Digital Public Administration factsheet 2020

Luxembourg

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1 | Country Profile

1 Country Profile

1.1 Basic data

Population: 613 894 inhabitants (2019)
GDP at market prices: 63 516.3 million Euros (2019)
GDP per inhabitant in PPS (Purchasing Power Standard EU 27=100): 263 (2018)
GDP growth rate: 2.3% (2019)
Inflation rate: 1.6% (2019)
Unemployment rate: 5.6% (2019)
General government gross debt (Percentage of GDP): 22.1% (2019)
General government deficit/surplus (Percentage of GDP): 2.2% (2019)
Area: 2 600 km²
Capital city: Luxembourg
**Official EU languages**: French, German
Currency: Euro

Source: Eurostat (last update 25 May 2020)

1.2 Digital Public Administration Indicators

The following graphs present data for the latest Generic Information Society Indicators for Luxembourg compared to the EU average. Statistical indicators in this section reflect those of *Eurostat* at the time the Edition is being prepared.

Percentage of individuals using the Internet for interacting with public authorities in Luxembourg
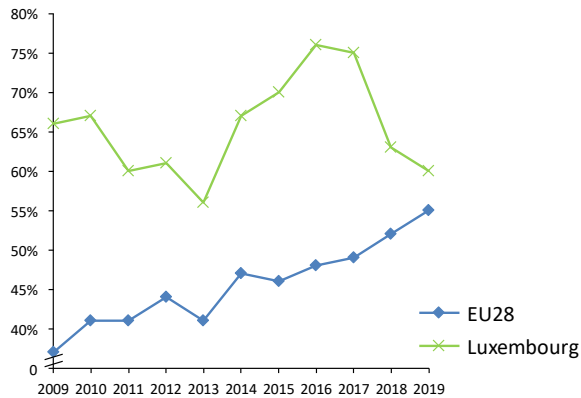
Source: Eurostat Information Society Indicators

Percentage of individuals using the Internet for obtaining information from public authorities in Luxembourg
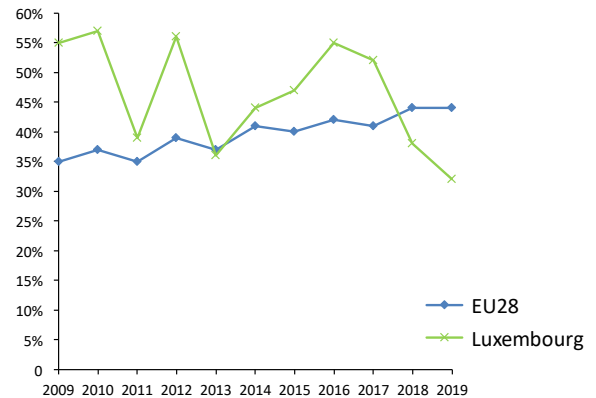
Source: Eurostat Information Society Indicators

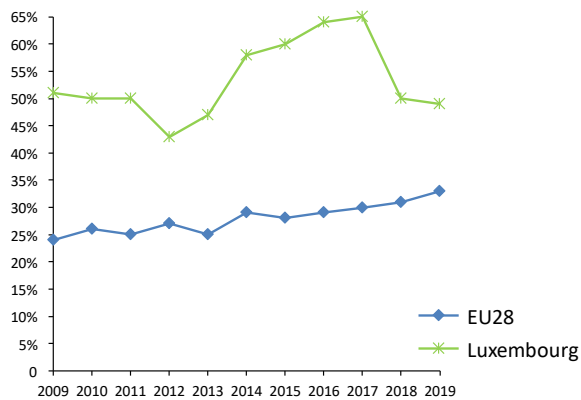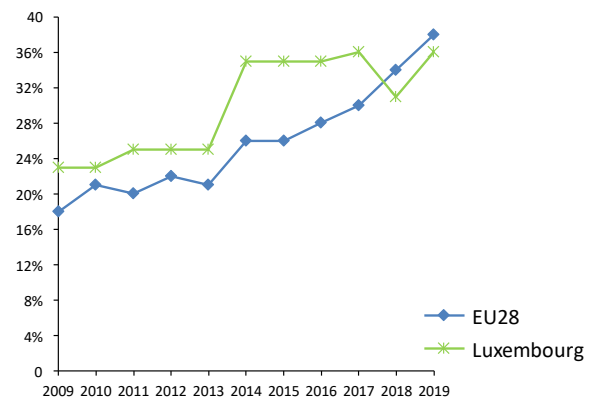Percentage of individuals using the Internet for downloading official forms from public authorities in Luxembourg

