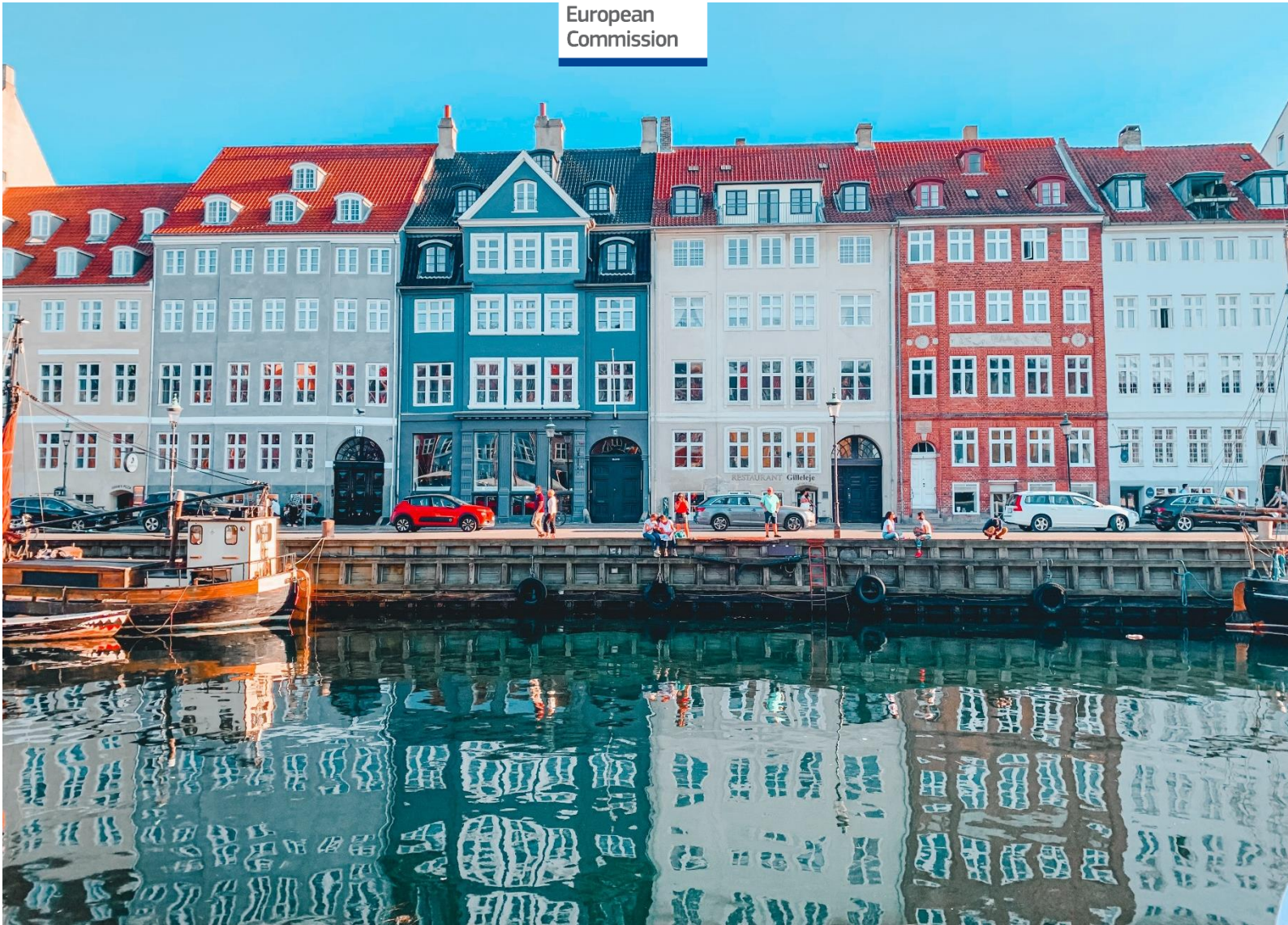




European
Commission



Digital Public Administration factsheet 2023

Denmark

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1 Interoperability State-of-Play

1 Interoperability State-of-Play

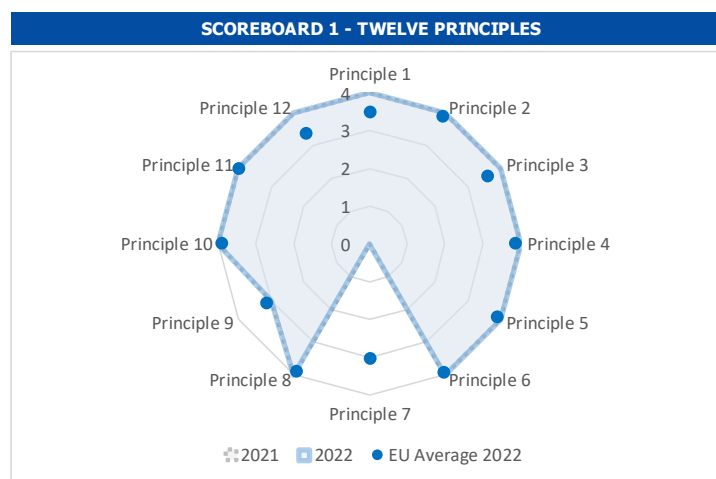
In 2017, the European Commission published the **European Interoperability Framework (EIF)** to give specific guidance on how to set up interoperable digital public services through a set of 47 recommendations divided in three pillars. The EIF Monitoring Mechanism (MM) was built on these pillars to evaluate the level of implementation of the framework within the Member States. Whereas during the previous, the MM relied upon three scoreboards, the 2022 edition includes an additional scoreboard on cross-border interoperability, assessing the level of implementation of 35 Recommendations. The mechanism is based on a set of 91 Key Performance Indicators (KPIs) clustered within the four scoreboards (Principles, Layers, Conceptual model and Cross-border interoperability), outlined below.

Scoreboard 1 Interoperability Principles		Scoreboard 2 Interoperability Layers		Scoreboard 3 Conceptual Model	
	Recommendation(s) n°		Recommendation(s) n°		Recommendation(s) n°
Principle 1 - Subsidiarity and Proportionality	1	Interoperability Governance	20-24	Conceptual Model	34-35
Principle 2 - Openness	2-4	Integrated Public Service Governance	25-26	Internal information sources and services	36
Principle 3 - Transparency	5	Legal Interoperability	27	Basic Registries	37-40
Principle 4 - Reusability	6-7	Organisational Interoperability	28-29	Open Data	41-43
Principle 5 - Technological neutrality and data portability	8-9	Semantic Interoperability	30-32	Catalogues	44
Principle 6 - User-centricity	10-13	Technical Interoperability	33	External information sources and services	45
Principle 7 - Inclusion and accessibility	14			Security and Privacy	46-47
Principle 8 - Security and privacy	15				
Principle 9 - Multilingualism	16				
Principle 10 - Administrative simplification	17				
Principle 11 - Preservation of information	18				
Principle 12 - Assessment of Effectiveness and Efficiency	19				

Scoreboard 4 Cross-border Interoperability

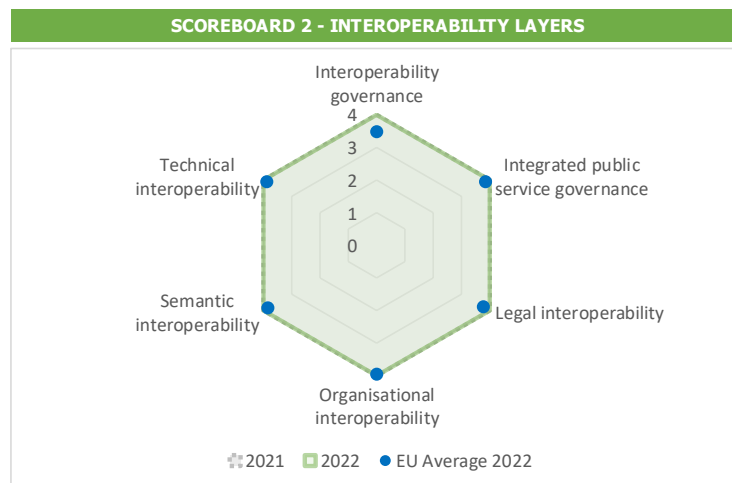
Source: European Interoperability Framework Monitoring Mechanism 2021

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 Denmark in 2022, comparing it with the EU average as well as the performance of the country in 2021.



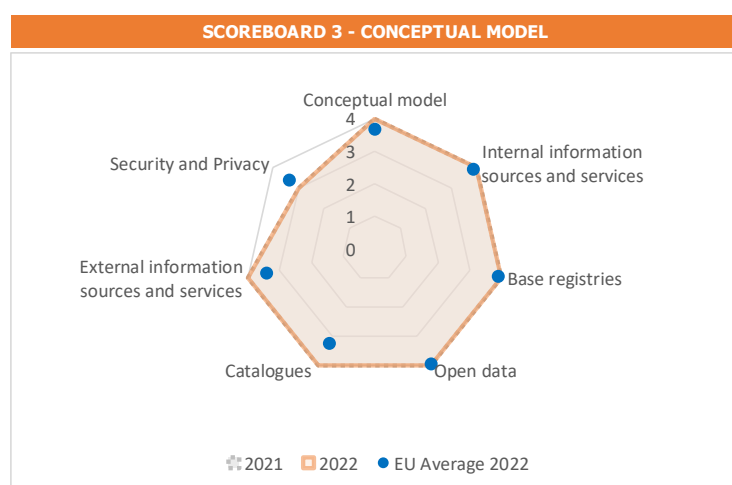
Source: European Interoperability Framework Monitoring Mechanism 2022

Despite the lack of data for Principle 7 (Inclusion and accessibility), Denmark's results in Scoreboard 1 show an overall good implementation of the EIF Principles, scoring above the European average for Principle 1 (Subsidiarity and Proportionality) and Principle 12 (Assessment of Effectiveness and Efficiency). Areas of improvements are concentrated in Principle 9 (Multilingualism) for which the score of 3 shows an upper-medium performance in the use of information systems and technical architectures that cater for multilingualism when establishing a European public service (Principle 9 – Recommendation 16).



