HELLENIC REPUBLIC
Ministry of Digital Governance

THE GREEK NATIONAL DIGITAL DECADE STRATEGIC ROADMAP

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1. STATE OF PLAY OF DIGITAL TRANSFORMATION IN GREECE

1.1. Overview

The prolonged financial crises which have significantly hampered the Greek society and economy during the period 2009 - 2018 had also a strong impact on the country's digital transformation performance as reflected in the Digital Economy and Society Index (DESI[1]). Although Greece remains one of the European countries with relatively low digital maturity, the situation during the last 5 years is steadily reversing and Greece is accelerating towards other EU countries' digital maturity levels, exhibiting an upward convergence trend. Strong political commitment, an expanding governance institutional framework, a comprehensive strategy and the availability of appropriate resources have contributed to this improvement, in full alignment with European Semester's country specific recommendations[2] and utilising the benefits from the corresponding supportive instruments. Finally the recent pandemic emphasised the need for digital transformation as a crucial factor for economic resilience and recovery. Greece's National Reform Program 2023 highlights all major commitments and measures driving the digital transformation of the country in crucial sectors such as fiscal policy, economy, healthcare, work, education, justice and public administration to address the identified challenges and is constantly monitoring their progress to ensure a faster convergence.

More specifically, the improved digital competitiveness of the country during the last few of years has been propelled by the following main factors:

- **Reformed Ministry of Digital Governance**: The reformed structure of the Ministry of Digital Governance (MDG), which has since 2019 evolved into a single reference point for the digital transformation initiatives of the Greek state by consolidating organisations previously scattered across other government entities (such as the General Secretariat of Information Systems, the General Secretariat of Telecoms and Posts, Information Society SA,. HDIKA SA, GRNET SA, National Documentation Center, etc.) has been a long awaited reform in the Greek digital transformation ecosystem. The MDG has incorporated global best practices from digital transformation leaders towards fostering simplicity and interoperability as part of the country's digital transformation.
- **National Digital Transformation Strategy**: The country has developed a modern and holistic national Digital Transformation Strategy, which is reflected in a strategic document named "Digital Transformation Bible". This document sets concrete priorities for the digital transformation of the country, mainly by formulating a portfolio of around 400 digital transformation cross-sectoral and domain-specific projects and initiatives that are

[1] https://digital-strategy.ec.europa.eu/en/policies/desi

[2] https://commission.europa.eu/business-economy-euro/economic-and-fiscal-policy-coordination/european-semester/european-semester-your-country/greece/european-semester-documents-greece_en

expected to drive the accomplishment of the country's strategic goals. The Digital Transformation Bible is centred around seven (7) strategic objectives and includes projects and activities that transcend all the different targets of the Digital Decade.

- **Other Related National Strategies**: Along with the "Digital Transformation Bible", the country has developed and documented strategic priorities for various aspects of the digital transformation, including Connectivity[3] Cyber Security[4], 5G Networking, and Artificial Intelligence (currently in internal consultation). Some of these aspects are relevant to the targets of the Digital Decade, which aims at fostering Gigabit connectivity and 5G infrastructures deployment and AI adoption among enterprises.
- **Legislation about digital governance and emerging Information and Communication Technologies**: The Greek Parliament has voted and adopted new legislation for promoting the digital transformation of Greece, most notably laws 4623/2019 and 4727/2020 on Digital Governance and its regulation and law 4961/2022 on emerging ICT technologies. This legislation has greatly facilitated the implementation of key measures and initiatives to support the DTB objectives.
- **Gov.gr Establishment**: The Greek single digital portal Gov.gr was established under law 4635/2019 and provides a single entry point to the full range of digital services of the public administration. It is the digital portal that enables citizens and businesses to search, use and fully leverage any digital public service in-line with their needs.
- **Funding Programmes and Allocation of Funding to Digital Transformation**: The country has already allocated significant financial resources to on-going and future digital transformation projects, including projects of the "Digital Finance" sector. In this direction, the country leverages available financial resources in the scope of large scale funding programmes like the RRF (Recovery and Resilience Facility) for Greece and the "Digital Transformation Operational Programme" of NSRF 2021 - 2027. This funding allocation reflects Greece's commitment to sustain and intensify the pace of its digital transformation[5]. As the European Semester CSR 2023 report mentions *"The recovery and resilience plan contains measures to improve the effectiveness of public administration, with a particular focus on improving its digital services"*. Greece is committed to preserving nationally financed public investment ensuring the effective absorption of RRF grants and other EU funds, to foster its digital transformation.

Greece's intensified digital transformation efforts during the last few years, have already demonstrated significant improvements to the public digital services offered by the administration to citizens and businesses, and are expected to contribute significantly to the country's digital competitiveness and to the corresponding targets of the Digital Decade. As mentioned in the Digital Transformation in Greece 2023 publication[6] "*is particularly optimistic this year for our*

[3] National Broadband Plan (Official Gazette, B 6155/2022)

[4] Greece's National Cyber Security Strategy: https://mindigital.gr/wp-content/uploads/2022/11/E%CE%9D-NATIONAL-CYBER-SECURITY-STRATEGY-2020_2025.pdf

[5] According to the Country's National Reform Program 2023 "*the RRP is estimated to add 1.9 pps to GDP growth mainly through high-quality private and public investment for the green and digital transition".*

[6] https://thefoundation.gr/innovation-platform/our-publications

country, as it is among the three EU member states (along with Poland and Italy) that managed to show the most digital progress. The three states have managed to significantly improve their DESI scores over the past five years by implementing sustainable investments with an enhanced political focus in the digital sector, which are also supported by European funding".

Nevertheless, since Greece has exhibited a rather delayed start in its digital transformation efforts, there is still an important ground to cover in order to converge to the EU average and to contribute more substantially to the Digital Decade objectives, having still considerable challenges to address.

Greece is also making sure that the country's digital transformation aligns with the objectives expressed in the European Declaration on Digital Rights and Principles for the Digital Decade. The Digital Transformation Bible pays special attention to linking major initiatives to the satisfaction of corresponding general objectives of the Digital Decade Policy Program. More specifically, the re-design of digital public services based on the principle of inclusive design, the introduction of "digital-by-default" and "security & privacy by design" principles as compulsory requirements in all projects' implementation, the promotion of "digital citizenship" through the deployment of free digital skill classes and educational programs for all citizens, the continuous enhancement and investment on major digital cloud and telecom infrastructures ensuring energy efficiency and, the emphasis on opening and exploiting public sector data to foster competition, the improvement of cybersecurity resilience and raising awareness in both public and private sector stakeholders are all actions that are directly linked to the objectives.

Law 4727/2020 on digital governance, a milestone in the digital transformation journey of the country, sets the legal framework upon which all such initiatives are based, covering aspects such as General Principles of Digital Governance, universal access rights of citizens to public sector data, digital public service provision principles, digital inclusion, trust services, open data utilisation , digital transparency, interoperability, digital infrastructures, digital governance public registries and development of the 5G ecosystem.

Law 4961/2022 on emerging technologies also supports the contribution to the general objectives, by providing the framework for the ethical development of AI, rules on data and network security, on just and transparent utilisation of advanced technologies, and on the national coalition for digital skills and employment

The following chapters present the state-of-play of digital transformation in Greece with respect to the cardinal points set out in article 4 of the Digital Decade Policy Programme 2030 of the EU providing a country-specific context as well as an insight to the specific requirements of the digital targets as the basis for measures (see Chapter 3) and the formulation of the national trajectories (Chapter 2) for achieving them.

1.1.1 Human Capital to drive digital transformation (Digital Skills)

Overview of state of play & trends

Historically, Greece underperformed in the Human Capital related DESI indexes (usually ranking in the last three positions). A study undertaken by the MDG[7] in 2020 indicated that the digital skills ecosystem was characterised by a high degree of fragmentation and digital divide, with insufficient digital education and training programs, lacking coordination and strategic cohesion, having low compliance to established frameworks (such as EU's DIGCOMP) and missing a formal monitoring and assessment mechanism. During the last 4 years however, the country's performance has been rising at a slightly higher rate compared to the EU average, whereas from 2015 to 2018 it was more or less slowing down[8]. As a result, the country's position has improved, achieving the 22nd position in the 2022 report, according to which[9] Greece scores 52.48% (53.63% Male/51.39% Female) in the sub-indicator "At least basic digital skills", bringing the country closer to the EU average (53.92% - 55.62% Male/52.26% Female)[10].

This change is mainly attributed to a series of legal, institutional, structural and investment initiatives that have been promoted by the Greek government in an attempt to prioritise a strategy for enhancing digital competences of the population. More specifically, the Ministry of Digital Governance, the Ministry of Education and Religious Affairs and the Ministry of Labour and Social Affairs set out three targets: (i) to enhance digital knowledge of all citizens; (ii) to establish the National Academy of Digital Competences[11] as the national portal for digital up-skilling and reskilling courses and (iii) to empower the Greek National Coalition for digital skills and jobs[12]. The strategy also focuses on vulnerable groups (people with disabilities, older people, etc.) and groups that face difficulties to enter the labour market (women, the unemployed, conscripts, etc.).

Variation of digital skills among the different population groups

In an attempt to present the major constituents of the "Human Capital" in Greece, the following figure presents the distribution of Greek population according to **gender** and **age**:

7 SRSP-3 Project "Recommendations on a National Digital Skills Strategic Plan" REFORM/IM2020/001

8 https://digital-agenda-data.eu/charts/desi-see-the-evolution-of-two-indicators-and-compare-countries

9 https://digital-strategy.ec.europa.eu/en/library/digital-economy-and-society-index-desi-2022

10 https://ec.europa.eu/eurostat/databrowser/view/TEPSR_SP410__custom_7464999/default/table?lang=en

11 https://nationaldigitalacademy.gov.gr

12 https://www.nationalcoalition.gov.gr/en/national-coalition_en accessed 06.08.2023.

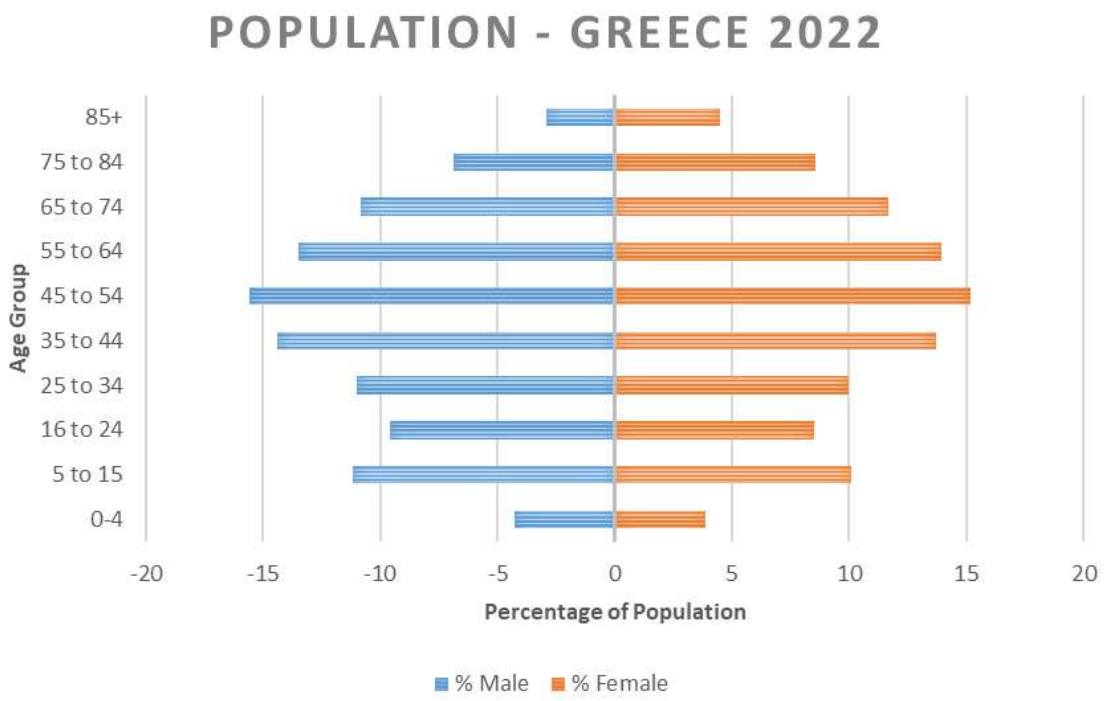

Figure 1. Population in Greece by sex and age groups, Digital Strategy Dept., Ministry of Digital Governance[13]

As regards digital skills, not all of the age groups (from the ones that are eligible for DESI measurements) perform equally. For example, within the age group of 16 - 24 years, Greece is among the frontrunners in EU scoring a mark of 87.78% for young people with at least basic digital skills, which is much higher than the EU average (71.17%)[14].

From the above figure it becomes evident that:

- 64.73% of the total population is over 35 years old, i.e. the majority of the human capital lies towards the "older" end of the spectrum
- The population belonging in the age group 16-74 (which is by definition the "target audience" for the specific digital objective) amounts to approximately 3.3 million people.

Furthermore, data from more than 100 Eurostat variables[15] related to the basic digital skills of the population with respect to age and gender demonstrate that:

a) **there is no significant variation** in "at least basic digital skills" **between the two sexes of all age groups in Greece**
b) the population under 35 years of age **already scores slightly above the EU target** (80%) as regards the present objective
c) the percentage of people having basic digital skills **declines with age**

[13] https://ec.europa.eu/eurostat/databrowser/view/DEMO_PJAN__custom_7516517/default/table?lang=en accessed 06.08.2023.

[14] https://ec.europa.eu/eurostat/databrowser/view/ISOC_SK_DSKL_I21__custom_7421118/default/table?lang=en accessed at 10.09.2023.

[15] https://ec.europa.eu/eurostat/databrowser/view/isoc_sk_dskl_i21/default/table?lang=en accessed at 10.05.2023.

d) **Formal education level** of the population seems to be a significant factor regarding acquisition of digital skills.

Based on the above remarks, the following table summarises the expected impact of digital skills enhancing measures to the various identified categories of the Greek population (from the age and gender perspective), setting the agenda towards achieving the digital target of 2030 for basic digital skills[16]:

Age Group	No or low formal education	Medium formal education	High formal education
16 to 34	Low	Very Low	Very Low
35 to 54	High	Medium	Medium
55 to 64	Very High	High	Medium
65 to 74	High	Medium	Low
Impact LEVEL			

Table 1. Impact Level on Population for Target At Least Basic Digital Skills in Greece by age group and formal education, Digital Strategy Dept., Ministry of Digital Governance

Digital skills per competence area for the identified target audience

Furthermore, in order to positively contribute to the present digital objective, the population must acquire[17] the skills described in DigComp 2.2 (5 competence areas)[18], and more specifically **at least one digital skill <u>in each competence area</u>**.

Firstly, 21.51% of the population in Greece responded that they **did not use the internet during the 3-month period before the 2021 survey**, which means that this part of the "human capital" have not officially acquired any digital skill at all[19]! Even though this percentage is decreasing over time (at a rate of around 3% annually), it is still considered as an important challenge to overcome towards achievement of the digital objective.

[16] Even though the elderly demonstrate the lowest percentage of digital skills according to Eurostat data, several qualitative factors such as expected resistance to change, low interest of this age group in enhancing their skill levels etc, result in the 55-64 group being considered as more impactful with respect to the present target.

[17] According to the methodology of the European Union's survey on ICT usage in Households and by Individuals (ICT HH_IND) in https://ec.europa.eu/eurostat/cache/metadata/en/isoc_sk_dskl_i21_esmsip2.htm accessed at 10.05.2023.

[18] https://publications.jrc.ec.europa.eu/repository/handle/JRC128415 accessed at 10.05.2023.

[19] https://ec.europa.eu/eurostat/databrowser/view/ISOC_R_IUSE_I__custom_7086153/default/table?lang=en accessed at 10.05.2023.

Secondly, an uneven distribution of the percentage of people that possesses above basic digital skills as per the 5 DIGCOMP competence areas[20] is observed, as shown in the following figure, meaning that in the first two competence areas the majority of respondents have "above basic" digital skills, (ie possess "more than two skills in that area"), whereas in the last three areas almost half of the respondents only possess just one skill.

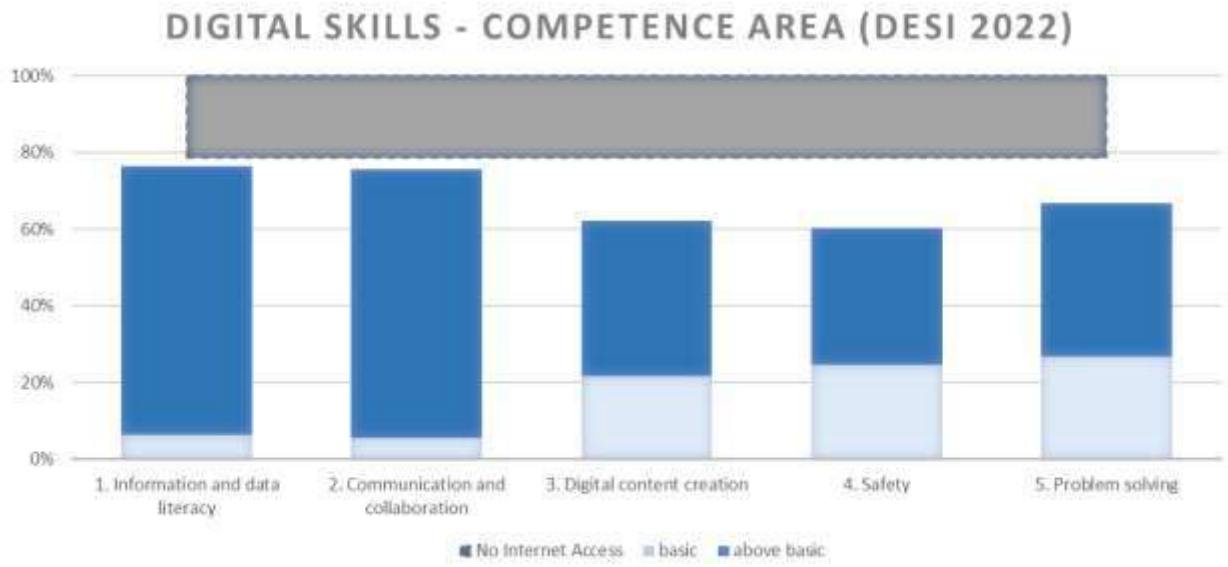

Figure 2. Digital Skills (above basic and basic) of Individuals per competence area (DESI 2022), Digital Strategy Dept., Ministry of Digital Governance

Therefore, it becomes clear that:

- Emphasis must be given in increasing the % of the population which uses the internet (as an absolute prerequisite for subsequent digital skill acquisition)
- Special focus must be given in enhancing the digital skills of the population in competence areas 3, 4 and 5 as this will lead in increasing on one hand the total % of each competence area, and on the other hand the % of the "above basic" digital skills in population.

[20] https://ec.europa.eu/eurostat/databrowser/view/ISOC_SK_DSKL_I21__custom_7634130/default/table?lang=en accessed at 02.10.2023.

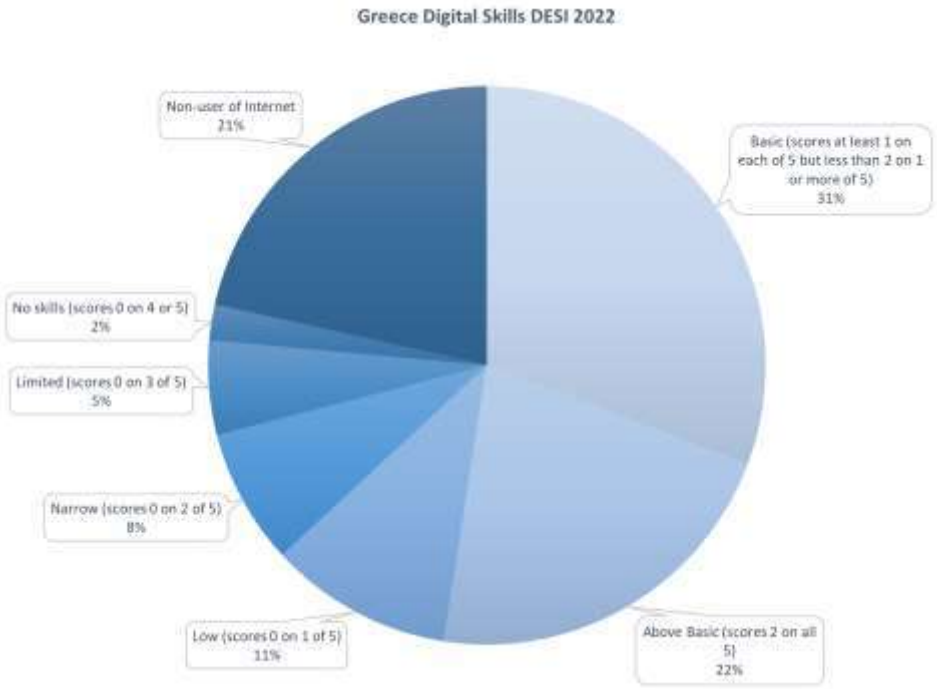

Figure 3. Digital Skills of Individuals (DESI 2022), Digital Strategy Dept., Ministry of Digital Governance

The ICT specialists landscape in Greece

Greece employs 93.4 thousands ICT Specialists[21] with a male/female ratio of 79/21[22] (slightly above EU ratio), who constitute the 2.4% of the total workforce[23] (4.6 million people with 14.7% unemployment, based on the statistical survey in 2021[24]), compared to an EU Total of 8 922.9 thousands (4.5% of total workforce). Although the % of ICT professionals according to DESI has remained more or less stable between 2018 and 2021, it is significantly rising since then, reflecting the increased demand.

Between 2020 and 2021 Greece had a 16.31% (13.6 thousands) increase of ICT specialists compared to EU average 5.99% (504.3 thousands).

On one hand, according to a survey carried out on behalf of the Greek Association of ICT Companies (SEPE),[25] supply in IT professionals is lower than the demand. More specifically, taking into account the number of students enrolling annually in an IT related university course (around 8 000), and that the existing needs are double this number, the gap in the ICT market in 2030 will be around 70 000 professionals. This projection might also be affected by taking into

21 DESI 2022 report (https://ec.europa.eu/newsroom/dae/redirection/document/88706), based on data collected in 2021.

22 https://ec.europa.eu/eurostat/databrowser/view/isoc_sks_itsps/default/table?lang=en accessed at 10.05.2023.

23 https://ec.europa.eu/eurostat/databrowser/view/ISOC_SKS_ITSPT/default/table?lang=en&category=isoc.isoc_sk.isoc_sks.isoc_skslf accessed at 10.05.2023.

24 https://www.statistics.gr/en/statistics/-/publication/SJO01/- accessed at 10.05.2023.

25 https://www.sepe.gr/research-studies/21142064/meleti-sepe-deloitte-apotimisis-eparkeias-eidikon-tpe-stin-ellada

account a relatively low graduation rate (around 50% between 2015 and 2021) from the 35 Informatics and Computer Engineering departments of the Greek HEIs, as reported by the National Authority for Higher Education (ETHAAE)[26].

On the other hand, Information Technology is reported in 2023 as the most dominant business sector in Greece regarding intention to hiring new professionals, with employment prospects reaching 27% (a 15% increase from 2022)[27], and almost 20.5% of the enterprises in Greece employ ICT Specialists as reported in the year 2022, which is very close to EU average (21%)[28]. In 2022, 71.4% out of the 18 000 ICT Greek companies recruited or tried to recruit IT professionals (59.6% EU)[29], although this percentage is significantly lower in other business domains (10%, comparable to 9.5% in EU).

The highest difficulties in Greece in recruiting Specialists in the ICT sector are:

- Applicants' lack of relevant ICT qualifications from education and/or training (33.7%)
- Applicants' lack of relevant work experience (34.9%)
- Applicants' salary expectations too high (31.3%)

Key areas to focus for increasing the number of ICT Professionals

The following categories/areas are identified as being of key importance in achieving the digital target for Greece: Training, Education, attracting expertise from abroad, innovation, providing financial incentives, linking education to the labour market, raising awareness and information.

Finally, focus shall be given on enhancing ICT professionals' most common essential and optional skills and competences as well as essential knowledge areas which constitute the 116 level 5 Occupations considered as "ICT Specialists" in ESCO classification.

1.1.2 National Digital Infrastructure

Gigabit (Fixed Very High Capacity Network (VHCN) coverage - Fibre to the Premises (FTTP) coverage)

In December 2022, Greece adopted its National Broadband Plan 2021 - 2027 with the goal to promote both the availability and the use of fixed very high capacity and 5G networks as catalysts and accelerators of the country's digital transformation. This plan involved substantial investments, including funding from the European Union through programs like the European

[26] https://www.ethaae.gr/el/nea/anakoinoseis/337-synantisi-ergasias-ethaae-sepe

[27] https://www.ot.gr/2023/01/10/texnologia/pliroforiki-rekor-proslipseon-stin-elliniki-agora-to-2023

[28] https://ec.europa.eu/eurostat/databrowser/view/ISOC_SKE_ITRCRN2__custom_7116469/default/table?lang=en accessed at 10.05.2023.

[29] https://ec.europa.eu/eurostat/databrowser/view/ISOC_SKE_ITRCRN2__custom_7116823/default/table?lang=en&page=time:2022 accessed at 10.05.2023.

Regional Development Fund (ERDF) and the Connecting Europe Facility (CEF), together with private investments on digital infrastructures.

Despite the late adoption of FTTP technologies, the FTTP coverage progresses rapidly. Based on DESI 2023 (data from 2022), the country is ranked 25th among the EU countries in terms of FTTP coverage (27.85%), thus achieving almost 8% increase during one year; considering the current market trends, it is anticipated that the coverage will continue to grow rapidly.

	2019	2020	2021	2022
Total FTTP coverage	303 044	436 289	849 460	1 194 821
- % of total households	7.1%	10.2%	**19.8%**	**27.85%**

Table 2. FTTP Coverage of Greece

5G

On mobile networks, Greece is a frontrunner in making the 5G pioneer bands available. The country has shown rapid progress in improving the overall 5G coverage, which has been above the EU average, contributing to the relevant Digital Decade target. More specifically, upon the successful 5G auction fulfilled in December 2020 generating significant revenue for the government, 5G network deployment has been launched. In brief, in the auction the 700 MHz, 2 GHz, 3400 – 3800 MHz (n78) and 26 GHz (n258) bands have been awarded for 5G in Greece.

Cosmote, Vodafone, and Nova (ex Wind) develop their own 5G network according to the respective contracts and their obligations.

According to DESI 2023 5G coverage in Greece has reached 86%.

Semiconductors

In the area of semiconductors, members of the industry and both the private and public sector participate in a number of cutting-edge projects. Greece also participates in the Important Project of Common European Interest (IPCEI) on Microelectronics and Communication with 6 direct participants focusing on design, edge AI, aerospace/defence, and packaging.

A series of actions is being proposed by HETiA[30], an alliance consisting of 47 industrial members and 28 universities and institutes representing the semiconductor, micro and nano-electronics and embedded systems industry in Greece. HETiA, aiming to secure a budget of 350 million EUR from both European and National (from both private and public sector) funds, is planning by 2027

[30] https://hetia.org

to complete a series of actions that will help create a National Innovation Hub for Integrated Circuits:

- The first Action Package provides for the establishment and operation initially of a Competence Center for Microcircuits. The centre will provide both a Design Platform for IC (with intelligent network edges and hyper-sensory intelligence) and Education/Training to develop talent to support ecosystem growth. Furthermore, it will strengthen and develop the Ecosystem through activities to accelerate the incubation and promotion of the already developing ecosystem of start-ups
- A Competence Center for the Creation and Operation of Pilot Production Lines. The objective of the second Action Package is to create microcircuit manufacturing pilot lines, starting from the existing pre-pilot lines. These lines will be interconnected with the first Action's design platform and the national Competence Center for Microcircuits. The long-term viability of a microelectronics design centre is enhanced by the proximity of manufacturing and production capabilities which is one of the key objectives of the European Chips Act.
- Action Package 3 concerns the creation of a fund or specialisation of venture capital, which, with the co-investment of private capital, will promote the development of the semiconductor and microelectronics ecosystem by leveraging and maximising the results of actions 1 and 2.

Moreover, the Foundation for Research and Technology - Hellas (FORTH), reporting to the General Secretariat for Research and Innovation of the Ministry of Development, is participating in a series of projects funded by the European High Performance Computing Joint Undertaking (EuroHPC JU) with a budget allotment of 19.07 million EUR. Notable projects are RED-SEA, eProcessor, European Processor Initiative (EPI), The European PILOT, DARE, Interconnects_2 aiming to develop both High-Performance Computing (HPC) processors and the low-latency networks that interconnect them.[31]

In the context of Chips Act, a Semiconductor Expert Group was established in Greece as well as in other MS. The Group performed a mapping exercise. The aim of the mapping was to identify and collect the contacts of the relevant companies in the semiconductor value chain in the national market and to have an overview of the activity (or activities) of those companies. The mapping revealed 63 companies (that responded to a relevant questionnaire) positioned in various places of the semiconductor value chain (ie Chip design, Electronic design automation [EDA], Equipment, Raw materials, wafer substrates etc). 9 of these companies are considered as Large Enterprises.

Quantum Computing

Greece had shown interest in the field of quantum computing and had been exploring potential collaborations with research institutions and international partners. However, there might not have been any major quantum computing projects with extensive funding at that time. The newly founded Institute of Quantum Computing and Quantum Technology in the National Center for

[31] A comprehensive list of projects involving FORTH can be found at: https://www.ics.forth.gr/carv/current-projects.

Scientific Research Demokritos ("Dimokritos")[32] aims to apply research to a wide range of industry sectors such as Energy, Telecommunications, Shipping, Pharmaceuticals, Biotechnology and Finance, at the standards of leading centres abroad. Algorithms and software and experimental devices are expected to be developed to exploit quantum phenomena, as well as for quantum simulations, telecommunications, cryptography, metrology and sensors. Specific actions are described in the relevant policies, measures and actions sectors.

In the European Quantum Communication Infrastructure (EuroQCI) initiative, the project HellasQCI[33] aims to build Greece's National QCI and contribute to safe-keeping critical data and infrastructures. The project will deploy an advanced quantum systems and networks national communication quantum infrastructure comprising three metropolitan test sites and three quantum key distribution QKD testbeds (governmental, industrial and educational).

Edge Nodes

Edge computing was gaining attention globally as a critical component of the digital ecosystem, and Greece might have started exploring its potential applications.

Greece was expected to benefit from the EU's Digital Europe Program, which aimed to support digital infrastructure development, including high-performance computing (HPC) and data infrastructure. This program would likely contribute to the country's digital transformation efforts. Specific actions are described in the relevant policies, measures and actions sectors.

1.1.3 Digitalisation of businesses

Overview of state of play & trends

According to the Digital Economy and Society Index (DESI) 2022 Greece ranks 22nd in the EU on the Integration of digital technology into business activities[34]. Only 39% of SMEs show at least a basic level of digital intensity compared to the EU average of 55%. Although 20% of SMEs in Greece take advantage of the opportunities offered by e-commerce (above the EU average of 18%), only 7% sell cross-border online (EU average: 9%). E-commerce accounts for 11% of total SME turnover, close to the EU average of 12%. The percentage of businesses using social media stands at 29%, the same as the EU average. Regarding the adoption of advanced digital technologies, 13% of businesses in Greece use big data, which is close to the EU average (14%), but their performance is much lower than the EU average in the use of cloud computing and artificial intelligence (AI). Finally, Greece is close to the EU average in terms of technology information and communication (ICT) for environmental sustainability (65% vs. 66%).

[32] Law 4965/2022 in September 2022.

[33] Digital Europe Programme (DEP Topic-2): Project DIGITAL-2021-QCI-01, HellasQCI Funding: EUR 9.9 million (50% EU) duration 01/2023-06/2025

[34] https://digital-strategy.ec.europa.eu/en/policies/desi-greece

A recent study by the Hellenic Federation of Enterprises (SEV)[35] reports however that Greek enterprises moved five times faster than the average EU enterprise (9.2% rate vs 1.9% in EU) and are now at a 70% digital maturity level in EU, indicating an upward trend. 85% of the enterprises are involved in at least one Digital Transformation initiative, but 36% face resistance to change. 31% of enterprises invested more than 1 million EUR, while 64% reported an investment between 100 thousand and 1 million EUR. The most important burdens in the digitalisation of businesses are internal resistance and lack of digital culture, ability to finance and lack of digital skills and know-how.

The DESI progress graph in Integration of Digital Technologies is rising steadily from 2017, and even more steeply after 2021, reflecting the increasing digital maturity of the Greek enterprises.

It is important however to emphasise the particularities of the Greek business environment, which affect the digitalisation performance assessment, namely their distribution across the various sectors of the economy, but more importantly their distribution by size, which differs considerably from EU.

Analysis of the Greek enterprises (size and sector distribution)

Based on the latest Statistical Business register, which is issued in 2020[36] almost 1.4 million enterprises are operating in Greece, with **a particularly high percentage** of solo (72.38%) and micro enterprises (23.97%)[37], resulting in an overall total percentage of 91.80%.

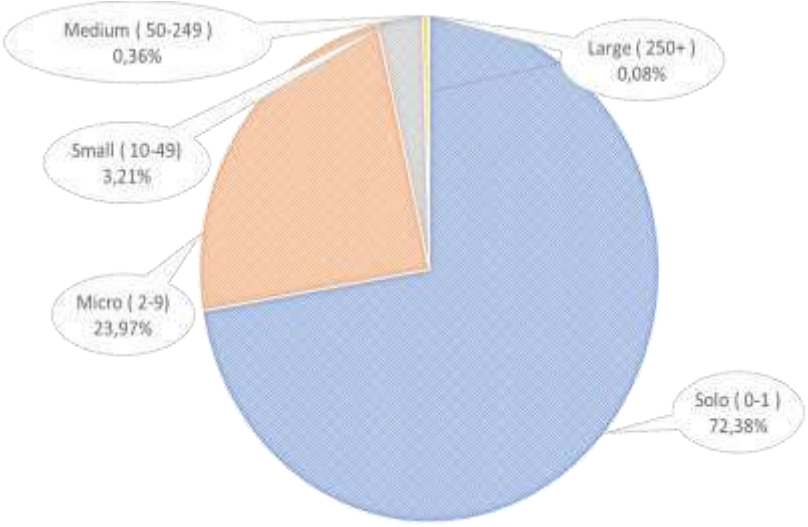

Figure 5. Percentage of enterprises in Greece by size, Digital Strategy Dept., Ministry of Digital Governance

These enterprises have a combined turnover of 83.4 billion EUR (29.74% of total) and employ almost 43.4% of the workforce. Compared to the EU average, SMEs and especially micro-

35 https://www.sev.org.gr/wp-content/uploads/2023/06/2023-06-30_SPECIAL-REPORT_Psifiaki_Orimotita_Epixeirisewn_final.pdf

36 https://www.statistics.gr/en/statistics/-/publication/SBR01/- accessed at 10.05.2023.

37 according to EU 2003/361/EK

enterprises are more numerous and play a more important role in the national economy. This fragmentation however impacts the investments required for the digital transformation of businesses.

In terms of economic activity, the number of enterprises, the annual turnover and the number of employees by sector is taken into account to better target their Digital Transformation:

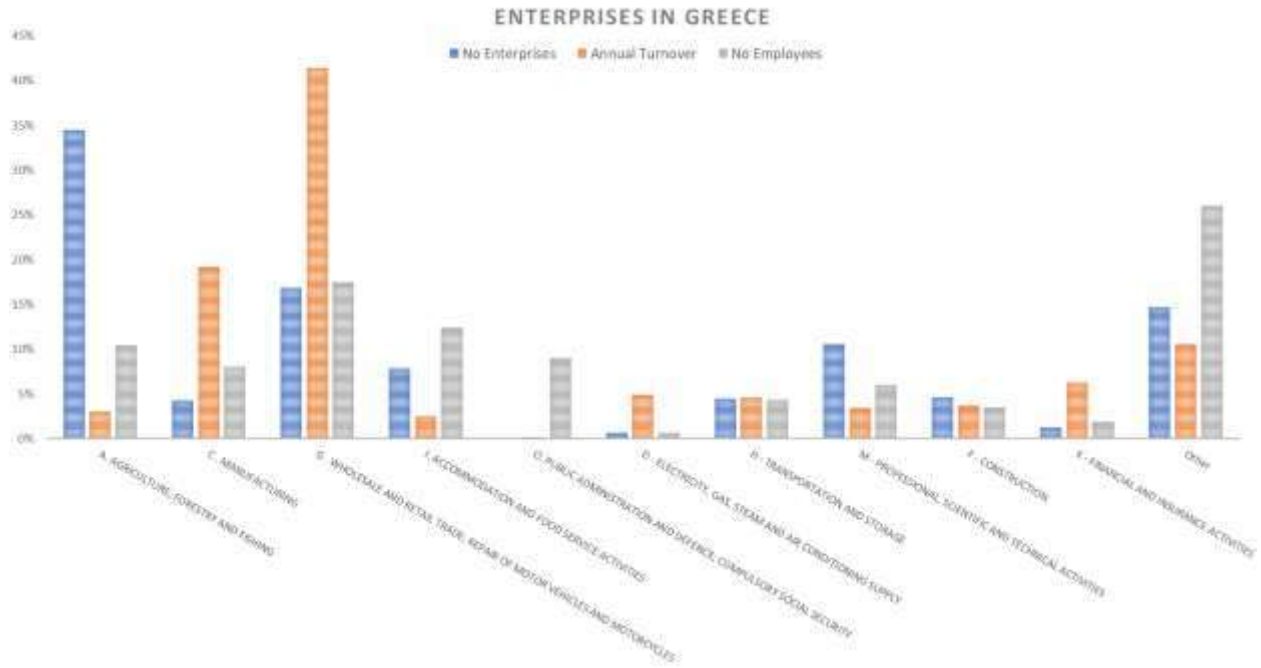

Figure 6. Enterprises in Greece by Activity (Number of Enterprises, Annual Turnover, Number of Employees), Digital Strategy Dept., Ministry of Digital Governance

The 10 main economic activities of Greece that gather more than 75% in these criteria are

1. A. AGRICULTURE, FORESTRY AND FISHING
2. C . MANUFACTURING
3. G . WHOLESALE AND RETAIL TRADE; REPAIR OF MOTOR VEHICLES AND MOTORCYCLES
4. I. ACCOMMODATION AND FOOD SERVICE ACTIVITIES
5. O. PUBLIC ADMINISTRATION AND DEFENCE; COMPULSORY SOCIAL SECURITY
6. D. ELECTRICITY, GAS, STEAM AND AIR CONDITIONING SUPPLY
7. H. TRANSPORTATION AND STORAGE
8. M. PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES
9. F. CONSTRUCTION
10. K. FINANCIAL AND INSURANCE ACTIVITIES

Focus areas to maximise the impact of digital transformation

The European Union Survey on ICT usage and e-commerce in enterprises[38] accounts for the enterprises with economic activity in sections C-J, L-N and Group 95.1[39] whereas the inclusion of enterprises with the number of employees and self-employed persons between 0 and 9 is **optional**. This means that the evaluated enterprises (pool for the sample) for the digital decade targets for the year 2022 in Greece (and therefore **the main focus for the national contribution** to the objective) were only **39.460**[40] (which is approximately 2.8% of total enterprises with 66.85% of the total turnover and 32.50% of the total employment). The majority of these enterprises are Small-sized Enterprises (~89%), medium-sized (~9.5%) and the rest (~1.5%) are Large enterprises.

A more detailed analysis of available data also reveals the technology areas in which targeted businesses need to improve in order to contribute to the digital objective faster. More specifically:

[CLOUD]:

In DESI 2022 Greece scored 15.2%[41] for the sub-indicator Cloud compared to the EU average (34%). This percentage was reported based on the Eurostat - European Union survey on ICT usage and e-commerce in enterprises.

For 2021, the data on Cloud Computing (CC) services[42] by size and by sector are as follows:

	All but Micro	SMEs (Small)	SMEs (Medium)	Large
	10 persons employed or more	From 10 to 49 persons employed	From 50 to 249 persons employed	250 persons employed or more
EU Average	34	31.6	43.2	59.7
Greece	**15.2**	13.1	30.5	43.1

Table 4. Percentages of Enterprises buying at least one sophisticated or intermediate CC services by size

38 https://circabc.europa.eu/ui/group/89577311-0f9b-4fc0-b8c2-2aaa7d3ccb91/library/b44e7e01-e75e-4ab5-be1c-dae7a1d80ef2?p=1&n=-1&sort=name_DESC accessed at 10.05.2023.

