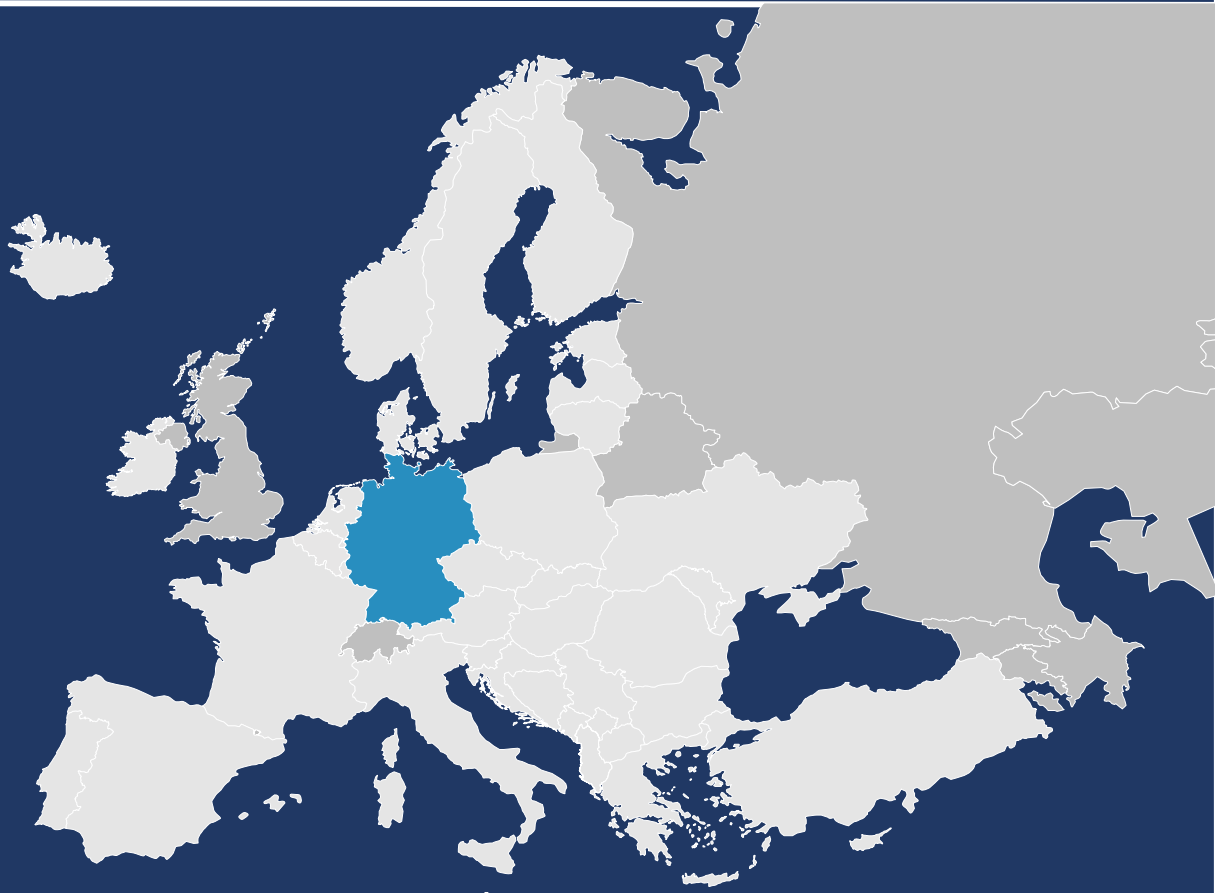


GERMANY

2024 Digital Public Administration Factsheet

Supporting document






Main developments in digital
public administrations and
interoperability

JULY 2024

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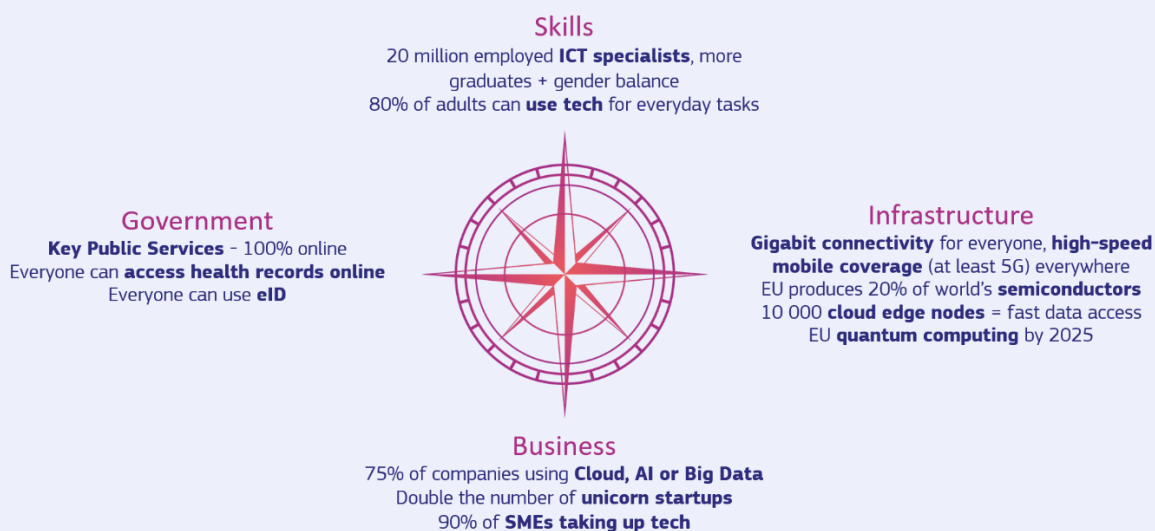
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2030 DIGITAL DECADE

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

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



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



1. Interoperability State-of-Play

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

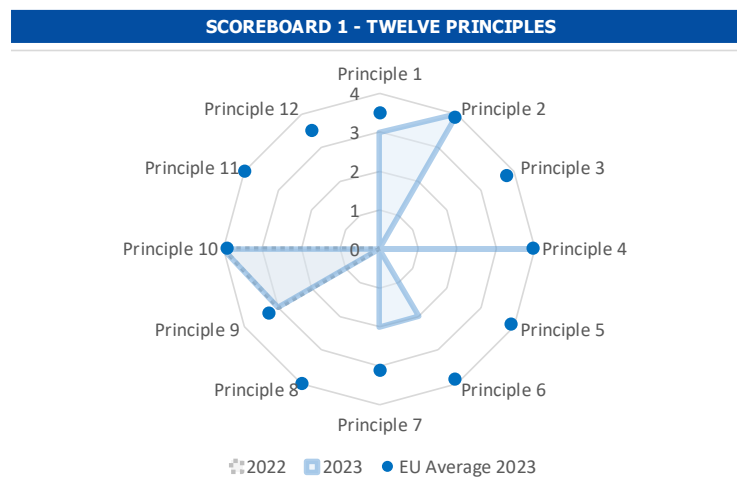
Starting from the 2022 edition, an additional scoreboard, Scoreboard 4, focusing on cross-border interoperability, has been incorporated. This scoreboard assesses the adherence to 35 Recommendations outlined in the EIF framework. Specifically, it encompasses Interoperability Principles 2, and 4 through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

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 2023

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

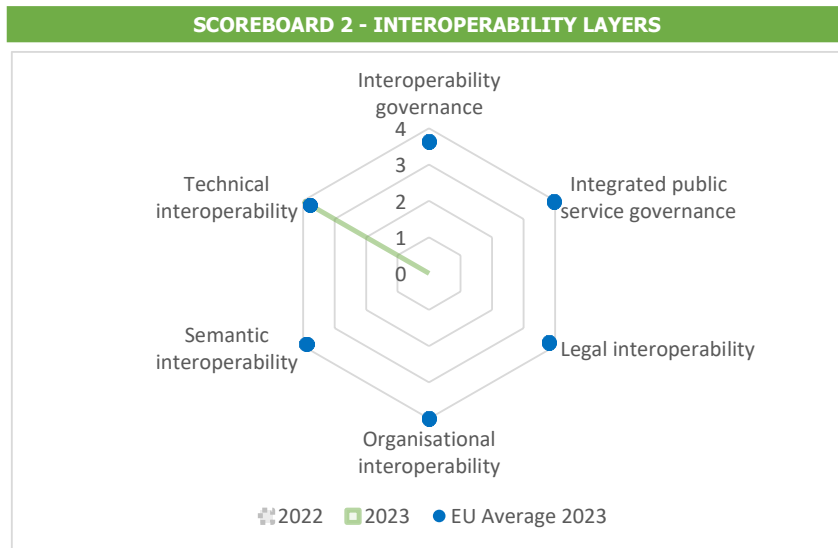


Source: European Interoperability Framework Monitoring Mechanism 2023

The German results in Scoreboard 1 offer a mixed medium performance on the implementation of the EIF principles. Germany obtained the maximum score of four in Principles 2 (Openness), 4 (Reusability) and 10 (Administrative simplification), and a score of three in Principles 1 (Subsidiarity and proportionality) and 9 (Multilingualism). In order to improve its performance in

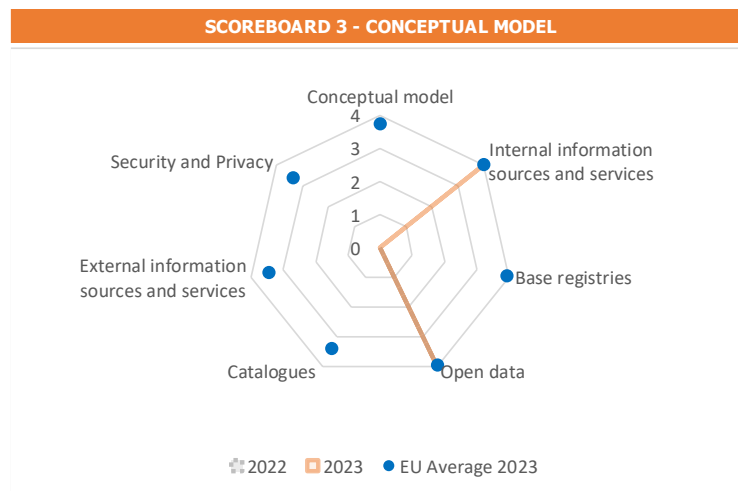


relation to Principles 6 (User-centricity) and 7 (Inclusion and accessibility), Germany should focus on putting in place mechanisms to involve users in the development of European public services (Recommendation 12 – Principle 6) as well as ensure accessibility to all European public services (Recommendation 14 – Principle 7).



