Digitální Česko

The Path to Europe's Digital Decade: The Strategic Plan for the Digitalization of Czechia by 2030

Document version: 1.2

Prepared by: Office of the Government of the Czech Republic

Last document change: 15 November 2023

Disclaimer: In case of any discrepancies between the Czech and English versions of the document, please refer primarily to the Czech version.

Contents

Summary of the first Strategic Plan for the Digitalization of Czechia by 2030

This document, i.e. the Path to Europe's Digital Decade: The Strategic Plan for the Digitalization of Czechia by 2030, has been prepared on the basis of Decision (EU) 2022/2481 of the European Parliament and of the Council[1] (hereinafter the "Decision") and aims to map how the Czech Republic, within the framework of its current strategies, is meeting the objectives set by this Decision in the areas of digital skills, digital infrastructures, digital transformation of businesses and digitalization of public services. The aim is also to indicate how the Czech Republic will effectively continue its digitalization in order to meet the specific objectives of the Digital Decade Policy Programme 2030 set out in the Decision.

This strategic plan covers other strategic and position documents of the Czech Republic and builds on the Digital Czechia strategy[2] and the Czechia in Digital Europe pillar (partial strategy) thereof. The document puts into context the current Czech digitalization strategies implemented under the responsibility of individual ministries and agencies. The interconnectedness and overlap of the areas addressed in the plan requires a coordinated approach. The coordination of this strategic plan is managed by the European Digital Agenda Unit within the Cabinet of the Deputy Prime Minister for Digitalization at the Office of the Government of the Czech Republic. The expert and substantive responsibility for the implementation of the set objectives remains with the individual gestors and co-gestors. The European Digital Agenda Unit of the Government Office and other gestors and co-gestors of the digital agenda activities have worked closely together in the preparation of this Strategic Plan 2030 and will continue to do so during its fulfilment.

The individual parts of the document summarise the overall progress towards the digitalization of the Czech Republic, the main challenges the Czech Republic faces in this area and the most important digitalization initiatives. It also includes national trajectories that project how the Czech Republic will meet the national digital targets set in accordance with the Decision, which are to be supported by key measures proposed by individual gestors, including their financing and timetable.

This document is subject to approval processes within the Government Council for Information Society and will be regularly updated to reflect current developments in all the above-mentioned areas of digital transformation and newly emerging measures. The first update will take place in 2024 with further updates following every two years. These updates are made mandatory by the Decision.

---

[1] EUROPEAN PARLIAMENT AND COUNCIL. Decision of the European Parliament and of the Council (EU) 2022/2481 of 14 December 2022 establishing the Digital Decade Policy Programme 2030. Online. Available here [cit. 2023-10-12].

[2] OFFICE OF THE GOVERNMENT OF THE CZECH REPUBLIC. Digital Czechia – The Vision. *Digitalnicesko.gov.cz.* Online. Available here [cit. 2023-10-23].

Introduction to the Strategic Plan for the Digitalization of Czechia by 2030

Decision (EU) 2022/2481[3] of the European Parliament and of the Council of 14 December 2022 established the Digital Decade Policy Programme 2030 (hereinafter the "DDPP") The Decision sets out the objectives of the Digital Decade and the mechanisms for monitoring the achievement of these objectives by 2030. Under the Decision, Member States are tasked with regularly reporting on the progress towards the objectives through national strategic plans for the Digital Decade – The Path to Europe's Digital Decade: The Strategic Plan for the Digitalization of Czechia by 2030.

The aim of this national plan is firstly to assess the current state of digital transformation in the EU Member State (Part 1). The second objective is to develop "trajectories" (Part 2) to determine how the Digital Decade objectives will be implemented in the national context. The trajectories are based on the Key Performance Indicators (KPIs), which were established by Commission Implementing Decision (EU) 2023/1353 of 30 June 2023.[4] There are 16 such indicators in total and they are linked to the Decision's digital objectives. The Commission Communication C(2023) 7500[5], which sets out Union-level projected trajectories for the digital targets, serves as a background document for the trajectories.

The individual actions that contribute to the Digital Decade objectives are an integral part of the plan (Parts 3 and 4). All these parts are logically structured according to the four basic areas of the Digital Decade, which are as follows: *Digital skills, digital infrastructures, the digitalisation of businesses, and the digitalisation of public services*. These areas also correspond to the pillars of the Government's Digital Czechia strategy and, as in the strategy, the gestors of these pillars are responsible for the implementation of individual measures. The Ministry of Education, Youth and Sports (MEYS) is responsible for the digital skills part, the Ministry of Industry and Trade (MIT) together with the Czech Telecommunication Office (CTO) are responsible for the digital infrastructures part. The MEYS is responsible for measures relating to quantum computing. The MIT is also responsible for the implementation of the digital transformation of businesses. The final part, i.e. the digitalization of public services, is co-managed by the newly established Digital and Information Agency (DIA) and the Ministry of Health (MoH), the latter being responsible for the electronic health data part.

---

[3] EUROPEAN PARLIAMENT AND COUNCIL. Decision of the European Parliament and of the Council (EU) 2022/2481 of 14 December 2022 establishing the Digital Decade Policy Programme 2030. Online. Available here [cit. 2023-10-12].

[4] EUROPEAN COMMISSION. Commission Implementing Decision (EU) 2023/1353 of 30 June 2023. Online. Available here [cit. 2023-10-23] & EUROPEAN COMMISSION. Corrigendum to Commission Implementing Decision (EU) 2023/1353 of 30 June 2023 setting out key performance indicators to measure the progress towards the digital targets established by Article 4(1) of Decision (EU) 2022/2481 of the European Parliament and of the Council. Online. Available here [cit. 2023-10-23].

[5] EUROPEAN COMMISSION. Communication from the Commission C(2023) 7500 final of 27 September 2023, establishing the Union-level projected trajectories for the digital targets. Online. Available here [cit. 2023-10-23].

The National Plan also includes cooperation on multi-country projects, in particular those implemented through the European Digital Infrastructure Consortium (EDIC). EDIC is a community of Member States working together to achieve at least one of the Digital Decade objectives (Part 5). The final parts of this plan mention stakeholder feedback (Part 6) and overall impact and conclusion (Part 7).

The Digital Decade Policy Programme 2030 requires EU Member States to submit a National Strategic Plan to the Commission by 9 October 2023. The Commission will provide feedback to Member States on these plans and prepare a series of recommendations for each country. The National Strategic Plan will be regularly updated in the light of developments and recommendations. The first update will take place in 2024, with further updates following every two years until 2030.

Part 1: Analysis of the current state of digital transformation

1.1 State of play

Digital transformation is one of the key priorities of the current Government, as evidenced by the appointment of the Deputy Prime Minister for Digitalization and the subsequent creation of the Digital and Information Agency (DIA) and other commitments outlined in the Government's Policy Statement of January 2022 which has been updated in March 2023[6]. At the same time, there is also a Government strategy entitled Digital Czechia, which is implemented on the basis of a set of several partial concepts, implementation plans and is in line with the needs of the Czech Republic and the Union's policy. Digital policies[7] and cybersecurity[8] have also become one of the important priorities of the Czech Presidency of the Council of the EU in the second half of 2022, where several major advances have been reached in the negotiation of proposals in this area. The fulfilment of the general and partial objectives of the Digital Decade remains a priority not only at national level, but also in the framework of European and international cooperation.

According to the results of the Digital Economy and Society Index (DESI) for 2022, the Czech Republic ranks 19th among the 27 EU Member States. The country performs the best in the area of human capital. Compared to 2021, the Czech Republic's ranking has improved in digital public services and connectivity.

In the long term, the Czech Republic is stable in the 18th to 20th position compared to other EU Member States. Since the beginning of this index in 2017, the Czech Republic has been linearly improving its score, which is in line with the average increase at EU level, as shown in

---

[6]   GOVERNMENT OF THE CZECH REPUBLIC. Government's Policy Statement. Online. Available here [cit. 2023-10-23].

[7]   EUROSKOP. Achievements of the Czech Presidency in the digital area and telecommunications. Euroskop.cz. Online. Available here [cit. 2023-10-23].

[8]   NÚKIB.Thanks to the work of NÚKIB during CZ PRES, EU cybersecurity has increased. *Nukib.cz*. Online. Available here [cit. 2023-10-23].

Figure 1. On average, the difference between the EU and the Czech Republic's score has been between 2 and 3 points throughout the iterations of this index, with the latest scores in 2022 being 49 for the Czech Republic and 52 for the EU.

In 2023, the European Commission (EC) included the DESI index in the first Report on the state of the Digital Decade, which takes stock of the EU's and individual Member States' progress towards a successful digital transformation. Although this first report from 2023 does not include an overall comparison of all Member States within a single summary indicator, it does include comparisons within individual indicators, which can be found in full in the DESI 2023 Dashboard.[9] In the report and the specific recommendations for the Czech Republic, the Commission highlights, among other things, the untapped potential of the Czech Republic and its possible ambition to become a key player in the field of cutting-edge technologies. It welcomes the update of the Digital Czechia strategy and its link to the objectives of the Digital Decade Policy Programme, including the emphasis on increasing digital skills and the growing availability of public services online. On the contrary, it points to a lack of ICT professionals, room for improvement in the digitalization of businesses or in connectivity.

Chart 1: DESI index over time
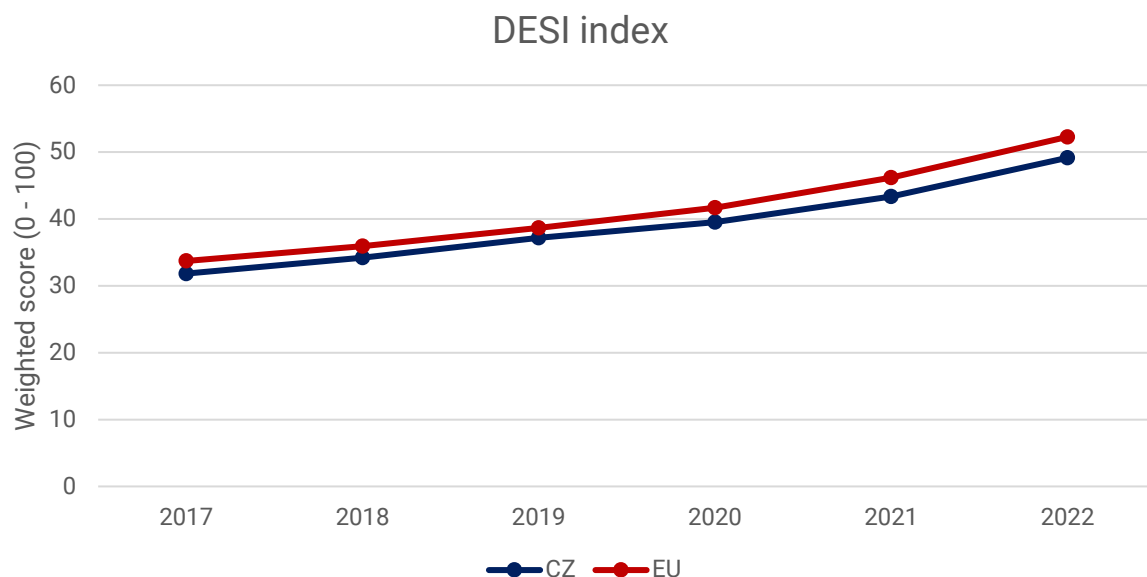
Source of data: DESI 2022

1.1.1   Digital skills

Digital skills are the first of the four digital objectives set out in Article 4 of the DDPP. It sets a target of 80% of 16–to 74-year-olds having at least basic digital skills by 2030. According to DESI data, only 60% of people in the Czech Republic will reach this level in 2021, which is still above the EU average (54%).

At the same time, this objective identifies the need to increase the number of ICT workers with an emphasis on promoting gender balance in this area. In 2022, only 4.5% of employed

---

9   EUROPEAN COMMISSION. DESI 2023 Dashboard for the Digital Decade. *Ec.europea.eu*. Online. Available here [cit. 2023-10-23].

persons aged 15–74 were employed as ICT professionals, of which only 10.9% were women. The share of women in IT is thus the worst in the EU. On the other hand, 25% of enterprises provided ICT training in 2020. The number of graduates from higher education institutions and tertiary vocational schools in this area reflects the demographic curve to a large extent. According to data from the Czech Statistical Office (CZSO)[10], the percentage of higher education institution students in this area is gradually increasing, with 6.9% in 2018 and 7.7% in 2022. The numbers of graduates also reflect this trend of slight increase with 5.5% in 2018 and 6.1% in 2022. An increasing trend can also be observed in the representation of women, with 14% of female students in 2015 and 18% in 2022.

Improving the digital skills of the Czech population is also a growing priority in the Government's Digital Czechia concept[11], which has been regularly updated since 2018 and was modified in 2022 to include the Digital Decade objectives. In this context, a completely new pillar on digital learning has been added. This is linked to the Education 2030+ Strategy[12], which is included under Strategic Line 1.4 *Digital Learning* and sets out specific actions to support this objective. One of the partial objectives is to increase women's participation in the digital domain. This objective is linked to the Digital Economy and Society concept[13] both in terms of equal opportunities and in terms of promoting ICT education and the acquisition of skilled workers, which is in line with the general objectives of the Digital Decade (specifically the objectives of promoting a human-centred, inclusive, transparent and open digital environment and of achieving gender balance by promoting continuous opportunities for all individuals to develop basic and advanced digital skills and competences).

Other activities in this area relating to education include the creation of the Interdepartmental Group for Digital Education and its transformation into the Committee for Digital Education under the Government Council for Information Society (GCIS). It coordinates relevant actors in digital education with representatives from the public, private and non-profit sectors. As part of its work, the Digital Czechia – Digital Education concept was developed, and recommendations were issued to improve the representation of women in ICT and lifelong learning opportunities. In 2021, the Ministry of Education, Youth and Sports introduced a revised ICT curriculum (Revised Framework Education Programmes for Primary Education in ICT), which supports the development of digital skills and computational thinking in primary schools and multi-year grammar schools (to be implemented gradually by September 2025).

The Ministry of Labour and Social Affairs has launched an active employment support tool in 2022 in the context of the ICT skills shortage, contributing to individuals' training courses in digital skills and creating a database of digital training opportunities.

---

[10] CZECH STATISTICAL OFFICE. Students of higher education institutions in science, technology and ICT. Online, pdf. 2023. Available here [cit. 2023-10-23].

[11] OFFICE OF THE GOVERNMENT OF THE CZECH REPUBLIC. Czech Republic in Digital Europe: Concept of the Czech Republic's place in the Digital Agenda for Europe. Online, pdf. 2023. Available here [cit. 2023-10-23].

[12] MINISTRY OF EDUCATION, YOUTH, AND SPORTS. Strategy for the Education Policy of the Czech Republic up to 2030+. Online, pdf (pp. 32). Available here [cit. 2023-10-23].

[13] See note 10 (p. 8).

1.1.2 Digital infrastructures

The second digital objective of the DDPP is to ensure secure, resilient, efficient and sustainable digital infrastructures. In terms of connectivity, the Czech Republic ranks 17th among the 27 EU Member States with its score slightly below the Union average. This is a significant improvement compared to 2021, when the country was ranked 22nd. However, in the area of very high capacity fixed network (VHCN) coverage, it is necessary to mention that the DESI figure does not reflect the true situation in the Czech Republic, as it is limited to only two technologies – FTTx and DOCSIS 3.1 – contrary to the technology-neutral definition of VHCNs[14]. The former coverage in the Czech Republic is 53% according to 2022 data, while the latter is 59%.[15]

Despite the growing trend in the development of VHCNs, there is still the need to support and accelerate the development of these networks, especially in areas with absent or insufficient coverage. Under the National Recovery Plan (NPO), using funding from the Czech Recovery and Resilience Facility (RRF), relevant actions are planned, such as the creation of a Digital Technical Map that will provide information that will be key to accelerating the development and construction of VHCN infrastructure. This objective is part of the Digital Transformation pillar, specifically part 1.3 *Digital High Capacity Networks[16]*, which has been allocated CZK 5 787 million and includes support for the development of the 5G network ecosystem.

The connectivity target also includes the area of 5G network coverage. Since the introduction of 5G in the Czech Republic, coverage has increased rapidly, reaching 85.4% of the population and 76.2% of the territory (on all bands) by the end of 2022. As of 30 June 2023, the 5G network coverage stands at 94.6% of the population and 92.1% of the territory. Between 2024 and 2030, mobile network operators will gradually improve the coverage of the territory of the Czech Republic by 5G networks, at least in accordance with the conditions for the development of 5G networks resulting from the respective allocations of radio frequencies. As part of the preparation of connectivity reforms under the NPO, improved 5G network coverage in sparsely populated areas and on major rail corridors, including improved availability of connectivity inside trains, is planned by 2030. To this end, a working group was set up comprising stakeholders from the State administration, State organisations, railway carriers and mobile operators.

The Czech Republic is beginning to play an important role in the production of semiconductor chips. Every day 10 million chips are produced in the Czech Republic. There are two important

---

[14] Definition of a VHCN in accordance with to Article 2(2) of Directive (EU) 2018/1972 laying down the European Electronic Communications Code.

[15] As defined in the Directive, which sets out the European Electronic Communications Code, "'very high capacity network' means either an electronic communications network which consists wholly of optical fibre elements at least up to the distribution point at the serving location, or an electronic communications network which is capable of delivering, under usual peak-time conditions, similar network performance in terms of available downlink and uplink bandwidth, resilience, error-related parameters, and latency and its variation; network performance can be considered similar regardless of whether the end-user experience varies due to the inherently different characteristics of the medium by which the network ultimately connects with the network termination point".

[16] National Recovery Plan. Digitalization will bring better government services to citizens. *Planobnovy.cz.* Online. 2023. Available here [cit. 2023-10-23].

semiconductor chip (integrated circuit) manufacturers in the Czech Republic. One of them is an American company producing 200 mm SiC (silicon carbide) wafers and several types of silicon-based chips. This company is interested in building its entire value chain of silicon carbide substrate chip production in the Czech Republic. There are also research and development centres focused on chip design, microcontrollers, carpacks and software for car manufacturers. Furthermore, three are three important Czech companies that are important suppliers for in the area of photolithography, the cornerstone of the front-end (production of custom chips), including for the world's dominant manufacturer of optical lithography with unique EUV (Extreme ultraviolet lithography) technology.

The Czech Republic also supported the European Chips Act, which it helped negotiate during the Czech Presidency. The Czech National Semiconductor Cluster, z.s. (CNSC) was founded in 2022, which brings together industrial HUBs, scientific institutions and public administration representatives. It was initiated by the Cabinet of the Minister for Science, Research and Innovation and the MIT. Together, these bodies are involved in the development of the National Semiconductor Strategy of the Czech Republic (NSS CR), which is being prepared in response to the Chips Act. CNSC has also joined the Silicon Europe Alliance – The European cluster alliance for innovative electronics & software technologies, which represents more than 2000 companies and research institutions. Within the framework of regional cooperation, the Czech Republic, through the South Moravian Region, joined the Brussels-based European Semiconductor Regions Alliance. The Alliance brings together 12 regions to work together to develop a strong and integrated supply chain and implement the European Chips Act.

The Czech Republic has been selected by The European High Performance Computing Joint Undertaking as one of six sites to host Europe's first quantum-accelerated computer in 2022. The LUMI-Q consortium project has been selected for this purpose and their quantum computer will be located at the IT4Innovations National Supercomputing Centre in Ostrava. A number of technical universities are involved in supporting the project, providing specific courses focusing on this area.

Work on building a quantum network has also begun in the Czech Republic. The network will be used to distribute quantum keys that should ensure highly secure communication within critical infrastructure. The Czech Republic has also started preparing its National Quantum Strategy (NQS), which will support research and development and education in the fields of quantum computers, quantum communication, quantum sensors and quantum materials with the aim of creating an ecosystem for quantum technologies.

1.1.3 Digital transformation of businesses

In general, the Czech Republic ranked 19th in the integration of digital technologies according to the 2022 DESI index. The objective of the Digital Decade is for 75% of businesses to use at least one of these technologies: cloud computing, big data or artificial intelligence (AI). In the area of big data, we can observe an improvement of one percentage point compared to 2018, reaching 9% in 2020. However, this is still far below the 2020 Union average of 14%. Supporting the development of the Czech digital ecosystem through specific measures concerning research, development and application of new technologies (including artificial intelligence, cloud computing, big data) in individual sectors of the economy, the corporate sphere,

infrastructure and connectivity and in legislation is the main objective of the Digital Economy and Society pillar of the Digital Czechia Republic concept.

The use of cloud computing, big data and AI is supported under the Operational Programme Technologies and Application for Competitiveness. The Czech Republic participates in the European Open Science Cloud, which aims to create a virtual environment with freely available services for storing and processing research data.