39 https://nacev2.com/en under NACE Rev. 2 accessed at 10.05.2023.

40 https://www.statistics.gr/documents/20181/9813f8a3-e950-ad74-41d3-51a51203bbe6 accessed at 10.07.2023.

41 The baseline is 15.2% for 2021. The difference stems from a restatement by the Greek national statistical authorities in the Eurostat database.

42 https://ec.europa.eu/eurostat/databrowser/view/ISOC_CICCE_USE__custom_4852061/default/table?lang=en accessed at 10.05.2023.

NACE Rev.2 activity	EU	Greece
Manufacturing	31.8	14.2
Electricity, gas, steam and air conditioning supply; water supply; sewerage, waste management and remediation activities	35.3	20.4
Water supply; sewerage, waste management and remediation activities	32.2	13
Construction	26.1	8.4
Wholesale and retail trade; repair of motor vehicles and motorcycles	33.7	18.9
Transportation and storage	29.3	25.3
Accommodation and food service activities	26.3	8.8
Information and communication	68	34
Real estate activities; professional, scientific and technical activities	46.8	28.8
Professional, scientific and technical activities	47.9	29.6
Administrative and support service activities	34.9	21.7
Information and Communication Technology - Total	66.5	42.2
All activities, without financial sector	**34**	**15.2**

Table 5. Percentages of Enterprises buying at least one sophisticated or intermediate CC services by sector[43]

[43] https://ec.europa.eu/eurostat/databrowser/view/ISOC_CICCE_USEN2__custom_7672848/default/table?lang=en accessed at 10.07.2023.

[AI]:

In DESI 2022 Greece scored 4%[44] for the sub-indicator AI compared to the EU average (7.9%). This percentage was reported based on Eurostat - European Union survey on ICT usage and e-commerce in enterprises [45].

For 2021, the data on AI[46] by size and by sector are as follows:

	All but Micro	SMEs (Small)	SMEs (Medium)	Large
	10 persons employed or more	From 10 to 49 persons employed	From 50 to 249 persons employed	250 persons employed or more
EU Average	**7.9**	6.4	12.8	28.5
Greece	**2.6**	2	7.5	9.8

Table 6.Enterprises use at least one of the AI technologies by size

NACE Rev.2 activity	EU	Greece
Manufacturing	7.3	5.3
Electricity, gas, steam and air conditioning supply; water supply; sewerage, waste management and remediation activities	9	9.8
Construction	4.8	2.8
Wholesale and retail trade; repair of motor Vehicles and motorcycles	6.4	1.9
Transportation and storage	5.3	5.4
Accommodation and food service activities	3.6	0.1

44 The baseline is 2.6% for 2021 data. The difference stems from a restatement by the Greek national statistical authorities in the Eurostat database.

45 https://circabc.europa.eu/ui/group/89577311-0f9b-4fc0-b8c2-2aaa7d3ccb91/library/b44e7e01-e75e-4ab5-be1c-dae7a1d80ef2?p=1&n=-1&sort=name_DESC accessed at 10.05.2023.

46 https://ec.europa.eu/eurostat/databrowser/view/ISOC_EB_AI__custom_6140353/default/table?lang=en accessed at 10.05.2023

NACE Rev.2 activity	EU	Greece
Information and communication	25.5	11.2
Telecommunications	19.9	16
Real estate activities; professional, scientific and technical activities	16	8
Professional, scientific and technical activities	17.6	9.2
Administrative and support service activities	7.3	1.8
Repair of computers and communication equipment	9.1	0
Information and Communication Technology - Total	24.8	16.9
All activities, without financial sector	**7.9**	**2.6**

Table 7. Percentage of Enterprises use at least one of the AI technologies by sector[47]

[BIG DATA]:

In DESI 2022 Greece scored 12.9% for the sub-indicator Big data compared to the EU average (14.2%). This percentage was reported based on Eurostat - European Union survey on ICT usage and e-commerce in enterprises (E_BDA)[48]. Data since 2017 show a more or less steady performance on Greek enterprises, with a slight increase in 2019.

For 2020[49], the data on Big Data[50] by size are as follows (no data is available by sector)[51]

47 https://ec.europa.eu/eurostat/databrowser/view/ISOC_EB_AIN2__custom_7453298/default/table?lang=en accessed at 10.09.2023.

48 https://circabc.europa.eu/ui/group/89577311-0f9b-4fc0-b8c2-2aaa7d3ccb91/library/b44e7e01-e75e-4ab5-be1c-dae7a1d80ef2?p=1&n=-1&sort=name_DESC accessed at 10.05.2023.

49 No data has been collected in 2021.

50 https://ec.europa.eu/eurostat/databrowser/view/ISOC_EB_BD__custom_4852117/default/table?lang=en accessed at 10.05.2023.

51 https://ec.europa.eu/eurostat/databrowser/view/ISOC_EB_BDN2__custom_7453482/default/table?lang=en accessed at 10.05.2023.

	All but Micro	SMEs (Small)	SMEs (Medium)	Large
	10 persons employed or more	From 10 to 49 persons employed	From 50 to 249 persons employed	250 persons employed or more
EU Average	**14.2**	12.5	20.6	34.3
Greece	**12.9**	N/A	N/A	29.1

Table 8. Percentage of enterprises analysing big data from any data source (internal or external) by size

[DIGITAL INTENSITY]:

In DESI 2022 Greece scored 39%[52] for the sub-indicator SMEs with at least a basic level of digital intensity compared to the EU average (54.9%)[53].

For 2021, the data on Digital Intensity Index (DII)[54] by size is as follows:

		All but Micro	SMEs (Small)	SMEs (Medium)	SMEs but Micro	Large
		10 persons employed or more	From 10 to 49 persons employed	From 50 to 249 persons employed	From 10 to 249 persons employed	250 persons employed or more
EU Average	Digital Intensity (Low, High, Very High DII)	55.8	51.9	72.9	**54.9**	88.1
Greece	Digital Intensity (Low, High, Very High DII)	38.2	35.2	61.3	**37.6**	73.3

Table 9. Percentage of enterprises analysing Digital Intensity (DII version 3) by size

[52] The data of 2021 based on eurostat indicate 37.6% - (DII version 3). These data were revised backwards by the Greek National Statistical Institute after the publication of DESI 2022. The Eurostat database was updated accordingly.

[53] Survey of businesses on the use of digital technologies by Ipsos and iCite.

[54] https://ec.europa.eu/eurostat/databrowser/view/ISOC_E_DII__custom_7427814/default/table?lang=en&page=time:2021 accessed at 12.06.2023.

[UNICORNS]:

The domestic ecosystem of innovative start-ups includes three unicorn companies, PeopleCert (Education management), Viva Wallet (Financial Services) and Skroutz (e-commerce platform)[55], with few other start-ups claiming a corresponding position (e.g., FlexCar, Blueground, Persado which are today considered as "soonicorns"). In the context of the wider South Eastern European ecosystem, Greece leads the way when it comes to the amount of total attracted capital in 2022, with ~40% of all venture funding in the region[56].

The country has the advantage of a highly skilled English-speaking workforce and a promising IT sector. Moreover, Greece enjoys proximity to European markets, the Middle East, and Africa, which would all support the creation of a regional tech hub. However, the challenge is to keep this talent in the country while also fostering an entrepreneurial mindset through education and training. With heavy bureaucracy and a scattered network of ecosystem stakeholders, the budding startup landscape of Greece still has room for improvement.

Overview of latest measures

The Greek Government has activated a series of legal, institutional, structural and investment initiatives to support the Digitalisation of businesses in all of the above areas, including strong investment in Research and Innovation, the establishment of a Digital Innovation Hub ecosystem, a 375 million EUR flagship program on the Digital Transformation of SMEs under the RRP[57] and the empowerment of the Greek startup ecosystem.

Promotion of Research & Innovation in the Digital Transformation of businesses

Digital transformation of enterprises is inextricably linked to research and development. Greece participated in R&I EU projects of total cost 5.51 billion EUR[58] and in the last 10 years 2.88 billion EUR. The R&D Intensity of Greece[59] in 2021 is 1.45%, while Greece has doubled this intensity within the last ten years[60]. Over the last decade, the largest percentage increases in government budget allocations for R&D per person were recorded in Greece (+129%, from 66 EUR to 151.2 EUR per person).

55 https://app.dealroom.co/curated-heatmaps/unicorns/location/f/year_became_unicorn_min/anyof_2000?endYear=2023&interval=yearly&rows=netherlands~~united_kingdom~~spain~belgium~austria~italy~sweden~france~germany~ireland~finland~estonia~denmark~croatia~~czech_republic~~portugal~greece~poland~lithuania~luxembourg~hungary~cyprus~romania~slovakia~malta~slovenia~latvia~~north_macedonia~~albania&sort=-2022&startYear=2000&type=amount accessed at 10.06.2023.

56 https://thefoundation.gr/wp-content/uploads/2022/12/Foundation-Startups-in-Greece-report-2022-2023.pdf

57 https://digitalsme.gov.gr

58 https://webgate.ec.europa.eu/dashboard/sense/app/98dcd94d-ca66-4ce0-865b-48ffe7f19f35/sheet/KVdtQ/state/analysis accessed at 10.05.2023.

59 Gross domestic expenditure on R&D (GERD) expressed as % of GDP

60 https://ec.europa.eu/eurostat/databrowser/view/RD_E_GERDTOT__custom_7117648/default/table?lang=en accessed at 10.06.2023.

The Government budget allocation for R&D (GBARD) in Greece is above EU average since 2019. Although the Gross domestic expenditure on R&D (GERD)[61] from government sector is 0.32 and above the EU average, the business sector scores only 0.69, which is quite lower than the EU average (1.49) for the year 2021.

The role of the European Digital Innovation Hubs

Since 2022 seven European DIHs are operating in several regions in Greece covering a variety of technologies and policy domains (see table below). Their service offerings are more or less aligned with the 5 co-financed areas identified in the Digital Decade 2030 (AI, Cybersecurity & Trust, HPC, Advanced digital skills, optimum utilisation of digital capacities and interoperability).

eDIH	Title	Region	Technology Sectors	Policy Domains
smartHEALTH	European Digital Innovation Hub for Smart Health: Precision Medicine and Innovative E-health Services	8 out of 13 Regions	AI, Cybersecurity, HPC	Healthcare, Pharmaceutical Industry
DigiAgriFood	Digital Transformation and Green Transition of the Agri-Food Value Chain in Central and Northern Greece	Central and Northern Greece	AI, Advanced Digital Skills, HPC	Agri-food
GR digiGOV-innoHUB	The Greek digital Government and Public Services innovation HUB	Nation wide	AI, 5G, HPC, IoT, Cloud, Cybersecurity, Blockchain	Public sector, e-Government
SmartAttica-AtHeNAI	Smart Attica DIH, the Attica region – Greek Innovation hub for Artificial Intelligence in Energy and Environment, Supply chain and mobility, Culture and Tourism	Attica, Nation wide	AI, HPC, Cybersecurity	Energy and Environment, Supply Chain and Mobility, Culture and Tourism
HEALTH HUB	HEALTH HUB – Healthcare & Pharmaceutical Industry Transformation through Artificial Intelligence Digital Services	Thessaly	AI	Healthcare, Pharmaceutical Industry

61 https://ec.europa.eu/eurostat/databrowser/view/GBA_NABSFIN07__custom_7024947/bookmark/table?lang=en&bookmarkId=768c9e7c-0a4c-4b66-abb5-22d0789c3ddb accessed at 10.06.2023.

eDIH	Title	Region	Technology Sectors	Policy Domains
SYNERGiNN EDIH	Digital Innovation Hub of Western Macedonia	Western Macedonia, Northern Greece, Balkans	AI, Cybersecurity, IoT, Big Data Analytics	Energy, Environment
EasyHPC	easyHPC@eco.plastics.industry.WCG:An open HPC ecosystem for the ecological transformation and the advancement of the competitiveness of the Plastic Industry in the Regions of West & Central Greece	Western and Central Greece	HPC	Market and services, Technological innovation

Table 10. EDIHs in Greece

The Greek eDIHs:

- contribute to the digital transformation of the economy supporting the development of new digital companies resulting in more employment in the sector
- constitute R&D centres aiming at driving adoption of modern technologies and digital applications, resulting in new products and services
- provide training courses and seminars to support professionals in the acquisition of digital skills and competencies, which can improve workforce's qualifications
- link the local innovation ecosystem with international communities and foster cross-border collaboration

The RRP Digital Transformation Program for SMEs

The program supports technologies and services for digitalising SMEs (e.g. e-payment, e-sales and e-invoicing applications, digital advertising tools, teleworking systems, business analytics, digital upskilling, AI, IoT, cybersecurity systems, and cloud infrastructures and services). Eligible expenses for that program in the target trends are:

- Business analytics. Digital tools like Business Analytics, Business Intelligence, Big data analytics will be eligible.
- Artificial Intelligence. As artificial intelligence technologies proliferate, they are becoming an imperative for businesses that want to maintain a competitive edge. Chatbots, Consumer behaviour forecasting, Fraud detection, Business forecasting tools will be eligible for investment.

- Cloud Services. In the past SMEs faced significant barriers to enter the digital era. Cloud Services is the cornerstone of this change, that normalises issues like insufficient funds, rapid scaling quickly etc. Under this category IaaS, PaaS & SaaS (e.g. ERP, CRM, HRM, PMS, WMS, Payroll, etc.) will be covered through the proposed investment.

Empowering the Greek startup ecosystem

The public sector has a pioneering role in empowering the startup ecosystem, especially in developing a network for promoting and mentoring potential entrepreneurs and directing investor interest in early-stage startups. EquiFund, a fund-of-funds, has taken an active role in addressing lack of venture capital and private equity activity by channelling more than 300 million EUR of public money, having been deployed in more than 138 companies (employing an estimated 6 000 professionals) which have attracted more than 1.1B€ from external VCs and angel investors, multiplying the impact of investments by a factor of 3.7[62]. However, due to the fact that Equifund has come to an end, a decreased number (around 35%) of companies announcing new rounds of financing is observed, however in 2022 a record-breaking number of exits was registered as 19 Greek startups were acquired.

"Elevate Greece" and "Startup Greece" are two government initiatives that bring startups and investors together to provide a more comprehensive look at the startup landscape.

1.1.4 Digital public services

Overview of state of play & trends

The provision of digital public services to Greek citizens and Greek businesses has been significantly improving since 2021 with the introduction and evolution of the gov.gr portal (Law 4635/2019 Article 52), as a result of the government's commitment to rendering more public services available online.

The key public services are defined in the e-Government Benchmark methodology, which compares digital public services delivery across EU countries[63]. Since the evaluation of each service takes place biannually, the DESI report reflects the score of the digital public services of the previous two years on average.

In DESI 2022 Greece had 52.35% for the sub-indicator Digital public services for citizens compared to the EU average (74.63%). In DESI 2022 Greece had 47.60% for the sub-indicator

62 https://thefoundation.gr/innovation-platform/our-publications/startups-in-greece

63 https://digital-strategy.ec.europa.eu/en/library/egovernment-benchmark-2022 accessed at 10.05.2023.

Digital public services for businesses compared to the EU average (81.71%). These indicators measure the degree to which a service or information on a service for citizens/businesses are provided online, interoperable and work cross-border via a government portal[64].

Although the level of progress in Greece is not yet entirely reflected in the DESI index, Greece has embarked on a comprehensive digitalisation of its public services as outlined in the Digital Transformation Bible. The implementation plan consists of over 450 measures and IT projects. Notable examples include setting-up critical e-registers, the universal use of a single sign-on mechanism and the continuous upgrade of the single portal for all digital public services ('Gov.gr'), as mentioned in DESI 2022 report. Starting with just 500 services in March 2020, gov.gr is offering more than 1 580 services as of Q2 2023 in both Greek and English, and the digitalisation of Greece's public services is continuing to expand rapidly, as indicated also by the DESI comparison charts (continuous increasing trend, with more than 50% increase between 2017 and 2022).

Another important factor in promoting digital public services is the establishment of the National Registry of Administrative public Services – MITOS (Law 4961/2022 Article 68) in July 2022, which aims at recording, mapping modelling and disseminating all the administrative procedures of the state, and therefore contains the processes leading to the aforementioned key digital public services. By the end of August 2023 3 094 procedures in Greek and 440 in English were published in the system.

Variation of digital public services per life event

More analytically, in the following figure we can see the baseline value per life event

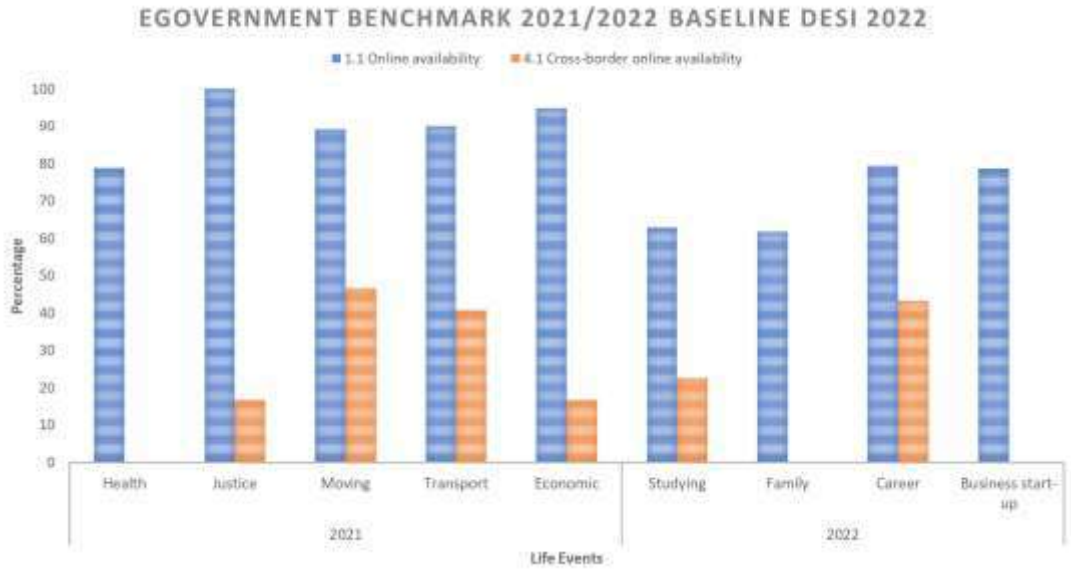

Figure 7. Baseline value of Greece per life event of DESI 2022 for citizens and businesses (Online Availability and Cross-border online Availability)

More specifically:

64 https://ec.europa.eu/newsroom/dae/redirection/document/88768 accessed at 10.05.2023.

For citizens, there are 69 processes, 39 of which are evaluated in odd years and 30 in even years. The following table displays the relevant scores of Greece (DESI's sub-indicator in 2022[65])

Life Event	No Processes	Evaluation Year	National	Cross-border	Average
			Online availability		
Studying	11	2020	63.00%	22.50%	42.75%
Family	9		61.83%	0.00%	30.92%
Career	19		79.50%	43.33%	61.42%
SubTotal	**39**				**45.03%**
Health	7	2021	79.00%	0.00%	39.50%
Starting a small claims procedure	6		100.00%	16.67%	58.33%
Moving	8		89.33%	46.67%	68.00%
Transport	9		90.24%	40.83%	65.54%
Subtotal	**30**				**57.84%**
Digital public services for citizens	**69**		**80.41%**	**24.29%**	**52.35%**

Table 11. Evaluation results for processes in life events for citizens regarding Online availability in the years 2020 and 2021 (reference years of DESI 2022), Digital Strategy Dept., Ministry of Digital Governance

For businesses, there are 26 processes, 16 of which are evaluated in odd years and 10 in even years. The following table displays the relevant scores of Greece, (DESI's sub-indicator in 2022)

Life Event	No Processes	Evaluation Year	National	Cross-border	Average
			Online availability		
Business start-up	16	2020	78.75%	0.00%	39.38%
Regular business operations	10	2021	95.00%	16.70%	55.85%
Digital public services for businesses	**16**		**86.88%**	**8.35%**	**47.61%**

Table 12. Evaluation results for processes in life events for businesses regarding Online availability in the years 2020 and 2021 (reference years of DESI 2022), Digital Strategy Dept., Ministry of Digital Governance

It is clear from the above data, that Greece has room for improvement <u>in the cross-border digital service availability</u>, which is the main factor affecting the overall performance of the country.

65 Data source: eGovernment benchmark 2022, eGoverment benchmark 2021 https://digital-strategy.ec.europa.eu/en/library/egovernment-benchmark-2022

https://digital-strategy.ec.europa.eu/en/library/egovernment-benchmark-2021 accessed at 10.05.2023.

Further analysis into the e-health dimension of public services

Furthermore, as regards the healthcare dimension, citizens in Greek can access medical records and related information in myHealth app[66] (available online and as a mobile application), and are able to

- manage and view information about prescriptions and referrals
- access to e-prescription history and receive Push Notifications about new prescriptions and exam referrals
- issue medical certificates that your physician has registered in the Electronic Prescription system.

Based on eHealth Network Coordinated Actions Meeting on 16th of November 2022, the proposed list of indicators are on Annex I. In this composite indicator, Greece more analytically scored as followed in DESI 2023,

Composite and Layer scores	Weight	Score	Final Score 2022
1. Electronic health records data online access service(s)	8.34%	100.00%	8.34%
2. Types of accessible health data categories	25.00%	59.50%	14.88%
3. Access technology and means	33.33%	75.00%	25.00%
4. Access opportunities for certain categories of people	33.33%	37.50%	12.50%
Citizens' online access to medical records			**60.71%**

Table 13. eHealth indicator – Greece's score breakdown (DESI 2023)

The elements that are missing are

- Electronic results and reports available to citizens
- Availability of authentication schemes
- Technical implementation for disadvantaged groups
- WCAG and WAD compliance

Outlook of the e-identity status

Lastly, in line with eIDAS regulation[67], on the 27th of July 2022, the Gov.gr Wallet[68] application was made available (law 4954/2020 article 80). Gov.gr Wallet allows citizens to create, store and control their digital documents. It currently holds the national identity card, driving licence and

66 https://www.gov.gr/ipiresies/ugeia-kai-pronoia/phakelos-ugeias/epharmoge-gia-kinetes-suskeues-myhealth accessed at 10.05.2023.

67 COM/2021/0136 https://digital-strategy.ec.europa.eu/en/policies/eidas-regulation accessed at 10.05.2023.

68 https://www.gov.gr/upourgeia/upourgeio-psephiakes-diakuberneses/psephiakes-diakuberneses/epharmoge-gia-kinetes-suskeues-gov-gr-wallet accessed at 10.05.2023 (Law 4954/2022).

disability card. Greece has not yet notified eID scheme[69] in accordance with Regulation (EU) No 910/2014. An electronic service to book an appointment for issuing a new type of national IDentity card for Greek citizens was launched in 25th of September 2023[70], which sets the basis for establishing the national eID scheme. Currently, Greece has developed the eIDAS node[71], and already tested the connections with 17 countries in the testing environment as well as 14 countries in the production environment[72].

1.2 Challenges

1.2.1 General Challenges

Greece is currently on-track to contribute essentially and considerably to most of the targets of the digital agenda. Nevertheless, the country is facing several challenges that could hinder its relevant efforts, while limiting its overall contribution to some of the targets of the digital decade. Specifically, the country is facing the following challenges:

- **Delayed Start and Low Ranking in DESI Indicators.** Despite the country's intense digital transformation efforts during the last couple of years, Greece starts from a position of very low digital maturity with a great distance to be covered. For instance, according to the DESI index, in 2021, Greece was ranked 25th out of the 27 EU Member States in overall digitalisation. Likewise, Greece is still classified as "emerging" in the 2018 World Economic Forum's Readiness for the Future of Production Report[73] i.e., the country's limited readiness to participate in the fourth industrial revolution. To compensate for Greece's low rank position and delayed start, there is a need for considerable investments in enabling infrastructures and human capital that are already available in other countries.
- **Recovery from Financial Crises.** Greece has faced financial turmoil during an entire decade of technology acceleration. The country is currently recovering from one of the most severe financial crises in European history, which has depleted the country from financial resources in several policy areas. This might be depriving the national budget from the necessary capital for large scale investments in digital transformation infrastructures and projects.
- **Ecosystems in their Infancy.** Several ecosystems that are essential for selected targets of the digital agenda are still in their infancy. This is for example the case for the national start-up ecosystem which is a foundation for producing unicorns and the case for Greece's semiconductors' ecosystem. However several ecosystems are growing.
- **Quite Low level of digital skills.** There is a lack of digital skills and expertise among the Greek citizens, which is a setback to an accelerated digital transformation. Greece faces a skills shortage in terms of the digital literacy of the general population, along with a lack of a critical mass of ICT experts that possess the technical skills needed to implement, deploy and utilise digital technologies at scale.

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69 https://ec.europa.eu/digital-building-blocks/wikis/display/EIDCOMMUNITY/Overview+of+pre-notified+and+notified+eID+schemes+under+eIDAS accessed at 10.05.2023.

70 https://id.gov.gr

71 https://www.eidas.gov.gr accessed at 10.05.2023.

72 https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/european-digital-identity_en#documents

73 https://www3.weforum.org/docs/FOP_Readiness_Report_2018.pdf

1.2.2 CHALLENGES PER DIGITAL DECADE TARGET

Beyond the above-listed top-level targets that impact the country's ability to achieve its ambitious targets for the digital agenda, there are also some more specific challenges for individual targets, which are summarised in the table below.

Targets	Challenges
DD1: A digitally skilled population and highly skilled digital professionals · "At least basic digital skills" · "ICT Specialists"	· Greece has a shortage of digital skills especially among the oldest population, and ranks quite low in human capital. · The country suffers from population decline and is likely to become the fastest ageing EU country by 2030. · Greece has a rather low number of ICT specialists that is significantly below EU average. · Greece has suffered a significant "brain drain" during the crisis period that has limited the number of ICT specialists in the country.
DD2: Secure, resilient, performant, and sustainable digital infrastructures · "Gigabit Connectivity" · "5G Coverage" · "Semiconductors" · "Edge Nodes" · "Quantum Computing"	· Greece ranks low in fixed internet access speed for both households and mobile internet, while offering poor connectivity in several areas. · The country's geomorphology (i.e., numerous islands and mountainous areas) and demographic profile (extended and sparsely populated rural areas) significantly increase the required investments in order to achieve global gigabit coverage. · Lack of quantum computing infrastructures and of related investments prior to 2022, when the first projects (e.g., Quantum Communication Infrastructure (QCI), EuroHPC Quantum Computers in Greece) have commenced. · Despite islands of success and few very successful startups, Greece does not have a vibrant semiconductors technology ecosystem. · Relatively poor awareness and low investment density from the private sector.

Targets	Challenges
DD3: The digital transformation of businesses · "Cloud Computing" · "Big Data" · "Artificial Intelligence" · "SMEs with at least a basic level of digital intensity" · "Unicorns"	· There is an overwhelming number of SMEs with relatively moderate innovation activities. · Greece is characterised by a limited market size and scalability issues that reflect on the innovation capital of small businesses. · Greece lags behind the EU average in terms of private Research and Development (R&D) and innovation investments, which affects SMEs and relates to emerging technologies (e.g., AI) as well. · Limited sharing of data and data openness in private enterprises (e.g. lack of data hubs). · Relatively new start-ups ecosystem with very Greek Unicorns recorded so far, yet a greater number of Unicorns from Greek founders and the Greek diaspora. · There are still many siloed data management infrastructures in the public and private sector.
DD4: The digitalisation of public services · "Digital Public Services" · "eHealth" · "eID/eIDAS" · "gov Wallet"	· Digital Divide: Not all citizens have equal access to digital technologies and the internet. Rural areas and elderly populations may have limited access to digital devices and reliable internet connections, making it difficult for them to access digital public services. · Infrastructure Development: Building the necessary digital infrastructure, including high-speed internet access and data centres, is a prerequisite for digitalization. Ensuring adequate coverage and capacity can be a significant challenge, especially in remote areas. · Digital Literacy: Many citizens may lack the necessary digital skills to navigate and use digital public services effectively. This can create a barrier to adoption, particularly among older or less tech-savvy populations. · Digital Inclusion: Ensuring that digital public services are inclusive and accessible to all citizens, including those with disabilities, is a priority. This involves making services user-friendly and compliant with accessibility standards. · Data Security and Privacy: Ensuring the security and privacy of citizens' data is a critical concern. Cybersecurity threats and data breaches can compromise sensitive information, eroding public trust in digital services. · Interoperability: Different government departments and agencies may use different IT systems and databases, leading to interoperability challenges. Integrating these systems to provide seamless digital services can be complex and costly.

Targets	Challenges
	· Bureaucratic Resistance: Resistance to change within government agencies can hinder the adoption of digital technologies. Bureaucratic inertia and resistance to new processes can slow down digitization efforts. · Funding and Resources: Developing and maintaining digital infrastructure and services require significant financial and human resources. Greece may face budget constraints that limit its ability to invest in digitalization. · Legal and Regulatory Framework: Outdated or complex legal and regulatory frameworks can pose challenges to the development of digital public services. Simplifying and adapting these frameworks to the digital age is essential. · Maintenance and Updates: Once digital services are implemented, they require regular maintenance and updates to remain effective and secure. Ensuring the sustainability of digital services is an ongoing challenge.

Table 14. Challenges Faced by Greece in relation to Specific Targets/KPIs of the 2030 Digital Agenda

Part of the above challenges has also been identified in the latest Digital Decade Country Report 2023 for Greece. The table below presents the correlation between challenges identified in the National Roadmap and the findings of the Digital Decade Country Report 2023 for Greece.

The measures that are expected to address the aforementioned challenges are presented in detail in chapter 3.1.5 of this report.

Digital Target Thematic	Challenges identified in the National Digital Decade Strategic Roadmap 2030	Recommendations stated in the Digital Decade Country Report 2023 for Greece
Digital skills	• **Challenge 1** - Greece has a shortage of digital skills especially among the oldest population and ranks quite low in human capital. The challenge becomes more intense as the country suffers from population decline and is likely to become the fastest ageing EU country by 2030. • **Challenge 2** - Greece has a rather low number of ICT specialists that is significantly below EU average. Greece has suffered a significant "brain drain" during the crisis period that has limited the number of ICT specialists in the country.	Greece should significantly step up its efforts in the area of digital skills. The need to expand the digital talent pool of ICT specialists in Greece will require special attention to tackle the current gap and ensure the economy benefits from a digitally skilled population. It is also crucial that Greece can forecast the skills required to match the labour market needs and anticipate changes in skills.
Digital infrastructures	• **Challenge 3** - Greece ranks low in internet access speed for both households and mobile internet, while offering poor connectivity in several areas. The country's geography (i.e., numerous islands, many isolated valleys) does not ease the target of achieving complete gigabit network coverage. • **Challenge 4** - Lack of quantum computing infrastructures and of related investments prior to 2022, when the first projects (e.g., Quantum Communication Infrastructure (QCI), EuroHPC Quantum Computers in Greece) have commenced. Despite islands of success and few very successful startups, Greece does not have a vibrant semiconductors technology ecosystem.	Greece should step up its efforts on connectivity infrastructure, in particular Gigabit coverage. Greece should further improve the effectiveness and coordination of initiatives to ensure coherence in achieving its connectivity goals. Greece's efforts in the area of semiconductors and quantum should be sustained in order to help the EU become a strong market player in these areas

Digital Target Thematic	Challenges identified in the National Digital Decade Strategic Roadmap 2030	Recommendations stated in the Digital Decade Country Report 2023 for Greece
Digitalisation of businesses	• **Challenge 5** - There is an overwhelming number of SMEs with relatively moderate innovation activities and low digital maturation level, especially regarding the deployment of advanced technologies, including big data, AI. In addition, Greece is characterised by a limited market size and scalability issues that reflect on the innovation capital of small businesses. • **Challenge 6** - Greece lags behind EU average in terms of private Research and Development (R&D) and innovation investments, which affects SMEs and relates to emerging technologies (e.g. AI) as well.	Greece should significantly step up its efforts in the area of digitalisation of businesses, notably by swiftly implementing the RRP measures, and the ERDF Programmes, 'Competitiveness' and 'Digital transformation'. Attention should be paid to supporting the development and deployment of advanced technologies, including big data, AI, in particular in SMEs
Digitalisation of public services	• **Challenge 9 –** Digital Divide in Greece where not all citizens have equal access to digital technologies and the internet. • **Challenge 10** - Interoperability challenges: Different government departments and agencies may use different IT systems and databases. • **Challenge 11 -** Digital Inclusion: Ensuring that digital public services are inclusive and accessible to all citizens, including those with disabilities, is a priority. • **Challenge 12** - Ensuring the security and privacy of citizens' data is a critical concern. Cybersecurity threats and data breaches can compromise	Greece should step up its efforts to digitalise public services. In particular, it should notify the Commission of an eID scheme under the eIDAS Regulation. The roll-out of the considerable investments earmarked in the RRP for modernising the public administration should continue at the same pace to ensure citizens and businesses benefit in the immediate future. On e-health records, the scope of data accessible should be expanded and equal access should also be strengthened for disadvantaged groups. Expanding the national telemedicine network should help providing equal access to health

Digital Target Thematic	Challenges identified in the National Digital Decade Strategic Roadmap 2030	Recommendations stated in the Digital Decade Country Report 2023 for Greece
	sensitive information, eroding public trust in digital services.	services for all residents of the country, regardless their location

1.3 Strengths and Assets to be leveraged

To overcome the above-listed challenges and to achieve the ambitious KPIs of the national roadmap, Greece will leverage the following strengths:

S1 – Strong Digital Transformation Momentum: During the last couple of years, Greece is exhibiting an unprecedented digital transformation momentum, offering over 1 500 digital public G2C/G2B services and growing the number of on-line transactions with the Greek government from few millions in 2018 to over seven hundred million in 2022. This momentum is also reflected in other figures (e.g. fibre optic lines). It is fuelled by changes in the structure of the Ministry of Digital Governance and the incorporation of global best practices. As such it is an asset for realising and further accelerating Greece's digital transformation.

S2 – Funding Available for and committed to Digital Transformation Projects: Greece leverages EU funds for the implementation of its digital transformation strategy. Specifically, digital transformation is an integral element and core pillar of the Greek RRF, which will also support human capital development. A significant number of Greece's RRP (Recovery and Resilience Plan) grants will be devoted to digital transformation projects. Moreover, the country leverages structural funds for the implementation of digital transformation projects.

S3 – Growing Innovation and Startups Ecosystem: The ecosystem of Greek startup enterprises has also a growing momentum that is reflected on a rising number of startups with innovation activities and an increased number of private investments, including a significant increase of foreign investments.

S4 - High Number of well educated "STEM" graduates and the Greek Diaspora: Greece ranks high in the number of STEM graduates among OECD countries and is close to EU average. This is an asset for the implementation of the country's digital transformation strategy. The resident human capital is complemented by the high number of well-educated Greeks that are part of the diaspora, which regularly contributes to digital transformation projects based on transfer of knowhow, mentoring, guidance, and other forms of support.

S5 – Legislation about Emerging Technologies and Investment Friendly Reforms: The country has already undertaken legislative action for emerging technologies, which is expected to lower regulatory barriers. At the same time, it is implementing investment-friendly reforms (e.g., reduced taxation for labour, reduced taxation for capital, labour and insolvency reforms, legal frameworks for strategic investments), which stimulate private investments in technology and digital projects.

S6 – Established funds to foster Digital Innovation: Greece has already established and will leverage funds that are aimed at funding digital innovation projects. As a prominent example, the "Phaistos Investment Fund" supports enterprises that develop 5G-related products and services.

S7 – Active role in EU initiatives linked to the Digital Decade targets: Greece has an active role in EU-wide initiatives that support various targets of the digital agenda, such as the Horizon Europe programme (e.g. Greece is ranked 7th within EU-27 in approved projects and funding during 2021-2022), the EuroHPC Joint Undertaking, the AIoD (AI on Demand) initiative and others.

S8 – Legal framework to support important reforms in the digital public services domain: The establishment and operation of the gov.gr portal as the cornerstone of digital public service provision and of MITOS registry as the foundation of all underlying processes have been supported by legal interventions to ensure a maximum degree of compliance from all involved public sector entities (law 4635/2019 and law 4961/2022 respectively).

S9 – A digital friendly environment after CoVID pandemic: The CoVID pandemic triggered a wave of reforms in the digital transformation of the country, allowing on one hand the government to quickly create and deploy digital services and on the other hand citizens who would otherwise resist to use the digital channels have been more or less been obliged to turn to digital services in order to take care of their transactions. This has created an unprecedented momentum as well as expectations and an overall positive climate for digital transformation

2 NATIONAL TRAJECTORIES AND TARGET VALUES TO CONTRIBUTE TO THE EU'S DIGITAL TARGETS

All values displayed regarding historical data on the trajectory diagrams (i.e. all values up to and including 2023) are data from KPIs that have been actually measured within the framework of reporting for the Digital Decade. However, taking into account that not all KPIs have been measured each one of these consecutive years, some gaps appear in the diagrams which reflect lack of measurement of the corresponding data point.

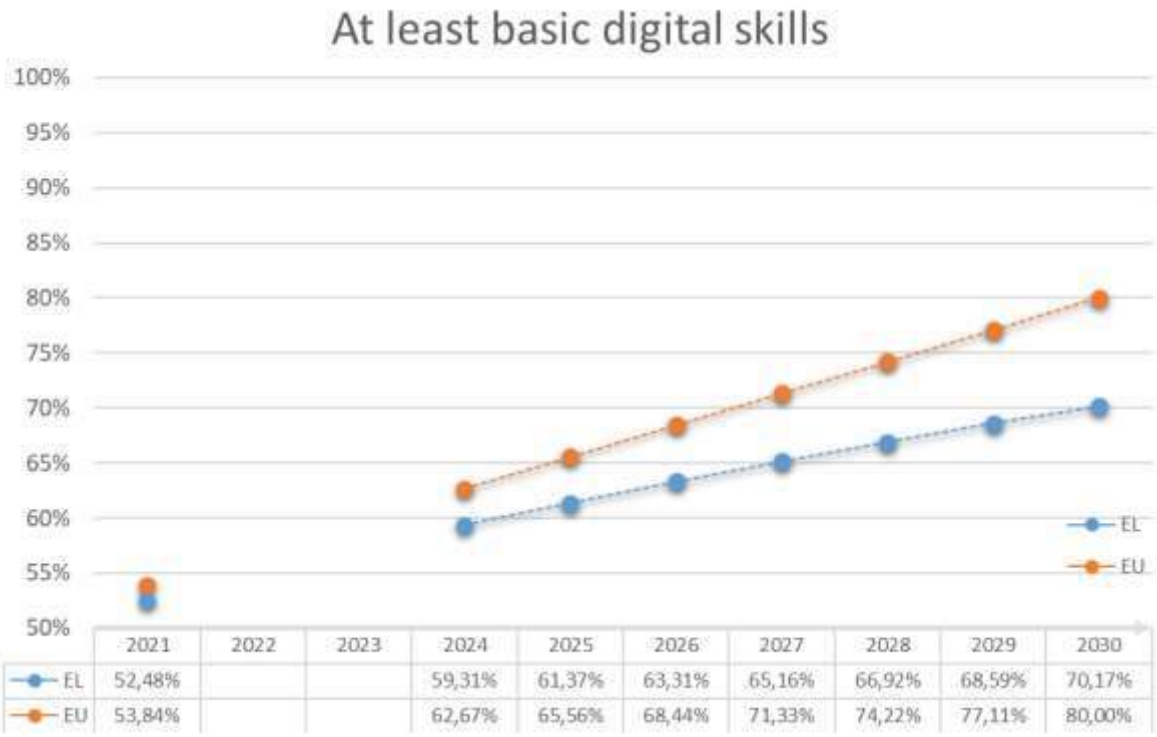
Regarding the projections for the years 2024 - 2030, the values used to represent the EU targets are the ones indicated as "Baseline Trajectory"[74].

2.1 Digital Decade objective: A digitally skilled population and highly skilled digital professionals, with the aim of achieving gender balance, as follows:

2.1.1 KPI-1 "At least basic digital skills": 70% of those aged 16-74 with at least basic digital skills

The baseline value of Greece is 52.48% for the year 2021, according to the Digital Decade report 2023. The proposed target for Greece is to achieve 70% by the year 2030.

74 https://digital-decade-desi.digital-strategy.ec.europa.eu/datasets/dd-trajectories/charts/dd-trajectories?indicator=dd_bds&breakdownGroup=digital_decade&unit=pc_ind&country=EU accessed 29.09.2023.



