



ESTONIA

2024 Digital Public Administration Factsheet

Supporting document





Main developments in digital public administrations and interoperability

JULY 2024



Table of Contents

1.	Interoperability State-of-Play	3
2.	Digital transformation of public administrations	
3.	Interoperability and data	
4.	Digital transformation of public services	
5.	Trust and Cybersecurity	.18
6.	Innovative technologies	
7.	Digital Public Administration Governance	
8.	Cross border Digital Public Administration Services for Citizens and Businesses	.26

Icons Glossary			
Political Communication	Legislation	Infrastructure	
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2030 DIGITAL DECADE

The **Digital Decade policy programme 2030** sets out digital ambitions for the next decade in the form of clear, concrete targets. The main goals can be summarised in 4 points:

- 1) a digitally skilled population and highly skilled digital professionals;
- 2) secure and sustainable digital infrastructures;
- 3) digital transformation of businesses;
- 4) digitalisation of public services.

Skills

20 million employed **ICT specialists**, more graduates + gender balance 80% of adults can **use tech** for everyday tasks

Government

Key Public Services - 100% online Everyone can **access health records online** Everyone can use **eID**



Infrastructure

Gigabit connectivity for everyone, high-speed mobile coverage (at least 5G) everywhere EU produces 20% of world's semiconductors 10 000 cloud edge nodes = fast data access EU quantum computing by 2025

Business

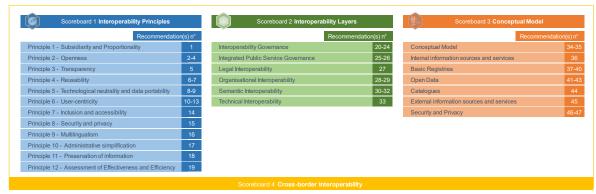
75% of companies using **Cloud, AI or Big Data**Double the number of **unicorn startups**90% of **SMEs taking up tech**

The production of the **Digital Public Administration factsheets and their supportive documents** support the objectives and targets of the Digital Decade programme. By referencing national initiatives on the digital transformation of public administrations and public services, as well as interoperability, they complement existing data and indicators included in the Digital Decade reports and related resources. They also highlight and promote key initiatives put in place or planned by EU countries to reach the Digital Decade's targets.

1. Interoperability State-of-Play

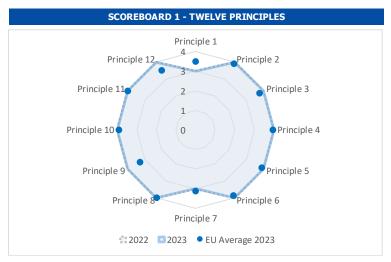
In 2017, the European Commission published the European Interoperability Framework (EIF) to give specific guidance on how to set up interoperable digital public services through a set of 47 recommendations divided in three pillars. The EIF Monitoring Mechanism (MM) was built on these pillars to evaluate the level of implementation of the framework within the Member States. The mechanism is based on a set of 91 Key Performance Indicators (KPIs) clustered within the three scoreboards (Principles, Layers, Conceptual model and Cross-border interoperability), outlined below.

Starting from the 2022 edition, an additional scoreboard, Scoreboard 4, focusing on cross-border interoperability, has been incorporated. This scoreboard assesses the adherence to 35 Recommendations outlined in the EIF framework. Specifically, it encompasses Interoperability Principles 2, and 4 through 11 from Scoreboard 1, all recommendations pertaining to Interoperability Layers from Scoreboard 2, as well as Conceptual Model recommendations 36 to 43 and 46 to 47 from Scoreboard 3.



Source: European Interoperability Framework Monitoring Mechanism 2023

Each scoreboard breaks down the results into thematic areas (i.e. principles). The thematic areas are evaluated on a scale from one to four, where one means a lower level of implementation and four means a higher level of implementation. The graphs below show the result of the EIF MM data collection exercise for Estonia in 2023, comparing it with the EU average as well as the performance of the country in 2022.



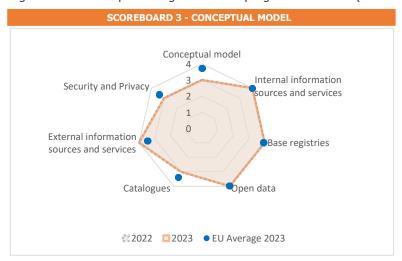
Source: European Interoperability Framework Monitoring Mechanism 2023

The Estonian results in Scoreboard 1 stand for an overall good implementation of the EIF Principles. Estonia even performed above the European average for Principle 9 (Multilingualism). Potential areas for improvement relate to the implementation of Principles 1 (Subsidiarity and Proportionality) and 7 (Inclusion and Accessibility). Particularly, the extent to which strategies or frameworks take the EIF results into account (Principle 1 - KPI 1), and the existence of modelling techniques to document business processes to deliver public services (Principle 7 - KPI 28) should be improved. To achieve it, Recommendation 1 (Principle 1) on ensuring that national interoperability frameworks and interoperability strategies are aligned with the EIF; and Recommendation 14 (Principle 7), asking countries to ensure that all European public services are accessible to all citizens should be considered by Estonia.



Source: European Interoperability Framework Monitoring Mechanism 2023

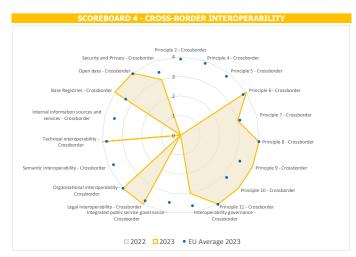
Estonia's scores in Scoreboard 2 illustrate an overall good performance of the country with scores of in all interoperability layers, except for interoperability governance, which registered a score of 3. Thus, areas for improvement to strengthen the country's implementation of the recommendations under Scoreboard concern mostly this layer. To achieve the maximum score of interoperability governance, Estonia could put in place processes to select relevant standards and specifications, evaluate them, monitor their implementation, check compliance and test their interoperability (Recommendation 21); as well as consult relevant catalogues of standards, specifications and guidelines when procuring and developing ICT solutions (Recommendation 23).



Source: European Interoperability Framework Monitoring Mechanism 2023

The Estonian results in relation to the Conceptual Model in Scoreboard 3 show a good performance of the country. The country performed above the European average for External information sources and services, although fell short for the Catalogues, Security and Privacy, and Conceptual Model areas. The country's lack of a common scheme for interconnecting loosely coupled service components (KPI 55 – Conceptual Model), and its number of trust services providers (KPI 68 – Security and Privacy) contribute the most to these lower scores. To improve them, the country

should decide on a common scheme for interconnecting these loosely coupled services (Recommendation 35), and use trust services according to the Regulation on eID and Trust Services as mechanisms that ensure secure and protected data exchange in public services (Recommendation 47).