The NPO includes plans to invest in European and national digital innovation centres to support sustainable digital transformation of small and medium-sized enterprises (SMEs). The digitalization of enterprises and the development of the digital society in general will be significantly assisted by NPO investments under component 1.4 in the total amount of CZK 5.658 billion or the Digital Enterprise call offering targeted support to at least 377 enterprises.

In 2021, only 5% of enterprises were using artificial intelligence (AI) technologies based on DESI data. The Czech Republic is implementing the 2019 National Artificial Intelligence Strategy (NAIS), following the European Coordinated Plan on Artificial Intelligence, which aims to stimulate the deployment of these technologies (NAIS as part of the DES pillar is also linked to Czechia in Digital Europe concept). The development and expansion of sustainable AI systems is one of the main priorities of the Digital Economy and Society pillar. Currently, the Ministry of Industry and Trade is preparing an update of the NAIS to reflect rapid technological developments and to be able to respond to new challenges related, for example, to AI innovations in Europe and emerging AI legislation. In order to support the development of the Czech AI ecosystem, the Czech Republic is involved in the AI-MATTERS consortium which manages the European Testing and Experimentation Facilities for AI in Manufacturing. In 2022, the project to create a European Centre of Excellence in Artificial Intelligence for a Safer Society was completed.

The Czech Republic has a high level of cloud adoption. In 2021, 40% of enterprises were using cloud technologies, compared to the EU average of 34%. The use of these technologies is supported by the NPO in the context of sustainable digital transformation.

In recent years, the Czech Republic has seen a positive trend in the growing number of start-ups. Currently, two unicorns have been built, bringing the total number of unicorns to four. In 2022, the CzechInvest, which is the State Business and Investment Development Agency, launched the first year of the Technology Incubation project, which aims to support innovative start-ups in the fields of AI, mobility, creative industries or ecotech. Within the framework of this conceptual support, start-ups are then further developed within HUBs focused on a given technological domain. CzechInvest actively supports both start-ups and investors, operates the website Czechstartups.org[17] offering a comprehensive overview of the Czech start-up system and providing information on current state and private programmes to support them, and it also actively monitors the start-up environment and publishes detailed data on its

---

[17] CZECHINVEST. *Czechstartups.org.* Online. 2023. Available here [cit. 2023-10-23].

website[18]. The MIT is another major investor supporting the development of start-ups, specifically through the Central European Fund of Funds and the Initial Public Offering fund.

1.1.4   Digitalization of public services

The last digital objective of the DDPP is the digitalization of public services. The Czech Republic has been improving its position in the DESI index over the long term, ranking 20th in 2021 and 17th in 2022 in the EU. The Czech Republic scores 76% in terms of citizens' access to online digital services. To ensure the further development and improvement of the quality of digital public services, the Digital and Information Agency (DIA)[19] was established on 1 January 2023 and launched on 1 April 2023. The DIA has a supervisory role over the coordination of projects across ministries and their interoperability. The DIA has been established to help with the digitalization of the Czech public administration in its entirety. As a central authority of the State administration, it has statutory powers that enable it to effectively manage the digitalization of the State and specific digitalization and IT projects.

In 2023, the Single Digital Gateway Regulation enters its final phase of implementation. By 2023, the Czech Republic will meet most of the requirements of this Regulation. Work is also continuing on the Once Only Technical System, which, once in place, will enable data sharing between public administrations across the Union. According to DESI, access to digital public services for enterprises scored 81 on a scale of 0 to 100 in 2021, rising to 84 in 2022, which is in line with the EU average. The same development, although not as rapid, can be observed in the evaluation of digital public services for citizens.

The Government has successfully designed and implemented an electronic identification system that allows citizens to communicate with authorities online. Several means of authorisation are possible, and from 2021 the utilisation of this method is increasing exponentially. In 2022, over 5 million citizens have owned one of the eID means.[20] The number of active data boxes has also been increasing in the long term, with the highest increase recorded at the beginning of 2023, when data boxes were mandatorily set up for all legal persons and their number reached over 3.4 million in 2023.[21]

In the area of access to electronic health records, the Czech Republic is still only starting to build its infrastructure. According to DESI 2022, the Czech Republic's score is 47, compared to the EU average of 71. The Czech Republic plans to improve this situation by using the RRF through the National Health Information Portal administered by the Ministry of Health. It also participates in the European Digital Transformation in Health and Care initiative under Horizon 2020. The NPO also includes a section on eHealth services through the interoperability project. The Czech Republic supports the creation of a single European area for sharing health data. It is important that citizens of the Czech Republic have easy access to their health data

---

[18]   CZECHINVEST. Czechia in data: Start-up data. *Czechstartups.org.* Online. 2023. Available here [cit. 2023-10-23].

[19]   DIA. *Dia.gov.cz.* 2023. Online. Available here [cit. 2023-10-23].

[20]   MINISTRY OF THE INTERIOR. 5 million already have an electronic identification device and can communicate online with the State, banks and companies. *Mvcr.cz.* Online. 2023. Available here [cit. 2023-10-23].

[21]   DIA. Statistics on the use of data boxes. *Mojedatovaschranka.cz.* Online. 2023. Available here [cit. 2023-10-23].

in electronic form, which they will be able to share with health care professionals and health care facilities in other EU Member States.

Another step in the digitalization of public administration is the planned abolition of the obligation to carry IDs and documents if the State can verify a person's identity otherwise. This will be facilitated by a priority project of the Government of the Czech Republic, which is focused on the creation of eDoklady (eDocuments) application for proving identity or other facts and the related European eWallet project, which will make proving a citizen's identity as easy as possible throughout the European Union. Act No 12/2020 Sb., on the right to digital service will introduce a citizen's right to use a digital copy of the ID card and will create a simple eIDAS-compliant application[22] for use at national level for the time being, preceding the European Digital Identity Wallet solution.

1.2 Challenges for the Czech Republic

In the framework of the recommendations issued as part of the European Semester, significant progress has been made in implementing them since 2019. For the period 2019-2020,[23] the following has been recommended to the Czech Republic in the area of digitalization:

> **"Improve the quality and inclusiveness of education and training systems, inter alia by promoting technical and digital skills and by promoting the teaching profession."**

> **"In the context of the investment economic policy, focus on transport and in particular its sustainability, digital infrastructure and the transition to a low-carbon economy and energy transformation."**

In the context of the priorities at the European and national level, a new concept for the development of digital literacy in various areas of education and the new content of the subject Informatics were tested in nursery, primary and secondary schools by the MEYS within the framework of the projects Support for the development of digital literacy and Support for the development of computational thinking. In April 2019, the Digital Teacher Competence Framework based on the European DigCompEdu framework was approved and subsequently, the Teacher Support Project developed an online self-assessment tool for teachers' digital skills, Teacher Profile 21 (Profil Učitel 21). In 2019, the National Plan for the Development of Next Generation Networks was updated to ensure quality coverage of high-speed electronic communication infrastructure for connecting to data services.

Recommendations for 2020 were mainly focused on handling the Covid-19 pandemic, but some points remained in relation to previous recommendations:

---

[22] EUROPEAN PARLIAMENT AND COUNCIL. Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC. Online. Available here [cit. 2023-10-23].

[23] COUNCIL (EU). Council recommendation on the National Reform Programme 2019 and Council Opinion on the Convergence Programme of the Czech Republic 2019. Online. Available here [cit. 2023-10-23].

> **"Promote employment through active labour market policies, provision of skills (including digital skills) and access to digital learning."**

> **"Focus investments on green and digital transformation, particularly on high-capacity digital infrastructure and technology, with an emphasis on improving e-government."**

The new Strategic Framework for Employment Policy until 2030 was prepared to address the challenges of digital skills, including the need to digitise and improve the training of employees in this area. The issue of further education is given considerable attention within the framework of the Work 4.0 Action Plan, whose measures are incorporated into the Digital Czechia concept and the National Artificial Intelligence Strategy for the Czech Republic. The Digital Literacy Strategy 2015–2020 and the follow-up projects DigiStrategie 2020 and DigiKatalog focus specifically on the development of digital skills. The support for digital education and the development of new teaching methods (including the use of digital technologies) was implemented under the Operational Programme Research, Development and Education, and the Implementation of the Digital Education Strategy call.

The Spring Package of the European Semester in 2021 followed up on the Covid-19 pandemic issues; the Czech Republic, with the help of the Recovery and Resilience Facility formalised in the form of NPO, was preparing for green and digital transformation, with digital transformation being one of the main pillars, which served as the basis for the continued digitalization of the public administration.

For the period 2022–2023, the European Semester's recommendations for the Czech Republic in the area of digitalization were as follows:

> **"Expand public investment in green and digital transformation and energy security, including through the Recovery and Resilience Facility, RePowerEU and other EU funds."**

As part of the regular monitoring of progress towards implementation of the NPO (twice a year), another round of monitoring reports covering milestones and targets was collected with an expected completion date of the end of 2022. The current status of NPO implementation is continuously monitored and the digital transformation is being strengthened.

For the current period 2023–2024, the Czech Republic has been recommended to:

> **"Maintain nationally funded public investment and ensure the effective use of grants from the Recovery and Resilience Facility and other EU funds, in particular to support green and digital transformation."**

In its report, the EC stated that the NPO responds to key challenges related to digital and green transformation and to challenges in the areas of education, labour market, public administration, research, development and innovation and health care, to which the Czech Republic responded by agreeing that prioritisation of State investment in green and digital transformation was necessary. As part of the digitalization of the administration, the building permit proceedings were also digitised with the support of the NPO. The Czech Republic is preparing a project supported by NPO funds "Increasing efficiency, client orientation and use of evidence-based principles in public administration", which aims, among other things, to complete a database with relevant data in relation to the performance of public

administration. Furthermore, a project is planned to build a system that would enable the digitalization of certain processes in the field of human resources in public administration. The NPO also allocates a significant amount of funds to increasing basic digital skills.

In the previous section describing the current state of the digital transformation of the Czech Republic with regard to the DDPP, the main shortcomings were identified in comparison with the European average, especially in the area of connectivity and integration of digital technologies, and the main possible causes and challenges were described. Another obstacle is the need to deal first and foremost with the consequences of the Covid-19 pandemic, which was also included in the European Semester and which has meant that some topics have had to be temporarily set aside, slowing down progress in certain areas. Ensuring access, collection, consolidation and evaluation of ESG data (i.e. environmental, social and governance information), which is a key element of the sustainable finance framework, can be cited as another significant challenge in the green and digital transition. The implementation of the framework plays a crucial role in ensuring the necessary investments in the digital and green transition. Partial progress in the digitalization of public administration and health care can be mentioned as a positive consequence. Last but not least, it is necessary to mention the current geopolitical situation, specifically the effects of Russian aggression in Ukraine, which, in the context of the Digital Decade, is causing, among other things, an increase in cyberspace threats.

In the country report for the Czech Republic, published together with the first report on the state of the Digital Decade, the EC draws the Czech Republic's attention to the following: support for further development in the field of ICT and acquiring more cybersecurity experts; in the area of connectivity, according to the Commission, it is necessary to focus in particular on FTTP connections and to continue the development of 5G networks; in the digitalization of businesses, it is necessary to focus on SMEs and help them with digital transformation; finally, in the area of digitalization of public services, it is necessary to improve the accessibility of the user environment for citizens based on user feedback.

Last but not least, the Czech Republic faces the challenge of effectively implementing existing strategies and performing the necessary follow-up and evaluation. The DDPP Decision can help the Czech Republic address the challenge of compatibility of existing digital strategies and the creation of KPIs to serve as control mechanisms for their implementation. Thanks to multi-country projects, the Czech Republic can gain know-how and help existing projects in priority areas of digitalization. The DDPP thus represents an important link between the Czech digitalization strategies under the Digital Czechia concept and the European Path to achieving common digital objectives by 2030.

1.3   Strengths and advantages of the Czech Republic

The most important initiative in relation to the implementation of the Digital Decade is the Digital Czechia concept, which was modified in 2022 to include the Digital Decade objectives. In 2023, a section on digital skills has been added to the concept for this reason as well. Digital Czechia includes several concepts linked to specific implementation plans. In order to facilitate the digital transformation of the State administration, the Digital and Information Agency (DIA) was created, which is a central body of the State administration with legal

powers that enable it to effectively manage the digitalization of the State and specific projects in the areas of digitalization and IT. These initiatives are essential for the managed digital transformation of the Czech Republic, especially in connection with digital objectives number 1 digital skills and number 4 digitalization of public services.

The main strength of the Czech Republic lies in its population and strong human capital. This is true in the area of digitalization and the potential for developing digital skills. The development of human capital is hampered by the low participation of women in IT professions, which represents a great potential for further increasing digital skills in the Czech Republic.

While the Czech Republic is not making sufficiently rapid progress under objective 2 digital infrastructures, there are several important initiatives that may prove crucial to progress in this area in the future. In 2022, the EuroHPCJU announced the selection of 6 sites to host the first European quantum computers, including the Czech Republic. These will be integrated into networks of existing supercomputers. The LUMI-Q consortium was among the selected projects and their quantum computer will be located at the IT4Innovations National Supercomputing Centre in Ostrava. The installation and launch of this quantum computer is planned for 2024. The Czech Republic is also participating in a multi-country project aimed at the expansion of 5G corridors in Europe, and a study funded by CEF Digital is currently underway to prepare the implementation of 5G and FRMCS communication systems in relation to Connected and Automated Mobility on the Brno (CZ) – Bratislava (SK) railway corridor.

In the NPO, 22% of the total budget is dedicated to digital priorities.[24] The main investments will focus on promoting digital skills and the digital transformation of businesses. The Framework Education Programmes have been changed (schools prepare their own curricula in accordance with them), within the framework of which the educational area of Informatics has been innovated and digital competence introduced. At the same time, massive investment has been made in improving the technical equipment of schools, providing digital teaching aids and supporting learning opportunities for teachers in this area (webinars, consultations, peer to peer activities, etc.). In this context, a network of "IT gurus" has been created within the framework of a project of the National Institute for Education, which offers expert advice to schools in the field of digitalization. In the health sector, new interoperability regulations were introduced. The Czech Republic has also launched the Central European Digital Media Observatory, which aims to strengthen capacity and cooperation between Member States and the EU in the areas of improving detection, coordinating responses, working with online platforms and industry, raising awareness and empowering citizens to respond to online misinformation.

The Operational Programme Technologies and Application for Competitiveness (OP TAC) is focused mainly on supporting small and medium-sized enterprises, including in the field of cloud computing. Enterprises of all sizes can further benefit from the support of digitalization activities covered by the RRF under the programmes for digital transformation of

---

24 EUROPEAN COMMISSION. Digital Economy and Society Index (DESI) 2022: Czechia. *Ec.europa.eu*. Online. Available here [cit. 2023-10-23].

manufacturing and non-production companies and increasing resilience. Six European Centres for Digital Innovation have been set up to help enterprises develop projects to apply AI, HPC and cybersecurity technologies in digital transformation and automation.

As of the beginning of 2023, data boxes were established for all legal entities, which must now use them on a mandatory basis. This legislation will enable a rapid increase in the number of eID users. In order to increase voter turnout, the possibility of electronically applying for a voter ID card through the Citizen Portal was also introduced in 2022. This portal is now managed by the DIA; it offers citizens access to online government services and it is the main vehicle for eGovernment services in the future. In the future, all websites of State administration bodies and institutions should also have a uniform design and switch to the gov.cz domain to ensure greater clarity, transparency and increased resistance to cyberattacks. In all these activities, however, care must continue to be exercised to ensure a sufficient level of cybersecurity and the protection of the personal data of citizens and other persons using these services.

1.4 Digital skills

1.4.1 Basic digital skills

Objective: 80% of the population aged 16 to 74 have at least basic digital skills

Indicator name (KPI): basic digital skills

National KPI baseline: 59.7% (2021)

National KPI target (for 2030): 80%

EU KPI baseline: 54% (2021)

EU KPI target (for 2030): 80%

Source of data: Eurostat, EU Survey on ICT Usage in Households and by Individuals

KPI definition: At least basic digital skills, measured as the percentage of individuals aged between 16 and 74 years old disaggregated by sex with "basic" or "above basic" digital skills in each of the following five dimensions: information, communication, problem solving, digital content creation and safety skills. It is measured based on the activities that individuals carried out during the previous three months; and gender convergence, measured as the percentage of women and men among those individuals with "basic" or "above basic" digital skills.

Chart 2: Basic digital skills
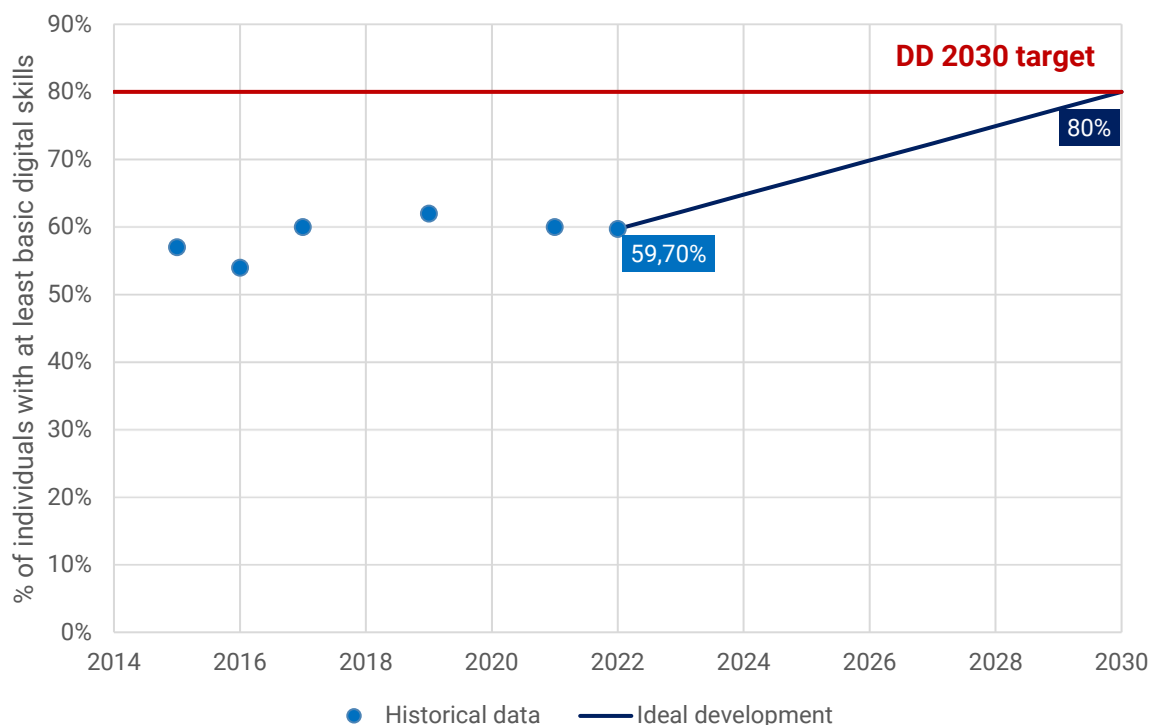
Reasoning: The development of basic digital skills is one of the main pillars of the Government's Digital Czechia concept, but the development of this indicator over time is linked to other demographic indicators and the need to implement long-term strategies and concepts. Given the complexity of the topic, it is difficult to estimate the exact trajectory for the Czech Republic over time. The decrease compared to previous years is due to a change in the measurement methodology; in 2021 Eurostat added the area of security to the measurement.

1.4.2 ICT specialists

Objective: at least 20 million ICT professionals are employed in the Union, while maintaining equal access for women in this field and increasing the number of ICT graduates

Indicator name (KPI): ICT specialists

National baseline: 4.5% (2022)

National KPI target (for 2030): 7%

EU baseline: 4.5% (2022)

EU KPI target (for 2030): 10%

Source of data: Eurostat – Labour Force Survey

KPI definition: ICT specialists, measured as the number of individuals aged 15-74 who are employed as ICT specialists; and gender convergence, measured as the percentage of women and men among those individuals employed as ICT specialists. In accordance with the ISCO-08 code classification, ICT specialists are workers who have the ability to develop, operate and maintain ICT systems, and for whom ICT constitutes the main part of their job, including but not limited to ICT service managers, ICT professionals, ICT technicians, ICT installers and servicers.