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
EL	52,48%			59,31%	61,37%	63,31%	65,16%	66,92%	68,59%	70,17%
EU	53,84%			62,67%	65,56%	68,44%	71,33%	74,22%	77,11%	80,00%

Figure 8. At least basic digital skills for Greece (GR projection to 2030)

Digital Skills were measured only in 2021 and for the last two years there is no data available[75]. The proposed target, as well as the projected trajectory, are based on the assumptions that the measures presented in Section 3 will focus on the specific characteristics identified in Section 1.1.2 (target audiences and content of digital skills re-skilling and upskilling initiatives) and a similar rate of improvement of basic digital skills and above basic digital skills (+1% for both) and follows a linear stable growth model with an estimated yearly increase of 2% on average, compared to EU average of 2.90%.

Supporting information for the above assumptions:

- The 65-74 age group (low digital skills level) will phase out of scope of the index measurement towards the end of the decade, a fact that is estimated to contribute 10% to the target (+1% per year).
- In year 2022, an increase of 5% to the number of persons using the internet has been recorded, resulting in lowering the percentage of people not using the internet to 16.83%[76]. As discussed in Section 1.1.2, this will increase the performance of the relevant KPI.
- Training of the population on the following digital skills is targeted by priority, since they have been identified as the areas with significant room for improvement
    1. No need to fact-check online information - content or source was not reliable
    2. Taking part in online consultations or voting to define civic or political issues (e.g. urban planning, signing a petition)
    3. Editing photos, video or audio files

[75] https://ec.europa.eu/eurostat/databrowser/view/ISOC_SK_DSKL_I21__custom_7634130/default/table?lang=en accessed on 06.08.2023.

[76] https://ec.europa.eu/eurostat/databrowser/view/ISOC_R_IUSE_I__custom_7086153/default/table?lang=en accessed at 10.05.2023.

4. Creating files (such as documents, image, videos) incorporating several elements such as text, picture, table, chart, animation or sound
5. Using advanced features of spreadsheet software (functions, formulas, macros and other developer functions) to organise, analyse, structure or modify data
6. Writing code in a programming language
7. Limiting access to profile or content on social networking sites or shared online storage
8. Downloading or installing software or apps
9. Changing settings of software, app or device
10. Selling online goods or services
11. Looking for a job or sending a job application

2.1.2 *KPI-2 "ICT Specialists": 180 000 people aged 15-74 who are employed as ICT specialists and percentage of women and men among those individuals employed as ICT specialists*

The baseline value of Greece is 93.4 thousand of Employed ICT Specialists (2.4% of total Employment)[77] for the year 2021 and a 79/21 male/female ratio in 2021.The proposed target for Greece is to reach 180 000 ICT specialists by the year 2030, assuming a similar rate of increase as the EU (i.e. doubling the total number of ICT Specialists), by maintaining a gender ratio above the EU one. This means an annual increase of around 9 500 ICT Specialists each year (8.7%), compared to EU average of 1 328 725 (12.42%). The projected trajectory assumes a gradual development with a linear stable growth.

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
EL	80 300	93 400	103 100	107 451	116 047	125 331	135 357	146 186	157 881	170 511	180 262
EU	8 422 700	8 927 000	9 370 200	10 698 925	12 027 650	13 356 375	14 685 100	16 013 825	17 342 550	18 671 275	20 000 000

Figure 9. ICT Specialists for Greece (GR projection to 2030)

[77] https://ec.europa.eu/eurostat/databrowser/view/ISOC_SKS_ITSPT/default/table?lang=en&category=isoc.isoc_sk.isoc_sks.isoc_skslf accessed at 10.05.2023.

Supportive information for the trajectory:

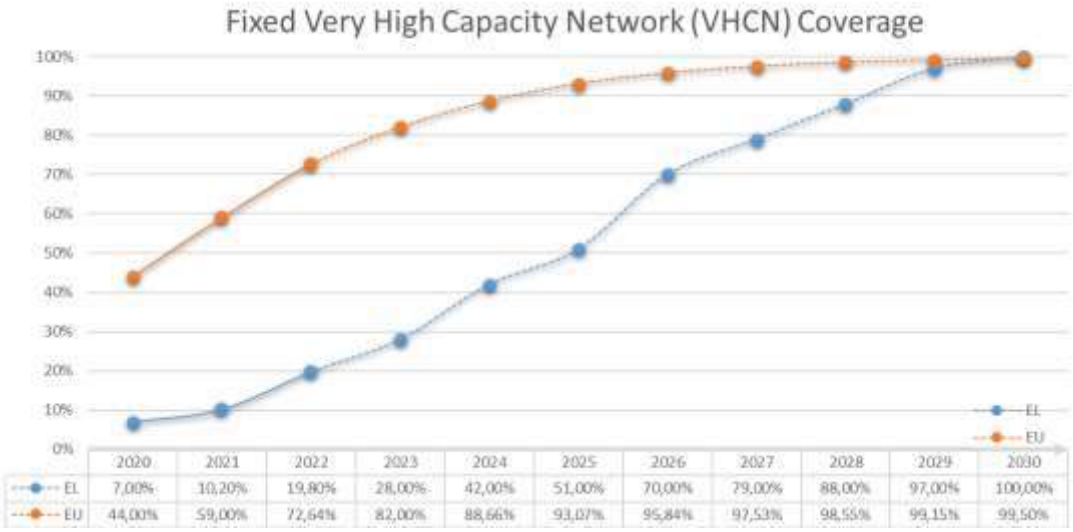
- An unprecedented portfolio of digital transformation projects is scheduled for implementation under the RRF and NSRF frameworks, requiring a significant amount of ICT professionals
- The number of ICT graduates remains stable with some evidence of increase
- An expected law to officially approve graduates from private colleges is scheduled for voting in the Greek parliament, which will increase the number of ICT graduates and professionals (professional equivalence of higher education qualifications)

2.2 Digital Decade objective: Secure, resilient, performant and sustainable digital infrastructures

2.2.1 KPI-3 "Gigabit Connectivity": All end users at a fixed location are covered by a gigabit network (fixed Very High-Capacity Networks -VHCN) up to the network termination point/Fibre to the Premises (FTTP) coverage

Bearing in mind that in Greece the only available technology that meets the VHCN requirements is FTTP, the two trajectories are identical.

The baseline value of FTTP coverage in Greece is 27.85% of households for the year 2022, according to the Digital Decade report 2023. Based on the current trends, it is anticipated that the FTTP coverage will continue to grow rapidly and the country will converge with the EU within the next few years.



	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
EL	7,00%	10,20%	19,80%	28,00%	42,00%	51,00%	70,00%	79,00%	88,00%	97,00%	100,00%
EU	44,00%	59,00%	72,64%	82,00%	88,66%	93,07%	95,84%	97,53%	98,55%	99,15%	99,50%

Figure 10. Fixed Very High Capacity Network (VHCN) coverage for Greece (GR projection to 2030)

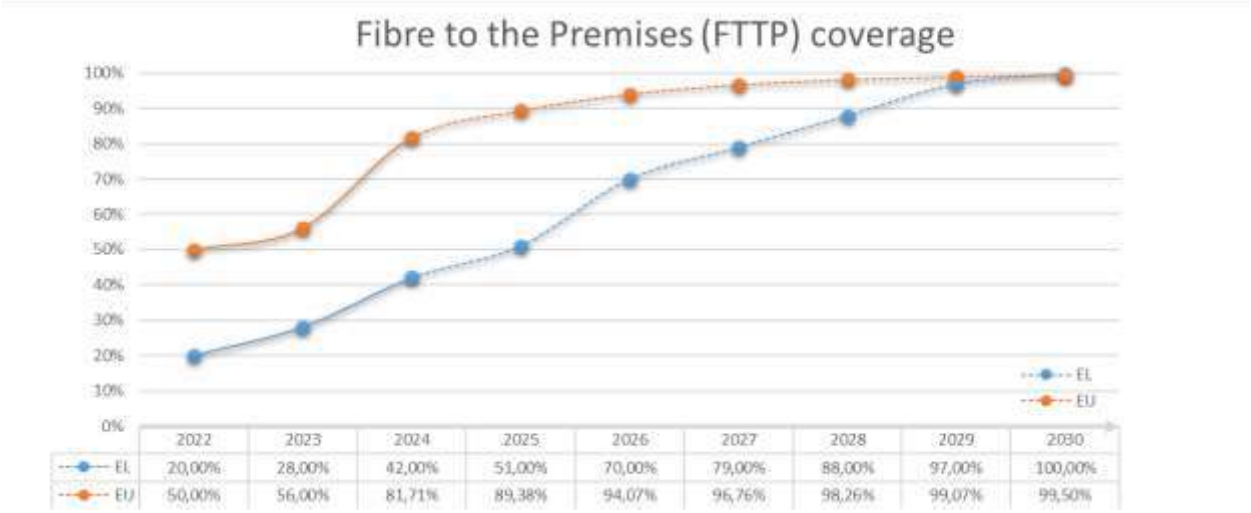


Figure 10. Fibre to the Premises (FTTP) coverage for Greece (GR projection to 2030)

2.2.2 *KPI-4 "5G Coverage": All populated areas covered by at least one 5G network regardless of the spectrum band used*

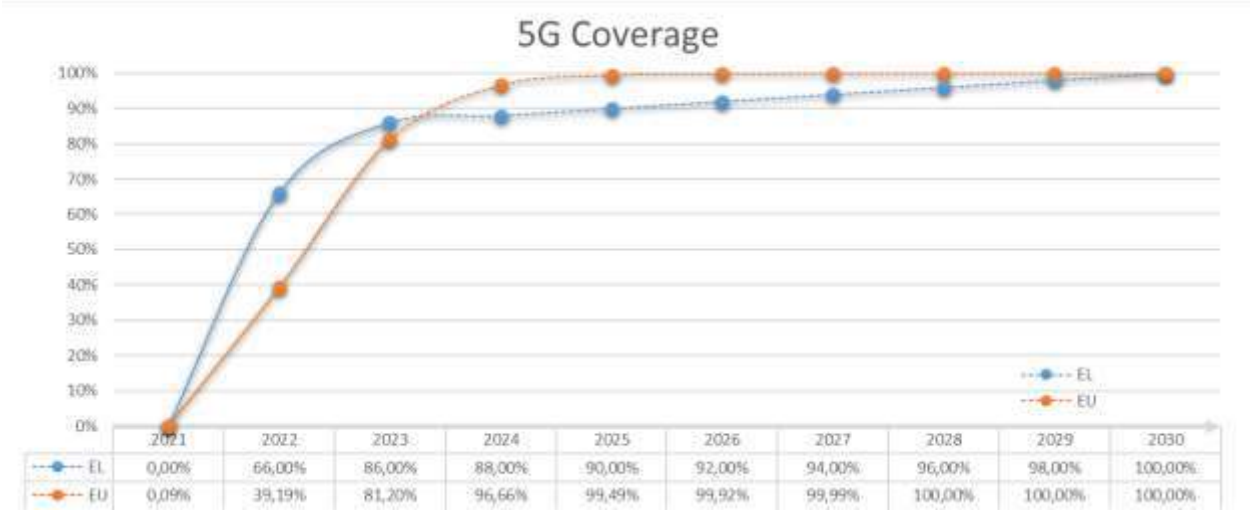


Figure 11. 5G Coverage for Greece (GR projection to 2030)

Supportive information for the trajectory:

- According to DESI 2023 Greece had 86% for the sub-indicator 5G coverage compared to the EU average (81,20%) and during 2023 Greece increased the coverage to 87%.

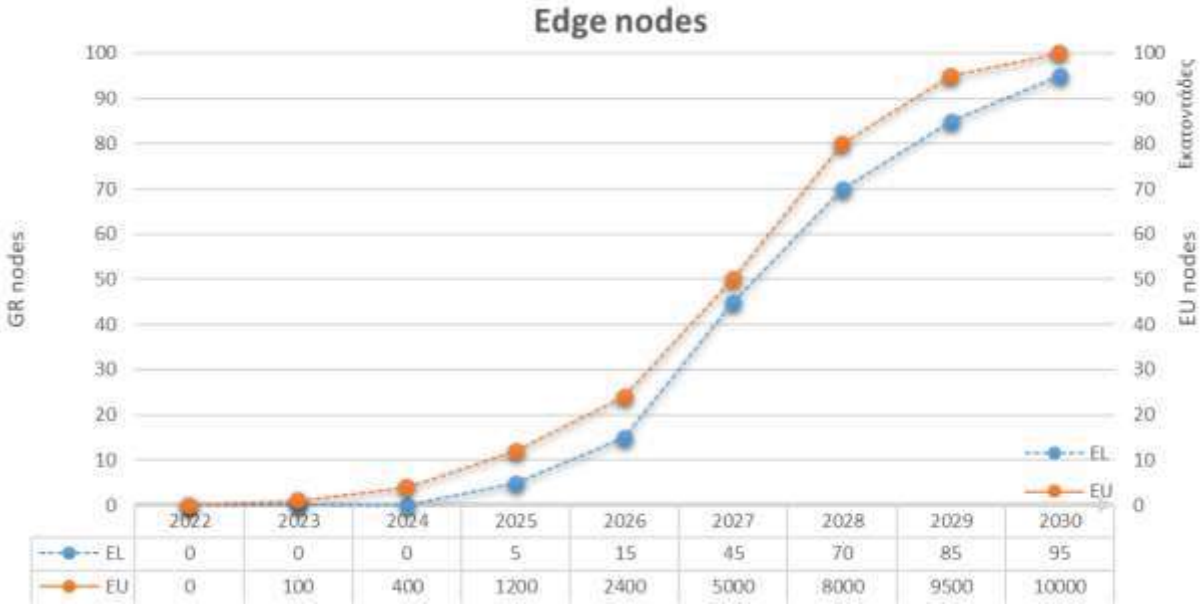
Furthermore, according to DESI 2023 the assigned spectrum of total harmonised 5G spectrum is 99% (from 2021).

2.2.3 *KPI-5 "Semiconductors": Value generated, in terms of revenues, by semiconductor activities in all stages of the value chain, with respect to the global market value*

There is currently no data available on semiconductors deployment across Member States. Public sector and industry players are mainly in a testing and piloting phase in Greece. It is expected to have return of at least 13MEuro as a result of the investments that have been already planned.

2.2.4 *KPI-6 "Edge Nodes": 95 compute nodes providing latencies below 20 milliseconds*

There is currently no data available on edge deployment across Member States. Public sector and industry players are mainly in a testing and piloting phase in Greece. Target value of Greece is 95.



	2022	2023	2024	2025	2026	2027	2028	2029	2030
EL	0	0	0	5	15	45	70	85	95
EU	0	100	400	1200	2400	5000	8000	9500	10000

Figure 11. Edge nodes for Greece (GR projection to 2030)

Supportive information for the trajectory:

Although we provide the above figure, there is currently no data available on edge nodes across Member States. Public sector and industry players are mainly in a testing and piloting phase in Greece. Although the results of Action 2C01M are expected to accelerate and coordinate the deployment of edge nodes in Greece by providing the required data and scientific basis to ensure optimum distribution and performance.

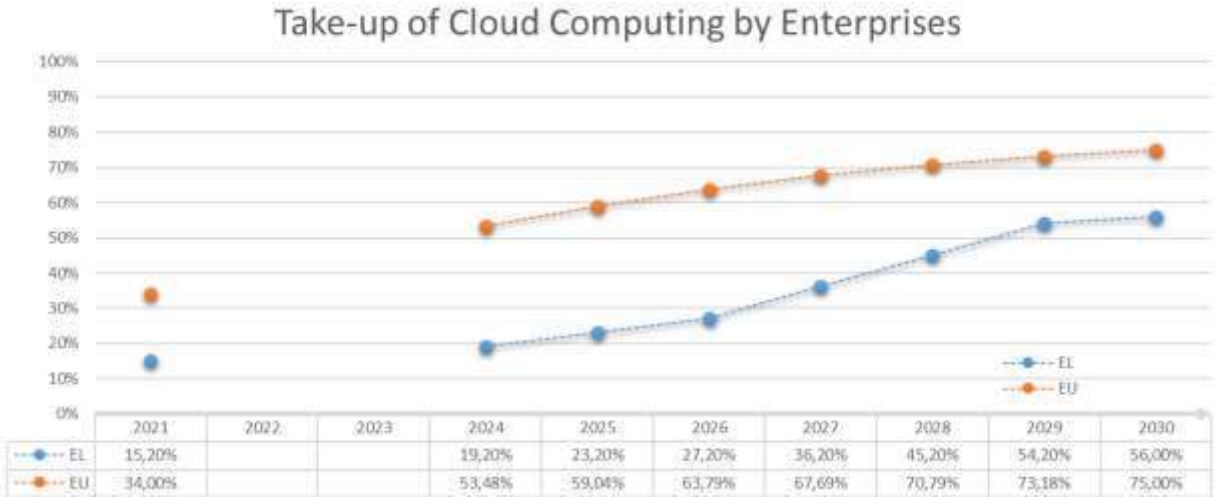
2.2.5 *KPI-7 "Quantum Computing": Number of unique Union quantum computing hardware systems/services; and use of a widely adopted quantum volume benchmark for the largest quantum computing capacity; and number of quantum algorithms and use cases created with clear impact orientation in basic science, applied science, industries, and the public sector*

There is currently no data available on quantum computing across Member States. Public sector and industry players are mainly in a testing and piloting phase in Greece. It is expected that as a result of the actions described under the target 2D (2D01A- 2D07A) Greece will start providing a small number of services in the area of semiconductor.

2.3 Digital Decade objective: The digital transformation of businesses

2.3.1 *KPI-8 "Cloud Computing": 56% of enterprises using at least one of the applicable[78] cloud computing services*

The baseline value of Greece is 15.20% for the year 2021, according to the Digital Decade report 2023. The target percentage of enterprises using Cloud Computing in Greece is 56%.



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
EL	15,20%			19,20%	23,20%	27,20%	36,20%	45,20%	54,20%	56,00%
EU	34,00%			53,48%	59,04%	63,79%	67,69%	70,79%	73,18%	75,00%

Figure 12. Cloud Computing for Greece (GR projection to 2030)

For Cloud Computing Services, there are 10 technologies measured at EU level. These technologies are presented in the following figure, with their levels

[78] The following services are considered: Finance or accounting software applications, enterprise resource planning (ERP) software applications, customer relationship management (CRM) software applications, security software applications, hosting the enterprise's database(s), and computing platform providing a hosted environment for application development, testing or deployment

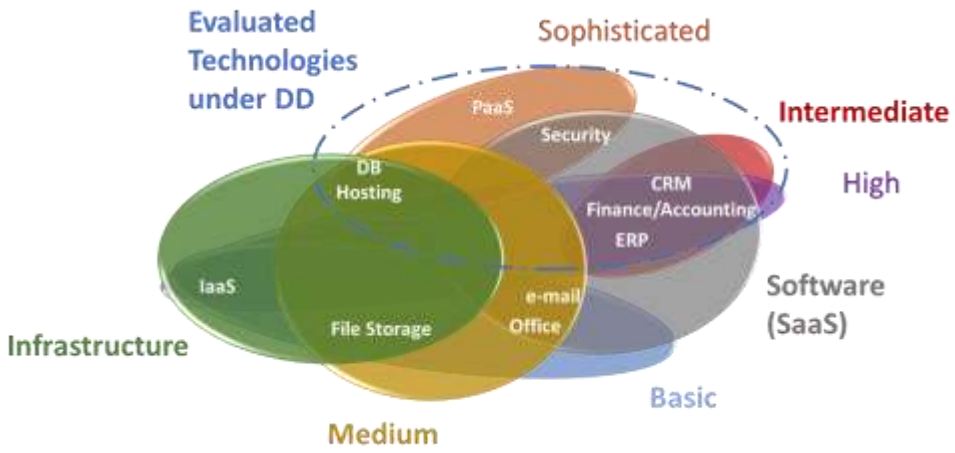


Figure 13. Cloud Computing technologies, Digital Strategy Dept., Ministry of Digital Governance

Only Intermediate and Sophisticated are evaluated under Digital Decade. Last measurement of Cloud Computing was in 2021 and for the last two years there is no data available. More analytically, the 6 technologies measured (Intermediate and Sophisticated) are displayed in the following figure,

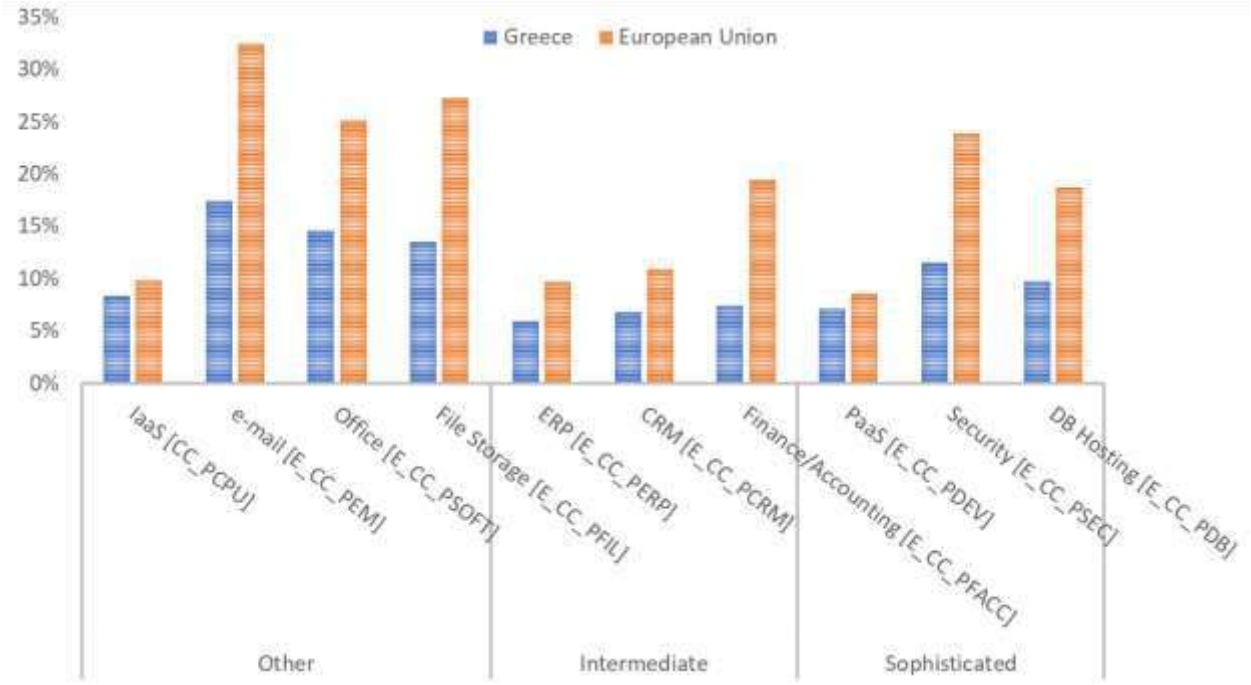


Figure 14. Cloud Computing for Greece with breakdown of 10 CC technologies measured in 2021

From the above figure we notice that the most popular CC service in Europe (and Greece) are:

- security software applications
- hosting for the enterprise's database
- finance or accounting software applications.

However, the percentage of the Greek enterprises adopting these technologies is still very low compared to the corresponding percentage of European ones. Therefore, these are the technologies to be targeted by priority, since they have been identified as the areas with significant room for improvement.

2.3.2 *KPI-9 "Big Data": 40% of enterprises performing data analytics (internally or externally)*[79]

The baseline value of Greece is 12.90% for the year 2020, according to the Digital Decade report 2023. The target percentage of enterprises using Big Data to perform data analytics is 40%.

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
EL	11,40%		12,60%		12,90%				15,61%	18,32%	26,03%	31,74%	34,45%	37,16%	40,00%
EU	9,10%		12,30%		14,00%				43,05%	51,26%	58,56%	64,56%	69,19%	72,59%	75,00%

Figure 15. Big Data for Greece (GR projection to 2030)

Big Data was measured only in 2020 and for the last three years there is no data available[80].

It is worth mentioning that 78.82% in Greece have never considered performing big data analysis. Main areas for analysing big data are from geolocation of portable devices (IoT), generated data from social media, using machine learning, using natural language processing, natural language generation or speech recognition.

The proposed trajectory is based on the following assumptions:

- The national Data Strategy is being implemented under a relevant RRF project
- An increasing percentage of IT graduates are attracted to Data Science and are expected to accelerate uptake of this technology in the following years

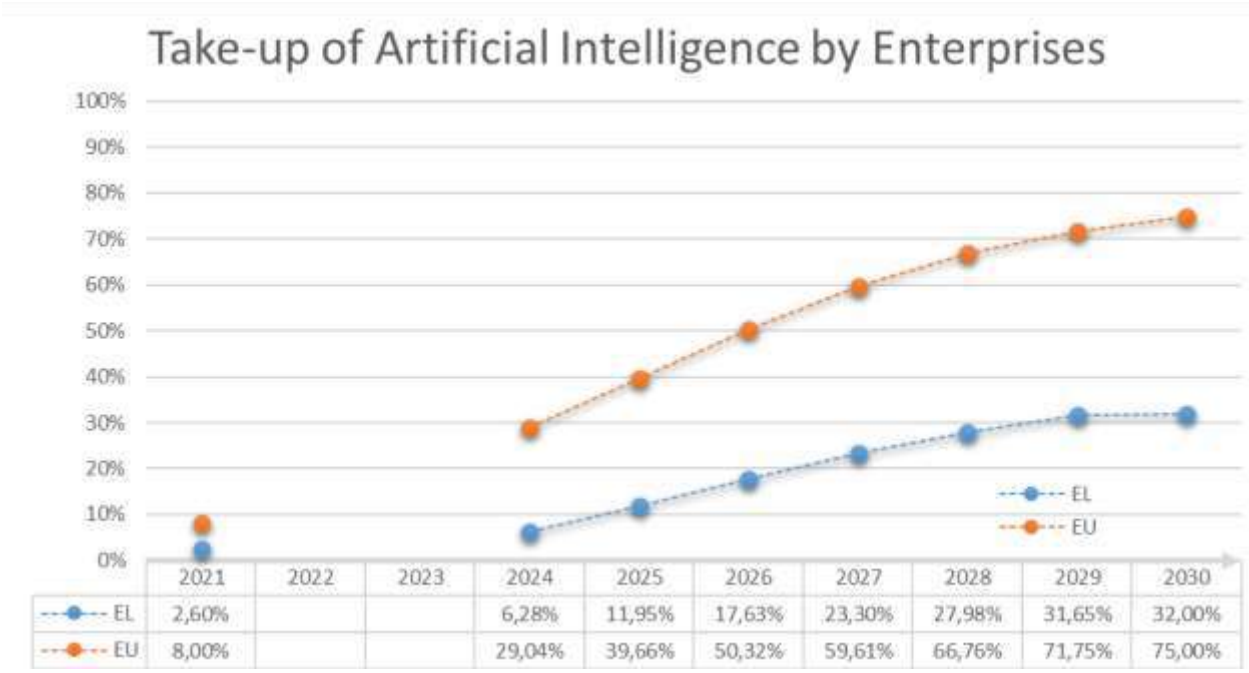
[79] Before the 2023 Data Point (2024 report), this KPI measures the percentage of enterprises analysing big data from any data source (internal or external)

[80] https://ec.europa.eu/eurostat/databrowser/view/ISOC_EB_BD__custom_7099961/default/table?lang=en accessed on 06.08.2023.

- Large scale dissemination and communication initiatives are planned under an RRF Framework Agreement for all pillars of the Program, including Digital Transformation and shall be exploited to promote the use of Big Data to Greek enterprises

2.3.3 *KPI-10 "Artificial Intelligence": 32% of enterprises using at least one of applicable artificial intelligence technologies*[81]

The baseline value of Greece is 2.60% for the year 2021, according to the Digital Decade report 2023. The target percentage of enterprises using AI to perform data analytics is 32%.



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
EL	2,60%			6,28%	11,95%	17,63%	23,30%	27,98%	31,65%	32,00%
EU	8,00%			29,04%	39,66%	50,32%	59,61%	66,76%	71,75%	75,00%

Figure 16. Artificial Intelligence for Greece (GR projection to 2030)

AI was measured only in 2021 and for the last two years there is no data available[82].

[81] The following AI technologies are considered: Performing analysis of written language (text mining); Converting spoken language into machine-readable format (speech recognition); Generating written or spoken language (natural language generation); Identifying objects or persons based on images (image recognition, image processing); Use machine learning (e.g. deep learning) for data analysis; Automating different workflows or assisting in decision making (AI based software robotic process automation); Enabling physical movement of machines via autonomous decisions based on observation of surroundings (autonomous robots, self-driving vehicles, autonomous drones)

[82] https://ec.europa.eu/eurostat/databrowser/view/ISOC_EB_AI__custom_6140353/default/table?lang=en accessed 06.08.2023.

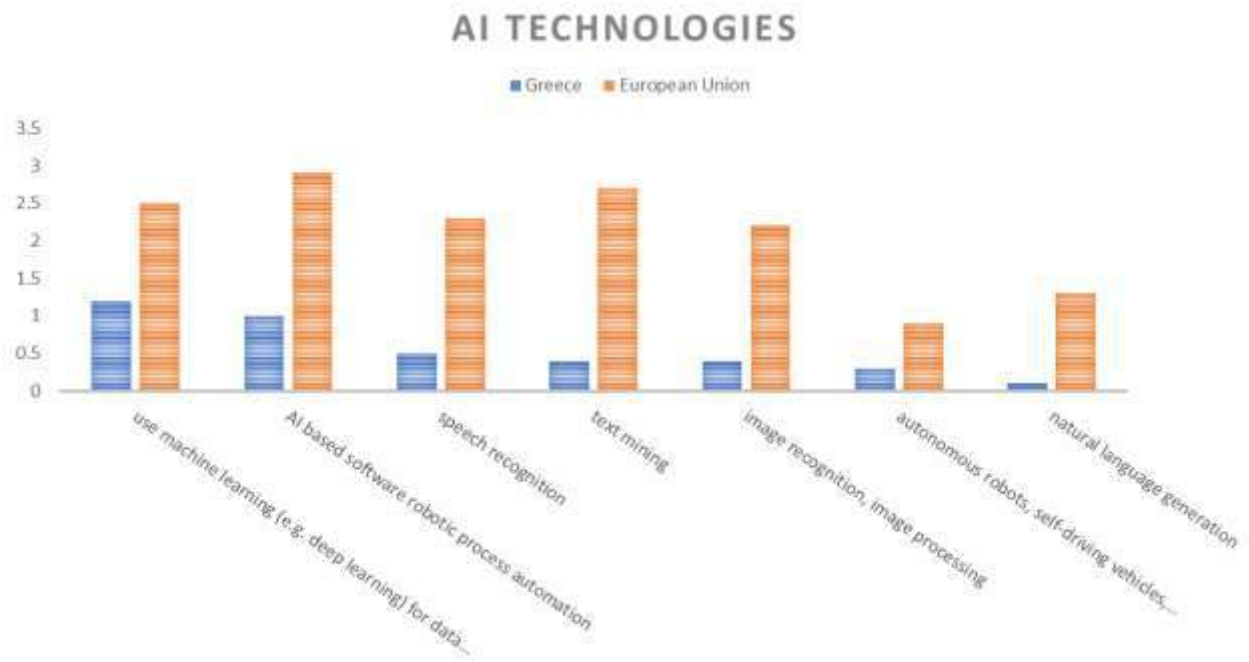


Figure 17. AI for Greece with breakdown of 7 technologies measured in 2021[83]

Supportive information for the trajectory:

- Greece is at the final stages of issuing its national strategy for AI which is expected to identify and accelerate specific measures and actions.
- There is an increase in the number of proposals for Digital Transformation projects which include AI components (both in RRF and Digital Transformation OP), which is expected to result in an increased adoption of the technologies by businesses, after 2025.
- A special initiative on the utilisation of RPA technologies is already under implementation in the public sector (Digital Transformation Bible 2020 - 2025)[84], which is expected to be expanded also in the private sector.
- There seems to be great room for improvement for all technologies, especially the natural language generation (such as chatGTP). Text mining technology is very low compared to the corresponding percentage of European one and will be targeted by priority.

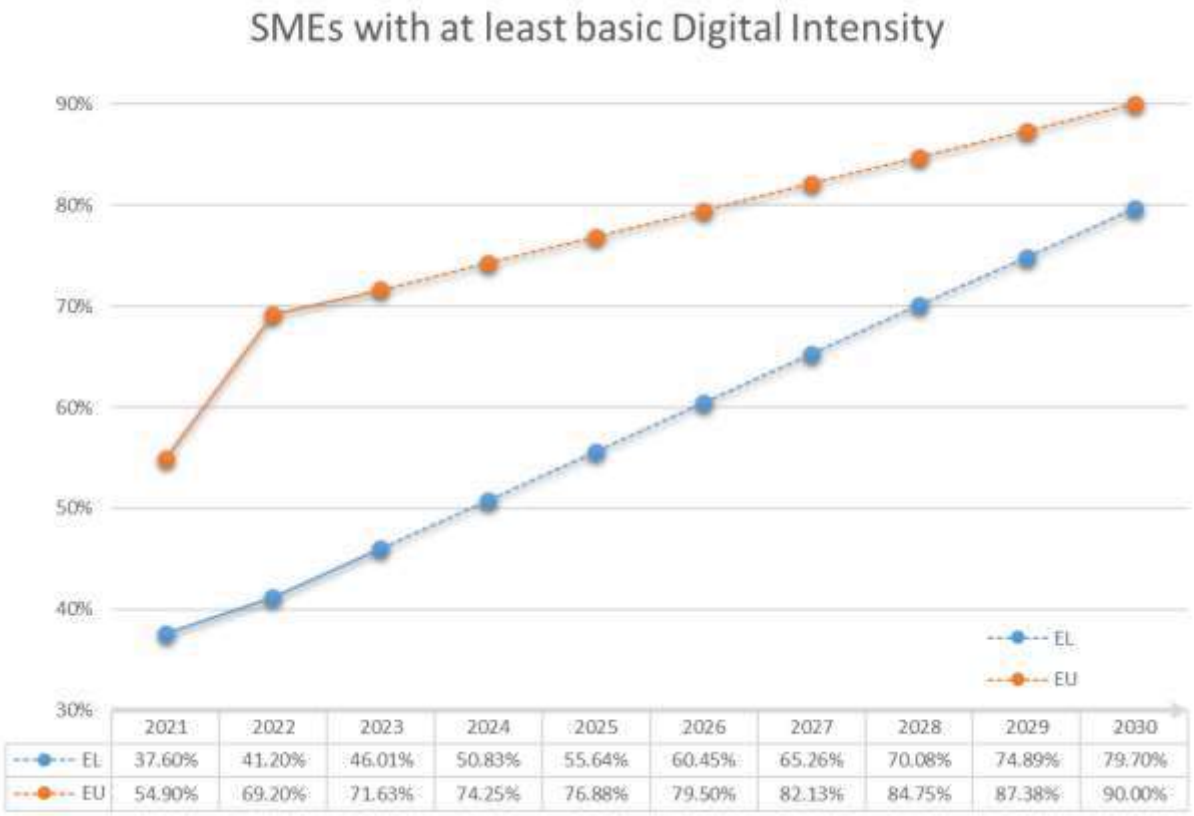
2.3.4 KPI-11 "SMEs with at least a basic level of digital intensity": 80% of SMEs using at least 4 of 12 selected digital technologies[85]

83 only the Intermediate and Sophisticated technologies are measured for the Digital Decade.

84 https://digitalstrategy.gov.gr/project/eisagogi_technologion_robotic_process_automation_gia_ti_meiosi_ton_epanalamvanomenon_dioikitikon_erg

85 The applicable technologies for even years (2022, 2024, etc) are: 1. Enterprises where more than 50% of the persons employed had access to the internet for business purposes; 2. Employ ICT specialists; 3. The maximum contracted download speed of the fastest fixed line internet connection is at least 30 Mb/s; 4. Enterprises which conducted remote meetings; 5. Enterprises make persons employed aware of their obligations

The baseline value of Greece is 37.60%[86] for the year 2021. The target percentage for SMEs with at least a basic level of digital intensity is 80%.



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
EL	37.60%	41.20%	46.01%	50.83%	55.64%	60.45%	65.26%	70.08%	74.89%	79.70%
EU	54.90%	69.20%	71.63%	74.25%	76.88%	79.50%	82.13%	84.75%	87.38%	90.00%

Figure 18. SMEs with at least a basic level of digital intensity for Greece (GR projection to 2030)

In year 2022, according to the Digital Decade report 2023, Greece had 41.2% (increase of 3.6 percentage points) while EU Average had 69.1% (increase of 14.2 percentage points)[87]. However, the evaluated underlying technologies between the two years are quite different and there is no historical data to compare (the technologies evaluated each year differ significantly). From 2023, in order to reach the 2030 target Greece needs to increase the number of SMEs with basic digital

in ICT security related issues; 6. Any type of training provided to develop ICT related skills of the persons employed, during 2021; 7. Use at least three ICT security measures; 8. Enterprise with document(s) on measures, practices or procedures on ICT security; 9. Any of the persons employed having remote access to any of the following: e-mail, documents, business apps; 10. Use industrial or service robots; 11. Used any computer networks for sales (at least 1%); 12. Enterprises where web sales are more than 1% of the total turnover and Business-to-Customer (B2C) web sales more than 10% of the web sales. The technologies evaluated in 2021 are: 1. The maximum contracted download speed of the fastest fixed line internet connection is at least 30 Mb/s; 2. Use any social media; 3. Buy CC services used over the internet; 4. Have ERP software package to share information between different functional areas; 5. Have CRM; 6. Buy sophisticated or intermediate CC services (2021); 7. Use two or more social media; 8. Use any IoT; 9. Enterprises with e-commerce sales of at least 1% turnover; 10. Enterprises where web sales are more than 1% of the total turnover and B2C web sales more than 10% of the web sales; 11. Use any AI technology; 12. Enterprises where more than 50% of the persons employed had access to the internet for business purposes

86 https://ec.europa.eu/eurostat/databrowser/view/ISOC_E_DII__custom_7427814/default/table?lang=en&page=time:2021

87 https://ec.europa.eu/eurostat/databrowser/view/ISOC_E_DII__custom_6140377/default/table?lang=en&page=time:2022 accessed at 10.05.2023.

intensity annually by 4.65% in order to reach 80%, compared to EU average 2.61% (assuming a gradual development with a linear stable growth).

More analytically, the 12 technologies measured in 2022 are displayed in the following figure,

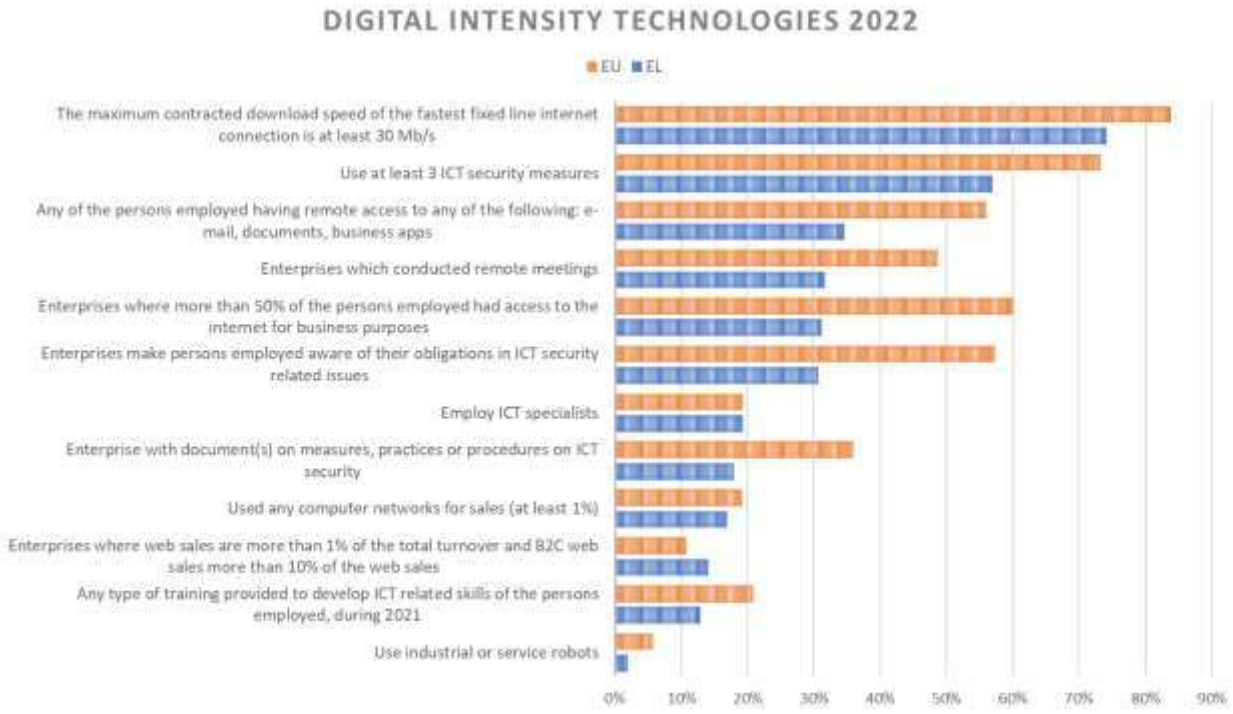


Figure 19. 12 Technologies evaluated in 2022 (DESI 2023), Digital Strategy Dept., Ministry of Digital Governance

From the above figure we notice that the most popular services in Europe (also in Greece) are:

- Enterprises where more than 50% of the persons employed had access to the internet for business purposes (diff 29.06%)
- Enterprises make persons employed aware of their obligations in ICT security related issues (diff 26.60%)
- Any of the persons employed having remote access to any of the following: e-mail, documents, business apps (diff 21.40%)
- Enterprise with document(s) on measures, practices or procedures on ICT security (diff 18.10%)

and also, that the percentage of Greek enterprises that use them remains significantly low with respect to the EU average.