Source: European Interoperability Framework Monitoring Mechanism 2023

The results of Estonia on Cross-Border Interoperability in Scoreboard 4 show a very good performance for the areas in which there are data, for which the country scores a 4 in all except for Principle 7 (Inclusion and Accessibility – Cross-Border), Interoperability Governance, and Security and Privacy. To raise these scores to a 4, the country should consider putting in place processes to select relevant standards and specifications, evaluate them, monitor their implementation, check compliance and test their interoperability (Recommendation 21). Additionally, Estonia should focus on developing interfaces with base registries and authoritative sources of information, publish the semantic and technical means, and documentation needed for others to connect and reuse available information (Recommendation 38).

Additional information on Estonia's results on the EIF Monitoring Mechanism is available online through interactive dashboards.

Curious about the state-of-play on digital public administrations in this country?

Please find here some relevant indicators and resources on this topic:

- Eurostat Information Society Indicators
- Digital Economy and Society Index (DESI)
- eGovernment Benchmark
- Repository of good practices on the EIF implementation

2. Digital transformation of public administrations



Main digital strategies, action plans and legislations

Joint Declaration on Cooperation for Powering Digital Transformation

In October 2020, Estonia signed a Joint Declaration of Intent titled 'Cooperation for Powering Digital Transformation', so as to cooperate in accelerating the digital transformation and digitalisation of public administration for the achievement of the sustainable development goals. The declaration was also signed by Germany, the International Telecommunication Union and the Digital Impact Alliance. The collaboration aims to expedite the digital transformation and help governments deploy digital public services in a cost-efficient manner by providing them with building blocks to do so, such as expertise, guidelines, best practices and case studies.

Berlin Declaration on Digital Society and Value-Based Digital Government

In December 2020, the Estonian government signed the Berlin Declaration on Digital Society and Value-Based Digital Government, thus re-affirming its commitment – together with other European Union (EU) Member States – to foster digital transformation in order to allow citizens and businesses to harness the benefits and opportunities offered by modern digital technologies. The Declaration aims to contribute to a value-based digital transformation by addressing and strengthening digital participation and digital inclusion in European societies.

Digital Agenda 2030

The Digital Agenda 2030 for Estonia was adopted by the Estonian Ministry of Economic Affairs and Communications in 2021. It includes a vision and an action plan concerning the development of the Estonian economy, State and society in the next decade with the help of digital technology. The main contributions of the Agenda are structured around the areas of digital government, connectivity, cyber security, and the expectations defined in other development plans.

The Estonian Digital Agenda 2030 has the following priorities concerning digital competence development: (i) providing a sufficient number of ICT professionals at the appropriate level, including cyber specialists; (ii) increasing reskilling and upskilling initiatives related to digital skills to move towards the next level of digital maturity in the economy and public administration; (iii) ensuring that citizens have up-to-date skills to deal with digital solutions in a useful and safe manner; and (iv) investing in research and development activities to increase the capacities of digital society.

Digital Society Development Plan 2030

Under the leadership of the Ministry of Economic Affairs and Communications, Estonia adopted in October 2021 a new Development Plan for the Estonian Digital Society 2030, which is a continuation of the previous Estonian Information Society 2020 development plan. The Plan is divided into three areas: (i) digital State; (ii) connectivity; and (iii) cybersecurity. It aims to define a long-term strategy to ensure the success of the Estonian digital society.

Principles for Managing Services and Governing Information

The Principles for Managing Services and Governing Information (a government regulation) entered into force in March 2021, obliging all authorities to ensure:

- Management and quality of direct public services;
- Management and quality of processes;
- Information governance and quality thereof; and
- Every sub-activity of information governance and quality thereof.

The regulation aims to establish a common view on how to develop, maintain and provide high-quality public services. With this regulation, Estonia adopted a new approach to developing public services: from that moment on, public services must be life event-based and, where possible,

proactive. Estonia is currently developing a methodology on how to develop and offer such public services.

The problem that authorities often face is that they do not have a clear view of their services (as defined in the second article of the regulation). For this reason, the regulation obliges authorities providing public services to maintain an up-to-date list of their own direct public services and of support services provided to other authorities, containing at least significant services. Furthermore, the management of the processes behind the services must have a clear owner. The regulation also established a network of coordinators:

- The Ministry of Economic Affairs and Communications is responsible for the management of direct public services, including determining, sharing and exchanging the information necessary for providing such services;
- The Data Protection Inspectorate is responsible for organising access to and protection of information; and
- The Estonian Information System Authority is responsible for the implementation of the requirements applying to the architecture of the State Information System and the key components of the State Information System.

While executing their tasks, the coordinators have the following functions:

- Planning the main directions for development and the activities supporting such development;
- Issuing guidelines and recommendations;
- Monitoring the implementation of planned activities and the application of guidelines;
- Managing communication;
- Cooperating with other coordinators; and
- Engaging other parties, as necessary.



Next Generation Digital Government Architecture

In March 2020, Estonia's Chief Technology Officer, Mr. Kristo Vaher, published a paper on the Next Generation Digital Government Architecture, tackling the challenges of the future of digital governance and addressing the technical aspects of reaching the new objectives and goals. In particular, the paper focuses primarily on the software and solution architecture layers of government technology, while also addressing data and business architecture dependencies. The paper focuses on the digital government stack of the Republic of Estonia, but the issues that it tackles are likely to apply to the aspirations of any modern digital government.

Digitalisation of internal processes



Document Exchange Layer

The Document Exchange Layer (DHX) is a document exchange protocol that enables the safe exchange of documents and information between the document management system of the public sector and other information systems. The DHX relies on X-Road version 6 as transport-level infrastructure.

The automatic document exchange in the Estonian public sector began in 2006. Due to an irregular internet connection, sending documents from one document management system to another was challenging. For this reason, the State created a central solution, i.e. the Document Exchange Centre, where documents would be temporarily stored in such situations. The Document Exchange Centre was used by all Ministries and agencies in their area of government, county governments, agencies and inspectorates, but also by most of the local governments and educational establishments, and other institutions of the public sector. In 2009, the European Consortium for Electronic State Awards recognised the Document Exchange Centre as a good service and strategic initiative.

The transition to the new means of document exchange began in 2017, with the Document Exchange Centre closed at the end of 2018 and the new distributed solution for the exchange of documents, the DHX, implemented at the beginning of 2019. The new protocol enables documents to be transported between agencies directly from sender to receiver.



ASOnet's 'EEBone'

EEBone (PeaTee) is the broadband network for data communication among government institutions. More in detail, EEBone is a government-wide backbone network connecting more than 20 000 computers from all government offices across the country, and providing secure access to the internet and the government's intranet.