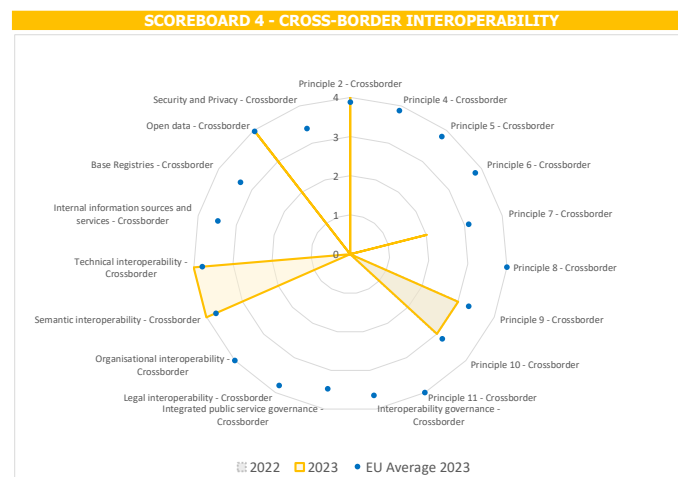
Source: European Interoperability Framework Monitoring Mechanism 2023

Germany’s scores in Scoreboard 2 reflect a lack of data in several interoperability layers. However, Germany achieved a maximum score of four for the technical interoperability layer. In terms of improvements, the score of two for both recommendations 22 and 23 could be improved by using a structured, transparent, objective and common approach to assessing and selecting standards and specifications (Recommendation 22 – Interoperability governance) as well as by consulting relevant catalogues of standards, specifications and guidelines at national and EU level, in accordance with your NIF and relevant DIFs, when procuring and developing ICT solutions (Recommendation 23 – Interoperability governance).



Source: European Interoperability Framework Monitoring Mechanism 2023

The German results in relation to the Conceptual Model in Scoreboard 3 show a good performance for Open data and internal information sources and services indicators with respectively a maximum score of four. Despite the lack of score of several indicators, Germany has result for several recommendations. Therefore, in terms of improvement, the country could decide on a common scheme for interconnecting loosely coupled service components and put in place and maintain the necessary infrastructure for establishing and maintaining European public services (Recommendation 35 – Conceptual Model) as well as work on extending to which the five major Base Registries (Population, Vehicle, Tax, Land, Business) are available for reuse in digital public services (KPI 26 – Recommendation 37 – Base Registries).



Source: European Interoperability Framework Monitoring Mechanism 2023

Lastly, the trend observed in the rest of scoreboards for Germany continues for Scoreboard 4 on cross-border interoperability. In 2023, Germany obtained a maximum score of four in Principle 2 (Security and Privacy), semantic and technical interoperability, and open data. Regarding areas of improvement, the country obtained a score of two in Principle 7. The country could focus on ensuring that all European public services are accessible to all citizens, including persons with disabilities, the elderly and other disadvantaged groups (Recommendation 14 - Principle 7). Further area for improvement in cross-border interoperability could be found in Principles 9 (Multilingualism) and 10 (Administrative simplification). For instance, Germany could concentrate its efforts on the use of information systems and technical architectures that cater for multilingualism when establishing a European public service (Recommendation 16 - Principle 9).

Additional information on Germany's results on the EIF Monitoring Mechanism is available online through [interactive dashboards](#).

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

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

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



2. Digital transformation of public administrations

Main digital strategies, action plans and legislations



Berlin Declaration on Digital Society and Value-Based Digital Government

The ministers responsible for digital transformation in the public administration of EU member states officially adopted the [Berlin Declaration on Digital Society and Value-Based Digital Government](#) at an online high-level conference in December 2020. The Berlin Declaration contains common guidelines on digital transformation in Europe, its impact on society and future opportunities.

In order to enable value-based digital transformation, the countries that signed the declaration agreed to carry out concrete measures by 2024 regarding, among other things, the digital sovereignty of their administrations, the promotion of civil society participation, digital inclusion and self-determination. These measures are based on the common values and ethical principles which form the foundation of the European Union and include in particular the following:

- Promoting fundamental rights and democratic values in the digital sphere;
- Enhancing social participation and inclusion;
- Fostering digital empowerment and digital literacy;
- Strengthening trust through security in the digital sphere;
- Strengthening Europe's digital sovereignty and interoperability;
- Creating value-based, human-centred AI systems for use in the public sector; and
- Fostering resilience and sustainability.



Federal Digital Strategy

In August 2022, the [Federal Ministry for Digital and Transport \(BMDV\)](#) published its [new Federal Digital Strategy \(*Digitalstrategie der Bundesregierung*\)](#). The strategy succeeds the implementation of the [Shaping Digitalisation \(*Digitalisierung gestalten*\)](#) strategy of the previous administration. It serves as a guidebook for all digital policies and digitalisation strategies of the Federal ministries for the current legislative period. It defines ambitious and measurable goals the Federal Government wants to reach. The strategy also defines three key projects, which are the prerequisite to boost digital transformation:

- Network rollout as well as improved and standardized provision of data;
- Providing digital identities, not only for the use of public administration services; and
- Creating uniform framework conditions and standards to allow the highest degree of interoperability.

These projects are essential for every digital policy measure planned and implemented by the ministries in their own responsibility. Progress is measured by a three-pillared monitoring process comprised of both quantitative and qualitative elements.



Fourth National Action Plan within the Open Government Partnership

In the framework of its participation in the Open Government Partnership (OGP), Germany develops national action plans on open government every two years, in accordance with the OGP rules and guidelines. They are the product of a co-creation process between government and civil society resulting in relevant commitments to foster transparency, participation, accountability and other elements of government openness.

The German government submitted a fourth [National Action Plan \(NAP\)](#) in August 2023. The NAP contains eleven commitments by the federal government, and four individual commitments by three *Länder*, covering such areas as the sustainable development goals, access information, open data (environment, procurement, budgets), and arms exports and public private partnerships.



Strategic Alignment of the German IT Planning Council

The IT Planning Council's future efforts as well as its operational structures are organised around a select number of [multi-year strategic focus areas](#). These focus areas shape the cross-functional initiatives of the IT Planning Council which reflect current trends as well as strategic questions concerning the public administration's digitisation efforts. They bundle individual



ventures and create an increased focus towards a common goal so that the IT Planning Council, supported by additional instruments, is able to make decisions more quickly, collaborate more efficiently, and expand the impact it generates. This strategy covers:

- Digital infrastructure (cloud transformation);
- Digital transformation (esp. digital competences / training of personnel, depletion of legal barriers, standardisation, automatisisation);
- Digital applications (esp. further advancement OZG, digital identity, reinforcement of re-use principle (EFA) and cooperations, SDG implementation, digital identity, federal IT architecture);
- Use of Data and data privacy (esp. modernisation of registers, Once-Only principle); and
- Information security.

IT Consolidation Programme of the German Federal Government

The German cabinet decided in the summer 2015 to substantially modernise the federal government in the IT department. **The IT Consolidation Programme of the German Federal Government** will serve several aims, namely: (i) ensure information security in an increasingly complex IT environment; (ii) maintain sovereignty and control over federal IT also in the future; (iii) respond swiftly to technological innovations; (iv) ensure effective, efficient, stable and future-proof operations; and (v) enable the government to remain an attractive employer for IT experts. Data of the federal administration must be comprehensively protected and secured against misuse. Until 2025, IT consolidation follows three lines of action: consolidating operations, consolidating services, and centralising procurement.

IT Strategy of the Federal Administration

The federal government's **IT Strategy** (*IT-Strategie des Bundes Leitbild und Ziele Version 2023*) defines ten cross-departmental goals for strategic IT development. It is successively specified by topic-related fields of action, which determine the prioritization of current and future IT measures. The first field of action defines implementation activities in the area of cloud technology. The federal government's IT strategy takes into account requirements and decisions at European and national level.