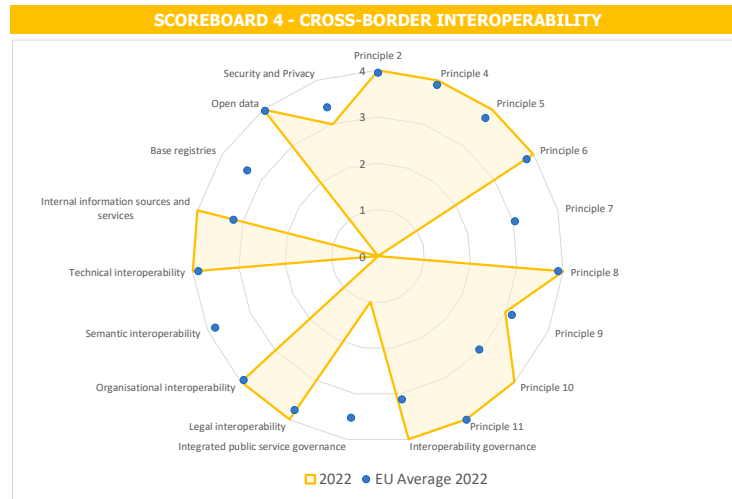
Source: European Interoperability Framework Monitoring Mechanism 2022

The Danish results for the implementation of interoperability layers assessed for Scoreboard 2 show a high performance with scores of 4 in all principles. The only potential area of improvement to enhance the country’s implementation of the recommendations under Scoreboard 2 are concentrated in the areas of interoperability governance and organisational interoperability. Specifically, the score of 3 for Denmark in Recommendation 22, stating that public administrations should use a structured, transparent, objective and common approach to assessing and selecting standards and specifications, and in Recommendation 29, calling for clarification and formalisation or organisational relationships for establishing and operating public services, could be improved for a total implementation of interoperability layers for Denmark.



Source: European Interoperability Framework Monitoring Mechanism 2022

Denmark’s scores assessing the Conceptual Model in Scoreboard 3 show a high performance in the implementation of the majority of recommendations associated with the conceptual model itself, the internal and external information sources and services, base registries, open data and catalogues. The only area for a potential improvement is the indicator on security and privacy, more specifically in the implementation of Recommendation 47 which gets a score of 2, on the use of Trust Services operating in accordance to the Regulation on eID, and the absence of Trust Services as mechanisms that ensure secure and protected data exchange in public services (Recommendation 47) which hinders Denmark’s score on the Security and Privacy section. However, due to Denmark’s centralised approach to trust services it is unlikely that Denmark will be able to improve its performance further on this indicator.



Source: European Interoperability Framework Monitoring Mechanism 2022

The results of Denmark on Cross-Border Interoperability in Scoreboard 4 show an upper-medium performance of the country. Particularly, Belgium has the maximum score of four for 12 indicators, including three above the EU average (Principle 10, Interoperability governance and Internal information sources and services). To improve its performance, Denmark could increase its scores on indicators where the country obtains a lower performance, such as Principle 9 (Multilingualism – Cross-border) and Security and Privacy, as well as Integrated public services governance for which Denmark has a score of one. For this last indicator, efforts could focus on establishing interoperability agreements in all layers, complemented by operational agreements and change management procedures. (Recommendation 26).

Additional information on Denmark’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](#)



2 Digital Public Administration Political Communications

2 Digital Public Administration Political Communications

2.1. Specific Political Communications on Digital Public Administration

new National Strategy for Digitalisation 2022–2026

In May 2022, the Danish government launched a new **National Strategy for Digitalisation**, which lays out the main lines for the digital development in Denmark in the years 2022–2026. The strategy builds on the recommendations from the Danish government's 'Digitalisation Partnership' and is the first of its kind in Denmark. It calls for broad and binding collaboration on digital development across both the public and the private sector, and contains nine visions identifying the next steps in Denmark's digital development. In describing these visions, the strategy presents 61 specific initiatives. The initiatives pursue many significant goals, among which maintaining Denmark's position as a digital front-runner and using digital solutions, new technology and data to strengthen Danish welfare, accelerate the green transition, increase growth and digital transformation of Danish small- and medium sized enterprises (SMEs), and strengthen cyber and information security. In doing so, the strategy also acknowledges the challenges that may accompany an increasingly digitised society. Therefore, a core element of the strategy is to make sure that citizens are able to use and benefit from the digital services regardless of differences in their digital skills. This also entails ensuring that technology and data are used ethically and with a clear focus on security, responsibility, transparency and trust.

Berlin Declaration on Digital Society and Value-Based Digital Government

In December 2020, the Danish government signed the Berlin Declaration on Digital Society and Value-Based Digital Government, thus re-affirming its commitment – together with other 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 Public Administration and COVID-19

The public digital infrastructure has shown its worth during the COVID-19 pandemic, as it has enabled public services to uphold their high level even with a considerable degree of remote work within the State, regions and municipalities. Furthermore, the government has launched a range of new digital services to cope with COVID-19, including a contact-tracing app and the digital booking of tests and vaccines.

Thanks to digital-ready legislation and an advanced digital infrastructure, the central government was able to process **COVID-19 stimulus checks** addressed to 2.2 million recipients in a fully automatic mode and in less than eight days. Furthermore, 2.1 million residents were able to digitally apply for and receive early holiday allowance for a total value of approximately EUR 14.5 billion. Finally, businesses were able to apply for the Danish stimulus packages for businesses during the pandemic **digitally** (i.e. for lost turnover), as the Danish '*Virksomhedsguiden*' incorporated a platform for applications and the provision of information before the final settling of accounts in the Danish Business Authority. As of 14 March 2022, the Danish Business Authority had helped 103 054 businesses with stimulus packages for a total value of approximately EUR 7.1 billion.

Digitalisation Partnership for Denmark's Future

In the spring of 2021, the Danish government launched a Digitalisation Partnership. The partnership involved top managers and experts from the Danish business community, the research community, civil society, stakeholders from the labour market, Local Government Denmark and Danish Regions. In October 2021, the partnership concluded its work and submitted **46 recommendations** on how Denmark can harness and utilise future technological opportunities. The recommendations offer suggestions for both the public and private sector as well as public-private collaboration.

In May 2022, the Danish government presented a new [National Strategy for Digitalisation](#) building upon the above-mentioned recommendations. The strategy lays out the main lines for digital development until 2030.

Before launching the strategy, as part of a new reform package and of the Finance Act of 2022, the government decided on a few digital initiatives that address some of the recommendations. These initiatives, among other things, aim to strengthen the digital transformation of SMEs, ease the administrative procedures for companies when reporting to authorities, make public data more accessible to businesses, researchers and citizens, and strengthen the use of new technologies, such as artificial intelligence (AI) in the public sector. Moreover, they focus on strengthening data ethics and digital-ready legislation.

Strategy for Denmark's Digital Growth

The [Strategy for Denmark's Digital Growth](#) encompasses a series of goals and actions fostering the digital transformation of Danish commerce and industry. More specifically, the strategy consists of 38 initiatives, allocating a total of EUR 112 million from 2018 to 2025 to support the digital transformation of SMEs. Subsequently, the strategy foresees a EUR 10 million investment per year. Some of the key actions that the strategy includes are the following:

- Digital enhancement of SMEs;
- Digital hub for stronger digital growth;
- Digital skills for all;
- Data as driver of growth in trade and industry;
- Agile regulation in the areas of trade and industry; and
- Increased cybersecurity within companies.

Guidelines on How to Make Legislation Digital-Ready

A broad political agreement was reached in January 2018, requiring all legislation proposed after 1 July 2018 to comply with seven principles for [digital-ready legislation](#). The [Guidelines on How to Make Legislation Digital-Ready](#) outline these principles and how to apply them in the legislative process. Additionally, all proposed legislation must be assessed for potential impacts regarding project risk, organisational changes, data protection and citizens' rights. The findings must be described in the legislative proposal together with possible mitigating measures. To ensure that legislation is digital-ready, every legislative proposal is screened for compliance with the guidelines and consultation responses are sent to the responsible Ministries by a unit established within the Ministry of Finance. Since 2018, approximately 400 consultation responses have been sent. In support of this approach, a [course on digital-ready policymaking](#) is available to legislative drafters and policy officers in government departments.

A report documenting the initiative's results was [published](#) in May 2021. The report concludes, among other things, that the effort is well under way and that new legislation is increasingly digital-ready. The report however also shows that existing legislation has not been systematically reviewed for digital-readiness. As part of the agreement on the Finance Act of 2022, it was decided to continue work on ensuring that legislation is digital-ready.