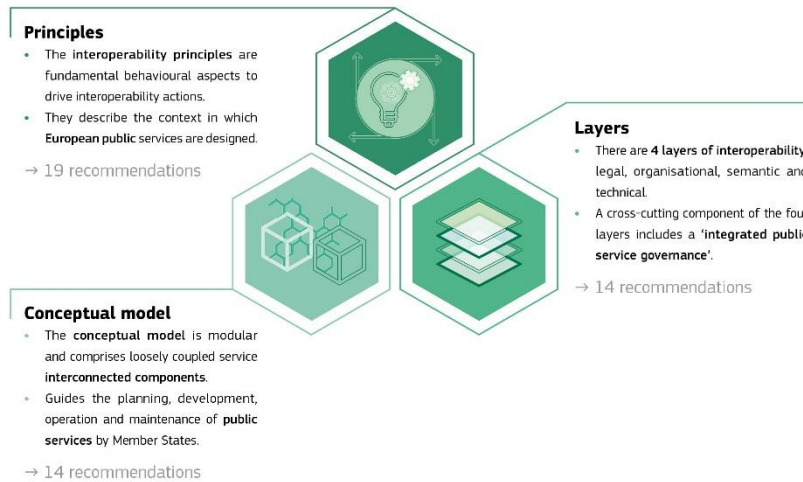Source: Eurostat Information Society Indicators

Percentage of individuals using the Internet for sending filled forms to public authorities in Luxembourg

Source: Eurostat Information Society Indicators

1.3 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. The picture below represents the three pillars of the EIF around which the EIF Monitoring Mechanism was built to evaluate the level of implementation of the EIF within the Member States. It is based on a set of 68 Key Performance Indicators (KPIs) clustered within the three main pillars of the EIF (Principles, Layers and Conceptual model), outlined below.

Principles
- The **interoperability principles** are fundamental behavioural aspects to drive interoperability actions.
- They describe the context in which **European public** services are designed.

→ 19 recommendations

Layers
- There are **4 layers of interoperability**: legal, organisational, semantic and technical.
- A cross-cutting component of the four layers includes a '**integrated public service governance**'.

→ 14 recommendations

Conceptual model
- The **conceptual model** is modular and comprises loosely coupled service **interconnected components**.
- Guides the planning, development, operation and maintenance of **public services** by Member States.