Data Strategy of the German Federal Government

Germany's federal cabinet adopted the new **National Data Strategy** on August 2023. The new strategy *Progress through data use – Strategy for more and better data for new, effective and forward-looking data use*, is intended to build on the existing data strategy from 2021 and to promote the development and expansion of data competences. Mainly, it seeks to effectively use all data that is produced, and to ease the access to information. In order to achieve its goals, a roadmap over a period of time up to the end of 2024 has been drawn up by the German government.

Act for the Improvement of Online Access to Administration Services

On 18 August 2017, the **Act for the Improvement of Online Access to Administration Services** (*Onlinezugangsgesetz, OZG*) entered into force. The federal, regional and local levels of government are now required to take comprehensive measures in order to promote electronic government services. Core requirements include:

- All (suitable) administrative services must be available online within five years after the law's entry into force;
- Federal and municipal eGovernment services must be available both through a newly created federal online portal and the online portals of the federal States (*Länder*). All portals are to be connected to a network of portals, the *Portalverbund*. Thus, access to electronic government services becomes easier and more user-friendly; and
- Access to all administrative services in the portal network must be allowed via a secure single-user account. In the user account, personal data (e.g. date of birth, residence) can be stored permanently for the users' convenience, provided they have given their consent.

Act on the Promotion of Electronic Government

The **Act on the promotion of electronic government** (eGovernment Act, EGovG) came into effect on 1 August 2013. Its aim is to facilitate electronic communication with the administration



and to enable federal, State and local authorities to provide simpler, more user-friendly and efficient eGovernment services. The main provisions include:

- Obligation for federal, State and local authorities to open a point of access for the transfer of electronic documents;
- Obligation for federal authorities to open a De-Mail access and to offer an electronic proof of identity via electronic identity card (eID) and an electronic residence permit;
- Electronic record-keeping;
- Enabling electronic evidence and electronic payment in administrative procedures;
- Obligation to document and analyse processes before implementing IT systems;
- Provision of machine-readable data (open data); and
- Georeferencing of electronic registers.

The eGovernment Act triggered legislative activities in most of the German federal States. By now, 15 federal States (*Länder*) have already adopted their own eGovernment Act.

Digitalisation of internal processes



German Basic Law (Articles 91c and 91d)

On 1 August 2009, within the framework of the second round of reforms of Germany's federal structure, important changes in the [German Basic Law](#) (*Grundgesetz*) came into force with articles 91c and 91d. Article 91c ensures the simplification of IT bodies and decision-making processes, thus increasing their effectiveness and enabling their adaptation to the needs of the fast-evolving technical progress. The German federation now has the option for the development of a secure linking-up network to interconnect the IT networks of national and federal States, which can prevent any underlying media issues. Article 91c par. 5 added in 2017 enables the Federal government to pass laws regarding the digital access to all administrative services for both federal and State administrations. Furthermore, Article 91d constitutes a vital component for administrative modernisation as it provides the legal basis for facilitating the federation and the federal States to directly and effectively benchmark their administrations in order to increase their effectiveness and transparency and provide better public services.



Law on the Connection of Information Technology Networks of Federal and State Governments

The envisaged objectives of the German Basic Law are implemented by the law on the connection of IT networks of federal and State governments (IT-NetzG), to define a telecommunications interconnection platform for secure information exchange between the federal and State administrations (adopted on 10 August 2009), as well as through an Inter-federal State Agreement, which came into force on 1 April 2010. According to this agreement, the IT Planning Council was established and tasked with developing the technical requirements for the use of the core network infrastructure. The implementation took place under the responsibility of the federal government in 2012 as part of the public administration infrastructure (*Verbindungsnetz, VN*). Moreover, the IT Planning Council bears the responsibility to steer cross-disciplined eGovernment projects involving both the federation and the federal States. Finally, the Council adopts decisions on IT interoperability and security standards.

Digitalisation supporting the EU Green Deal

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

3. Interoperability and data

Interoperability Framework



Once-Only Principle

With the coalition agreement 2021-2025, the government set itself the goal of introducing the Once-Only principle as quickly as possible. According to the Once-Only principle, citizens or companies can submit their data and evidence only once when applying for administrative services. For all further applications, the authorities use the data and evidence already available. The federal government and a few federal States work collectively on the technical, organisational and legal challenges of implementing the Once-Only principle through various projects.



Register Modernisation Act

The **Register Modernisation Act** (*Registermodernisierungsgesetz*) constitutes a major improvement in the provision of online administrative services with the Online Access Act. European provisions – in particular the **Single Digital Gateway (SDG) Regulation** – forces German authorities to put the so-called Once-Only principle into practice. The act introduces a unique, trans-sectoral identification number in the German administration in line with **Regulation (EU) 2016/679** of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data and repealing **Directive 95/46/EC** (General Data Protection Regulation). The legislation also provides changes in the German fiscal code and other technical items of legislation to enable the processing of the identification number in order to provide administrative services in line with the **Online Access Act**. The **German Identification Number Act** (*Identifikationsnummerngesetz*, IDNrG) lists 51 registers (out of a total of over 375) that play a key role in implementing the **German Online Access Act** (*Onlinezugangsgesetz*, OZG). The implementation of the legislation is embedded in a roadmap for a modernised register landscape adopted by the federal government and the federal States.



Roadmap for Modernisation of Registers and Once-Only Principle

In June 2021, the **IT Planning Council** (*IT-Planungsrat*) set up an overall steering structure for the implementation of the roadmap for modernisation of registers and implementing the **Once-Only principle**. The plan is to allow citizens and companies to apply for digital government services more easily, quickly and securely.

The key component of a modern register landscape is its technical architecture, which should comply with the existing applications and standards of the IT Planning Council. It must be expanded in accordance with the legislative provisions already set out in the **German Register Modernisation Act** (*Registermodernisierungsgesetz*, RegMoG) and must guarantee not only implementation of the Once-Only principle (OOP) in Germany, but also a connection to the Once-Only system at European level. Examples of needs-based technical infrastructure expansion might include a central directory of types of evidence and interfaces enabling connectivity between existing registers. The focus of these development efforts should be on strengthening interoperability within Germany and achieving convergence with European technologies.

The roadmap has received updates both in 2023 und 2024 in order to reflect the outcomes of the current work by the federal government and the federal States.



Single Digital Gateway Regulation

On 11 December 2018, the **SDG Regulation 2018/1724** entered into force. Based on a decision of the IT Planning Council, a national stakeholder network for the SDG implementation was set up in April 2019. It consisted of SDG multipliers appointed by each of the 16 federal States, the national coordinator appointed by the federal government, contact persons of the federal ministries and representatives of the leading municipal associations. The network will meet at least twice a year.

Implementing the requirements for the SDG in Germany is part of the implementation of the **Online Access Act** (*Onlinezugangsgesetz*, OZG) and **Register Modernisation Act** and takes place within the implementation structures of these acts. The following challenges have already been resolved:



- Linking the Your Europe platform with the Federal Portal, including connecting the EU search engine;
- Linking the Federal Portal with the eight assistance services and, accordingly, with the EU search engine;
- Providing German and English descriptions of federal and State-level services for online and offline procedures;
- Adhering to the Commission's branding requirements such as the inclusion of the Your Europe logo etc.; and
- Gathering user feedback and collecting user statistics through our national IT components.

In accordance with Article 14 of the SDG Regulation, the Commission provided a technical system for the cross-border application of the Once-Only principle by December 2023. From 12 December 2023, the procedures provided for in the Digital Single Window have to be made available entirely online on the basis of the technical system for the automated cross-border exchange of tests and the application of the Once Only Technical System (OOTS). The interconnection of national registers throughout the EU enables the digital exchange among EU Member States of the necessary evidence for the procedures that are to be offered entirely online.

The German registers, which hold digital evidence for the procedures in question, and the relevant online procedures are to be linked to the Commission's technical system.

The Commission has adopted the implementing [regulation \(EU\) 2022/1463](#) setting out technical and operational specifications of the technical system for the cross-border automated exchange of evidence on 5 August 2022. To ensure a coordinated development and operation of the OOTS sub-groups were formed. Germany is involved in every subgroup. The EU Once-Only-Technical-System will thus be further developed with support from Germany. From Germany's perspective, connecting the decentralised register landscape of our federal system to a central Commission system is the core challenge. Germany, together with Austria and the Netherlands, started a pilot project using the Once Only Technical System. Several services such as the registration of a company in another country can be done online on both Germany's and Austria's business portal. The services use eIDAS for the identification of individuals and legal entities and the OOTS for Once-Only sharing of personal data and documents.



Federal Information Management (FIM)

The Federal Information Management (FIM) is a permanently established product of the IT Planning Council (IT-Planungsrat) since 2017 to harmonise the implementation of administrative services through standardised information created on the basis of legal regulations. Therefore, the FIM also plays a key role in implementing the German Online Access Act (Onlinezugangsgesetz, OZG).

The application of the FIM is meant to provide easily understandable information for citizens, uniform data fields for form systems and standardised process specifications for administrative enforcement. The aim is to reduce the translation and implementation effort for legal requirements. Federal States and municipalities should no longer have to act alone when it comes to the editorial and organisational implementation of an administrative procedure. Instead, they can rely on quality-assured preparatory work from the next higher administrative level.