The network was launched in October 1998, and was developed based on ASONet, the backbone network elaborated by the Border Guard Administration, the Customs Board and the Police Board in 1993. The network currently provides approximately 50% of all administrative services to the various associations. The use of the backbone network is financed centrally from the State budget and is free of charge for subscribed clients. Clients only need to pay to access the backbone network and to determine the access connection service themselves.

RIA is highly involved in running the network, either as a mediator of customised value-added data services, or as a provider of customer services.

Digitalisation supporting the EU Green Deal

No particular initiatives in this field have been reported to date.



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3. Interoperability and data

Interoperability Framework



Estonian Interoperability Framework

In Estonia, the eGovernment is fully aligned with the Estonian Interoperability Framework (EIF) in terms of terminology and general principles. An example in this regard, related to base registries in general and the Once-Only principle in particular, is the Underlying Principle No. 9 of the EIF which concerns administrative simplification. In this field, when the documentation of the databases is coordinated in the Management System of the State Information System (RIHA), the purposefulness of data collection and the compliance with the principle of a single request for data are verified to ensure that the Estonian system complies with the EIF.

A new interoperability framework is being launched in 2023, replacing a framework that is over ten years old. The new framework will be more of a living document rather than a legislative text, so that it can be edited more frequently.

The new framework will not be mandatory across the government, and it will rather be a guidance document containing suggested principles. Therefore, the document will provide value to domains where some of the principles would not apply.



Digital Agenda 2030 for Estonia

The Digital Agenda 2030 for Estonia states that it is necessary to join forces and share experiences and solutions with each other, in order to keep the already established digital State sustainable and introduce new solutions in the best possible way. Therefore, common directions and requirements must also be in place to ensure interoperability, avoid duplication and guarantee that the completed solutions rely on an optimal technological base. All national initiatives in the digital sector stem from the agenda and must be in line with the document.



Public Information Act

The Public Information Act regulates various elements related to interoperability, namely:

- The prohibition to collect duplicate data;
- The concept of base data (defining the authoritative source for every piece of data collected in the public sector), going further than the concept of base registries; and
- The mandatory consultation process with IT coordination, data protection and statistics bodies when preparing legal acts establishing new public sector databases or introducing changes to existing ones.

The Public Information Act also serves as legal basis for secondary legislation establishing:

- The classification system;
- The geodetic system;
- The system of address details;
- The system of security measures for information systems;
- The data exchange layer of information systems; and
- The management system of the State Information System.



Management System of the State Information System

The creation and maintenance of government databases is governed by the Public Information Act of 2007, establishing a Management System for the State Information System (RIHA) where all databases and information systems must be registered. The objective of RIHA is to ensure the interoperability of public sector information systems, and the reuse of technical, organisational and semantic resources, so as to give a clear view of the State registers and the related services. The system of integrated registers also allows for the application of new principles to administrative arrangements, such as citizen-orientation, flexibility, swiftness, and cost and time effectiveness for both citizens and the State.

RIHA includes metadata about existing public sector databases, ranging from information on the administrators of the databases to the eServices offered and the technical data concerning the environment/platform. In the same web-based environment, requests to other information systems can be made to launch a new X-tee-based service.

Data access, management and reuse

Open data



Open Government Partnership

In 2018, the government approved the Open Government Partnership Action Plan 2018–2020, aiming to foster open and inclusive policy-making at national and local level. In October 2020, the Open Government Partnership Action Plan 2020–2022 was adopted.

In September 2022, the government published the Open Government Partnership Action Plan 2022–2024. This Plan continues previous action plans' efforts to increase transparency and civic participation in policy-making, and introduces new commitments around evidence-based policy-making. In both policy areas, the key challenges are stimulating sustainable cultural change in the public sector to reinforce the impact of new policy frameworks and tools. The Estonian government hosted the 2023 OGP Global Summit on 6-7 September in Tallinn, Estonia. The Summit focused on open government in the digital age, the potential of technology to make governance and policy-making more transparent and accountable, and the preservation of democracy.



X-Road Middleware

Launched in December 2001, the X-Road (referred to as X-tee in English since 2018) is a middle-tier data exchange layer enabling government databases to communicate with each other and serving as main interoperability solution inside Estonia. In particular, the use of X-tee is the mandatory solution for data exchange between public sector information systems.

Initially developed as an environment facilitating the formulation of queries to different databases in a standardised way, the system allows officials, as well as legal and natural entities, to search data from national databases over the internet, within the limits of their authority, using a unified user interface.

In addition, the system has been further developed to enable the creation of eServices capable of simultaneously using data stored in different databases. As a result, several extensions have been developed for the X-tee system, such as writing operations in databases, transmitting huge datasets between information systems, performing successive data search operations in different data sheets and providing services via web portals.



Open Data Portal

The Open Data Portal provides the general public and businesses with a single point of access to unrestricted public sector data, with the permission to reuse and redistribute such data for both commercial and non-commercial purposes. In other words, the Open Data Portal is intended to serve as a platform for the dissemination of data by public bodies, and for the search and retrieval of such datasets by open data users.

The Open Data Portal allows to:

- Search and download open data;
- Publish new open data (to that end, prior registration with the Portal's administrator is required);
- Store datasets by government agencies and local authorities;
- Search and use applications created on the basis of open data; and
- Post news, questions and instructions pertaining to open data and have discussions on relevant topics.

Base registries

The following table lists the Estonian base registries:

National	
Business and Tax	The e-Business Register is one of the first services of the Estonian Centre of Registers and Information Systems, being the basis for developing the

	Company Registration Portal and the Visualised Business Register. The e-Business Register is a service based on the database of the registry departments of county courts. It displays the real-time data of all legal persons registered in Estonia. The Register is owned by the Centre of Registers and Information System.	
Transportation / vehicles	In the e-service, one can apply for a driver's license, formalise the purchase and sale of a car, vessel or other vehicles, register for a theory and driving test, apply for digital tachograph cards, special transport permits and much more. The owner of the register is the Estonian Transport Administration.	
Land	The e-Land Register is a convenient and accessible service which allows quick and easy verification of general data, size, owners, restrictions and encumbering mortgages of immovable properties. The Register is owned by the Centre of Registers and Information System.	
Population	The population register is a database which brings together the main personal data on Estonian citizens, citizens of the European Union who have registered their residence in Estonia and aliens who have been granted a residence permit or right of residence in Estonia. The register is maintained and developed by the Ministry of the Interior, as the chief administrator of the register.	
Other		
Sub-national		
Base Registries		

Data platforms and portals

The following table lists the Estonian data platforms and portals infrastructures:

