and the strengthening of interaction with the public. Finally, through a series of articles, press releases and publications we maintained a strong presence in and interaction with the Mass Media, effectively participating in a constructive public dialogue with the user communities

*EKT implements an integrated communication strategy and reaches out to different audiences, leveraging all communication channels, with an emphasis on digital media and tools.*



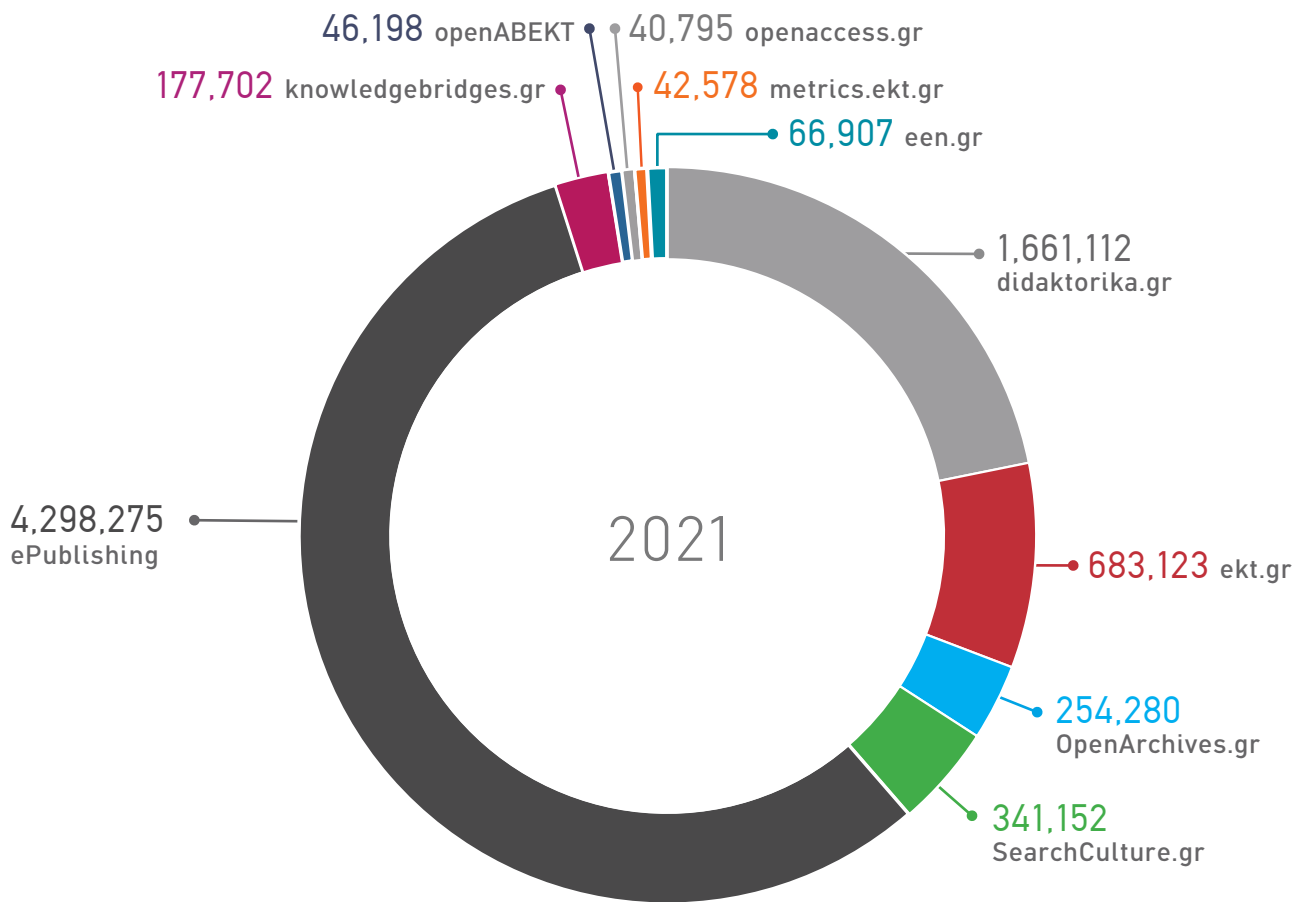
## EKT WEBSITES

Visits to infrastructures, services and websites



[www.ekt.gr](http://www.ekt.gr)  
EKT website

EKT's website ([www.ekt.gr](http://www.ekt.gr)) is the main portal for news and information on its constantly expanding activities and services. Aimed at immediacy and ease of navigation, the EKT website is developed based not only on aspects of EKT's identity (mission, policies, projects, publications, scientific publications and press centre) and the services it provides, but also the potential of information and access to the areas within which we operate, namely econtent EKT - digital content and services, metrics EKT - indicators and



statistics EKT and innovation EKT - services for networking, collaboration, development.

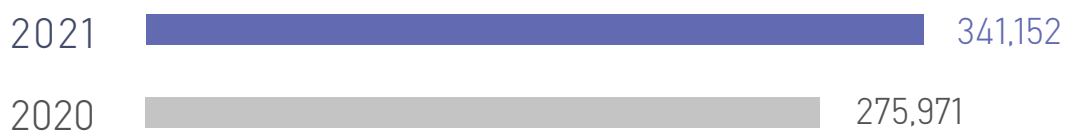
The main objective is friendly navigation to find information, general data and data related to the activities and services provided by EKT, as well as the redirection to the digital portals, platforms and sources that are developed and made available. Modern user authentication technologies (Single Sign On) enable the provision of personalised

and improved services for all user communities: the research, academic, business, educational community, public organisations, private organisations, policy makers and the public.