Furthermore, regarding the technologies evaluated in 2021, the 12 technologies measured are displayed in the following figure,

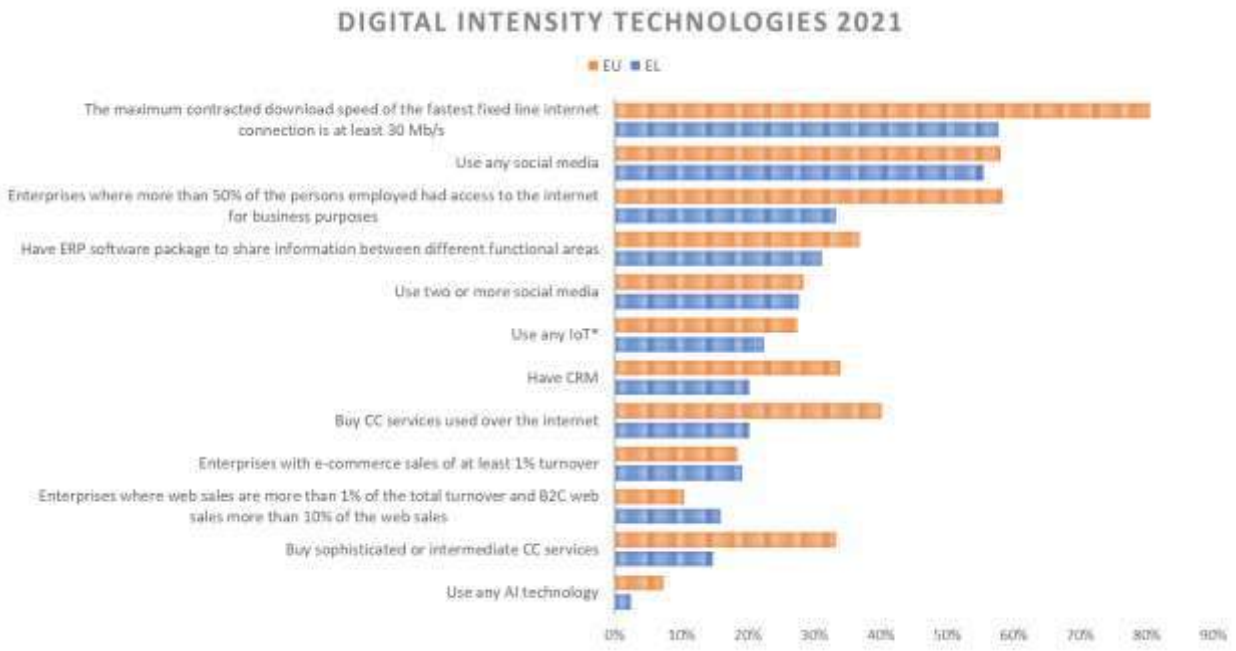


Figure 20. 12 Technologies evaluated in 2021 (DESI 2022)[88], Digital Strategy Dept., Ministry of Digital Governance

From the above figure we notice that the most popular services in Europe (also in Greece) are:

- The maximum contracted download speed of the fastest fixed line internet connection is at least 30 Mb/s (diff 22.70%)
- Buy sophisticated or intermediate CC services (diff 18.50%)
- Buy CC services used over the internet (diff 19.90%)
- Have CRM (diff 13.70%)

and also, as above, that the percentage of Greek enterprises that use them remains significantly low with respect to the EU average.

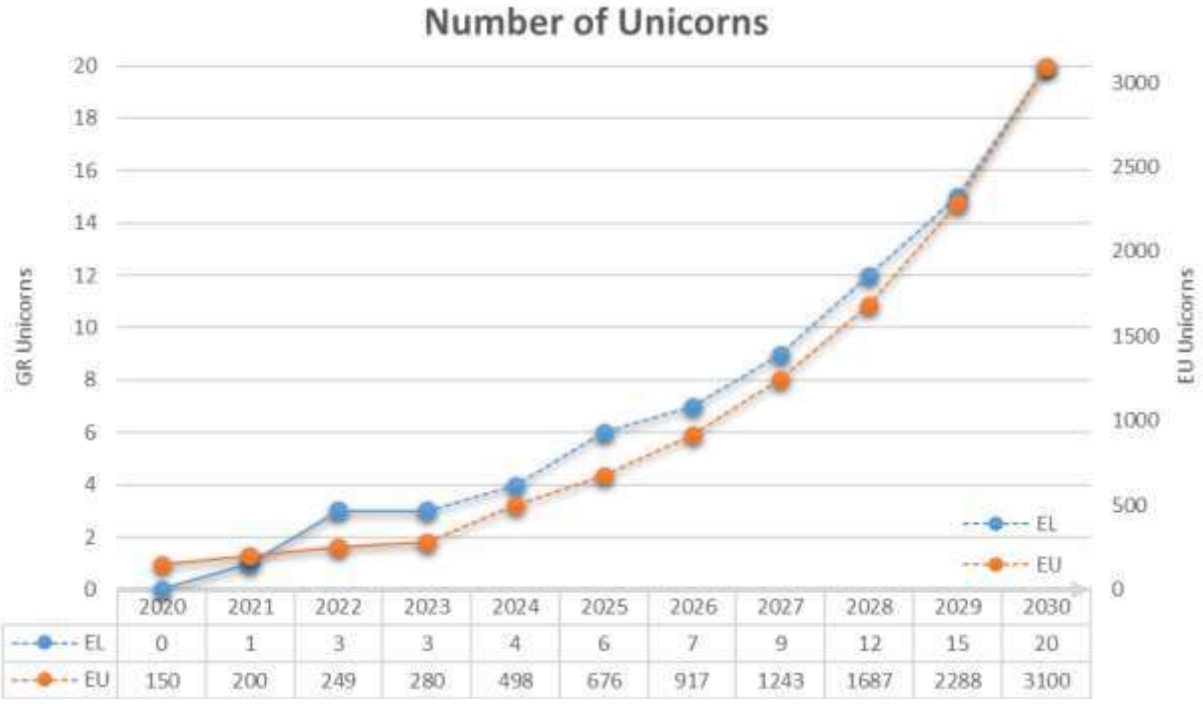
Please note that 4 technologies are evaluated in both years[89] and the Digital Targets AI, Cloud Computing and Big Data are also evaluated under the Digital Intensity Index as separate technologies in odd years.

88 The technology "Use of IoT" will be replaced by "Data analytics for the enterprise is performed by the enterprise's own employees or by an external provider" in 2023.

89 The maximum contracted download speed of the fastest fixed line internet connection is at least 30 Mb/s,Enterprises where web sales are more than 1% of the total turnover and B2C web sales more than 10% of the web sales, Enterprises where more than 50% of the persons employed had access to the internet for business purposes,Enterprises where web sales are more than 1% of the total turnover.

2.3.5 *KPI-12 "Unicorns": Sum of unicorns' unicorns referred to in Article 2, point (11)(a), of Decision (EU) 2022/2481 and those referred to in Article 2, point (11)(b), of that Decision*

The baseline value of Greece is 0 Unicorns for the year 2020. The target number of Unicorns for Greece is 20, while the EU projection is over 3 100.



	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
EL	0	1	3	3	4	6	7	9	12	15	20
EU	150	200	249	280	498	676	917	1243	1687	2288	3100

Figure 21. Unicorns for Greece (GR projection to 2030)

The domestic ecosystem of innovative start-ups counts three unicorn companies, PeopleCert, Viva Wallet, and Skroutz while there are now quite a few Greek start-ups claiming a corresponding position (e.g. Blueground, Workable, Flexcar, Persado which are today considered "soonicorns").

According to the latest report of the European Investment Bank, Dealroom.co and the Bulgarian Private Equity and Venture Capital Association[90], in 2017 the total valuation of start-ups in Greece reached 1.1 billion EUR, while last year it exceeded 8.2 billion EUR! That is, it increased by 7.5 times in this six-year period, as the appearance of new ideas and the evolution of existing companies forced investors to constantly launch new portfolios to participate in new funding rounds so as not to miss the opportunities that arise.

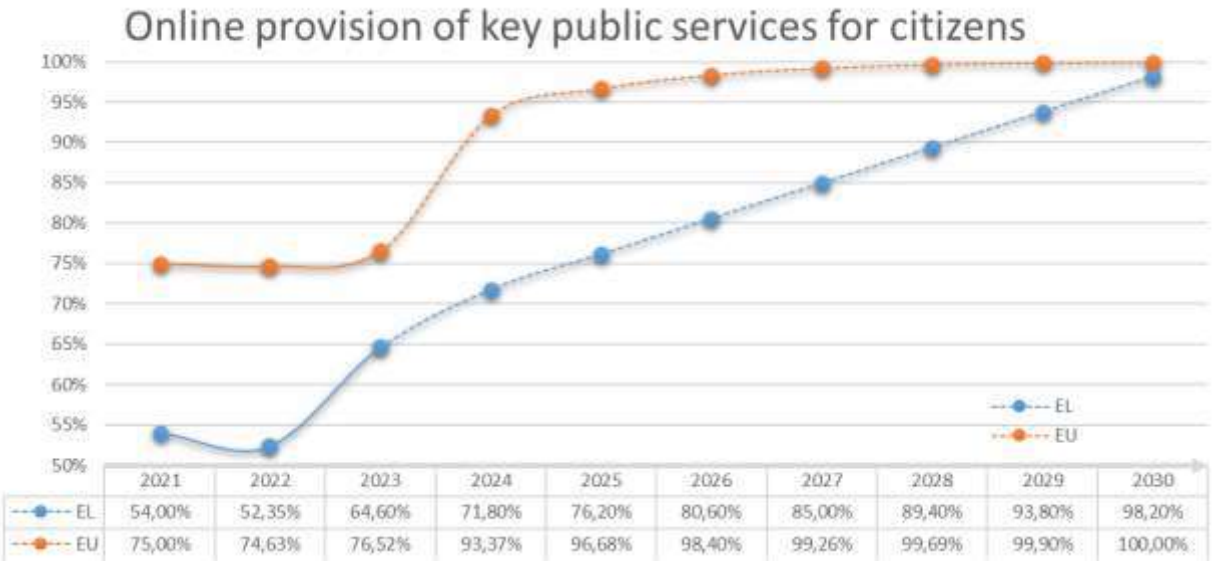
In this context, exploiting the full potential of the EU single market and overcoming existing legal and economic barriers between EU member states is an important factor.

[90] https://bvca.bg/wp-content/uploads/2022/11/SEE-Report-2022.pdf

2.4 Digital Decade objective: The digitalisation of public services

2.4.1 *KPI-13 "Online provision of key public services for citizens": share of administrative steps that can be done fully online for applicable major life events*[91]

The baseline value for Greece in the evaluation of 2022 is 52.35% derived from the evaluation years 2021 and 2020 under eGovernment Benchmark.



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
EL	54,00%	52,35%	64,60%	71,80%	76,20%	80,60%	85,00%	89,40%	93,80%	98,20%
EU	75,00%	74,63%	76,52%	93,37%	96,68%	98,40%	99,26%	99,69%	99,90%	100,00%

Figure 22. Online provision of key public services for citizens for Greece (GR projection to 2030)

DESI 2023 for Greece was 64.60% (an increase of 12.25 percentage points compared to the EU average of 1.89 percentage points (DESI 2023 EU 76.50%), 6 times more than the average. Based on preliminary analysis conducted by the Digital Strategy Department of the Ministry of Digital Governance, for 2024 an increase of 7.20 percentage points is expected.

In the following figure we can see the first two years of evaluation for eGovernment Benchmark in the evaluated life events,

[91] The following life events are considered: moving; transport; starting a small claims procedure; family; career; studying; health

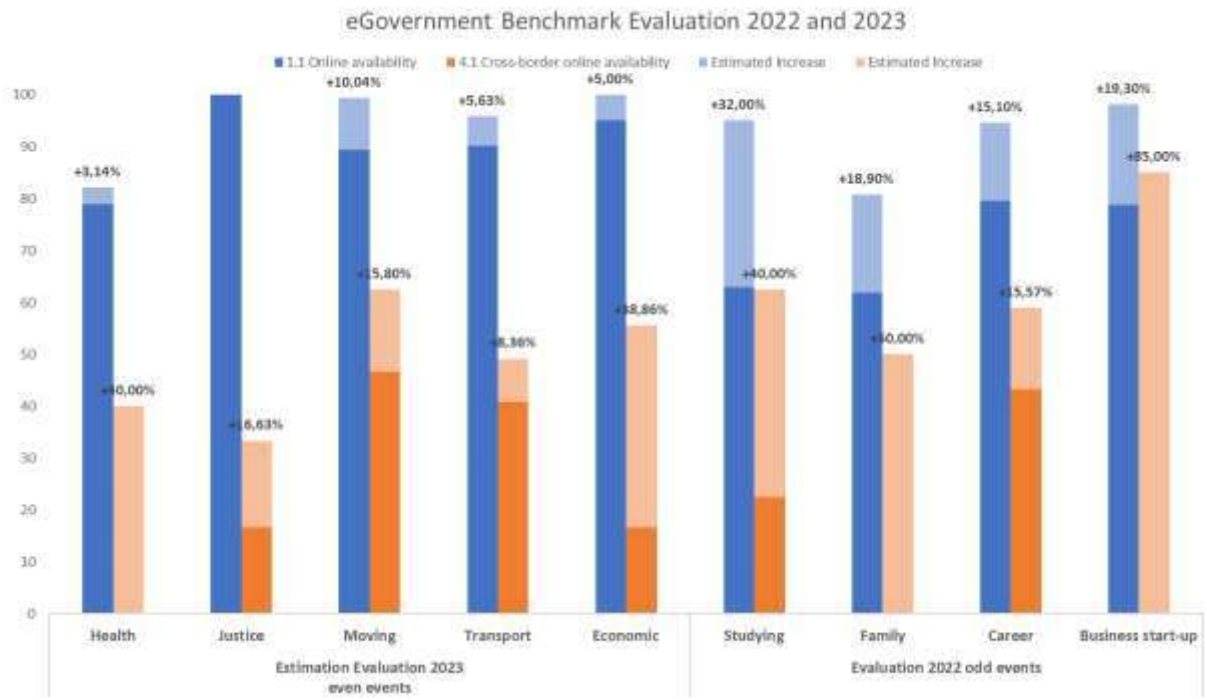


Figure 23. Evaluation of public services of Greece per life event for citizens and businesses (Online Availability and Cross-border online Availability) - estimated increase for the years 2022 and 2023, Digital Strategy Dept., Ministry of Digital Governance

From the above figure it becomes clear that Greece has room for improvement concerning the cross-border service availability, especially in the life events of Health and Justice domains.

Supportive information for the trajectory:

- The central portal of Greece is currently bilingual (the cross-border availability of the service was the major setback)
- Major Projects in RRF in the area of Justice and Health to improve and create digital public services (these areas have most room for improvement as indicated in the above figure)

while a more analytical preview of the underlying data is presented in the following table,

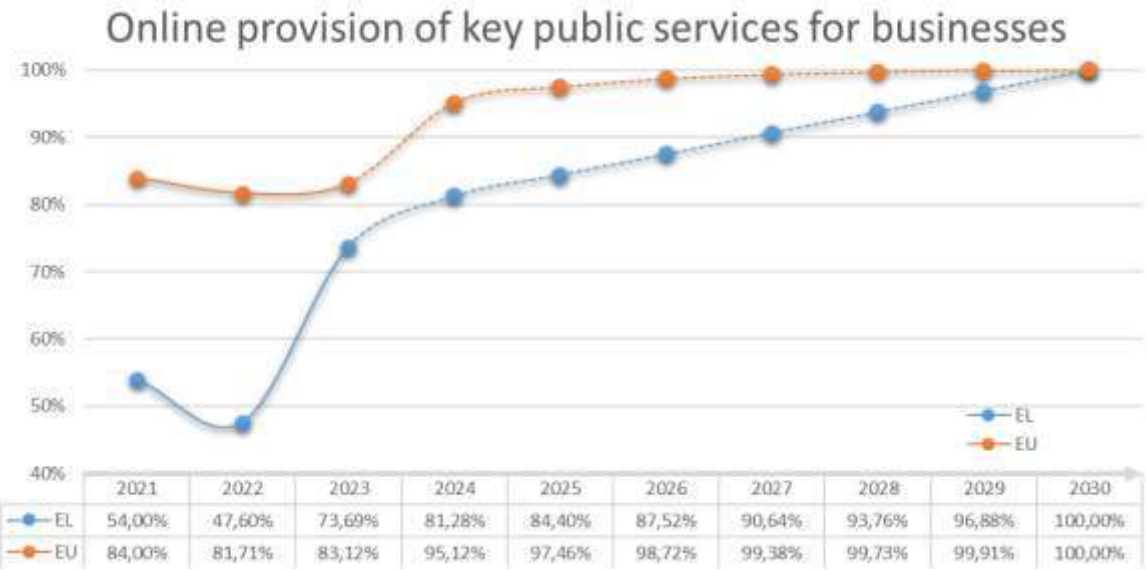
Life Event	No Processes	Evaluation Year	National	Cross-border	Average	Evaluation Year	National	Cross-border	Average	Improvement
			Online availability				Online availability			
Studying	11	2020	63.00%	22.50%	42.75%	2022	95.00%	62.50%	78.75% ☆	36.00%
Family	9		61.83%	0.00%	30.92%		80.70%	50.00%	65.35% ☆	34.43%
Career	19		79.50%	43.33%	61.42%		94.60%	58.90%	76.75% ☆	15.33%
Subtotal	**39**				**45.03%**				**73.62%** ☆	**28.59%**
Health	7	2021	79.00%	0.00%	39.50%	2023 (estimation)	89.00%	40.00%	64.50% ☆	25.00%
Starting a small claims procedure	6		100.00%	16.67%	58.33%		100.00%	50.00%	75.00% ☆	16.67%
Moving	8		89.33%	46.67%	68.00%		89.30%	55.00%	72.15% ☆	4.15%
Transport	9		84.50%	40.83%	62.67%		90.20%	50.00%	70.10% ☆	7.43%
Subtotal	**30**				**57.13%**				**70.44%** ☆	**13.31%**
Total	**69**		**79.60%**	**24.29%**	**51.94%**		**91.26%**	**52.34%**	**71.80%**	

Table 15. Evaluation results for processes in life events for citizens regarding Online availability in the years 2020-2023, Digital Strategy Dept., Ministry of Digital Governance

From that point, in order to reach the 2030 target Greece needs to grow at an average of 4.40%, compared to the EU average of 3.35% (assuming a gradual development with a linear stable growth).

2.4.2 *KPI-14 "Online provision of key public services for businesses": share of administrative steps needed to start a business and conduct regular business operations, which can be done fully online*

The baseline value for Greece in the evaluation of 2022 is 47.60% derived from the evaluation years 2021 and 2020 under eGovernment Benchmark.



	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
EL	54,00%	47,60%	73,69%	81,28%	84,40%	87,52%	90,64%	93,76%	96,88%	100,00%
EU	84,00%	81,71%	83,12%	95,12%	97,46%	98,72%	99,38%	99,73%	99,91%	100,00%

Figure 24. Online provision of key public services for businesses for Greece (GR projection to 2030)

DESI 2023 for Greece was 73.76% (an increase of 26.09 percentage points compared to the EU average of 1.41 percentage points (DESI 2023 EU 81.71%), 19 times more than the average. Based on preliminary analysis conducted by the Digital Strategy Department of the Ministry of Digital Governance, for 2024 an increase of 7.58 percentage points is expected. From that point, in order to reach the 2030 target Greece needs to grow at an average of 3.12%, compared to the EU average of 2.41% (assuming a gradual development with a linear stable growth).

Supportive information for the trajectory:

- Major Projects in RRF in the Independent Authority of Public Revenue (IAPR) as well as Public Employment Service (DYPA) to improve and create digital public services

while a more analytical preview of the underlying data is presented in the following table,

Life Event	No Processes	Evaluation Year	National	Cross-border	Average	Evaluation Year	National	Cross-border	Average	Improvement
			Online availability				Online availability			
Business start-up	16	2020	78.75%	0.00%	39.38%	2022	98.10%	85.00%	91.55% ☆	52.18%
Regular business operations	10	2021	95.00%	16.70%	55.85%	2023 (estimation)	100.00%	45.00%	72.50% ☆	16.65%
Total	**16**		**86.88%**	**8.35%**	**47.61%**		**99.05%**	**65.00%**	**82.03%**	

Table 16. Evaluation results for processes in life events for businesses regarding Online availability in the years 2020-2023, Digital Strategy Dept., Ministry of Digital Governance

2.4.3 *KPI-15 "Access to e-health records": nationwide availability of online access services for citizens to their electronic health records data[92] and additional measures in place that enable certain categories of people[93] to also access their data and the percentage of individuals that have the ability to obtain or make use of their own minimum set of health-related data currently stored in public and private electronic health-record (EHR) systems*

The baseline value for Greece in the evaluation of 2023 is 60.71%.

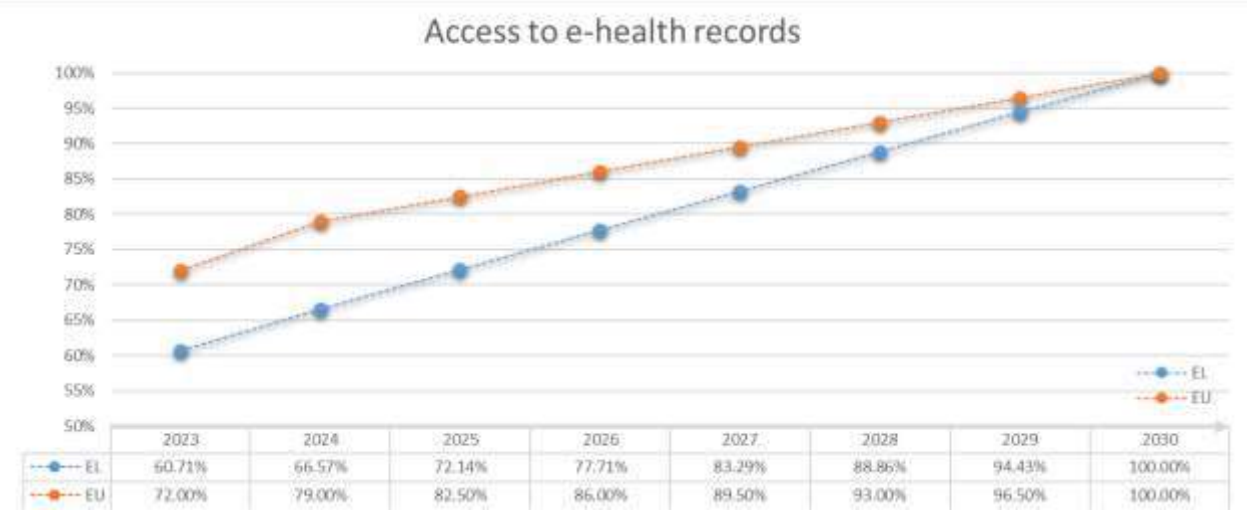


Figure 25. Access to e-health records for Greece (GR projection to 2030)

Supportive information for the trajectory:

Major ehealth projects in RRF include the implementation of electronic results and reports, such as medical imaging reports, laboratory test results and hospital discharge reports, the lack of which is recognized as one of the major shortcomings in Greece's performance.

92 via a patient portal, or a patient mobile app

93 e.g. guardians for children, people with disabilities, elderly

2.4.4 KPI-16 "Access to eID": Issuance of digital wallet[94] and at least one national eID scheme notified in accordance with Regulation (EU) No 910/2014

Greece has not yet notified a national eID scheme. It is expected by the end of 2027 to fulfil this obligation. Greece has a national e-wallet. It is expected by the end of 2027 to be in line with EU Digital Identity Wallet specifications.

Assumptions

- National wallet will be in line with EU directives specifications, taking into account the expected results of the pilot project EU Digital Identity Wallet (EUDI), namely DC4EU, EWC, Potential[95].

[94] In accordance with the Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EU) No 910/2014 as regards establishing a framework for a European Digital Identity

[95] See MCP projects.

3 POLICIES, MEASURES AND ACTIONS TO ACHIEVE THE DIGITAL TARGETS[96]

The main funding mechanisms to drive the Greek Digital Transformation are the National Recovery and Resilience Plan "Greece 2.0" in the framework of NextGenerationEU, National Strategic Reference Framework 2021 – 2027 Operational Programs (ERDF & ESF). Both of these instruments include a wide spectrum of policies, measures and actions amounting to more than 7 billion EUR, which are expected to contribute to the achievement of Greece's Digital Transformation strategic objectives (see for example Pillar 2 of the RRP and the Digital Transformation Operational Program of NSRF).

In addition to the public funding the private sector will contribute to the implementation of measures and actions concerning mainly the infrastructure projects which part of them will be implemented through Public-Private Partnerships (PPPs). Apart from the PPPs projects (e.g. Measure 2A01M- Ultra-Fast Broadband project), TELCO companies announced investments for expanding and upgrading their telecommunication networks (e.g. Action 2A01A) mainly for "Fibre To The Home" services and participation in the 5G spectrum auction (Action 2A02A) by National Telecommunications and Postal Commission.

The selected policies, measures and actions presented in the chapter below are the ones that demonstrate **a direct impact** in the achievement of the Digital Decade national targets, as analysed in Chapters 1.1 and 2, meaning that their completion will straightforwardly affect the corresponding KPIs for each objective. All other remaining measures (described in detail in the aforementioned Programs) are complementary to the ones presented herein and also absolutely essential to the achievement of the digital objectives, they are either of a horizontal nature (for example the government next generation G-Cloud project), or satisfy essential prerequisites for the core measures to take effect (such as the SYZEFXIS II public network infrastructure project).

Greece will continue the actions for achieving the targets of the digital decade after the year 2025 that the NRRP finishes and the year 2027 that the ERDF and ESF period will be finished. Moreover additional actions will be included until the targets of 2030 will be achieved. Regarding the telecommunications infrastructure development projects, a major PPP project, namely Ultra-Fast Broadband (UFBB) has just started and the private funding is anticipated to exceed 300 million EUR. A detailed mapping exercise for private investment plans for 2023 - 2028 has been conducted; the collected data are under elaboration. The details of the actions and the required budget for the implementation will be further elaborated and better described the following years when the Multiannual Financial Framework for the period 2028 - 2034 will be decided and concluded.

In addition to the policies, measures and actions included in the aforementioned programmes, new measures and policies will be introduced until the end of 2030 to support the digital decade roadmap. The current National Digital Transformation Strategy (Digital Bible) 2020 - 2025 will

[96] Please note that the analytical description of policies, measures and actions can be found in the ANNEX due to the size of the tables.

be updated to cover the period from 2025 until 2030 and a new portfolio of projects will be introduced to cover the gaps from the period 2020 – 2025. The new portfolio of projects will be funded either from the NSRF 2021 - 2027 or from Public Investment Programme and will include measures and actions focused mainly to increase the digital skills capabilities of population reducing Digital Divide in Greece, increase the ICT workforce by implementing the New Institutional Framework for Lifelong Learning and skills development, establish secure, resilient, and sustainable digital infrastructures, secure interoperability between different government bodies and agencies and ensure that digital public services are inclusive and accessible to all citizens.

3.1 General overview of measures per digital target

3.1.1 Digital Decade objective: Digitally skilled population and highly skilled digital professionals, with the aim of achieving gender balance

As mentioned in the Section 2, Greece has a digital skills deficit with the problem focused on older people and those with low financial and educational profiles[97]. Therefore, measures and policies in force aim to effectively address current skills mismatch and create a direct link between qualifications and jobs.

To this end both the reforms of DYPA (formerly known as OAED), namely "Labour force skilling, reskilling and upskilling through a reformed training model for the working population" and "Strengthening the apprenticeship system", and the reform and investment of the Ministry of Education, Religious Affairs and Sports create opportunities to respond effectively to reskilling and upskilling of labour force. Towards this goal Horizontal Upskilling Programmes will further support the undertaking policies to reduce skills mismatch. The reform "A New Strategy for Lifelong Skilling: Modernising and Upgrading Greece's Upskilling and Reskilling System" will act as a cornerstone in the effective delivery of the upskilling and reskilling programmes.

3.1.1.1 Target 1 (a) - At least 80% of those aged 16-74 having at least basic digital skills

The measures, policies and actions in place or planned to be in force the next period that contribute to the achievement of the specific target of this section are presented at the following table, along with the budget of Public or Private investments and the corresponding timeline for every measure.

[97] Study by the Center of Educational Policy Development titled "Adults and Lifelong Learning Programs in the Pandemic Period: The Challenge of Digital Skills."

Measures, Policies and Actions that contribute to the target	Public/ Private investment (MEUR)	Timeline (20xx)							
		23	24	25	26	27	28	29	30
Measure 1A01M - Upskilling and reskilling program in high-demand sectors with an emphasis on digital and green skills RRF ID16913	**Total: 302** EL:9 EU:293								
Measure 1A02M - Reskilling and up-skilling in the tourism sector by the Ministry of Tourism	**Total: 45** EL:21.6 EU:23.4								
Measure 1A03M - Teacher Training Actions	**Total: 24.79** EL:4.79 EU:20								
Measure 1A04M - Adaptation of workers in private sector companies by upgrading their digital knowledge and skills, in specialties of the Blue Economy activities	**Total: 12.57**								
Measure 1A05M - Development of digital skills for conscripts RRF	**Total: 39.66** EU:39.66								
Measure 1A06M – Programmes for reskilling and upskilling of General Government public servants ESPA	**Total: 20** EL:1 EU:19								
Measure 1A07M - Promotion of employment through Programs Public Beneficial Character (Training voucher) ESPA	**Total: 19.8**								

Measures, Policies and Actions that contribute to the target	Public/ Private investment (MEUR)	Timeline (20xx)							
		23	24	25	26	27	28	29	30
Measure 1A08M - National Academy for Digital Skills	**Total: 8.6**								
Measure 1A09M (New) - Development of Model Digital Centers in all regions									
Measure 1A10M - New Strategy for Lifelong Skilling: Modernising and Upgrading Greece's Upskilling and Reskilling System	**Total: 40** EL:1.2 EU:38.8								
Action 1A01A - Cisco International Centre of Digital Transformation and Digital Skills									
Action 1A02A – Microsoft initiative "GR for Growth"									
Policy 1A01P - National Coalition for Digital Skills and Jobs (NC)	**N/A**								
Measure 1A11M (New) – Strengthen the digital skills of the general population of all ages, including special population groups with particular characteristics									
Total Public Investments	**512.5**								
Total Private Investments									

Table 17. Measures, policies and actions for Target 1 (a)

3.1.1.2 Target 1 (b) - At least 20 million ICT specialists being employed within the Union, while promoting the access of women to this field and increasing the number of ICT graduates

The measures, policies and actions in place or planned to be in force the next period that contribute to the achievement of the specific target of this section are presented at the following table, along with the budget of Public or Private investments and the corresponding timeline for every measure.

Measures, Policies and Actions that contribute to the target	**Public/ Private investment (MEUR)**	**Timeline (20xx)**							
		23	**24**	**25**	**26**	**27**	**28**	**29**	**30**
Measure 1B01M - Vocational Education & Training Reform	**Total: 131** EL:4 EU:127								
Measure 1B02M (New) - Creation of new departments and courses in Greek Universities for ICT courses									
Measure 1B03M (New) - Increase of the ICT training courses									
Measure 1B04M - Industrial PhDs	**Total: 36.2** EL:15.9 EU:20.3								
Action 1B01A – The Project "Rebrain Greece"									
Action 1B02A – The Project "Choose Greece"									
Action 1B03A - Innovation Hubs and Data Centres by Private Sector	**Total: 1 000**								
Policy 1B01P - New Institutional Framework for Lifelong Learning and skills development RRF 16913	**Total: 1.23**								
Policy 1B02P - Visa for Digital Nomads (Law 4825/2021)	**N/A**								

Measures, Policies and Actions that contribute to the target	Public/ Private investment (MEUR)	Timeline (20xx)							
		23	24	25	26	27	28	29	30
Total Public Investments	**168.4**								
Total Private Investments	**1 000**								

Table 18. Measures, policies and actions for Target 1 (b)

3.1.2 Digital Decade objective: Secure, resilient, performant and sustainable digital infrastructures

The key objectives of the measures, actions and policies applied is the transition to fast broadband connections and pave the road towards 5G technology and to implement investments that focus on digital transition and particularly on very-high-capacity digital infrastructure, with a view to increasing mobile and fixed broadband coverage and take-up.

The main measure already in force "Switch to fast broadband connections – Transition to 100/200 Mbps (UltraFast) broadband connections and strengthening of Superfast Broadband demand" aims at increasing the availability of next generation broadband services throughout the country and is linked with the investments like "Fibre optic infrastructure in buildings", which are going to enhance the acceleration of the development of Fibre to Home (FTTH) networks and the transition to fast broadband connections, supporting emerging and future digital services and applications, and contributing directly to growth and new jobs creation, as part of the country's economic recovery and resilience.

3.1.2.1 Target 2 (a) – Ensuring that all end users at a fixed location are covered by a gigabit network up to the network termination point, and all populated areas are covered by next-generation wireless high-speed networks with performance at least equivalent to that of 5G, in accordance with the principle of technology neutrality

The measures, policies and actions in place or planned to be in force the next period that contribute to the achievement of the specific target of this section are presented at the following table, along with the budget of Public or Private investments and the corresponding timeline for every measure.

Measures, Policies and Actions that contribute to the target	Public/ Private investment (MEUR)	Timeline (20xx)							
		23	24	25	26	27	28	29	30
Measure 2A01M- Ultra-Fast Broadband - PPT Project	**Total: 870** EL: 35 EU: 265 PR: 570								
Action 2A01A - Private investments by TELCO companies	**Total: 5 600** PR:5 600[98]								
Action 2A02A - Auction of the 5G spectrum	**Total: 372** PR: 372								
Action 2A03A - Phaistos Investment Fund									
Action 2A04A - Smart Readiness Programme	**Total: 100** EU: 100								
Policy 2A01P - Law 4727/2020, transposing the EECC Directive to the national legislation	**N/A**								
Total Public Investments	**400**								
Total Private Investments	**6 542**								

Table 19. Measures, policies and actions for Target 2 (a)

3.1.2.2 Target 2 (b) - Producing, in accordance with Union law on environmental sustainability, cutting-edge semiconductors in the Union of at least 20% of world production in value

[98] (to be confirmed) the results of the analysis of the private investments mapping will be available by end of 2023

The measures, policies and actions in place or planned to be in force the next period that contribute to the achievement of the specific target of this section are presented at the following table, along with the budget of Public or Private investments and the corresponding timeline for every measure.

Measures, Policies and Actions that contribute to the target	**Public/ Private investment (MEUR)**	**Timeline (20xx)**							
		23	**24**	**25**	**26**	**27**	**28**	**29**	**30**
Action 2B01A - Think Silicon acquired by Applied Materials a leading company in the semiconductor industry	**Total: 7.7**								
Measure 2B01M (New) – Support the research and development of cutting-edge semiconductors									
Action 2B02A - Participation in the Joint Undertaking (JU) of the European Partnership for Key Digital Technologies - Key Digital Technologies Joint Undertaking / KDT-JU	**Total: 13.6**								
Action 2B03A (New) – Actions for Chips JU	**Total: 6[99]**								
Total Public Investments	**19.6**								
Total Private Investments	**7.7**								

Table 20. Measures, policies and actions for Target 2 (b)

3.1.2.3 Target 2 (c) – Deploying at least 10 000 climate-neutral highly secure edge nodes in the Union, distributed in a way that guarantees access to data services with low latency (i.e. a few milliseconds) wherever businesses are located.

The measures, policies and actions in place or planned to be in force the next period that contribute to the achievement of the specific target of this section are presented at the following table, along with the budget of Public or Private investments and the corresponding timeline for every measure.

		Timeline (20xx)

[99] pending approval

Measures, Policies and Actions that contribute to the target	Public/ Private investment (MEUR)	23	24	25	26	27	28	29	30
Action 2C01A - Project aerOS (Autonomous, scalablE, tRustworthy, intelligent European meta Operating System for the IoT edge-cloud continuum)	0.552 (Horizon Europe)								
Measure 2C01M (New) – Perform needs analysis and maturing actions to support the deployment of climate-neutral highly secure edge nodes	0.5								
Action 2C02A - Project OASEES (Open Autonomous programmable cloud appS & smart EdgE Sensors)	0.835 (Horizon Europe)								
Action 2C03A – Project ICOS (IoT to Cloud Operating System)	0.468 (Horizon Europe)								

Total Public Investments	**2.4**	
Total Private Investments		

Table 21. Measures, policies and actions for Target 2 (c)

3.1.2.4 Target 2 (d) - The Union having, by 2025, its first computer with quantum acceleration, paving the way for the Union to be at the cutting edge of quantum capabilities by 2030

The measures, policies and actions in place or planned to be in force the next period that contribute to the achievement of the specific target of this section are presented at the following table, along with the budget of Public or Private investments and the corresponding timeline for every measure.

		Timeline (20xx)

Measures, Policies and Actions that contribute to the target	Public/ Private investment (MEUR)	23	24	25	26	27	28	29	30
Action 2D01A - Research institute on Quantum Computing									
Action 2D02A – Daedalos HPC	**Total: 33**								
Action 2D03A – ARIS HPC	**Total: 3.8**								
Action 2D04A – HellasQCI project	**Total: 9.9** EL.: 4.95 EU: 4.95 PR:								
Action 2D05A – Project PQ-REACT (Post Quantum Cryptography Framework for Energy Aware Contexts)	**Total: 1.506** (Horizon Europe)								
Action 2D06A - International M.Sc. Program in "Quantum Computing and Quantum Technologies"									
Action 2D07A – Project NOUS (A catalyst for EuropeaN ClOUd Services in the era of data spaces, high-performance and edge computing)	**Total: 0.651** (Horizon Europe)								
Total Public Investments	**48.9**								
Total Private Investments									

Table 21. Measures, policies and actions for Target 2 (d)

3.1.3 Digital Decade objective: The digital transformation of businesses

In 2022, the main programme for the digital transformation of small and medium-sized enterprises was activated. This programme is implemented within the framework of the National Recovery and Resilience Plan "Greece 2.0", with funding from the European Union - NextGenerationEU and a total budget of 445 million EUR. The action is implemented by the Information Society S.A. (supervised body of the Ministry of Digital Governance) and concerns the strengthening of the digital maturity of the country's small and medium enterprises (SMEs), with the aim of modernising their productive, commercial and administrative functions. The action to support small and medium-sized enterprises, for the purchase/utilisation of digital products and services and their general support for their digital transformation, is divided into three individual State Aid programs:

- **Program I "SME Digital Tools"** provides vouchers that will be allocated for the acquisition, through purchase or lease, of new digital products and services, with the aim of strengthening the digital maturity of the country's small and medium enterprises (SMEs), through the use of various digital tools.
- **Program II "Development of Digital Products and Services",** a budget of 100 million EUR, digital investments will be subsidised, in the form of a non-refundable grant, amounting to between 200 thousand and 2 million EUR, for the development of infrastructure and cloud services.
- **Program III "Digital Transactions",** which will also take the form of including the upgrade or replacement of cash registers, as well as the replacement of old POS machines.