Anonymiser	At the end of 2022, an application for the anonymisation of personal data was released, aiming at increasing security in the training of bureaucratic contacts. The Data Anonymiser will identify personal identifiers such as names, IDs and locations of individuals from text, which it will be able to replace with another value of the same entity class (e.g. Tallinn will be replaced with Tartu). The application is intended to be used both in Bürokratt and in applications and information systems of other institutions tasked with the processing or storing of personal data.
The Government Portal	Since June 2014, all Ministries have developed similarly designed and structured webpages to allow visitors to access information faster and more easily than before, and to have a clear overview of the goals and activities of the government and governmental authorities. The similarly structured and designed webpages of the government, Government Office and eleven Ministries now form a common online environment: the Government Portal. Additionally, all Government Portal webpages allow access to the webpages of the other Ministries.
eGovernment Code Repository	The Ministry of Economic Affairs and Communications, and RIA have finished the first version of an eGovernment code repository, called <i>koodivaramu</i> , making public software solutions built for the government. The eGovernment code repository is based on open-source technologies and the code is public for everyone. In the future, all source codes for eGovernment solutions will be open and available for use by everyone, unless required otherwise for security reasons.

Rural Municipality Portal	The Rural Municipality Portal was launched in February 2011 by the Estonian government, with a view to increasing the transparency of local governments and promoting citizen participation. Based on an open-source content management tool allowing for an easy and uniform site administration, the portal builds on an innovative concept. The developed solution includes a standard website structure for local governments, tools for site administration and built-in interfacing with public registers.
Open Data Portal	The Estonian Open Government Data Portal provides access to public sector data, which can be freely reused or shared. The reach of the databases is broad and includes, among others, data on politics, economy, medicine, education, law and security.
National Data Portal	The National Data Portal provides open data for everyone to use, reuse and share. It pursues the following objectives: (i) publish dataset descriptions; (ii) publish and encourage the reuse of semantic assets (i.e. vocabularies, ontologies); (iii) publish information on reuse (including the availability of services, PETs, data services and open data sets); (iv) grant the possibility to request restricted data; and (v) knowledge sharing and guidance.

Cross-border infrastructures

The following table lists the European cross-border infrastructures of which Estonia is part of:

European Business Registry	Estonia is a member of the European Business Registry, which is a network of national business registries.
EUCARIS	Estonia is a member of the European Car and Driving Licence Information System (EUCARIS), using it to provide vehicular information. The Estonian authority responsible for it is the Estonian Transport Administration.
TESTA	Estonia uses the Trans European Services for Telematics between Administrations (TESTA) network as the main cross-border infrastructure to communicate digitally among the EU agencies, institutions and Member States.
EU Digital Wallet	Estonia is part of the EUDI Digital Wallet Consortium.
European Blockchain Services Infrastructure (EBSI)	Estonia is part of the EBSI initiative.



Nordic Institute for Interoperability Solutions

The Nordic Institute for Interoperability Solutions (NIIS) is an association founded jointly by Estonia and Finland with the aim of ensuring the development and strategic management of X-Road and other cross-border components for eGovernment infrastructure. The Population Register Centre of Finland and Estonian Information System Authority (RIA) had already concluded a cooperation agreement to formalise cooperation relating to X-Road and work as a contractual platform for deepening cooperation. NIIS then took over the X-Road core development from Finland's Population Register Centre and RIA, starting by running the Working Group. In September 2018, Iceland also became a partner of the NIIS and then a member country on 1 June 2021.

NIIS works both as network and cooperation platform, and as executioner of IT developments in the common interest of its members. The Institute focuses on practical collaboration, experience sharing and promotion of innovation. The operating model of the Institute is something quite unique world-wide.



Data Embassy in Luxembourg

The world's first Data Embassy has been established by Estonia in Luxembourg. Estonia's pilot project is based in a high-security data centre in Luxembourg, storing copies of the most critical datasets identified by the Estonian government that are the minimum set to keep the country running. In the next phases, Estonia intends to go beyond a mere back-up site and operate live from the Data Embassy when necessary.

The Data Embassy backs up the databases from eFile (court system), the Treasury Information System, the eLand Registry, the Taxable Person's Registry, the Business Registry, the Population Registry, the State Gazette, the Identity Documents Registry, the Land Cadastral Registry and the National Pension Insurance Registry.

4. Digital transformation of public services



Digital public services for citizens

eResidency

On 8 August 2019, the Estonian government approved the eResidency 2.0 Action Plan with the aim of updating the previous programme to make it more secure and convenient for the eResidency community, and more beneficial for entrepreneurs. Specifically, the new action plan provides that a control is carried out before issuing a digital ID and after the completion of the procedure. Moreover, the action plan lays down the creation of a user-friendly online platform that facilitates the use of services provided by the State and offers a marketplace to help Estonian and international companies to provide services to eResidents. The platform is conceived as a services export platform and possibly a store where eResidents have access to private and public sector services, all available into one platform.

eesti.ee: eGovernment Portal

Estonia's eGovernment Portal was first launched in March 2003 based on the eCitizen project initiated in 2002 and has been constantly renewed since then. The portal coordinates the information provided and the services offered by the various State institutions, ensuring a safe internet environment for communicating with the State, and offering reliable information and eSolutions for citizens, entrepreneurs and officials. Access to the relevant information and eServices on the portal depends on whether the user is a citizen, entrepreneur, or State official. The State portal's environment allows users to: (i) authenticate with their national eID card to access and check their personal details; (ii) perform transactions with municipal and government bodies; (iii) complete and send online forms and applications; (iv) sign documents digitally; (v) create email addresses with the suffix @eesti.ee; and (vi) receive email or SMS notifications. In addition, the portal gives access to other registry services (e.g. the Forest Registry) on more than 20 national databases.

Accelerate Estonia

Accelerate Estonia is a government-led national testbed platform powered by the Tehnopol Science and Business Park for citizens and businesses to experiment, validate and solve global problems. Citizens and businesses are called upon to provide solutions to problems in Estonia that can be scaled globally, develop significant economic opportunities for Estonia, and create or catalyse systematic change in Estonia. In exchange for citizens' and businesses' efforts, Accelerate Estonia fosters collaboration with policy owners and public sector influencers to identify systemic enablers and resolve any constraints on the solution. Furthermore, it provides a team of public sector specialists to help work on the solution and covers the costs of the experiment for selected projects through grants of up to EUR 90 000.

Accelerate Estonia's focus themes for 2022 were mental health, green turn and Wild Card, but other topics are also welcomed.

eInvoicing

eInvoicing in Estonia

The implementation of eInvoices in Estonia began in 2014. According to the amendments to the Accounting Act introduced in 2019, government authorities can only accept eInvoices, which is in line with the Once-Only principle, and significantly reduces the time and labour invested into processing invoices. Private sector operators can utilise various providers to send eInvoices to the government or to other operators.