Public Sector Digitisation Strategies

The [Common Public Sector Digitisation Strategy 2016–2020](#) (also known as 'Digital Strategy') was agreed between the Danish government, [Local Government Denmark](#) and Danish Regions, and entered into force in May 2016. The goal of the strategy was to help shape the future of digital Denmark and ensure that the public sector was prepared to seize the advantages of technology. The strategy covered numerous themes related to the digitisation of the public sector, such as automation of administrative procedures, better user experience for citizens and businesses, digital welfare and data sharing.

In 2021, a set of initiatives was agreed between the Danish government, [Local Government Denmark](#) and Danish Regions, with the purpose of extending and strengthening the main goals of the Digital Strategy throughout 2021 and 2022, until a new strategy was agreed upon. The previous Danish government formed the Danish Government Digitalisation Partnership, with members from the Danish business community, the research community, civil society, the social partners, Local Government Denmark and Danish Regions. In October 2021, the partnership handed over its recommendations for the public sector, the private sector and public-private collaboration on how to harness and utilise technological opportunities. A new National Strategy for Digitalisation covering both the public and private sectors was then published in May 2022. The strategy is the first of its kind in Denmark precisely in that it covers both sectors.

In conjunction with the new national strategy, a new binding Common Public Sector Digitisation Strategy for 2022–2025, covering the public sector, was agreed between the Danish government, Local Government Denmark and Danish Regions. The strategy includes, among other things, initiatives aimed at using technology to reduce our climate footprint and ensure efficient adaptation to climate change, as well as to deal with labour shortage.

new Joint Public Digitalisation Strategy

A new financial agreement was adopted at the municipal and regional level in early 2022, and then finalised and published in June 2022. EUR 43 million were allocated for a new [Joint Public Digitalisation Strategy](#) in collaboration with the State, municipalities and regions. The strategy will support the increased use of new technology in the public sector. The strategy was finalised and published in Q2 of 2022. Link to the strategy (only available in Danish): [DEN FÆLLESOFFENTLIGE DIGITALISERINGSSTRATEGI 2022-2025 \(digst.dk\)](#).

Strategy for ICT Management in Central Government

A [Strategy for ICT Management in Central Government](#) was launched on 21 November 2017, aiming to improve the operational management of information and communication technology (ICT) systems. The 13 initiatives forming the framework for a better management of ICT systems address issues such as the mandatory compliance to the central government's ICT system portfolio management model and the periodic review by the National ICT Council of each Ministry's ICT system management. The initiatives also address the development of cross-governmental network activities amongst leaders and employees working with digitalisation and developing the technical and professional competencies and skills required to manage ICT.

2.2. Interoperability

Common Framework for Public Sector Digital Architecture (Danish NIF)

In 2017, the central government, Local Government Denmark and Danish Regions agreed on a common [Federal Digital Architecture \(FDA\)](#) focusing on data sharing and cross-organisational processes. The FDA includes a general framework as well as a number of specific architecture assets.

The core is a set of general architecture principles and rules supported by guidelines on architecture description and communication, as well as rules for concept and data modelling. Activities such as skill development, architecture guidance and project review support the adoption of the common framework. The FDA then also includes a number of concrete architecture assets, like reference architectures on common issues such as the sharing of data and documents, user and rights management across domains, coherent user journeys in relation to digital self-services, and user-centric and cross-cutting overview of data relevant to each citizen and enterprise (e.g. in relation to cases, payments, debt, appointments and deadlines). Finally, the FDA encompasses a number of common technical solutions such as the national infrastructure solutions for ID, Digital Signature, Single Sign On and Digital Post, among others.

The application of the general governance structure is voluntary depending on relevance, logic, and business case. Nonetheless, some elements, such as Digital Signature and Digital Post, are mandatory. Projects falling within the Common Public Sector Strategies shall take the FDA into account and undergo an architecture review.

Rules for Concept and Data Modelling

It is important that authorities and businesses are able to retrieve, understand and reuse data in the public sector. Therefore, the Common Public Sector Digital Architecture recommends applying the [Rules for Concept and Data Modelling](#) to document concepts and data. The rules ensure that

concepts and data are described and documented thoroughly, correctly and consistently, whilst reusing national and international models, standards and experiences to the extent possible.

2.3. Key Enablers

2.3.1. *Open data, Reusability and Access to Public Information*

Open Government Partnership Action Plan (2019–2021)

As part of the Open Government Partnership, which is an international collaboration, the Danish government drafted the fourth National Action Plan (2019–2021) with seven initiatives from various parts of the Danish public sector aiming at strengthening trust and transparency in public authorities, especially in public sector digitalisation.

2.3.2. *eID and Trust Services*

No political communication has been adopted in this field to date.

2.3.3. *Security Aspects*

National Strategy for Cyber and Information Security 2022–2024

On 15 December 2021, the government launched a National Strategy for Cyber and Information Security 2022–2024 to replace the previous strategy covering the period 2018–2021. The new national strategy strengthens national cyber and information security in society through 34 specific initiatives and increased obligations regarding the area of critical infrastructure protection, among others. The initiatives aim to strengthen security through:

- Robust protection of the key functions of society (16 initiatives);
- Increased level of competencies and management responsibilities (six initiatives);
- Strengthened public-private cooperation (seven initiatives); and
- Active international engagement in the fight against cyberthreats (five initiatives).

A renewed national Cybersecurity Council consisting of representatives from the public and private sector is co-chaired by the Centre for Cybersecurity, the Agency for Digital Government and a private sector representative. Over its mandate lasting from 2022 to 2023, it will advise the government on how to further strengthen cyber and information security in Denmark, also in light of the implementation of the new national strategy.

The threats related to cyberespionage and cybercrime are very high and the national strategy seeks to address them by increasing the level of ambition regarding the efforts of the industry and in relation to the national critical infrastructure and cross-sectoral commitments. The strategy also focuses on increasing the level of cyber and information security of citizens, businesses and authorities.

2.3.4. *Interconnection of Base Registries*

Basic Data Programme

Established in 2012 and completed in 2019, the Basic Data Programme acted as a driver for growth and efficiency by improving the quality and interconnectivity of Danish base registries. The initial goal of the programme was to create a common distribution platform (the Data Distributor) for easy-to-access, secure, high-quality basic data, whilst ensuring their correctness by increasing the coordination between the different authorities responsible for the base registries. The coordination among base registries continues in the Basic Data organisation. The next generation of Data Distributor is currently under procurement with the aim of implementing it swiftly over the coming years.

2.3.5. *eProcurement*

eProcurement Initiatives

Several initiatives aimed at digitising procurement procedures in the public sector were initiated in January 2019 and are scheduled to end in 2023. The focus is the standardisation of electronic procurement documents related particularly to eCatalogues and eOrders. An obligation is

introduced for purchasing bodies in central government and in sub-national governments to use them when procuring certain goods.

Rules for Concept and Data Modelling

Denmark's [Rules for Concept and Data Modelling](#) ensure that concepts and data are thoroughly and correctly described and documented. The rules contribute to a shared public sector data architecture and a shared modelling language.

SME-friendly National Tender System

A new national tender system will be developed which businesses will be obliged to use when they participate in a tender for a public contract. The new system will handle all tender notices, thus making it easier for SMEs to tender for a public contract.

2.4. Domain-Specific Political Communications

Coherent and Trustworthy Health Network for All - Digital Health Strategy 2018–2024

The [Digital Health Strategy 2018–2022](#) aimed to enable hospitals, municipal health services, general practitioners and other public and private participants throughout the health sector to use digital tools to cooperate in an integrated patient-centered way, creating a personalised and coherent health system where more tasks can be performed closer to patients. The strategy created a basis for a joint digitalisation effort of the entire Danish health system. By strengthening the digital foundation for providing healthcare across the sector, it also strengthened the security of personal health data, and enabled the safe and secure exchange of relevant data in the health sector.

The government of Denmark, Local Government Denmark and Danish Regions have reached an agreement to pursue the ongoing digital transformation of the healthcare system. As a result, the [Strategy for Digital Health 2018–2022](#) has been extended to 2024.

Vision for Strategic Cooperation on Better Use of Health Data

In 2021, the relevant parties in the field of health data agreed on the [Vision for Strategic Cooperation on Better Use of Health Data](#), which will support the use of data for secondary purposes. The objective is to create a simpler and smoother access to health data, to enable advanced data analytics across data sources as well as to ensure high data security and transparency about the use of data. More specifically, the vision aims to ensure: i) easy and quick access to application and approval; ii) secure and flexible access to data on a common national analysis platform; iii) better and shared data services; and iv) high data security and transparency. The vision is implemented by establishing a single contact point for smooth access, approval and guidance to health data, and a common national analysis platform offering a secure analytical environment, and allowing for linking data sources and conducting complex analyses.

Strategy for Denmark's Tech Diplomacy 2021–2023

In February 2021, the Danish government launched the [Strategy for Denmark's Tech Diplomacy 2021–2023](#). It consists of three pillars that are central to future technological development and governance: (i) responsibility is key – the tech industry shall meet its societal responsibility and operate on a level playing field; (ii) democracy should be the premise of governance, also in a digital world – global digital governance shall build on democratic values and human rights; and (iii) security is central – technology shall support Denmark's safety and security.

In addition, Denmark has led the 'Tech for Democracy' flagship initiative, a multi-stakeholder push for protecting and promoting human rights and democratic values in an era of rapid technological development. The initiative has produced the [Copenhagen Pledge on Tech for Democracy](#), with more than 200 signatories from governments, industry and civil society. It has gathered twelve action coalitions working on concrete solutions to issues of the digital age.