The FIM consists of three modules:

- Services: essential information on a public administration service for citizens and companies. The federal government provides the (master) information on the services;
- Data fields: usually the trigger for the utilisation of a service. The federal government provides the description of necessary data fields for forms; and
- Processes: description or visualisation of the processes for service supply. The federal government provides the core processes of law enforcement.

The FIM modules are each represented by a catalogue, which records services, data fields and processes, links them together, harmonises their designations and assigns them a unique nationwide identification. The toolboxes contain quality-assured, reusable elements for creating the master information. Furthermore, an essential part of the FIM is the exchange of FIM information at all federal levels. For this purpose, standardised data exchange formats have been developed that are certified according to the XÖV standardisation framework.



Data access, management and reuse

Open data



Law on the Reuse of Public Sector Information

The Directive on open data and the re-use of public sector information (Directive (EU) 2019/1024) entered into force on 16 July 2019. It replaced the Public Sector Information Directive (Directive 2003/98/EC), which was amended by Directive 2013/37/EU. Member States had to transpose Directive (EU) 2019/1024 by 16 July 2021. Germany transposed the Directive on 16 July 2021, through the [Data Use Act](#). Once fully transposed at national level, it makes all public sector content in principle freely available for re-use, except in very limited cases. It stimulates the transparency, non-discrimination and non-exclusivity of data. Furthermore, real-time data available via Application Programming Interfaces (APIs), open access to publicly funded research data and high value datasets will foster innovation and benefit both society and the economy.



Open Data Strategy of the German Federal Government

On 6 July 2021, the federal cabinet adopted the [Open Data Strategy](#) of the German Federal Government. The overarching data policy framework for the open data strategy sets out the German government's data strategy and its objectives, which also include open data. Over the following five years, the Open Data Strategy will cover three areas of action with a total of 68 measures taken by various federal ministries and federal authorities to improve data provision, promote data skills and establish a data culture in the federal administration to improve the quality and usability of data provided.



Open Data Act

The principle of open data is becoming increasingly important worldwide and the availability of data is becoming an important economic factor. Considering this, on 13 July 2017 the legislator initiated an initial amendment to the [eGovernment Act \(EGovG\)](#) and the newly created § 12a of the EGovG (first Open Data Act). This created, for the first time, a separate legal framework for open administrative data by establishing common criteria for open data. These include free provision, free access to data and machine readability. At the same time, data protection applies and it must be ensured that such personal data are only provided for publication if the requirements regarding the protection of personal data are met. With the [second Open Data Act](#), which entered into force on 23 July 2021 (Act amending the eGovernment Act and introducing a law on the use of public sector data), the legislator refined the existing obligations for the federal administration in various areas under § 12a of the EGovG and significantly extended the range of authorities obliged to do so. Other key elements are the establishment of open data coordinators in the federal authorities and the inclusion of research data in the obligation to provide them. The nation-wide [meta data portal GovData](#) was created to ensure that the open data provided by the different administrations can be easily found.

Base registries

A list of administrative registers in Germany is available in the [administration data information platform](#) (Verwaltungsdaten-Informationsplattform, VIP). There are several hundred official registers in Germany. Many of them are held at the municipal level. The register-keeping authorities decide how they run the registers technically. Data exchange between individual authorities and registers can be limited. The modalities for data exchange are currently negotiated individually. The national Once-Only Technical System (NOOTS) will provide a platform for a (more) standardised transmission of evidence in the future.

In this context, the planned register for basic enterprise data is worth mentioning: the Company Basic Data Register Act (UBRegG from July 2021) introduces a uniform nationwide identifier for businesses so that, going forward, companies will only have to register their core data with the administration once. The register for basic enterprise data will be administered by the Federal Statistical Office and is currently being set up. The first development stage should be operational in 2024. This will be a crucial step towards digitalised administration, a reduced administrative burden for businesses as well as better identifiability of businesses across different administrative bodies.





The Register Modernisation Act also stipulates that the Federal Central Tax Office will store basic data on individuals. The following table lists the German base registries:

National	
Business and Tax	The most important legislation for the Commercial Registry is the German Commercial Code . Part II, Articles 8 and 9, state that the Commercial Registry is under the control of the courts, and the right to inspect the Registry is open to everyone. Copies of the entries can be obtained and authenticated. Another important regulation is the Commercial Registry Regulation. According to Article 3, the Commercial Registry addresses two categories: individual merchants and commercial partnerships (category A) and corporations (category B). Information regarding the electronic maintenance of the Commercial Registry, recorded files, registry folders and inspections can also be found in the regulation.
Transportation / vehicles	
Land	Both the Land Registration Code (<i>Grundbuchordnung</i> , GBO) and the Civil Code (BGB) contain paragraphs which are relevant to the Land Registry. The <i>Grundbuchordnung</i> places more emphasis on governing the procedural part, the required processes and formalities. Its articles cover information such as the entries to be made in the Registry, the rectification of the data, the exchange of copies of the Land Registries, public charges, access to basic files and more. The Civil Code covers such items as land leases, rental fees, annuities and property management.
Population	
Other	
Sub-national	
Base Registries	The Population Registry falls under the Federal Registration Act (BMG). The Act regulates areas such as the required reference data to be registered, registration authorities and their duties, storage of data, accuracy and completeness of the Population Registry, information restrictions, storage and deletion of data, registration certificates, use restrictions, automatic retrieval and data transfer.

Services Registry - German Administration Services Directory

DVDV (*Deutsche Verwaltungsdienstverzeichnis*) is a multilevel and cross-sectoral infrastructure component of eGovernment in Germany. More specifically, it is the administrative and federal infrastructure that ensures the safe and reliable provision of automated services and specialised procedures, as well as the secure and legally binding communication between authorities and with the public administration in Germany. The DVDV is based on a directory which lists agencies and other providers with their respective services.

The DVDV relies exclusively on open internet protocols. Worldwide, it is one of the first and largest standardised Service Oriented Architecture (SOA) implementations in the government area and was made possible through unique cooperation between various levels of government and sectors in the Federal Republic of Germany.

Data platforms and portals

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

GovData Portal	The German Metadata Portal GovData provides a unified, centralised access to administrative data from federal, State and local governments. The goal is to make this data accessible in one single place and thus easier to use for both citizens and businesses. In the spirit of the Open Data principle, the portal aims to promote the use of open licenses and increase the supply of machine-readable raw data. In addition to government data, the portal bundles the metadata of other sectors. In 2022, GovData was opened to metadata provided by companies
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	in general services, universities, researchers, research institutions and research funding institutions. The first research institutions have already been integrated. For example, the Robert Koch Institute supplies various numbers and indicators for the Covid-19 pandemic directly to GovData.
Bund.de	The Federal Portal (<i>Bundesportal</i>) provides information on the administrative services offered by Germany's federal, State and local governments. The Federal Portal defines the central access point for citizens and companies to start their user journey. As central part of the implementation of the Online Access Act (<i>Onlinezugangsgesetz, OZG</i>), the portal features many government services online and the number of features and online services is steadily growing. Soon, the Federal Portal will also offer annex services related to citizen identification. In January 2024, the portal reached over 1 million monthly users.
The German Portal for Medical Research Data	The German Portal for Medical Research Data (FDPG) was established by the Medical Informatics Initiative (MII) and is funded by the Federal Ministry of Education and Research. It offers researchers the opportunity to request patient data and biospecimens from the German university hospitals centrally. Requests can be made for data based on the MII core data set. This includes a wide range of datasets regardless of indication. Since May 2023, researchers from academia and industry may request access to patient data and biospecimens for medical research purposes and submit feasibility requests. The FDPG also ensures transparency by publishing information on all research projects using these patient data.
The German Federal Statistical Office	The task of the German Federal Statistical Office is to provide and disseminate statistical information, which is objective, independent and of high quality. This information is structured in 6 themes: society and the environment; economy; economic sectors and enterprises; labour; government; and States and regions. This information is made available to everybody: politicians, government, administration, businesses and citizens. The federal law on statistics specifies the duties and responsibilities of the Federal Statistical Office.
Central Statistics Component (ZSK)	By means of the Central Statistics Component (ZSK), introduced in 2023, the use of digital public services data for statistical purposes is being aggregated and evaluated, thus facilitating monitoring processes. The key indicator used is the monthly transaction number of an online service, e. g. the number of online applications for the Federal Training Assistance (BAföG). On a login protected website, competent authorities can access usage data for the online services they offer to citizens and legal entities.

Cross-border infrastructures

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

European Business Registry	Germany is a member of the European Business Registry , which is a network of national business registries.
EUCARIS	Germany is a member of EUCARIS , which is an exchange mechanism that connects the Vehicle and Driving Licence Registration Authorities in Europe. It is not a database nor a central repository but a secure, harmonised and efficient technical exchange network. EUCARIS is developed by and for governmental authorities. It is sustainable since it has proved to be extendable and can serve various purposes.
TESTA	Germany is part of the Trans European Services for Telematics between Administrations (TESTA) . The national connection network (Verbindungsnetz, VN), defined by national law (IT-NetzG), is the central telecommunications connection platform for the secure exchange of information between federal

	and State administrations in Germany and connects the public administration networks with one another and with the TESTA network. Concerning the obligations from the EU treaty on TESTA, the VN implements the local domain of Germany and is therefore also part of the TESTA Euro Domain.
Once-Only Technical System (OOTS)	The national Once-Only Technical System of Germany (NOOTS) is connected to the European Once-Only Technical System (EU-OOTS) in order to manage cross-border evidence requests.
EU Digital Wallet	Germany is part of the EUDI Wallet Consortium .
European Blockchain Services Infrastructure (EBSI)	Germany is part of the EBSI initiative.