Act on Amendments to the Accounting Act

On 20 February 2019, the Estonian Parliament approved a bill providing that the accounting of the State was to fully switch to electronic invoicing. Starting from July 2019, the public sector

could only accept eInvoices. In other words, the Act on Amendments to the Accounting Act (795 SE), initiated by the government, made machine-processable invoices mandatory in invoicing with the public sector, aiming to reduce the workload and the time required in invoicing within the public sector. The act also transposed the EU Directive on eInvoicing. An electronic invoice is a machine-readable document drawn up on the basis of a common standard, sent from one software system to another to avoid entering data by hand.



eHealth and social security

Agreement on the International Certificate of Vaccination

On 5 October 2020, Estonia signed an agreement with the World Health Organisation (WHO) agreeing to collaborate on the development of a digital International Certificate of Vaccination. The agreement involves working together across a variety of eHealth projects, not just the vaccination card. Other projects include a global framework for health data interoperability, and guidelines for national ePrescription and eDispensing systems, as well as the European Roadmap for the Digitalisation of National Health Systems.



Regulation on the Cross-Border Exchange of Information Regarding Health Services

The Regulation on the Cross-border Exchange of Information regarding Health Services came into force in November 2018, aiming to enable people abroad to have better access to medical care and medicines thanks to the electronic exchange of prescription data between countries. Estonia and Finland became the first two countries in Europe to exchange medicine prescription data. Since January 2019, the first EU patients have been able to use digital prescriptions issued by their home doctor when visiting a pharmacy in another EU country: Finnish patients are now able to go to a pharmacy in Estonia and retrieve medicines prescribed electronically by their doctor in Finland. The initiative applies to all ePrescriptions in Finland and to the Estonian pharmacies that have signed the agreement. The novelty of this initiative is that the ePrescriptions are visible electronically to participating pharmacists in the receiving country via the new eHealth Digital Service Infrastructure, without the patient having to provide a written prescription.

e-Health Record

The Electronic Health Record (e-Health Record) is a nationwide system that integrates data from Estonia's different healthcare providers to create a common record that every patient can access online.

Other key initiatives

TARGET Instant Payment Settlement

Since November 2018, commercial banks operating in Estonia have been able to join the TARGET Instant Payment Settlement (TIPS) through Eesti Pank (Bank of Estonia). TIPS is an instant payment system developed by the central banks of the euro area at the initiative of the European Central Bank. Like other pan-European instant payment systems, TIPS allows clients to settle payments in real time, night and day and throughout the year.

Personal Data Usage Monitor

The Personal Data Usage Monitor is a set of four micro service-style applications that, when combined with each other and attached to X-tee, provide citizens with a comprehensive view of how their personal data have been used by the government.

Estonian Tax and Customs Board

On September 2019, the eServices of the Estonian Tax and Customs Board (ETCB) were made available in the newly redesigned eMTA environment, offering users logically structured content and easy navigation. The goal was to make compliance in tax and customs matters equally easy to achieve for both occasional and regular users (e.g. accountancy employees).

Digital public services for businesses



Digital Testbed Framework

The Digital Testbed Framework was finalised in 2019 and was launched globally with a new website in autumn 2021. The essence of the framework is to come up with solutions, developed through public-private cooperation, that can be added to the Estonian code repository, and be reused and further developed freely by all public and private stakeholders. This framework allows the government to facilitate innovative cooperation, whereby a private sector party (e.g. a company, university or individual developer) can create additional components to the government stack or further develop previously created solutions. The State and the public have access to the developed solution for free and the author of the solution can promote it as a success story with Estonian State references all over the world. This opens a whole new perspective for public-private partnerships, and allows stakeholders from the private and non-governmental sector to join the Estonian platform-based approach and help accelerate the development of new technologies.

Information Society Services Act

The Information Society Services Act was passed on 14 April 2004 and entered into force on 1 May 2004, implementing Directive 2000/31/EC on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market. More in detail, the act established the requirements pertaining to information society service providers, as well as the organisation of supervision and liability in case of violation of these requirements.

Simplified Business Income Taxation Act

On 1 January 2018, the Simplified Business Income Taxation Act entered into force, establishing the concept of business account. The business account is aimed at small companies (one-man private limited companies and self-employed persons) in order for them to operate without bureaucracy. In particular, the act enables a natural person to open a business account with 20% of the balance automatically transferred to the Tax and Customs Board. Therefore, the account holders disclose themselves to the Tax and Customs Board and, in return, need not submit annual reports and tax returns.

Public procurement

Public

Public Procurement Act

The Public Procurement Act came into force in May 2007, with the current version transposing the EU Directives on public procurement. The act includes legal provisions enabling the further development of eProcurement (eAuctions, Dynamic Purchasing System, eCatalogues, etc.) to offer better opportunities to reach a fully electronic procurement tendering process. Importantly, the previous version of the Public Procurement Act (October 2000) had already established rules for the eNotification of public tenders through the country's Public Procurement State Register.

Public Procurement Registry

The Public Procurement Registry offers an innovative, free, self-service working environment for buyers (i.e. contracting authorities) to organise and tenderers (i.e. economic operators) to participate in public procurements. Anyone can freely browse published procurements, notices and contract information, and review the decisions of the Committee that decides the outcome of the procurement. The Public Procurement Registry is administered by the Ministry of Finance.

Digital inclusion and digital skills



Select IT is a pilot adult retraining programme that was launched in 2017. In the framework of this pilot project, 500 people without prior IT education were trained for the position of junior software developer in the subsequent four years. The programme lasts 3.5 months (14 weeks)



and is carried out on the basis of a dedicated study programme. In accordance with the needs of the involved IT company, teaching is provided either on Java or the .NET platform.

Digital State Academy

In cooperation with the Ministry of Economic Affairs and Communications and the Tallinn University of Technology, the online course platform of the Digital State Academy has been completed. This is a first-of-its-kind approach where the development of knowledge and skills about the digital State is offered centrally through an e-learning platform. The aim of the Digital State Academy is to develop the knowledge of public sector employees about the development of the digital State and digital services, so that everyone can keep up with the rapid development of the digital State. The Digital State Academy is primarily aimed at the public sector, but anyone who wishes can take the courses free of charge.



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5. Trust and Cybersecurity

eID and trust services

Electronic Identification and Trust Services for Electronic Transactions Act

The Electronic Identification and Trust Services for Electronic Transactions Act was adopted on 12 October 2016, effectively transposing Regulation (EU) No.°910/2014 on electronic identification and trust services for electronic transactions in the internal market (eIDAS Regulation). The act also replaced the Digital Signatures Act (DSA), which had entered into force on 15 December 2000 and had been revised in 2014. The DSA gave digital and handwritten signatures equal legal value and set an obligation for all public institutions to accept digitally signed documents.