→ 14 recommendations

Source: European Interoperability Framework Monitoring Mechanism 2019

For each of the three pillars, a different scoreboard was created to breakdown the results into their main components (i.e. the 12 principles of interoperability, the interoperability layers and the components of the conceptual model). The components are evaluated on a scale from one to four, where one means a lower level of implementation, while 4 means a higher level of implementation. The graph below shows the result of the first EIF Monitoring Mechanism data collection for Luxembourg in 2019. It is possible to notice an overall good performance of the country, with particularly positive results within the second scoreboard (Interoperability layers). In between the first and third scoreboards there are only few areas scoring below higher performance.
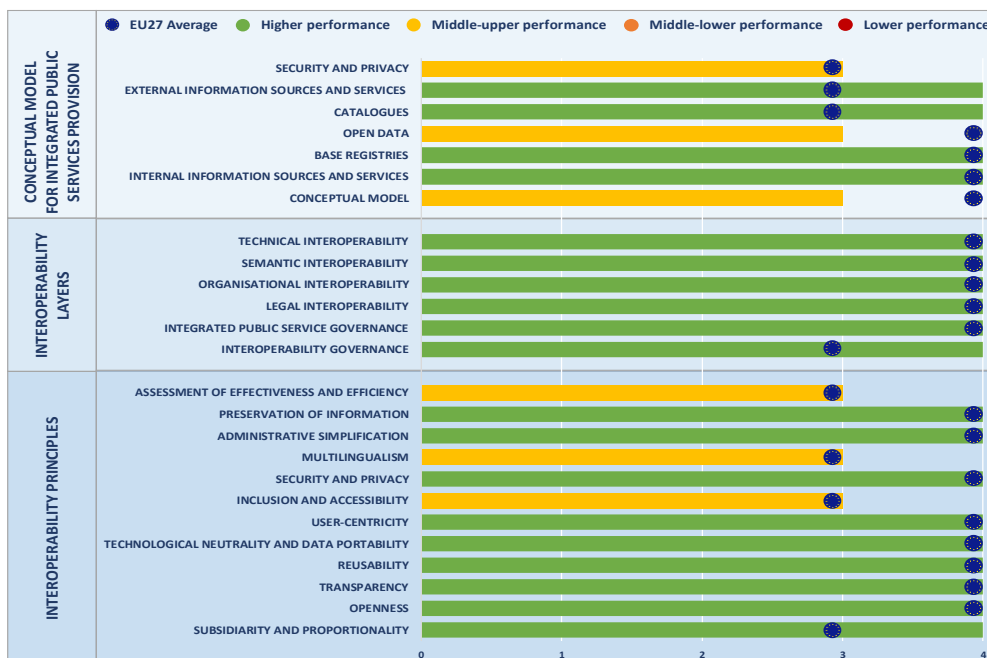
Source: European Interoperability Framework Monitoring Mechanism 2019

1.4 eGovernment State of Play

The graph below is the result of the latest eGovernment Benchmark report, which evaluates the priority areas of the eGovernment Action Plan 2016-2020, based on specific indicators. These indicators are clustered within four main top-level benchmarks:

- **User Centricity** – indicates the extent to which a service is provided online, its mobile friendliness and usability of the service (in terms of available online support and feedback mechanisms).
- **Transparency** – indicates the extent to which governments are transparent about (i) the process of service delivery, (ii) the responsibilities and performance of public organisations and (iii) the personal data processed in public services.
- **Cross-Border Mobility** – indicates the extent to which users of public services from another European country can use the online services.

Key Enablers – indicates the extent to which technical and organisational pre-conditions for eGovernment service provisions are in place, such as electronic identification and authentic sources.

The 2020 report presents the biennial results, achieved over the past two years of measurement of all eight life events used to measure the above-mentioned top-level benchmarks. More specifically, these life events are divided between six 'Citizen life events' (*Losing and finding a job*, *Studying*, *Family life*, all measured in 2012, 2014, 2016 and 2018, and *Starting a small claim procedure*, *Moving*, *Owning a car*, all measured in 2013, 2015, 2017 and 2019) and two 'Business life events' (*Business start-up*, measured in 2012, 2014, 2016 and 2018, and *Regular business operations*, measured in 2013, 2015, 2017 and 2019).