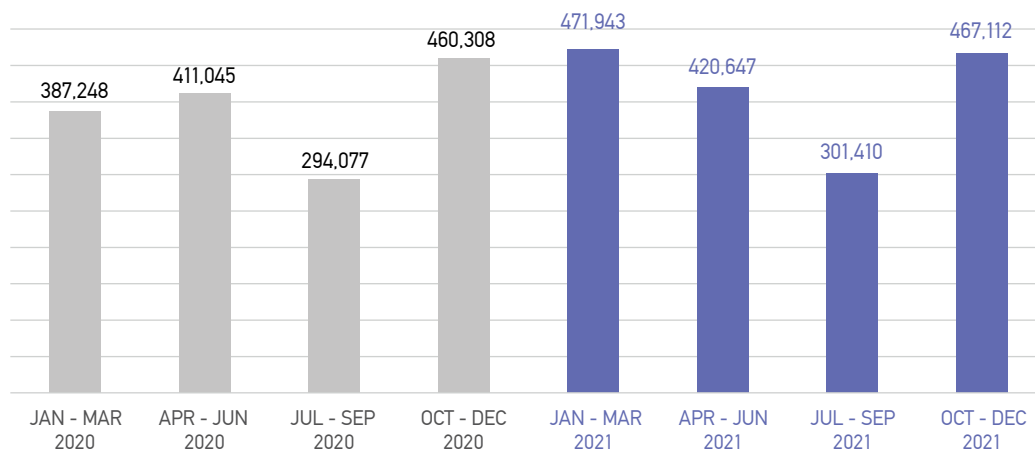
## ePublishing Visits to [epublishing.ekt.gr](http://epublishing.ekt.gr)



## sc } Visits to digital portal [SearchCulture.gr](http://SearchCulture.gr)



## NAPhD Visits to [didaktorika.gr](http://didaktorika.gr) (National Archive of PhD theses)





## MEDIA

2020

238 articles at ekt.gr

196 publications in printed media

1,990 publications in online media

2021

183 articles at ekt.gr

212 publications in printed media

1,543 publications in online media



## EVENTS

2020

62 events

Organised by EKT:

29 events with 12.000 participants

Participation - Support - Sponsorship:

34 events

2021

85 events

EKT event:

21 events with 6,000 participants

Participation - Support - Sponsorship:

64 events

## Integrated Communication & Coverage of Events

- Publicity & communication actions before, during and after the event
- Update via EKT eNewsletter, targeted newsletter & Social Media
- Events Livestreaming
- Live coverage of events on social media
- Video posting presentations & reviews (live tweeting + facebook)