In January 2019, the amendments to the Electronic Identification and Trust Services for Electronic Transactions Act entered into force. The State Information Authority is now the single competent authority regarding rights and obligations arising from the eIDAS Regulation.



Electronic ID Card

Estonia started issuing national eID cards in January 2002. The card, fulfilling the requirements of Estonia's Digital Signatures Act, now replaced by the Electronic Identification and Trust Services for Electronic Transactions Act, is mandatory for all Estonian citizens and residing foreigners over 15 years of age. The eID card is meant to be the primary document for identifying citizens and residents, and is used for all activities – governmental or private. In particular, the eID card can be used to vote electronically (since 2005), create a business, verify banking transactions and access medical history (since 2010), and can work as a virtual ticket. Furthermore, the eID card is a valid travel document within the EU. Since 1 January 2007, the card issued by the Citizenship and Migration Board (CMB) has become valid for five years (instead of ten years previously). As of May 2024, there are 1 405 495 eID cards issued in Estonia. In addition to being a physical identification document, the card features advanced electronic functions facilitating secure authentication and providing a legally binding digital signature for public and private online services. An electronic processor chip contains a personal data file, a certificate for authentication, a certificate for digital signature and the associated private keys, protected with PIN codes. The certificates contain only the holder's name and personal code (national ID code).



Mobile-ID

The mobile-ID is the ID card-based identity verification and digital signature solution for users of mobile phones in Estonia. The mobile phone, based on a standardised SIM application, acts as a secure signing device. Thus, similarly to the eID card, the mobile-ID enables authentication and digital signing of documents, bearing the same legal value. The user's certificates are maintained on the telecom operator's SIM card and require the user to enter a PIN code to be used.



Smart-ID

As an alternative to the mobile-ID, Estonia has a new private sector-offered solution for secure authentication, called smart-ID. The smart-ID can be used to log in to eServices, to use the online banking and to sign documents. Signatures given with the smart-ID are legally binding and recognised in all EU States, and have the same legal effect as handwritten signatures.



ePassport

To comply with Regulation 2252/2004/EC on standards for security features and biometrics in passports and travel documents issued by Member States, the systems developed by the CMB have undergone considerable changes that have been implemented step-by-step. Changes in the organisation of the work and the supporting systems of the CMB are planned at both customer service and document issuance system level. The first biometric passports containing the holder's biometric data were delivered on 22 May 2007.



Dokobit Portal

The Dokobit portal is available for numerous countries, including Estonian eID-card, and Estonian, Icelandic and Lithuanian mobile-ID users. In addition, users can log in to the portal using the smart-ID from Estonia, Latvia and Lithuania. The portal allows for digital signatures, verification of the validity of digital signatures, and documents to be forwarded to and received from other users of the portal.

The Dokobit portal provides a quick and easy way to raise the security of any web service to meet the highest demands, making it possible to carry out authentication based on strong authentication devices from different vendors and providing service providers with the opportunity to enter legal signatures on any created data within their service. That way, the portal provides long-term validity and proof of action in courts across the EU. Finally, the portal enables to gather digital signatures for documents that need to be signed by multiple parties, including entrepreneurs, government officials and individuals.



Estonia's Digital ID Wallet

The Estonian Information System Authority (RIA), in collaboration with Cybernetica, will soon start to analyse the architecture of Estonia's digital ID wallet, to ensure its compatibility with the country's digital ID ecosystem, and its compliance with the European Digital Identity Regulation (eIDAS). The new eIDAS is a new opportunity for Estonia's digital ID to be used not only nationally but also abroad.

Cybersecurity



Cybersecurity Strategy 2019–2022

Based on the experience from the two previous periods (2008–2013 and 2014–2017), the Cybersecurity Strategy 2019–2022 is the third strategy document on cybersecurity and general security which defines the long-term vision in the field, and the objectives, priority activity areas, roles and functions necessary to adopt it. The goal of the document is to enter into agreements and lay the conditions for implementing a comprehensive, systematic and inclusive sectoral policy. In this context, the strategy forms the basis to plan activities and resources in the field. As a horizontal strategy, it involves parties who contribute to ensuring Estonian cybersecurity, namely the public sector (both civilian and military defence), vital service providers, businesses operating in the field, universities and research institutes.



Cybersecurity Act

The Cybersecurity Act entered into force in May 2018, aiming to strengthen the security of the digital systems used in providing vital and other socially important services to the public. The act establishes the requirements applying to the maintenance of the network and information systems which are essential for the functioning of the society and the State, as well as of local authorities' network and information systems. The act also provides for liability and supervision provisions, and serves as a basis for the prevention and resolution of cyber incidents.



Personal Data Protection Act

The first Personal Data Protection Act (PDPA) entered into force on 19 July 1996. The act was amended in 2003 to be made fully compliant with the EU Data Protection Directive (95/46/EC), then amended again in January 2008 and renewed in 2019. The current version of the act can be found here.

The PDPA protects the fundamental rights and freedoms of persons with respect to the processing of their personal data, in accordance with the right of individuals to obtain freely any information that is disseminated for public use.

The 2008 version of the act introduced several changes. First, the previous classification of personal data into three groups (non-sensitive personal data, private personal data and sensitive personal data) was replaced by two data categories, namely 'personal data' and 'sensitive personal data', with the latter being a sub-class under special protection. Second, all processed personal data are protected and registered by chief processors (i.e. controllers) with the Data Protection Inspectorate, the data protection supervision authority. Finally, the new PDPA extended all general principles applying to the processing of personal data to the processing of the personal identification code (the unique number assigned to every Estonian citizen and resident).



From 1 January 2015, the Data Protection Inspectorate may submit reports to the Constitutional Committee of the *Riigikogu* and to the Legal Chancellor concerning significant matters which have an extensive effect or need prompt settlement emerging in the course of supervision over compliance with the act.



System of Security Measures for Information Systems

On 1 January 2008, the regulation establishing the system of security measures for information systems used for processing the data contained in State and local government databases and related information assets entered into force. The system consists of the procedure to specify security measures, and the description of organisational, physical and IT security measures to protect data. Importantly, however, the regulation does not apply to the security of information systems processing State secrets.



6. Innovative technologies

Artificial Intelligence (AI)



National Strategy on Artificial Intelligence

In June 2019, following the Digital Agenda 2020 for Estonia, the country published its National Strategy on Artificial Intelligence 2019–2021. In addition, the concept paper '#KrattAI: the next stage of digital public services in #eEstonia' further develops the vision for a national strategy on artificial intelligence (AI). In particular, the paper, stemming from the AI Strategy, provides a vision on how AI-based personal assistants and government services should operate from the user's point of view.