Chart 3: ICT specialists
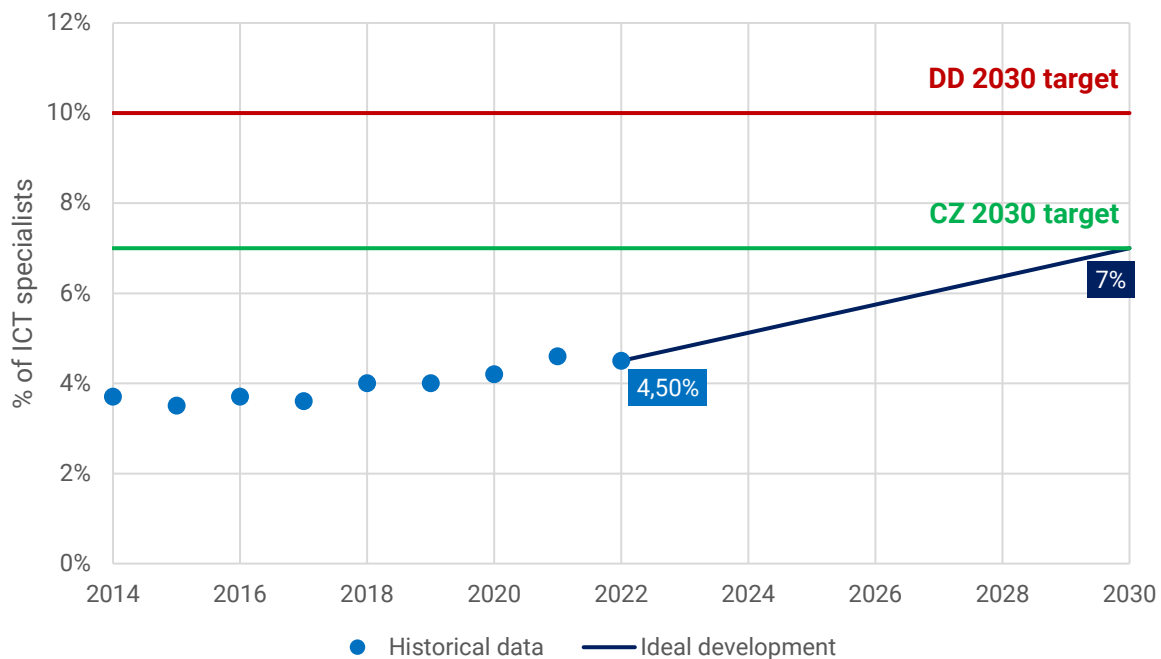
Reasoning: The Czech Republic maintains a gradual linear growth in ICT specialists above the EU average. As with the previous indicator, this indicator is one of the themes of the Digital Czechia concept, but it can also be influenced by demographic developments. In general, however, this indicator has an upward trend. New education programmes and strategies are also currently being implemented which will lead to an increase in interest in studying in this field, but for the reasons mentioned above it is not possible to estimate more accurately the development in individual years. For consistency of KPI measurement, the target values and historical data have been converted to percentages as a share of ICT specialists.

In initial education, activities are currently underway to expand the range of professionally oriented study programmes at higher education institutions (funded by the NPO under component 3.2), including in the area of ICT professionals training (e.g. programmes focused on cybersecurity, etc.). In the area of

regional education, an innovation of the system of secondary school fields of study is being prepared, which will subsequently be reflected in the planned revision of the framework education programmes for individual secondary school fields of study. As these are relatively significant changes, it is necessary to take into account that the implemented/planned changes will take longer to take effect (ensuring successful implementation of the proposed changes, time delay before there are the first graduates of the offered programmes, etc.).

1.5 Digital infrastructures

1.5.1 Gigabit networks (VHCN coverage)

Objective: all end users in a fixed location are covered by a gigabit network to the endpoint

Indicator name (KPI): gigabit networks (VHCN coverage)

National baseline (FTTP and DOCSIS 3.1 only) (DESI): 53.2% (2022)

National baseline (all technologies) (ALL): 59.3% (2022)

National KPI target (for 2030): 95%

EU baseline: 73% (2022)

EU KPI target (for 2030): 100%

Source of data: External studies – Broadband coverage in Europe studies for the EC (Omdia and Point Topic) – Gigabit 2013-2022 (baseline-DESI); CTO (baseline-ALL)

KPI definition: Gigabit connectivity, measured as the percentage of households covered by fixed Very High-Capacity Networks (VHCN). The technologies considered are those currently able to deliver gigabit connectivity, namely Fibre to the Premises and Cable DOCSIS 3.1. The evolution of the Fibre to the Premises coverage will also be monitored separately and taken into consideration when interpreting VHCN coverage data.

Chart 4: Gigabit networks (VHCN coverage)
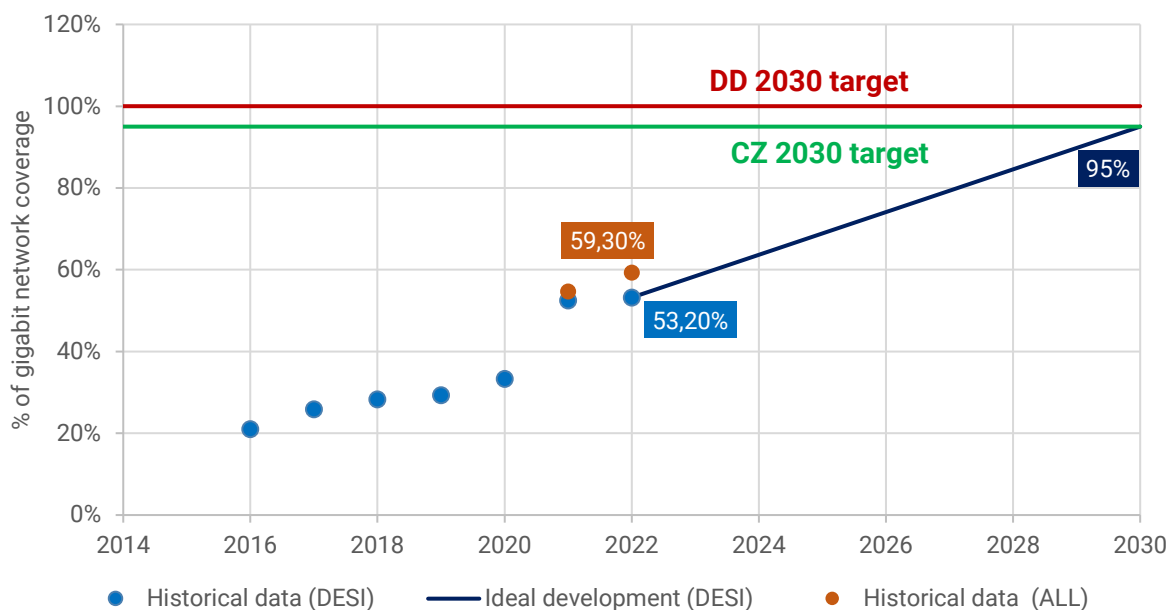
Reasoning: Given the increase in values between 2021 and 2022, a similar trend can be expected in subsequent years. The trajectory set reflects the definition of KPIs as per the approved Commission

Implementing Decision of 30 July 2023. However, as explained in Part 1.1, this definition used for the DESI is not entirely technology neutral. Therefore, historical data (ALL) based on this VHCN definition in accordance with Directive (EU) 2018/1972 and BEREC guidelines are also shown in the chart for comparison. With reference to Commission Implementing Decision 2022/2481, we also see the possibility of future adjustments to the definition of this KPI in cooperation with BEREC, or adjusting it to more comprehensively reflect the stated objectives. Networks in a liberalised market, such as the Czech Republic within the EU, are built by the commercial sphere under market conditions and the State's aim is not to interfere negatively with competition. The State should identify and remove obstacles to network development and seek legislative and non-legislative measures to facilitate, accelerate and cheapen construction. It is understood that the Czech Republic is not alone in this effort; European legislation is being prepared, e.g. a proposal for a regulation on gigabit infrastructure, and other options are being discussed to help the development of networks, especially in locations where market mechanisms are failing. Therefore, there are also subsidy mechanisms and block exemptions (GBER) to cover at least some of the "white spots", i.e. places where market mechanisms fail and it is verified by public consultation that there are no relevant networks and will not be built on a commercial basis in the next 3 years. See e.g. Analysis of the state of development of NGA networks in the Czech Republic for providing access to high-speed internet available at a fixed location (pp. 134–138)[25]. Therefore, as part of non-legislative measures, subsidy mechanisms are targeted at these areas, both from the National Recovery Plan and from European Structural Funds, Operational Programme Enterprise and Innovation for Competitiveness (OP PIK), Operational Programme Technologies and Applications for Competitiveness (OP TAC).

These are particularly areas where VHCN coverage is very problematic, especially given the nature of the landscape and built-up areas, and even more so if the KPI is currently set only for FTTx and DOCSIS 3.1 coverage. Given the existence of these areas in the Czech Republic, setting a national target of 100% would be unrealistic. Therefore, based on expert estimation, a provisional value of 95% was chosen. Based on the rationale of the Implementing Decision and with reference to the historical data (ALL) above, we also see the possibility of meeting the target values using other technologies that do not currently fall under the definition of this indicator.

1.5.2 5G coverage

Objective: all populated areas are covered by next-generation high-speed wireless networks with at least 5G performance in line with the principle of technology neutrality

Indicator name (KPI): 5G coverage

National baseline: 83% (2022)

National KPI target (for 2030): 100 % (assuming the use of satellite technology, provided that this technology will provide services with at least 5G-comparable performance)

**EU baseline:** 81.2% (2022)

EU KPI target (for 2030): 100%

Source of data: External studies – Broadband coverage in Europe studies for the EC (Omdia and Point Topic) – Gigabit 2013-2022

KPI definition: 5G coverage, measured as the percentage of populated areas covered by at least one 5G network regardless of the spectrum band used.

---

[25] MPO. Analysis of the state of development of NGA networks in the Czech Republic. *Mpo.cz*. 2023. Available here [cit. 2023-10-23].

Chart 5: 5G coverage
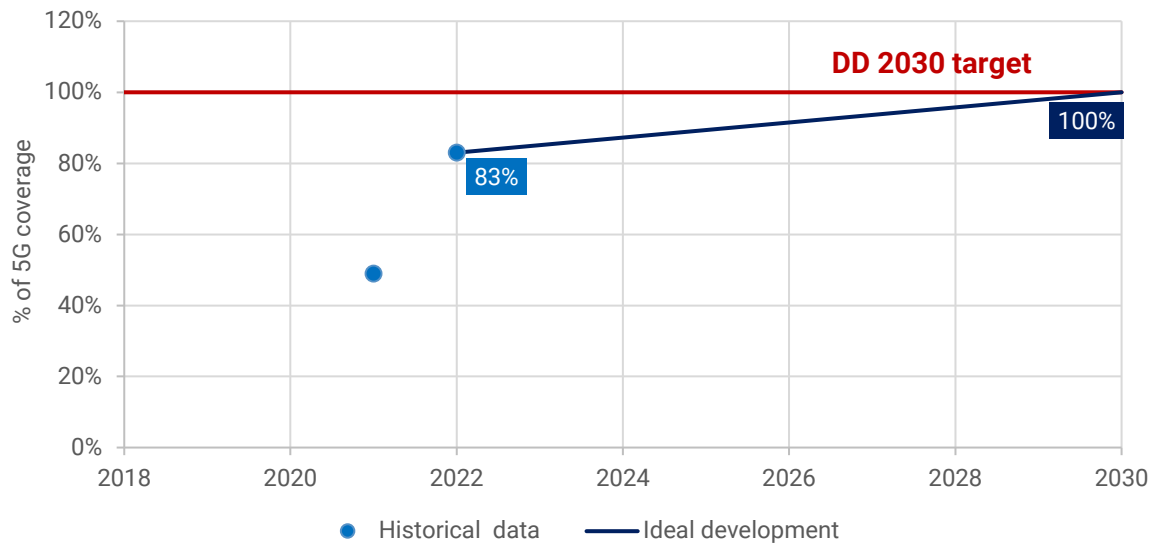
Reasoning: The chart shows the significant development in 5G network coverage in the Czech Republic between 2020 and 2022. The current actual population coverage stands at 94.6% as of June 2023. The Czech Telecommunication Office's data on 5G network coverage is available on a per capita or per covered area basis. Therefore, they may differ slightly from the data recalculated for the Broadband coverage in Europe studies for the EC (Omdia and Point Topic) – Gigabit 2013–2022 used by the European Commission. As outlined in Chapter 1.1, 5G coverage will continue to be provided at least in accordance with the conditions set out in the radio frequency allocations for the relevant frequency bands. The values enforceable by the State reach 99% coverage of the population of each district in the country and 90% coverage of the territory of each district in the country as of Q1 2031. These values were determined with regard to the actual technical feasibility of coverage with respect to the characteristics of the Czech Republic. However, it is possible that a higher level of coverage will be achieved, especially in view of possible technological developments, but also with the help of subsidy support for 5G coverage in sparsely populated areas.

1.5.3 Semiconductors

Objective: Union production of high-end semiconductors, in compliance with Union law on environmental sustainability, shall account for at least 20% of world production in value terms

Indicator name (KPI): semiconductors

National baseline: unknown

National KPI target (for 2030): unknown, to be added later depending on the availability of the EC study.

EU baseline: 10% (2022)

EU KPI target (for 2030): 20%

Source of data: International Data Corporation study in progress

KPI definition: Semiconductors, measured as value generated, in terms of revenues, by semiconductor activities in the Union, in all stages of the value chain, with respect to the global market value. For the first year, reporting will be done on the basis of those activities in Europe.

Reasoning: As the EC study is still ongoing and no data is yet available, this trajectory will not be projected in the first roadmap.

1.5.4 Edge nodes

Objective: at least 10 000 climate-neutral, highly secure nodes at the edge of the network are deployed in the Union, deployed in such a way that low-latency (i.e. a few milliseconds) access to data services is guaranteed wherever businesses are located

Indicator name (KPI): edge nodes

National baseline: 0

National KPI target (for 2030): unknown

EU baseline: 0

EU KPI target (for 2030): 10 000

Data source: external Edge observatory study (ongoing)

KPI definition: Edge nodes, measured as the number of compute nodes providing latencies below 20 milliseconds; such as an individual server or other set of connected computing resources, operated as part of an edge computing infrastructure, typically residing within an edge data centre operating at the infrastructure edge, and therefore physically closer to its intended users than a cloud node in a centralised data centre.

Reasoning: As no data is currently available, this trajectory will not be projected in the first roadmap.

1.5.5 Quantum computing

Objective: The Union has the first quantum-accelerated computer by 2025, paving the way for it to become a leader in quantum capabilities by 2030.

Indicator name (KPI): quantum computing

National baseline: 0

National KPI target (for 2030): 1

EU baseline: 0

EU KPI target (for 2030): 3

Source of data: study on the Quantum Technologies Flagship initiative

KPI definition: Quantum computing measured as the number of operational quantum computers or quantum simulators, including accelerators of High Performance Computing supercomputers, deployed and accessible to the user communities.

Reasoning: Due to the nature of the indicator and the impossibility of quantifying contributions, this trajectory will not be projected. However, the Czech Republic has been selected by The European High Performance Computing Joint Undertaking as one of six sites to host Europe's first quantum-accelerated computer in 2022. The LUMI-Q consortium project at IT4Innovations was selected for this purpose.

Further activities and research in this area are being carried out at a number of universities (e.g. Czech Technical University in Prague or Masaryk University in Brno). The Operational Programme Jan Amos Komenský (OP JAK) also supported two projects in the field of quantum technologies and materials, each worth CZK 500 million (Czech Academy of Sciences and the University of West Bohemia in Pilsen). The project will involve researchers from several higher education institutions and institutes across the Czech Republic. Given the capacity of the State, the Czech Republic will focus in particular on support in this area at the national level and in cooperation with other Member States.

1.6 Digital transformation of businesses

1.6.1 Cloud services

Objective: at least 75% of businesses in the Union use one or more of the following in line with their business activities: cloud services; big data; artificial intelligence

Indicator name (KPI): Cloud computing

**National baseline:** 40% (2021)

National KPI target (for 2030): 60%

EU baseline: 34% (2022)

EU KPI target (for 2030): 75%

Source of data: EU Survey on ICT Usage and e-commerce in enterprises

KPI definition: Cloud computing, measured as the percentage of enterprises using at least one of the following cloud computing services: 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.

Chart 6: Cloud services
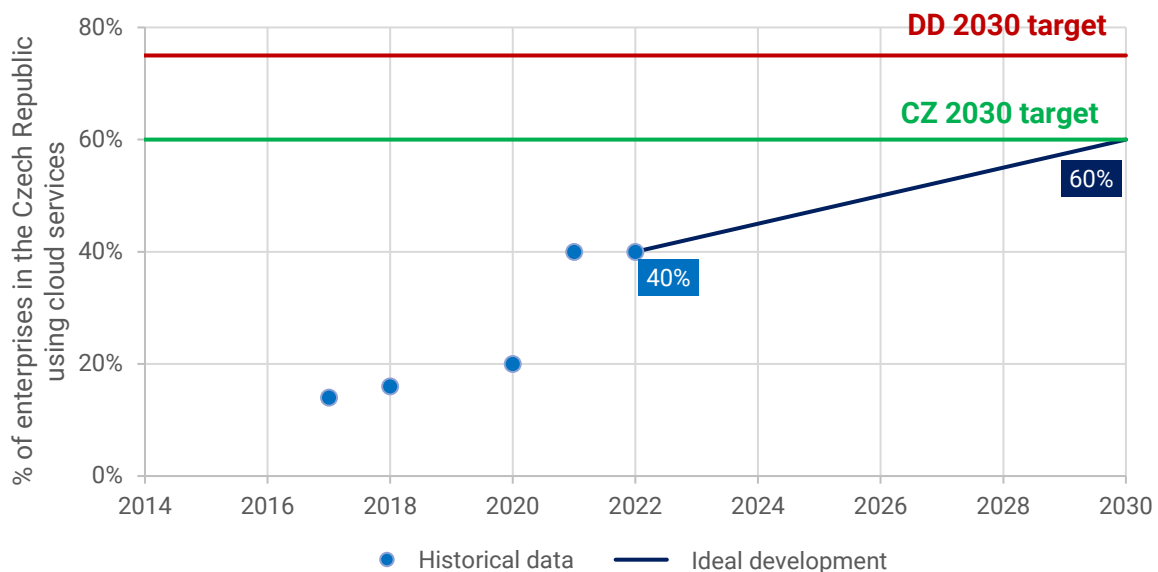
Reasoning: This indicator is one of the three composite indicators related to the digital transformation of enterprises and the target is to reach a value of 75% for at least one of them.

One of the newer manifestations of digitalization in the business sector is the use of cloud computing services, where enterprises use provided storage space, services or programmes available from the Internet via remote access, e.g. using a web browser. The popularity of using cloud services is growing, especially among large enterprises. One factor that may lead to the 60% target not being met is activities that restrict access to the EU internal market for non-European suppliers from like-minded EU countries.

1.6.2 Big data

Objective: at least 75% of enterprises in the Union use one or more of the following in line with their business activities: cloud services; big data; artificial intelligence

Indicator name (KPI): Big data

National baseline: 9.12% (2020)

National KPI target (for 2030): 25%

EU baseline: 14% (2022)

EU KPI target (for 2030): 75% (overall indicator)

Source of data: [Eurostat, EU Survey on ICT Usage and e-commerce in enterprises](#)

KPI definition: Big data, measured as the percentage of enterprises analysing big data from any data source (internal or external). As of the 2024 report, big data will be measured by the percentage of enterprises performing data analytics (internally or externally).

Chart 7: Big data
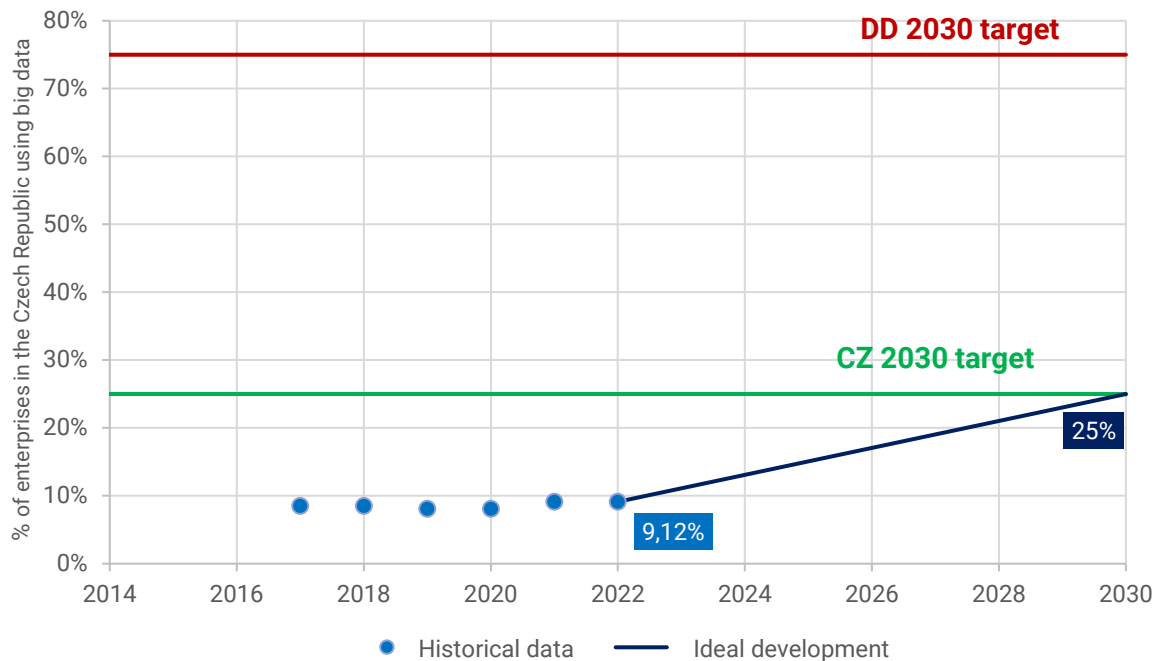
Reasoning: The Czech Republic has set an ambitious target of 25%, which can be facilitated by the adaptation of the new Data Act, which aims to boost Europe's data-driven economy by unlocking the potential of industrial data, optimising its availability and reuse. Furthermore, according to the results of the CZSO survey, it seems advisable for enterprises in the Czech Republic to make more use of big data from social networks and other social media, as well as location data from portable devices, as is the case in other countries.