Regarding the Greek startup ecosystem, it was brought into the spotlight during the financial crisis and it keeps growing ever since. In recent years, the Greek startup scene saw a stage of consolidation with new successes and a lot of balancing out. Greece is home to many aspiring entrepreneurs who are working on promising new ideas and innovative business models. Recently, foreign investment funds have invested in three or more Greek startups such as: Intel Capital, Index Ventures, Accel, Andreessen Horowitz, Kleiner Perkins, Sequoia, BainCapital, DFJ Greycroft. Greek startups have been acquired by major companies in the industry such as: Microsoft, Apple, Splunk, Amazon, Samsung, Teradata, Daimler, Citrix, Vmware, DellEMC, Salesforce[100].

As a result of this emerging startup ecosystem there are already 5 Greek startups in the area of unicorns Viva Wallet, Persado, Blueground, Skroutz and PeopleCert[101].

3.1.3.1 Target 3 (a) - At least 75% of Union enterprises having taken up one or more of the following, in line with their business operations: (i) cloud computing services, (ii) big data, (iii) artificial intelligence

The measures, policies and actions in place or planned to be in force the next period that contribute to the achievement of the specific target of this section are presented at the following table, along with the budget of Public or Private investments and the corresponding timeline for every measure.

Measures, Policies and Actions that contribute to the target	**Public/ Private investment (MEUR)**	**Timeline (20xx)**							
		23	**24**	**25**	**26**	**27**	**28**	**29**	**30**
Measure 3A01M - European Digital Innovation Hubs - EDIHS	**Total: 34.3** EL: 25								

[100] Enterprise Greece

[101] https://startupper.gr accessed 21.09.2023.

Measures, Policies and Actions that contribute to the target	Public/ Private investment (MEUR)	Timeline (20xx)							
		23	24	25	26	27	28	29	30
	EU: 9.3								
Measure 3A02M - Programme "Development of Digital Products and Services"	**Total: 100**								
Measure 3A03M - Programme "Research - Create - Innovate" 2014 - 2020	**Total: 650**								
Measure 3A04M – Programme "Research - Innovate" 2021 - 2027	**Total: 300**								
Measure 3A05M – Acceleration of smart manufacturing RRF	**Total: 75**								
Measure 3A06M - Digital Transformation of SMEs Programme (Action 2: Advanced Digital Transformation of SMEs and Action 3: Edge Digital Transformation of SMEs) NSRF	**Total: 210**								
Measure 3A07M – Programme Industrial Data Platforms RRF ID: 16706	**Total: 145**								
Measure 3A08M - Research Excellence Partnerships	**Total: 94.6** EL:2.4 EU:92.2								
Measure 3A09M - Multiannual Funding Plan for Research Infrastructures	**Total: 73**								
Measure 3A10M - Create – Expand - Upgrading the Infrastructures of the	**Total:207.4**								

Measures, Policies and Actions that contribute to the target	Public/ Private investment (MEUR)	Timeline (20xx)							
		23	24	25	26	27	28	29	30
Research Centers under the supervision of GSRI									
Policy 3A01P - National Strategy for the development of AI	**Total: 0.148**								
Policy 3A02P – Law 4961/2022: Emerging ICT technologies and enhancement of Digital Governance	**N/A**								
Total Public Investments	**1 889.45**								
Total Private Investments									

Table 23. Measures, policies and actions for Target 3 (a)

3.1.3.2 Target 3 (b) - More than 90% of Union SMEs reach at least a basic level of digital intensity

The measures, policies and actions in place or planned to be in force the next period that contribute to the achievement of the specific target of this section are presented at the following table, along with the budget of Public or Private investments and the corresponding timeline for every measure.

Measures, Policies and Actions that contribute to the target	Public/ Private investment (MEUR)	Timeline (20xx)							
		23	24	25	26	27	28	29	30
Measure 3B01M- Programme "Digital Tools for SMEs" RRF ID: 16706	**Total: 180** EL:38 EU:142								
Measure 3B02M – Programme "Digital Transactions" RRF ID: 16706	**Total: 162** EL:34 EU:128								

Measures, Policies and Actions that contribute to the target	Public/ Private investment (MEUR)	Timeline (20xx)							
		23	24	25	26	27	28	29	30
Measure 3B03M – Digital Transformation of SMEs Programme - Action 1: Basic Digital Transformation of SMEs NSRF	**Total: 90**								
Measure 3B04M – Programme Digitalization Co-Financing Loans)	**Total: 100**								
Measure 3B05M (New) – Measures supporting the increase of the level of the digital intensity of Greek SMEs									
Policy 3B01P - Law NO. 4887/2022 Development Law	**N/A**								
Total Public Investments	**532**								
Total Private Investments									

Table 24. Measures, policies and actions for Target 3 (b)

3.1.3.3 Target 3 (c) - The Union facilitates the growth of its innovative scale-ups and improves their access to finance, leading to at least doubling the number of unicorns

The measures, policies and actions in place or planned to be in force the next period that contribute to the achievement of the specific target of this section are presented at the following table, along with the budget of Public or Private investments and the corresponding timeline for every measure.

Measures, Policies and Actions that contribute to the target	Public/ Private investment (MEUR)	Timeline (20xx)							
		23	24	25	26	27	28	29	30
Measure 3C01M - Programme "Equifund"	**Total: 292**								

Measure 3C02M (New) – Programme "InnovateNow"	**Total: 100**								
Action 3C01A - Elevate Greece RRF	**Total: 2.85**								
Policy 3C01P - Angel Investors Common Ministerial Decision 39937/2021	**N/A**								
Total Public Investments	**394.85**								
Total Private Investments									

Table 25. Measures, policies and actions for Target 3 (c)

3.1.4 Digital Decade objective: The digitalisation of public services

In recent years, the Greek state moved to advanced levels of digital transformation at a rapid pace, which had significant benefits both for citizens, businesses, and for the country's public sector as well. The digital platform gov.gr is now a focal point for every transaction of citizens and businesses with the State, providing around 1 500 digital services, the number of which is constantly increasing.

The government measures and actions supporting the digitalisation of public services is based on the National Digital Transformation Strategy (Digital Bible) 2020 - 2025 and implemented within the framework of the National Recovery and Resilience Plan "Greece 2.0", (NextGenerationEU) and the "Digital Transformation" Operational Programme of National Strategic Reference Framework (NSRF) 2021 - 2027. The main priorities of these programmes are the digital transformation of the health sector, the Justice sector, the Local Governments along with reforms for Independent Authority for Public Revenue (IAPR), e-EFKA and Public Employment Service.

3.1.4.1 Target 4 (a) - The 100% online accessible provision of key public services and, where relevant, the possibility for citizens and businesses in the Union to interact online with public administrations

The measures, policies and actions in place or planned to be in force the next period that contribute to the achievement of the specific target of this section are presented at the following table, along with the budget of Public or Private investments and the corresponding timeline for every measure.

Measures, Policies and Actions that contribute to the target	Public/ Private investment (MEUR)	Timeline (20xx)							
		23	24	25	26	27	28	29	30
Measure 4A01M- Development of an integrated CRM system for the citizens and business. RRF 16810	**Total: 73** EU: 73								
Measure 4A02M - e-EFKA Reforms RRF	**Total: 81.5** EU: 81.5								
Measure 4A03M - Digital Transformation of Justice (e-justice) RRF ID: 16727	**Total: 137** EU: 137								
Measure 4A04M - Interoperability and web services development RRF ID 16779	**Total: 27.9** EU: 27.9								
Measure 4A05M – Independent Authority of Public Revenue (IAPR) Reforms and Digitization RRF	**Total: 70** EU: 70								
Measure 4A06M – Digitalisation of OAED RFF ID: 16942	**Total: 9**								
Measure 4A07M - Smart Cities initiative RRF	**Total: 90**								
Measure 4A08M - Digital transformation of Local Governments NSRF	**Total: 235**								

Measures, Policies and Actions that contribute to the target	Public/ Private investment (MEUR)	Timeline (20xx)							
		23	24	25	26	27	28	29	30
Measure 4A09M – National Policy on Administrative Procedures (NPAP) NSRF	**Total: 15.2**								
Measure 4A010M (New) – Measures supporting the provision of digital public services									
Action 4A01A – Gov.gr platform									
Action 4A02A - National Disability Portal RRF ID: 5179243	**Total: 2.5** **EU: 2**								
Policy 4A01P – National Digital Transformation Strategy (Digital Bible) for 2020 - 2025	**N/A**								
Total Public Investments	**741.1**								
Total Private Investments									

Table 26. Measures, policies and actions for Target 4 (a)

3.1.4.2 Target 4 (b) – 100% of Union citizens having access to their electronic health records

The measures, policies and actions in place or planned to be in force the next period that contribute to the achievement of the specific target of this section are presented at the following table, along with the budget of Public or Private investments and the corresponding timeline for every measure.

Measures, Policies and Actions that contribute to the target	Public/ Private investment (MEUR)	Timeline (20xx)							
		23	24	25	26	27	28	29	30
Measure 4B01M – Digital Transformation of the Health Sector ● National Electronic Health Record ● Digital Transformation of National Health Service Organisation ● Improvement of digital readiness of Greek hospitals ● National Telemedicine Network RRF ID 16752	**Total: 277** EL.55 EU: 222								
Measure 4B02M – Digitalisation of public health system archives RRF ID 16778	**Total: 117.8** EL: 22.8 EU: 95								
Measure 4B03M (New) – Measures supporting the access to citizens electronic health records									
Action 4B01A - myHealth app	**Total:**								
Action 4B02A - Digital Child Health Booklet	**Total:**								
Total Public Investments	**395**								
Total Private Investments									

Table 27. Measures, policies and actions for Target 4 (b)

3.1.4.3 333..Target 4 (c) - 100% of Union citizens having access to secure electronic identification (eID) means that are recognised throughout the Union, enabling them to have full control over identity transactions and shared personal data

The measures, policies and actions in place or planned to be in force the next period that contribute to the achievement of the specific target of this section are presented at the following table, along with the budget of Public or Private investments and the corresponding timeline for every measure.

Measures, Policies and Actions that contribute to the target	**Public/ Private investment (MEUR)**	**Timeline (20xx)**							
		23	**24**	**25**	**26**	**27**	**28**	**29**	**30**
Measure 4C01M - The new national ID cards	**Total: 100** EL:100								
Policy 4C01P - Launch of the Hellenic Public Administration Certification Authority (APED)	**N/A**								
Action 4C01A - Project DC4EU	**Total: 0.622205** EL: 0.3111025 EU: 0.3111025								
Action 4C02A - Project EWC	**Total: 0.149158** EL: 0.074579 EU 0.074579								
Action 4C03A - Project Potential	**Total:** **53.21884656** EL: 1.41034025 EU 16.91740296								
Total Public Investments	**154**								
Total Private Investments									

Table 28. Measures, policies and actions for Target 4 (c)

3.1.5 How and to what extent are the measures expected to address the MS-specific challenges?

Challenge 1 - Greece has a shortage of digital skills especially among the oldest population and ranks quite low in human capital. The challenge becomes more intense as the country suffers from population decline and is likely to become the fastest ageing EU country by 2030.

Greece is implementing several measures to address the shortage of digital skills among the population. The **Measure 1A01M** funded by RRF is expected to upgrade basic digital skills of 150 000 individuals until the end of 2025. Complementary, several measures for upskilling and reskilling of employees are implementing in specific economic sectors like tourism sector **(Measure 1A02M)** for reskilling 78 000 employees in the tourist sector, education sector **(Measure 1A03M)** for upgrade the digital skills of 120 000 teachers, blue economy sector **(Measure 1A04M)** for reskilling 10 000 employees in the blue economy sector, and public sector **(Measure 1A06M)** where a large number of public employees is expected to participate in the reskilling and upskilling programmes until the end of 2027. In addition, the National Academy for Digital Skills **(Measure 1A08M)** launched in 2021 aspires to play an active role in the field of digital literacy, constantly enriching the educational content available to citizens. At the same time the National Alliance for Digital Skills and Employment **(Policy 1A01P)** will support and coordinate several actions concerning the upgrade of basic digital skills of the population. Finally, the Development of Model Digital Centers in all regions **(Measure 1A10M)** will strengthen the digital skills of the general population of all ages, including special population groups with particular characteristics (oldest population, population in remote areas, etc).

Apart from the aforementioned measures and actions, new measures will be introduced to address the challenge.

Challenge 2 - Greece has a rather low number of ICT specialists that is significantly below EU average. Greece has suffered a significant "brain drain" during the crisis period that has limited the number of ICT specialists in the country.

A priority of the Greek state is to reverse the "brain drain" to "brain gain" providing incentives **(Action 1B01A, Action 1B02A, Policy 1B01P)** to ICT professionals to return and join the workforce of Greek ICT companies. In addition, measures **(Measure 1B01M)** and policies **(Policy 1B01P)** in force aim to effectively address current skills mismatch and create a direct link between qualifications and jobs.

In order to cover the shortage of ICT specialists new measure and actions have to be introduced, like the creation of new departments and courses in Greek Universities for ICT studies **(Measure 1B02M)** and increase of the ICT training courses in P.E.C. (Private Educational Centres), Public

vocational training Centres and private schools **(Measure 1B03M)** expecting to improve the work readiness of employees, through reskilling (employees of other branches) & upskilling (in ICT), aimed at creating new employment prospects.

At the same time the policy measure "New Institutional Framework for Lifelong Learning and Development skills" **(Policy 1B01P)** is financed by the European Union – NextGeneration EU and concerns the primary/secondary legislation to modernise the ongoing system vocational training. The new institutional framework will support the implementation of the new Strategy for Lifelong Skilling, to address the current skills mismatch and cover a significant part of the ICT specialists' shortage.

Apart from the aforementioned measures and actions, new measures will be introduced to address the challenge.

Challenge 3 - Greece ranks low in internet access speed for both households and mobile internet, while offering poor connectivity in several areas. The country's geography geomorphology (i.e., numerous islands and mountainous areas) and demographic profile (extended and sparsely populated rural areas) significantly increase the required investments in order to achieve global gigabit coverage.

Greece state launched one of the largest Public-Private Partnership (PPP) projects in Europe, the Ultra-Fast Broadband -PPT Project **(Measure 2A01M)** to ensure the possibility of ultra-highspeed 22Internet in areas that were not included in the planning of private investments. It is estimated that about 830 000 households and businesses will benefit from this programme.

At the same time more than 5.6 billion EUR[102] will be invested by the private operators in Greece for upgrade of telecommunications networks in Greece **(Action 2A01A)**. It is expected that after the investments more than 5 million network termination points will provide 1Gbps internet speed.

It is expected that after PPP projects and private investments more than 5M network termination point will provide 1Gbps internet speed, which leads to a more than 95% FTTP coverage in Greece.

Challenge 4 - Lack of quantum computing infrastructures and of related investments prior to 2022, when the first projects (e.g., Quantum Communication Infrastructure (QCI), EuroHPC Quantum Computers in Greece) have commenced. Despite islands of success and few very successful startups, Greece does not have a vibrant semiconductors technology ecosystem.

The new research institute on Quantum Computing **(Action 2D01A)** announced to be established in 2023 at the National Centre of Scientific Research "Demokritos". It is expected that the new research institute will contribute to the improvement of quantum computing infrastructures in Greece. In addition, Greece participates in the European Quantum Communication Infrastructure (EuroQCI) initiative with the project HellasQCI **(Action 2D03A)** aiming at strengthening the resilience of critical infrastructure in the Greek territory against cyber threats.

Apart from the aforementioned measures and actions, new measures will be introduced to address the challenge.

Challenge 5 - There is an overwhelming number of SMEs with relatively moderate innovation activities and low digital maturation level, especially regarding the deployment of advanced

[102] (to be confirmed) the results of the analysis of the private investments mapping will be available by end of 2023

technologies, including big data, AI. In addition, Greece is characterised by a limited market size and scalability issues that reflect on the innovation capital of small businesses.

A major programme "Development of Digital Products and Services" (**Measure 3A02M)** is currently under implementation within the framework of the National Recovery and Resilience Plan "Greece 2.0", with a total budget of 445 million EUR. The programme concerns the strengthening of the digital maturity of the country's small and medium enterprises (SMEs), with the aim of modernising their productive, commercial and administrative functions. The action to support small and medium-sized enterprises, for the purchase/utilisation of digital products and services and their general support for their digital transformation.

In addition to Measure 3A2 the programme "Digital Tools for SMEs"**(Measure 3B01M)** and Programme " Digital Transactions " **(Measure 3B02M)** launched in 2022 with a total budget of 342 million EUR for supporting the digital transformation of SMEs. For the deployment of advanced technologies in SMEs the programme "Smart manufacturing" **(Measure 3A05M)** will provide funding to SMEs to improve business resilience through upgrading digital production management and adopting cut-edge technologies in their production process.

Apart from the aforementioned measures and actions, new measures will be introduced to address the challenge.

Challenge 6 - Greece lags behind EU average in terms of private Research and Development (R&D) and innovation investments, which affects SMEs and relates to emerging technologies (e.g., AI) as well.

In Greece there are two major programmes for stimulating R&D innovation investments in SMEs. The first Programme "Research - Create - Innovate" 2014 - 2020 **(Measure 3A03M)** and its successor programme "Research -Innovate" 2021 - 2027 **(Measure 3A04M)** with a total budget of approximately 1 billion Euro. The objective of the programmes is to connect research and innovation with entrepreneurship and to strengthen the competitiveness, productivity and extroversion of companies.

At the same time EU initiatives such as the European Digital Innovation Hubs – EDIHs **(Measure 3A01M)** will act as one-stop shops supporting SMEs to respond to digital challenges (AI, Big Data) and become more competitive. In the context of this measure the seven (7) hubs established in Greece will cover geographically all the region in Greece. It is expected that more than 500 SMEs will benefit from this measure.

Apart from the aforementioned measures and actions, new measures will be introduced to address the challenge.

Challenge 7 - Limited sharing of data and data openness in private enterprises (e.g., lack of data hubs).

The programme Industrial Data Platforms **(Measure 3A07M)** will provide funding to SMEs for the utilisation of CloudOnly infrastructures and services and the development of online software services (cloud Only Software framework).

Challenge 8 - Relatively new start-ups ecosystem with very small Greek Unicorns recorded so far, yet a greater number of Unicorns from Greek founders and the Greek diaspora.

The Greek startup ecosystem was brought into the spotlight during the financial crisis, and it keeps growing ever since. In recent years, the Greek startup scene saw a stage of consolidation with new successes and a lot of balancing out. The Greek state launched several measures and funding instruments to support the ecosystem development and maturation. The programme «Equifund» **(Measure 3C01M)** in cooperation with the European Investment Fund (EIF) was the fund-of-funds programme in Greece with a budget of 292 MEUR to strengthen the venture capital market in Greece, in order to provide funding and support services to the Greek start-ups ecosystem.

Additionally, actions like Elevate Greece **(Action 3C01A)** provides benefits and incentives to Greek startups to become scales-ups, expecting that a small percentage of them become unicorns.

Challenge 9 – Digital Divide in Greece where not all citizens have equal access to digital technologies and the internet.

The Digital Divide is more intense in rural areas where citizens may have limited access to digital devices and reliable internet connections, making it difficult for them to access digital public services. The Greek state launched several horizontal measures along with measures that increase accessibility of public services to the rural areas. More specifically the "Digital transformation of Local Governments"**(Measure 4A08M)** will provide funding to 332 municipalities to enhance e-government services and limit the digital divide in the regional level. Additionally, measures that intend to address the shortage of digital skills as described in Challenge 1, will increase the accessibility of citizens to digital technologies and the internet especially in rural areas.

Challenge 10 - Interoperability challenges: Different government departments and agencies may use different IT systems and databases.

To address the interoperability challenges in the public sector Greece launched the measure " Interoperability and web services development" **(Measure 4A04M)** under the reform "Interconnection and interoperability of registries, systems and services for data exchange between national public organisations". The measure is in line with the new European Interoperability Framework (EIF) linked with a series of investments, namely "Interoperability and web services development", "Next-Generation Interoperability Centre (KED)", "eRegistries" and "Tourism Registry e-MHTE".

Challenge 11 -Digital Inclusion: Ensuring that digital public services are inclusive and accessible to all citizens, including those with disabilities, is a priority.

All the measures providing digital public services **(Measure 4A01M, Measure 4A07M, Measure 4A08M, Measure 4A09M, Action 4A01A etc)** are designed based on the requirements of the W3C organisation and specifically the Web Accessibility Initiative (www.w3c/wai) at the level of specifications of all applications and websites, ensuring that the proposed technologies do not create further exclusions for People with Disabilities.

Regarding the Health Sector, the Digital Transformation of the Health Sector (**Measure 4B01M)** by the National Recovery and Resilience Plan "Greece 2.0" includes the National Electronic Health Record project providing access to all citizens to their electronic health records and the National Telemedicine Network for access to e-health services from remote areas.

In addition, the measure “National Disability Portal” **(Action 4A03A)** will be the central service and information hub for people with disabilities.

Apart from the aforementioned measures and actions, new measures will be introduced to address the challenge.

Challenge 12 - Ensuring the security and privacy of citizens' data is a critical concern. Cybersecurity threats and data breaches can compromise sensitive information, eroding public trust in digital services.

To address the security challenges in the digital services the National Cybersecurity Authority was established, and the National Cybersecurity Strategy 2020-2025 was published[103] for the effective formation of an integrated framework to deal with cyber-attacks.

3.1.6 Estimated investment gap and possible actions to reach the national target values

The aforementioned projects that are being implemented through the RRP have a deadline of implementation until the end of 2025, while the NSRF projects must have secured funding until the end of 2027.

The investment gap arises either because the new proposed measures have not secured funding or some of the existing measures need to be extended over time to cover the gaps after the implementation period of RRF and NSRF 2021 - 2027.

To determine the investment gap the following considerations have been made:

Consideration 1: The funding of the measures and actions is linear distributed to the years of the timeline (equal amount per year). Even though the budget of measure could be allocated at the initiation of a measure (year 1), the total budget should be distributed throughout the entire timeline.

Consideration 2: To maintain the slope of the national trajectories funding for new or existing measures must be secured beyond 2027 and in any case until 2030.

Consideration 3: In case that there are no measures and actions for some digital targets, thus there is not an annual funding, the investment gap was estimated based on the new measures that will be introduced until the end of 2030.

Example: For Target 1 (a) the main Measures described in Section 3.1.4 have a total budget of 512 million EUR with a timeline until 2027. Therefore, the annual budget (consideration 1) for the years 2023 to 2017 will be 102.5 million EUR. To cover the entire period until 2030 (consideration 2) additional 307 million EUR (3 years x 102) will be needed.

[103] https://mindigital.gr/wp-content/uploads/2020/12/national-cybersecurity-strategy-2020-2025.pdf

The following table presents the investment gaps for every digital target based on the annual funding of existing measures and the estimated investment gaps in order to cover the entire period of the national roadmap. More specifically:

Digital Target	Measures without budget allocated	Annual funding (MEUR)	Period without funding	Investment gap (MEUR)
Target 1 (a)	Measure 1A09M and new measures to be defined	102	2028-2030	307
Target 1 (b)	Measure 1B02M, Measure 1B03M and new measures to be defined	19[104]	2026-2030	95
Target 2 (a)	There is no need for extra measures currently[105]			
Target 2 (b)	New measures to be defined		2024-2030	20
Target 2 (c)	New measures to be defined		2024-2030	10
Target 2 (d)	New measures to be defined		2024-2030	20
Target 3 (a)	There is no need for extra measures currently			
Target 3 (b)	Extension of existing measures or new measures to be defined	50	2028-2030	150

104 Estimation refers to public investments. No private investments are taken into consideration.

105 (to be assessed) The General Secretariat of Telecommunications and Post has conducted mapping of private investments; the results of the analysis of collected data will be available by the end of 2023. The aforementioned results will identify both the connectivity and the investment gap and they will allow the preparation of new measures, if required.

Digital Target	Measures without budget allocated	Annual funding (MEUR)	Period without funding	Investment gap (MEUR)
Target 3 (c)	Extension of existing measures (e.g. Measure 3C02) or new measures to be defined		2025-2030	100
Target 4 (a)	Most of the measures are being funded by RRF until 2025	50	2028-2030	150
Target 4 (b)	Most of the measures are being funded by RRF until 2025	20	2026-2030	100
Target 4 (c)	New measures to be defined	25	2027-2030	100
Total Estimated Investment Gap				**1 050**

Table 29. Estimated Investment Gap

It should be noted that the investment gap can be partially covered by the unused funds of the RRF and the operational programs of the NSRF. More specifically, the “Digital Transformation 2021 - 2027” Operational Program (913 million EUR), the "Human Resources & Social Cohesion 2021 - 2027” Operational Program (4.16 billion EUR) and “Competitiveness 2021 - 2027” Operational Program (3.9 billion EUR) could allocate budget for the implementation of existing measures or new measures that will be proposed to support national targets of the Digital Decade roadmap.

4 MAIN POLICIES, MEASURES AND ACTIONS TO CONTRIBUTE TO THE GENERAL OBJECTIVES

The following table presents measures and actions that are implemented to contribute to the general objectives, namely digital citizenship, leadership, as well as green transition.

In terms of digital citizenship (DC), Greece implements several measures that foster the development of values, attitudes, skills and knowledge required to ensure digital citizenship in Greece. These measures will complete earlier reported policies for digital decade targets such as the digital skills development target (e.g., measures aiming to ensure that citizens possess basic digital skills).

Moreover, several measures have been already undertaken to ensure Greece's control over technology and services in the EU context i.e., in line with European values and the applicable regulatory environment. These measures complement the earlier presented actions and policies are destined to support relevant digital decade targets (e.g. policies for the digital transformation of businesses and the establishment of sovereign digital infrastructures).

There are also Green Transition (GT) measures that complete actions and policies for improved energy efficiency and environment performance that are pursued as part of the digital decade target for establishing sovereign cloud/edge/5G digital infrastructures in Greece.

Greece has issued several key strategic documents to ensure adherence to the Declaration on digital rights and principles. More specifically,

- A national Cybersecurity Strategy has been issued[106] in December 2020, which specifically states that the protection of human life and citizen rights constitute its highest principles. Two of the pillars of this strategy include protection of privacy and capacity building for citizens on cybersecurity issues, in alignment with the Declaration on Digital Rights and Principles' focus on security and ensuring citizen privacy and data protection in the digital space.
- The Digital Accessibility Guide for government websites and applications has been issued on May 2023[107] (following law 4780/2021 which established the National Accessibility Authority) is the first effort of the Greek government to provide a structured and concise guide for ensuring inclusion of all citizens in the digital transformation.
- The Digital Transformation Bible adopts all principles of the Declaration, putting citizens at the centre of the reforms, ensuring transparency and a (re-)design of digital services to democratise access, promoting the provision of digital public services through a multitude of channels.

[106] https://mindigital.gr/wp-content/uploads/2020/12/Εθνική-Στρατηγική-Κυβερνοασφάλειας.pdf

[107] https://www.secdigital.gov.gr/wp-content/uploads/2023/05/Accessibility_Guide.pdf

- The enhanced mission of the National Coalition for Digital Skills (law 4961/2022) which among others promotes a national strategic plan on digital competences for all citizens and proposes actions and programs for digital literacy, giving emphasis on digital inclusion and ensuring that all citizens gain the skills required for participation in digital society and economy.
- Deployment of resilient and green national infrastructures, adhering to EU's guidelines, legally secured and promoted by a "cloud-first policy" (law 4027/2020), to gradually replace legacy systems and improve the environmental footprint and their sustainability.

	General Objectives	Examples of measures and possible contributions from Greece
Digital Citizenship	(a) promoting a human-centred, fundamental-rights-based, inclusive, transparent and open digital environment where secure and interoperable digital technologies and services observe and enhance Union principles, rights and values and are accessible to all, everywhere in the Union (b) reinforcing Member States' collective resilience and bridging the digital divide, achieving gender and geographic balance by promoting continuous opportunities for all individuals, developing basic and advanced digital skills and competencies, including through vocational and professional training, and lifelong learning, and fostering the development of high-performing digital capacities within horizontal education and training systems (e) developing a comprehensive and sustainable ecosystem of interoperable digital infrastructures, where high performance, edge, cloud, quantum computing, artificial intelligence, data management and network connectivity work in convergence, to promote their	Measure LS1: Establishment of agreements on ICT security requirements for the public procurement of data processing services based on the European Interoperability Framework (EIF) Measure LS2: Participation in EU Actions and Initiatives for digital sovereignty, including participation in the GAIA-X Alliance and establishment of a GAIA-X Hub in Greece Measure LS3: Establishment of Initiatives/Associations to foster digital sovereignty in the areas of semiconductors production/technology, such as HETiA i.e., the alliance of highly innovative industrial and academic performers that promotes digital technology proliferation and entrepreneurship. Measure LS4: Establishment of Ethical Committees, at National Level (National Commission for Bioethics & Technoethics[108] (law 4780/2021, April 2021)) and the level of public organisations (e.g., Several Public Academic Institutes have established Ethical Committees). Measure LS5: Participation in the exchange of good practices in terms of human centric AI development with other member states, through

[108] The purpose of this decision is to facilitate natural persons in the process of verification of their identity or identification by public sector bodies or judicial authorities or natural or legal persons of the private sector, who are legalised for the identity verification or identification, in the context of the exercise of their legal responsibilities or the fulfilment of their legal obligations, if the above procedure is carried out by showing the data of the police identity card (ID) or driving licence.

	General Objectives	Examples of measures and possible contributions from Greece
	uptake by businesses in the Union, and to create opportunities for growth and jobs through research, development and innovation, and ensuring that the Union has a competitive, secure and sustainable data cloud infrastructure in place, with high security and privacy standards and complying with the Union data protection rules (g) ensuring that online participation in democratic life is possible for everyone, and that public services, health and care services are also accessible in a trusted and secure online environment for everyone, in particular for disadvantaged groups including persons with disabilities, and in rural and remote areas, offering inclusive, efficient, interoperable and personalised services and tools with high security and privacy standards	fora like JRC, the AI Watch Initiative and various EU projects. Measure LS6: Collection and sharing of crisis management data from the public sector data centres with other Member States.
Fostering Sovereignty and Leadership	(c) ensuring the Union's digital sovereignty in an open manner, in particular by secure and accessible digital and data infrastructures capable of efficiently storing, transmitting and processing vast volumes of data that enable other technological developments, supporting the competitiveness and sustainability of the Union's industry and economy, in particular of SMEs, and the resilience of the Union's value chains, as well as fostering the start-up ecosystem and the smooth functioning of the European digital innovation hubs (d) promoting the deployment and the use of digital capabilities with a view to reducing the geographical digital divide and granting access to digital technologies and data on open, accessible and fair terms, in order to achieve a high level of digital intensity	Measure LS1: Establishment of agreements on ICT security requirements for the public procurement of data processing services based on the European Interoperability Framework (EIF). Measure LS2: Participation in EU Actions and Initiatives for digital sovereignty, including participation in the GAIA-X Alliance and establishment of a GAIA-X Hub in Greece. Measure LS3: Establishment of Initiatives/Associations to foster digital sovereignty in the areas of semiconductors production/technology, such as HETiA i.e., the alliance of highly innovative industrial and academic performers that promotes digital technology proliferation and entrepreneurship. Measure LS4: Establishment of Ethical Committees, at National Level (National Commission for Bioethics & Technoethics[109] (law 4780/2021, April 2021)) and the level of

[109] https://bioethics.gr

	General Objectives	Examples of measures and possible contributions from Greece
	and innovation in Union enterprises, in particular start-ups and SMEs (k) improving resilience to cyberattacks, contributing to increasing risk-awareness and the knowledge of cybersecurity processes, and increasing the efforts of public and private organisations to achieve at least basic levels of cybersecurity	public organisations (e.g., Several Public Academic Institutes have established Ethical Committees). Measure LS5: Participation in the exchange of good practices in terms of human centric AI development with other member states, through fora like JRC, the AI Watch Initiative and various EU projects. Measure LS6: Collection and sharing of crisis management data from the public sector data centres with other Member States.
Contributing to the Green Transition	(h) ensuring that digital infrastructure and technologies, including their supply chains, become more sustainable, resilient, and energy- and resource-efficient, with a view to minimising their negative environmental and social impact, and contributing to a sustainable circular and climate-neutral economy and society in line with the European Green Deal, including by promoting research and innovation which contribute to that end and by developing methodologies for measuring the energy and resource efficiency of the digital space (j) ensuring that all policies and programmes which are relevant to achieving the digital targets set out in Article 4 are taken into account in a coordinated and coherent way to fully contribute to the European green and digital transition, while avoiding overlaps and minimising administrative burdens	Measure GT1: Implementation/Deployment of systems for energy consumption estimation within Data Centres. Measure GT2: Consideration of the transportation cost and CO^2 emissions in the design, implementation, and deployment of new e-services. Measure GT3: Optimised programmed obsolescence of digital equipment, including provision of information on maintenance, repair, reuse, and other aspects of the equipment that contributed to environmental performance. Measure GT4: Stimulation of Private Investments in Green Data Centers and Edge Computing. Prominent examples include the recent data centre deployment agreements with Amazon and Microsoft. Measure GT5: Measures for optimising energy efficiency and local consumption of digital tools and infrastructures from Large Greek Industries (e.g., the Independent Power Transmission Operator IPTO[110]).

Table 30. Measures that Contribute to the three main General Objectives

110 https://www.admie.gr/en/market/market-statistics/detail-data

5 EU LEVEL COOPERATION

5.1 Multi-Country projects

Overview 1) a. – Multi-Country projects included in the list of areas of activity for MCP in the Annex of the Decision, to which the Member State is committing or plans to commit in the future

5.1.1 Measures Multi-Country projects included in the list of areas of activity for MCP in the Annex of the Decision, to which the Member State is committing or plans to commit in the future

TITLE	DESCRIPTION
Europe's 5G Corridors New 5G cross-border corridor for connected and automated mobility	Bulgaria, Greece and Serbia have jointly agreed to develop experimental 5G cross-border corridors that will allow for the testing of driverless vehicles. This corridor will include the border crossings and key sections of the main roads. This corridor will include the border crossings and key sections of the main roads, where the implementation of current and future mobility technologies to ensure the interoperability and continuity of cross-border transit and automated driving services will be tested. The main goals of this MCP are the following: ● Start assessing existing and upcoming technologies in the field of connected and automated driving ● Analyse opportunities and positive externalities of the deployment of automated and connected vehicles, with a focus on road traffic safety and traffic management efficiency ● Foster the use of connected and automated vehicles in order to optimise the impacts on mobility, especially regarding road safety, innovation and environment ● Raise public awareness and promote knowledge and shared experiences; and, ● Work jointly towards coordinated policies and regulation of automated driving. The measures to be developed will aim at: ● Coordination and recognition of automated vehicle testing regulation and procedures;

TITLE	DESCRIPTION
	● Automatic and direct communication of lessons learned and experiences gained by the three countries; ● Coordination in future national traffic regulations on the deployment and registration of highly and fully automated vehicles, to ensure cross-border and international traffic For the implementation of this project in June 2018 Bulgaria, Greece and Serbia signed a Letter of Intent to work together on the Thessaloniki – Sofia – Belgrade corridor. This new agreement builds on a number of previous ones between a number of European countries, and underlines that a pan-European network of 5G corridors is now emerging. The 5G SEAGUL project plans to address the aforementioned call (CEF-DIG-2021-5GCORRIDORS-WORKS) by deploying state-of-the-art 5G network equipment to provide seamless, uninterrupted connectivity along a significant part of the Orient/East-Med TEN-T corridor Sofia-Thessaloniki-Athens, including the border-crossing of Promahonas / Kulata. Furthermore, the project plans to assess the suitability of the provided 5G connectivity through field-trials for selected advanced CAM use cases as defined by the 5G Automotive Association (5GAA). The deployed 5G network equipment will adhere to the latest commercially available 3GPP standards (Rel.16) supporting Stand-Alone (SA) operation i.e., comprising both a 5G core network and a 5G Radio Access network (RAN). The two (2) major MNOs involved in the project from Greece and Bulgaria commit to cover a portion of the highways comprising the Orient/East-Med corridor in their respective countries, limited by the call directives to a length less than the 15% of the sum TEN-T corridors length in each country. The project covers 300 Km of highway on the Greek side and 173 Km of highway on the Bulgarian (BG) side. Moreover, as small rural communities sparsely located along the targeted corridor, will also benefit from the additional 5G base station coverage and the upgraded services offered by the 5G features to be delivered by 5G SEAGUL deployments. The company profiles of the partners involved in 5G SEAGUL are: ● COSMOTE Mobile Telecommunications S.A. (Greece) ● A1 (Bulgaria) ● WINGS ICT Solutions (Greece) The 5G SEAGUL project duration will be 36 months and estimated to have been completed by end/2025 – beg/2026. The total budget of the 5G SEAGUL project is in the order of 11.5 million €, of which 50% will be financed by the European Commission's Connecting

TITLE	DESCRIPTION
	Europe Facility programme with the rest 50% undertaken by the partners' own resources.

TITLE	DESCRIPTION
Euro Quantum Communication Infrastructures (EuroQCI)	The EuroQCI initiative aims to build a secure quantum communication infrastructure that will span the whole EU, including its overseas territories. The EuroQCI was launched in 2019 with the EuroQCI Declaration, initially signed by seven Member States: all Member States subsequently joined the initiative. Since then, work has continued, under the supervision of the Commission and implemented by the Member States in the case of the terrestrial segment, and by ESA in the case of the space segment.. The aim is for it to be fully operational by 2027. The EuroQCI will safeguard sensitive data and critical infrastructures by integrating quantum-based systems into existing communication infrastructures, providing an additional security layer based on quantum physics. It will reinforce the protection of Europe's governmental institutions, their data centres, hospitals, energy grids, and more, becoming one of the main pillars of the EU's new Cybersecurity Strategy for the coming decades. The EuroQCI will include a terrestrial segment relying on fibre communications networks linking strategic sites at national and cross-border level, and a space segment based on satellites. It will link national quantum communication networks across the EU and provide global coverage. Greece participating in EuroQCI is implementing the HellasQCI project aimed to deploy advanced national QCI systems and networks in Greece. The advancement in technologies that will be achieved by the realisation of the HellasQCI initiative include: ● reinforcement of Scientific and Technological capabilities in cybersecurity, ● improvement of industrial competitiveness, ● strengthening European digital sovereignty

TITLE	DESCRIPTION
	This project on behalf of Greece, together with other EU Member States, the CSA project PETRUS and the European Commission will achieve the co-creation of the EuroQCI. Hellas QCI: 9,97 M€ 50% funded by DEP 2. In addition Greece participates in DEP3 PETRUS Constortium. The DEP4 final results and award expected by end of 2023.

TITLE	DESCRIPTION
The European High Performance Computing Joint Undertaking (EuroHPC JU)	Greece is participating in the EuroHPC JU, which is a joint initiative between the EU, European countries and private partners to develop a World Class Supercomputing Ecosystem in Europe. The EuroHPC JU aims to: ● develop, deploy, extend and maintain in the EU a world-leading federated, secure and hyper-connected supercomputing, quantum computing, service and data infrastructure ecosystem ● support the development and uptake of demand-oriented and user-driven innovative and competitive supercomputing system based on a supply chain that will ensure components, technologies and knowledge limiting the risk of disruptions and the development of a wide range of applications optimised for these systems ● widen the use of that supercomputing infrastructure to a large number of public and private users and support the development of key HPC skills for European science and industry. The EuroHPC Joint Undertaking is jointly funded by its members with a budget of around 7 billion EUR for the period 2021-2027. The expected impact is increasing Supercomputing capabilities of EU countries in order to understand and respond to complex challenges and transforming them into innovation opportunities, like discovering new drugs, developing and targeting medical therapies in health, anticipate severe weather conditions in the climate crisis and support digital transformation of science.