The national strategy's goal is to automate certain tasks performed by government employees, as well as make decision-making procedures more effective. More specifically, it encompasses the following topics:

- A legal framework to enable the use of fully autonomous software systems in all different areas, and regulate the relevant liability and safety issues, as well as other aspects;
- A national AI plan or strategy on how Estonia could advance the uptake of AI solutions in the public sector as well as in the wider economy; and
- Raising public awareness on AI in all sectors from labour market challenges to education, through the potential use cases of AI in the public sector.

As of June 2021, more than 100 AI-based tools had been deployed or were under development in the Estonian public sector, along with use cases. By way of example, the projects allow for the use of predictive analytics to decide where to send the police for traffic regulation, the use of AI to match job seekers with vacancies through the Estonian Unemployment Insurance Fund and the use of an AI-assisted application helping to track activities in the farming sector and facilitate information sharing among the authorities monitoring the use of government subsidies to farmers. In 2022, the country published its second National Strategy on Artificial Intelligence 2022–2023. The current strategy focuses on five key pillars: (i) public sector; (ii) private sector; (iii) education and R&D; (iv) legislation; and (v) data as an enabler. In the current Digital Agenda 2030, one of the developments is AI-powered government, with the goal of realizing certain tasks in the public sector with the help of a chatbot. With the help of AI, a new leap in efficiency has been made in the public sector.

The Estonian Ministry of Economic Affairs and Communications AI task force is currently working on a strategy for 2024-2026.



Data and Artificial Intelligence White Paper 2024 - 2030

The Data and Artificial Intelligence White Paper 2024-2030, drafted by various Estonian Ministries and the State Chancellery, was published in January 2024. It outlines the strategic goals for the development of data management and artificial intelligence (AI) in Estonia from 2024 to 2030. The plan emphasises the importance of data-based governance and economy, the empowerment of the State and society through AI, and the focus on reliability and human-centricity in data management and AI development.

The action plan details the current state of the field and international trends, highlighting the strengths, weaknesses, opportunities, and threats in the domain. It proposes a vision and mission for the sector, along with specific objectives and directions for subfields such as data-based governance, creative State and society, and trustworthy AI. Additionally, it includes action plans with concrete goals and metrics to guide progress towards the long-term objectives set out in the document. The plan also aligns with the Estonia 2035 strategy and other national development plans, ensuring coherence with broader policy goals.



Action Plan for Artificial Intelligence for the years 2024 - 2026

The Action Plan for Artificial Intelligence for the years 2024–2026, created by the Ministry of Economic Affairs and Communications, the Ministry of Justice, and the Ministry of Education and Research, was published in January 2024. It follows previous AI action plans and aims to further integrate AI into various sectors, including public services, the private sector, and education. The plan outlines strategic goals, challenges, and activities to promote the use of AI, emphasising the importance of a human-centric and trustworthy approach.





Key aspects of the plan include enhancing AI competencies and capabilities within the public sector, fostering collaboration between public and private entities, and supporting research and development. The plan also addresses the need for legal frameworks to ensure the ethical use of AI. The document details specific actions to achieve these objectives, such as appointing AI responsibility officers, creating AI implementation plans, and providing funding and support for AI projects. Additionally, it highlights the significance of high-performance data processing and language technology in advancing AI applications.

Distributed Ledger Technologies

Central Bank Digital Currency

The Estonian Central Bank, Eesti Pank, has launched a project to determine the suitability of Keyless Signatures Infrastructure (KSI) blockchain in supporting the digital money infrastructure of a central bank. KSI blockchain is a core eGovernment technology component in Estonia. The research will consist of several phases and is planned to last two years in order to determine how to design a platform that is practical, scalable and cryptographically secure, while meeting high privacy and security requirements.

Big data

No particular initiatives in this field have been reported to date.

Cloud and edge computing

Government Cloud

The Estonian Government, represented by the State Infocommunication Foundation (RIKS), and a consortium of private sector companies including Cybernetica, Dell EMC, Ericsson, OpenNode and Telia, has developed the Estonian Government Cloud.

Estonia has been a pioneer in converting public services into flexible electronic solutions for its citizens and e-residents. The implementation of the Government Cloud solution provides an excellent basis for online public services and solutions, making Estonia the most digital country in the world. With this solution, Estonia is taking the next step in its digital evolution to develop its ICT society.

The Estonian Government Cloud will modernise and renew existing information systems, exploit the possibilities offered by cloud technology and provide greater flexibility in the delivery of electronic services by Estonian government agencies and providers of essential services to residents and e-residents.

The solution will integrate the Estonian public sector's siloed IT infrastructures into a pool of shared resources. Estonian public institutions will gradually migrate from legacy systems to a new government cloud solution, which has been developed in accordance with the National IT Security Standard (ISKE) to ensure compliance with security and quality requirements. For example, sensitive personal data is stored and processed with confidentiality and integrity.

To accommodate physical security requirements, the Estonian Government Cloud will be deployed in two locations, one being outside the capital, thus allowing to manage data and information systems in a distributed manner. A long-term plan has been introduced to establish eEmbassies outside of Estonia in friendly foreign countries, to support the Estonian digital independence and uninterrupted operation of public IT services in state of emergency.

The Estonian Government Cloud is managed by the Estonian IT Centre (RIT).

Internet-of-Things (IoT)

No particular initiatives in this field have been reported to date.

Quantum Computing

No particular initiatives in this field have been reported to date.

Gigabit and wireless high-speed networks

No particular initiatives in this field have been reported to date.

GovTech

No particular initiatives in this field have been reported to date.



7. Digital Public Administration Governance



For more details on Estonia's responsible bodies for digital policy and interoperability, its main actors, as well as relevant digital initiatives, please visit the NIFO collection on Joinup.

National

Ministry of Economic Affairs and Communications

The Ministry of Economic Affairs and Communications holds political responsibility for the development of the State information policy. In particular, the Ministry elaborates the State economic policy and economic development plans, while also drafting the respective legislation bills in a variety of fields, including informatics, development of State information systems, research and development, and innovation.

With regard to political coordination, management and financing, interoperability initiatives are also coordinated by the Ministry of Economic Affairs and Communications. In particular, the Ministry, being responsible for developing the State Information System, designs the interoperability framework and prepares the related documents.

Government Chief Information Officer Office

The Government Chief Information Officer (CIO) Office (formerly known as the State Information System Department) of the Ministry of Economic Affairs and Communications plays a major role in the elaboration of the Estonian information society policy. The Government CIO Office develops information society-related activities in the field of IT and prepares draft legislation in the relevant areas. More in detail, the Government CIO Office's strategic tasks include the coordination of State IT-policy actions and development plans in the field of State administrative information systems, such as State IT budgets, IT legislation, IT projects, IT audits, standardisation, IT procurement procedures and international cooperation in the field of State information systems.