4. Digital transformation of public services



Digital public services for citizens



ePayBL

ePayBL (ePayment Bund-Länder) was established as a mandatory basic IT component at the federal government level. With ePayBL the members of the development community (so-called *Entwicklergemeinschaft*) - an association of the federal government (*Bund*) and the participating federal states (*Länder*) - have a powerful eGovernment basic component for payment transactions at their disposal. ePayBL is thus a jointly designed and developed payment component. In connection with the German Online Access Act (*Onlinezugangsgesetz, OZG*), ePayBL is intended to be the central ePayment component for the federal administration, enabling electronic payment and billing for federal administrative services. As a central data hub, ePayBL also ensures the integration of required payment service providers and the forwarding of posting-relevant data to downstream HKR (*Haushalts-, Kassen- und Rechnungswesen*, English: budgeting, cash management and accounting) and ERP systems.

The payment platform ePayBL offers federal authorities an efficient and simple solution for integrating electronic payment procedures for their fee-based administrative services offered via IT procedures (e.g., administrative portals or web store solutions). Citizens have the option of paying costs and fees with ePayBL using established payment methods that are familiar from the private sector, such as credit card payments or giro pay. ePayBL can be flexibly integrated into existing specialised procedures and administrative portals, such as the Federal Portal (*Bundesportal*). Through its use, billing processes are accelerated, and administrative costs are reduced, while revenues are available in a budget-compliant, secure and timely manner. This can lead to a reduction in the number of necessary reminders. The simple and version-independent integration into the specialised procedures is supported by the *ePayBL Connector*, which avoids adaptation efforts on the part of the specialized procedures during process updates. The payment platform ePayBL is very well suited for federal authorities that are already offering chargeable administrative services or goods online or intend to do so. Operators of direct and indirect federal administrations can make use of the offer of support for the integration of ePayBL.

eInvoicing



eInvoicing Normative

In Germany, the EU Directive 2014/55/EU on electronic invoicing in public procurement has been implemented by the federal government and the 16 federal States.

At the federal level, all government authorities must be able to receive and process electronic invoices according to the eInvoicing Law of 4 April 2017 (E-Rechnungsgesetz). In addition, in accordance with the E-Invoicing Ordinance of 27 November 2020 (E-Rechnungsverordnung), suppliers to federal authorities are obliged to transmit electronic invoices in a structured data format. The operational administrative responsibility for eInvoicing at the federal level lies with the Federal Ministry of the Interior and Community and its subordinate authorities.

The legislation of the federal States differs slightly from the federal regulations, but comparable regulations are in force or planned in the federal States.

Following a decision by the National IT Planning Council in June 2017, XRechnung, the German Core Invoice Usage Specification (CIUS) based on European Standard 16931, is the leading eInvoicing standard for central, regional, and local authorities in Germany.



eRechnung

Similarly to the abovementioned legal situation, neither is the infrastructure uniformly regulated at federal and State level.

With regard to the infrastructure for the transmission of electronic invoices, the federal government provides two platforms (Zentrale Rechnungseingangsplattform des Bundes, ZRE and



Onlinezugangsgesetzkonforme Rechnungseingangsplattform, OZG-RE). Some of the federal States use the federal government's infrastructure, others have set up own platforms. XRechnung, as the German Core Invoice Usage Specification (CIUS), is maintained by the Coordination Centre for IT Standards (KoSIT) and is continuously adapted to changing requirements.

eHealth and social security

Digitalisation Strategy for Health and Care

In March 2023, the [Digitalisation Strategy for Health and Care](#) was published. The strategy gives the digital transformation of healthcare a clear direction. It pursues a holistic approach that is oriented toward people. In concrete terms, this means that it contributes to overcoming sector boundaries and consistently focuses on the needs of those in need of care as well of those providing care (user perspective). A need for concrete action in three areas in particular has been identified:

- Establishment of person-centred and digitally-supported cross-sector und cross-professional care processes;
- Use of high-quality data for better care and research; and
- Benefit-oriented technologies and applications.

Targets are set for these fields of action and strategic guidelines are outlined. In addition, measures (short-, medium- and long-term) are formulated.

Telematics Infrastructure (TI)

The successful digitalisation of the German health system is based on a reliable, secure and comprehensive digital infrastructure, the Telematics Infrastructure, which is a special, secure 'data highway' for healthcare. It consists of a variety of components and services, allowing a secure and workable exchange of medical data. The Telematics Infrastructure gradually links all health sector actors and ensures a secure exchange of information across sectors and independently of service providers' systems. The Society for Telematics (gematik) in which the Federal Government is a shareholder, manages the Telematics Infrastructure and ensures its continuous expansion. Ensuring data protection and data security in the Telematics Infrastructure is one of gematik's core tasks and includes high requirements for all technical components used and also for organisational procedures in the Telematics Infrastructure.

Personal Electronic Health Record (ePA)

A key application is the [personal electronic health record \(ePA\)](#) provided by the health insurance funds. The ePA is a digital service that enables patients to manage their health data independently and in a self-determined manner. It provides patients with continuous access to their health information, benefiting both patients and healthcare providers alike. Important documents such as medical reports and test results can be securely stored inside the ePA as one central location, ensuring easy access to vital health-related information when needed for treatment purposes. The use of the ePA is voluntary and free of charge for the insured persons. Those using ePA are entitled to have doctors enter data into their ePA. Insured persons have access to their stored data via a suitable mobile device such as a smartphone as well as via assisted telemedicine in pharmacies. Starting in 2025, ePA which will be automatically provided to every person insured in the statutory health insurance unless they choose to opt out. Its purpose will develop from a storage place into a health platform. Healthcare providers will then transfer data from their local medical record to ePA so that other practitioners and institutions can access them in addition to the involved patient. It is planned that, by 2025, 80% of people insured in the German statutory health insurance shall have an ePA.

Next to the ePA, another important application in the Telematics Infrastructure is e-prescription; e-prescription services were adopted nationwide on 1 January 2024.

Legislation in the Field of Digital Health

The German legislation process for the digitalisation of the healthcare system started in 2004. Since that time, the digitalisation of the healthcare system has been advanced through various laws, including the [Appointment Service and Healthcare Supply Act \(Terminservice- und Versorgungsgesetz - TSVG\)](#), the [Act to Increase Security in Medicinal Product Supply \(Gesetz für mehr Sicherheit in der Arzneimittelversorgung - GSAV\)](#), the [Digital Services Act \(Digitale-Versorgung-Gesetz - DVG\)](#) or the [Patient Data Protection Act \(Patientendaten-Schutz-Gesetz -](#)



PDSG), as well as through the **Digital Services and Care Modernisation Act** (*Digitale-Versorgung-und-Pflege-Modernisierungs-Gesetz - DVPMG*), which entered into force on 9 June 2021.

The most recent laws in the field of Digital Health are the Digital Act (DigiG) and the Act on Health Data Use, which will both enter into force early 2024.

The DigiG aims at simplifying the everyday treatment process for doctors and patients through digital solutions. A central component of the law is the establishment of an opt-out-based personal electronic health record (ePA). This will promote the exchange and utilisation of health data and strategically support healthcare provision. The act also provides for the further development of the interoperability governance in healthcare.

The Act on Health Data Use (*Gesundheitsdatennutzungsgesetz - GDNG*) aims to make health data more accessible for research purposes. At the core of the law is the facilitation of health data usability for public interest purposes. This includes the establishment of a decentralised health data infrastructure with a central data access and coordination agency for the utilisation of health data.

Digital Health Applications (DiGA)

Pursuant to a 2019 legislative initiative, Germany established mechanisms to facilitate the access of DiGA to the health care system. As of February 2024, 56 applications that help to treat a vast range of diseases can be prescribed. The Digital Act (2024) will build upon the experience gained and include a broader range of digital applications to the regulatory framework (e.g. more complex treatment and telemonitoring).

Other key initiatives

E-Gesetzgebung: Digitalising the Legislative Process

E-Gesetzgebung is a Federal Ministry of the Interior and Community project initiated in April 2018, with the aim of fully digitalising the legislative process. By creating applications that electronically link the entire federal-level legislative process, the *E-Gesetzgebung* ensures complete interoperability while avoiding media discontinuity. The applications are integrated into a collaborative platform that enables, for instance, a full range of legislative functions, such as mapping timelines for regulatory projects ("Zeitplanung") or intra- and interdepartmental votes ("Haus- und Ressortabstimmung"). Legislative drafts can be written and revised in a text processor program ("Editor"). The implications of proposed legislation can be determined with the electronic impact assessment tools ("Gesetzesfolgenabschätzung"), e.g. the electronic Sustainability Impact Assessment tool (eNAP), which makes it easier to check the sustainability of purposed legislation. Users are guided through the platform by the electronic procedure assistant ("Verfahrensassistent") and have access to more than 50 user assistance guides for drafting legislation ("Arbeitshilfenbibliothek"). Current technological standards guide the development of all *E-Gesetzgebung* tools, for example by providing user-friendly as well as accessible applications and utilizing LegalDocML.de, a data standard for the entire legislative cycle.