White Paper: Towards a Better Social Contract with Tech Giants

In June 2021, the former Danish government published a [White Paper](#) with a proposal for debate and nine principles for a more responsible and fair society with regard to major tech companies. The White Paper aims to initiate a public debate as well as to formulate and implement Danish initiatives to address the business models of major tech companies and the platform economy to

ensure that digitalisation provides the most fertile ground for Danish democracy, economy and culture.

2.5. Innovative Technologies

As mentioned in Section 2.1, the Digitalisation Partnership for Denmark's Future contained recommendations related to emerging technologies. These recommendations laid the foundation for a number of initiatives under the National Strategy for Digitalisation.

2.5.1. Artificial Intelligence (AI)

National Strategy for Artificial Intelligence

In 2019, Denmark established an investment fund (2019–2022) to support the testing of AI in the public sector. The fund currently supports 40 signature projects to test AI within the healthcare, climate, and social and employment areas. In addition, the Finance Act of 2022 included a fund of EUR 19.2 million for the period 2022–2025 to accelerate the use of emerging technologies, such as AI, in the public sector.

On a strategic level, Denmark's efforts relating to emerging technologies such as AI are based on two national strategies: the National Strategy for Digitalisation (2022) and the Joint Public Digitalisation Strategy (2022–2025). Several initiatives under these two strategies support the experimentation, use and upscaling of emerging technologies such as AI.

2.5.2. Distributed Ledger Technologies

new DLT Regulatory Sandbox

The Danish Financial Supervisory Authority (DFSA) runs a regulatory sandbox where both new and established companies within the financial sector can test new business models and the use of new technologies in a safe environment. The purpose of the regulatory sandbox is, on the one hand, to provide the necessary guidance to help financial companies lever the opportunities offered by new technologies, to the benefit of both the participating company and the financial sector in general. On the other, the tests in the sandbox provide valuable insights on how to ensure an efficient and technology-neutral regulation for the future. Currently, the DFSA are in the final phase of a test that started in autumn 2022 with a company that plans to use distributed ledger technology (DLT) in providing capital market infrastructure.

2.5.3. Big Data

No political communication has been adopted in this area to date.

2.5.4. Cloud Computing

new Guidance on the Use of Cloud Services

In 2019, the Agency for Digital Government and the Centre for Cybersecurity released the 'Guidance on the Use of Cloud Services'. The guide highlights key areas, questions and considerations that any organisation should be aware of as part of the uptake of the cloud. It also lowers the barriers for using cloud technology, which is part of Denmark's National Strategy for AI and a series of other political strategies. The guide comprises four main sections:

- 1) An introduction to cloud services providing an understanding of the main characteristics of cloud infrastructure, the main service models (Infrastructure as a Service or IaaS, Platform as a Service or PaaS and Software as a Service or SaaS), as well as the differences between private clouds, shared clouds, public clouds and hybrid clouds;
- 2) A walkthrough of important organisational and business considerations to be taken into account when making decisions about migrating to the cloud;
- 3) An overview of legal considerations and requirements to be worked through when migrating to and using the cloud;
- 4) A focus on security and safety considerations to be taken into account prior to as well as after transitioning to the cloud.

The guide was last updated in July 2020 and is currently in the process of being updated again with the aim of addressing the legal landscape in 2023, including the implications of the Schrems

II verdict related to third-country transfers to the United States. These implications are e.g., mitigated through the introduction by the Agency for Governmental IT Services of GovCloud (for further details, see Section 4.10.4).

2.5.5. Internet of Things (IoT)

No political communication has been adopted in this field to date.

2.5.6. High-performance Computing

Strategy for National Collaboration on Digital Research Infrastructure 2019–2029

No political communication is specifically targeted at public administration. However, in 2019 the Danish Agency for Higher Education and Science published a [Strategy for National Collaboration on Digital Research Infrastructure](#), covering a 10-year period. The strategy draws attention to the importance of a well-developed digital infrastructure including high-performance computing (HPC). It sets out a vision that researchers at Danish universities must have access to digital infrastructure including HPC, enabling world-class research and education. Regarding HPC in particular, the strategy lays out five targets for national cooperation: i) establishing a new common model for open access to national HPC facilities; ii) ensuring the operation and upgrade of existing national HPC resources; iii) providing increased HPC resources; iv) strengthening and coordinating HPC competences in Denmark; and v) continuing to strengthening Danish membership of the EuroHPC collaboration.

2.5.7. High-speed Broadband Connectivity

No political communication has been adopted in this field to date.

2.5.8. GovTech

GovTech Programme Denmark 2019–2020

The Danish Business Authority and the Agency for Digital Government established the (pilot) GovTech Programme Denmark in 2019 to strengthen public sector innovation and develop GovTech as a Danish position of strength. The aim of the programme was to increase cooperation between the public sector and tech companies, and thereby the application by the public sector of innovative technologies. More specifically, the programme sought to match selected challenges from the public sector with solutions or ideas from innovative tech companies, and actively supported this matchmaking process by facilitating market dialogue and offering guidance on procurement rules. The programme also focused, among other things, on the typical barriers experienced by SMEs participating in public-private innovation.

The GovTech Programme was ended in 2020 after completing two rounds of matchmaking and the lessons learned fed into the development of the new National Centre for Public-Private Sector Innovation (CO-PI) which was established in 2022.



3 Digital Public Administration Legislation

3 Digital Public Administration Legislation

3.1. Specific Legislation on Digital Public Administration

Standing Committee for the Legal Framework on eGovernment

As part of the Digital Strategy 2016–2020, presented by the former government, a Standing Committee was set up to create a clear legal framework for eGovernment. The work is ongoing and divided into different sections.

3.2. Interoperability

Legislative Focus on Interoperability

Most digitalisation initiatives are developed with a focus on ensuring interoperability across different solutions. This is reflected in most of the legislation described in this chapter covering cross-sector solutions (e.g. see Sections 3.3.2 and 3.3.4). An example are the guidelines on the use of NemID (Act No. 439 of 08 May 2018 and Act No. 899 of 21 June 2018).

new

Single Digital Gateway

In Denmark, the Agency for Digital Government has the responsibility for coordinating the implementation of the Single Digital Gateway (SDG) Regulation. In 2023, the Agency for Digital Government will plan its implementation based on the appropriate level, scope and ambition for the national implementation. Among other things, this includes a more advanced Identity Matching service.

3.3. Key Enablers

3.3.1. Open data, Reusability and Access to Public Information

Access to Public Administration Documents Act

Access to government records is governed by the Access to Public Administration Documents Act, which came into force on 1 January 2014. The act is applicable to central government as well as to regional and municipal authorities and, as opposed to the previous act, also to enterprises fully or partially owned by central government, enterprises making decisions on behalf of central government, Local Government Denmark and Danish Regions.

The act allows any person to request documents from an administrative file. Authorities must respond as soon as possible to such requests and, if this exchange takes longer than seven days, they must inform the requestor of the reasons why the response is delayed and when an answer is to be expected.

However, all documents produced by the courts and by legislators are exempted from the provisions of the act. The same applies to documents relating to the security of the State, defence, protection of foreign policy, law enforcement, taxation and public financial interests. In case of a decision of non-disclosure, complaints can be submitted to the Parliamentary Ombudsman, who can issue non-binding opinions on whether documents are to be disclosed.

Act Amending the Law on the Reuse of Public Sector Information

The Act Amending the Law on the Reuse of Public Sector Information of 10 May 2021 implements the Open Data Directive 2019/1024/EU of 20 June 2019, which is a recast of Directive 37/2013/EU and Directive 2003/98/EC on the re-use of public sector information. The Open Data Directive was included in the existing landscape of open data initiatives.

3.3.2. eID and Trust Services

Electronic Identification and Trust Services for Electronic Transactions

Denmark is compliant with Regulation (EU) No. 910/2014 on electronic identification and trust services for electronic transactions in the internal market (eIDAS Regulation). The supporting legislation came into effect on 1 July 2016. To provide guidelines for citizens and authorities with regard to issuance, revocation and suspension, both the [Act on the Issuance of the NemID with Public Digital Signature for Physical Persons and Employees in Legal Entities](#) and the [Danish Executive Order on the Issuance and Suspension of the NemID with Public Digital Signature](#) entered into force in 2018.

In addition, Act No. 617 of 8 June 2016 appointed the Agency for Digital Government under the Ministry of Digital Government and Gender Equality as the Danish supervisory body and set out the rules for Danish trust service providers with reference to existing national legislation.

The Agency for Digital Government provides qualified trust services on behalf of the Danish State. The supported services are certificates, timestamping and signature validation.

3.3.3. Security Aspects

Regulation on General Data Protection

The General Data Protection Regulation (2016/679 of 27 April 2016) – or GDPR – regulates the processing of personal data in the EU. Additional rules complementing the GDPR were included in the [Danish Data Protection Act](#) (No. 502 of 23 May 2018) and entered into force on 25 May 2018. The Law Enforcement Directive (2016/680 of 27 April 2016) – or LED – regulates the processing of personal data in the EU by competent authorities for the purposes of prevention, investigation, detection or prosecution of criminal offences or the execution of criminal penalties. It also regulates the free movement of such data. The [Danish Law Enforcement Act](#) (No. 506 of 23 May 2018) implements the LED and entered into force 25 May 2018.