1.6.3 Artificial intelligence

Objective: at least 75% of enterprises in the Union use one or more of the following in line with their business activities: cloud services; big data; artificial intelligence

Indicator name (KPI): artificial intelligence (AI)

National baseline: 5% (2021)

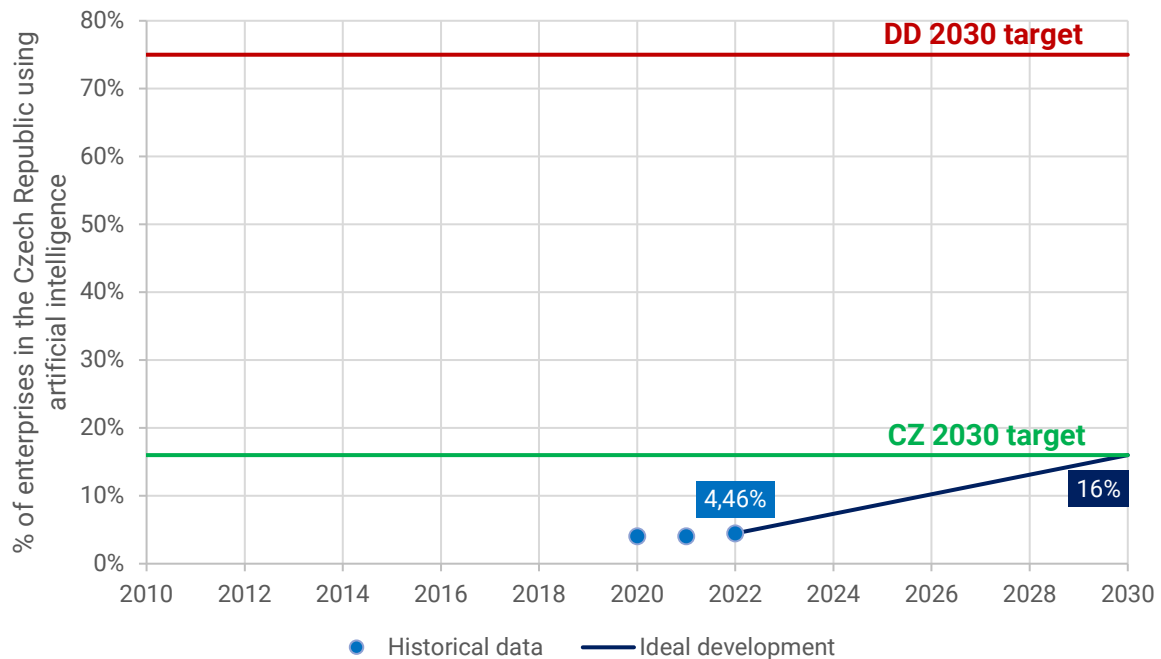**National KPI target (for 2030):** 16%

EU baseline: 7.91% (2022):

EU KPI target (for 2030): 75% (total)

KPI definition: Artificial intelligence, measured as the percentage of enterprises using at least one artificial intelligence technology.

Chart 8: Artificial intelligence

Reasoning: The Czech Republic perceives the importance of using AI in the digital transformation of enterprises and several initiatives and plans are currently underway to increase its use. According to statistical surveys, artificial intelligence is used in the Czech Republic, for example, to predict the development of events, in process automation or in enterprise management, and it is widespread among large enterprises. A quarter of them used some form of AI technology. The use of artificial intelligence technologies is most prevalent in the IT sector.

The Czech Republic is able to meet the 16% target provided that the democratisation of AI use enabled by the introduction of generative AI (e.g. ChatGPT) continues. However, future approved AI regulation needs to be of high quality and not impose unjustified obstacles to AI innovation. At the national level, the Czech Republic wants to support the development of artificial intelligence in companies also through the implementation of future measures of the National Artificial Intelligence Strategy, in which the Czech Republic will also seek greater support for this segment to improve the future economic development and competitiveness of the Czech Republic.

1.6.4 Digital intensity of businesses

Objective: more than 90% of SMEs in the Union achieve at least a basic level of digital intensity

Indicator name (KPI): digital intensity of SMEs

National baseline: 68% (2022)
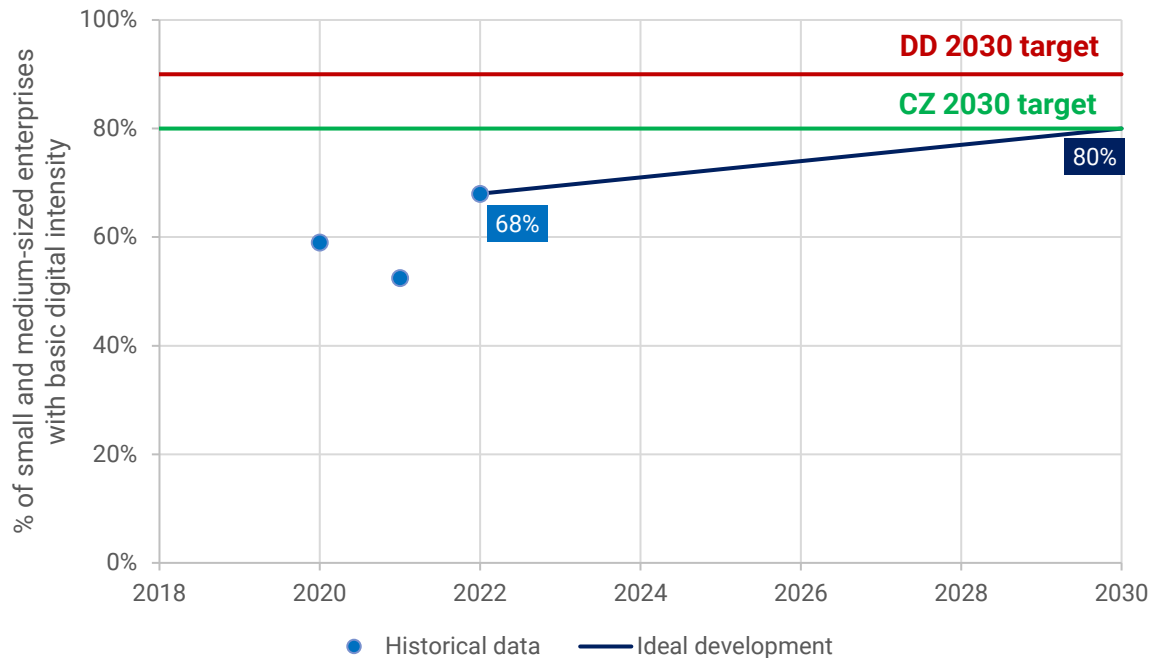
National KPI target (for 2030): 80%

EU baseline: 69% (2022)

EU KPI target (for 2030): 90%

KPI definition: SMEs with at least a basic level of digital intensity, measured as the percentage of SMEs using at least 4 of 12 selected digital technologies.

Chart 9: Digital intensity of businesses

Reasoning: Due to the change in measurement methodology, it is not possible to base the data on time series, so it is not possible to indicate a baseline. Therefore, the presented trajectory cannot indicate the actual evolution of the variable over time. To achieve this objective, the Czech Republic will use support for the digital transformation of SMEs, e.g. through funds (OP TAC digital and virtual enterprise) or European financial programmes (National Recovery Plan or Digital Europe Programme).

1.6.5 Unicorns

Objective: The Union facilitates the growth of innovative and emerging businesses and improves their access to finance, leading to at least a doubling of the number of unicorns

Indicator name (KPI): unicorns

National baseline: 4 (2022)

National KPI target (for 2030): 6
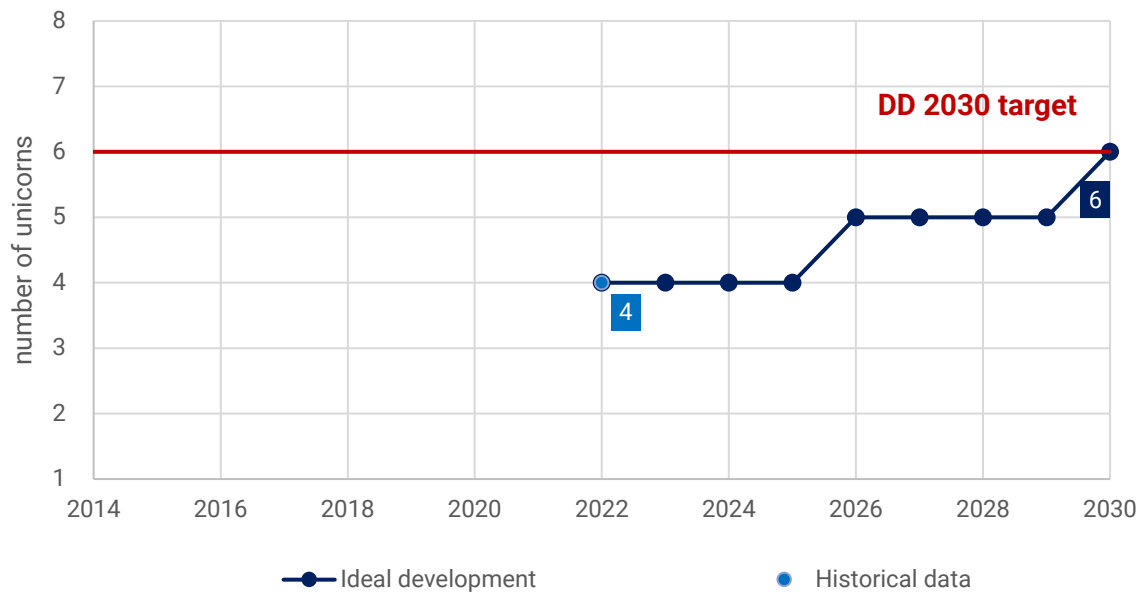
EU baseline: 249 (2022)

EU KPI target (for 2030): 500

Source of data: Dealroom platform

KPI definition: Unicorns, measured as the sum of 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.

Chart 10: Unicorns

Legend: Ideal development ● Historical data

Reasoning: The Czech Republic has set a target of 6 unicorns as their emergence is very unpredictable and difficult to estimate. In order to achieve this value, the Czech Republic needs to create a predictable, transparent and favourable environment for the emergence of unicorns through programmes such as the Technology Incubation mentioned in Section 3. On the other hand, it should be stressed that the influence of the State on the emergence of unicorns is rather limited. Conversely, what is key to the emergence of unicorns is that companies offer innovative products, are willing to take risks, talented people have entrepreneurial spirit and skills, and there is demand for the services offered. Furthermore, there is a need for a favourable investment climate and available investor support. The emergence and growth of unicorns is associated with risks and great challenges. A number of programmes and strategies to support emerging businesses, as outlined in Section 3, will serve to create more unicorns in the country.

1.7 Digitalization of public services

1.7.1 Online access to key public services for citizens

Objective: 100% of key public services are available online and, where relevant, it is possible for Union citizens and businesses to communicate online with public authorities

Indicator name (KPI): Online access to key public services for citizens

National baseline: 76% (2022)

**National KPI target (for 2030):** 100%

EU baseline: 77% (2022)

EU KPI target (for 2030): 100%

Source of data: e-Government benchmark

KPI definition: Online provision of key public services for citizens, measured as the share of administrative steps that can be done fully online for major life events. The following life events are considered: moving; transport; starting a small claims procedure; family; career; studying; health.

Chart 11: Online access to key public services for citizens
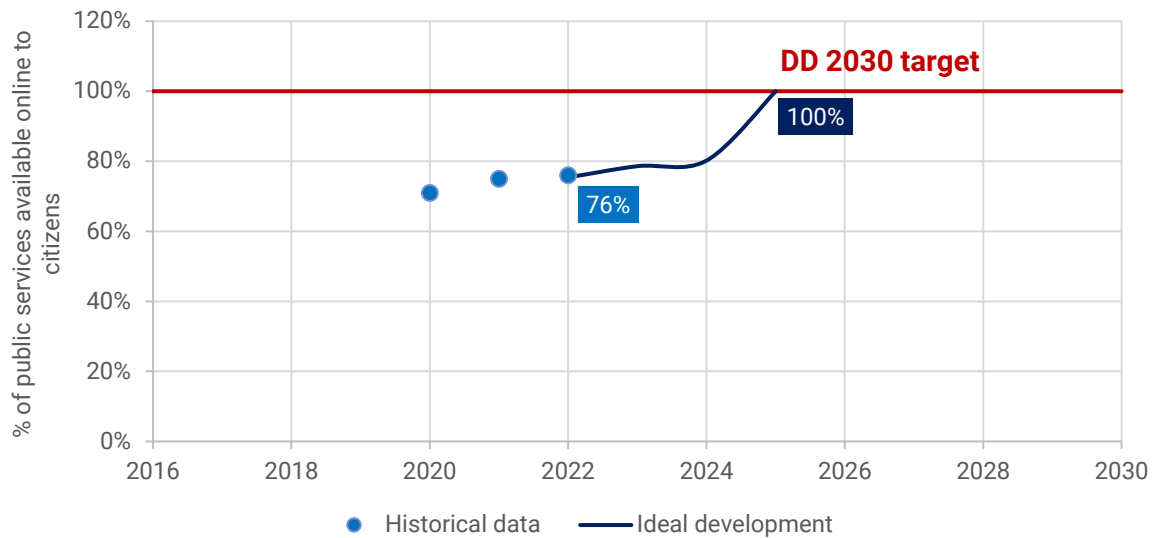
Reasoning: Several other eGovernment tools are expected to be launched in the coming years, so the increase in values in each year may be higher. The ideal development corresponds to the actual launch of the Act No 12/2020 Sb., on the right to digital service, which envisages the launch of all services included in the Catalogue of Services as digital services on 1 February 2025.

1.7.2 Online access to key public services for businesses

Objective: 100% of key public services are available online and, where relevant, it is possible for Union citizens and <u>businesses</u> to communicate online with public authorities

Indicator name (KPI): Online access to key public services for businesses

National baseline: 84% (2022)

National KPI target (for 2030): 100%

**EU baseline:** 84% (2022)

EU KPI target (for 2030): 100%

Source of data: e-Government benchmark

KPI definition: Online provision of key public services for businesses, measured as the share of administrative steps needed to start a business and conduct regular business operations, which can be done fully online.

Chart 12: Online access to key public services for businesses
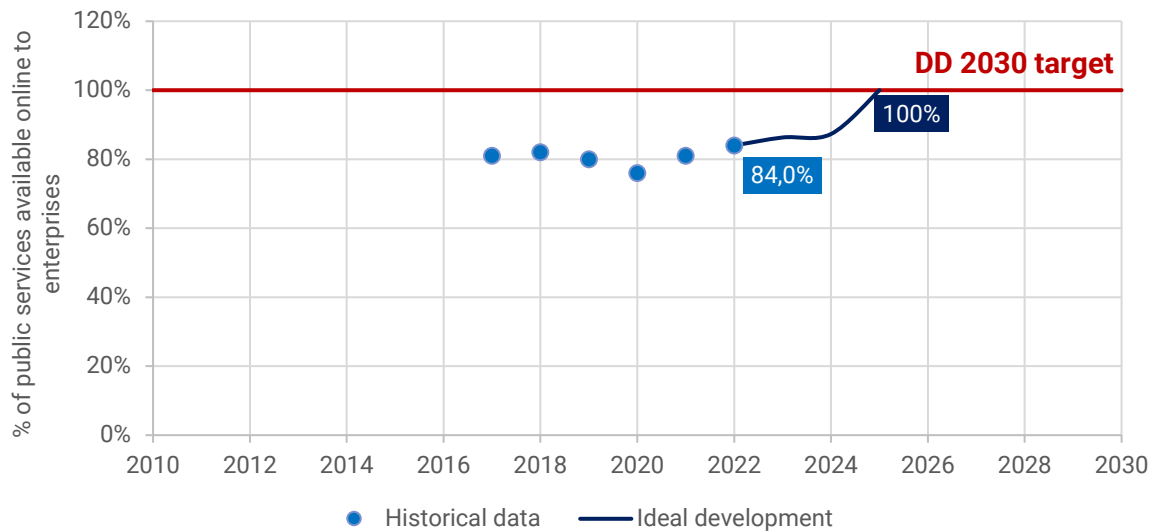
Reasoning: Historical data do not show a clear trend, so it is not possible to accurately estimate ideal developments from these data. However, the same applies here as for the previous indicator on the availability of online services for citizens. The ideal development corresponds to the actual launch of the Act No 12/2020 Sb., on the right to digital service, which envisages the launch of all services included in the Catalogue of Services as digital services on 1 February 2025.

1.7.3 Access to electronic health records

Objective: 100% of Union citizens have access to their electronic health records

Indicator name (KPI): access to electronic health records

National baseline: 47% (2022)

**National KPI target (for 2030):** 100%

EU baseline: 72% (2022)

EU KPI target (for 2030): 100%

Source of data: External study, Empirica GmbH and PredictBy

KPI definition: Access to e-health records, measured as: (i) the nationwide availability of online access services for citizens to their electronic health records data (via a patient portal, or a patient mobile app) with additional measures in place that enable certain categories of people (e.g. guardians for children, people with disabilities, elderly) to also access their data, and (ii) 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.

Chart 13: Access to electronic health records
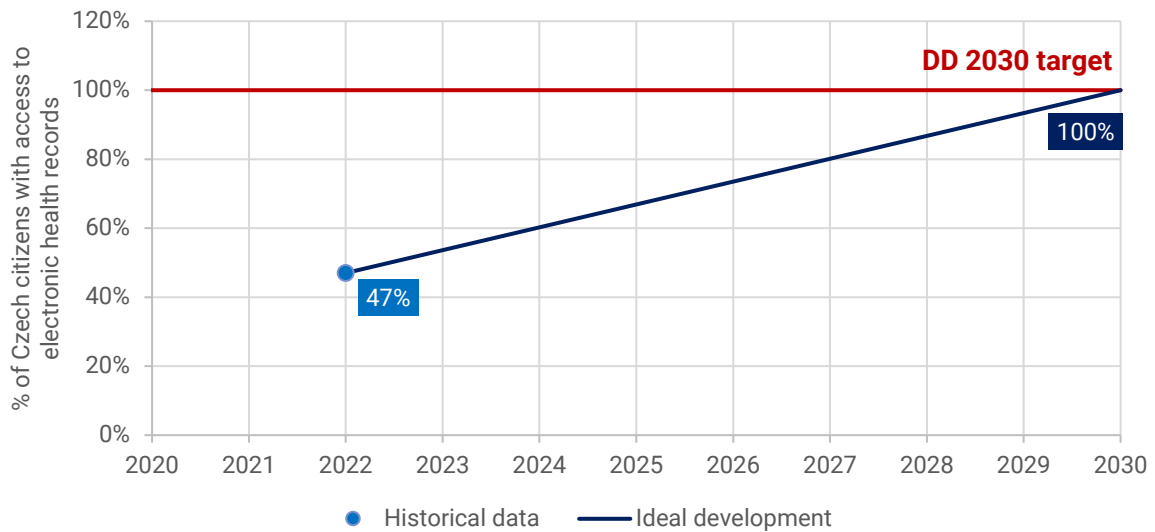
Reasoning: There is no historical data in the Czech Republic except for 2022; therefore, the trajectory presented is only a linear trend.

1.7.4 Access to eID

Objective: 100% of Union citizens have access to a secure means of electronic identification recognised throughout the Union, allowing them to have full control over transactions involving identity verification and shared personal data

Indicator name (KPI): Access to eID

National baseline: electronic identification system notified

National KPI target (for 2030): 100%

EU baseline: unknown

EU KPI target (for 2030): 100%

Source of data: European Digital Identity Framework

KPI definition: Access to eID measured by two KPIs: (1) as the number of Member States that have notified at least one national eID scheme in accordance with Regulation (EU) No 910/2014 and (2) as the number of Member States that have provided access to secure privacy-enhancing eID via the European Digital Identity Wallet 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. **Reasoning:** Given the setting of the indicator, we do not consider it necessary to present a national trajectory. As far as electronic identification systems are concerned, the Czech Republic has currently notified three such systems that comply with the eIDAS Regulation. Specifically, these are the electronic ID card, the eGovernment Mobile Key and MojeID.