Library Portal (Bibliotheksportal)

The **Library Portal** (*Bibliotheksportal*) provides quick and easy access to a wide range of information through the federal intranet. This portal lists the literary works, the electronic publications, the databases and the services made available by 20 libraries. Users can, anytime and from anywhere, search the library catalogues of all participating libraries and the portal for specialised databases, such as Beck-Online, Juris, Genios and the Munzinger Archive.

XRepository

XRepository is an online library for XML-based data exchange formats. This website constitutes a central location for the publication of a broad spectrum of data related to eGovernment projects, including data models, XML schemes and relevant documentation. Once published, the data is available for reuse by other administrations and designers of business processes. The website also facilitates online research on standards and interfaces, which can be subsequently downloaded at no cost. The online library is operated by the Co-ordination Office for IT Standards (KoSIT) in Bremen.

Digital public services for businesses

Public procurement

 eProcurement in Germany

Following recent EU directives that set out deadlines for the implementation of eProcurement in EU Member States, the modernisation process of German e-Procurement services started in 2018, when the [federal electronic tendering platform](#) was launched successfully. Parallel to the implementation of the [EU Implementing Regulation establishing standard forms for the publication of notices in the field of public procurement](#) ('eForms') in 2023, a [central Data Service for Public Procurement](#) ("Datenservice Öffentlicher Einkauf") was developed by the Procurement Office of the Federal Ministry of the Interior and Community (*Beschaffungsamt des BMI, BeschA*), the central supplier to the public administration in Germany, as a federal-State project. As one of few countries, Germany used the eForms EU Directive to nationally tailor the standard in order to meet local legal requirements and enhance its capability to move towards a more data driven government. The purpose of the service is to provide transparent information on federal, State and local government tender notices that are subject to publication requirements. Increasing the level of functional integration between eProcurement systems at all three levels, which is necessary to meet the needs of all stakeholders, continues to be a key objective. Already in place is the online procurement platform. The entire procedures for public procurement below EU thresholds will be digitised just like public procurement above the EU thresholds. The [website](#) can be used to conduct procurement procedures entirely online. Nothing needs to be sent by post.

 Official Contracting Terms for Award of Service Performance Contracts

The government transposed [Directive 2004/17/EC](#), [Directive 2004/18/EC](#) and [Directive 2005/51/EC](#) into national law when the official contracting terms for the award of service performance contracts were published on 6 June 2006. The original contracting terms were subsequently simplified through the [Contract Awards for Public Supplies and Services-Part A \(VOL/A\)](#) published on 29 December 2009 in the [Federal Gazette](#), again with a corresponding correction published on 29 February 2010.

The amended Procurement Ordinance (*Vergabeverordnung, VgV*), which came into force on 11 June 2010, regulated the submission of electronic bids in the area of public procurement. The VgV specifies the regulations for awarding public contracts in the upper threshold range. The VOL/A, 2nd section ceased to apply since April 2016. In the case of awards below the threshold values, traditional budgetary law applies. The [Sub-Threshold Regulation](#) (*Unterschwelvenvergabeordnung, UVgO*) applies to the award of contracts for supplies and services below the EU thresholds via corresponding references in the respective budget regulations. In the case of awards at the State and municipal level, this is only the case if it has come into force in the version applicable to the State; otherwise, VOL/A (1st section only) still applies here. On 1 December 2016, the Bundestag adopted the Law on the Transposition of Directive on electronic invoicing in public procurement ([Directive 2014/55/EU](#)).

 Federal eProcurement Platform (eVergabe) and Data Service for Public Procurement (*Datenservice Öffentlicher Einkauf*)

The [eVergabe](#) project was considered to be one of the most important projects of the BundOnline 2005 initiative. The service features the electronic awarding of orders based on communications between the awarding agency and potential bidders that are comprehensive, legally binding and free from media discontinuities. The offering ranges from notification via electronic tender submission to contract award using the contract award platform. The documents containing the contract terms can be downloaded and bids can be submitted with an electronic signature. The eAward project falls within the remit of the [Procurement Agency of the Federal Ministry of the Interior \(BeschA\)](#). In technical terms, the service was implemented as a web-based information and transactional platform using Java clients and combined with a web interface to search for tenders. In addition to the eVergabe platform, all public tenders from this platform are automatically and continuously published [online](#) ([sector "Ausschreibungen"](#)).

Starting in 2022, a new central Data Service for Public Procurement (*Datenservice Öffentlicher Einkauf*, formerly *Bekanntmachungsservice, BKMS*) was publicly released. This service centralizes





all public tenders in one place, making it much easier for companies (as possible tenderers) to find relevant public invitations to tender published by awarding authorities from all three governmental levels (federal, State and local government level). Furthermore, the Data Service has been declared as single eSender in Germany, ensuring that all EU-Wide tenders pass through this system, making its open data interface a valuable source for information about procurement behaviour and effects in Germany. The service was jointly developed as a federal-State project together with the Free Hanseatic city of Bremen and is also operated by the Procurement Agency of the Federal Ministry of the Interior (BeschA).

Digital inclusion and digital skills

The Future Research and Innovation Strategy of Germany

Since 2006, the Federal Ministry of Education and Research has been developing a Research and Innovation Strategy for every new legislation period, updating its objectives and reorienting the focus towards emerging and strategic needs. In February 2023, Germany published the [Future Research and Innovation Strategy](#). It is a policy coordination framework at the level of federal ministries. The main objective is to provide a common understanding of issues to be addressed, and to support the need for coordination among all relevant stakeholders. The Future Research and Innovation Strategy addresses the central future fields of the coalition agreement and relates them to the current most important challenges for research policy: (i) resource-efficient industry and sustainable mobility, (ii) climate protection, food security and preservation of biodiversity, (iii) health, (iv) digital and technological sovereignty, (v) astronautics, space and oceans, (vi) social resilience, diversity and cohesion. The strategy is executed by mission-oriented cross-governmental teams supported by a board of experts from economy, science and civil society.

Future of the Countryside: Digitalisation Opportunities for Rural Areas

The Federal Ministry of Food and Agriculture established the programme [Smart.Rural.Areas](#) (*Smarte.Land.Regionen*) to support rural counties in developing a digital strategy as well as in the creation and implementation of digital solutions for challenges in rural areas. The developed applications will be collected on a marketplace, which is intended to remain operational even after the project has concluded. The objective of the initiative is to enhance the provision of services for the public for rural areas. The funding phase has started in 2021, and will close at the end of 2024.

Digital Academy for the Public Administration

The German federal administration faces four central challenges in order to remain resilient and capable in the long term. These are: (i) demographic change; (ii) increasing employer competition on the labour market; (iii) technological change, and (iv) transformation in the direction of sustainability und climate neutrality. To address these challenges, the Federal Academy of Public Administration (BAköV) established, inter alia, its new Digital Academy. The [Digital Academy](#) supports the federal administration with training courses to master the digital transformation. The Digital Academy is an important lever for the German Digital Strategy. The Academy is designed to connect the federal administration internally and train technical skills, methods and cultural competencies through a strong network. The Academy follows the hybrid learning approach by including both a physical campus and an online platform that offers courses, webinars, lectures, training and coaching. These mixed methods are intended to maximise accessibility and scalability. With the product [#digitaljourney](#) launched at the end of 2022, the Digital Academy empowers top managers in the administration to understand, experience and help shape digital cultural change. The Digital Academy fosters an innovative discourse and networking between top managers across silos on digital mindset, modern leadership and collaboration. At the end of 2023 the new format [#Transformationagencies](#) for digitalisation followed on from the [#digitaljourney](#), training multipliers to drive the transformation in public authorities. In order to successfully drive forward modernisation in the federal administration, the digital empowerment and networking of multipliers in public authorities is essential. Furthermore, the Digital Academy offers a lot of trainings and networking activities regarding information technology, cyber security, data protection, project management, digital accessibility and digital skills in sustainability like Green-IT. Within these issues the academy established modern training paths for different levels of skill requirements and different target groups. The academy offers a comprehensive digital training for the federal administration.



5. Trust and Cybersecurity

eID and trust services



[Personalausweisportal: the eID Card Website](#)

The Federal Ministry of the Interior and Community (BMI) publishes on a dedicated [website](#) information regarding the operation of the German eID Card. There is information available for citizens, businesses and local administrations. In addition, the website contains news about new possible utilisations of the eID and a brochure with background information about it. Since January 2021, the German federal identification and authentication component has met the requirements of the European Regulation on Electronic Identification and Trust Services for Electronic Transactions (eIDAS Regulation). EU citizens now have the possibility to log in with an eIDAS-notified means of identification via the federal user account in order to be able to use online administrative services of the Federal Republic of Germany.