## NEWSLETTERS



24

EKT's monthly newsletter



51,336

Newsletter recipients

## eMAIL CAMPAIGNS

2021

140 informative newsletters

1,148,466 total number of recipients

102 informative newsletters

866,374 total number of recipients

2020



## MAGAZINE



3

issues



5,000

recipients



2,500

e-readings per issue

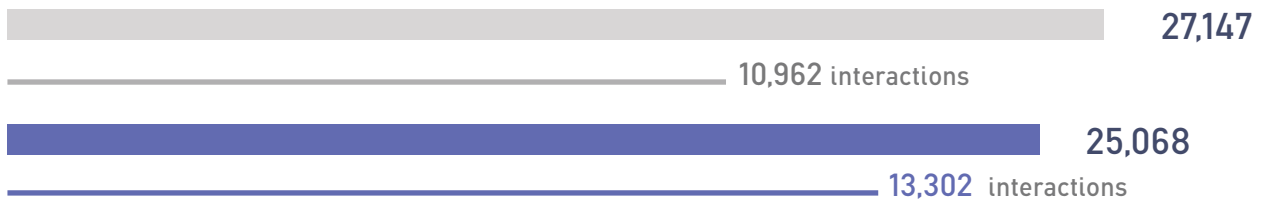


## SOCIAL MEDIA

Following EKT on social media

2021

### FACEBOOK FOLLOWERS



2020

2021

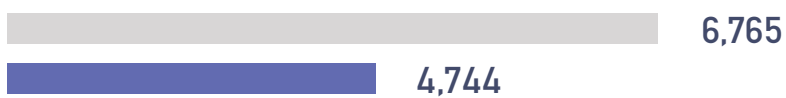
### TWITTER FOLLOWERS



2020

2021

### LINKEDIN FOLLOWERS



2020

2021

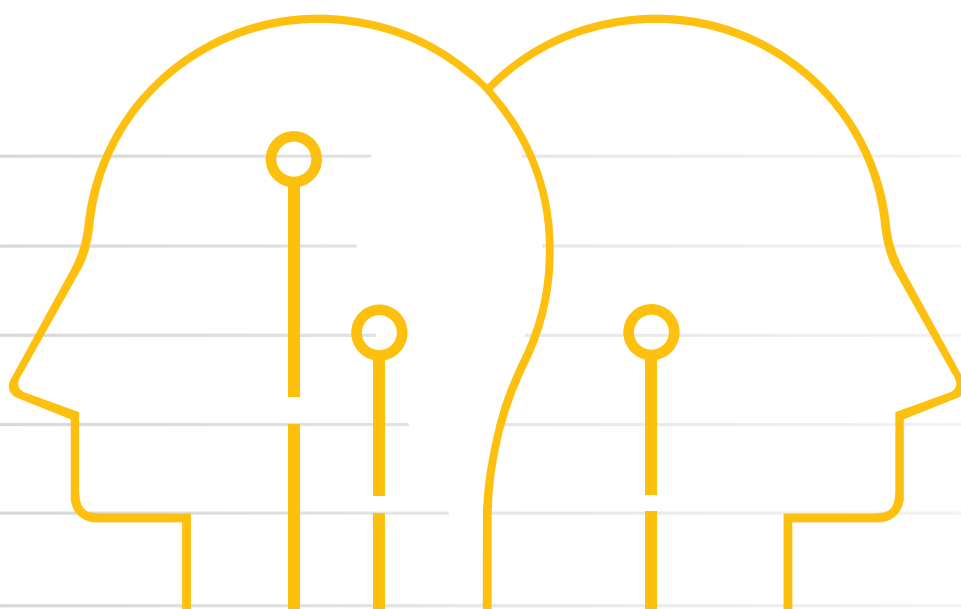
### YOUTUBE SUBSCRIBERS



2020



# HUMAN RESOURCES





The catalyst paramount for the achievement of the organisation's strategic and operational goals is people and their capabilities. The development and evolution of human resources and their optimal use gives EKT new dynamics for its own development and the strengthening of its effectiveness and the organisation's flexibility in a constantly changing environment. For the implementation of its multidimensional actions and the projects it implements, personnel with a wide range of knowledge and skills, experience and commitment are required. The EKT team, which now numbers more than 100 employees, is constantly being strengthened by the addition of new people with complementary scientific specialties.

Our specialised human resources are highly competitive in the international scientific and research environment. EKT's performance in the national and international research and innovation system is highlighted through our activities and personnel. In order to effect productive restructuring, technological modernisation, digital transformation and the strengthening of competitiveness, support policies for human resources play a key role in the organisation's development strategy.

At the end of 2021, a total of 109 people worked for EKT, 58 men and 51 women. EKT's human resources are highly-qualified educationally (various qualifications) with significant professional experience. 44 people hold a master's degree and 20 hold a doctoral degree. The largest percentage of employees, over 2/3, are under 50 years of age. Computer scientists, information scientists, engineers, data analysts, economists,

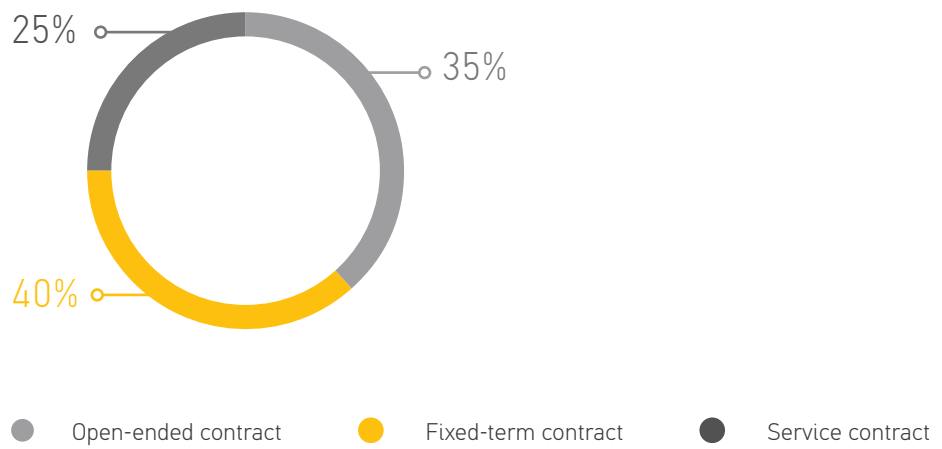
innovation consultants, museologists, physicists, mathematicians, lawyers, communication specialists, content creators are some of the scientific backgrounds of EKT personnel.

Το ΕΚΤ ενσωματώνει την αρχή της ισότητας των φύλων στις δραστηριότητές του και προωθεί την εξασφάλιση ίσων ευκαιριών μεταξύ γυναικών και ανδρών. Σε αυτό το πλαίσιο, αξίζει να σημειωθεί ότι το 47% των εργαζομένων στον οργανισμό είναι γυναίκες, όπως επίσης και το 55% των κατόχων μεταπτυχιακού τίτλου σπουδών και το 43% των μελών του Δ.Σ.

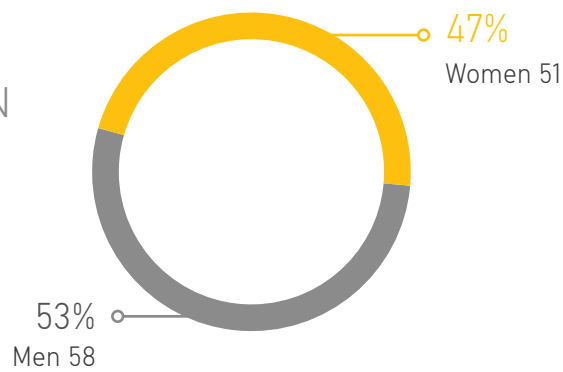
We incorporate the principle of gender equality in our activities and promote equal opportunities between women and men. In this context, it should be noted that women make up 47% of the employees in the organisation, 55% of the postgraduate degree holders and 43% of the members of the Board of Directors.