TITLE	DESCRIPTION
EU Digital identity - EUDI Wallet	The European Commission is investing in projects to develop the European Digital Identity wallet (EUDI) wallet for travel, health, banking, education and more. For this reason the EC is investing 46 million EUR from the Digital Europe Programme into piloting and enhancing the European digital identity (EUDI) wallet. In this context 4 projects launched to test EUDI Wallet and Greece is participating in one of them called POTENTIAL – Pilots for European Digital Identity Wallet Consortium. This project is coordinated by Germany and France with the involvement of 17 Member States and Ukraine. It involves over 50 public administrations and over 80 private entities. The project will apply the EUDI wallet to 6 use-cases: ● Access to government services ● Opening of a bank account ● Registration for a SIM card ● Mobile driving licence ● eSignatures ● ePrescriptions

TITLE	DESCRIPTION
Security Operations Centres	EU aims to tackle cyberthreats within its block of members by creating a network of Security Operations Centres (SOC), powered by AI and advanced data analytics to anticipate, detect and respond to cyberattacks at the national and EU levels. To implement this strategy 110 million EUR have been allocated in the EU Funding Programme DIGITAL under the Cybersecurity work programme. The EU has already put out a call for an expression of interest to select the entities to host the necessary facilities and operations, providing funding and grants to SOC operators. It is expected that the programme will result in improved prevention and policies, faster threat detection, and more effective response to security threats without incurring higher costs. A SOC can also

TITLE	DESCRIPTION
	improve customer confidence and strengthen businesses' compliance with industry and relevant privacy regulations

5.1.2 Possible new Multi-Country projects, not yet included in the list of areas of activity for MCP in the Annex of the Decision, for which the Member State identifies a need

TITLE	DESCRIPTION
EDIC for EBP and EBSI	Greece aims to participate in the EDIC for Blockchain Partnership European (EBP) and European Blockchain Service Infrastructure (EBSI) will help address the objectives of the Digital Decade Policy Programme 2030, with a reliable and long-term governance solution for scaling up the initiative, making the best of blockchain and decentralised technologies within the digital transformation of public and private services. The EDIC will exploit the advantages of broadband connectivity and mobility, which is of key importance for seamless interoperable infrastructures. The EDIC will enable expanding the already vibrant ecosystem around EBSI and its use cases through mobilising providers for technological solutions and application providers, services, and users. The development of blockchain technology applications remains in close synergy with other technological trends, such as AI, IoT, 5G, and quantum communications. Like other breakthrough technologies, blockchain has horizontal importance for digital transformation, potentially contributing to achieving most of the objectives of the Digital Decade 2030. The EBSI will help facilitate access to data and will contribute to the reduction of the digital divide, taking into account regional and gender dimensions. Furthermore, it will support standardisation and ensure interoperability between EBSI and the European "building blocks" for the benefit of all EU Member States. The EBP-EBSI-EDIC will address several objectives and targets of Digital Decade Policy Programme 2030 (DDPP 2030). It will notably provide for: ● 1st Goal: "Supporting the digital transformation of public and private service" ● 2nd Goal: "Strengthening digital skills and competencies"

TITLE	DESCRIPTION
	● 3rd Goal: "Strengthening of the ecosystem on blockchain/DLT/web3.0 in Europe"

TITLE	DESCRIPTION
EuroHPC JU	The aim of the proposed project is to leverage Greek EuroHPC participation via Multi-Country-Projects as Greece is already a Member of EuroHPC Joint Undertaking, established in September 2018. Any further action of a potential EDIC for HPC would have to be aligned with EuroHPC JU activities and plans. In Greece the Ministry of Digital Governance has been assigned to design and implement the new Greek supercomputing installation, called "DAEDALUS", and carry out its operation. DAEDALUS supercomputer will be available to serve a wide range of users in the scientific community, industry and the public sector located in Greece and across Europe, who need to use the power of supercomputing. Furthermore, it is in the strategic interest of Greece to support science and technology in the wider area of South-East Europe, where traditionally it supports a number of large electronic infrastructure projects in the last 2 decades. Thus, Greece has extended an invitation to the countries of the region which are part of the EuroHPC JU. Cyprus, Montenegro and North Macedonia have accepted and joined the proposal, while the offer to join the proposal has urged Serbia to start the process to join EuroHPC JU. The main objective of the project is to create a unified European HPC ecosystem with systems, technology, federation mechanisms, user support mechanisms and skills in place. The main action lines are as follows: ● Federation and interoperation of HPC machines ● Common access mechanism ● Support for cross-border Centres of Excellence in HPC in different scientific and industrial fields ● Porting and adaptation of user codes and software, code development ● Links to SMEs and industry ● Skills and competences in HPC ● Stakeholder and user engagement ● International cooperation

TITLE	DESCRIPTION
	• Quantum computing The timeline is 10 years.

TITLE	DESCRIPTION
The Language EDIC ALT-EDIC	Language technologies have become ubiquitous, used in a multitude of daily interactions of citizens, organisations and states in the digital sphere. Contemporary, high-performant Language Technologies (LTs) are powered by the respective appropriate Large Language Models (LLMs) for the different languages and applications, thus rendering the availability of sizable and high quality data key to the development, success and adoption of language technologies in end-user applications. The initiative Greek 2.0 u at taking care of Greek in the contemporary digital era by a) ensuring the digital presence and technological readiness of the Greek language, b) safeguarding the availability of the appropriate language data, resources, models and tools, c) enhancing the uptake of language technologies by the Greek industry, public sector and research community, d) increasing awareness of the critical role of data in today's economy, and e) promoting collaboration of Greek and European stakeholders. In tandem, it fosters cooperation between Greece and the EU member states, paves the way for the contribution of Greece in the Language EDIC and multi-country projects, and leverages the political and financial instruments in Greece and the EU The proposed timeline starts with an initial period of 3-5 years for setting up and running Greek 2.0, through which Greece will contribute to the Language EDIC. At the end of the 5-year period we will evaluate our progress and results achieved as well as their usefulness in reaching the overall objectives. Regarding the financial support to the project the Ministry of Digital Governance, for the period 2023 - 2027, has planned a set of concerted actions (projects) that require LTs resources, datasets, models and tools. Such actions are in line with the Digital Transformation Strategy of Greece. Examples of planned actions range from LT enabled text classification of very large data collections and fine-grained text mining and information extraction, to LT enabled interfaces to information systems and end-user

TITLE	DESCRIPTION
	applications. Funding resources of those projects involve public investment funds, structural and regional funds. Overall, in the period 2023 - 2027 we foresee an investment of 5 million EUR in projects that will require language technologies.

TITLE	DESCRIPTION
Innovative Massive Public Administration interConnected Transformation Services (IMPACTS) EDIC	Greece is leading the working group for the preparation of an EDIC for connected public Administration. Member states participating in IMPACS EDIC Working Group have recognized the importance of achieving "Connected Public Administrations" and ultimately design a multi-county project to improve public administration through the implementation of solutions for: a. Creating new generation of public service using Innovative GovTech and emerging technologies solutions, b. Reusing good practices, such as existing CEF building blocks, JoinUp solutions and extending their use in other domains and use cases, c. Exploiting the expertise of private sector through innovation procurement, d. Enhancing cross border interoperability using national architectures and tools that are compliant with the existing European Interoperability Reference Architecture and reusing tools that are already in the European Interoperability Toolbox, e. Enrich digital communication that contributes to a better connection between public institutions, citizens, and Business, as well as communication among different public institutions. f. Reducing the administrative burden of business due to obligations related to reporting to public administration using open procedures such as open accounting. Endowed with a legal personality recognized by all EU Member States as an International Organization, the "IMPACTS-EDIC" will support the coordination – collaboration among Member States, European Agencies and Institutions aligning the efforts towards common objectives that will facilitate the development, deployment of new solutions for better public services, will support the appropriate operations for interoperability tests among the existing national solutions. The IMPACTS EDIC will be based on the shared

TITLE	DESCRIPTION
	Governance Model of the forthcoming Interoperable Europe Act and will create a framework and a platform for collaboration, deliberation and exchange of good practices involving the Quadruple Helix i.e., Public Administration, Research and Academic Institutes, Businesses - Companies and Civil Society.

TITLE	DESCRIPTION
EDIC for the deployment of the Cybersecurity Skills Academy	Greece is leading the working group for an EDIC for Cybersecurity Skills Academy, to be developed by an EDIC comprising entities from several member states, will aim to address this challenge by serving as a European umbrella organisation that integrates various activities related to cybersecurity education and training as well as standardisation of procedures for cybersecurity competence recognition and professional certification, thus increasing visibility, accessibility, and impact of these activities in Europe, while aligning them along common goals, key performance indicators, and a joined-up communication strategy to seek more significant impact. The Cybersecurity Skills Academy will use the existing network of the National Cybersecurity Authorities of the member – states and the network of the European Cybersecurity Competence Centre's NCCs to disseminate its activities to each member state's cybersecurity community according to national needs and strategic priorities. The main objectives of the EDIC responsible for the developing the Cybersecurity Skills Academy are the following: ● Develop an organisational and operational structure for the Cybersecurity Skills Academy ● Develop training programs for small and medium-sized enterprises (SMEs), start-ups, and the public sector, focusing on meeting these groups' cybersecurity needs and preparing personnel for acquiring professional certifications in cybersecurity. ● Promote the standardisation of procedures for cybersecurity competence recognition and professional certification in the European market. ● Develop and use up-to-date curricula in cybersecurity to ensure that trainees are equipped with the most relevant and current skills. ● Promote the matching between relevant stakeholders and, in particular , between the needs of industry/public sector and training institutions

TITLE	DESCRIPTION
	● Increase the visibility, accessibility, and impact of cybersecurity training programs in Europe The Cybersecurity Skills Academy will focus on providing cybersecurity training programs for SMEs, start-ups, and the public sector. Funding will be available for implementing new training opportunities or scaling up successful ones, targeting the cybersecurity needs of SMEs and public administrations. The training will be tailored to the specific needs of businesses, with a focus on facilitating access to cybersecurity talents for SMEs and start-ups. To ensure the high levelled cybersecurity needs for digital public administration, the Academy will cater for upskilling, reskilling, and interdisciplinary understanding of cybersecurity for civil servants. The activities of the Academy will be devised and delivered by consortia of organisations active in cybersecurity, universities, or cybersecurity training providers. These jointly vetted industrial partners' activities will enhance trainees' employability and increase public servants' cybersecurity capabilities. These activities include identifying relevant training courses, such as boot camps on cybersecurity topics. The Academy will also promote developing and using up-to-date cybersecurity curricula, including training on in-demand skills like cyber forensics, malware analysis, and AI. In addition, the Academy will explore and define an impactful scheme promoting the standardisation of procedures for cybersecurity competence recognition and professional certification in the European market. The proposal will strengthen digital skills and competencies in the wider European cybersecurity community. It notably corresponds to the first target of DDPP 2030, a digitally skilled population and highly skilled digital professionals, to achieve gender balance, as well as to the DESI index dimension "human capital" (basic and advanced digital skills, digital content creation skills).

6 STAKEHOLDER FEEDBACK

The Ministry of Digital Governance, after being thoroughly informed about the issues of the Digital Decade, prepared the following action plan in order to coordinate the work required:

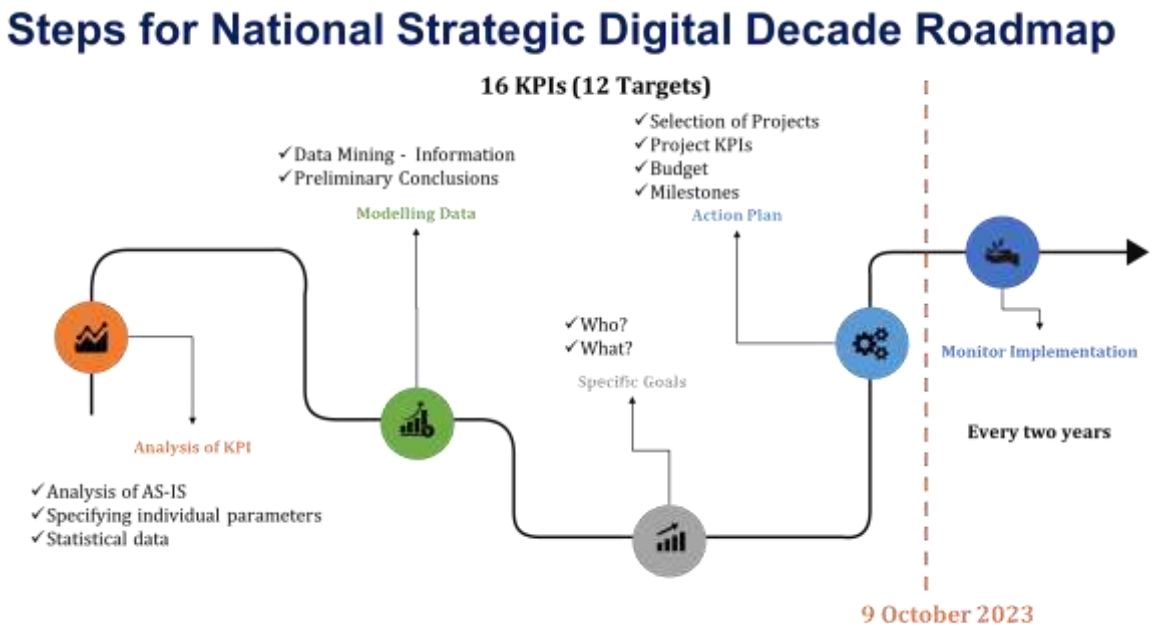


Figure 24. Steps for the National Strategic Digital Decade Roadmap of Greece, Digital Strategy Dept., Ministry of Digital Governance

For the identified KPIs, background research has been performed to analyse each KPI. The data collected has been communicated through various channels (e.g. formal requests to complete questionnaires, organisation of workshops) to the appropriate stakeholders and their feedback was collected. Once collected, the feedback was carefully analysed, prioritised and categorised. This involved identifying common themes, concerns, and suggestions. Prioritisation was crucial to focus on addressing the most critical issues or incorporating the most valuable suggestions. This step involved determining the impact and importance of each piece of feedback. After making decisions based on the feedback, we sent relevant answering letters back to the stakeholders. Taking stakeholder feedback into account will be an ongoing process and part of a continuous improvement cycle, keeping stakeholders informed about the outcomes resulting from their input.

More specifically, the following actions took place:

Activity #1

Based on the existing legislative framework, in January 2023, the Ministry of Digital Governance sent an informatorily letter and invited the entire central administration, including its supervised bodies, to appoint representatives to form the Digital Transformation Executive Network. The Ministry activated and continues to coordinate this Network, with the aim of

enhancing the effective and active participation of all public entities in the implementation of the country's digital strategy. For this reason, an awareness-raising workshop was organised on 15th of February 2023, with the participation of representatives of all stakeholders providing information and communication services. During the workshop, the goals and the key indicators of the Digital Decade 2030 were presented. The commitment of every country to reach those goals and the steps towards the drafting of the National Roadmap were also explained. As a result of the workshop, it was agreed that communication letters will be sent to every stakeholder in order to gather information and data for the roadmap.

Activity #2

In continuation of the previous activity, the first data collection activity started for the National Roadmap for Digital Decade 2023-2030. More specifically, in order to gather data and start the cooperation, six letters, concerning the targets of the Digital Decade, were drafted and sent to public and private bodies, and some particularly important, such as the Association of Enterprises and Industry and the FOUND.ATION enterprise. Four letters were sent to public bodies concerning the targets At least Basic Digital Skills, ICT Specialists, digital transformation of businesses and eHealth and two letters were sent to private bodies concerning highly skilled digital professionals employed and the digital transformation of businesses.

Stakeholders were asked to fill a questionnaire type table with the institutional interventions / programmes / actions that their institution is currently implementing or will implement by 2030, which provide incentives and opportunities for achieving all Digital Decade targets. They had to briefly describe the Action, give an example, if any, of how the Action relates to the objective and present a timetable for the implementation of the measure.

Regarding the feedback received, most stakeholders replied to the letters, sending either information on their activities or just replying that no actions were implemented / are scheduled.

Activity #3

In parallel, three formal letters were drafted and sent to the Hellenic Statistical Authority (ELSTAT), the National Documentation Centre (EKT) and the Greek Association of Information and Communication Technology Enterprises (SEPE).

The conducted surveys of ELSTAT and the data of their questionnaires will pinpoint the current state of the country concerning its population and enterprises' profiles and skills. EKT, acting as National Authority of the Hellenic Statistical System and through the conducted investigations/studies, contributes to the European Research, Development & Innovation statistics. The data gathered will be used for the determination of the population and enterprises' digital skills, for the decision making and policies at local and national level and, finally, for the determination of digital transformation actions aiming ICT professionals in enterprises as well as in the general population. SEPE will also contribute in capturing the current state towards the same direction. In order to coordinate the next actions and in continuation of the studies and surveys SEPE has already done, the co-organization of relevant meetings and the sending of relevant questionnaires from SEPE to its members was suggested as the next step.

As feedback, ELSTAT sent contact details of their executives to be designated as representatives of the above surveys and also specially formatted data tables related to the country's enterprises and population. Moreover, EKT sent contact details of their executives

on innovation and digital transformation of enterprises together with relevant publications and special reports including data and corresponding analysis mainly related to the digital transformation of enterprises. On 9th of June 2023 a constructive meeting was held, through video conference, between officials of the Ministry of Digital Governance and EKT, aiming to formulate opinions on the goals of the digital decade. Finally, on 14th of March 2023 a presentation was made for the Ministry of Digital Governance, concerning a survey in "Study on the sufficiency of ICT specialists in the Greek labour market", which was issued from SEPE in cooperation with Deloitte Business Solutions S.A, in order to assess the level of ICT specialists' sufficiency in Greece.

Activity #4

Simultaneously, concerning the target of the digitalisation of public services, the eGovernment Benchmark framework and methodology for the digital transformation of the public sector was used as source of information and data. For this specific index, eighteen individual letters were drafted and sent to public bodies.

Stakeholders were asked to fill a questionnaire type table with data on their digital services. More specifically, the URL of the service corresponding to the description above, who the responsible body is and the contact details of a representative of the responsible body, but also the evaluation of the service according to the criteria - clarifications provided, description of the digital transformation action related to the service to achieve the objective, budget, source of funding, planned/actual start year, interim dates and end year.

As far as feedback is concerned, most of them replied and data analysis shows the areas of success and areas of treatment.

Activity #5

Within the framework of the Executive Network of Digital Transformation[111] two stakeholder consultation sessions took place on the following digital objectives:

- at least basic digital skills
- digital transformation of enterprises

During these sessions, the Ministry presented the framework of the KPIs for Digital Decade and the methodology behind targeted analysis and trajectory estimation to more than 100 representatives from all public administrations.

The main measures have been also presented and discussed with key stakeholders in order to gather feedback and recommendations.

Main feedback included:

- Detailed description of scope and objectives of already identified measures
- Proposition of new measures which were currently under development in several ministries (eg Labor, Interior and Health)
- Feedback on prioritisation of measures to better link results with the national targets

Activity #6

Within the framework of the Executive Network of Digital Transformation 3 analysis workshops took place (with the method of Design Sprint) and 1 workshop for presenting findings to a wider audience.

[111] Law 4727/2020

The case studies were drawn from eGovernment Benchmark concerning the processes from the life events Justice (Monitor status of case), Health (Get guidance and information about where you can get healthcare) and Studying (Get guidance with how to arrange internships and starting your career). These processes were selected in order to better understand the design sprint methodology, mapping the service, identifying challenges and opportunities from the user's perspective, setting priorities, forming a vision, designing “use cases”, forming concepts and user flows. The results were presented as prototypes to the wider audience.

Activity #7

In the framework of the National Broadband Plan preparation extensive consultation with all stakeholders, both from public and private sector, have been conducted and their feedback was considered when preparing the relevant measures and interventions. Moreover, the mapping of private investment plans was the basis for the identification of the gaps and for the identification of the scope of public intervention.

7 OVERALL IMPACT AND CONCLUSION

7.1 Synergies between measures

Synergies between measures

Greece aspires to maximise its contributions to the digital decade targets, despite challenges faced by the current status of the country's digital transformation and digital ecosystem, and within the limits of the available digital transformation budget. In this direction, synergies between the different measures and actions are plans towards achieving multiplicative benefits and reinforcing their outcomes.

The Greek National Digital Decade Roadmap encompasses a comprehensive set of measures and initiatives designed to transform the country into a digitally advanced and inclusive society by 2030. These measures span various domains, including skills, digital transformation of businesses, secure and sustainable digital infrastructures, and digitalisation of public services.

Although these areas are central to the Digital Decade Policy Program, they were also a major part of the Greek digital transformation strategy (issued in June 2021), to be accomplished mainly through a portfolio of more than 400 projects. The MDG has already selected a subset of these projects as the "digital transformation portfolio" which form the "core" measures that will drive the transformation and which are already included in the roadmap.

Furthermore, around 25% of Greece's total funding of the national RRP has been allocated to digital transformation, of which up to around 4.5 billion EUR is linked to Digital Decade targets[112]. All projects that are related to the Digital Decade Policy are included in the national roadmap.

The Digital Transformation Operational Program 2021-2027 funded by EU structural funds, has also been designed with both the DTB and the Digital Decade program in mind, and all relevant proposals are included as measures in the roadmap.

In order to ensure alignment and coordination with other countries towards the joint effort to reach the Digital Decade objectives by 2030, Greece is participating in several cross-border activities and European initiatives.

All of the above areas are coordinated by the MDG (with a fit-for-purpose governance scheme established by law in 2020) which is also responsible to ensure synergies, avoid overlaps and communicate critical information to all stakeholders.

[112] Deloitte LLP Report The contribution of National Recovery and Resilience Plans to achieving Europe's Digital Decade ambition - 21 June 2021; see

https://assets.ctfassets.net/q7ob9vms4z5k/1jzrQbA5uXffPjiDgHghRJ/ec8a78d29e1594ef7642222cb0d8c539/deloitte-llp-europe-digital-decade-rrf-gap-analysis.pdf, accessed on 29 November 2023.

7.2 Contribution to the Overall Vision of the Digital Decade

Contribution to the Overall Vision of the Digital Decade

In recent years, Greece has accelerated its digital transformation and already managed to achieve significant milestones and ambitious targets. The overall vision of Greece's digital transformation as articulated in the Digital Transformation Bible of the document is very well aligned to the overall vision and objectives of the digital decade. This is also reflected on the analysis presented in earlier paragraphs, where:

- Tangible measures with KPI targets have been presented for each one of the sixteen targets of the Digital Decade.
- Most of the proposed measures and actions to contribute to the overall vision and targets of Digital Decade, include projects prescribed and carried out as part of the implementation of the Digital Transformation Bible.

Thus, Greece embraces the vision of the Digital Decade and has already specified and implemented policies and measures that contribute to its realisation. Nevertheless, the performance and intensity of the measures linked to specific targets vary and can be broadly classified in three different categories:

- **High Velocity and Contribution**: The first category includes the targets where Greece is exhibiting very good to excellent implementation and velocity performance, based on the accelerated implementation of measures and actions that contribute to these targets. This is for example the case with the targets that concern the offering of digital public services for citizens and businesses. In both of these targets, Greece is exhibiting growth that exceeds the average points at EU level, and this growth is expected to continue based on planned projects.
- **Moderate Velocity and Contribution**: This category includes digital targets where Greece is expected to grow at similar rate to the EU average. This is for example the case of targets that concern digital skills development and ICT specialists. Greece is expected to make a contribution close to the EU average.
- **Low Velocity and Contribution**: This concerns areas where Greece has had quite low activity so far and starts from a very low baseline. This is for example the case of measures and activities that contribute to the semiconductors production and the creation of Unicorns.

These different levels of contribution are a result of the specificities of the country in terms of baselines, strengths and weaknesses of the innovation ecosystem, available funding, demographics and other factors.

By investing in the above interconnected measures, Greece aims to achieve transformative outcomes:

- Government Efficiency and Citizen Empowerment: Digitising public services will enhance citizen engagement, transparency, and accountability, while improving government efficiency and responsiveness.
- Economic Growth and Competitiveness: A skilled, digitally transformed business landscape will drive innovation, productivity, and economic growth, enabling Greece to contribute significantly to the European objectives.
- Social Inclusion and Prosperity: Digital literacy and skills development will empower individuals, reducing inequalities and promoting social inclusion, fostering a more equitable society, in line with the general objectives of the Digital Decade.
- Sustainable and Secure Digital Ecosystem: Investing in sustainable and secure digital infrastructure will protect the environment, safeguard data integrity, and enable a resilient digital future.

The Greek National Digital Decade Roadmap envisions a digitally advanced, inclusive, and prosperous society where technology empowers individuals, businesses, and government to achieve their full potential. By leveraging synergies across the various sections of the roadmap, Greece is on track to transform into a leading digital hub in the European Union and beyond.

ANNEX 1: DESCRIPTION OF THE MEASURES

A.1 Digital Decade objective: Digitally skilled population and highly skilled digital professionals, with the aim of achieving gender balance

Measure 1A01M - Upskilling and reskilling program in high-demand sectors with an emphasis on digital and green skills

New measure	☐ yes x no
Short description of the measure	The programme “Upskilling and reskilling program in high-demand sectors with an emphasis on digital and green skills” concerns the provision of vocational training programs to 150 000 beneficiaries with the aim of upgrading their skills (upskilling) and reskilling them in digital and green skills in high demand industries. The programme is being implemented in the framework of the action: “Horizontal upskilling / reskilling programs to targeted populations" funded by the Recovery and Resilience Fund. D.YP.A will cooperate with the licensed LLL centres. that meet specific quality assurance criteria, for the provision of training programs to unemployed people registered in the unemployment registers, as part of the national effort to upgrade the skills of the Human Resources, mainly in "digital" and "green" skills, aiming both their effective interconnection with the labour market and the improvement of their employability, as well as the preservation of future jobs. The object of this project is the provision of theoretical training services - which will lead to certification of the knowledge and skills that will be acquired during the training - and will be addressed to beneficiaries, registered in the Register of unemployed, over 18 years of age. In particular, the services provided under this project include: • Theoretical training programs for the unemployed - beneficiaries lasting 50 - 200 hours that lead to the acquisition of digital and "green" knowledge and skills, as will be described in each call. • Certification of knowledge and skills that will be acquired within the training programs. *Link to the target:* This Measure tackles the need for digital, green and financial literacy skills of the following population groups: a) unemployed, especially the youth and long-term unemployed, b) employees, especially those with high unemployment risk and those who are left behind by workspace technology, c) employees, especially at SMEs with limited in-house training capacity, d) public sector employees, including teachers. Skills offered are: a) Baseline digital skills, b) Medium-level digital skills, c) Green skills and d) Financial literacy skills. Therefore, the measure will increase the digitally skilled population and at the same time will support the employability of 150 000 beneficiaries. *Tentative timeline:*

	The programme started in Q4 of 2022 (administrative decision) and the first results expected in Q3 of 2023. The programme is expected to be available at least until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 302 MEUR • National: 9 MEUR allocated • EU: 293 MEUR allocated through RRF
Expected impact and related timing:	150 000 individuals with at least basic digital skills until end of 2025

Measure 1A02M - Re-skilling and up-skilling in the tourism sector by the Ministry of Tourism

New measure	☐ yes x no
Short description of the measure	The purpose of the training programs is the acquisition of new skills (upskilling) and reskilling of the employees in the tourism sector as a necessary condition for the implementation of the policies and measures that they will allow the transformation of the sector's development model and, at the same time, improve its image in the post-coronavirus COVID-19 pandemic era. *Link to the target:* The measure will increase the digitally skilled population *Tentative timeline:* The measure will be available until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 45 MEUR • National: 21.6 MEUR allocated • EU: 23.4 MEUR allocated through RRF
Expected impact and related timing:	78 000 employees in the tourist sector with at least basic digital skills until end of 2025

Measure 1A03M - Teacher Training Actions

New measure	☐ yes x no
Short description of the measure	The "Teacher Training Actions" is part of the investment "Digital Transformation and Digitization of Education" focuses on the content, infrastructure and services provided and is part of an overall reform strategy regarding the updating of curricula, the rationalisation of the services provided and the monitoring of educational results. due to investment is divided into 4 axes as follows: 1. Digital Content in Schools 2. Digital Equipment in Schools 3. Professional development of teachers 4. Digital services in Schools and Universities In the context of the above, in the 3rd axis, the project for teacher training actions will be implemented. It is planned to train 120 000 teachers in total for the period 2023 – 2025 in digital services, in the development of digital skills and in the new educational content which will be developed in the context of axis 1 and the infrastructure / equipment that will be acquired in axis 2. *Link to the target:* The action contributes to the digital target as the teachers are a significant part of the Greek population. *Tentative timeline:* The programme started in Q4 of 2022 (administrative decision) and the first results expected in Q3 of 2023. The programme is expected to be available at least until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 24.79 MEUR • National: 4.79 MEUR allocated • EU: 20 MEUR allocated through RRF
Expected impact and related timing:	120 000 teachers with at least basic digital skills until end of 2025

Measure 1A04M - Adaptation of workers in private sector companies by upgrading their digital knowledge and skills, in specialties of the Blue Economy activities

New measure	☐ yes x no
Short description of the measure	The action focuses more on third sector sectors related to the blue economy (e.g. organisation and management of maritime transport of persons and goods, catering, travel agencies, tourism, etc.) and less on secondary sectors (shipbuilding, ship repair, desalination, marine energy production, etc.). The action concerns Training, Counselling, Certification in digital skills. *Link to the target:* The action contributes to the digital target by providing digital skills training to employees in the blue economy sector. *Tentative timeline:* The programme started in Q4 of 2022 (administrative decision) and the first results expected in Q3 of 2023. The programme is expected to be available at least until the end of 2027.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total:12.57 MEUR • National: X MEUR allocated • EU: X MEUR allocated through ESPA 2021-2027
Expected impact and related timing:	10 000 employees in the blue economy sector with at least basic digital skills until end of 2025

Measure 1A05M - Development of Digital Skills to conscripts

New measure	☐ yes x no
Short description of the measure	The action aims at the implementation of learning programs (reskilling & upskilling) and the certification of acquired skills by accredited certification bodies for the development of new skills and the acquisition of knowledge for young conscripts. The added value of the proposed action concerns the mitigation of the differences in the level of knowledge, abilities and skills required in each work subject, the certification specialised thematic modules of high importance for the technologies of the future, enhancing the performance

	and personal development of employees, enhancing the feeling of taking on more or complex responsibilities, quick adaptation to new needs and changing trends of the labour market. *Link to the target:* The action contributes to the digital target as the conscripts are a significant part of the Greek population. *Tentative timeline:* The programme is expected to start in Q4 of 2023 (administrative decision) and the first results expected in Q1 of 2024. The programme is expected to be available at least until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 39.66 MEUR ● National: 0 MEUR ● EU: 39.66 MEUR allocated through RRF
Expected impact and related timing:	It is expected that more than 35 000 conscripts will participate in the programme every year.

Measure 1A06M - Programmes for reskilling and upskilling of General Government public servants

New measure	☐ yes x no
Short description of the measure	The object of the measure is the retraining - upgrading of digital skills in the Public Sector, adapted for all levels (basic, advanced, special education), by public policy sector, educational level and sector. The aim of the Action is to accelerate the integration of new technologies and the digital transformation of the Public Administration, the further improvement of the provided public electronic services, the effective use of electronic tools and applications for teleworking and participation in distance education, as well as the promotion of mobility of public service executives. More specific the action is focused on: ● Upgrade of digital skills (upskilling) of executives and employees of the Public Sector (OTA) for local development, of the I.T.A. (Institute of Local Government) ● Development of digital skills of the human resources of the Public Administration for their necessary preparation for the utilisation of the new digital projects and services. Also, upgrading of digital skills (upskilling) in

	matters of utilisation and management of innovative digital technologies as well as cyber security, of executives of medium and high digital maturity, of the EKDDA The reskilling and upskilling concerns the employees of the General Government, including the executives of the OTAs, the medical and nursing staff of the Public Sector, as well as other special groups of public employees. *Link to the target:* The action contributes to the digital target as the public employees are a significant part of the Greek population. *Tentative timeline:* The programme started in Q2 of 2023 (administrative decision) and the first results expected in Q1 of 2024. The programme is expected to be available at least until the end of 2027.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 20 MEUR • National: 1 MEUR allocated • EU: 19 MEUR allocated through NSRF 2021-2027
Expected impact and related timing:	A large number of public employees is expected to participate in the reskilling and upskilling programmes until the end of 2027.

Measure 1A07M - Promotion of employment through Programs Public Beneficial Character - Training voucher

New measure	☐ yes x no
Short description of the measure	The object of the action is the provision of training programs for horizontal or specialised skills and the certification of the knowledge and skills that will be acquired by the beneficiary participants in the Program of Community Benefit in Municipalities, Regions, Regional Social Welfare Centers (RCCs)/ related bodies, Ministry Services and other agencies. Theoretical training program from 120-150 hours depending on the subject of the training program that will lead to the certification of the knowledge and skills acquired within the program. The thematic subjects of the theoretical training are the following: • Basic ICT Skills (1st level) • Basic ICT Skills (2nd level)

	• Basic ICT Skills (3rd level) • Organization & Operation of Public Services, Organizations & Businesses • Environmental Protection and Product Recycling • Digital Social Networking Skills with applications in the workplace (Social Media) •Secretarial support The action will be implemented with the training voucher system. *Link to the target:* The measure contributes to the target by providing basic digital skills training programmes to a large part of the population. *Tentative timeline:* The programme started in Q2 of 2023 (administrative decision) and the first results expected in Q4 of 2023. The programme is expected to be available at least until the end of 2027.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 19.8 MEUR ● National: X MEUR allocated ● EU: X MEUR allocated through NSRF 2021 - 2027
Expected impact and related timing:	In total, approximately 19 146 beneficiaries are expected to benefit, who will be trained. This number is based on the number of beneficiaries up to 54 years of age who are required to participate in this action, as well as the number of over 55 years of age who participate based on their choice during the first individual consultation.

Measure 1A08M - National Academy for Digital Skills

New measure	☐ yes x no
Short description of the measure	The National Academy of Digital Skills (NADS) is an initiative of the Ministry of Digital Governance with the aim of developing and gathering educational content on an online platform. It is available from May 2021 with free and open access for everyone who wants to improve, strengthen and develop their digital skills. For the first time, citizens are given the opportunity to choose and follow suitable open training programs in IT and communication technologies for free, in order to acquire basic as well as advanced digital skills. It also accelerates the digital literacy of citizens by mitigating educational, economic and social inequalities. By improving their level of digital skills, citizens can: - to know how to use the digital services of the Greek government,

	- to utilise ICT in all aspects of their daily life and - to enrich their already existing knowledge to become more attractive in the labour market. In the context of the National Academy of Digital Skills, among others, a set of activities and actions aimed at the development and creation of an integrated electronic platform for uniform and direct access to educational content for broad population groups of citizens, professionals, students, etc. *Link to the target:* The NADS provides a digital platform for upgrading the basic digital skills (among others) to all citizens. *Tentative timeline:* The programme started in Q2 of 2021 and it is expected to be available at least until the end of 2030.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 8.6 MEUR • National: X MEUR allocated • EU: X MEUR allocated through NSRF 2021 - 2027
Expected impact and related timing:	The National Academy of Digital Skills aspires to play an active role in the field of digital literacy, constantly enriching the educational content available to citizens. It has more than 290 basic and advanced level courses corresponding to over 1 800 hours of training. Also, the courses are offered by organisations with recognized academic and educational prestige, such as Greek academic institutions, well-known international companies, banking institutions, telecommunications providers and digital education organisations.

Measure 1A09M (New) - Development of Model Digital Centers in all regions

New measure	x yes ☐ no
Short description of the measure	The aim of the Model Digital Centers is to strengthen the digital skills of the general population of all ages, including special population groups with particular characteristics. The Standard Digital Centers that will be implemented and will operate are expected to be 15 throughout the country and will have the active support of the Local Government through the Central Union of Municipalities and Communities (KEDE) and the Chambers with the cooperation of the Central Union of Chambers of Greece. The initiative also includes the strategy of providing opportunities and educational opportunities to vulnerable social groups of the population that are at risk of being excluded economically, socially and culturally, so that they can use the applications and

	services for the service of citizens provided through gov.gr and to gradually join the new digital era. The educational material will also be available on e-learning platforms (through the Digital Citizens Academy), so that it is immediately accessible to as many interested parties as possible. The object of the project is the development of partnerships for the development of those educational, advisory, informative and supportive actions in population groups such as senior citizens, people with disabilities, refugees, etc. *Link to the target:* *XXX* *Tentative timeline:* The programme is expected to start in Q1 of 2024 and the first results expected in Q3 of 2024. The programme is expected to be available at least until the end of 2030.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: X • National: X MEUR allocated • EU: X MEUR allocated through NSRF 2021 - 2027
Expected impact and related timing:	The Development of Model Digital Centers in all regions will strengthen the digital skills of the general population of all ages, including special population groups with particular characteristics like oldest population, population in remote areas

Measure 1A10M - New Strategy for Lifelong Skilling: Modernising and Upgrading Greece's Upskilling and Reskilling System

New measure	x yes ☐ no
Short description of the measure	A New Strategy for Lifelong Skilling: Modernising and Upgrading Greece's Upskilling and Reskilling System puts in place a new governance providing an incentives-compatible framework of training provision in Greece. The reform envisages an outcomes-based skilling-reskilling system, providing the right incentives for trainees and training providers, as well as an error-proof certification framework. By linking the financial remuneration of providers to training and labour market outcomes, as well as ensuring high certification standards, the reform provides incentives promoting adoption and scaling up of best practices, resulting in systemic improvement of training and labour market outcomes. *Link to the target:*

	The reform is linked to a horizontal upskilling programme aiming to develop the skills - mainly digital - of the working age population and build a more sustainable workforce. *Tentative timeline:* The programme started in Q4 of 2023 and it is expected to be available at least until the end of 2030.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 40 MEUR • National: 1.2 MEUR allocated • EU: 38.8 MEUR allocated through RRF
Expected impact and related timing:	The reform is linked to a horizontal upskilling programme aiming to develop the skills - mainly digital - of the working age population and build a more sustainable workforce.

Action 1A01A - Cisco International Center of Digital Transformation and Digital Skills

New measure	☐ yes x no
Short description of the measure	The International Center for Digital Transformation and Digital Skills was established in June 2020 by Cisco in collaboration with the Municipality of Thessaloniki, the Ministry of Digital Governance and the Ministry of Development and Investments, under the auspices of the Office of the Prime Minister in Thessaloniki. Its purpose is to enhance innovation, accelerate digital transformation, enhance digital skills as well as promote digital culture. More specifically, at the Center, Cisco with the support of the Municipality of Thessaloniki, its partners, the academic community and start-ups, will create teams that will analyse, design and propose solutions that concern any area of economic and social life. At the same time, the Center will have a training department - Cisco Networking Academy (www.netacad.com) - as well as STEM and Robotics departments, which aim to enhance the digital skills of pupils, students and professionals who want to acquire specialisation equipment, which are in now days required by the labour market. The Digital Skills Program at the Center includes the Networking Academy, STEM, and Robotics departments to help pupils, students, and professionals acquire specialisations and stay up-to-date with the latest digital technologies in a rapidly evolving landscape. In today's job market, it's more important than ever to stay ahead of the curve and enhance your skills.

	Link to the target: The Cisco International Center of Digital Transformation and Digital Skills offers digital skills programmes to all citizens in the area of Thessaloniki. *Tentative timeline:* The programme started in Q2 of 2020 and it is expected to be available at least until the end of 2030.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: X MEUR •
Expected impact and related timing:	Every year more than 125 citizens participate in digital skills programmes.

Action 1A02A - Microsoft initiative «GR for Growth»

New measure	☐ yes x no
Short description of the measure	"GR for GRowth" foresees plans to re/upskill approximately 100 000 people in Greece addressed to public sector, business and IT professionals, educators, and students so as to support the digital transformation of public and private organisations in the country. This ambitious goal will be achieved over the next five years, through a three-pronged skilling program that includes online and physical courses and workshops. *Link to the target:* *Tentative timeline:* The programme started in Q4 of 2022 and it is expected to be available at least until the end of 2027.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: X MEUR •

Expected impact and related timing:	It is expected that approximately 100 000 people will participate in the digital skills programmes.

Policy 1A01P - National Coalition for Digital Skills and Jobs (NC)

New measure	☐ yes x no
Short description of the measure	The National Alliance for Digital Skills and Employment, as a member of the European Alliance for Digital Skills and Employment, is part of the General Secretariat for Digital Governance and Simplification of the Ministry of Digital Governance and has as its central mission to improve digital skills, increase the employment of the population and support digital transformation at national, regional and local level in the context of the government's broader skills policy. The mission of the National Coalition includes: ● the adaptation, at national, regional and local level, of the political and operational priorities of the European Union (EU) and the EU institutions in matters of digital skills, ● submitting proposals to the Ministry of Digital Governance in matters of planning and updating the national strategy for digital skills, ● supporting the networking and cooperation of the members of the National Alliance, in order to plan and implement actions to upgrade the digital skills of the population and strengthen employment, ● the exchange of know-how and best practices between the members of the National Alliance and Alliances of other EU member states, as well as the exchange of know-how and best practices in the context of related initiatives of third countries, ● the formulation of project proposals, co-financed or not, to strengthen the digital skills of the population, ● the organisation of events, conferences and workshops to promote digital skills policy, ● cooperation with corresponding initiatives of the private sector ● its participation, if requested by the relevant body, in the certification of educational structures or training structures with the object of digital skills, training or training programs with content of digital skills and digital knowledge and skills of the trainees *Link to the target:* The National Alliance for Digital Skills and Employment supports and coordinates several actions regarding the upgrade of basic digital skills of the population. *Tentative timeline:* The programme started in Q1 of 2020 and it is expected to be available at least until the end of 2027.

Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: X • National: X MEUR allocated • EU: X MEUR allocated through RRF
Expected impact and related timing:	The National Alliance for Digital Skills and Employment supports and coordinates several actions regarding the upgrade of basic digital skills of the population.

Measure 1B01M - Vocational Education & Training Reform

New measure	☐ yes x no
Short description of the measure	The overall aim of this reform is to effectively address current skills mismatch and create a direct link between qualifications and jobs. To this end both the reforms of OAED (namely "Labour force skilling, reskilling and upskilling through a reformed training model for the working population" and "Strengthening the apprenticeship system") and the reform and investments of the Ministry of Education and Religious Affairs through RRF will further upgrade the Vocational Education and Training (VET) in Greece, create opportunities to respond effectively to unemployment and address labour market imbalances, while contributing to making the VET system an appealing educational pathway. The aforementioned projects also invest in the digital transformation of the VET system and the provision of the required equipment and tools that will help meet the shifts in skill demand and supply that have been reflected in the inability of employers to fill their vacancies with people that have the right skills. Towards this goal the Horizontal Upskilling Programme will further support the undertaking policies to reduce skills mismatch. *Link to the target:* The reform will address current skills mismatch and cover a significant part of the ICT specialist's gap. *Tentative timeline:* The programme will start in Q4 of 2023 and it is expected to be available at least until the end of 2025.
Budget allocated or planned and, if relevant, other resources –	Total: 131 MEUR • National: 4 MEUR allocated • EU: 127 MEUR allocated through RRF

including human resources - allocated]	
Expected impact and related timing:	A strengthened professional and vocational training system will strengthen the Greek economy and help to alleviate the social costs of the economic downturn. At the same time, it will facilitate the supply of new, relevant and rewarding skills as a response to the increased demand of the labour market. Innovation, economic growth and competitiveness of the workforce are the expected lasting outcomes of investing in revamping labour force skilling, reskilling and upskilling. To this end, it is expected that the reform will cover a significant part of the ICT specialist's gap.

Measure 1B02M (New) - Creation of new departments and courses in Greek Universities for ICT studies

New measure	x yes ☐ no
Short description of the measure	It is proposed to create new undergraduate & postgraduate departments in ICT subjects with high demand in Greece (e.g. Programming, IT Project Management, Cybersecurity, etc.), which will be determined jointly between Universities and bodies representing businesses. This will need a redistribution of the budget in Tertiary education in favour specialties with significant deficiencies as well as the maximum possible coverage of places admitted to existing departments. Individual actions proposed are: a) Creation of undergraduate study programs in high demand ICT subjects → Taking into account Law 4957/2022, the new study programs could have three-year duration (6 semesters of theoretical training) and mandatory practical training (1 extra semester). The expected impact is judged as high (quantitatively) in the long term results, given that graduates will be able to join the labour market in a time horizon of approximately 4-5 years from the establishment of the departments. b) Creation of postgraduate study programs in high demand ICT subjects → expected medium (quantitatively) short-term impact, as graduates will be able to join the labour market in about 2 years. Also qualify: a) the creation of professional postgraduates, in collaboration with companies that want to enhance skills of their employees, and b) strengthening the provision of scholarships to postgraduate students, based on criteria (e.g. excellence, financial, social). In addition, there will be incentives for Greek ICT academics to be repatriated and evaluated in a general number of Universities departments in terms of the needs of the Greek labour market. *Link to the target:* The new departments and courses in Greek Universities for ICT studies will produce more ICT specialists. *Tentative timeline:* The measure could start at 2026
Budget allocated or	Total: • National: MEUR allocated

planned and, if relevant, other resources – including human resources - allocated]	● EU: MEUR allocated through
Expected impact and related timing:	● Enhancing the faster absorption of graduates undergraduate (3-year programs) ● Covering the needs of companies, with an increase in the number of ICT specialists by graduates of ICT schools, with a medium impact of graduate and high impact undergraduate degrees ● Improving the quality of studies, through cooperation with institutions companies (e.g. SEPE) for the formulation of the programs

Measure 1B03M (New) – Increase of the ICT training courses

New measure	x yes ☐ no
Short description of the measure	Currently, a number of training programs are implemented by Universities, P.E.C. (Private Educational Centres), Public vocational training Centres and private schools. Also, co-financed training programs are offered by organisations, such as Public Employment Agency, in collaboration with other bodies (e.g. P.E.C., SEPE, ESEE, etc.), as well as certifications from National Organisation for the Certification of Qualifications and Vocational Guidance (EOPPEP), ISO. In this context, it is proposed the further promotion of training programs for workers and the unemployed in subjects ICT in high demand, with a particular focus on graduates from public and private schools in science, maths, economics subjects: ● Central Planning by the Business Associations of each sector (e.g. SEPE for ICT objects), which covers both the private and the public sector in terms of the required specialties. ● Possibility of practical training, 3 months (in addition) of theoretical training, for the unemployed. For specific, highly focused items, there should be a commitment from the companies who will participate in the provision of paid internship positions for the beneficiaries. ● Financing of certifications by the State, as well as recognition by the State international product certifications. *Link to the target:* The new ICT courses will produce more ICT specialists. *Tentative timeline:* The measure could start at 2024
Budget allocated or planned and, if relevant, other resources –	Total: X ● National: X MEUR allocated ● EU: X MEUR allocated through

including human resources - allocated]	
Expected impact and related timing:	• Significant coverage of the needs of companies, with an increase number of ICT specialists from other sectors, suitably trained in ICT specialties with a high demand • Improving the work readiness of experts, through reskilling (employees of other branches) & upskilling (in ICT), with aimed at creating new employment prospects • Strengthening the ecosystem, through reducing unemployment & increase in skilled work

Measure 1B04M - Industrial PhDs

New measure	☐ yes x no
Short description of the measure	The measure "Industrial PhDs" aims to create links between private companies and University Institutions through industrial research. It also aims to solve problems in the productive sector through focused industrial research as well as the corresponding transfer of know-how from Greek universities to businesses. In the context of the project, the Highest Educational Institutes in collaboration with Businesses/Industries, are invited to submit proposals to implement an "Industrial PhD" together with a PhD Candidate. The funding of research projects aims to carry out industrial or applied research. *Link to the target:* The measure aims to strengthen the digital capabilities of education and modernise vocational education and training. *Tentative timeline:* The programme started in Q1 of 2023 and it will be available until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 36.2 MEUR National: 15.9 MEUR allocated EU: 20.3 MEUR allocated
Expected impact and related timing:	It is expected that a significant number of PhD Candidate will participate to programme and upgrade their IT capabilities to join the IT specialist workforce.

Action 1B01A - The "Rebrain Greece" initiative

New measure	☐ yes x no
Short description of the measure	"Rebrain Greece", is an interdisciplinary and inter ministerial initiative concerning the digital transformation in the Greek labour market and the reverse of the brain drain phenomenon. The "Rebrain Greece" connects highly skilled executives inside and outside Greece with highly skilled positions/companies operating in Greece. The purpose of the mechanism for the liaison of Experts and Researchers (EEE) with Companies operating in Greece is the interconnection of the two parts of the labour market, the valuable human capital and the companies. This is now achieved digitally by a platform, through the publication of the requested High Specialization positions with ESCO coding by the companies in the Greek territory and the expression of interest for a specific such position by the EU. Through the digital interconnection of the platform it is achieved the strengthening of the competitiveness and extroversion of the Greek labour market in a hybrid way, since in this way intangible human capital of high speeds and cognitive power is integrated in the Greek ecosystem, which transfers know-how work experience, high management capacity customer portfolios and a forward-looking culture and business mindset (growth mindset) from abroad. *Link to the target:* The "Rebrain Greece" gives the tools to ICT specialists from abroad to link with the needs of the Greek ICT companies and join their workforce. *Tentative timeline:* The programme started in Q1 of 2020 and it is expected to be available at least until end of 2030
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: • National: MEUR allocated • EU: MEUR allocated
Expected impact and related timing:	It is expected that a large number of ICT specialists will participate in the programme and join the workforce of Greek companies.

Action 1B02A - The Project "Choose Greece"

New measure	☐ yes x no
Short description of the measure	The project "Choose Greece", concerning the repatriation of highly skilled Greeks working abroad, is the most emblematic initiative of Rebrain Greece. The project includes a wage subsidy scheme offered to Greek companies for hiring in total 500 young Greeks of high qualifications and scientific experience with a salary of 3 000 euros for a minimum duration of two years. *Link to the target:* The project "Choose Greece" provides incentives for ICT specialists to join the workforce of Greek ICT companies. *Tentative timeline:* The programme started in Q1 of 2020 and it is expected to be available at least until end of 2030
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: X MEUR ● National: MEUR allocated ● EU: MEUR allocated through RRF
Expected impact and related timing:	It is expected that a large number of ICT specialists will participate in the programme and join the workforce of Greek ICT companies.

Action 1B03A - Innovation Hubs and Data Centres by Private Sector

New measure	☐ yes x no
Short description of the measure	The last 5 years there has been a significant interest of large corporations like Microsoft and Google in investing in large scale infrastructures and Innovation Centres. Most of these private investments are now under implementation and it is expected to be fully functional in the next period. These private investments for technology infrastructures and innovation centres will increase the ICT specialist demand and create attractive ICT jobs for internal and external workforce. Example of such investments are: ● Microsoft GR for Growth initiative: Create a complex of data centres and technological business support, consisting of three (3) data centres in the Attica Region. ● Google Data Centers ● Lamda Hellix Data centres

	● Pfizer Center for Digital Innovation (CDI) in Thessaloniki. 240 employees (June 2021) ● PwC created the SAP Center of Excellence ● Deloitte Centers of Excellence in Thessaloniki and Patra" *Link to the target:* Private investments for technology infrastructures and innovation centres will increase the ICT specialist demand and create attractive ICT jobs for internal and external workforce. *Tentative timeline:* Most of the programmes started in Q1 of 2022 and it is expected to be available at least until the end of 2030.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 1 000 MEUR private investments
Expected impact and related timing:	It is expected that a large number of ICT specialists will be attracted by the ICT jobs created by the private investments.

Measure 1B01P - New Institutional Framework for Lifelong Learning and skills development

New measure	☐ yes x no
Short description of the measure	The policy measure "New Institutional Framework for Lifelong Learning and Development skills" is financed by the European Union – NextGeneration EU and concerns the primary/secondary legislation to modernise the ongoing system vocational training, so that it evolves into an effective system that is widely accessible, simpler and more flexible, and responsive to modern socio-economic needs, emphasises quality results and promotes the redefining and upgrading the skills of the country's workforce. The legislation will enforce the new Strategy for Lifelong Skilling. *Link to the target:* The new institutional framework will support the implementation of the new Strategy for Lifelong Skilling, in order to address the current skills mismatch and cover a significant part of the ICT specialist's gap.

	Tentative timeline: Most of the programmes started in Q1 of 2022 and it is expected to be available at least until the end of 2030.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 1.236 MEUR • National: 0.239 MEUR allocated • EU: 0.997 MEUR allocated through RRF
Expected impact and related timing:	The specific policy measure will support the reforms for developing the skills -mainly digital - of the working age population and build a more sustainable workforce

Policy 1B02P - Visa for Digital Nomads (Law 4825/2021)

New measure	☐ yes x no
Short description of the measure	The Visa for Digital Nomads is a granting of a residence permit to self-employed third-country nationals, freelancers or employees who work for employers or with clients outside of Greece remotely using IT and Communications Technologies. The licence is granted for a period of up to 12 months. *Link to the target:* The specific action provides incentives to ICT specialists to relocate to Greece and join the workforce of Greek ICT companies. *Tentative timeline:* The programme started in 2021 and it is expected to be available at least until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	The specific policy does not need any public investment to be implemented.
Expected impact and related timing:	It is expected that a large number of ICT specialists will participate in the programme and join the workforce of Greek ICT companies.

A.2 Digital Decade objective: Secure, resilient, performant and sustainable digital infrastructures

Measure 2A01M - Ultra-Fast Broadband - PPT Project

New measure	☐ yes x no
Short description of the measure	The project "Ultra-Fast Broadband Infrastructure" (UFBB) is the largest telecommunications infrastructure project that has been announced in Greece, and one of the largest Public-Private Partnership (PPP) projects in Europe. It envisages the creation of telecommunication infrastructures that will ensure the possibility of ultra-highspeed Internet in areas that were not included in the planning of private investments. The implementation of the UFBB project is expected to contribute to the support and development of local businesses, the creation of new jobs and the support of decentralisation, through the reduction of the digital divide between urban and semi-urban areas. In total, it is estimated that about 830,000 households and businesses, in areas that were not included in the planning of private investments, will benefit from Ultra-Fast Broadband, ensuring the possibility of an Internet speed of up to 1Gbps. *Link to the target:* The programme will contribute to the expansion of the internet speed of up to 1Gbps to households in areas that were not included in the planning of private investments. *Tentative timeline:* The programme started in Q2 2023, and it will be implemented until 2027.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 870 MEUR • National: 35 MEUR allocated • EU: 265 MEUR allocated through NSRF 2021 - 2027 • Private: 570 MEUR
Expected impact and related timing:	It is estimated that about 830 000 households and businesses, including about 10 000 public buildings (schools, health centres, etc.), in areas that were not included in the planning of private investments, will benefit from Ultra-Fast Broadband, ensuring the possibility of an Internet speed of up to 1Gbps

Action 2A01A - Private investments by TELCO companies[113]

[113] (to be confirmed) the results of the analysis of the private investments mapping will be available by end of 2023

New measure	☐ yes x no
Short description of the measure	All the private operators in Greece announced big investment projects for the upgrade of telecommunications networks in Greece. At the heart of these investments are fibre optic networks to the home (Fibre To The Home – FTTH). More specific the investments are: ● COSMOTE investments for Fibre to the Premises – FTTP with a budget of 3 000 MEUR ● Vodafone investments for Fibre to the Premises – FTTP with a budget of 600 MEUR ● Wind investments for Fibre to the Premises – FTTP with a budget of 2 000 MEUR *Link to the target:* The investments will contribute to the increase of the number of FTTH network connections in Greece. *Tentative timeline:* Most of the investments will be implemented until the end of 2030.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 5 600 MEUR ● Private: 5 600 MEUR
Expected impact and related timing:	It is expected that after the investments more than 5M network termination points will provide 1Gbps internet speed.

Action 2A02A - Auction of the 5G spectrum

New measure	☐ yes x no
Short description of the measure	The auction for the 5G spectrum was concluded by the National Telecommunications and Postal Commission in 2020. The successful completion of the auction with the award of the 5G spectral areas is expected to offer significant benefits for the electronic communications market in Greece, enabling the development of new products and services for the benefit of the consumer, but also opening the way for the implementation of significant investments in critical infrastructures. The cumulative benefit is estimated to be multiple, as the development of 5G networks is expected to radically affect a wide range of dimensions of economic and social life, accelerating the digital transformation of the country. *Link to the target:*

	The auction for the 5G spectrum was the first step for the development of the 5G networks in the country. *Tentative timeline:* The auction for the 5G spectrum concluded by the end of 2020 and companies with the respective licence will invest in the 5G infrastructures and services until the end of 2027.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 372 MEUR • Private: 372 MEUR
Expected impact and related timing:	Based on the conditions of the licences, by the end of 2023 telecommunications providers must provide access to 5G services to at least 60% of the population. This six-year figure expands to 94%, and as part of the government's strategy to balance infrastructure development and avoid blockades, provision has been made for the provision of 5G service by at least one operator in 42 remote areas, both at the border and inland.

Action 2A03A - Phaistos Investment Fund

New measure	☐ yes x no
Short description of the measure	The Phaistos Investment Fund is an innovative initiative supported by the Greek state and private investors and focuses on technological investment opportunities in sectors of the 4th industrial revolution that benefit from 5G and related technologies. The goal of the Phaistos Investment Fund is to promote the next generation of investment and entrepreneurship, as well as to promote a profitable and sustainable digital technology market in Greece. *Link to the target:* The fund will support Greek business and other legal entities to develop products, solutions, and services for the 5G industry. *Tentative timeline:* The investment fund was created in 2020 and it is active until today.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: X MEUR • National: X MEUR allocated • EU: X MEUR allocated
Expected impact and related timing:	The portfolio of the Phaistos Investment Fund has 6 businesses in the area of 5G industry.

Action 2A04A – Smart Readiness Programme

New measure	☐ yes x no
Short description of the measure	The "Smart Readiness" Program grants the implementation of works related to the installation of infrastructure that will facilitate the transformation of a building into a "smart" one, as well as its interconnection with utility networks (electricity, natural gas) through new "smart" meters. For this purpose, the "Smart Readiness" Program will provide checks (Vouchers) that will be allocated to cover part of the cost of the above works, the nominal value of which will be determined according to the type of work to be carried out and the special characteristics of the buildings. *Link to the target:* The Smart Readiness Program will address the problem of lack of the necessary infrastructure in existing buildings and acts in addition to another envisaged action (Gigabit Voucher) in order to remove obstacles that limit citizens' access to ultra-high speed broadband services. *Tentative timeline:* The programme launched in 2023 and it will be available until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 100 MEUR EU: 100 MEUR allocated through RRF
Expected impact and related timing:	The Smart Readiness Program comes to address the problem of lack of the necessary infrastructure in existing buildings and acts in addition to another envisaged action (Gigabit Voucher) in order to remove obstacles that limit citizens' access to ultra-high speed broadband services. In addition, upgrading a building's infrastructure to support ultra-high-speed broadband services allows work to be carried out in parallel to facilitate interconnection with utility grid smart meters and the installation of sensors aimed at reducing the environmental footprint of buildings. most basic communal facilities of the buildings.

Policy 2A01P - Law 4727/2020, transposing the EECC Directive to the national legislation

New measure	☐ yes x no
Short description of the measure	According to the provisions of Law 4727/2020, transposing the EECC Directive to the national legislation, the following decisions were issued during the last two years: *i.* Ministerial decision on the content of the universal service, the "reasonable" universal service application, as well as the criteria and conditions for the designation of the universal service provider. The broadband access is defined to Minimum nominal download speed 10 Mbps and upload speed 1Mbps and actual download speed not less than 4Mbps. Furthermore, the universal service provider is under obligation to provide access without extra cost for the end user if the connection point is within 200m from the closest distribution point of the cable network....." ii. Ministerial Decision setting simplified procedures for the implementation of low impact works for telecommunications infrastructure deployment. iii. Ministerial decision establishing an information system acting as Broadband Map and Telecom Infrastructures Cadastre *Link to the target:* The legal framework will facilitate and expedite the development of the broadband access market. *Tentative timeline:* The law is in effect since 2020
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	
Expected impact and related timing:	The legal framework will protect consumers regarding broadband access and create a healthy competitive environment.

Action 2B01A - Think Silicon acquired by Applied Materials, a leading company in the semiconductor industry

New measure	☐ yes x no
Short description of the measure	Think Silicon is a leading provider of ultra-low power GPU IP for embedded systems. Think Silicon was first funded by Metavallon (Equifund fund) and then acquired by Applied Material Company.

	Link to the target: Think Silicon is a Greek company in the semiconductors industry. *Tentative timeline:*
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 7.7 MEUR • Private: 7.7 MEUR allocated
Expected impact and related timing:	It is expected that more companies like Think Silicon will be involved in the semiconductors industry.

Action 2B02A - Participation in the Joint Undertaking (JU) of the European Partnership for Key Digital Technologies - Key Digital Technologies Joint Undertaking / KDT-JU"

New measure	☐ yes x no
Short description of the measure	The KDT-JU aims to strengthen the Union's strategic autonomy in electronics components and systems to support the future needs of vertical sectors and the economy in general. The ultimate goal is to contribute to doubling the value of designing and manufacturing electronic components and systems in Europe by 2030. The specific action concerns the submission of funding applications for the projects that were evaluated and selected for funding by the Joint Undertaking for Key Digital Technologies (Key Digital Technologies – Joint Undertaking / KDT-JU) in the context of its first (2021) and second (2022) announcement. Specifically, in the context of the first announcement, 6 projects were selected for funding in which 17 Greek organisations participate and in the context of the second announcement 6 projects were selected in which 15 Greek organisations participate. *Link to the target:* The action will support the research and production of electronic components in the semiconductors industry. *Tentative timeline:* The programme started in Q4 of 2022 and it will be available until the end of 2027

Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 13.6 MEUR EU: 13.6 MEUR allocated
Expected impact and related timing:	It is expected that the Greek organisations that will participate to the programme will develop designing and manufacturing capabilities in the semiconductor industry.

Action 2B03A – Actions for Chips JU

New measure	☐ yes x no
Short description of the measure	The Chips Joint Undertaking is the next stage in the European Commission's effort to reinforce the European semiconductor ecosystem and Europe's technological leadership by bridging the gap between research, innovation and production thereby facilitating the commercialisation of innovative ideas. It constitutes the main implementer of the Chips for Europe initiative with an expected total budget of 15.8 billion Euros until 2030. Greece is willing to actively participate in the relevant calls at a national level and has already undertaken action to reserve 6M€ for 2024 through NSRF programs, as discussed during the 16th meeting of the Chips JU Governing Board (6th December 2023). Although the Work Program hasn't been yet finalized, it is expected that the national call will follow the general concepts of the KDT-JU one, albeit with several enhancements currently under discussion with the Governing Board aligned with the forthcoming Strategic Research and Innovation Agenda 2024, such as revised methods and tools, AI support, enriched quantum technologies and emphasis on sustainability. *Link to the target:* The action will support the research and production of electronic components in the semiconductors industry. *Tentative timeline:* Participation in the programme is expected to start in Q4 of 2024 and implementation of actions are expected until 2030.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 6 MEUR to be allocated through NSRF 2021-2027 (pending approval)

Expected impact and related timing:	It is expected that the Greek organisations that will participate to the programme will further enhance the designing and manufacturing capabilities in the semiconductor industry.

Action 2C01A – Project aerOS (Autonomous, scalablE, tRustworthy, intelligent European meta Operating System for the IoT edge-cloud continuum)

New measure	☐ yes x no
Short description of the measure	aerOS aims at transparently utilising the resources on the edge-to-cloud computing continuum for enabling applications in an effective manner while incorporating multiple services. The overarching goal of aerOS is to design and build a virtualized, platform-agnostic meta operating system for the IoT edge-cloud continuum. *Link to the target:* Laboratories/Scientific Institutions/ Edge-to-Cloud Data Services *Tentative timeline:* 2022-2025
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Work programme: Horizon Europe Democritos budget 552 500 €
Expected impact and related timing:	aerOS will enable distributed computing and storage, by orchestrating services on heterogeneous (hardware) nodes running various operating systems.

Action 2C01M – Perform needs analysis and maturing actions to support the deployment of climate-neutral highly secure edge nodes

New measure	☐ yes x no
Short description of the measure	Greece will investigate the development of edge technologies, the needs, the use cases and enablers that are critical for strengthening the position of the national industry in next-generation edge technologies. We will initially

	focus on telecommunication application areas in access, transport and core networks, that require many of the computing functions to be executed close to the user and we will estimate the number of edge nodes that are needed to reduce data traffic and its associated carbon footprint. Key driver technologies such as AI/ML in Data Center Design for Edge and Cloud will also be investigated, so as to distribute workloads in and outside the datacenters, but also to improve the visibility and control of the GHG emissions Work will include determination of criteria (such as geographic position, node capacity, infrastructure readiness), elaboration of an assessment model, validation case and maturation study. *Link to the target:* Laboratories/Scientific Institutions/ Edge-to-Cloud Data Services *Tentative timeline:* 2024-2025
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	0.5 MEUR
Expected impact and related timing:	The results of the study are expected to accelerate and coordinate the deployment of edge nodes in Greece by providing the required data and scientific basis to ensure optimum distribution and performance.

Action 2C02A - Project OASEES (Open Autonomous programmable cloud appS & smart EdgE Sensors)

New measure	☐ yes x no
Short description of the measure	OASEES aims to create an open, decentralised, intelligent, programmable edge framework for Swarm architectures and applications, leveraging the Decentralised Autonomous Organisation (DAO) paradigm and integrating Human-in-the-Loop (HITL) processes for efficient decision making. The OASEES vision is to provide the open tools and secure environments for swarm programming and orchestration for numerous fields, in a completely decentralised manner. *Link to the target:* Edge-to cloud Blockchain Services/ Decentralised computing *Tentative timeline:*

	2023-2025
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Work Programme: Horizon Europe Democritos budget: 835 000 €
Expected impact and related timing:	The OASEES project will deliver a European, fully open-source, decentralised, and secure Swarm programmability framework for edge devices and leveraging various AI/ML accelerators (FPGAs, SNNs, Quantum) while supporting a privacy-preserving Object ID federation process

Action 2C03A – Project ICOS (IoT to Cloud Operating System)

New measure	☐ yes x no
Short description of the measure	The ICOS project aims at covering the set of challenges coming up when addressing this continuum paradigm, proposing an approach embedding a well- defined set of functionalities, ending up in the definition of an IoT2cloud Operating System (ICOS). *Link to the target:* Edge-to-Cloud Data Services/ IIoT and ML *Tentative timeline:* 2022-2025
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Work programme: Horizon Europe Democritos budget: 468 375 €
Expected impact and related timing:	ICOS expects to design, develop and validate a meta operating system for a continuum, by addressing the challenges of: i) devices volatility and heterogeneity, continuum infrastructure virtualisation and diverse network connectivity; ii) optimised and scalable service execution and performance, as well as resources consumptions, including power consumption; iii) guaranteed trust, security and privacy, and; iv) reduction of integration costs and effective mitigation of cloud provider lock-in effects, in a data-driven system built upon the principles of openness, adaptability, data sharing and a future edge market scenario for services and data.

Action 2D01A - Research institute on Quantum Computing

New measure	☐ yes x no
Short description of the measure	New research institute on Quantum Computing announced to be established on National Centre of Scientific Research "Demokritos" The first institution will produce research that can be applied across multiple industry sectors, and it will set up interdisciplinary programs, graduate-school programs, and programs for public administration and business managers. *Link to the target:* The research institute will be active in Quantum Computing research. *Tentative timeline:* The Research institute on Quantum Computing was established in 2023.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: X • National: X MEUR allocated • EU: X MEUR allocated
Expected impact and related timing:	It is expected that the new institute will contribute to the research in the field of Quantum Computing.

Action 2D02A – Daedalos HPC

New measure	☐ yes x no

Short description of the measure	A hosting agreement has been signed between the EuroHPC Joint Undertaking and Greece where DAEDALUS, a new EuroHPC supercomputer will be located. DAEDALUS will be a mid-range supercomputer, able to perform more than 30 petaflops or 30 million billion calculations per second. The supercomputer will power new applications in a wide range of areas, such as engineering, chemistry, health sciences and will be used to visualise and solve scientific problems. It will advance science and boost the innovation potential of enterprises while improving the European citizens' quality of life. *Link to the target:* DAEDALUS supercomputer could facilitate the research in Quantum Computing *Tentative timeline:* DAEDALUS will be established in 2024
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 33 MEUR
Expected impact and related timing:	It is expected that the new supercomputer will contribute to the research in the field of Quantum Computing.

Action 2D03A - Aris HPC

New measure	☐ yes x no

Short description of the measure	Aris is a Greek initiative for a national high-performance super-computer. In April 2022, Greece signed the Inclusion of the Act to upgrade the national high-performance supercomputer ARIS (Phase A). This work is part of the 2014-2020 Attica programme for SMEs using ICT and is funded by the European Regional Development Fund (ERDF). *Link to the target:* ARIS supercomputer could facilitate the research in Quantum Computing *Tentative timeline:*
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 3.8 MEUR
Expected impact and related timing:	It is expected that the ARIS supercomputer will contribute to the research in the field of Quantum Computing.

Action 2D03A – HellasQCI project

New measure	☐ yes x no

Short description of the measure	HellasQCI, as part of the EuroQCI initiative, is co-funded by the European Union under the Digital Europe Programme grant agreement. This project on behalf of Greece, together with other EU Member States, the CSA project PETRUS and the European Commission will achieve the co-creation of the EuroQCI. HellasQCI architecture comprises of three metropolitan test sites located at major cities of Greece namely: HellasQCI-Central (Athens), HellasQCI-North (Thessaloniki) and HellasQCI-South (Heraklion-Crete). Each test-site is divided into Governmental and Industrial testbeds, which allow the project to investigate the field deployment of QKD technologies in a plethora of realistic scenarios and use cases addressing Public Services Security, Public Health, Critical Infrastructure and ICT sector. An additional Research testbed will allow the development of new quantum technologies, provide a sandpit for SME innovation, and offer Greece a futureproof extension towards Quantum Internet. It will also serve as a comprehensive training environment for technical, research staff and end users. For inter-test-site links and international connection with other EuroQCI members, HellasQCI will exploit three Greek observatories, which constitute a national asset and have been selected by ESA to be upgraded as Optical Ground Stations with QKD capabilities. The aim of HellasQCI is also to create a community from all interested national stakeholders, gather expertise and share knowhow on the application of quantum technologies. *Link to the target:* It is expected that the results of HellasQCI project will contribute to the developments in the field of Quantum Computing *Tentative timeline:* The project started in 2023 and will be concluded until 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 9.9 MEUR · National: 4.95 MEUR allocated · EU: 4.95 MEUR allocated by the Digital Europe Programme
Expected impact and related timing:	HellasQCI aspires to ensure that citizens and businesses have access to reliable digital services, creating added value for the Greek economy. At the same time, the infrastructure that will be created is expected to enhance the competitiveness of Greek companies active in cyber-security and quantum technologies and to help train the next generation of engineers in these fields.

Action 2D05A – Project PQ-REACT (Post Quantum Cryptography Framework for Energy Aware Contexts)

New measure	☐ yes x no
Short description of the measure	The main objective of PQ-REACT project is to design, develop and validate a framework for a faster and smoother transition from classical to post-quantum cryptography for a wide variety of contexts and usage domains, while leveraging Europe's most powerful Quantum infrastructure (IBM Quantum Computer from Fraunhofer FOKUS). *Link to the target:* KPI ecosystem/ KPI quantum communication/ KPI education/KPI dissemination *Tentative timeline:* 2023-2026
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Work programme: Horizon Europe EL budget: 1 506 250 €
Expected impact and related timing:	Among others PQ-REACT will develop a portfolio of tools for validation of post quantum cryptographic systems, that will allow users to switch to post-quantum cryptography, taking under consideration their individualities and various contexts and a wide variety of real world pilots, i.e., Smart Grids, 5G and Ledgers. The project will also foster a series of open calls for SMEs and other stakeholders to bring and test their PQC algorithms and external pilots on the PQ-REACT, Quantum Computing Infrastructure.

Action 2D06A - International M.Sc. Program in "Quantum Computing and Quantum Technologies"

New measure	☐ yes x no
Short description of the measure	The M.Sc. will provide postgraduate students with cutting-edge knowledge in Quantum Mechanics, Quantum Computing and Quantum Technologies. Organisers: The Department of Electrical and Computer Engineering, Democritus University of Thrace (DECE), and the Institute of Nanoscience and Nanotechnology of NCSR Demokritos. *Link to the target:* KPI ecosystem/ KPI quantum communication/KPI quantum simulation/ KPI education

	Tentative timeline: 2022 (ongoing)
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	
Expected impact and related timing:	Graduates of this program will be able to to program quantum computers and to develop novel quantum algorithms. They will also be able to.use and apply the acquired knowledge not only in science and research but also to tackle problems that companies face in their operation as well as to create new enterprises.

Action 2D07A – Project NOUS (A catalyst for EuropeaN ClOUd Services in the era of data spaces, high-performance and edge computing)

New measure	☐ yes x no
Short description of the measure	NOUS will develop the architecture of a European Cloud Service that allows computational and data storage resources to be used from edge devices as well as supercomputers, through the HPC network, and Quantum Computers *Link to the target:* KPI ecosystem/ KPI quantum communication/ KPI quantum computing *Tentative timeline:* 2024-2027
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Work programme: Horizon Europe Democritos budget: 651 875 €
Expected impact and related timing:	NOUS will be an Infrastructure-as-a-Service (IaaS)/Platform-as-a-Service (PaaS) cloud provider, harnessing edge computing and decentralisation paradigms to incorporate a wide array of devices and machines in its computational flow to provide leaps in Europe's capability to process vast amounts of data.

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A.3 Digital Decade objective: The digital transformation of businesses

Measure 3A01M - European Digital Innovation Hubs - EDIHs

New measure	☐ yes x no
Short description of the measure	The EDIHs are partnerships of research organisations with complementary specialisation, with the aim of supporting companies, especially businesses, SMEs and mid-caps, but also the public sector in their sector in their digital transformation. EDIHs are one-stop shops supporting companies and public sector organisations to respond to digital challenges and become more competitive. More specific EDIHs support companies to improve business/production processes, products, or services using digital technologies by: ● providing access to technical expertise and testing, as well as the possibility to 'test before invest' ● providing innovation services, such as financing advice, training, and skills development that are central to successful digital transformation ● helping companies tackle environmental issues, in particular the use of digital technologies for sustainability and circularity. A central coordination mechanism has been established to enhance synergies between EDIHs that will support the digital transformation of Greece and disseminate the latest the latest developments, particularly in areas such as high-performance computing (HPC), artificial computing (HPC), artificial intelligence (AI), cybersecurity, but also in other innovative and emerging and other innovative and emerging Key Enabling Technologies (KETs), in both the business and public sectors. Greece will participate in the European network with 7 nodes from which 4 of them will be funded with a total amount of € 9.3 million by the European Commission for three years, while 3 will participate in the network without European funding. The total 7 hubs in Greece are the following: •smartHEALTH, Precision Medicine and Innovative E-health Services. •DigiAgriFood, Digital Transformation and Green Transition of the Agri-Food Value Chain in Central and Northern Greece. •digiGOV-innoHUB, The Greek digital Government and Public Services innovation HUB. •SmartAttica-AtHeNAI, Smart Attica DIH, the Attica region – Greek Innovation hub for Artificial Intelligence in Energy and Environment, Supply chain and mobility, Culture and Tourism. •HEALTH HUB, Healthcare & Pharmaceutical Industry Transformation through Artificial Intelligence Digital Services – in collaboration with the Institute of Development and Entrepreneurship. •SYNERGiNN EDIH, Digital Innovation Hub of Western Macedonia. •EasyHPC, ecosystem for the ecological transformation and the advancement of the competitiveness of the Plastic Industry in the Regions of West & Central Greece.

	Link to the target: As mentioned before the EDIHs have the mission to support SMEs in their digital transformation journey and become more competitive by improving their business/production processes using edge technologies like artificial intelligence (AI) which is the one of three technologies required in Digital Target 3(a). *Tentative timeline:* In Q3 of 2022, the Ministry of Digital Governance announced the completion of the tendering procedure by the European Commission for the creation of the EDIHs and in Q2 of 2023 the EDIHs start to provide services to SMEs.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 34.3 MEUR • National: 25 MEUR allocated • EU: 9.3 MEUR allocated by the Digital Europe Programme
Expected impact and related timing:	It is expected that EDIHs will support more than 500 SMEs until end of 2025

Measure 3A02M - Programme "Development of Digital Products and Services"

New measure	☐ yes x no
Short description of the measure	Strengthening of private Businesses for the implementation of investment projects that cover the entire development cycle of digital products and services (new product development). This funding program emphasises the implementation by private IT companies of cloud services (SaaS, PaaS, IaaS) and the provision of vouchers to SMEs in order to make use of these cloud services. The products and services should be based on modern technologies and have as their goals (among others) the operation of new computing infrastructures and services for small and medium enterprises, the support of small and medium enterprises for the utilisation of Cloud infrastructures and services and the development of online software services. *Link to the target:* The programme provides financial assistance to Greek companies to develop products and services related to cloud computing services. *Tentative timeline:* The programme started in Q2 of 2022 and it is expected to be available at least until the end of 2025.
Budget allocated or planned and, if relevant, other	Total: 100 MEUR • National: 21 MEUR allocated • EU: 79 MEUR allocated through RRF

resources – including human resources - allocated]	
Expected impact and related timing:	It is expected that more than 1 000 SMEs will participate in the programme.

Measure 3A03M - Programme “Research - Create - Innovate” 2014 - 2020

New measure	☐ yes x no
Short description of the measure	The objective of the funding program “Research - Create - Innovate” is to connect research and innovation with entrepreneurship and to strengthen the competitiveness, productivity and extroversion of companies towards international markets, with the aim of transitioning to quality innovative entrepreneurship and increasing domestic value added. In addition, the aim of the programme is to strengthen Research and Innovation, which is fully aligned with the country's strategy to place innovation at the heart of a sustainable and resilient recovery from the pandemic, to accelerate the green and digital transition and ensure technological development of Greece. *Link to the target:* The SMEs participating in the programme will be supported to test and develop products and services related (among others) to new technologies like big data, artificial intelligence and cloud computing services. *Tentative timeline:* The programme started in Q2 of 2018 and it is expected to be concluded in 2023.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 650 MEUR • National: X MEUR allocated • EU: X MEUR allocated through NSRF 2014 - 2020
Expected impact and related timing:	More than XX participate in the programme and develop products and solutions related (among others) to new technologies like big data, artificial intelligence and cloud computing services.

Measure 3A04M – Programme “Research - Create - Innovate” 2021 - 2027

New measure	☐ yes x no
Short description of the measure	The programme is a continuation of the “Research - Create - Innovate” in the period 2021 – 2027. The objective of the funding program "Research - Innovate" is to connect research and innovation with entrepreneurship and to strengthen the competitiveness, productivity and extroversion of companies towards international markets, with the aim of transitioning to quality innovative

	entrepreneurship and increasing domestic value added. In addition, the aim of the programme is to strengthen Research and Innovation, which is fully aligned with the country's strategy to place innovation at the heart of a sustainable and resilient recovery from the pandemic, to accelerate the green and digital transition and ensure technological development of Greece. *Link to the target:* The SMEs participating in the programme will be supported to test and develop products and services related (among others) to new technologies like big data, artificial intelligence and cloud computing services. *Tentative timeline:* The programme will start in Q3 of 2023 and it is expected to be available until end of 2027
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 300 MEUR • National: X MEUR allocated • EU: X MEUR allocated through NSRF 2021 - 2027
Expected impact and related timing:	It is expected that more than XX will participate to the programme and develop products and solutions related (among others) to new technologies like big data, artificial intelligence and cloud computing services

Measure 3A05M – Programme "Smart manufacturing"

New measure	☐ yes x no
Short description of the measure	The programme provides funding of investment projects of very small, small and medium enterprises in the industry sector. Investment plans should aim to improve business resilience through upgrading digital production management and control systems, procurement of advanced and digitally controlled industrial equipment, digitization of interconnection systems throughout the supply chain, and production systems and technology that support digital transformation. In addition, the action will finance 5G high-speed network infrastructure, mechanical equipment, laboratory equipment and quality control equipment, ICT & software equipment, software licences, cloud licences, IT security services, product design, intellectual property, patents, costs certification, technical consulting services for the implementation of new IT and software infrastructures or for carrying out a feasibility analysis for the development of new smart products and services, staff and workforce training in the new Industry 4.0 technologies. *Link to the target:* It is expected that part of the investment projects will include the integration of new technologies like big data, artificial intelligence and cloud computing services in the production process of the business.

	Tentative timeline: The programme started in Q3 of 2022 and it will be available until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 75 MEUR ● National: 36 MEUR allocated ● EU: 39 MEUR allocated through RRF
Expected impact and related timing:	It is expected that a large number of SMEs will participate in the programme and will integrate new technologies like big data, artificial intelligence and cloud computing services in the production process.