Part 3: Policies, actions and steps to achieve the digital objectives

This section describes the individual measures that help to achieve each of the digital objectives, following the trajectories presented in Part 2. These measures were selected based on several criteria, such as prioritisation of actions, timing, expected impact or budget. This is not an exhaustive list, as a number of other measures contribute to the Digital Decade's objectives. Only the most important measures are presented here.

The measures are divided logically into areas according to the individual objectives. Despite the fact that each area as a whole falls under the responsibility of a specific institution, as mentioned in the introduction to this document, the situation may differ for individual measures. For this reason, the managing entity is mentioned separately for each measure.

1.8 Digital skills

1.8.1 Digital target 1a) 80% of 16−74 year olds have basic digital skills & 1b) 20 million ICT professionals are employed in the EU

Timeline of measures contributing to the achievement of the objective	2023	2024	2025	2026	2027	2028	2029	2030
Measure 1.1 – Implementation of the revised ICT curriculum for primary schools and multi-year grammar schools with emphasis on the development of digital skills and computational thinking in teaching (cross-cutting)	■	■	■					
Measure 1.2 – Drafting a revised Framework Education Programme for Primary Education reflecting the use of AI in teaching	■	■						
Measure 1.3 – Preparing a revision/update of the FEP for secondary education	■	■	■	■	■			
Measure 1.4 – Expanding the range of programmes for the development of basic and advanced digital skills for the public within the framework of activities supported by the National Recovery Plan (MoLSA e-shop) and preparing an awareness campaign	■	■	■					
Measure 1.5 – Reforming undergraduate teacher preparation and developing graduate competency profiles in teacher preparation programmes	■	■						
Measure 1.6 – Expanding the range of teacher education programmes (including online) focused on the development of digital skills in the context of the FEPW and linked to the use of diagnostic/auto-evaluation tools	■	■	■					

Measure								
Measure 1.7 – Introducing a contribution to the payment for digital training courses (pilot testing of a new active labour market policy)	🟩	🟩	🟩	🟦	🟦	🟦	🟦	🟦
Measure 1.8 – Creating a repository of certificates and a portal offering microcredentials in cooperation between higher education institutions and the Czech National Agency for International Education and Research	🟩	🟩	🟦	🟦	🟦	🟦	🟦	🟦
Measure 1.9 – Expanding the range of courses in the field of digital skills development for employees	🟩	🟩	🟩	🟦	🟦	🟦	🟦	🟦
Measure 1.10 – Expanding the range of study programmes at higher education institutions with a focus on ICT and cybersecurity, e.g. using a combination of full-time and distance learning	🟩	🟩	🟩	🟩	🟦	🟦	🟦	🟦
Measure 1.11 – Taking into account the requirements for improving the training of ICT/cybersecurity professionals (with an emphasis on increasing the representation of women in this field) in the framework of the planned innovation of the subject-area system	🟩	🟩	🟦	🟦	🟦	🟦	🟦	🟦
Measure 1.12 – Providing digital tools and aids for pupils from socio-economically disadvantaged backgrounds in schools	🟩	🟩	🟦	🟦	🟦	🟦	🟦	🟦
Measure 1.13 – National RIS3 Strategy	🟩	🟩	🟩	🟩	🟩	🟦	🟦	🟦

A budget of all measures that can be assigned to the given objective:

- Public investment:
    - Total CZK 10 193.1 million
    - Of which national sources:
        - CZK 9 650 million from the NPO (CZK 9 640 million allocated)
        - CZK 515 million from the NPO and the State budget
        - CZK 28.1 million from the State budget

A description of how and to what extent the measures are intended to address Member State-specific challenges:

Although the Czech Republic has a higher share of people with basic digital skills compared to other Member States and the EU average (according to DESI), the aim is to further improve the conditions and support the development of digital skills across society, in the context of the advancing digital transformation, the accelerating development of digital technologies and the prevention of digital exclusion. In terms of improving the competitiveness of the Czech Republic, we consider it crucial to support the training and increase in the number/share of ICT and cybersecurity professionals (including the under-representation of women in these fields). The Czech Republic has long faced a shortage of skilled labour in these professions, with the labour market experiencing a significant increase in demand in this area.

Regarding the change of the target value in the preparation of ICT professionals: In initial education, activities are currently underway to expand the range of professionally oriented study programmes at higher education institutions (funded by the NPO under component 3.2), including in the area of ICT professionals training (e.g. programmes focused on cybersecurity, etc.). In the area of regional education, an innovation of the system of secondary school fields of study is being prepared, which will subsequently be reflected in the planned revision of the framework education programmes for individual secondary school fields of study. As these are relatively significant changes, it is necessary to take into account that the implemented/planned changes will take longer to take effect (ensuring successful implementation of the proposed changes, time delay before there are the first graduates of the offered programmes, etc.).

Some flexibility is provided by reskilling/upskilling tools in the field of further education. Funds from the NPO have been used to create the Database of Retraining and Further Education Courses under the MoLSA, which aims to expand/increase access to the range of programmes, including in the field of information technology and the development of digital tools. At the same time, financial support is provided for people registered with the Labour Office. However, it should also be taken into account that the participation of adults in further education in the Czech Republic is not very high (compared to OECD countries, the Czech Republic is among the countries with lower participation) [26]. Moreover, the share of the adult population participating in further education has decreased significantly since 2017 compared to the EU average. In an international comparison, the Czech Republic is among the countries with a higher proportion of people who are not in education or do not plan further education at all (84% Czech Republic, 78% EU) [27].

Investment gap:

In order to ensure successful implementation and minimise the associated risks, the above objectives correspond with the activities implemented/planned at the level of the concerned ministries. The projects are financed either from the budget chapter of the respective managing entity or from the National Recovery Plan within the framework of the supported activities. The vast majority of the above targets are to be met by the end of 2025. In response to this, related projects will be added to the next roadmap, in agreement with the relevant coordinators in terms of the expected deadlines for implementation, securing sources of funding and calculating the expected costs.

Measure 1.1 – Implementation of the revised ICT curriculum for primary schools and multi-year grammar schools with emphasis on the development of digital skills and computational thinking in teaching (cross-cutting)	
Managing entity:	**Ministry of Education, Youth, and Sports**
New measure	**No**
Brief description of the measure	**Content of the measure:** • The aim of the measure is to develop pupils' computational thinking, which includes the following strands: data, information and modelling; algorithmisation and

---

[26] OECD. OECD Skills Outlook 2021: Learning for life. Online. 2021. Available here [cit. 2023-10-23].
[27] EUROSTAT. EU labour force survey. *Ec.europa.eu*. Online. 2023. Available here [cit. 2023-10-23].

	programming; information systems; digital technologies, as well as digital competences across the curriculum areas.
	Link to objective:
	• Developing teachers' digital and computational mindsets to be able to prepare children well for the digital future, targeted support towards schools in the context of the implementation of the revised educational content.
	Indicative timetable:
	• The measure will be implemented between 2020–2025.
Allocated or planned budget	• CZK 515 million (State budget, NPO)
Expected impact and related timing	• Developing digital skills/computational thinking.

Measure 1.2 – Drafting a revised FEP for primary education reflecting the use of AI in teaching

Managing entity:	**Ministry of Education, Youth, and Sports**
New measure	**No**
Brief description of the measure	**Content of the measure:**
	• Preparation of a comprehensive revision of the FEP for primary schools with an emphasis on the development of digital skills/computational thinking and the integration of AI into teaching, on the basis of which schools will prepare their own education programmes (SEP).
	Link to objective:
	• Developing digital literacy skills, supporting the effective integration of digital technologies into the curriculum to prepare children for a digital future.
	Indicative timetable:
	• The expected date of implementation is set for the end of 2024.
Allocated or planned budget	• As part of the normal activities of the plan of main tasks (plán hlavních úkolů – PHÚ) (State budget)
Expected impact and related timing:	• Developing digital skills/computational thinking.

Measure 1.3 – Preparing a revision/update of the FEP for secondary education

Managing entity:	**Ministry of Education, Youth, and Sports**
New measure	**Yes**
Brief description of the measure	**Content of the measure:**
	• Preparation of revised FEPs for secondary school fields of study with emphasis on the development of digital skills/computational thinking, on the basis of which secondary schools will create their own educational programmes (SEP) – Relation to the planned innovation of the system of secondary school fields of study.
	Link to objective:
	• Development of digital skills and computational thinking across subject areas in relation to the already implemented modifications of the FEP for primary education.

	Indicative timetable:
	• The expected date of implementation is set for the beginning of 2027.
Allocated or planned budget	• CZK 20 million (State budget)
Expected impact and related timing	• Developing digital skills/computational thinking.

Measure 1.4 – Expanding the range of programmes for the development of basic and advanced digital skills for the public within the framework of activities supported by the National Recovery Plan (MoLSA e-shop) and preparing an awareness campaign

Managing entity:	Ministry of Labour and Social Affairs
New measure	No
Brief description of the measure	**Content of the measure:** • Making available and expanding the range of programmes and courses in information technology and digital skills development • Ensuring financial support, e.g. for people registered with the Labour Office. • Preparing an awareness campaign to promote the use of the programmes and courses offered, including targeting people who are digitally excluded/at risk of digital exclusion. **Link to objective:** • Developing digital skills. **Indicative timetable:** • The expected date of implementation is set by the end of 2025
Allocated or planned budget	• CZK 10 million (NPO) + CZK 8.1 million for awareness campaign (State budget)
Expected impact and related timing:	• Developing digital skills

Measure 1.5 – Reforming undergraduate teacher preparation and developing graduate competency profiles in teacher preparation programmes

Managing entity:	Ministry of Education, Youth, and Sports
New measure	No
Brief description of the measure	**Content of the measure:** • Modernisation of teacher education programmes in cooperation with higher education institutions, also in the context of the development of digital technologies (including AI) and their effective use in education and teaching. • Preparation of a competency profile for graduates of teacher education programmes providing a framework description of what a graduate should know and be able to do before starting actual work. The competence profile will also focus on digital skills in the context of effective use of digital tools in teaching, creating a safe school climate

	(wellbeing / digital wellbeing), effective use of digital technologies (including AI) in teaching.
	Link to objective:
	• Development of digital skills in the context of preparing future teachers, use of digital technologies in teaching, related prevention.
	Indicative timetable:
	• The expected date of implementation is set for the end of 2024.
Allocated or planned budget	• As part of the normal activities of the plan of main tasks (plán hlavních úkolů – PHÚ) (State budget)
Expected impact and related timing	• Support for the development of digital skills.

Measure 1.6 – Expanding the range of teacher education programmes (including online) focused on the development of digital skills in the context of the FEPW and linked to the use of diagnostic/auto-evaluation tools

Managing entity:	**Ministry of Education, Youth, and Sports**
New measure	**No**
Brief description of the measure	**Content of the measure:**
	• Expanding the range of educational programmes focusing on the development of digital skills and the use of digital technologies in teaching for teachers as part of their continuing professional development.
	• Use of existing self-evaluation tools to better target programme offerings to the actual needs of trainees (Teacher21 Profile, SELFIE for TEACHERS, etc.).
	Link to objective:
	• Developing digital skills of teachers
	Indicative timetable:
	• The expected date of implementation is set for the end of 2025.
Allocated or planned budget	• Allocated: CZK 10 million (NPO)
Expected impact and related timing	• Developing digital skills.

Measure 1.7 – Introducing a contribution to the payment for digital training courses (pilot testing of a new active labour market policy)

Managing entity:	**Ministry of Labour and Social Affairs**
New measure	**No**
Brief description of the measure	**Content of the measure:**
	• Introduction of a contribution towards the cost of digital training courses.
	• Pilot testing of a new active labour market policy.
	Link to objective:
	• Encouraging participation in digital skills development training.
	Indicative timetable:
	• The expected date of implementation is set for the end of 2025.

Allocated or planned budget	• Allocated: CZK 2 billion (NPO)
Expected impact and related timing:	• Support for the development of digital skills.

Measure 1.8 – Creating a repository of certificates and a portal offering microcredentials in cooperation between higher education institutions and the Czech National Agency for International Education and Research

Managing entity:	**Ministry of Education, Youth, and Sports**
New measure	**No**
Brief description of the measure	**Content of the measure:** • Creation of a common online catalogue of public higher education institutions courses that meet microcertificate requirements. • Establishment of a unified system designed to verify the results of smaller forms of education in the context of increasing the permeability of education at the level of HEIs. **Link to objective:** • Developing digital skills, supporting reskilling/upskilling. **Indicative timetable:** • The expected date of implementation is set for the end of 2025.
Allocated or planned budget	• Allocated: CZK 10 million (NPO)
Expected impact and related timing	• Digital skills development, reskilling/upskilling.

Measure 1.9 – Expanding the range of courses in the field of digital skills development for employees

Managing entity:	**Ministry of Labour and Social Affairs**
New measure	**No**
Brief description of the measure	**Content of the measure:** • Expanding the range of courses focused on developing digital skills for employees in companies. **Link to objective:** • Developing digital skills. **Indicative timetable:** • The expected date of implementation is set for the end of 2025.
Allocated or planned budget	• Allocated: CZK 3.12 billion (NPO)
Expected impact and related timing	• Developing digital skills.

Measure 1.10 – Expanding the range of study programmes at higher education institutions with a focus on ICT and cybersecurity, e.g. using a combination of full-time and distance learning

Managing entity:	**Ministry of Education, Youth, and Sports**
New measure	**No**
Brief description of the measure	**Content of the measure:**

	• The aim of the reform is to adapt the structure of study programmes to new trends and labour market needs, including in the context of developments in digital technologies. • Expanding the range of career-oriented study programmes and programmes focused on progressive fields. • Related activities (component 3.2 in the NPO) also focus on improving the skills of academic staff in the use of information technology. **Link to objective:** • Digital skills development, reskilling/upskilling, training of ICT specialists and cybersecurity professionals. **Indicative timetable:** • The expected date of implementation is set for 2026.
Allocated or planned budget	• Allocated: CZK 3 billion (NPO)
Expected impact and related timing:	• Digital skills development, reskilling/upskilling, training of ICT and cybersecurity professionals.

Measure 1.11 – Taking into account the requirements for improving the training of ICT/cybersecurity professionals (with an emphasis on increasing the representation of women in this field) in the framework of the planned innovation of the subject-area system

Managing entity:	**Ministry of Education, Youth, and Sports**
New measure	**No**
Brief description of the measure	**Content of the measure:** • Reflecting the need to strengthen the training of ICT/cybersecurity professionals within the planned innovation of the system of secondary school fields of study, at the level of fields of study, or by targeting schools within their own school education programmes (SEP). • One of the starting points will be the result of an experimental validation aimed at teaching cybersecurity in the field of Information Technology. • Promoting greater representation of girls in this area. **Link to objective:** • Education and training of ICT/cybersecurity professionals, promoting greater representation of women in ICT. **Indicative timetable:** • The expected date of implementation is set for the end of 2024.
Allocated or planned budget	• Allocated: as part of the normal activities of the plan of main tasks (State budget)
Expected impact and related timing	• Training of ICT/cybersecurity professionals, increased representation of women in ICT.

Measure 1.12 – Providing digital tools and aids for pupils from socio-economically disadvantaged backgrounds in schools

Managing entity:	**Ministry of Education, Youth, and Sports**
New measure	**No**
Brief description of the measure	**Content of the measure:**

	· Allocation of funding to schools for the purchase of digital learning aids to make mobile digital technology in education accessible to all pupils (through the mobile device fund). · Activities to support the prevention of digital exclusion. **Link to objective:** · Creating appropriate conditions for the use of digital technologies in education and the development of children's digital skills **Indicative timetable:** · The expected date of implementation is set for the end of 2024.
Allocated or planned budget	· Allocated: CZK 1.5 billion (NPO)
Expected impact and related timing	· Support for the development of digital skills, preventing digital exclusion

Measure 1.13 – National RIS3 Strategy	
Managing entity:	**Ministry of Industry and Trade**
New measure	**No**
Brief description of the measure	**Content of the measure:** · The National RIS3 Strategy focuses in particular on supporting the modernisation (and digitalization) of the initial education system with an emphasis on the development of key competences of pupils and students relevant for long-term employment on the labour market and in independent entrepreneurship. **Link to objective:** · Supporting the development of digital and entrepreneurial skills. **Indicative timetable:** · The measure will be implemented between 2023−2027.
Allocated or planned budget	· This does not have its own budget. It is a strategy shaping the form of relevant measures financed by the Operational Programme Jan Amos Komenský (EUR 3 million)
Expected impact and related timing:	· Developing digital skills

1.9 Digital infrastructures

1.9.1 Digital Objective 2a) Gigabit network coverage and coverage of all populated areas with 5G-comparable high-speed networks

Timeline of measures contributing to the achievement of the objective	2023	2024	2025	2026	2027	2028	2029	2030
Measure 2.1 – Enhancing digital connectivity	🟩	🟩	🟩	🟩	🟩	🟩	🟩	🟩
Measure 2.2 – Broadband Competence Office Czech Republic project	🟩	🟩	🟩	🟩	🟩	🟩	🟩	

Measure 2.3 – Support for the development of very high capacity networks								
Measure 2.4 – Support for the development of 5G mobile networks								
Measure 2.5 – Non-subsidy support for the development of electronic communications networks								
Measure 2.6 – Research activities related to the development of 5G networks and services								
Measure 2.7 - Fulfilling radio frequency allocation obligations for 5G networks								

A budget of all measures that can be assigned to the given objective:

- Public investment:
    - Total CZK 13 597 million[28]
    - Of which national sources:
        - Total CZK 7 843
            - CZK 7 843 million from NPO
    - Of which from EU sources:
        - Total CZK 5 754 million from EU sources:
            - CZK 4 673 million from OP TAK
            - CZK 1 081 million from OP PIK

A description of how and to what extent the measures are intended to address Member State-specific challenges:

In line with the European Commission's recommendations for the Czech Republic, the proposed measures represent a commitment by the Czech Republic to continue to support investment in digital transformation, using grants from the Recovery and Resilience Facility and other EU funds.

All of these measures will contribute to the development and availability of very high capacity networks and 5G services, and will make a significant contribution to achieving the digital objectives. In addition to supporting the construction of infrastructure, the measures are also aimed at removing obstacles and barriers affecting the construction and operation of networks and providing advice and support to regions in their development.

Estimated investment gap and possible measures to achieve national targets:

For Measure 2.1 – Improving digital connectivity, private investment is estimated to be comparable to public support (of which: grants, financial instruments), totalling EUR 64 337 000.

Measure 2.1 – Enhancing digital connectivity	
Managing entity:	**Ministry of Industry and Trade**
New measure	**No**
Brief description of the measure	**Content of the measure:**

---

[28] Note: For simplicity, all amounts in the funding summary are in CZK. Amounts quoted in euro have been converted at the Czech National Bank's exchange rate on 29 September 2023, which was as follows: 1 EUR (euro) = 24.340 CZK

- In particular, the following activities will be supported under this measure:
  - Modernisation or expansion of existing infrastructure and establishment of new networks for high-speed Internet access of very high capacity using mainly fibre optic cables – support for connection of white address points to VHCNs.
  - Building backhaul networks where capacity is insufficient (e.g. as part of the construction of smart energy networks, using backhaul to provide optical data connectivity to small municipalities).
  - Support for the construction of transmission points to cover remote areas within larger municipalities, with the aim of providing connectivity across the entire territory of the Czech Republic.
  - Building professional and technical capacity in the territory to facilitate and accelerate the interaction of actors in building very high capacity networks in the regions – Broadband Competence Office Czech Republic (BCO).

Link to objective:

- Within the country, there is a deep digital divide (coverage and usage) between urban and rural areas; therefore, priority investment needs have been identified to improve digital connectivity, in particular to deploy backhaul/backbone networks, broadband infrastructure and to support demand-side measures to promote cable solutions for private homeowners in rural areas.

Indicative timetable:

- The programme was launched in July 2022 and a mid-term review of the programme conditions will take place (revised conditions should be available at the end of Q4 2024). The programme is expected to run until at least the end of 2030.

Allocated or planned budget	- EUR 192 million (EU)
Expected impact and related timing	- The main impact is to increase the digital connectivity of citizens and private entities and to improve digital infrastructure.

Measure 2.2 – Broadband Competence Office Czech Republic project	
Managing entity:	**Ministry of Industry and Trade**
New measure	**Yes**
Brief description of the measure	**Content of the measure:** - The aim of the Broadband Competence Office (BCO) is to support all regions of the Czech Republic in the creation of a single EU digital market with an emphasis on the development of high-speed VHCNs. **Link to objective:** - The activities of the office include efforts to increase the efficiency and effectiveness of investments in the development of high-speed networks, providing advice and expert assistance to municipal governments, business entities and socio-economic actors to help achieve the objective. **Indicative timetable:** - The office will operate until at least 2029.