Adaptability was the key word for the period of the COVID-19 pandemic. EKT's human resources demonstrated a high sense of responsibility and remarkable flexibility under the new conditions. Teleworking and personnel rotation was effectively implemented in line with the instructions of the relevant circulars, ensuring the smooth operation of all services and projects implemented by EKT.

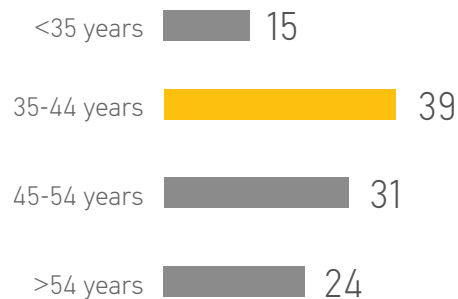
## PERSONNEL EMPLOYMENT RELATION



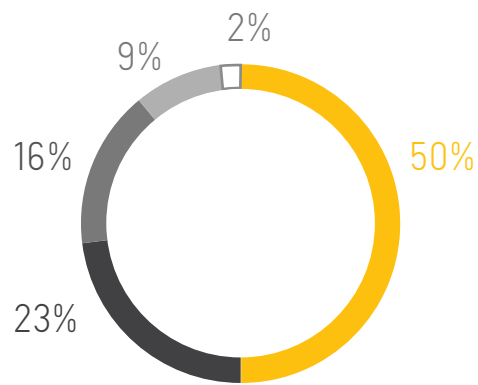
## CATEGORISATION BY GENDER



## CATEGORISATION BY AGE



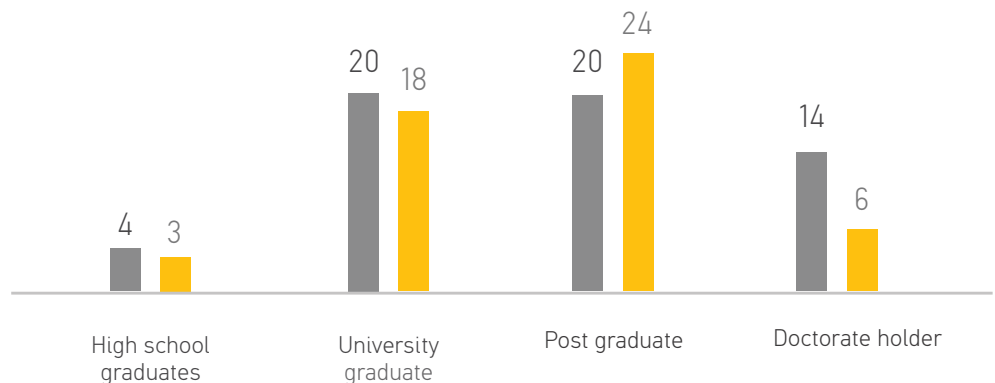
## CATEGORISATION BY SCIENTIFIC FIELD (FRASCATI)



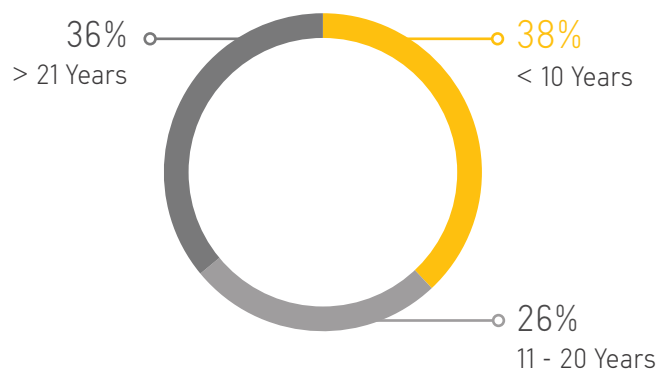
- Social Sciences (political & legal sciences, Economics & Business, Media & communications, education etc)
- Engineering and Technology    ● Humanities and Art    ● Natural Sciences
- Agricultural and Veterinary Sciences, Medicine and Health Sciences

## EDUCATIONAL LEVEL (categorisation by gender)

- Men
- Women



## CATEGORISATION BY YEARS OF EMPLOYMENT



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## EKT BOARD OF DIRECTORS

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The EKT Board of Directors is appointed by decision of the Minister of State and Digital Governance, its members serving a four-year term of office.

The Board of Directors consists of:

Argyris Peroulakis | Former executive of the European Commission

Georgios Matsopoulos | Deputy President Professor, National Technical University of Athens, School of Electrical and Computer Engineering

Paraskevi Sachini | Director of EKT

Angeliki Alexiou | Professor, University of Piraeus, Department of Digital Systems

Panagiotis Demestichas | Professor, University of Piraeus, Department of Digital Systems

Athanasios Dimas | Advisor to the Minister, Ministry of Digital Governance

Dimitra Lygoura | Director of the Office of the General Secretary for Digital Governance and Process Simplification, Ministry of Digital Governance

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## APPENDIX I

### DEVELOPMENT & RESEARCH PROJECTS

EKT participates in development and research projects with national and European funding - which are related to innovation, research, the digital economy and open data - as a practice, as a policy and as a process.