Act on the Processing of Personal Data

Other laws regulating the processing of personal information by the public sector include e.g. the [Public Administration Act](#) (consolidating Act No. 433 of 22 April 2014), the [Publicity and Freedom of Information Act](#) (consolidating Act No. 145 of 24 February 2020), the [Public Records Act](#) of 1992 and the [National Registers Act](#) of 2000. These laws set out basic data protection principles and determine which data should be available to the public and which data should be kept confidential.

3.3.4. Interconnection of Base Registries

Act on the Central Business Registry

The [Act on the Central Business Registry](#) states that the Danish Business Authority is the body responsible for the maintenance and development of the Central Business Registry. The Danish Business Authority cooperates with customs, tax and statistical authorities for the registration and maintenance of certain basic data and activities. The purpose of the Registry is to:

- Record basic data on legal entities (e.g. a natural person in its capacity as employer or self-employed, a legal entity or a branch of a foreign legal person, an administrative entity, a region, a municipality or a municipal association);
- Secure a unique numbering for legal entities; and
- Make basic data available to public authorities and institutions, as well as the private sector.

Act on Building and Dwelling Registration

The [Act on Building and Dwelling Registration](#) establishes the relevant Registry and stipulates (i) the responsible authority; (ii) how the maintenance and operational costs are allocated; and (iii) the aim of the Registry, which is to register:

- Basic data on construction and housing as well as plants and equipment; and
- Unique data on all buildings, residential and commercial units as well as technical equipment.

Act on Subdivision

The [Act on Subdivision](#) contains provisions about the registration of real properties (parcels, condominiums and buildings on leased ground) in the cadastre and about cadastral work.

Act on Spatial Information

The [Act on Spatial Information](#) contains provisions about infrastructure for spatial information. The infrastructure also includes registries contributing to the combination of data across authorities, thereby increasing the usefulness of data. The registries covered by the act include the Registry of Owners of Real Property and the Registry of Property Location.

3.3.5. eProcurement

Government Order concerning the Procedures for the Awarding of Public Works Contracts and Public Supply Contracts

In Denmark, Article 22 of [Directive 2014/24/EU](#) was transposed by the [Executive Order on the Use of Electronic Communication in Tenders and on Public Procurement under the Thresholds with Clear Cross-border Interest](#) (No. 1572 of 30 November 2016), under the authority of Section 194 of the [Public Procurement Act](#) (No. 1564 of 15 December 2015). All communication on a public procurement procedure within the scope of Titles II and III of the [Public Procurement Act](#) and the [Executive Order on the Procedures for Contracts within Water and Energy Supply, Transport and Postal Services](#) (No. 1624 of 15 December 2015) must be made digitally, according to Section 2 of [Executive Order No. 1572](#), with the exception of the specific situations mentioned in Article 22(1)(a)-(d) of [Directive 2014/24/EU](#).

Act on Electronic Invoicing

Electronic invoicing to all public authorities and institutions has been mandatory for suppliers of goods and services since 2005. To facilitate and ease cross-border trade and invoicing, the use of a cross-border network based on eDelivery has become possible for the public sector, allowing for direct eInvoicing of Danish public entities.

Denmark has implemented and transposed [Directive 2014/55/EU on electronic invoicing in public procurement](#).

3.4. Domain-Specific Legislation

Act on Business Promotion

Article 11 of the [Act on Business Promotion](#) specifies that the Danish Business Authority will manage a digital platform for business promotion and development. The purpose of the platform is to provide information and services to start-ups and businesses in Denmark. Other authorities are obliged to deliver relevant content to the platform. The platform, called *Virksomhedsguiden*, was launched on 28 June 2019.

new Act on Information Society Services and Electronic Commerce

Known as the eCommerce Act (No. 227), the [Act on Information Society Services and Electronic Commerce](#) of 22 April 2002 transposes [Directive 2000/31/EC](#) of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce in the Internal Market.

Mandatory Digital Self-Service

The Danish government wants at least 80% of all written communication between citizens and businesses and the public sector to be done exclusively through a digital channel. As part of the implementation of the [Common eGovernment Strategy 2011–2015](#) by the central, regional and local governments, the Danish Parliament passed legislation making [digital self-service solutions](#) mandatory by law (though with certain exemptions), resulting in a total of more than 100 different service areas where online self-service is mandatory (again subject to certain exemptions).

Mandatory Digital Post

As part of the implementation of the [Common eGovernment Strategy 2011–2015](#) by the central, regional and local governments, the Danish Parliament adopted the [Act on Public Digital Post](#) in

June 2012. The act came into force on 1 November 2014 for citizens and on 1 November 2013 for businesses. It states that citizens and businesses must have a digital letter box for receiving digital messages, letters, documents, etc. from public authorities rather than receiving paper-based letters by traditional postal service. The act also provides that digital messages transmitted through the Digital Post solution have equal legal status and effect as paper-based letters, messages, documents, etc. The act covers all citizens over the age of 15 years and all businesses.

Act on Web Accessibility

To implement [Directive 2016/2102/EU](#), Denmark adopted the [Act on Web Accessibility](#) (No. 692 of 08 June 2018), describing the requirements for public authorities' websites and mobile applications.

3.5. Innovative Technologies

Generally, Danish legislation is technology neutral. Different acts affect the below-listed emerging technologies, but none is specifically aimed at them.

3.5.1. *Artificial Intelligence (AI)*

No legislation has been adopted in this field to date.

3.5.2. *Distributed Ledger Technologies*

No legislation has been adopted in this field to date.

3.5.3. *Big Data*

No legislation has been adopted in this field to date.

3.5.4. *Cloud Computing*

No legislation has been adopted in this field to date.

3.5.5. *Internet of Things (IoT)*

No legislation has been adopted in this field to date.

3.5.6. *High-performance Computing*

new Legal Framework for Collaboration on the National Digital Research Infrastructure

No legislation is specifically targeted at public administration in this field. However, a legal framework was established for collaboration on the national digital research infrastructure, including in the field of high-performance computing. Collaboration with and between Danish universities is called Danish eInfrastructure Cooperation (DeiC). The legal basis of DeiC was recently established by a new text annotation to the Finance Act of 2023, as well as by an executive order, which came into force on 1 January 2023. The most significant changes as a result of the new legal framework are that DeiC's Board gets more autonomy, with a clearer division of responsibilities between the Ministry of Higher Education and Science, and DeiC's Board.

3.5.7. *High-speed Broadband Connectivity*

No legislation has been adopted in this field to date.

3.5.8. *GovTech*

No legislation has been adopted in this field to date.



4 Digital Public Administration Infrastructure

4 Digital Public Administration Infrastructure

4.1. Platforms and Applications

4.1.1. National Platforms and Applications

Borger.dk - Citizen Portal

First launched in January 2007, the Citizen Portal is a single point of entry for citizens to online information and eServices published by the public sector, regardless of the public authority. It is a shared infrastructure funded by national, regional and local authorities. The Citizen Portal also contains an English sub-site for international citizens.

The Citizen Portal provides general, location-specific (e.g. region or municipality) and personal information, data and eServices for citizens, including access to Digital Post (for more information on Digital Post, see below). In addition, the Citizen Portal features a range of 'self-service' solutions, allowing citizens to manage their communications with the public sector effectively and efficiently. Furthermore, a single sign-on solution allows citizens to receive and access information and services from several agencies, without having to log on several times.

The portal currently contains more than 2 000 self-service solutions. In 2022, borger.dk set a record for visitors, with a total of 72 million visits. In the previous record year, 2021, the number of visits reached 70.7 million. A survey shows that 9 out of 10 visitors at borger.dk are satisfied with the portal, as 91% of the respondents answered that they are 'satisfied' or 'very satisfied' with borger.dk.

My Overview

My Overview is the citizens' personal page on the Citizen Portal. Here, citizens can log on using their MitID to access some of the personal information public authorities have registered, such as information on tax, debt, student grants or housing as well as status of benefits and ongoing cases with public authorities, upcoming agreements and deadlines. The development of My Overview is part of a joint public political vision for creating transparency, and a better and more coherent digital service in the public sector. The overview is personalised and therefore no one but the citizens themselves have access to the data on the site. My Overview is a supplement to existing websites or self-service solutions offering a wider digital overview of a citizen's data and interactions with the public sector as well as links to the relevant public websites. New public authorities join My Overview every year, and display relevant information and data to citizens.

Digital Guides to Life Events

The Agency for Digital Government and the Danish Business Authority are developing digital guides to support coherent user journeys in relation to the eleven most common life events for citizens and the ten most common life events for businesses. The guides provide citizens and businesses with a personalised overview of what they need to know and understand regarding their life event, and give them a collection of relevant links to e.g. public services and self-service solutions. The guides are published on the portals borger.dk (citizens) and virk.dk (businesses). They will be further developed as new user needs are identified, and so will be the architecture supporting them.

Virk.dk - Business Portal

The **Business Portal** is the common public web portal for businesses, allowing them to handle their reporting obligations towards the public sector. The overall objective of Virk.dk is to relieve Danish businesses from administrative burdens and provide a single entrance to the public sector. To date, the portal contains more than 1 500 eForms and in 2020 user sessions on Virk.dk totalled 23 million.

Virk.dk also features a personalised dashboard for businesses to provide them with an overview of current deadlines, tasks and obligations towards public authorities. The dashboard contains basic information on the business, a calendar, access to Digital Post, access to the user

administration interface and a few services with information from specific public authorities. The dashboard is continuously expanded with new services.