Estonian Association of Information Technology and Telecommunications

The Estonian Association of Information Technology and Telecommunications (ITL) is a non-profit organisation aiming to group Estonian IT and telecommunications companies, to promote their cooperation in the development of Estonia towards an information society, to represent and protect the interests of its member companies and to express their common positions. The main activities of the association include the popularisation of ICT, the promotion of vocational education and amendment of legislation.

Estonian Information System Authority

On 1 June 2011, the Estonian Informatics Centre was restructured into the Estonian Information System Authority (RIA). Its mission is to coordinate the development and management information system so that Estonian citizens are served in the best possible way. In particular, RIA coordinates all public key infrastructures related to the operation of ICT and IT, like the State portal, the middleware system X-tee, the government backbone network EEBone, RIHA and the Electronic Document Exchange Centre (DVK). Moreover, the Authority is also responsible for the coordination of the State information system development projects, and the preparation of and participation in international projects. RIA also monitors the legislation process concerning the management information system requirements. Finally, RIA is also the main body responsible for interoperability activities in Estonia.

Computer Emergency Response Team of Estonia

The Computer Emergency Response Team of Estonia (CERT Estonia), established in 2006, is an organisation responsible for the management of security incidents in '.ee' computer networks. More in detail, CERT Estonia deals with security incidents that occur in Estonian networks or incidents that have been notified by citizens or institutions either in Estonia or abroad. In this context, CERT Estonia assists Estonian internet users in the implementation of preventive

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measures to reduce possible damage from security incidents and to respond to potential security threats.

Information Technology Foundation for Education

The Information Technology Foundation for Education (HITSA) (formerly Estonian Information Technology Foundation or EITF) is a non-profit association established by the Republic of Estonia, the University of Tartu, the Tallinn University of Technology, Eesti Telekom and the ITL. The role of HITSA is to ensure that graduates at all levels of education have obtained the digital skills necessary for economic and societal development, and that the possibilities offered by ICT are skilfully used in teaching and learning, helping to improve the quality of learning and teaching at all levels of education.

eGovernance Academy

The eGovernance Academy is a non-governmental, non-profit organisation aiming to promote the use of ICT in the work of government bodies and in democratic practices. More in detail, the Academy's mission is to train and advise leaders and stakeholders in using ICT, to increase government efficiency and to improve democratic processes with the aim of building open information societies.

Management System of the State Information System

The Management System of the State Information System (*Riigi Infosüsteemi Halduse Infosüsteem*, RIHA) is the Estonian catalogue of public sector information systems, serving as national registry of systems, components, services, data models, semantic assets, etc. RIHA facilitates planning and operation activities related to information systems, with the main goal of guaranteeing a transparent and optimal balance, and an efficient management of public sector information systems. In addition, the RIHA supports the interoperability of databases, the lifecycle management of information systems and the reuse of data by providing complete and upto-date metadata relating to the Estonian public sector information systems. The registration of public databases and information systems on RIHA is mandatory and enforced by law.

Subnational (Federal, Regional and Local)

Association of Estonian Cities and Rural Municipalities

The Association of Estonian Cities and Rural Municipalities (AECM) is a voluntary union established to represent the common interests of cities and rural municipalities, and organize cooperation among them. The main goal of the AECM is to ensure the development of local governments through joint activities. At present, 74 municipalities out of 79 are members of the Association. Local governments belonging to the Association cover 99% of the population of Estonia, with all Estonian regions being represented. The AECM is funded through membership fees, the amount of which depends on the revenues of each member.

8. Cross border Digital Public Administration Services for Citizens and Businesses

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Further to the information on national digital public services provided in the previous chapters, this final chapter presents an overview of the basic cross-border public services provided to citizens and businesses in other European countries. Your Europe is taken as reference, as it is the EU one-stop shop which aims to simplify the life of both citizens and businesses by avoiding unnecessary inconvenience and red tape in regard to 'life and travel', as well as 'doing business' abroad. In order to do so, Your Europe offers information on basic rights under EU law, but also on how these rights are implemented in each individual country (where information has been provided by the national authorities). Free email or telephone contact with EU assistance services, to get more personalised or detailed help and advice is also available.

Please note that, in most cases, the EU rights described in Your Europe apply to all EU member countries plus Iceland, Liechtenstein and Norway, and sometimes to Switzerland. Information on Your Europe is provided by the relevant departments of the European Commission and complemented by content provided by the authorities of every country it covers. As the website consists of two sections - one for citizens and one for businesses, both managed by DG Internal Market, Industry, Entrepreneurship and SMEs (DG GROW) - below the main groups of services for each section are listed.

Life and Travel

For citizens, the following groups of services can be found on the website:

- Travel (e.g. Documents needed for travelling in Europe);
- Work and retirement (e.g. Unemployment and Benefits);
- Vehicles (e.g. Registration);
- Residence formalities (e.g. Elections abroad);
- Education and youth (e.g. Researchers);
- Health (e.g. Medical Treatment abroad);
- Family (e.g. Couples);
- Consumers (e.g. Shopping).

Doing Business

Regarding businesses, the groups of services on the website concern:

- Running a business (e.g. Developing a business);
- Taxation (e.g. Business tax);
- Selling in the EU (e.g. Public contracts);
- Human Resources (e.g. Employment contracts);
- Product requirements (e.g. Standards);
- Financing and Funding (e.g. Accounting);
- Dealing with Customers (e.g. Data protection).

Last update: July 2024

The Digital Public Administration Factsheets

The factsheets present an overview of the state and progress of Digital Public Administration and Interoperability within European countries.

The factsheets are published on the Joinup platform, which is a joint initiative by the Directorate General for Digital Services (DG DIGIT) and the Directorate General for Communications Networks, Content & Technology (DG CONNECT).



The Digital Public Administration Factsheets are prepared for the European Commission by Wavestone.

An action supported by Interoperable Europe

The ISA² Programme has evolved into Interoperable Europe - the initiative of the European Commission for a reinforced interoperability policy.

The work of the European Commission and its partners in public administrations across Europe to enhance interoperability continues at full speed despite the end of the ISA² programme. Indeed, enhanced interoperability will be necessary to unlock the potential of data use and reuse for improved public services, to enable cross-border collaboration, and to support the sector-specific policy goals set by the Commission for the future.

Interoperable Europe will lead the process of achieving these goals and creating a reinforced interoperability policy that will work for everyone. The initiative is supported by the *Digital Europe Programme*.

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