The participation of the organisation in international and established networks is one of our central goals at EKT, enabling us to offer high-quality services for the country's scientific, research and business community.

In the two years 2020 - 2021, seven (7) major projects were implemented with funding from NSRF, the Public Investment Programme and the Recovery Fund. At the same time, either as a co-ordinator or as a partner, the organisation participated in seventeen (17) European projects / networks, with funding directly from European programmes (Horizon 2020, Europeana, EIT Health).

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## Production of RIS3 indicators for the years RIS3 2016-2023

**FUNDING:** Operational Programme 'Competitiveness, Entrepreneurship, Innovation' NSRF 2014-2020 (co-financed by Greece and the European Union - European Regional Development Fund)

**DURATION:** 2017 - 2023

**DESCRIPTION:** The purpose of the project is the production of the RIS3 indicators (Research and Innovation Strategies for Smart Specialisation) for the years 2016 - 2023 and the systematic transmission of these indicators to the GSRI and the competent national and regional bodies. The project concerns the production of a series of indicators that have been included in the monitoring system of NSRF for the years 2014-2020 and the Smart Specialisation Strategy (both national and regional) for Research, Development and Innovation. Overall, the indicators cover R&D expenditures, R&D personnel, government budget appropriations for R&D, innovation in enterprises and Greek scientific publications in international journals. The data and indicators produced under the project are published in EKT's publications on the metrics.ekt.gr website.

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## Knowledge and Partnership Bridges

**FUNDING:** Public Investment Programme

**DURATION:** 2017 - 2023

**DESCRIPTION:** The 'Knowledge and Partnership Bridges' initiative, implemented by EKT in collaboration with the Ministry of Development and Investments, aims to connect and functionally network Greeks who either live in the country or have emigrated. The initiative supports the creation of networking and the development of 'bridges' with Greeks living and working abroad. Emphasis is placed on their reconnection with the country, taking advantage of opportunities for activity and entering into partnerships with scientists, professionals, institutions and businesses.

Study, design and development of the State Aid Information System (PSKE) for the reception and management of actions in the field of research and technology, for the promotion of smart specialisation and innovative entrepreneurship

**FUNDING:** Operational Programme 'Technical Support' NSRF 2014-2020

**DURATION:** 2017 - 2021

**DESCRIPTION:** The project involves the implementation of all the necessary work for the study, design and development of the applications of the State Aid Information System (PSKE) for the reception and management of actions for the promotion of smart specialisation and innovative entrepreneurship, mainly in the field of research and technology. In this context, a programming contract was signed between the General Secretariat of Public Investments, the NSRF programme of the Ministry of Economy & Development, the Management Organisation Unit of Development Programme (MOD S.A.) and EKT for the timely and effective implementation of the project.

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Evaluation Mechanism of 4 Actions of the O.P. 'Human Resource Development, Education & Lifelong Learning' ('Evaluation of Higher Education NSRF Actions')

**FUNDING:** Operational Programme 'Human Resource Development, Education & Lifelong Learning' NSRF 2014-2020 (co-funded by Greece and the European Union- European Social Fund)

**DURATION:** 2018 - 2023

**DESCRIPTION:** The purpose of the project is the creation of a data recording system and evaluation mechanism for the actions implemented and financed by the Operational Programme

'Human Resource Development, Education and Lifelong Learning 2014-2020'. It involves the recording system and the valuation mechanism for the following actions: a) Strengthening Human Research Resources through the Implementation of Doctoral Research, b) Supporting Postdoctoral Researchers, c) Acquisition of Academic Teaching Experience for Young Scientists with PhDs, and d) Support of Researchers with an emphasis on Young Researchers. The data recording system allows the collection and inventory of statistics, indicators and the quality dimensions of actions. Thus, the systematic recording and processing of metric data regarding Greek scientific production and activity is achieved.

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## National Research Information and Technology System: Digital Content Aggregation, Documentation and Dissemination Infrastructure ensuring interoperability, long-term preservation and open access

**FUNDING:** Operational Programme 'Public Sector Reform' NSRF 2014-2020 (co-financed by Greece and the European Union - European Regional Development Fund)

**DURATION:** 2020 - 2023

**DESCRIPTION:** The purpose of the project is the technological upgrade, strengthening with new functionalities, operational alignment with European policies and the expansion of services to meet the new requirements of EKT's National Digital Infrastructure for the Collection, Documentation, Dissemination and Preservation of Digital Content and Science and Culture Data. Particularly important is the added value of the project in terms of open access and the free availability of digital content and data for scientific documentation, for use and reuse by the research and educational community, the

business community, creative industries and the general public. The project's goals include: the creation of the 'digital public space' for the National Digital Cultural and Scientific Content, the strengthening of the production and distribution of digital content and data by science, culture and public administration bodies, the development of new and the upgrading of remunerative services (SaaS) and tools that will contribute catalytically to the digital transformation of those bodies.