eGovernment performance across policy priorities	EU27+ average [%, 2018 2019]	Country average [%, 2018 2019] (growth since 2016 2017)
USER CENTRICITY		
Overall scores	86.5	92 (+11)
Online availability	86.8	90 (+8)
Usability	90.5	95 (+7)
Mobile friendliness	76.3	97 (+32)
TRANSPARENCY		
Overall scores	65.6	73 (+23)
Service delivery	57.8	60 (+22)
Public organisations	74.4	65 (+2)
Personal data	64.8	94 (+45)
CITIZEN CROSS BORDER MOBILITY		
Overall scores	50.8	75 (+24)
Online availability	62.3	84 (+11)
Usability	65.0	83 (+25)
eID	9.3	38 (+38)
eDocuments	24.3	56 (+56)
BUSINESS CROSS BORDER MOBILITY		
Overall scores	67.0	91 (+26)
Online availability	75.5	98 (+22)
Usability	75.5	84 (-16)
eID	36.0	78 (+72)
eDocuments	51.0	75 (+75)
KEY ENABLERS		
Overall scores	61.4	75 (+24)
eID	57.4	61 (+18)
eDocuments	68.4	71 (+30)
Authentic sources	56.9	67 (+17)
Digital post	67.3	100 (+31)

Source: eGovernment Benchmark Report 2020 Country Factsheets

2 | Digital Public Administration Highlights

2 Digital Public Administration Highlights

Digital Public Administration Political Communications

The new Ministry of Digitalisation, instituted following the 2018 legislative elections, focuses on the government's will to place digital transformation at the heart of its action. Digitalisation is seen as an element of central importance for the development of Luxembourg by the new government.

Mr Marc Hansen, Minister Delegate for Digitalisation, outlined to the public on 24 June 2019 the main lines of action of the new Ministry of Digitalisation and presented the new functionalities on the interactive platform Guichet.lu.

Given the importance of the subject, Mr Hansen intends to involve all stakeholders and strong forces in the country. This is why a consultation debate on the digital transformation of Luxembourg was held on 3 July 2019 in Luxembourg's Chamber of Deputies.

A summary document prepared by the Ministry of Digitalisation and submitted to the members of Parliament is intended to enable them to deal with the debate in the best possible way.

On 6 December 2019, the Minister Delegate for Digitalisation, was also the guest of the Benelux Parliamentary Assembly, sitting in plenary session at the Luxembourg Chamber of Deputies. Its intervention focused on the policies put in place by the Grand Duchy of Luxembourg with regard to digitalisation.

The Luxembourg National Interoperability Framework (NIF) was adopted on 1 March 2019. It defines the principles, the objectives, the governance and recommendations in the field of interoperability. The Ministry for Digitalisation has set up a working group aiming to install an effective Governance Model.

Digital Public Administration Legislation

The law on electronic invoicing in public procurement and concession contracts passed into law on 26 March 2019.

The law on the accessibility of the websites and mobile applications of public sector bodies passed into law on 16 May 2019.

Digital Public Administration Governance

In view of the importance of the digitalisation process for all citizens and businesses, the Minister Delegate for Digitalisation is in the process of setting up in 2020 a Digital Transformation Committee composed of representatives of ministries, but also of active members of the civil society or those with a specific interest in the digitalisation process of Luxembourg.

This Committee is intended to play an active part in the development of actions and initiatives to support the objectives set out in the national digital Luxembourg strategy.

Digital Public Administration Infrastructure

The established one-stop eGovernment platform MyGuichet.lu has been expanded with further useful eServices for citizens and businesses.

3 | Digital Public Administration Political Communications

3 Digital Public Administration Political Communications

3.1 Specific political communications on digital public administration

Einfach Lëtzebuerg

In line with the administrative simplification approach of recent years, the government has decided to intensify its efforts to improve public services, with the goal of meeting the expectations of users, citizens and companies. *Einfach Lëtzebuerg* is a programme, adopted in 2016, dedicated to the modernisation of public administration. It aims to:
- actively involve citizens in the discussion process;
- reduce administrative and regulatory burdens;
- simplify and improve the design and quality of legislation and processes.

To achieve these objectives, the programme is structured around the following elements:
- a selective and strategic review of existing legislation;
- pragmatic and effective quality controls;
- more transparency and consultation;
- the strategic and intelligent digitisation of procedures;
- alignment with the principles pursued at the international level, especially the EU level.