Allocated or planned budget	• CZK 90 million (of which CZK 78 million from OP TAC included in the budget of Measure 2.1, CZK 12 million from OP PIK)
Expected impact and related timing	• The activities of the office will indirectly contribute to achieving higher coverage by high-speed VHCN.

Measure 2.3 − Support for the development of very high capacity networks

Managing entity:	**Ministry of Industry and Trade**
New measure	**Yes**
Brief description of the measure	**Content of the measure:** • The aim of the measure is to implement and plan calls in the area of network development. Specifically, the calls concern the following areas: high-speed internet, building high-capacity connections, measuring the quality of electronic communications networks, developing digital technical maps, recording the upcoming state of infrastructure, and deploying fixed VHCNs. **Link to objective:** • The individual calls under this measure will help leverage public and European funding to develop the infrastructure needed to ensure high quality coverage by very high capacity networks. **Indicative timetable:** • Calls under this measure are planned until 2029.
Allocated or planned budget	• Expenditure: CZK 9.7 billion (of which CZK 3 billion included in the budget of Measure 2.1; CZK 1 069 million OP PIK; CZK 5 633 million NPO)
Expected impact and related timing:	• The measure will directly contribute to achieving higher coverage by high-speed VHCN.

Measure 2.4 − Support for the development of 5G mobile networks

Managing entity:	**Ministry of Industry and Trade**
New measure	**Yes**
Brief description of the measure	**Content of the measure:** • The aim of the measure is to implement and plan calls in the development of 5G mobile networks. Specifically, it covers the following areas: development of 5G mobile infrastructure in investment-intensive rural locations; 5G corridor coverage and support for 5G development (MNOs and BTS builders); 5G application development demonstration projects for industrial areas using 5G networks; 5G corridor coverage and support for 5G development; 5G application development demonstration projects for smart cities using 5G networks; equipping 350 rail cars with mobile signal repeaters or pass-through windows. **Link to objective:** • Individual calls under this measure will help leverage public funds to develop the infrastructure needed to cover the territory with 5G mobile networks. **Indicative timetable:** • Calls under this measure are planned until 2026.
Allocated or planned budget	• CZK 1 910 million (NPO)

Expected impact and related timing:	• The measure will directly contribute to achieving higher coverage of 5G-comparable networks.

Measure 2.5 – Non-subsidy support for the development of electronic communications networks

Managing entity:	**Ministry of Industry and Trade**
New measure	**Yes**
Brief description of the measure	**Content of the measure:** • Non-subsidy support is based on the implementation of action plans to implement non-subsidy measures to support the planning and construction of electronic communications networks. The aim of these plans is to identify the range of existing obstacles, increased financial requirements that negatively affect the planning and construction of electronic communications networks and existing financial barriers affecting the operation of these networks. • The "development criteria" set out in the auction of frequencies for 5G networks are key to the development of mobile networks, whereby 90% of the territory of each district and 99% of the population of each district should be covered by 5G networks by 2031. **Link to objective:** • The measure is aimed at facilitating, speeding up and making cheaper the construction of electronic communications networks and thus indirectly at meeting the set objective. **Indicative timetable:** • The measure is planned until 2029.
Allocated or planned budget	• No budget. The measure is aimed at facilitating, speeding up and making cheaper the construction of electronic communications networks. For mobile network development criteria, these are commercial investments by mobile network operators.
Expected impact and related timing:	• Facilitating, speeding up and making cheaper the construction of electronic communications networks. • Creation of digital technical maps. • Creation of a database of upcoming infrastructure constructions within digital technical maps. • Creation of technical standardisation information for internal wiring of electronic communications lines. • Preparation of technical professions for the field of electronic communications networks.

Measure 2.6 – Research activities related to the development of 5G networks and services

Managing entity:	**Ministry of Industry and Trade**
New measure	**No**
Brief description of the measure	**Content of the measure:** • This measure is aimed at supporting public and private actors active in research, development and innovation related to 5G networks and services. • The projects will focus on the use of 5G applications in industry and services, in particular the use of new

	technologies in automotive manufacturing processes and other key sectors, taking into account the principles of the circular economy by recovering secondary raw materials. • Support should also be focused on projects supporting the development and deployment of automation, robotics, artificial intelligence and virtual or augmented reality. **Link to objective:** • The measure contributes to supporting industrial research and experimental development of 5G-based mobile communications in enterprises. It is primarily concerned with the development of 5G private networks in the Czech Republic in cooperation with research organisations. **Indicative timetable:** • The measure is implemented in the period from the beginning of 2021 to the end of 2025.
Allocated or planned budget	• Allocated: CZK 300 million (NPO)
Expected impact and related timing:	• Around 50 companies, including research organisations, are expected to receive funding to collaborate on industrial research and experimental development in 5G and increase their level of digitalisation by the end of 2025.

Measure 2.7 - Fulfilling radio frequency allocation obligations for 5G networks	
Managing entity:	**Czech Telecommunication Office**
New measure	**No**
Brief description of the measure	**Content of the measure:** • This measure is the basis for the development of 5G networks in the Czech Republic. • This is a binding timetable for the coverage of the population/territory of the Czech Republic with 5G networks for holders of radio frequency allocations for the relevant bands. Coverage commitments are based on the terms of the radio frequency auction[29]. **Link to objective:** • It is the basis for achieving the stated objective and an enforceable measure. **Indicative timetable:** • 2024 – 30% of the Czech population (700 MHz band/1 operator). • 2025 – 95% of the cadastral territory of each town with a population above 50 000 (700 MHz and 3400−3800 MHz). • 2025 – 100% of the main corridors and 98% of the secondary corridors of the extent of the rail and road corridor sections falling within the pan-European TEN-T network in the "Core Network" and "Comprehensive Network" categories (700 MHz and 3400−3800 MHz/few exceptions). • 2026 – 70% of the Czech population (700 MHz). • 2026 – 80% of the territory of the Czech Republic (700 MHz/1 operator/no military districts).

---

[29] CTO. Notification of the Czech Telecommunication Office on the announcement of a selection procedure for the purpose of granting rights to use radio frequencies for the provision of electronic communications networks in the frequency bands 700 MHz and 3400−3600 MHz. *Ctu.cz*. Online. 2023. Available here [cit. 2023-10-23].

	• 2027 – 100 % of secondary TEN-T corridors in the "Core Network" and "Comprehensive Network" categories (700 MHz and 3400−3800 MHz/few exceptions). • 2028 – 90% of the population of each district of the Czech Republic (700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2600 MHz and 3400−3800 MHz). • 2028 – 70% of the territory of each district of the Czech Republic (700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2600 MHz and 3400−3800 MHz/no military districts). • 02/2031 – 99% of the population of each district of the Czech Republic (700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2600 MHz and 3400−3800 MHz). • 02/2031 - 90 % of the territory of each district of the Czech Republic (700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2100 MHz, 2600 MHz and 3400−3800 MHz/no military districts).
Allocated or planned budget:	• Not stated
Expected impact and related timing:	• It is the basis for achieving the stated objective and an enforceable measure.

1.9.2 Digital Objective 2b) High-end semiconductor production in the EU with a value of at least 20% of global production, with an emphasis on sustainability

Timeline of measures contributing to the achievement of the objective	2023	2024	2025	2026	2027	2028	2029	2030
Measure 2.8 – Support to Czech enterprises participating in IPCEI in the field of microelectronics communication technologies	██	██	██	██	██	██		
Action 2.9 – Preparing the National Semiconductor Strategy	██	██						

A budget of all the measures that can be assigned to a given public investment objective:

- Public investment
  - Total CZK 1 387 million
  - Of which from EU sources:
    - CZK 1 387 million from EU sources

A description of how and to what extent the measures are intended to address Member State-specific challenges:

The measures are aimed at increasing the share of Czech companies in the semiconductor market, promoting research and development and international cooperation and the involvement of companies in the international value chain.

Investment gap:

For Measure 2.8, the planned budget is based on the requirements of IPCEI projects for the research and development phase. The support to IPCEI direct and indirect partners stems from European Commission Decision SA.101141.

Measure 2.8 – Support to Czech enterprises participating in IPCEI in the field of microelectronics and communication technologies	
Managing entity:	**Ministry of Industry and Trade**
New measure	**Yes**
Brief description of the measure	**Content of the measure:** • The measure will support major international innovation projects in, inter alia, processor and chip design for artificial intelligence (AI), chip design for communications (5G, 6G and others) and connectivity, the development and manufacture of these chips in the EU, advanced casing technologies for heterogeneous integration and semiconductor substrates for radio frequency and power devices, which will help restore capacity in areas where the EU is heavily dependent on imports of raw materials and technologies and ensure the competitiveness of EU industry in global markets. • The measure supports small, medium-sized and large enterprises involved in the IPCEI ecosystem by providing a subsidy to finance the eligible costs of projects under notification SA.101141 (2023/N). **Link to objective:** • The measure targets the entire semiconductor ecosystem. Given the importance of the Important Projects of Common European Interest (IPCEI) as a joint multi-country activity that integrates EU value chain stakeholders in strategic sectors, it has many spill-over effects and contributes to European independence in the development, design and application of new technologies, and it is essential to support Czech projects involved in the IPCEI Microelectronics and Communication Technologies. **Indicative timetable:** • The IPCEI ME/CT projects were notified on 8 June 2023. The duration of the projects is 5 years. Part of one project should be funded from the OP TAC; the research and development part from the Recovery Plan. The projects are expected to run until the end of 2028.
Allocated or planned budget	• EUR 57 million (EU) • Human resources mobilised – 1
Expected impact and related timing:	• 4 projects (about 20 entities including SMEs) should receive funding by the end of 2028. The projects aim to contribute to the further development of the microelectronics and communication technology value chain by enabling the expansion of advanced technologies and the deployment of 2nd and 3rd generation technologies. The IPCEI ME/CT seeks, among other things, to contribute to maintaining and enhancing the competitiveness of the value chain and to ensure that the microelectronics and communication technology ecosystem remains of strategic importance for the Union in the future.

Action 2.9 – Preparing the National Semiconductor Strategy	
Managing entity:	**Ministry of Industry and Trade**
New measure	**Yes**
Brief description of the measure	**Content of the measure:** • The strategy will map which types of chips the Czech industry has the greatest potential in and propose measures of support, including investments, to implement. As part of the strategy, the Czech Republic will focus on capacity mapping with the aim of expanding its share in the traditional sector of Czech industry, namely chip design and development. The strategy will help, for example, to adjust the education system, because the development of the sector cannot be achieved without enough qualified workers. **Link to objective:** • The measure is aimed at mapping developments and formulating recommendations for the Czech Republic in the field of semiconductor industry. The recommendations will be based on a SWOT analysis of the Czech market. **Indicative timetable:** • The development of the strategy started in June 2023. It is expected to be approved in 2024.
Allocated or planned budget	• National (not yet planned) • Human resources mobilised – 1
Expected impact and related timing	• More precise targeting of resources for research and development. • Increased collaboration in the semiconductor ecosystem. • Improvement of processes within the framework of inter-ministerial cooperation, e.g. in the field of education.

1.9.3 Digital Objective 2d) Access to quantum accelerated computer within the EU by 2025, leadership in quantum capabilities by 2030

Timeline of measures contributing to the achievement of the objective	2023	2024	2025	2026	2027	2028	2029	2030
Measure 2.10 – Acquisition and operation of the quantum computer of the European consortium LUMI-Q	🟩	🟩	🟩					

A budget of all measures that can be assigned to the given objective:

- Public investment
  - o Total CZK 364 million
  - o Of which national sources:
    - ▪ CZK 183 million from the contributions of the LUMI-Q consortium members and from the MEYS budget (CZK 86 million allocated, CZK 97 million planned)
  - o Of which from EU sources:
    - ▪ CZK 182 million (amount already allocated)

A description of how and to what extent the measures are intended to address Member State-specific challenges:

The construction and operation of the quantum computer will contribute to the digital objective 2) Secure, resilient, efficient and sustainable digital infrastructures (digital infrastructure), improving the position of the Czech Republic as a country with cutting-edge technologies and an environment promoting R&D&I.

Investment gap:

The costs were estimated by EURO HPC to build and operate a quantum computer for 4 years.

Measure 2.10 – Acquisition and operation of the quantum computer of the international consortium LUMI-Q	
Managing entity:	**Ministry of Education, Youth, and Sports**
New measure	**Yes**
Brief description of the measure	**Content of the measure:** • Installation in 2024 at the IT4Innovations National Supercomputing Centre in Ostrava (the first Czech quantum computer). • Integration of the LUMI-Q quantum computer with the supercomputers of the IT4Innovations centre. **Link to objective:** • The new quantum computers, including LUMI-Q, will be integrated with existing supercomputers and selected host entities will operate these systems on behalf of the EuroHPC Joint Undertaking. **Indicative timetable:** • The agreement to acquire and operate the quantum computer was signed with EuroHPC in Q2 2023. Installation of the quantum computer is expected to take place in 2024 and a phased commissioning is planned for 2023−2024.
Allocated or planned budget	• EUR 7.5 million (contributions of the LUMI-Q consortium members, of which the Czech Republic contributes EUR 3 million [MEYS budget]) • EUR 7.5 million (EU)
Expected impact and related timing:	• Providing access to quantum computing to lower tens of researchers from the Czech Republic and higher tens (lower hundreds) of researchers from the EU in 2025. • Contribution to the development of European quantum computing resources, quantum computing and its applications.

1.10 Digital transformation of businesses

1.10.1 Digital objective 3a) 75% of EU businesses use one of the following: cloud services, big data, artificial intelligence & 3b) More than 90% of SMEs achieve at least a basic level of digital intensity & 3c) The Union facilitates the growth of innovative and emerging businesses and improves their access to finance, leading to at least a doubling of the number of unicorns

Timeline of measures contributing to the achievement of the objective	2023	2024	2025	2026	2027	2028	2029	2030
Measure 3.1 – Reaping the benefits of digitalization for citizens, companies, research organisations and public authorities	■	■	■	■	■	■	■	■
Measure 3.2 – Digital Enterprise – Virtual Enterprise – Call I	■	■	■					
Measure 3.3 – Implementation and administration of the National Artificial Intelligence Strategy	■	■	■	■	■			
Measure 3.4 – Establishment of a European testing and experimentation facility	■	■	■	■	■			
Measure 3.5 – Support for investment in innovative projects, development and implementation of Industry 4.0	■	■	■	■				
Measure 3.6 – Support for the development of innovative entrepreneurship with an emphasis on digital services and innovation roll-out	■	■	■	■				
Measure 3.7 - National RIS3 Strategy, Strategic Objective D01 – Support for digitalization and use of new technologies in business	■	■	■	■	■			
Measure 3.8 – Development of European Centres for Digital Innovation	■	■	■					
Measure 3.9 – Programme of direct support for the digital transformation of enterprises	■	■	■					
Measure 3.10 – Linking the network of digital innovation centres across regions	■	■	■	■				

A budget of all measures that can be assigned to the given objective:
- Public investment:
  - o Total CZK 12 400 million

- o Of which national sources:
  - ▪ Total CZK 2 822
    - • CZK 1 965 million from the NPO
    - • CZK 857 million from State budget
- o Of which EU resources:
  - ▪ Total CZK 9 578 million
    - • CZK 6 328 million from OP TAC
    - • CZK 3 250 million from other ESF

A description of how and to what extent the measures are intended to address Member State-specific challenges:

The measures will contribute to the achievement of the objectives through direct support to the digital transformation of businesses by supporting the purchase and deployment of digital technologies, ICT specialist services, robotics and automation, advisory and testing activities or policy coordination to ensure appropriate targeting of support.

Investment gap:

For Measure 3.1 – Reaping the benefits of digitalization for citizens, companies, research organisations and public authorities, private investment is estimated to be comparable to public support (of which: grants, financial instruments): a total of CZK 9 106 million (EUR 374 118 000).

Measure 3.1 – Reaping the benefits of digitalization for citizens, companies, research organisations and public authorities	
Managing entity:	**Ministry of Industry and Trade**
New measure	**No**

Brief description of the measure	**Content of the measure:**
	• In particular, the following activities will be supported under this measure:
	  o Rolling out digitalization in enterprises; supporting projects in areas related to artificial intelligence, process automation, robotics and cybersecurity of online and cyber-physical systems, including support for training and education of employees. An essential part of the supported activities is also the acquisition of new technological devices and equipment, including the necessary infrastructure, interconnection of acquired or existing technologies using the most modern communication channels and protocols (autonomous two-way communication).
	  o Acquisition of high-performance computing and support for using HPC.
	  o Use of modern technologies (e.g. blockchain, virtual reality, etc.) for economic development.
	  o Development and acquisition of specialised software (e.g. for computer security, simulation, monitoring, computer vision, for work with big data – Big Data Analytics, for 3D printing, etc.), for example in the field of digitalization, automation, Industry 4.0 or Construction 4.0, deployment of artificial intelligence.
	  o Building and modernising computing and data centres.
	Link to objective:

	• High priority investment needs are aimed at increasing the competitiveness of SMEs and promoting technology expansion and deployment, in particular to support enterprises to better position themselves in value chains, increase productivity and facilitate participation in industry-led and research-led clusters, improve the R&D capacity of SMEs by supporting the development and deployment of new business models and the adoption of new and emerging technologies, provide support for proof of concept, early stage and development of innovative firms through financial and soft support measures, and support the internationalisation of SMEs to exploit new business opportunities. **Indicative timetable:** • The programme was launched in July 2022 and a mid-term review of the programme conditions will take place (revised conditions should be available at the end of Q4 2024). The programme is expected to run until at least the end of 2030.
Allocated or planned budget	• EUR 260 million (EU; 85% subsidies, 15% financial instruments)
Expected impact and related timing:	• The target groups are virtually all enterprises (especially SMEs) and their customers, who are also affected by the digitalization process. Furthermore, these are research and knowledge dissemination organisations (i.e. entities meeting the definition of a Research Organisation in accordance with the Framework for State Support for Research, Development and Innovation), research infrastructures, centres of high-performance computing or digital clusters. In addition, population using information technology.

Measure 3.2 – Digital Enterprise – Virtual Enterprise – Call I (OP TAC)	
Managing entity:	**Ministry of Industry and Trade**
New measure	**No**
Brief description of the measure	**Content of the measure:** • The aim of this Call is to support the improvement of the digital level of SMEs operating on Czech and foreign markets by supporting the purchase and implementation of advanced non-production digital technologies that will help the company to ensure a significant shift in digitalization, for example by supporting automation, digitalization of data and more efficient interconnection and management of corporate processes. It is the digital transformation of enterprises through newly acquired or deployed technologies/services that will lead to greater automation, digitalization or more efficient integration of business processes. **Link to objective** • The measure aims to contribute to the digital transformation of SMEs. **Indicative timetable:** • The measure runs from 2023 to 2025
Allocated or planned budget	• CZK 500 million (allocated in budget of the measure 3.1)

Expected impact and related timing:	• Approximately 200 enterprises are expected to be impacted under the call, which will contribute significantly to the digital transformation of enterprises.

Measure 3.3 – Implementation and administration of the National Artificial Intelligence Strategy

Managing entity:	**Ministry of Industry and Trade**
New measure	**No**
Brief description of the measure	**Content of the measure:** • Ensuring coordination, promotion and creation of infrastructure for AI development in the Czech Republic. An evaluation was conducted in 2022 and an update of the NAIS will be conducted in 2023–2024. • Supporting the development of science, research, innovation and technology engagement in AI-related industries. **Link to objective:** • The NAIS was introduced with the aim of contributing to the coordinated development of AI in the Czech Republic, including its application in practice and supporting enterprises, especially SMEs, in reaping its benefits. The updated NAIS will be based on data and input from the Technology Centre's analyses, the national public consultation, outputs from the AI Working Group, roundtables with stakeholders and the general public, and consultations with international partners. **Indicative timetable:** • The NAIS was introduced in 2019 and is expected to be implemented and managed by May 2027.
Allocated or planned budget	• The implementation of the NAIS is carried out with the help of public and private resources. For public resources, this includes EU, national and regional resources.
Expected impact and related timing:	• Increase in the number of enterprises using at least one AI technology compared to the Czech Republic's previous DESI results.