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## Strengthening the operation of EKT's public statistical information mechanism - Integrated digital data services for informed public policies

**FUNDING:** Operational Programme 'Public Sector Reform', NSRF 2014-2020 (co-financed by Greece and the European Union - European Regional Development Fund)

**DURATION:** 2021 - 2023

**DESCRIPTION:** As a member of the Hellenic Statistical System, EKT, utilising the knowledge of the international environment and cutting-edge technologies, has developed a platform and services of intelligent data with the aim of strengthening the implementation of policies and decision-making in its field of activity. The large volume of Research, Technology, Development, Innovation (RTD) and Digital Economy data systematically collected by EKT and administrative data from external public sources are compiled in a unified way. This aggregation includes the organisation of the data, its transformation, interconnection, its disposal for further use and its storage. Towards this end, EKT leverages state-of-the-art technologies to create an information infrastructure of registers and a platform to provide digital data services for policy makers

and the country's scientific, research and business community.

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Development of the institution, infrastructure, capabilities and capacities for the governance of public data, their availability for reuse and the provision of relevant services in the public and private sector in Greece - Phase A

**FUNDING:** : National Recovery and Resilience Plan (Recovery Fund & Public Investment Programme, Funded by the European Union - 'NextGenerationEU')

**DURATION:** 2021 - 2023

**DESCRIPTION:** Under the project, EKT implements a series of linked actions, which will effectively support the implementation of the strategy of the Ministry of Digital Governance in terms of: the economy and the policy of data disposal, the digital transformation of the public and private sector and strengthening the effectiveness of digital governance. With a focus on the re-use and further use of public data, in the context of this specific project, EKT will evolve into an implementation body for these policies. The purpose is to shape the conditions in order to provide effective services for the state, citizens and businesses.

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## OPENAIRE ADVANCE

**FUNDING:** European Union - Horizon 2020

**DURATION:** 2018 - 2020

**DESCRIPTION:** The OpenAIRE Advancing Open Scholarship (OpenAIRE Advance) is a continuation of the OpenAIRE2020 and OpenAIREPlus projects aimed at supporting Open Science & Open Access in Europe and in which EKT also participated. The project strengthened the network of National Nodes (NOADs) in order to gain a central position on the national map of national infrastructures, focusing on Open Science & Open Access. The strengthening of the national nodes was carried out through a series of actions for issues such as politics, legal issues, etc., training activities and workshops. On a technical level, the project ensured the operation and maintenance of technical services, as well as their upgrading. In the context of this specific project, EKT undertook the formulation of policies for open access and open science through the creation of toolkits and other actions. In addition, a report was drawn up with proposals for improving the technical characteristics of electronic publishing infrastructures.

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## Europeana Common Culture

**FUNDING:** Europeana

**DURATION:** 2019 - 2020

**DESCRIPTION:** The scope of the project was to strengthen the role of national aggregators in Europeana and expand Open Access to the collections of European memory and culture organisations. The project, which was co-ordinated by the Europeana Foundation with the participation of 24 providers/national aggregators from different European countries, aimed to increase the Open Access content of the European digital library Europeana, improve its content and collaboration between national aggregators, harmonise policies, technologies and infrastructures of the network and



ensure a more comprehensive dissemination of Europeana's work. EKT participated in the project as a National Aggregator with the National Aggregator of Digital Content SearchCulture.gr. Through SearchCulture.gr, enriched and quality digital content was collected and contributed to Europeana. Specifically, in terms of openness, EKT increased the Greek digital content available on Europeana by at least 300,000 items.

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## C-Energy V2

**FUNDING:** European Union-Horizon 2020

**DURATION:** 2019 - 2020

**DESCRIPTION:** The project was designed to support the National Energy Contact Points in the European Horizon 2020 programme so as to improve the quality of their services for stakeholders, thus contributing to a better-informed public about Horizon 2020 announcements as well as an improvement in the quality of the proposals submitted. The project supported and contributed to the transfer of know-how, the exploitation of knowledge and the integration of alternative forms of disseminating innovation under the Horizon 2020 Framework Programme. In this context, EKT, which was the National Contact Point for the 'Safe, Clean and Efficient Energy' programme of Horizon 2020, participated in the project as Work Package Leader and Task Leader.

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## TRANS-NATIONAL COOPERATION AMONG ICT NCPS - IDEALIST2020 (Ideal-ist)

**FUNDING:** European Union- Horizon 2020

**DURATION:** 2019 - 2020

**DESCRIPTION:** Ideal-ist is the international network of National Contact Points (NCPs) for ICT (Information and Communication Technologies) in the Horizon 2020 programme, with the aim of supporting research and innovation in European Funding Programmes (Framework Programmes). The aim of the project was to strengthen the network of National Contact Points that have extensive experience and a deep understanding of Horizon 2020, its objectives and the impact it has on the European economy. Additionally, the project aimed to provide uniform services from the National Contact Points in each country and to increase the number of successful proposals submitted, especially by third countries and countries with low participation. EKT represented Greece as a partner in the network of ICT NCPs in Horizon 2020 (Ideal-ist) and helped to exchange knowledge and implement joint actions between the organisations acting as National Contact Points for ICT with the aim of the wider dissemination of Horizon 2020 calls and the participation of more new organisations in those calls as well as supporting the new NCPs. EKT participated in all the Work Packages of the project while, during the implementation of the project, synergies were developed with the Enterprise Europe Network and with other European initiatives.