The platform *Vos idées*, created in 2014, allows the government to collect public proposals and suggestions.

Digital Lëtzebuerg Strategy

Digital Lëtzebuerg considers that IT has become both a vital sector of the economy and an important influence factor in all socio-economic sectors, which makes it a vital component of the government's policy of rationalisation, efficiency, modernisation and 'doing more with less'. Therefore, the government decided in October 2014 to reinforce and consolidate Luxembourg's position as an IT and high-tech centre of excellence and as an open and connected society, starting with a coherent and generalised strategic framework. This strategy covers eGovernment services but goes beyond that narrow scope. It establishes solid financial foundations for innovation, providing for the teaching and training of new competences, and helping to create new markets (big data, smart grids, health IT, financial technology, virtual currencies) for Luxembourg's rapidly growing IT sector. To maximise its impact, the strategy is applied horizontally and is a key component of every political decision.

The Digital Luxembourg Strategy is implemented by various ministries for the domains that fall under their responsibility and is coordinated by the Ministry for Digitalisation. The strategy is aligned with the United Nations Sustainable Development Goals (SDGs) framework, which is part of the general political goals in Luxembourg.

Part of the strategy implied the adoption by the Government Council in September 2015 of three strategic principles in the context of digital government: digital by default, once only and transparency.

Strategic vision for artificial intelligence and data-driven innovation strategy

On 24 May 2019, Prime Minister Xavier Bettel and Deputy Prime Minister Etienne Schneider presented the political guidelines for both artificial intelligence and for the ongoing digitisation of priority economic sectors, in order to support the emergence of a sustainable and trusted national economy.

Developing a strategic vision for AI in Luxembourg is a national priority. The Strategic Vision for AI is not a set strategy document, but rather a first version of a political vision, which will be regularly updated and redefined as necessary. The document has three ambitions:

1. becoming one of the most digitally advanced societies in the world, in particular within the European Union.
2. establishing Luxembourg as a sustainable, data-driven economy.
3. supporting the development of AI with a human-centred approach.

The Ministry of the Economy's data-driven innovation strategy for Luxembourg is based on the vision of a data-driven economy that is developing and enabling the use of general-purpose digital technologies such as Artificial Intelligence (AI) coupled with Internet of Things (IoT) smart components, systems and networks, HPC and big data analytics to drive future growth. Luxembourg's data-driven innovation strategy is built on the following three key pillars:

1. boosting and assuring digital infrastructure capacity.
2. experimenting, innovating and taking up new advanced digital technologies in the industrial sector.
3. ensuring a strong regulatory, intellectual property, investment and financing environment.

3.2 Interoperability

Luxembourg National Interoperability Framework

The Luxembourg National Interoperability Framework (NIF) was adopted on 1 March 2019 . It defines principles, objectives, governance and recommendations in the field of interoperability. The NIF gives specific guidance on how to set up interoperable digital public services. This framework, based on the European Interoperability Framework (EIF), offers public administrations concrete recommendations on how to improve interoperability in the field of digital government and ICT in a sustainable and systematic way.

3.3 Key enablers

3.3.1 Access to public information

Guichet.lu One Stop Portal

The Guichet.lu One Stop Portal for online services (citizens/business companies) is structured in a coherent way and gives access via a common taxonomy to the public services and procedures. The once-only principle has been implemented in the My Guichet.lu platform of Guichet.lu. Directly accessible through Guichet.lu, the secured MyGuichet.lu platform, operated by the Government IT Centre (CTIE), allows people to see their personal data listed by authentic source, download official documents and carry out administrative procedures online through a personal and secured eID. Users can also reuse their data and update them themselves for some of the authentic sources. Furthermore, the myguichet.lu platform always offers a delivery notice and always tracks progress.

Guichet.lu is also systematically and regularly communicating on the new initiatives or services in the domain of digital government. This is done via the portal itself, which has a very high number of regular users, or via social media or other more traditional means.