Measure 3.4 – Establishment of a European testing and experimentation facility

Managing entity:	**Ministry of Industry and Trade**
New measure	**Yes**
Brief description of the measure	**Content of the measure:** • The emergence of the digital ecosystem is based on European Commission documents. The Czech Republic has long been preparing for the establishment of one Testing and Experiment Facility (AI TEF). • Since initially the Member States were not required to co-finance this project, the Czech Republic was ready to endorse national applicants. Co-financing is required in the updated Coordinated Plan. In order to enable the creation of at least one AI TEF, either as part of the Digital Europe co-financing or as a national project, it is necessary to secure funding through the NPO. **Link to objective:** • The AI TEF for Manufacturing will help develop AI solutions and support companies in bringing them to market,

	expanding the portfolio of AI technologies available to other companies to use in their processes. Thus, the AI TEF will support the use of AI in companies. **Indicative timetable:** • The measure will be implemented from the beginning of 2023 to the end of 2027.
Allocated or planned budget	• CZK 144 million (NPO, State budget, 50% co-financing, the remaining 50% AI TEF requests from the Digital Europe Programme).
Expected impact and related timing:	• Contributing to the objective by ensuring a coordinated approach to taking action and informing stakeholders of DES measures in line with the digital transformation objectives.

Measure 3.5 – Support for investment in innovative projects, development and implementation of Industry 4.0

Managing entity:	Ministry of Industry and Trade
New measure	No
Brief description of the measure	**Content of the measure:** • Support for investment in innovative projects, development and implementation of Industry 4.0. **Link to objective:** • The specialist services for the implementation of advanced ICT technologies in SMEs will be supported. • Purchases of cloud computing services for SMEs and investments in technologies and systems capable of analysing big data will also be supported. **Indicative timetable:** • The measure will be implemented from the beginning of 2023 to the end of 2027.
Allocated or planned budget	• CZK 3 250 million (other ESF)
Expected impact and related timing:	• The Operational Programmes will support 405 projects from SMEs.

Measure 3.6 – Support for the development of innovative entrepreneurship with an emphasis on digital services and innovation roll-out

Managing entity:	Ministry of Industry and Trade
New measure	No
Brief description of the measure	**Content of the measure:** • Supporting the development of start-ups, digital infrastructure and innovation through the NPO. **Link to objective:** • The measure supports start-ups that focus on innovative technologies, one of which is AI. The aim of the measure is to seek out and assist the creation of projects that are exceptionally innovative, feasible and scalable and to increase the number of unicorns in the Czech Republic. • The measure offers start-ups financial support, incubation services, mentoring, advice, networking and access to infrastructure, markets and customers, which will directly help increase the share of enterprises using AI. **Indicative timetable:**

	• The measure will be implemented between the beginning of October 2019 and the end of 2027.
Allocated or planned budget	• CZK 857 million (State budget)
Expected impact and related timing:	• The measure has the overall ambition (not only in terms of AI) to support 250 innovative companies (start-ups) by 2027 and increase their chances of becoming unicorns by providing direct support of up to CZK 4 500 000 for technical development of a product or service (without losing a stake in the company), indirect support worth CZK 500 000 in the form of workshops, seminars, assistance of incubation managers, consultations with business and technology experts for up to 2 years and by connecting them with experts in the Czech Republic and abroad. • Ideally, the project will generate 3 unicorns within two years of completion.

Measure 3.7 - National RIS3 Strategy, Strategic Objective D01 – Support for digitalization and use of new technologies in business

Managing entity:	**Ministry of Industry and Trade**
New measure	**No**
Brief description of the measure	**Content of the measure:** • The objective is focused on supporting the development of digitalization, robotisation and automation, the ability to respond to new technological trends and the implementation of Industry 4.0 principles (use of Digital Innovation Hubs [DIH]). Support for the creation and development of endogenous companies using digitalization and new technologies (possibly also open data of public administration or data of mobile operators) for the creation of new products and services (e.g. blockchain, data analytics, robotisation, automation, etc.). **Link to objective:** • The measure is aimed at supporting companies. **Indicative timetable:** • 2023−2027
Allocated or planned budget	• Measure 3.7 does not have its own budget, it is a strategy shaping the form of Measure 3.1
Expected impact and related timing:	• Increase in the number of ICT-focused firms and their share of the business sector. • Increased use of digital technologies in the business sphere.

Measure 3.8 – Development of European Centres for Digital Innovation

Managing entity:	**Ministry of Industry and Trade**
New measure	**Yes**
Brief description of the measure	**Content of the measure:** • The aim of the measure is to support the digital transformation of, in particular, SMEs and State administration, to introduce new technologies, to attract experts in this field and to make industry and services more resilient to possible further crises. Co-funding from the Digital Europe Programme is foreseen. Six European Digital Innovation Hubs (EDIH) will be set up. **Link to objective:**

	• The EDIH network will enable the expansion of new technologies across application domains to SMEs and/or public administrations. Creating a quality EDIH network is a crucial condition for accelerating the digitalization process of the Czech Republic and Czech companies with a focus on robotics, information network security, AI, IoT and more areas according to client requirements. **Indicative timetable:** • The expected timetable is from 2023 to 2025
Allocated or planned budget	• Allocated: CZK 221 million (NPO, 50% co-financing, remaining 50% centres requests from Digital Europe Programme)
Expected impact and related timing:	• The aim is to increase the use of digital technologies in the region.

Measure 3.9 – Programme of direct support for the digital transformation of enterprises

Managing entity:	**Ministry of Industry and Trade**
New measure	**No**
Brief description of the measure	**Content of the measure:** • The aim of the measure is to implement calls for direct support for the digital transformation of enterprises under the National Recovery Plan (NPO), component 1.5 Digital transformation of enterprises. **Link to objective:** • The aim is to support the improvement of the digital level of small, medium-sized and large enterprises operating in the Czech and foreign markets by supporting the purchase and implementation of advanced non-production digital technologies that will help the company to achieve a significant shift in digitalization through, for example, support for automation, digitization of data and more efficient interconnection and management of corporate processes, implementation of artificial intelligence processes, more efficient work with big data, etc. Therefore, the project must be in line with the focus of the Specific Objective D0.1 "Promoting digitalization and use of new technologies in business" of the National RIS3 Strategy. **Indicative timetable:** • The expected timetable is from 2022 to 2024
Allocated or planned budget	• Allocated: CZK 1 600 million (NPO)
Expected impact and related timing:	• Increasing the digital level of small, medium-sized and large enterprises operating in the Czech and foreign markets through support for the purchase and implementation of advanced non-production digital technologies that will help to achieve a significant shift in digitalization in the company through, for example, support for automation, digitization of data and more efficient interconnection and management of corporate processes, implementation of artificial intelligence processes, more efficient work with big data, etc.

Measure 3.10 – Linking the network of digital innovation centres across regions

Managing entity:	**Ministry of Industry and Trade**
New measure	**No**
Brief description of the measure	**Content of the measure:** • Sharing clients of the Digital Innovation Centre and disseminating good practice through the Platform for the Digitalisation of the Economy. **Link to objective:** • The Platform for the Digitalisation of the Economy was established as an advisory and coordinating body of the MIT for the implementation of the objectives and investments of component 1.5 Digital Transformation of Enterprises of the National Recovery Plan (NPO) in the field of digital transformation. • The Platform's activities are primarily aimed at connecting and coordinating all relevant actors in the national digital ecosystem and it will indirectly contribute to the correct targeting of measures to support the digitalization of enterprises, especially SMEs. **Indicative timetable:** • The programme is implemented from June 2020 to May 2026.
Allocated or planned budget	• No funds allocated
Expected impact and related timing	• A coordinated approach will be ensured in the implementation of NPO measures aimed at the digital transformation of enterprises. • The Platform will promote discussion and information transfer among its members and shape recommendations.

1.11 Public services digitalization

1.11.1 Digital Objective 4a) 100% of key public services are available online and can be reached online where relevant & 4c) 100% of Union citizens have access to a secure means of electronic identification recognised across the Union

Timeline of measures contributing to the achievement of the objective	2023	2024	2025	2026	2027	2028	2029	2030
Measure 4ac.1 – National RIS3 Strategy Strategic Objective D02 Support for digitalization and use of new technologies in the public sphere	■	■	■	■	■			
Measure 4ac.2 – Registry of Territorial Identification, Addresses and Real Estate (RÚIAN) 2020+	■							
Measure 4ac.3 – National Certification Authority (NCA)	■	■	■					
Measure 4ac.4 – Public Administration Portal 2.0	■	■						
Measure 4ac.5 – NIPPI – Development of the most appropriate software solution for the national integration	■	■	■					

Measure								
platform for spatial information in a method suitable for use by the State with emphasis on open source principles	■	■	■					
Measure 4ac.6 – State mobile application	■	■	■	■				
Measure 4ac.7 – eDoklady, electronic personal documents	■	■						
Measure 4ac.8 – Register of Representations	■	■						
Measure 4ac.9 – Transportation portal	■	■	■	■				
Measure 4ac.10 – National Recovery Plan – Acceleration and digitalization of building permit proceedings	■	■	■	■				
Measure 4ac.11 – Entrepreneur portal	■	■	■	■				
Measure 4ac.12 – Introduction of new and innovative digital services of the CSSA – Further development of the CSSA ePodání (electronic submission service) and connection to digital services at the Citizen Portal	■							
Measure 4ac.13 – CSSA – Stage I of the Digitalization of Pension Agencies Programme (EDA)		■	■					
Measure 4ac.14 – MoLSA – Client zone I. and II.	■	■	■					
Measure 4ac.15 – Digitalization of court agendas eTrest, eSpráva and ePR	■	■	■	■	■			
Measure 4ac.16 – Integrated Foreigners' Agenda System (ICAS)	■	■	■					
Measure 4ac.17 – Electronic registry office – IS eMatrika	■	■	■	■	■			
Measure 4ac.18 – Public administration contact centre	■	■	■	■				
Measure 4ac.19 – Full electronic submission and processing	■	■	■	■	■			
Measure 4ac.20 – Central Agenda Information System (CAIS)	■	■						
Measure 4ac.21 – Establishment of the Digital and Information Agency (DIA)	■							

Budget of all measures that can be attributed to the objective (in aggregate; the regional dimension should be taken into account where possible):

- Public investment:
  - Total CZK 6 766million
  - Of which national sources:
    - CZK 932 million from the NPO and the State budget (CZK 825 million allocated)
    - CZK 485 million from the State budget (CZK 362 million allocated, CZK 123 million planned) (
    - CZK 3 429 million from the NPO (CZK 3 046 million allocated)
    - CZK 628 million from IROP and the State budget
    - CZK 50 million from the State budget and excess requests (amount already allocated)
    - CZK 462 from IROP 3032
    - CZK 296 million in excess requests
    - CZK 363 million from operational programmes (amount already allocated)
    - CZK 484 million from the NPO and excess requests (amount already allocated)

A description of how and to what extent the measures are intended to address Member State-specific challenges:

The measures will contribute to achieving the objectives by directly supporting the digital transformation and digitalization of public services in all areas of eGovernment services for both citizens and businesses, while also contributing to increasing access to means of electronic identification.

Investment gap

Due to the enormity of the objective, it is not possible to quantify the investment gap accurately at this time.

Measure 4ac.1 – National RIS3 Strategy Strategic Objective D02 – Support for digitalization and use of new technologies in the public sphere	
Managing entity:	**Ministry of Industry and Trade**
New measure	**No**
Brief description of the measure	**Content of the measure:** • The aim is to support the development of the digitalization of public administration and public space in order to increase both the supply of eGovernment services by public institutions and the demand for these services by citizens. Activities that generally increase the demand for innovative solutions and solutions based on digital technologies and artificial intelligence, such as the Smart Cities concept, open data, etc. will be supported. **Link to objective:** • The measure is aimed at supporting public administration. **Indicative timetable:** • 2023−2027
Allocated or planned budget	• Measure 13 does not have its own budget, it is a strategy shaping the form of relevant measures financed from IROP 21−27 (EUR 496 million).
Expected impact and related timing:	• Increased use of the Internet in relation to public administration by companies, citizens and other entities. • Increase electronic communication and use of electronic services between authorities.

Measure 4ac.2 – Registry of Territorial Identification, Addresses and Real Estate (RÚIAN) 2020+	
Managing entity:	**Czech Office for Surveying, Mapping and Cadastre**
New measure	**No**
Brief description of the measure	**Content of the measure:** • The RÚIAN 2020+ project will mainly implement the effects of the digital constitution into RÚIAN, and then develop all other functionalities planned in the RÚIAN 2018+ project completed this year (i.e. especially the development of special-purpose zoning elements). The aim is also to ensure operation on the central infrastructure. **Link to objective:** • It creates the basic environment for identification in the territory, especially of properties and addresses – it is the single point of truth in this area.

	Indicative timetable:
	• The programme started in January 2021 and is expected to be completed by the end of 2023.
Allocated or planned budget	• CZK 110 million (NPO, State budget)
Expected impact and related timing:	• The implementation of the impacts of the digital constitution, the development of the data base (especially the special-purpose territorial elements, technical-economic attributes) and the services of the basic public administration register will expand the set of open data or the eGovernment On-Line Service Bus of the Basic Registers Information System (Informační systém základních registrů) and will support the interoperability of the Czech Republic in spatial data within the EU. The backup infrastructure will be restored.

Measure 4ac.3 – National Certification Authority (NCA)

Managing entity:	**Digital and Information Agency**
New measure	**No**

Brief description of the measure	**Content of the measure:**
	 • The subject-matter of the project is the establishment of the National Certification Authority (NCA), its operation and further development. The establishment of the NCA created a system of subordinate certification authorities for issuing:
	    ○ qualified certificates for electronic signatures;
	    ○ qualified electronic time stamps;
	    ○ qualified certificates for electronic seals.
	 • The Basic Registers Administration has fulfilled all the legal requirements that are imposed on providers of qualified services and on the basis of an administrative decision of the eGovernment Department of the Ministry of the Interior of the Czech Republic dated 30 April 2019, it was registered as the fifth entity in the Czech Republic on the "List of qualified providers of trust services and qualified trust services". With the establishment of the NCA, the Basic Registers Administration has become a qualified provider and manager of all parts of the NCA and related infrastructure.
	 Link to objective:
	 • It develops access to eID.
	 Indicative timetable:
	 • Implementation of the measure started in August 2018 and it is expected to be completed in December 2025.

Allocated or planned budget	• Allocated: CZK 308 million (NPO, State budget)
Expected impact and related timing	• The expected impact is to expand and support access to eID.

Measure 4ac.4 – Public Administration Portal 2.0 (Citizen Portal)

Managing entity:	**Digital and Information Agency**
New measure	**No**
Brief description of the measure	**Content of the measure:** • Aggregate programme for the operation and development of the citizen portal and public administration portal. It

	includes plans to launch new digital services and publish them in the public administration portal/citizen portal. **Link to objective:** • Making digital services accessible to citizens. **Indicative timetable:** • Implementation of the measure started in August 2017 and it is expected to be completed by the end of 2024.
Allocated or planned budget	• Allocated: CZK 75 million (NPO; State budget)
Expected impact and related timing	• The expected impact is to expand and support access to eID.

Measure 4ac.5 – NIPPI – Development of the most appropriate software solution for the national integration platform for spatial information in a method suitable for use by the State with emphasis on open source principles

Managing entity:	**Digital and Information Agency**
New measure	**Yes**
Brief description of the measure	**Content of the measure:** • The aim of building a national integration platform for spatial information, as an integral part of the public administration reference interface, is to create an environment in which spatial data can be made available, in particular to public administrations on the basis of available spatial datasets and services over spatial data, through defined services **Link to objective:** • It develops a linked data pool on spatial data issues. **Indicative timetable:** • Implementation of the measure started in September 2022 and it is expected to be completed in September 2025.
Allocated or planned budget	• Allocated: CZK 50 million (IROP 2021–2027, excess requests)
Expected impact and related timing	• The measures will facilitate the development of eGovernment services

Measure 4ac.5 – State mobile application

Managing entity:	**Digital and Information Agency**
New measure	**No**
Brief description of the measure	**Content of the measure:** • A single mobile app that unifies the current fragmented mini mobile apps and brings users closer to the State's current and future digital services. **Link to objective:** • Facilitates access to services for citizens via mobile phone. **Indicative timetable:** • Implementation of the measure started in July 2022 and it is expected to be completed in July 2026.
Allocated or planned budget	• Allocated: CZK 99 million (IROP 2021–2027)
Expected impact and related timing:	• The expected impact is an increase in interest and simplification of citizens' access to eGovernment services.

Measure 4ac.7 – eDoklady

Managing entity:	Digital and Information Agency
New measure:	No
Brief description of the measure:	**Content of the measure:** • eDoklady is a mobile application that a user could install on their mobile phone or other mobile device. It would be possible to upload individual identification documents such as an ID or driving licence to the eDoklady app. Gradually, other documents issued by the State will follow. **Link to objective:** • It creates a replacement for documents in paper form and allows proof of identity via mobile phone. **Indicative timetable:** • The measure will be implemented from the beginning of 2023 to the end of 2024.
Allocated or planned budget	• Allocated: CZK 10 million (State budget)
Expected impact and related timing:	• The expected impact of the regulation is to enable citizens to access eID and eGovernment services via a mobile application.

Measure 4ac.8 – Register of Representations

Managing entity:	Digital and Information Agency
New measure	Yes
Brief description of the measure	**Content of the measure:** • The Register of Representations records the authorisations for representation for access to the electronic services of the public administration of the Czech Republic by a person authorised to act in representation (on behalf and in the name of) the represented person. **Link to objective:** • It enables electronic representation – representing both a citizen and a business entity. **Indicative timetable:** • The measure will be implemented between May 2023 and the end of 2024.
Allocated or planned budget	• Allocated: CZK 240 million (State budget)
Expected impact and related timing:	• The expected impact is an increase in the use of eGovernment services by citizens and business entities.

Measure 4ac.9 – Transportation portal

Managing entity:	Ministry of Transport
New measure	No
Brief description of the measure	**Content of the measure:** • A comprehensive portal providing digital services for transportation agenda to the general and professional public. • In particular, this will include: applications for documents (driving, pilot, skipper licences); provision of data from driver, vehicle, vessel, etc. registers; information on the driver's penalty points, notification channel, linking with other registers and portals, and more.

	• The login/identification will be done through the NIA and its dedicated resources. **Link to objective:** • Making digital services accessible to citizens and enterprises. **Indicative timetable:** • The measure is implemented in the period from January 2022 to July 2026.
Allocated or planned budget	• Allocated: CZK 60 million (State budget) • CZK 123 million planned (State budget)
Expected impact and related timing:	• The expected impact is to make digital services available to citizens and private entities in conjunction with the use of other eGovernment services and eID.

Measure 4ac.10 – National Recovery Plan – Acceleration and digitalization of building permit proceedings

Managing entity:	**Ministry of Regional Development**
New measure	**No**
Brief description of the measure	**Content of the measure:** • The aim of the measure is to speed up and digitise the building permit proceedings. Specific steps include the introduction of the recodification of building permit proceedings into practice, the creation of the Agenda Information System, the development and use of the public administration data pool in spatial planning and the full utilisation of the benefits of the digitalization of building permit proceedings. **Link to objective:** • It creates a fully digital path for building permit proceedings. **Indicative timetable:** • The measure is implemented until 2026.
Allocated or planned budget	• Allocated: CZK 2 977 million (NPO)
Expected impact and related timing:	• The expected impact is the simplification and streamlining of the building permit proceedings through digitalization.

Measure 4ac.11 – Entrepreneur portal

Managing entity:	**Ministry of Industry and Trade**
New measure	**No**
Brief description of the measure	**Content of the measure:** • The aim of the measure is to create a consolidated personalised portal offering e-services for legal persons and at the same time to have a modern digital tool to direct users to its repeated use. **Link to objective:** • A portal concentrating digital services for business entities. **Indicative timetable:** • The measure is implemented from January 2020 to March 2026.
Allocated or planned budget	• Allocated: CZK 9 million (NPO)

Expected impact and related timing:	• The expected impact of the measure is to make electronic services available to legal persons

Measure 4ac.12 – Introduction of new and innovative digital services of the CSSA – Further development of the CSSA ePodání (electronic submission service) and connection to digital services at the Citizen Portal

Managing entity:	**Czech Social Security Administration**
New measure	**No**
Brief description of the measure	**Content of the measure:** • Introduction of new and innovation of existing digital services in the framework of the project Further development of the eSubmission of the CSSA, Full electronic submission. **Link to objective:** • Expanding fully digital social security services. **Indicative timetable:** • The measure is implemented from July 2020 to the end of 2024.
Allocated or planned budget	• Allocated: CZK 60 million (NPO)
Expected impact and related timing:	• The measure expects to expand the use of existing services in electronic form, thus contributing to the streamlining of the process and increasing the use of eGovernment services.

Measure 4ac.13 – CSSA – Stage I of the Digitalization of Pension Agencies Programme (EDA)

Managing entity:	**Czech Social Security Administration**
New measure	**No**
Brief description of the measure	**Content of the measure:** • Implementation of modern application support for the pension agenda. **Link to objective:** • Comprehensive digitalization of pension agendas. **Indicative timetable:** • The measure is implemented from January 2024 to the end of 2025.
Allocated or planned budget	• CZK 296 million (excess requests)
Expected impact and related timing:	• The expected impact is to reduce costs and streamline the pensions agenda.