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## RICH-2

**FUNDING:** European Union- Horizon 2020

**DURATION:** 2019 - 2020

**DESCRIPTION:** The RICH-2 project was the European Network of National Contact Points for Research Infrastructures in Horizon 2020, which aimed to support research and innovation in European Funding Programmes (Framework Programmes). The aim of the project was to strengthen the network of National Contact Points that have extensive experience and a deep understanding of Horizon 2020, its objectives and the impact it has on the European economy. Additionally, the project aimed to provide uniform services from the National Contact Points in each

country and increase the number of successful proposals submitted, especially by third countries and countries with low participation. All of the above resulted in better support and dissemination of knowledge for those who submitted proposals for participation in the Horizon 2020 Research Infrastructures programme.

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## Nucl – EU

**FUNDING:** European Union- Horizon 2020

**DURATION:** 2015 – 2020

**DESCRIPTION:** The NUCL-EU 2020 network was the European network of National Contact Points for the Euratom programme in Horizon 2020. The network consisted of National Contact Points in 7 countries - including Greece for the first time - and offered its services to research & academic bodies and businesses in the period 2015-2020. EKT, as the National Contact Point in Horizon 2020, participated in the NUCL-EU 2020 network as the Greek hub of the European network. The aim of the project was to strengthen the National Contact Points for nuclear energy research under the Euratom treaty under Horizon 2020 in order to improve the quality of their services, thus contributing to a better-informed public about the Horizon 2020 calls and an improvement in the quality of proposals submitted. Under the project, services were offered for the promotion of international co-operation, finding partners for the joint submission of proposals in the context of Horizon 2020 calls, the organisation of educational seminars and brokering events for the exploitation of knowledge and the support of innovation, etc.

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## EEN Enhancement- SGA 4

**FUNDING:** European Union- Horizon 2020

**DURATION:** 2020

**DESCRIPTION:** The project provided consulting services for Enhancing Innovation Management Capacity (EIMC) for small and medium-sized enterprises through special evaluation and consultation tools. At its centre was advisory support for businesses that had succeeded in the SME Instrument, given by specially designated executives (Key Account Managers - KAMs). The aim of the consultancy is to connect companies with an appropriately qualified Coach (of the relevant EASME register) that can support them in their development and in entering the innovative product or service they have developed into the market.

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## GENDERACTION

**FUNDING:** European Union- Horizon 2020

**DURATION:** 2017 - 2020

**DESCRIPTION:** The project supported the creation of a European group of member state representatives to create gender equality policies in research. Following the recommendations of the European Research Area on Gender, the current situation at European level was mapped and gender policies were suggested to the Member States and the European Commission. The project aimed to create the right ground for discussion and development at European level in order to create and facilitate appropriate policies for gender equality in research. EKT participated as a partner in the actions related to the recording of existing gender policies, in the formulation of proposals for gender equality in research and in informing the NCPs on gender issues in research.

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## SIS-Net 3

**FUNDING:** European Union- Horizon 2020

**DURATION:** 2019 - 2020

**DESCRIPTION:** The project supported the National Contact Points for 'Science with and for Society' (SwafS) of the European Horizon 2020 programme to improve the quality of their services to stakeholders, thus contributing to a better informed public about Horizon 2020 calls as well as an improvement in the quality of proposals submitted. The aim of the project was to strengthen the network of National Contact Points which collectively have extensive experience and a deep understanding of Horizon 2020, the objectives of Horizon 2020 and the impact it has on the European economy. Additionally, the project aimed to provide uniform services from the National Contact Points in each country and to increase the number of successful proposals submitted, especially from third countries and countries with low participation. All of the above resulted in better support and dissemination of knowledge to those submitting proposals for participation in the programme.

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## STARTUP-3

**FUNDING:** European Union- Horizon 2020

**DURATION:** 2020 - 2021

**DESCRIPTION:** The purpose of the project was to build an ecosystem of smart 'spaces', a deep technology Hub that would encourage start-ups to scale and attract new funding opportunities as well as co-operation opportunities that would lead to their expansion. In the first phase, the Startup3 project sought and identified groups and pioneering innovations and technologies that came from applicable scientific or other technological discoveries in cutting-edge sectors (Uptake). Then the project helped the teams / companies to upgrade their technologies and business models and align their Value

Proposition with the real market demand and with the Key Performance Areas of the project. Finally, Startup3 brought together the leading cutting-edge technology startups with the most important established innovators, venture capital firms (VCs), startup accelerators, innovation labs, business clusters and Digital Innovation Hubs.

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## CatRIS

**FUNDING:** European Union- Horizon 2020

**DURATION:** 2019 - 2021

**DESCRIPTION:** The main objective of CatRIS was to gather, publish and disseminate information concerning the Services available for the Research Infrastructures (RIs) of Europe.

The information is made available in the form of a structured directory through a single web portal that addresses both potential service users - researchers, research organisations and companies - as well as other stakeholders of the wider RIs ecosystem, such as policy makers and funders. The web portal interoperates with European infrastructures and directories, such as the European Open Science Cloud (EOSC), and leverages results and expertise from other projects gathering information on RIs, such as Meril. The portal created under the project contributed to improving the visibility of RIs' services, improving their use and impact and promoting European and international collaborations.