Measure 3A06M - Digital Transformation of SMEs Programme

New measure	☐ yes x no
Short description of the measure	The programme of state aid actions "Digital Transformation of SMEs" aims to address the lag of Greek businesses in the adoption and integration of modern digital technologies in their production activity. Recognizing the different levels of digital and technological maturity of SMEs but also the different investment needs, the set of actions encourages, as a matter of priority, the implementation of targeted investment projects, as well as of comprehensive initial digital transformation investment plans that contribute to one extroverted, innovative, competitive and sustainable critical production of higher quality products and services added value. In particular: ● the Action 2 - Advanced Digital Transformation of SMEs concerns companies which aim to expand their digital and technological maturity with integrated investments in new ICT that will upgrade their competitiveness. It concerns business plans with a budget from €50 000 to €650 000 ● the Action 3 Edge Digital Transformation of SMEs: concerns businesses that have already integrated ICT in many of their operations and now seek to implement integrated investments in cutting-edge technologies or 4th industrial revolution solutions. It concerns business plans with a budget from €200.001 to €1 200 000 *Link to the target:* The Action 2 and 3 of the Programme "Digital Transformation of SMEs" promote the use of edge technologies in order to provide higher quality products and services by the SMEs. It is expected that part of the investment projects will include the integration of new technologies like big data, artificial intelligence and cloud computing services in the production process of the business. *Tentative timeline:*

	The programme started in Q4 of 2022 and it will be available until the end of 2027.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 210 MEUR • National: X MEUR allocated • EU: X MEUR allocated through NSRF 2021-2027
Expected impact and related timing:	It is expected that a large number of SMEs will participate in the programme and integrate new technologies like big data, artificial intelligence and cloud computing services in the production process.

Measure 3A07M – Programme "Industrial Data Platforms"

New measure	☐ yes x no
Short description of the measure	In the context of the Project, the financing of the development of innovators is foreseen services based on modern technologies aimed at the operation of new computers infrastructure and services for small and medium enterprises (Cloud Infrastructure & Services), the support of small and medium enterprises for the utilisation of CloudOnly infrastructures and services, the development of online software services (cloud Only Software framework) that will is available to SMEs based on its policies and standards GAIA-X initiative and the EU's International Data Spaces Association (IDSA). *Link to the target:* The aim of the programme is to support the utilisation of CloudOnly infrastructures and services by the business. *Tentative timeline:* The programme started in Q3 of 2022 and it will be available until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 145 MEUR • National: X MEUR allocated • EU: X MEUR allocated through RRF
Expected impact and related timing:	It is expected that a large number of SMEs will participate in the programme and utilise cloud computing services in their operating models.

Measure 3A08M – Research Excellence Partnerships

New measure	☐ yes x no
Short description of the measure	The project aims to provide incentives and support to university research groups of recognized excellence to conduct innovative collaborative research projects with private sector companies, in order to enhance knowledge transfer to the real economy and stimulate innovation within Greek universities. More specifically the Universities are invited to set up research clusters in the form of joint ventures with Businesses, for the development of innovative, internationally competitive R&D products and services, with an emphasis on cutting-edge technology areas, which will be applied in the real economy. *Link to the target:* The measure aims to more effectively link university research with the estimated needs of the national economy and society, with the ultimate goal of strengthening innovative entrepreneurship, improving the competitiveness of Greek businesses and domestic added value, as well as creating new highly qualified jobs. *Tentative timeline:* The programme started in Q1 of 2024 and it will be available until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources – allocated]	Total: 94.6 MEUR National: 2.4 MEUR allocated EU: 92.2 MEUR allocated
Expected impact and related timing:	It is expected that a significant number of SMEs will participate in the programme and increase their capabilities in cutting-edge technology areas.

Measure 3A09M – Multiannual Funding Plan for Research Infrastructures

New measure	☐ yes x no
Short description of the measure	Recognizing the importance of Research Infrastructures for the formation of the new development model which envisages the Greek state for the programming period 2014-20, the Greek authorities decided to strengthen the most important research infrastructures of the country and through co-financing of the European Structural Funds In this context the Research Infrastructures is not limited to building facilities and equipment, but includes human resources, know-how, networking and all the intangible elements required for their operation and full utilisation . In addition, the Research Infrastructures will facilitate the uptake of edge technologies by Greek enterprises utilising the results of the research activities. The Funding Plan includes 28 Research Infrastructures of national scope, mostly distributed. *Link to the target:* The strengthening of Research Infrastructures will facilitate the uptake of edge technologies by Greek enterprises utilising the results of the research activities. *Tentative timeline:* The programme started in 2016 and will be finalised until the end of 2023.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 73 M EUR
Expected impact and related timing:	It is expected that a significant number of SMEs will benefit from the programme and participate in the research activities and/or utilise the results of the research activities.

Measure 3A10M - Create – Expand -Upgrading the Infrastructures of the Research Centers under the supervision of GSRI

New measure	☐ yes x no
Short description of the measure	The project aims to strengthen the strategic choices of the Research and Technological Agencies, as well as the development course and the quality of the products and services offered. The continued action in critical areas of national priority, in which scientific excellence has been developed, as well as the strengthening of new directions, which will lead the Research centers in a development direction with international recognition. The measure aims to upgrade/expand the infrastructure of nine (9) Research Centers and the Medical Biological Research Foundation of the Academy of Athens to strengthen their research capacity and potential in important fields of science and technology. *Link to the target:* The measure aims to upgrade the research\scientific activity and therefore the competitiveness of the Greek economy. *Tentative timeline:* The programme started in Q1 of 2022 and it will be available until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 207.4 MEUR
Expected impact and related timing:	It is expected that a significant number of SMEs will benefit from the upgrade of the research\scientific activity

Policy 3A01P - National Strategy for the development of AI

New measure	☐ yes x no
Short description of the measure	The national strategy will set a framework for a holistic policy regarding the future development and application of artificial intelligence in Greece, which will be structured in a set of coordinated and interrelated actions, with the clear objective of maximising potential benefits and minimising potential costs of the economy and society. The national strategy will be a coherent country policy document on the development of artificial intelligence, which:

	• It will set out the conditions for the development of artificial intelligence, including the skills and trust framework, data policy and ethical principles for its safe development and use. • It will outline national priorities and areas for maximising the benefits of artificial intelligence to address societal challenges and economic growth. • It will analyse the necessary actions related to the above priorities and will propose horizontal interventions as well as at least one pilot application per policy area. *Link to the target:* The institutional framework set by the national strategy for AI will accelerate the use of AI tools and products by the Greek SMEs *Tentative timeline:* The National Strategy for the development of AI prepared in 2022
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 0.15 • National: X MEUR allocated • EU: X MEUR allocated
Expected impact and related timing:	It is expected that national strategy for AI will support the use of AI in products and services by the Greek SMEs

Policy 3A02P – Law 4961/2022: Emerging ICT technologies and enhancement of Digital Governance

New measure	☐ yes x no
Short description of the measure	The purpose of this policy is to create the appropriate institutional background for the legitimate and safe exploitation of the capabilities of artificial intelligence technology by public and private sector entities and to strengthen the resilience of public administration against cyber threats. *Link to the target:* The institutional framework set by the Law 4961/2022 will enable the use of ICT technologies and especially AI by the Greek SMEs *Tentative timeline:* The Law 4961/2022 is in force by the Q3 of 2022
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: X • National: X MEUR allocated • EU: X MEUR allocated
Expected impact and related timing:	The institutional framework set by the Law 4961/2022 will enable the use of ICT technologies and especially AI by the Greek SMEs

Measure 3B01M – Programme "Digital Tools for SMEs"

New measure	☐ yes x no
Short description of the measure	The programme is about strengthening the small and medium enterprises in the Greek territory, with the aim of adopting modern digital tools which will support the business processes. More specific businesses using new digital tools could: ● modernise their productive, commercial and administrative function, ● upgrade the way of communication and collaboration and introduce new forms of hybrid work (hybrid workplace), ● digitise electronic transactions with customers and partners, including e-commerce, ● increase the level of security and trust in electronic transactions. The Program will provide vouchers for the acquisition of new digital tools. *Link to the target:* The programme provides funding to Greek SMEs to increase their basic level of digital intensity. *Tentative timeline:* The programme started in Q2 of 2022 and it is expected to be available at least until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 180 MEUR ● National: 37.8 MEUR allocated ● EU: 142.2 MEUR allocated through RRF
Expected impact and related timing:	It is expected that approximately 100 000 SMEs will participate in the programme and increase their basic level of digital intensity.

Measure 3B02M – Programme "Digital Transactions"

New measure	☐ yes x no

Short description of the measure	The programme is about strengthening the small and medium enterprises in the Greek territory, with the aim of adopting modern digital tools which will support the processes of invoicing, issuing and handling tax documents and making electronic payments. The Program will provide vouchers for the acquisition of new digital tools. *Link to the target:* The programme provides funding to Greek SMEs to increase their basic level of digital intensity. *Tentative timeline:* The programme started in Q2 of 2022 and it is expected to be available at least until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 162 MEUR • National: 34 MEUR allocated • EU: 128 MEUR allocated through RRF
Expected impact and related timing:	It is expected that approximately 500 000 cash registers will be upgraded or replaced with computer-based solutions.

Measure 3B03M – Digital Transformation of SMEs Programme - Action 1: Basic Digital Transformation of SMEs

New measure	☐ yes x no
Short description of the measure	The Action 1 "Basic Digital Transformation of SMEs" of the programme "Digital Transformation of SMEs" is to meet the basic needs of SMEs with modern information and communication technologies (ICT). The Action encourages the implementation of targeted investment projects of basic digital transformation that contribute to an extroverted, innovative and competitive production of products or services of higher added value. *Link to the target:* The programme provides funding to Greek SMEs to increase their basic level of digital intensity. *Tentative timeline:* The programme started in Q4 of 2022 and it will be available until the end of 2027.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 90 MEUR • National: X MEUR allocated • EU: X MEUR allocated through NSRF 2021-2027

Expected impact and related timing:	It is expected that a large number of SMEs will participate in the programme and increase their basic level of digital intensity.

Measure 3B04M – Programme Digitalization Co-Financing Loans

New measure	☐ yes x no
Short description of the measure	The Digital Upgrade Loans Program was created to provide favourable terms for investment loans to SMEs, with a two-year partial interest subsidy and interest-free 40% of the capital, which will undertake the implementation of digitization investment projects and digital upgrading of their operations The aim of the measure is the support of small and medium-sized enterprises for the financing of business plans, in order to digitise and digitally upgrade their operations/activities with the aim of increasing their productivity, enlarging them and creating new jobs. *Link to the target:* The programme provides incentives to Greek SMEs to increase their basic level of digital intensity. *Tentative timeline:* The programme started in Q2 of 2023 and it will be available until the end of 2027.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 100 MEUR • National: X MEUR allocated • EU: X MEUR allocated
Expected impact and related timing:	It is expected that a large number of SMEs will participate in programmes and use investment loans to increase their basic level of digital intensity.

Policy 3B01P - Law 4887/2022 “Development Law - Greece Strong Growth”

New measure	☐ yes x no
Short description of the measure	The purpose of this Law is to promote the economic development of Greece by granting incentives to specific activities and sectors, in order to achieve the digital and technological transformation of businesses, the green transition, the creation of economies of scale, the support of innovative investments and those seeking to introduce of new technologies of “Industry 4.0” of robotics and artificial intelligence, the strengthening of employment with specialised personnel, the support of new entrepreneurship, the strengthening of less favoured regions of the country and regions that are part of the Just Development Transition Plan (SDG),

	the further strengthening of tourism and the improvement of competitiveness in sectors of high added value, of robotics and artificial intelligence, the strengthening of employment with specialised personnel, the support of new entrepreneurship, the strengthening of less favoured regions of the country, the further strengthening of tourism and the improvement of competitiveness in sectors of high added value. *Link to the target:* The Development Law provides incentives to Geek businesses to invest in the digital transformation and to increase their basic level of digital intensity. *Tentative timeline:* The law is in effect in 2022 and investment plans will be accepted until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: X • National: X MEUR allocated • EU: X MEUR allocated
Expected impact and related timing:	It is expected that a large number of SMEs will use the incentives of the Development Law in order to invest in their digital transformation and increase their basic level of digital intensity.

Measure 3C01M - Programme "Equifund"

New measure	☐ yes x no
Short description of the measure	The "EquiFund" is an initiative created by the Hellenic Republic in cooperation with the European Investment Fund (EIF). EquiFund is co-financed by the EU and national funds, as well as funding from the EIF. The "EquiFund" was the fund-of-funds programme in Greece, and by making commitments in professional and independently managed funds, aimed to strengthen the venture capital market in Greece, which can in turn provide entrepreneurs with the crucial financing they need to grow their businesses *Link to the target:* The "EquiFund" provides funding to innovative scale-ups through VCs to become the next unicorns in the Greek startup ecosystem. *Tentative timeline:* The programme started in 2018 and will be available until the end of 2023.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 292 MEUR • National: X MEUR allocated • EU: X MEUR allocated

Expected impact and related timing:	It is expected that a significant number of scales-ups will participate in the programme and grow in such a way to become unicorns.

Measure 3C02M (New) – Programme "InnovateNow"

New measure	☐ yes x no
Short description of the measure	The Hellenic Development Investment Bank (formerly TANEO), as the Equity Platform of the National Recovery and Resilience Plan "Greece 2.0", supporting the Greek ecosystem of innovative entrepreneurship announced the creation of a new investment tool, called "InnovateNow", in collaboration with the Recovery and Resilience Fund, the Ministry of Finance and the Ministry of Development and Investment. It is a fund-of-funds that aims to establish investment funds that will cover the entire financing chain of Greek startups with extroverted characteristics and significant scalability prospects. The total public financing through ETAE amounts to 100 million EUR, with the aim of establishing venture capital funds, with the participation of private investors. *Link to the target:* The programme provides funding to innovative scale-ups through VCs to become the next unicorns in the Greek startup ecosystem. *Tentative timeline:* The programme started in Q2 2022 and it is expected to be available until 2030
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 100 MEUR • National: X MEUR allocated • EU: X MEUR allocated
Expected impact and related timing:	It is expected that a significant number of scales-ups will participate in the programme and grow in such a way to become unicorns.

Action 3C01A - Elevate Greece

New measure	☐ yes x no
Short description of the measure	The Elevate Greece initiative supports startup companies. Elevate Greece is the National Startup Registry, which is the official record of startups in Greece. The Registry aims at monitoring startup entrepreneurship progress

	based on specific KPIs, at supporting them with benefits and incentives, and to operate as a dashboard of metrics to attract investors from Greece and abroad! https://elevategreece.gov.gr *Link to the target:* The action provides benefits and incentives to Greek startups to become scales-ups, from which a small percentage will have the possibility to become unicorns. *Tentative timeline:* The Elevate Greece was created in 2019 and will be active until 2030.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 2.85 MEUR • National: X MEUR allocated • EU: 2.85 MEUR allocated from RRF
Expected impact and related timing:	The Elevate Greece has a registry of 767 startups so far it is expected to have more than 1 000 startups registered until the end of 2025.

Policy 3C01P - Angel Investors Common Ministerial Decision 39937/2021

New measure	☐ yes x no
Short description of the measure	The Common Ministerial Decision 39937/2021 provides the legal framework and incentives to become an angel investor in the Greek startup ecosystem. *Link to the target:* The support to the Greek startup ecosystem will increase the possibility for new unicorns. *Tentative timeline:* The law is in effect in 2021 and will be available (if not changed or be replaced) until 2030.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	
Expected impact and related timing:	It is expected that the Common Ministerial Decision will increase the number of angel investor supporting the Greek startup ecosystem

A.4 Digital Decade objective: The digitalisation of public services

Measure 4A01M - Development of an integrated CRM system for the citizens and business

New measure	☐ yes x no
Short description of the measure	The measure is under the RRF reform ““Towards Public Administration’s “customer”-oriented services through simplification and improvement of processes, systems enhancements and compliance with European strategies and policies”. The CRM for the Greek Government will be the "Single digital infrastructure to serve citizens and businesses", constitutes the core of actions in the direction of providing integrated electronics services of Governance, with the aim of incorporating in it redesigned procedures so that the citizens and businesses to be able to carry out a significant part of the transactions with the Public Administration electronically, from anywhere, anytime and so on do anything in relation to the State (anything). The CRM that will be created will be able to maintain in a single system the single and complete (360) image of the trading natural / legal person and his relationship with the public, regardless of the specific information system or communication channel required for his transactions with the relevant Public Administration body (e.g. taxis, e-efka etc.). Accordingly, the Public Administration will have concentrated in one place all its interactions with the State, i.e. questions, requests, cases of the business partner regardless of the respective communication channel (telephone, physical presence, e-mail, etc.) or service provider . *Link to the target:* The CRM will increase the provision of online key public services for citizens and businesses to interact online with public administrations. *Tentative timeline:* The project started in Q2 2022 and it will be concluded until the end of 2025
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 73 MEUR • EU: 73 MEUR allocated through RRF
Expected impact and related timing:	It is expected that CRM will introduce the development of a holistic framework and the application of digital solutions in the public administration for the provision of “customer” oriented services to Greek citizens that are, by default, digital, cross-border and interoperable; user-centric, inclusive and accessible; open and transparent; trustworthy and secure, based on the once-only-principle

Measure 4A02M - e-EFKA Reforms

New measure	☐ yes x no
Short description of the measure	The e-EFKA (Single Pension Fund's) reforms include a set of measures for the digital transformation of the organisation and provision of digital services for the citizens and businesses. The key measures are: ● The implementation of an Integrated Information System that will cover the main, auxiliary insurance and lump-sum benefits, and all functional areas (registry, contributions, benefits, pensions), all insured groups (salaried, self-employed, farmers, State), as well as the employers, the audit work (fighting tax evasion), the certification and settlement of debts through the Insurance Debt Collection Center (KEAO), and the interface with the KEPA system (disability certification). At the same time, a single and complete basis of the insurance history will be gradually implemented, which will be the only source of data for the pension award process. ● The integration of the 88 different e-EFKA databases into an Integrated Information System, which will also communicate with the systems of the KEAO, with the aim of faster processing of insurance and pension cases. ● The digitization of the insurance life of all citizens, with the digitization of official documents and before 2002. *Link to the target:* The e-EFKA Reforms will implement the necessary simplification of processes and systems interoperability with key functions of the organisation in order to be able the provide online key public services for citizens and businesses *Tentative timeline:* The measure started in Q2 2022 and it will be concluded until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 81.5 MEUR ● EU: 81.5 MEUR allocated through RRF
Expected impact and related timing:	It is expected that e-EFKA Reforms will promote a new framework in terms of systems and processes that will increase the online interaction of citizens and businesses with public administrations.

Measure 4A03M - Digital Transformation of Justice (e-justice)

New measure	☐ yes x no
Short description of the measure	The digital transformation of Justice (e-justice) is implemented under the Component 4.3: Improve the efficiency of the justice system of the National Recovery and Resilience Plan (NRRP) "Greece 2.0". The digital transformation of Justice includes a comprehensive plan to introduce e-justice, including the upgrade of record keeping systems of the courts, the digitisation of archives, and the expansion of IT systems. More specific includes the following projects: ● Digitization of the Data Archives of the Ministry of Justice, which includes both the scanning of the data of the selected 368 Courts, as well as the registration of their basic data in a specialised information system, in order to create digital copies for the following reference points per court/ prosecution. ● Upgrade Record Systems & IT Justice Systems covering all elements of the e-justice (court record systems and upgrades to IT Justice systems OSDDY-PP, OSDDY-DD, Court of Audits, National Criminal Record) *Link to the target:* The e-justice will implement the appropriate investments in IT systems and archives digitization in order to provide online key public services to citizens and businesses. *Tentative timeline:* The measure started in Q2 2022 and it will be concluded until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 137 MEUR ● EU: 137 MEUR allocated through RRF
Expected impact and related timing:	E-justice is focused on modernising the function of the judicial system by putting in place actions such as the creation of Justice-cloud, the homogenisation of processes and several other actions for improving the interaction of citizens with the judicial system.

Measure 4A04M - Interoperability and web services development

New measure	☐ yes x no
Short description of the measure	The measure is under the reform "Interconnection and interoperability of registries, systems and services for data exchange between national public organisations" aims to develop a comprehensive framework and roadmap for the interconnection and interoperability of registries and services for data exchange between public organisations, in line with the new European Interoperability Framework (EIF). The

	reform is linked with a series of investments, namely “Interoperability and web services development”, “Next-Generation Interoperability Centre (KED)”, “eRegistries” and “Tourism Registry e-MHTE”. aiming at a radical enhancement of. *Link to the target:* The interoperability between IT systems in the public sector will support the provision of online key public services to citizens and businesses. *Tentative timeline:* The measure started in Q2 2022 and it will be concluded until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 27.9 MEUR ● EU: 27.9 MEUR allocated through RRF
Expected impact and related timing:	The interoperability between the Public Sector’s IT systems and data exchange will facilitate the provision of interoperable, personalised and user-friendly digital public services.

Measure 4A05M – Independent Authority of Public Revenue (IAPR) Reforms and Digitization

New measure	☐ yes x no
Short description of the measure	The measure supports the digital transformation of IAPR introducing an integrated IT environment (replacing TAXIS, TAXISnet, and Elenxis) to support tax and audit procedures for the IAPR’s personnel, citizens and businesses. The measure includes all required project studies, full database redesign and implementation, provision of data interfaces and the rollout of first phase subsystems (including tax registry, accounting). The project shall strengthen the capacity of the Independent Authority for Public Revenue to fulfil its obligations as a fully independent authority (in compliance with the Independent Authority for Public Revenue enabling law 4389/2016). *Link to the target:* *Tentative timeline:*
Budget allocated or planned and, if relevant, other resources – including human	Total: 70 MEUR ● EU: 70 MEUR allocated through RRF

resources - allocated]	
Expected impact and related timing:	The digital transformation of IAPR will enable the provision of new digital public services and the upgrade of existing digital services related to tax and audit procedures. The objectives of this measure is to concentrate all digital services to an integrated environment and improve services provided by IAPR to the taxpayer and for this reason the impact of this measure will affect the majority of citizens and businesses

Measure 4A06M – Digitalisation of Public Employment Service DYPA (formerly OAED)

New measure	☐ yes x no
Short description of the measure	The measure is implemented under the Component 3.1 "Increasing job creation and participation in the labour market" of the National Recovery and Resilience Plan (NRRP) "Greece 2.0". The digitalization of DYPA will improve the effectiveness of the organisation and foster the provision of digital services to the citizens. The measure is focused on the digital transformation of the DYPA, with the aim of increasing the efficiency of the services provided. Specifically, the investment provides for the digitization of the DYPA's archives, the purchase by the DYPA of some new information systems, both web applications and b) a highly sophisticated and state-of-the-art matching tool that will help DYPA to optimise the supply and demand matching process work. The above investment will lead to a better data management and decision-making system, maximising resources and greater customer satisfaction for native applications, as well as redesigning some of its current operating systems. The measure also includes a) the expansion of digital services (via the OAEDapp) which will enable the DYPA to provide electronic services to the unemployed and businesses via mobile phones and tablets, and the development of a digital advisor application, artificial intelligence work (chatbot) to improve and automate advisory services to job seekers. *Link to the target:* The measure will contribute to the digital transformation of DYPA which is essential for the provision of online public services to the citizens. *Tentative timeline:* The measure started in Q2 2022 and it will be concluded until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 9 MEUR • EU: 9 MEUR allocated through RRF

Expected impact and related timing:	It is expected that the measure will support the development of the digital aspect of the OAED and its performance while deploying digital capabilities of employees. More specifically, a fundamental part of this measure is its substantial digital transformation through the integration of digital technology and state-of-the-art AI into all operational and service areas, thus changing internal processes and delivering added value to its customers, both employers and the labour force.

Measure 4A07M - Smart Cities initiative

New measure	☐ yes x no
Short description of the measure	The measure concerns the implementation of projects to facilitate transformation of 11 Greek cities (cities with more than 100k population) into smart cities through investments in smart sustainable cities and Infrastructures & Systems for a sustainable & green urban future. Such investments include a) Availability and utilisation of open data that shall enhance market development of innovative solutions and products for smart cities (such as IoT applications, big data and cloud.) b) Utilisation of existing fixed and wireless networks. c) Activation of the research and academic community for the organisation of complementary innovative actions. d) platforms that shall contribute to the creation of open city data time series, and e) creation of a digital twin", as well as other citizen centric solutions and services that are included from the outset citizen participatory approaches (in a co-design manner). *Link to the target:* The Smart Cities initiative will enable cities to digitise many public services for their citizens. *Tentative timeline:* The measure started in Q1 2022 and it will be concluded until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 90 MEUR • EU: 90 MEUR allocated though RRF
Expected impact and related timing:	Smart city initiative will enable cities to use technology, information and open data to improve urban infrastructure and electronics services.

Measure 4A08M - Digital transformation of Local Governments

New measure	☐ yes x no
Short description of the measure	The measure concerns 332 municipalities with a population less than 100k. The object of the project is the supply of new applications and technological means that will improve the management and functionality of the urban environment in Greek cities. The implementation of digital solutions supported by locally generated data aims at more efficient, innovative and high-quality services for the benefit of residents, visitors and businesses, while the exploitation of Internet of Things (IoT) technologies aims to boost broadband demand. services. These solutions include smart urban mobility and parking management, energy efficiency, sustainable housing solutions, digital municipal services provided through the GOV.GR and citizen-centric governance, as well as ensuring citizens' trust in these systems, through the responsible use of data on digital platforms and the assurance of quality, security and confidentiality. *Link to the target:* The measure will enable cities to digitise many public services for their citizens. *Tentative timeline:* The measure started in Q3 2022 and it will be concluded by the end of 2027.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 235 MEUR ● National: X MEUR allocated ● EU: X MEUR allocated through NSRF 2021 - 2027
Expected impact and related timing:	Smart city solutions will enable cities to use technology, information and open data to improve urban infrastructure and electronics services

Measure 4A09M – National Policy on Administrative Procedures (NPAP)

New measure	☐ yes x no
Short description of the measure	The National Policy on Administrative Procedures (NPAP) constitutes the single framework for the continuous upgrading of the administrative procedures of the State and the fight against bureaucracy for the benefit of all. The goals of the NPAP are to improve the everyday life of citizens and support economic development without unnecessary administrative burdens for businesses. The EPAD includes the following actions: ● "MITOS" (mitos.gov.gr) represents a good practice in online accessible provision of key public services which allow citizens and businesses to interact online with public administrations. In

	particular, in “MITOS” all the procedures of the Greek State have been gradually recorded, and it has been providing citizens and end users with all the necessary information about the applicable administrative procedures, the competent services, the applicable legislation as well as the processing time. Furthermore, “MITOS” aims to be the Central Registry for every administrative process. Until the end of August 2023: ● 2 867 processes have been published in the Greek language. ● 369 processes have been published in the English language. ● The National Process Streamlining Program (EPAD): The EPAD is the framework for the redesign and simplification of administrative procedures. It aims at the continuous improvement of public services provided to citizens and businesses, through the fight against unnecessary bureaucracy. ● The Bureaucracy Observatory: The Bureaucracy Observatory is the evaluation and documentation mechanism of the National Administrative Procedures Policy. It aims to measure the impact of simplification actions on administrative burdens and red tape and to publish relevant reports. Link to the target: The NPAP will facilitate the simplification of public processes and services which is a prerequisite for the digitalisation of public services. *Tentative timeline:* The measure started in Q1 2020 and it will be concluded until the end of 2027.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 15.2 MEUR ● National: X MEUR allocated ● EU: X MEUR allocated
Expected impact and related timing:	The NPAP is the main government framework for simplification of public processes and services. Regarding the “MITOS” action of NPAP more than 2 867 public processes have been documented and are under a simplification process. This simplification process will accelerate the digitalisation of public processes and facilitate the provision of digital services

Action 4A01A – Gov.gr platform

New measure	☐ yes x no
Short description of the measure	Gov.gr is the new web portal of Greece. It hosts every digital service of the Greek ministries, organisations, authorities and the country’s regions, which are already provided online. More specifically it hosts digital

	services from 19 Ministries, 78 Public Organisations, 11 Independent Authorities and 13 Regions. Until the end of August 2023 it had 1 567 digital public services. *Link to the target:* Gov.gr is the main government platform for the provision of online public services to the citizens. *Tentative timeline:* The action started in Q4 2019 and it will be concluded until the end of 2030.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: X MEUR • National: X MEUR allocated • EU: X MEUR allocated
Expected impact and related timing:	It is expected that the Gov.gr will host all the digital public services until the end of 2030.

Action 4A02A - National Disability Portal

New measure	☐ yes x no
Short description of the measure	The National Disability Portal is the central service and information hub for people with disabilities. More specifically, through the Portal, it is possible to: • Submitting a request for disability assessment and certification through the new digital services of the Disability Certification Center (e-KEPA) • Submitting a request for a Disability Card • access to your available data held in the Digital Register of Persons with Disabilities • the information about the available benefits related to the disability, as well as about their eligibility criteria The Digital Register of Persons with Disabilities includes all persons with a valid disability certification issued by a competent Greek authority, issued on the basis of health assessment. The Register is updated exclusively in an electronic and interoperable manner by interfacing with the information systems of the certification authorities. Therefore, in the first phase, only persons who are actively certified by the Disability Certification Centre (KEPA) of the Electronic National Social Insurance Institution (e-EFKA) have been included in the Register. *Link to the target:* The action will enable public authorities to provide digital services to Persons with Disabilities

	Tentative timeline: XXX
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 2.480 MEUR • National: 0.480 MEUR allocated • EU: 2 MEUR allocated
Expected impact and related timing:	The National Disability Portal will effectively support people with disabilities, providing all necessary e-services and information.

Policy 4A01P – Digital Transformation Bible (Digital Bible) 2020 - 2025

New measure	☐ yes x no
Short description of the measure	The Digital Transformation Bible 2020-2025 is a strategy document published in December 2020 by the Ministry of Digital Governance of Greece, whose main role is to describe the vision, philosophy and goals of the national strategy for the country's digital transformation. The Digital Transformation Bible defines more than 400 specific projects that will contribute to the modernization of both the public and private sectors. *Link to the target:* The Digital Bible is the Greek national strategy for the implementation of all the actions and projects required for the digital transformation of the public administration in order to provide online all the public services to the citizens and businesses. *Tentative timeline:* The policy started in Q4 2020 and it will be in force until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	
Expected impact and related timing:	The Digital Bible is the Greek national strategy for the implementation of all the actions and projects required for the digital transformation of the public administration in order to provide online all the public services to the citizens and businesses.

Measure 4B01M - Digital Transformation of the Health Sector

New measure	☐ yes x no
Short description of the measure	The digital transformation of the Health Sector is a primary investment (Investment 1. Digital transformation of Health (DigHealth) to optimise healthcare quality and patient safety and enhance system functionalities) in the National Recovery and Resilience Plan "Greece 2.0". The measure has a great number of actions and projects focused on the digitalisation of health services including the following major projects: ● National Electronic Health Record (73.6 MEUR): The project aims to implement the National Electronic Health Records system. The objective of the project is to provide access to all citizens to their electronic health records. ● Digital Transformation of National Health Service Organisation (NHSO) (37.2 MEUR): The project scope is the provision of IT products, solutions and services for the digital transformation of the NHSO in order to provide digital services to the citizens. ● Improvement of digital readiness of Greek hospitals (111.6 MEUR): The project aims to improve the digital readiness by means of providing digital solutions and infrastructures along with IT services that improve the digital maturity of Greek hospitals organisations as the primary health service providers to the Greek citizens. ● National Telemedicine Network (44.8 MEUR): The object of this project is the extension of the National Telemedicine Network (EDIT) to the 1st, 3rd, 4th, 5th, 6th and 7th Health Region, i.e. the development of a system, in addition to the existing one (2nd Health Region) and in direct interconnection with it (as well as upgrading the existing system regarding the supply of additional peripheral equipment and subscription services. ● Digital Transformation of National Organization for the Provision of Health Services ("EOPYY") (31,44 MEuro): The aim of this project is the overall digital transformation of the Organization, with the main goal being to reach real-time clearing of all health expenditures that EOPYY receives from the health providers. In addition, the project includes the provision of Digital Services to health providers and Citizens like the E-appointments system for primary care and Public Pharmacies, and the e-services Platform to Insured citizens where insured patients will be provided with the possibility of submitting individual claims for compensation regarding other expenses covered by the EOPYY. *Link to the target:* The implementation of digital solutions in the health system can improve citizen's health and quality of life, increase their satisfaction from the use

	of public healthcare services, and enable more efficient ways towards organising and delivering healthcare services. Furthermore, the digital transformation of the health system aims to enhance equal access to healthcare services to uninsured citizens and other vulnerable categories of patients. The digital transformation of the health sector will enhance the quality of services and ensure the 100% accessibility of the population to their electronic health records. *Tentative timeline:* In Q1 of 2023, the Ministry of Digital Governance through the Electronic Governance of Social Security S.A. and National Health Service Organisation launched most of the tender for the digital transformation of the Health Sector. The projects will be concluded and provide the expected digital services to the citizens until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 277 MEUR allocated ● National: 55 MEUR allocated ● EU: 222 MEUR allocated
Expected impact and related timing:	It is expected that digital transformation of the health sector will ensure 100% access of Greek citizens to their electronic health records until end of 2025.

Measure 4B02M – Digitalisation of public health system archives

New measure	☐ yes x no
Short description of the measure	The Digitization and Electronic Management of the Historical Record of Patient Files of Health Units, with the aim of providing comprehensive information for patients, integrating medical information from the historical record with an emphasis on the following: ● the immediate display electronically, ● permanent and unalterable digital storage, ● rescuing highly valuable information of the historical record of patient files from the existing storage conditions (alteration due to age, loss due to human factors or natural disasters); ● the immediate release of vital operational spaces within the Hospitals, ● geographic independence regarding the ability to access and share Patient Care information. *Link to the target:* The measure will allow citizens to have access to their electronic health records. *Tentative timeline:* The measure started in Q1 2022 and it will be available until the end of 2025.

Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 117.8 MEUR allocated ● National: 22.8 MEUR allocated ● EU: 95 MEUR allocated
Expected impact and related timing:	It is expected that the majority of health historical records will be digitised.

Action 4B01A - myHealth app

New measure	☐ yes x no
Short description of the measure	Citizens have full access to the history of their medical prescriptions and referrals from their mobile phones through the MyHealth application. All medical prescriptions and referrals issued since the date the institution in which the citizen is insured joined electronic prescribing are available. This time can reach up to 2012, when the operation of the Electronic Prescription System began. The new version of the app is already available for mobiles with iOS and Android software. *Link to the target:* The measure will allow citizens to have access to their electronic health records. *Tentative timeline:* The action started in Q4 2021 and it will be available until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	XXX
Expected impact and related timing:	Through this action they are currently publishing digitally: ● the certificates of hospitalisation or visits to outpatient clinics from 55 health units throughout the territory and ● The test results from 59 health units across the territory. The possibility concerns 431 types of tests (haematological, microbiological, immunological, etc.), which represent 90% of the daily volume of all tests, except imaging ones.

Action 4B02A - Digital Child Health Booklet

New measure	☐ yes x no
Short description of the measure	With the digitisation of the previously paper-based Child Health Booklet, the paediatric history has been transferred to the individual's electronic health record (EHR). As a result, the digital Child Health Booklet now

	appears as a separate subcategory of the EHR and is accessible to parents through ehealth.gov.gr, in the “Paediatric History” section (ehealth.gov.gr) *Link to the target:* The measure will allow citizens to have access to their child’s electronic health records. *Tentative timeline:* The action started in Q2 2022 and it will be available until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	XXX
Expected impact and related timing:	The result of this action is that The Child's Health Booklet shows the child's health data for each age period.

Measure 4C01M – The new national ID cards

New measure	☐ yes x no
Short description of the measure	The new IDs will be in the form of a credit card, incorporating an electronic chip, a colour photo and the digital signature of the holder. Because they will support the eIDAS technology standard promoted by the European Commission, they will not only serve as an identification document but also as keys for online transactions with the public or private sector. *Link to the target:* Greek citizens who purchase the new identity card will have a secure electronic identification (eID), enabling them to have full control over identity transactions and shared personal data *Tentative timeline:* The measure will start in Q3 2023 and it will be available until the end of 2026.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 100 MEUR allocated • National: 100 MEUR allocated
Expected impact and related timing:	It is expected that by the end of 2026 all Greek citizens will have the new identity card.

Policy 4C01P - Launch of the Hellenic Public Administration Certification Authority (APED)

New measure	☐ yes x no
Short description of the measure	*Link to the target:* The APED will facilitate the verification of the identity of natural persons. *Tentative timeline:* The policy launched in 2022.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Min 5 000 000 max 15 600 000
Expected impact and related timing:	It is expected that APED will support the implementation of secure electronic identification (eID) in the public administration.

Action 4C01A - Project DC4EU

New measure	☐ yes x no
Short description of the measure	The aim of the proposal is to develop large-scale piloting projects of the EUDI (European Digital Identity) reference wallet addressing 2 use cases in compliance with the EU toolbox process. The 2 pilot applications will be: <u>Education:</u> Educational credentials to support lifelong learning (including primary, secondary, higher education, TVET, micro-credentials) Non-foundational IDs (e.g., European Student Identifier(ESI), MyAcademicID, InAcademia) Professional qualifications

	NOTE: In addition, and to have a real impact, especially in cross-border mobility, a set of elements will be developed to allow the interaction of the EUDI with existing mobility services (European Student Initiative, European Digital Credentials, Europass, European Learning Model, eduGAIN, Erasmus Without Paper services, EMREX, ELMO) Social Security: PDA1 (Portable document A1) EHIC (European Health Insurance Card The project is divided into 9 work packages. *Link to the target:* The objective's achievement will be measured on the basis of: number of wallet issuing countries involved, number of wallet users, involvement of education and social security domain-related institutions, wallet transactions fulfilled, qualified electronic signatures issued and number of countries that will interface the wallet in pre-production systems. *Link to the target:* The project aims to contribute to the creation of an ecosystem for the European Union Digital Identity (EUDI). *Tentative timeline:* The action started in Q2 2023 and it will be available until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 0.622205 MEUR EL: 0.3111025 EU: 0.3111025
Expected impact and related timing:	the issuance of educational credentials and professional qualifications in the Education sector, and the issuance of the portable document A1 (PDA1) and the European Health Insurance Card (EHIC) in the Social Security sector.

Action 4C02A - Project EWC

New measure	☐ yes x no

Short description of the measure	The EWC intends to build on the Reference Wallet Application to enable a use case focused on Digital Travel Credentials using the capabilities of the proposed EU Digital Identity Wallet (EDIW). The vision is to ensure free cross-border movement while allowing the wallet holders to identify themselves for work, study, making secure payments, and even for the interaction with their government online – wherever they are in Europe. The project has two core use cases: Digital Travel Credentials Citizens who travel can greatly benefit from being able to link their national digital identity with proof of other attributes and credentials such as a mobile driving licence for car rentals, identity enhanced payments, vaccination proofs, boarding passes, hotel reservations etc. The Digital Travel Credentials use case is also highly suitable to demonstrate cross-border use of the EDIW, and how a PID can enable citizens and residents to access services without having to use private identification methods or unnecessarily sharing personal data Support the digital transformation of the European industrial sector Member States would offer business digital identity wallets that can store both qualified and non-qualified electronic attestations of attributes (hereafter referred to as (Q)EAA) related to legal entities. *Link to the target:* The project aims to contribute to the creation of an ecosystem for the European Union Digital Identity (EUDI). *Tentative timeline:* The action started in Q2 2023 and it will be available until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 0.149158 MEUR EL: 0.074579 EU: 0.074579
Expected impact and related timing:	- Provide pilot EUDI wallets and/or organisational wallets (including PID and/or ODI enrolment for natural and/or legal persons) to the users of the Travel Credentials Use Case Application - Pilot ODI in different B2B scenarios e.g., public procurement, know your supplier, business documents exchange, and domain registration

Action 4C03A - Project Potential (PilOTs for EuropeaN digiTal Identity wALlet)

New measure	☐ yes x no
Short description of the measure	POTENTIAL pilots the EUDIW Reference Architecture by implementing six Use Cases (UC): "eGov Services", "Account opening", "SIM registration", "mDL", "rQES"' and "ePrescription". POTENTIAL's technical implementation features are implemented in two Work Packages (WP): WP2 aims at collectively defining and implementing an interoperable cross-border wallet infra-structure, as a technical prerequisite for the UC. WP3 pilots the functionalities of the wallets in cross-border usage scenarios providing complementary UC as basis for further development of a EUDI ecosystem in different areas. The different UC target a wide spectrum of public and private stakeholders. POTENTIAL's communication and dissemination strategy promotes opportunities for the new infrastructure and enables MS to build the necessary expertise and infrastructure. ***Link to the target:*** The project aims to contribute to the creation of an ecosystem for the European Union Digital Identity (EUDI). ***Tentative timeline:*** The action started in Q2 2023 and it will be available until the end of 2025.
Budget allocated or planned and, if relevant, other resources – including human resources - allocated]	Total: 53.21884656 MEUR EL: 1.41034025 EU: 16.91740296
Expected impact and related timing:	