In addition to Virk.dk, a Business Promotion Portal called 'The Business Guide' (*Virksomhedsguiden*) was launched in 2019, aiming to provide information and services to start ups and businesses in Denmark on how to start, run and develop a business. The platform gathers guidance on the most relevant business regulations from more than 16 different authorities, as well as guidance on starting, running and developing a business. At the launch, the platform contained more than 150 digital articles and tools, spanning from regulation on how to hire your first employee and how to pay VAT to advice on how to improve the sales technique and how to write a business plan.

Digital Post

Digital Post is the public authorities' shared information technology (IT) solution that enables to communicate securely with citizens, companies and other governmental institutions.

In March 2022, Denmark got a new Digital Post. The public sector will have increased ownership of the new solution, which will provide greater flexibility, adapt to future needs and ensure better coherence with other public IT solutions. The new Digital Post will resemble the current solution, so that the many citizens and companies that currently use Digital Post today will experience an improved user-friendliness providing a more coherent and easily accessible IT solution.

To date, approximately 4.8 million citizens and 680 000 businesses use and receive Digital Post, and 400 authorities are part of the system and use it to send Digital Post messages.

Real Property Portal

The Real Property Portal contains articles, step-by-step guides, tools and documents designed to make it easier and more secure for users, i.e. businesses and citizens, to sell or buy homes. It also provides an overview of the buying and selling processes at work. The portal thus offers an insight into housing transaction processes designed to prepare the property owner to engage with professional advisers. Several tools and documents enable property owners to carry out parts of a housing transaction single-handedly. Furthermore, property owners get access to large national databases containing data about buildings and can get acquainted with or updated on rules regarding business rentals, purchase and rental of summer houses and holiday homes as well as real estate services.

'Live' Operational Status

The site digitaliser.dk shows the operational status 'live' on common public sector digital services, and provides guidance for authorities, suppliers and businesses. The operational status service covers the following public key services: (i) the single-sign-in solution NemLogin; (ii) the electronic identification (eID)/digital signature solutions NemID and MitID; (iii) the national Citizen Portal Borger.dk; (iv) the national Business Portal Virk.dk, including its self-service solution 'Blanketmotoren'; (v) the bank account register for public sector transfers NemKonto; (vi) the public digital postal service Digital Post; and (vii) the national Healthcare Portal Sundhed.dk.

National Portal for Cyber and Information Security

Since 2018, the information portal sikkerdigital.dk has provided readily accessible information, advice and specific tools for citizens, businesses and authorities regarding information security and data protection, as well as information on how to comply with current legislation in those fields. The portal is managed by the Agency for Digital Government in collaboration with various other authorities and non-governmental organisations (NGOs).

Automated Business Reporting

According to estimates, increased automation of companies' bookkeeping practices and financial reporting entails yearly efficiency savings of EUR 400 million in Denmark. By introducing digital and automated bookkeeping processes, demanding manual processes and administrative burdens are minimised and companies' resources can be used to deal with the companies' core tasks. Furthermore, automated business reporting allows for digitalised and automated interactions with the authorities and, as a result, to report accounting information easily and in real time.

The Danish government therefore plans to introduce regulation that will require the vast majority of Danish companies to use digital accounting systems, to the benefit of individual companies, authorities and the general economy. With regard to the latter, automated business reporting will

have a clear positive impact, as the projected GDP effects are estimated to be at least EUR 255 million.

Automated business reporting also provides clear benefits for the authorities, both through potential efficiency savings, and through a more targeted auditing and financial monitoring. In this regard, increased automation and digitalisation in the companies allow for a more efficient monitoring by the authorities. When financial records are kept in digital accounting systems, any changes in the records are logged and disclosed to the authorities. Based on this information, authorities can target monitoring operations and minimise the number of audits made on law-abiding companies. Consequently, authorities are able to combat economic crime and tax fraud more efficiently.

Climate Compass

To give businesses a user-friendly, transparent and uniform tool to calculate their carbon footprint and gain an overview of how their climate impact is spread across activities over time, the Danish Business Authority and the Danish Energy Agency have introduced the Climate Compass, which targets SMEs.

The Compass allows businesses to: (i) calculate direct carbon emissions of company activities (i.e. own transportation, and oil and gas consumption); (ii) calculate the indirect carbon emissions from their energy providers, subcontractors and customers; and (iii) estimate the climate impact of various carbon-reducing initiatives in the company. Currently, further functionalities of the Climate Compass are being developed.

new

National Metadata Portal

In 2022, the Danish government launched a new [National Data Portal](#) to improve access to data held by the public sector. The portal aims to provide descriptions of and links to valuable public sector data, and help users navigate the data landscape.

Denmark has a long history of using high quality data for public administration purposes, including geospatial data, population statistics, and data on the flora and fauna of Denmark. In recent years, public sector organisations have increasingly made this data available to a wider range of users, much of it as open data.

In this context, the new National Data Portal is part of a wider European effort to leverage data to solve societal challenges, and spur innovation and economic growth. The portal uses the DCAT-AP-DK standard for metadata, which is based on European and international standards and has been adopted as part of the common IT architecture for the Danish public sector. The portal will continuously develop based on user demand, with an in-house team of developers implementing changes using agile methodologies.

4.1.2. Subnational Platforms and Applications

Local Government Denmark and Danish Regions

One of the overall objectives of digitalisation in Denmark is to associate the relevant levels of government. Thus, Local Government Denmark and Danish Regions are also involved in several of the nationally operated portals, e.g. [borger.dk](#) and [sikkerdigital.dk](#).

4.2. Networks

Broadband Speed

Denmark has a good high-speed broadband coverage, also in rural areas. The broadband target set at political level, i.e. that all households and businesses shall have access to 100/30 Mbps, was confirmed in 2021, and a new target was agreed stating that 98% of households and businesses shall have access to infrastructure capable of delivering gigabit speed by 2025. In 2022, 96% of all households and businesses were covered with at minimum 100/30 Mbps and 91% were covered with gigabit speed. An ambitious commercial roll-out of high-speed fixed broadband is expected. Consequently, a recent forecast estimated that 99% of all households and businesses will be covered with fixed high-speed broadband in the mid-2020s. Furthermore, 98% of Denmark is estimated to be covered with 5G by one or more mobile operators.

4.3. Data Exchange

Data Distributor

The **Data Distributor** is the main channel for accessing basic data from several authorities. It replaces a series of public distribution solutions, and ensures that authorities and companies are provided with easy and safe access to basic data in one collective system, rather than resorting to many different systems and interfaces. By now, the Data Distributor samples a unique variety of basic data, e.g. civil registration numbers, registered data on land, properties, parcels and buildings, registered data on companies, registered data on addresses, administrative divisions and place names, geographical base maps, geodata, etc. More data will be constantly made available on the Data Distributor.

Reference Architecture for Sharing Data and Documents

Denmark has published a reference architecture to facilitate the sharing of data and documents electronically. The reference architecture revolves around describing the disclosure of data by transmission. Disclosure by transmission focuses on the actual action of passing on data, whereas the interpretation of the sharing of data is broader and includes making data available for potential reuse, even if data may never be accessed. One of the main purposes of this reference architecture is to guide and assist in the choice between two fundamental business patterns for the disclosure of data by transmission:

- Transmission on request: typically, system-to-system integrations using an application programming interface (API); and
- Transmission by message: typically, the legally binding communication of data (possibly in the form of documents) from public authorities to citizens and businesses, but also a classical pattern in system-to-system integrations.

The fundamental difference between these two scenarios is whether it is the actor transmitting data or the actor receiving data who is responsible for the concrete data process flow.

New Application Profiles

A Danish application profile based on version 2.0 of the **DCAT Application Profile** for data portals in Europe (DCAT-AP) has been completed and approved for use in the context of the Danish public sector (DCAT-AP-DK).

Furthermore, to support higher reuse and quality of metadata about IT systems, two application profiles have been established: a Basic Application Profile describing the core properties of public sector IT systems and an Archive Application Profile extending the basic profile elements relevant to the submission of information about IT systems to the National Archives.

In addition, a method for describing dataset quality has been established. The method has been developed on the basis of international standards such as the W3C Data on the Web Best Practices, including the Data Quality Vocabulary, and ISO 25012 on Data Quality.

4.4. eID and Trust Services

new NemID Digital Signature and MitID

NemID, as described in the previous versions of the present document, is about to be dismissed in 2023 and replaced by MitID for natural persons, and MitID Erhverv for legal persons and natural persons representing legal persons. Existing NemID users will either be migrated to MitID or be registered for MitID in July 2023. In addition, more than 5 million users aged 13 or more are already using the MitID solution. Like NemID, MitID is used to access both public and private service providers.

MitID is an identification and authentication service only; signing can be achieved using a remote signing capability built in the national Danish trust services component and with MitID as the means of authentication.

The MitID business solution, called MitID Erhverv, was launched in the second half of 2022, and enables businesses and their employees to access digital self-service solutions with MitID on behalf of the business entity. MitID Erhverv thus will be the main channel for companies when using digital self-service solutions (e.g. Virk and Digital Post) on behalf of the business entity, which makes reporting to the public sector easier.

The MitID solution has been developed in a well-established partnership between the Danish public sector and Finance Denmark, the Danish Business Association for Banks and other financial

institutions. The partnership has the shared goal of a strengthened, secure and flexible digital infrastructure in Denmark.

eIDAS eID-Gateway Node

The Danish eIDAS infrastructure, called [eID-Gateway](#), went into production on 28 September 2018. The eID-Gateway consists of the Danish eIDAS Connector and the Danish eIDAS Proxy Service. The latter went live on 25 November 2021. The eID-Gateway utilises the existing national SAML protocol, which is also implemented in the national broker for public services, NemLog-in (see below).