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## OPERAS-P

**FUNDING:** European Union- Horizon 2020

**DURATION:** 2019 - 2021

**DESCRIPTION:** The objective of the OPERAS-P project was the implementation of the preparatory work in view of the new candidacy of the OPERAS network for inclusion in the European Strategy Forum on the Research Infrastructures (ESFRI) network in September 2020. The main goal of the project was to prepare the supported entities and infrastructure for the implementation of the planned upgrades by ESFRI as well as the development of the OPERAS research infrastructure. EKT contributed to a study of the landscape of open scientific communication in Europe, emphasising: the identification of the bodies and groups that have a say in this process and the recognition of the needs of the users - basically, the researchers - of the services of open scientific communication, with a view to studying the situation in Greece. In addition, EKT played an important role in drawing up the strategy for finding new partners and expanding the consortium. At the same time, it contributed to the promotion of Open Access by helping to connect and support various communities - such as researchers, publishers, librarians and politicians - who participate in the Open Science project.

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## EIT Health

**FUNDING:** EIT Health

**DURATION:** 2019 - 2022

**DESCRIPTION:** EIT Health is a network of leading businesses and organisations for health innovation. It consists of 150 partners and is supported by the European Institute of Innovation and Technology (EIT), a body of the European Union. The purpose of EIT Health is to bring innovative solutions and new services

to the healthcare sector, helping European citizens to improve their health and live longer. EKT is the hub of EIT Health for Greece. It implements a series of actions aimed at activating the health innovation ecosystem and connecting it with the wider EIT network as well as with the EIT Health Innostars CLC, one of the 8 EIT geographical regions. EKT designs, implements and informs about programmes to support start-ups in the health sector as well as student and graduate training programmes.

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## CRAFTED: Enrich and promote traditional and contemporary crafts

**FUNDING:** Europeana

**DURATION:** 2021 - 2023

**DESCRIPTION:** The project aims to support the preservation of traditional arts for future generations by gathering, enriching and promoting knowledge resources and artefacts of the tangible and intangible cultural heritage and folk art production. Within the framework of the project, more than 180,000 items from all over Europe will be highlighted, including the richness and variety of traditional techniques. Modern technologies such as machine learning and artificial intelligence will be leveraged by project partners for the semi-automatic annotation of digital artefacts, which will improve the retrievability of poorly documented material. EKT will make more than 5,500 documents of Greek institutions available and will improve the overall quality of the documentation of the folklore collections it has contributed to Europeana.

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## High added-value data from CIS and R&D business statistics in Greece – 2020-EL-B5618-RDI

**FUNDING:** Eurostat

**DURATION:** 2021 - 2023

**DESCRIPTION:** The goal of the project is to expand the statistical indicators produced regarding Research, Development and Innovation, in order to serve emerging needs of users from the area of planning and monitoring policies (evidence-based policy making) at European, national and regional level. EKT is the sole beneficiary of the project, as the National Authority of the Hellenic Statistical System with the responsibility for producing statistics on R&D and Innovation. The project includes actions in three areas: a) design of the sampling framework and the improvement of data collection in the surveys on Innovation in Enterprises covering the three years 2018-2020 (CIS2020), b) improvement of interventions and additional collection of primary and/or administrative data in the survey on expenditure and personnel in R&D covering the year 2020 (R&D2020), c) interconnection of the microdata of the Innovation in Enterprises surveys covering the three-year period 2018- 2020 (CIS2020) and the microdata on the R&D Expenditure and Personnel Survey covering the year 2020 in the business sector (BES R&D 2020).

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## TRIPLE

**FUNDING:** European Union – Horizon 2020

**DURATION:** 2019 - 2023

**DESCRIPTION:** The European project TRIPLE (Transforming Research through Innovative Practices for Linked interdisciplinary Exploration) aims to address the problems faced by research in the Humanities and Social Sciences (SSH). Some of these problems include the scarce usage and re-usage of the data produced,

the limited possibilities of interdisciplinary co-operation and the lack of multilingualism in scientific publications since it is known that it is customary in SSH for publications to be in the authors' native language and not in an international language (English). At the heart of TRIPLE is the creation of the GoTRiple digital platform, which aims to search, find and reuse material (publications, data, etc.) as well as to network SSH researchers across Europe.

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## Enterprise Europe Network-Hellas

**FUNDING:** EE - European Innovation Council and SMEs Executive Agency

**DURATION:** 2008 - 2025

**DESCRIPTION:** Strengthening competitiveness and innovation of small and medium-sized enterprises is a central policy priority of the EU. Enterprise Europe Network is the central mechanism for the design and implementation of relevant policies as it is a highly ambitious and complex effort that aims to unify and integrate a wider range of high value-added services for small and medium-sized enterprises using a 'one-stop-shop' logic. There are 600 partner organisations participating in the network, 4,000 specialists and 17 teams of experts in their respective industrial sectors. The Greek node of the network, Enterprise Europe Network - Hellas, the co-ordinator of which is EKT, is the largest network of integrated business support in the country and is composed of industrial associations, research and technological institutions, banks, chambers of commerce and industry and other established institutions in the fields of entrepreneurship and innovation.

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## APPENDIX II

### SCIENTIFIC PUBLICATIONS

EKT's human resources participate in conferences with scientific publications and posters, while its articles are hosted in scientific journals. Through this activity, the organisation contributes to the public discourse with new perspectives, opinions and findings, which are necessary for the understanding of the issues that concern, and affect research, innovation, digital economy, science, in Greece and Europe. At the same time, EKT reinforces its extroversion.

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