[Showcase Programme 'Secure Digital Identities'](#)

Within the framework of the innovation competition 'Showcase Secure Digital Identities', the Federal Ministry for Economic Affairs and Climate Action (BMWK) promotes innovative approaches for secure, interoperable and easy-to-use eID ecosystems, which are to be tested with businesses, local administrations and citizens in several German model regions. The four selected projects will address more than 100 use cases from various sectors and application areas.



[Draft Legislation Introducing a Card for EU Citizens and Members of the European Economic Area](#)

The legislation introducing a card for EU citizens and members of the European Economic Area (*Gesetz zur Einführung einer Karte für Unionsbürger und Angehörige des Europäischen Wirtschaftsraums mit Funktion zum elektronischen Identitätsnachweis sowie zur Änderung des Personalausweisgesetzes und weiterer Vorschriften*) was adopted by the German parliament in June 2019. It introduced the electronic ID card for a larger group of people. The card is not mandatory and is available upon request for citizens of the European Union and the European Economic Area. The eID card is not a classic ID since it does not contain any photograph and has an electronic chip that contains the most important biographical personal information (more specifically, name, date and place of birth, address).



[eIDAS Implementation Act](#)

Since 1 July 2016, the [eIDAS Regulation](#) has been the single legal framework for electronic trust services across the EU. In Germany, the [eIDAS Implementation Act](#) entered into force on 29 July 2017. The core of the eIDAS Implementation Act was the Trust Services Act (VDG). It regulates the national requirements for the effective implementation of the eIDAS Regulation. On 15 February 2019, the [Trust Services Ordinance](#) (VDV) came into force, providing the final specifications on the requirements for trust services and trust service providers, such as accessibility and financial security.



[Electronic Identification Promotion Act](#)

The [Electronic Identification Promotion Act](#) came into force on 15 July 2017. It aimed to promote the use and dissemination of online identification through the German eID card, making it easier and more secure. The eID card has an electronic proof of identity function and was introduced in 2010. This feature enables citizens, government agencies and businesses to reliably identify themselves on the internet. However, the use of the eID function lagged behind the expectations. In order to address this situation, since 15 July 2017, each new identity card is issued with a ready-to-use electronic identification function. With the Electronic Identification Promotion Act, several other additional measures were taken in order to promote the use of the national eID function. The responsible data protection authorities monitor compliance with data protection.



Electronic Identity Card

Germany's next generation **Identity Card (eID)** was launched on 1 November 2010. The new eID card in credit card format replaced the existing national identity card and offers more functions than the current conventional ID. By utilising a microchip, the card provides an online authentication function, applicable to both eGovernment and eBusiness transactions. Due to the assignment of authorisation certificates and mutual authentication, cardholders can be confident that whoever requests their data is also authorised to obtain it. The secure eID card provides further protection against identity theft and offers new, user-friendly ways to guarantee valid client data for service providers and to protect young people by age verification. Furthermore, the eID card can be used as identification and authentication means for remote signatures. To ensure that national ID cards continue to serve as secure travel documents, eID cards contain biometric identifiers stored on a chip, which satisfy the requirements for official identity checks. All eID cards include a digital biometric photo; furthermore all ID cards, issued since 2 August 2021, include two fingerprints, whereas before cardholders could choose to include two fingerprints on the chip. Both identifiers provide an efficient way to increase security at border controls.

In February 2017, Germany was the first Member State to trigger the **pre-notification procedure** to make sure that EU citizens and businesses could use their trusted electronic identification means (eID), as provided under eIDAS, to digitally authenticate themselves in order to use online services across the European Union. eID cards shall guarantee a high level of security and protection of personal data. The notification procedure for the German eID was completed in 2017 at a high level of assurance.



Electronic Passport (ePass)

Germany was among the first countries to introduce the **Electronic Passport (ePass)**, in November 2005. It was developed to comply with **Council Regulations (EC) No 2252/2004, last modified with Regulation (EC) No 444/2009**, and equipped with a microchip, holding the owner's data, such as name, surname, date of birth and nationality. Beyond traditionally relevant data, a digital facial image of the owner was also stored on the microchip. In June 2007, the revision of the **Passport Act**, as approved by the federal council, laid down the legal foundation for second generation electronic passports issued since November 2007. In addition to the digital facial image, the new passports featured two fingerprints in digital format. Fingerprints were to be stored exclusively on the passport microchip, and never stored locally on issuance authorities' systems, or in any other central database.

In March 2017, Germany issued a new generation of passports. For the new passport, traditional high-quality security features were complemented by additional, innovative features combining state-of-the-art materials with cutting-edge technology. Additional, unique security features will be added from May 2024.

Cybersecurity



De-Mail

De-Mail is a technology that takes conventional e-mail one step further as it allows citizens, businesses and administrations to exchange electronic messages in a secure manner. Compared to conventional e-mails, the delivery of De-Mails and the identity of senders and recipients can be proven. It is not possible to read or manipulate the contents of a De-Mail on its journey across the internet. One important aim is to make De-Mail confidential, reliable and binding through basic security functions that are easy to use and do not require additional installations for the end-user. The sender and recipient of a De-Mail can be clearly identified. Send and delivery certificates can be easily generated.

De-Mails are encrypted during transport and can neither be intercepted nor manipulated. Spam and phishing are effectively prevented because the De-Mail sender can be clearly identified by secure initial identification and users are able to log on with two-factor authentication using the new German eID card or a mobile phone-based method (mobile TAN).

The legal requirements for registration as De-Mail provider are contained in the Act on De-Mail services and amendments to other legislation, which entered into force on 3 May 2011.





Cybersecurity Strategy for Germany 2021-2026

On 8 September 2021, the current Cybersecurity Strategy for Germany was adopted by the federal government. It is valid for five years. The strategy from 2021 is a big update on the previous strategy. For example the strategy includes guidelines that run through the entire strategy. One of the guidelines states that cyber security has to be a joint task of State, the economy, science and civil society; another one affirms that strengthening the digital sovereignty of State, the economy, science and civil society is essential.

The strategy forms a cross-departmental strategic framework for the activities of the federal government about cybersecurity.



Protection of Personal Data

Due to the EU's reform of its data protection framework in 2016 – comprising the General Data Protection Regulation ([Regulation \(EU\) 2016/679](#)), replacing Directive 95/46/EC, and the Law Enforcement Directive (Directive (EU) 2016/680- LED) – Germany revised its data protection laws at federal and *Länder* level.





6. Innovative technologies

Artificial Intelligence (AI)

AI Strategy

The **AI Strategy** (*Strategie Künstliche Intelligenz der Bundesregierung*), adopted in November 2018, was put forward by the Federal Ministry for Education and Research, the Federal Ministry of Economic Affairs and Climate Action as well as the Federal Ministry of Labour and Social Affairs. With this AI strategy, the federal government established the framework for the holistic development and application of AI in Germany.

Distributed Ledger Technologies

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

Big data

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

Cloud & edge computing

Germany's Government Cloud Strategy – the Federal Approach (*Deutsche VerwaltungscLOUD Strategie*)

Germany's Government Cloud Strategy is one of the measures to strengthen the digital sovereignty of the German public administration. It was adopted by the IT Planning Council in October 2020 and is intended to introduce common standards and open interfaces for public administration cloud solutions as a means of establishing an interoperable and modular federal cloud infrastructure across the board.

The primary goal of Germany's government cloud strategy is to provide the option of using applications (software solutions) on a multi-cloud and reciprocal basis; another goal is to reduce critical vendor dependencies by establishing standardised, modular IT architectures. After building a minimum viable product (MVP) of Germany's Government Cloud, the implementation project has already started in 2023.

Internet-of-Things (IoT)

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

Quantum Computing

The Federal Government's Quantum Technologies Conceptual Framework

The federal government's Quantum Technologies Conceptual Framework Programme ("Handlungskonzept Quantentechnologien") was adopted on 26 April 2023. It aims at moving Germany and Europe into a leading international position in quantum technologies through targeted, long-term support and then to further consolidate this position. One primary goal of the programme is to make quantum technologies useful for the economy, society and governmental institutions. In this context, a plan is being devised to investigate the impact and benefits of quantum technologies in public administration - especially with regard to communication security - and implement appropriate measures.



Gigabit and wireless high-speed networks



Gigabit Strategy

The federal government's goal is to achieve nationwide coverage with fibre optic connections (fibre-to-the-home, FttH) and the latest mobile communications standard by 2030. To this end, the Federal Government adopted a **Gigabit Strategy**, containing more than 100 measures to accelerate the further expansion of digital infrastructures. For example, Germany has implemented:

- The potential analysis illustrating the potential for private fibre rollout for each municipality. This new tool significantly improves the basis for decision-making of private investors and municipalities;
- The standardised use of trenching, milling and ploughing methods will further accelerate the roll-out of gigabit infrastructure; and
- The gigabit register (see 5.10.7) provides detailed information on the expansion status.

To further advance the expansion of digital infrastructures, Germany supplements the private roll-out with optimised funding where necessary, in particular in rural areas.

In addition, the Federal Network Agency provides regulatory support for the market-driven expansion process (e.g. the development of viable open access approaches in a multi-carrier market) on the basis of the work of the 'Gigabit Forum' it has set up. It also ensures that the switch from copper to fibre networks is as competitive and consumer friendly as possible. Corresponding pilot projects have been started by various network operators.