Currently, a handful of eServices are connected to the Danish eIDAS Connector. Work is ongoing with regard to the implementation of the Single Digital Gateway Regulation, as well as to the integration of more national eServices into the Danish eIDAS infrastructure. Furthermore, Denmark is one of the few Member States that provides a solution for identity matching, a functionality in the eIDAS Connector which went into pilot phase on 18 January 2022. The solution is envisioned to become semi-automated by the fourth quarter of 2023 to be able to scale up the identity matching process of European citizens.

In October 2022, Denmark completed the process of notifying the new Danish eID, MitID, in accordance with Article 9 of the eIDAS Regulation, with publication in the Official Journal of the European Union (OJEU). MitID incorporates the necessary technical specifications, making it possible for the other EU Member States to integrate MitID in their respective eIDAS nodes. The previous Danish eID, NemID, will become void and with time will be replaced by MitID.

NOBID Project

Denmark is a member of the Nordic-Baltic Cooperation on Digital Identities (NOBID), a project initiated and managed by the Nordic Council of Ministers supporting the implementation and utilisation of the national eID infrastructure. The goal is to provide citizens and businesses using their own national eIDs borderless access to digital services throughout the Nordic-Baltic region. NOBID has been extended until the end of 2024 and has become a sub-project under the Cross-Border Digital Service Programme (CBDS) with the aim of creating a common Nordic-Baltic platform for the implementation of parts of the eIDAS Regulation and the Single Digital Gateway Regulation.

NemLog-in: Sign-In Solution

NemLog-in is a vital part of the public infrastructure and is the primary joint identity broker/identity provider solution. It also serves as integration point for public IT service providers and self-service solutions.

NemLog-in consists of a number of components that make up the Danish national platform for login and user access management. Established in 2008, NemLog-in is today in its third generation, with over 150 IT service providers. It offers 500 self-service solutions and records more than 100 million logins a year. One of the primary components is a login/authentication service with single sign-on (SSO) functionality. Citizens, employees in companies and authorities can log on to public self-service solutions and portals. Other NemLog-in components include central user access management, a signing service (including signature validation and possibly long-term storage), a power of attorney functionality and a security token service (STS) functionality. Lastly, NemLog-in provides an administration component, where IT service providers and IT vendors can maintain their self-service solution integrations to NemLog-in.

Digital Driving License App and Digital Health Insurance Card App

Since 24 November 2020, Danish citizens have been able to download their driving licence in a [mobile app \(Kørekort-appen\)](#) and leave their physical driving licence at home. The app has a built-in QR-code that enables the Danish police to use their dedicated app to confirm the digital driving licence validity without touching the driver's phone. More than 500 000 downloads of the Digital Driving Licence App within 24 hours after its release and almost 2.5 million downloads to date demonstrate that citizens have quickly adopted the digital driving licence. More specifically, 41% of Danish driving licence holders also have the digital driving licence.

In June 2021, the Agency for Digital Government introduced yet another digitised version of Danish citizens' universally issued ID cards. The [Digital Health Insurance Card App \(Sundhedskort-appen\)](#) is a voluntary digital supplement to the Danish Health Insurance Card. It is valid documentation of the citizen's right to receive healthcare in Denmark, equal to the physical Health Insurance Card, and can be utilised in all circumstances as the physical card. The Digital Health Insurance Card App has reached more than 2.7 million downloads since the launch, with

41% of potential users having a Digital Health Insurance Card. By the end of 2023, Danish citizens will have the opportunity to discontinue using the physical Health Insurance Card and only hold the Digital Health Insurance Card.

4.5. eProcurement

Procurement Portal

The **Procurement Portal** offers public and private providers guidance on the knowledge and tools necessary for the provision of tendering services. The purpose of the portal is to facilitate cooperation between enterprises and the public sector as a means to promote public services efficiently. Furthermore, some regional and local authorities make use of private marketplaces. The State-owned company **National Procurement Ltd (SKI)** has set up simpler eTendering solutions systems (*NetIndkøb* & *Netkatalog*).

Nemhandel

Nemhandel is an open network with its own document standards, making eProcurement between suppliers of goods, and public authorities and institutions easy, secure and efficient. *Nemhandel* functions as one common standard for eProcurement and makes it possible for all businesses to connect once and reach all systems - irrespective of the purchasing system or the IT service provider. *Nemhandel* has continuously and actively participated in European and international cooperation for eProcurement. In 2017, it began to be integrated into Peppol, and in 2019 and 2020 it became mandatory for all public authorities to be affiliated to the Peppol network via the *Nemhandel* Registry, which is also a Peppol registry. From January 2023, Peppol-based eCatalogues and eOrders should also be mandatory for public entities for certain categories of goods and services.

4.6. ePayment

NemKonto

A NemKonto is a normal bank account that a citizen or a company already has and assigns as NemKonto. All payments from public institutions in Denmark, such as tax or VAT refunds, pensions or social welfare payments, are transferred directly to the citizen's or company's NemKonto through the NemKonto system. All citizens and companies registered in Denmark are required to have a NemKonto to receive public payments. Enterprises, such as insurance companies or private employers, are also able to make payments to a NemKonto.

4.7. Knowledge Management

new Multi-Platform Knowledge Management

Knowledge management related to the Danish digital public administration infrastructure is distributed across a number of platforms and websites, and managed by various government bodies.

The Agency for Digital Government is responsible for a website hosting common public sector resources on methodology, reference architectures and specifications related to cross-cutting digital government. The target group includes Ministries, regions and municipalities, and the focus is on general digital government capabilities and interoperability. The Agency is also responsible for a catalogue of core concepts and data models used across government as well as a central portal harvesting metadata from decentralised data catalogues. A new and thoroughly revised metadata portal was launched in September 2022, aiming to be fully compatible with the European data portal (see Section 4.1). Furthermore, the Agency is responsible for a number of websites and repositories supporting specific infrastructure solutions and digital government projects.

4.8. Cross-Border Infrastructures

Government Cloud Services and CEF eDelivery Services

Work is currently ongoing to support the public sector use of cloud offerings, including the Guidance on the Use of Cloud Services published in November 2019 and the provision of various cloud offerings to government bodies serviced by the Agency for Governmental IT Services. Furthermore, CEF eDelivery is used in Denmark and supports various cross-border domain solutions such as eInvoicing, Business Register Interconnected Systems and Electronic Exchange of Social Security Information. It is also planned to use it for the Single Digital Gateway Once-Only Technical System.

TESTA Network

The Trans European Services for Telematics between Administrations (TESTA) network is used for a number of cross-border use cases.

4.9. Base Registries

Base Registry Data Available on the Data Distributor

The Danish Agency for Data Supply and Efficiency is responsible for cross-public coordination of base registries' data and is also responsible for the Data Distributor. Data from the following base registries have been made available via the **Data Distributor**: the Danish Address Registry (DAR), the Central Business Registry (CVR), the Danish Place Names Registry (*Danske Stednavne*), the Danish Administrative Geographical Division (DAGI) Registry, the Civil Registry of Personal Data (CPR), the Registry of Buildings and Dwellings (BBR), the Cadastre, GeoDanmark, the Registry of Property Valuation (VUR), the Registry of Owners of Real Property (EJF) and the Registry of Property Location (EBR).

4.10. Innovative Technologies

4.10.1. Artificial Intelligence (AI)

A Common Danish Language Resource

As Danish is a language spoken in a small area, the Danish government has taken initiatives to improve Danish language technology (LT) in order to secure that new technology, such as AI, functions in Danish. The initiative 'A Common Danish Language Resource', which was launched in 2020, has established a free-to-use catalogue of publicly available language data. The catalogue allows developers to use existing knowledge and data to create and improve Danish LT that benefits citizens, authorities and businesses.

4.10.2. Distributed Ledger Technologies

No particular infrastructure in this field has been reported to date.

4.10.3. Big Data

No particular infrastructure in this field has been reported to date.

4.10.4. Cloud Computing

The Danish government works on the basis of the principle of technology neutrality and does not favour one specific technology over others. This means that individual organisations have the freedom to choose IT services according to their needs. Public agencies are thus not required to migrate to cloud – and if they decide to do so, they are free to choose whether to use private clouds, public clouds, hybrid clouds and/or multi-clouds. However, this freedom of choice also means that agencies are responsible for the solutions they resort to, including securing legal compliance and taking the necessary security precautions.

GovCloud

The Agency for Governmental IT Services in Denmark, launched in 2020, runs a [private cloud service](#) that is available to public sector authorities. GovCloud is a secure and convenient supplement to other cloud services for State authorities in need of a Platform as a Service (PaaS) solution. It is a community cloud based on container-technology built mainly on open source. The use of GovCloud ensures that all data are physically located in the data centres of the Agency in Denmark, eliminating any legal concerns related to third country transfers in the GDPR. Furthermore, GovCloud offers an optional DevOps toolchain to aid public agencies in developing and commissioning applications on the platform, specifically supporting planning, coding, building and testing, releasing and deploying, as well as operation and monitoring.

GovCloud is only available for customers of the Agency for Governmental IT Services and, hence, only to governmental organisations. All agencies using GovCloud are invited to join the 'GovCloud Customer Community'. There, users of GovCloud are able to suggest ideas and discuss the further development of the platform together with the Agency for Governmental IT Services.