Measure 4ac.14 – MoLSA – Client zone I. and II.

Managing entity:	**Ministry of Labour and Social Affairs.**
New measure	**No**
Brief description of the measure	**Content of the measure:** • Full digitalization of the application for the lump sum child contribution in accordance with Act No 196/2022 Sb. • Implementation of the digitalization of housing allowance, parental allowance, child benefit and related HW and SW support. **Link to objective:**

	• It expands the scope of digital services in the field of social security and client handling. **Indicative timetable:** • The measure is implemented from 2022 to 2025.
Allocated or planned budget	• CZK 383 million (NPO)
Expected impact and related timing	• Simplifying access and availability of application and increasing the use of eGovernment tools.

Measure 4ac.15 – Digitalization of court agendas eTrest, eSpráva and ePR

Managing entity:	**Ministry of Justice**
New measure	**No**
Brief description of the measure	**Content of the measure:** • The aim of the measure is to digitise criminal court proceedings through the creation, commissioning and complete deployment of the eTrest information system, digitalization of the administrative court agenda through the creation, commissioning and complete deployment of the eSpráva information system (module), and modernisation of the electronic payment order agenda through the creation, commissioning and complete deployment of the ePR information system. • The project is focused on the creation of 3 new central information systems, which will enable complete digitalization of documents (with justified exceptions), files and processes in the court system in the criminal agenda, administrative agenda and electronic payment order agenda. **Link to objective:** • Digitalization of judicial proceedings. **Indicative timetable:** • The measure is implemented from 2023 to the end of 2027
Allocated or planned budget	• CZK 628 million (IROP 2021–2027, State budget)
Expected impact and related timing:	• Streamlining and digitalization of judicial proceedings.

Measure 4ac.16 – Integrated Foreigners' Agenda System (ICAS)

Managing entity:	**Ministry of the Interior**
New measure	**Yes**
Brief description of the measure	**Content of the measure:** • The aim of the project is the acquisition of a new Integrated Foreigners' Agenda System (ICAS) for the complete administration of the foreigners' residence agenda, the introduction of digital processes and the introduction of completely new digital services for the clients of the public administration in this section. **Link to objective:** • Digitalization of long-term stay processes for foreigners. **Indicative timetable:** • The measure is implemented from 2022 to 2024.
Allocated or planned budget	• Allocated: CZK 363 million (NPO, State budget)

Expected impact and related timing	• Simplification of the process of administration of the foreigners' residency agenda, streamlining of the State administration through the development of eGovernment.

Measure 4ac.17 – Electronic registry office – IS eMatrika

Managing entity:	**Ministry of the Interior**
New measure	**Yes**
Brief description of the measure	**Content of the measure:** • The aim of the measure is to digitise the civil registry agenda through the IS eMatrika. **Link to objective:** • Digitalization of the civil registry agenda. **Indicative timetable:** • The measure is implemented from 2023 to 2027.
Allocated or planned budget	• Allocated: CZK 363 million (IROP 2021–2027)
Expected impact and related timing:	• Streamlining State administration and reducing costs, improving the interconnection of digital systems and supporting the development of eGovernment.

Measure 4ac.18 – Public administration contact centre

Managing entity:	**Digital and Information Agency**
New measure	**Yes**
Brief description of the measure	**Content of the measure:** • The aim of the measure is to create a Public Administration Contact Centre connecting all communication channels between the public and the authority, including the voice channel. **Link to objective:** • Introduction of a new communication and partly transactional channel between the State administration and the client (citizen, business entity). **Indicative timetable:** • The measure is implemented from 2023 to 2026.
Allocated or planned budget:	• Allocated: CZK 484 million (excess requests, NPO)
Expected impact and related timing:	• Expanding and increasing the use of eGovernment services by citizens and enterprises.

Measure 4ac.19 – Full electronic submission and processing

Managing entity:	**Ministry of the Environment**
New measure	**No**

Brief description of the measure	**Content of the measure:**
	• Delivery and implementation of software solutions and services for service-oriented architecture (SOA) containing the following:
	    o A single tool for creating electronic smart forms and setting up their workflow
	    o Unified tool for visualisation, presentation and notification of submission statuses via different communication channels
	    o Implementation of the departmental service bus

	o Document Management System (DMS) for the controlled management of internal document circulation and their trusted and controlled storage **Link to objective:** • Full digitalization of processes relating to the environmental agenda. **Indicative timetable:** • The measure is implemented from 2022 to 2026.
Allocated or planned budget	• Allocated: CZK 76 million (NPO, State budget)
Expected impact and related timing:	• Streamlining State administration processes, facilitating access to eGovernment services.

Measure 4ac.20 – Central Agenda Information System (CAIS)

Managing entity:	**Czech Environmental Inspectorate**
New measure	**No**
Brief description of the measure	**Content of the measure:** • Provision of application support for electronic implementation of agendas in order to reduce the administrative burden on participants in supported processes, reducing the error rate in the performance of State administration, and handling legislative obligations arising from the characteristics of the Czech Environmental Inspectorate. **Link to objective:** • Electronic identification of officials accessing agenda-related information systems and central services. **Indicative timetable:** • The measure is implemented from 2021 to 2024.
Allocated or planned budget	• Allocated: CZK 52 million (State budget)
Expected impact and related timing:	• Reducing the administrative burden, speeding up and streamlining access to eGovernment.

Measure 4ac.21 – Establishment of the Digital and Information Agency (DIA)

Managing entity:	**Digital and Information Agency**
New measure	**Yes**
Brief description of the measure	**Content of the measure:** • The DIA has been established to help with the digitalization of the Czech public administration in its entirety. As a central authority of the State administration, it has statutory powers that enable it to effectively manage the digitalization of the State and specific digitalization and IT projects. • The DIA took over all eGovernment agendas and projects carried out at the Ministry of the Interior and the Basic Registers Administration. The DIA is also developing new digital projects such as eDoklady, the gov.cz domain, the Mandate Register and others. **Link to objective:** • The measure is aimed at improving central coordination in the design, development and provision of online public administration services for (mainly) citizens, at creating and implementing modern digital solutions and services that are efficient, user-friendly and secure.

	Indicative timetable: • The "Transformation Coordination and Digitalization Management" project was carried out in 2022. • The DIA began operations in March 2023.
Allocated or planned budget	• The amount of CZK 2.1 million was approved by a Government Resolution for the "Transformation Coordination and Digitalization Management" project. • The budget of the DIA over and above the existing costs with an impact on the State budget is approximately CZK 151 million. We anticipate that the DIA's activities will trigger long-term savings by increasing the efficiency of internal processes, improving procurement procedures and automating processes. • The amount of funding as an authority for next year and the medium term outlook for 2025 and 2026 are not yet known. • The DIA will have specialised teams providing expertise and a cross-departmental approach to the digital transformation of public administration. The personnel costs for their involvement and the involvement of other project teams will be covered by the National Recovery Plan.
Expected impact and related timing	• Oversight of cross-departmental projects to improve placement in DESI ratings, particularly in the area of Digital Public Services. • Unification of the administration of shared government services. • Expert assistance to other ministries in digitising services through competence centres. • Ensuring unified strategic management and leadership of digitalization and eGovernment.

1.11.2 Objective 4b) 100% of citizens have access to their electronic health records

Timeline of measures contributing to the achievement of the objective	2023	2024	2025	2026	2027	2028	2029	2030
Measure 4b.1 – Digitalization of public services – programme reforms	■	■	■					
Measure 4b.2 – Support for the development of digital transformation in health care – interoperability I Standardisation environment	■	■	■					
Measure 4b.3 – Portal solution for electronic health care	■	■						
Measure 4b.4 – Development of departmental infrastructure of electronic health care in the Czech Republic	■	■						

A budget of all measures that can be assigned to the given objective:

• Public investment:
• Total CZK 561 million
  o Of which national sources:
    ▪ CZK 561 million from the NPO (amount allocated)

A description of how and to what extent the measures are intended to address Member State-specific challenges:

The measures will contribute to the achievement of the objectives through direct support to the digitalization of public services, specifically in the area of health records and their accessibility for citizens.

Investment gap

Due to the enormity of the objective, it is not possible to quantify the investment gap accurately at this time.

Measure 4b.1 – Digitalization of public services – programme reforms	
Managing entity:	**Ministry of Health**
New measure	**Yes**
Brief description of the measure	**Content of the measure:** • The aim of the measure is to develop digitalization in the health sector, introduce innovative procedures and technologies, and provide human and financial resources for central management and coordination of the programme. **Link to objective:** • The measure is aimed at supporting sustainable digital transformation; digitally-enabled transformation of health and social care; the development of an ecosystem of interoperable digital infrastructures; and users. **Indicative timetable:** • The programmes are expected to run until the end of 2025.
Allocated or planned budget	• Public services identified as suitable for digitalization are part of the Catalogue of Intents (i.e. planned projects) of the Digital Czechia Programme. These are then preferably financed from appropriate funds – mainly from the State budget, the Integrated Regional Operational Programme 2021–2027 and the National Recovery Plan. • Other services are funded by EU programmes or supported by the EC.
Expected impact and related timing:	• Contributing to the creation of the European Health Data Space, enabling access to electronic health records.

Measure 4b.2 – Support for the development of digital transformation in health care – interoperability I Standardisation environment	
Managing entity:	**Ministry of Health**
New measure	**No**
Brief description of the measure	**Content of the measure:** • The aim of the measure is to ensure the exchange of information on health status and to provide citizens with access to electronic health records in accordance with the national strategy for the digitalization of health care and the objectives of the EC. **Link to objective:** • Creating the conditions for interoperability and information sharing within the health sector. **Indicative timetable:**

	• The measure is implemented from 2021 to 2025.
Allocated or planned budget	• Allocated: CZK 215 million (NPO)
Expected impact and related timing:	• Improving access to health care, digitising State administration, streamlining processes.

Measure 4b.3 – Portal solution for electronic health care

Managing entity:	**Ministry of Health**
New measure	**No**
Brief description of the measure	**Content of the measure:** • The project will enable the creation of a central entry point using the National Environmental Labelling Programme (Národní program environmentálního značení – NPEZ) platform for active access of citizens to verified and guaranteed information resources and services related to health and health care in the Czech Republic. . Access to the NPEZ will be secured by an authentication and authorisation layer. **Link to objective:** • Portal solution enabling access to health data both for the citizen, as a client of health services, and for their providers on the basis of authorisation. **Indicative timetable:** • The measure is implemented from 2021 to 2025.
Allocated or planned budget	• Allocated: CZK 60.5 million (NPO)
Expected impact and related timing	• Streamlining access to health records, developing eGovernment services, supporting the use of eID by citizens.

Measure 4b.4 – Development of departmental infrastructure of electronic health care in the Czech Republic

Managing entity:	**Institute of Health Information and Statistics of the Czech Republic**
New measure	**No**
Brief description of the measure	**Content of the measure:** • The aim of the measure is to improve the performance, data storage capacity and cybersecurity of the existing technical infrastructure. • The scope of the measure includes the acquisition of technical operating resources, network and security components and software – operating systems, databases, extension of SIEM tools and other specialised applications. **Link to objective:** • Creating the conditions for interoperability and information sharing within the health sector. **Indicative timetable:** • The measure is implemented from 2022 to 2025.
Allocated or planned budget	• Allocated: CZK 285 million (NPO)
Expected impact and related timing:	• Improving security and access to health records and developing eGovernment services.

Part 4: Main policies, measures and actions contributing to the general objectives

	General objectives	Examples of areas where Member States can contribute
Investment incentives	See the objectives set out in Article 3(1)(e).	Support for projects with higher added value in accordance with Act No 72/2000 Sb., on investment incentives, as amended, focusing on projects of technology centres, strategic service centres and production of strategic products.
Collaborative research	See the objectives set out in Article 3(1)(d), (e), (f).	Support for research and development projects in enterprises, including collaborative (joint) research, carried out in cooperation with research organisations, in accordance with the priorities of the National RIS3 Strategy, through a new subsidy programme of support for research and development focused on Industry 4.0 and related key technologies in order to improve the international competitiveness of the Czech Republic.
Cybersecurity	See the objectives set out in Article 3(1)(k).	Providing trust and cybersecurity for the public administration of the Czech Republic and comprehensive improvement of cybersecurity through the implementation of the tasks from the Action Plan to the National Cybersecurity Strategy of the Czech Republic for the period 2021 to 2025.
Online access to public services	See the objectives set out in Article 3(1)(a), (b), (c), (d), (g), (i), (j).	In connection with the implementation of the Act No 12/2020 Sb., on the right to digital service, the DIA has established a working group for the Act whose primary objective is to support the implementation of the Act by removing obstacles and creating an environment suitable for best practice. In order to improve the digitalization of government services, a coordinated group has also been established at the level of the DIA, the Government Office and external consultants to contribute to the digitalization of selected services that can be considered as examples of good practice.
Representation of women	See the objectives set out in Article 3(1)(b).	Setting up collaborative work within the Digital Learning Committee and the Digital Skills Framework on the topics of increased representation of women in IT and digital skills development.

Part 5: Cooperation at EU level

1.12 Multi-country projects

1.12.1 Overview 1) a. – Multi-country projects listed in the list of areas of activity in relation to multi-country projects in the Annex to the Decision to which the Member State has committed or intends to commit in the future

A network of local digital twins with progress towards the CitiVerse platform – European Digital Infrastructure Consortium (EDIC)	- The proposed project relates to one of the four general objectives of the Digital Decade, namely the digitalization of public services. Furthermore, it relates to one specific objective, namely the dissemination of digital solutions in areas of public interest and in the private sector and contributing to a sustainable digital transformation of society. - The budget is not yet known and it is subject to further discussion between the Member States involved and the EC. - The implementation mechanism of the project is not yet known and it is subject to further discussion between the Member States involved and the EC. - The EDIC will have an impact on increasing the efficiency of data use, ensuring interoperability between digital twins across MS (through the promotion of commonly accepted standards), promoting the sustainability and use of immersive technologies, and sharing the costs and benefits of promoting digital twins at European level. Last but not least, supporting the roll-out of digital twins will benefit cities in terms of positive impact on spatial planning, risk prediction, operation of public services, citizen participation, etc. **Participating entities:** DE, EE, ES, SI
1+ Million Genomes	- This project aims to enable safe access to genomics for better research, personalised healthcare and health policy making. As a result, the project will ensure the availability of an appropriate technical infrastructure across the EU to enable secure and unified access to genomics data in the context of the European Data Space, which is in line with the digital objective on access to electronic health records in paragraph 4(c) and at the same time in line with the general objectives on the creation of a secure, sustainable and accessible data infrastructure. - This EDIC will be a sustainable legislative tool for the implementation of the 1+ Million Genomes Member States initiative, specifically through the creation of the European Genomic Data Infrastructure. **Participating entities:** BE, BG, HR, CY, DK, EE, FR, DE, EL, IT, LT, LU, NL, PT, RO, ES, SE (CZ considers its participation)
IPCEI Microelectronics and	It will support major innovation projects in, inter alia, processor and chip design for AI, chip design for communications (5G, 6G and others) and connectivity, the development and manufacture of these chips in the EU, advanced casing

Communication Technologies	technologies for heterogeneous integration and semiconductor substrates for radio frequency and power devices, which will help restore capacity in areas where the EU is heavily dependent on imports of raw materials and technologies and ensure the competitiveness of EU industry in global markets.
	• Budget: EUR 57 million in R&D funding.
	• IPCEIs are strategic projects where a company can receive financial support provided that the subject meets the criteria set out in point 3 of the European Commission Communication (C/2021/8481).
	• The applicant undertakes to disseminate the knowledge gained through the support not only among partners but also within the EU. The interconnectedness of IPCEI participants leads to the ability of participants to advance digital transformation and the use of the latest technologies.
	• **Participating entities:** AT, FI, FR, DE, GR, IR, IT, MT, NL, PL, RO, SK, ES

1.13 Facilitating factors at EU level

Creation of a working group on AI in education

The Technology Agency of the Czech Republic has recommended the creation of an EU working group on AI in education. This would enable the monitoring of AI developments in educational processes across Member States, or activate joint working and consultation mechanisms in the EU Council. AI largely puts all Member States on a similar starting line. Sharing experiences would enable the Czech Republic and other countries to overcome some of the deficits in the integration of digital technologies into pedagogical and non-pedagogical activities in schools.

Part 6: Stakeholder feedback

This document was created on the basis of input and consultations with the Government's Digital Czechia concept and with members of the Committee for the Czech Republic in Digital Europe (CDE), who were updated on the progress of its preparation through CDE Committee meetings and ongoing written comments. Members of the CDE Committee include, in addition to representatives of individual ministries, the National Cyber and Information Security Agency, the Czech Telecommunication Office and representatives of economic and social partners (the Confederation of Industry and Transport of the Czech Republic, the Czech Chamber of Commerce, the Czech-Moravian Confederation of Trade Unions and the Union of Towns and Municipalities of the Czech Republic). The Digital Agenda for Europe Unit has taken all the comments received into account as far as possible.

This document was presented for comments and remarks to the presidency of the Government Council for Information Society (GCIS), which is composed of representatives of selected ministries (MoI, MIT, MoRD, MoF, a deputy member of the Government in charge of the Legislative Council of the Government, a representative of NÚKIB, a representative of the Office of the Government, the DIA and a representative of the Office of the Government responsible for the European Digital Agenda, as well as a representative of the industrial sector and academia and civil society). These include, inter alia, representatives of the Czech Statistical Office, the Czech Office for Surveying, Mapping and Cadastre, the Office for the Protection of Competition, the Administration of State Material Reserves, the National Security Authority, the Czech Telecommunication Office, the Office for the Protection of Personal Data, the Association of Regions of the Czech Republic, the Association of Towns and Municipalities of the Czech Republic and the Association of Local Authorities of the Czech Republic, a representative of the Security Information Service, the Office for Foreign Relations and Information and the Military Intelligence Service, a representative of the Czech Chamber of Commerce and the Confederation of Industry of the Czech Republic, a representative of the trade unions represented in the Council of Economic and Social Agreement, representatives of academia and civil society.

The Committee for the EU was also informed of the progress of the report (at working level). This document was unanimously approved by members of the Committee for the Czech Republic in Digital Europe and by the presidency of the GCIS before its final form was submitted in Czech and English to the European Commission. Deputy prime minister Ivan Bartoš also presented this document on 15 November 2023 to the Government of the Czech Republic, which acknowledged it.

Part 7: Overall impact and conclusion

The most important long-term strategy of the Czech Republic in the area of meeting the objectives of the Digital Decade 2030 is the Government's Digital Czechia concept, which includes most of the measures that contribute to the fulfilment of these objectives and which are included in this document.

The Path to Europe's Digital Decade: The Strategic Plan for the Digitalization of the Czech Republic by 2030 is the umbrella document of the Czech digital strategy and covers a wide range of areas falling under the four Digital Decade objectives. Part 1 mentions important Government initiatives and long-term strategies that are crucial for the digital transformation of the Czech Republic. Part 2 sets national targets for each of the digital objectives. Parts 3 and 4 then summarises the main measures that will facilitate the achievement of these objectives.

Specifically in the area of digital skills, it is important for the Czech Republic to increase the number of ICT specialists, which is the purpose of a number of measures mentioned in Part 3.1.1. Support for increasing the representation of women in ICT is also an important initiative related to the achievement of the general objectives.

The Czech Republic scores well in the digital infrastructure indicators, especially in the area of connectivity. Extending the coverage of 5G and VHCN technologies is a long-term objective of the European Digital Decade to which several measures in Part 3.1.2 contribute, as does a multi-country project to build a 5G corridor on the Brno-Bratislava railway line. The Czech Republic's contribution to the EU objective on quantum computing, specifically Measure 2.8 – Acquisition and operation of the quantum computer of the European consortium LUMI-Q, is also worth mentioning.

A number of measures are also directed at the digital transformation of businesses, where the Czech Republic is counting on significant investments aimed at such digital transformation; these measures are mostly financed by the NPO. Two policies under the general objectives on investment incentives and collaborative research are also targeted at this area.

The last equally important area is the section on the digitalization of public services. Especially in terms of online access to public services, the Czech Republic maintains a level that more or less corresponds to the European level. The Czech Republic has the lowest levels of access to health records, but several measures are already underway in this area that will contribute significantly to meeting the 2030 targets. In terms of access to electronic identification, the Czech Republic has already notified three electronic identification systems in accordance with the eIDAS Regulation, thus largely contributing to the progress towards this digital objective. The establishment of the Digital and Information Agency was a major step in this regard in the past year.

The Czech Republic will now continue to work hard to meet the interim objectives of the Digital Decade and maximise its potential in the field of digitalization in line with this strategic document.

List of Charts