Revised Telecommunications Act

The revised **Telecommunications Act (TKG)** entered into force in December 2021. It entails several provisions which are designed to speed up the roll out of high-speed broadband networks. Among other things, provisions on the privileged treatment of minor construction measures, the completeness of applications for the rights of way-based use of roads and waterways, as well as a provision on a greater streamlining of permit-granting procedures have been included in the act.



Gigabit Register

In 2022 Bundesnetzagentur published the Gigabit Register (*Gigabit-Grundbuch*) as the central information medium for public and private actors in relations to digital infrastructure roll-out. Among the six information platforms, the **Broadband Atlas** (*Breitbandatlas*) publishes information on broadband coverage in Germany. The Broadband Atlas is updated regularly and is available free of charge to all interested citizens. Interactive maps show which bandwidth and technologies are available for data transmission in 100 x 100-meter squares. Furthermore, geo-referenced information on funding areas are published, including information concerning the status of the relevant broadband funding scheme. Data transmission of publicly available information is possible. The Broadband Atlas is available [here](#).

GovTech



Start-up Federal Strategy

The **Startup strategy** of the federal government, adopted in 2022, aims to improve the start-up ecosystem in Germany and Europe. It includes the GovTech Campus, founded in 2021 and designed to promote cooperation between public administrations, science and business as well as civil society.

7. Digital Public Administration Governance



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

National

Federal Ministry of the Interior and Community

The responsibility for Germany's eGovernment policy lies with the **Federal Ministry of the Interior and Community (BMI)**. It is also the main body coordinating the combined implementation efforts of all federal ministries and agencies, in order to provide a modern IT infrastructure at national level. It does not coordinate the IT implementation at federal State or community level.

Federal Government Commissioner for Information Technology

The Office of the **Federal Government Commissioner for Information Technology** was established on 1 January 2008, in line with the guidelines of the Federal IT-Steering Strategy. In accordance with the Cabinet's decision of 5 December 2007, the Commissioner is responsible for the following activities:

- Elaboration of the federal general IT strategy, eGovernment and IT security strategy;
- Control the provision of the Federal IT security management;
- Development of the federal IT architecture, standards and methods; and
- Control the provision of central IT infrastructure of the federal government.

Apart from establishing this Office, all government departments have appointed a Chief Information Officer (CIO). The CIOs of all government departments form the CIO Board, which is the central decision-making body for IT-related laws and regulations in the federal public administration at the Ministry level. The Commissioner chairs the CIO Board and is the federal representative in the IT Planning Council, which is responsible for steering and coordinating cross-disciplinary eGovernment projects involving both the Federation and the federal States.

IT Council

The IT Council is chaired by the **Federal Government Commissioner for Information Technology** and the Head of the Federal Chancellery. The IT Council is the central strategic body for overarching digitalisation issues. Its members are responsible for administrative digitalisation and IT policies in all federal Ministries.

The main task of the IT Council is the strategic management of IT and administrative digitalisation. If necessary, the IT Council acts as an escalation authority.

Directorate-General for Digital Society: Information Technology

The **Directorate-General for Digital Society and Information Technology (DG)** deals with the socio-political questions of the digital revolution. This includes responsibility for the Berlin Declaration on Digital Society and value-based Digital Government.

The **Federal Academy of Public Administration (BAköV)** is also part of Directorate-General DG. BAKöV offers training courses tailored to staff needs so that federal employees can maintain and expand their professional knowledge and (digital) skills.

Directorate-General for Digital Administration: Management of the Online Access Act

Since June 2020, the competence for the digital transformation of Germany's administration is pooled in a separate Directorate-General for the **Digital Administration and Management of the Online Access Act (DV)** within the Federal Ministry of the Interior and Community. The Directorate-General DV is responsible for required legal changes, digital identities, digital infrastructure and online services as well as modernisation of the registers. Thus, it shortens decision-making channels and facilitates coordination. It is also responsible for administrative organisation and modernisation.



OZG-Kommunal

Initialised by the representatives of German federal administrative districts and municipalities, *OZG-Kommunal* should support local authorities during the implementation of the Online Access Act. The website *OZG-Kommunal.de* aims at promoting the exchange of information and networking among eGovernment experts and across different political levels.

Coordination Office for IT Standards

The **Coordination Office for IT Standards** (*Koordinierungsstelle für IT-Standards* - KoSIT) is tasked with the development and operation of IT standards for data exchange in public administration. KoSIT supports the IT Planning Council and FITKO in its task of elaborating independent and interdisciplinary IT interoperability and IT security standards, as well as managing eGovernment projects across federal and State borders.

German Federal Office of Administration

The **German Federal Office of Administration** (*Bundesverwaltungsamt*, BVA) is Germany's central public service agency. It performs more than 100 different tasks for all federal Ministries. These include the development of some of the country's eGovernment infrastructure components, such as the content management system **Government Site Builder**. The German Federal Office of Administration uses the Federal Portal to offer its government services online.

Individual Government Ministries and Agencies

Government Ministries and agencies are responsible for the implementation of their departmental ICT projects. The Federal Ministry of the Interior and Community coordinates the combined implementation efforts of all federal Ministries and agencies.

Federal Office for Information Security

The **Federal Office for Information Security** (*Bundesamt für Sicherheit in der Informationstechnik*, BSI) is the central IT security service provider for the German government. One of its key tasks is to provide support to federal authorities on IT security.

Agency for Innovation in Cybersecurity

To ensure digital sovereignty, an **Agency for Innovation in Cybersecurity** (*Agentur für Innovation in der Cybersicherheit GmbH*) was founded. The agency's purpose is to award contracts for ambitious research projects with high innovation potential in the field of cybersecurity and related key technologies to meet the needs of the State in the area of internal and external security. In particular, the agency will support innovative projects which are characterised by radical technological novelty, and which can therefore have a market-changing effect.

Federal Agency for Disruptive Innovation

The **Federal Agency for Disruptive Innovation** (*Agentur für Sprunginnovationen*) was founded in Leipzig on 16 December 2019. The founding was overseen by a commission made up of members from science, business and politics on behalf of the Federal Ministry of Education and Research (BMBF) and the Federal Ministry for Economic Affairs and Climate Action (BMWK).

The agency is intended to be a flexible and rapid State-funding instrument. With it, the BMBF and the BMWK want to support and accelerate the breakthrough of highly innovative ideas into the market. The agency's primary goal is to discover and further develop research ideas that have the potential to become leap innovations. With a dedicated law in 2023 initiated by the BMBF and the BMWK, the flexibility and financial freedom of SPRIND have been increased.

Subnational (Federal, Regional and Local)

German Federal States

All of the federal States (*Länder*) are currently setting their own eGovernment strategies. As a result of these strategies, nearly all local authorities have an Internet presence and over 80% of local authorities are already providing relevant online services. Furthermore, a large number of local authorities in Germany offer central access to their online services via highly efficient portals. The federal Länder and local authorities are working in parallel to further expand their own eGovernment services.



Conference of Minister-Presidents and Conferences of Specialised Ministers

The Conference of Minister-Presidents and the Conferences of Specialised Ministers are bodies in which the federal States cooperate in their own spheres of responsibility. The federal States use these conferences to agree on proceedings in matters of joint interest, develop their position in relation to the federal government and also seek mutually agreed solutions with the federal government.

IT Planning Council

The **IT Planning Council** (*IT-Planungsrat*) is an important body which brings together the Federal Government Commissioner for Information Technology (the responsible State Secretary at federal level), the State Secretaries responsible for IT (CIOs at State level), the Federal Commissioner for Data Protection and Freedom of Information and representatives of the national associations of local authorities. The IT Planning Council is responsible for steering and coordinating cross-disciplinary eGovernment projects involving both the Federation and the States (Länder). According to Article 91c of the German Basic Law, the Council is tasked with coordinating the cooperation between the Federation (Bund) and the States in the field of IT; decisions on IT interoperability and security standards; the steering of eGovernment projects; and the planning and implementation of the core network infrastructure according to the Law on the connection of the IT networks of the Federation and the States.

Federal IT Cooperation

In carrying out its tasks in accordance with Article 91c of the Basic Law and Section 1 (1) of the State Treaty on IT, the IT Planning Council is assisted operationally by the **FITKO** (*Föderale IT-Kooperationen*). This public institution, which is jointly sponsored by the 16 federal States and the federal government, consolidates the existing organisational structures as well as the personnel and financial resources of the IT Planning Council. The FITKO's tasks also include developing and implementing a federal digital strategy and a federal IT architecture, promoting joint IT solutions, administering the budget for digital technology and creating a network to connect all relevant stakeholders.

Individual Federal States and Municipalities

Individual federal States and municipalities are responsible for the implementation of their own eGovernment projects. They are supported by regional IT companies. These companies are often partly owned by the federal State or collectively by a union of municipalities.

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

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

Life and Travel

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

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

Doing Business

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

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

The Digital Public Administration Factsheets

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

The factsheets are published on the Joinup platform, which is a joint initiative by the Directorate General for Digital Services (DG DIGIT) and the Directorate General for Communications Networks, Content & Technology (DG CONNECT). This factsheet received valuable contribution from the Federal Government of the Federal Republic of Germany.



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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