4.10.5. *Internet of Things (IoT)*

No particular infrastructure in this field has been reported to date.

4.10.6. *High-performance Computing*

new

Legal Framework for Collaboration on the National Digital Research Infrastructure

No particular infrastructure is specifically targeted at public administration in this field. However, a legal framework was established for collaboration on the national digital research infrastructure, including in the field of high-performance computing. As collaboration with and between Danish universities, DeiC aims to ensure computing power, data storage and network infrastructure for Danish research and education. To that end, DeiC is responsible for coordinating and facilitating the usage of national high-performance computing available for Danish researchers. Computers are operated and developed by universities, which provide computing power for researchers independently of their institutional affiliation.

The national high-performance computing landscape consists of five different types of supercomputers and a user interface. The fifth type is the European pre-exascale supercomputer LUMI. Abbreviation of Large Unified Modern Infrastructure, LUMI is located in the CSC – IT Center for Science Ltd's data centre in Kajaani (Finland) and is part of the European EuroHPC project. DeiC also coordinates the Danish participation in EuroHPC and Danish researchers' access to resources at LUMI. LUMI is managed by a consortium of eight countries, Finland, Belgium, Czechia, Denmark, Estonia, Norway, Poland, Sweden and Switzerland.

4.10.7. *High-speed Broadband Connectivity*

No particular infrastructure in this field has been reported to date.

4.10.8. *GovTech*

No particular infrastructure in this field has been reported to date.



5 Digital Public Administration Governance

5 Digital Public Administration Governance

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

5.1. National

new Ministry of Digital Government and Gender Equality

As a result of the formation of a new government on 15 December 2022, the [Ministry of Digital Government and Gender Equality](#) was established. It coordinates the collective efforts to digitise Denmark, while also working towards equality for everyone in all aspects of society. In this context, the Ministry deals with the digitalisation of both the public sector and private businesses to ensure the best possible digital solutions that make it easier to be a Danish citizen or business owner. Furthermore, the Ministry follows the international digitalisation and equality agendas, and acts as the responsible government body for interoperability activities in Denmark.

Agency for Digital Government

As part of the Ministry of Digital Government and Gender Equality, the [Agency for Digital Government](#) (formerly known as Agency for Digitisation) is a catalyst for digital development in Denmark. The [Agency](#) gathers strategic, professional and technical competencies. One of its main roles is to coordinate public digitalisation, from concept to output. To that end, it facilitates and participates in different initiatives across the entire public sector and coordinates public digitalisation across the different levels of government.

In addition, the Agency acts as secretariat for three [steering committees](#) on Digital Infrastructure, Digital Communication, and Technology and Data. Different authorities are represented in the committees with the aim to ensure technical and functional interoperability as well as coherence within public sector digitalisation., and which are therefore responsible for the public sector digital infrastructure.

Ministry of Finance

The [Ministry of Finance](#) provides the framework for good and efficient governance throughout the Danish government, including the use of digital means for providing public services. For more than a decade the vision has been that the public sector should improve procedures and methods to deliver public services of the best possible quality using digital solutions and modern technology, where possible. To this end, the Ministry of Finance develops and implements initiatives concerning public finance and digital administration, as well as public leadership to improve the efficiency and effectiveness of the public administration.

Agency for Public Finance and Management

As part of the Ministry of Finance, the [Agency for Public Finance and Management](#) supports the Danish government in good and efficient governance. It offers advice and guidance on large-scale ICT projects and management of systems portfolios to Ministries and national agencies as well as State-funded self-governing institutions. In this context, the Agency is responsible for the development and maintenance of the national model for ICT projects and the national model for ICT systems portfolio management, both of which are stipulated by the common budgetary framework for the Danish government.

Agency for Governmental IT Services, Ministry of Finance

Also part of the Ministry of Finance, the [Agency for Governmental IT Services](#) (*Statens It*) is a shared service centre for the national government providing ICT services to the majority of Denmark's Ministries and national agencies. The Agency for Governmental IT Services aims to provide accessibility, stability, effectiveness and information security with a focus on delivering (i) a common central government platform for ICT usage; (ii) standardisation of generic administrative systems; and (iii) effective outsourcing of operational contracts through standard framework procurements.

National ICT Council

In 2011, the Danish government established the [National ICT Council](#) to optimise and professionalise the management of the Danish government's ICT projects and systems. The ICT Council comprises 13 senior managers, primarily from the private sector, but also from semi-public and public IT-intensive organisations. All members have great experience with large-scale ICT projects or change management, and offer solid and competent guidance to Ministries and national agencies on the management of their projects and systems portfolios. The National ICT Council is supported by the Agency for Public Finance and Management.

Ministry of Industry, Business and Financial Affairs

The [Ministry of Industry, Business and Financial Affairs](#) is responsible for the digital aspects of a number of policy areas which are important for the general business environment, including business regulation, intellectual property rights, competition and consumer policy, finance and shipping. The Ministry works to promote digitalisation within the business environment and in relation to public services for businesses in coordination with the Ministry of Digital Government and Gender Equality.

The [Danish Business Authority](#), an agency under the Ministry, focusses on smart regulation, free movement and the Digital Agenda for Europe to reduce regulatory burdens and enhance growth in the EU. In particular, the Digital Agenda for Europe aims to promote a coherent digital economy in Europe.

Ministry of Climate, Energy and Utilities

The [Ministry of Climate, Energy and Utilities](#) is also responsible for the telecommunication policy, including roaming, competition regulation, and mobile and broadband penetration.

Data Ethics Council

In early 2019, the government created a [Data Ethics Council](#) to facilitate public debate about e.g. the use of technology, data and AI in both the public and private sectors. With the aim to reap the many advantages offered by the use of data, the Data Ethics Council seeks to support ethical considerations in the development and use of technology, e.g. citizens' fundamental rights, legal certainty and fundamental values of society. The Council is composed of members from universities, trade unions and think tanks as well as representatives from the public and private sectors.

Agency for Data Supply and Efficiency

In Denmark, the [Data Distributor](#) acts as a data hub for basic data and base registries. The Agency for Data Supply and Efficiency is the authority in charge of the Data Distributor. However, a wide range of authorities collect and distribute basic data from different sources, which entails that many different authorities provide data to the Data Distributor. These include, but are not limited to, the [Agency for Data Supply and Efficiency](#), the [Danish Geodata Agency](#), the [Danish Business Authority](#), the [Social Security Office](#), the [Danish Agency for Digital Government](#) and the [Tax Authority](#).

National Audit Office of Denmark

The [National Audit Office of Denmark](#) is a public institution whose primary task is to audit the State accounts and to examine whether State funds are administered in accordance with the decisions of the Parliament. The Office carries out both financial and performance audit in accordance with the principles of 'good public auditing practice'.

Danish Data Protection Agency

The [Danish Data Protection Agency](#) exercises surveillance over the processing of data to which the [Act on the Processing of Personal Data](#) applies. It mainly deals with specific cases based on inquiries from public authorities or private individuals or takes up cases on its own. The Danish Data Protection Agency is also responsible for supervising data protection practices in the two subnational levels of governance in Denmark.

5.2. Subnational (Federal, Regional and Local)

Local Government Denmark

Local Government Denmark is the national association of local authorities (municipalities) represented in the Steering Committee for Joint Government Cooperation (STS) to report relevant information from the central government to the local authorities. Its mission is to safeguard the common interests of local governments, assist municipalities with consultancy services and ensure that local governments are provided with relevant up-to-date information.

Danish Regions

Danish Regions is the national association of regional councils. It is represented in the STS alongside Local Government Denmark. **Danish Regions** represents the five regions negotiating with the central government and ensures that regional authorities are provided with relevant up-to-date information.

Municipalities and Regions

Municipalities and regions are responsible for the vast majority of community-centred service delivery and thus play a central role in the public sector. The annual budget agreements between the central government and the organisations representing subnational government, i.e. Local Government Denmark and Danish Regions, are crucial for the government's cooperation with municipalities and regions.

The **98 municipalities** are responsible for carrying out most tasks related to citizen service delivery, including social services, childcare, elderly care, healthcare, employment, culture, environment and planning. The five regions are mainly responsible for the health sector, e.g. hospitals. Municipal and regional bodies implement the individual action plans previously articulated at cross-governmental and departmental level and by domain area, in compliance with the overall national eGovernment Strategy.

Subnational Interoperability Coordination

In Denmark, one of the overall objectives of digitalisation is to facilitate cooperation between the three levels of government. Thus, Local Government Denmark and Danish Regions are also involved in several of the nationally operated interoperability coordination initiatives, e.g. all the steering committees created as a part of the Digital Strategy and the Digitisation Pact. The Committee for Architecture and Standards, whose aim is to facilitate digital coherence in the public sector at several levels, usually deals with questions and issues related to interoperability (for more information on the IT architecture, read [here](#)).

Ankestyrelsen

Since April 2017, **Ankestyrelsen**, a Danish agency, has been responsible for auditing the two subnational levels of governance in Denmark.



6 Cross-border Digital Public Administration Services

6 Cross-border Digital Public Administration Services for Citizens and Businesses

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. **YourEurope** 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.

6.1. 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).

6.2. 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).

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 Informatics (DG DIGIT) and the Directorate General for Communications Networks, Content & Technology (DG CONNECT). This factsheet received valuable contribution from Ms. Hannah-Jean Gardner, Policy Officer at the of Ministry of Digital Government and Gender Equality.



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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