A Helpdesk service responds to all users' questions by mail and telephone as well as physically at the Guichet.lu reception desk in Luxembourg City, which enables citizens and companies' representatives to be personally assisted in any administrative procedure they have to complete and to give their feedback in written or oral form.

For the first time since the creation of the Guichet Portal, more than 500 000 transactions have been performed by the Luxembourg administrations in 2019, which represents an increase of more than 25 % compared to the whole year 2018. A strategic focus of the newly created Ministry for Digitalisation is to further develop transparent and efficient eGovernment by providing user-friendly, innovative and accessible digital services for citizens and businesses. These 500 000 transactions reinforce the excellent results achieved by MyGuichet.lu, as emerges from a recent opinion poll commissioned by the Ministry on citizens' perception and expectations on digitalisation.

3.3.2 eID and Trust Services

No political communication has been reported to date.

3.3.3 Security aspects

Third National Cybersecurity Strategy

On 8 May 2018, the Prime Minister, the Minister of State and the High Commissioner for National Protection presented the guidelines for the 3rd national cybersecurity strategy for 2018-2020. It illustrated the government's response to the challenges and transformations that characterise a digital environment in constant change. The strategy focuses on the following three central guidelines:

- Guideline 1 — Strengthening public confidence in the digital environment (creating trust through digital skills).
  - Objective 1: sharing of knowledge between all actors.
  - Objective 2: dissemination of risk information.
  - Objective 3: raising awareness of all stakeholders.
  - Objective 4: responsible disclosure.
  - Objective 5: fight against cybercrime.
- Guideline 2 — Digital infrastructure protection (protection of the IT environment).
  - Objective 1: identification of critical and critical digital infrastructure.
  - Objective 2: security policies.
  - Objective 3: crisis management.
  - Objective 4: standardisation.
  - Objective 5: improvement of international cooperation.
  - Objective 6: cyber defence.
  - Objective 7: strengthening the resilience of the State's digital infrastructure.
- Guideline 3 — Promotion of the economy.
  - Objective 1: creation of new products and services.
  - Objective 2: pooling of security infrastructures.
  - Objective 3: requirements, benchmarks and supervisor.
  - Objective 4: creation of the Cybersecurity Competence Centre (C3).
  - Objective 5: risk management and informed governance.
  - Objective 6: training and training aids.
  - Objective 7: collaboration between Information Security Officers.
  - Objective 8: incident response collaboration between experts.
  - Objective 9: start-ups as a research priority.
  - Objective 10: code disassembly and vulnerabilities identification.

3.3.4 Interconnection of base registries

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

3.3.5 eProcurement

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

3.4 Domain-specific political communications

Digital (4) Education Strategy

On 20 May 2015, the Minister for Education, Children and Youth, presented the Digital Strategy for Education. This strategy had two key objectives:
1. to prepare young people for work in a complex and constantly changing environment (under the 'digital for education' umbrella);
2. to promote new learning strategies, software, and innovate educational projects (under the 'digital for education' umbrella).

One of the initiated projects was the introduction of free computing classes for young Luxembourgers through the launch of 'makerspaces' at secondary schools during the 2015/2016 school year. The makerspaces were open to the schools which hosted them, as well as to other schools, after-school clubs, youth clubs, parents and associations. There are currently more than 20 makerspaces. Another pilot scheme aims to introduce the use of tablet devices in five secondary schools for students' daily activities.

Other projects under the Digital Education Strategy include: training teaching staff and offering access to digital teaching resources as part of eduSphere; the introduction of a maths teaching software (for cycle 4) to be used at home and at school as part of MathemaTIC; and Digital Classroom Lëtzebuerg, providing comprehensive computer literacy training and enabling students to better manage their lives through digital tools. Further projects include makerspaces in schools, FutureHub labels for schools committed to new technologies and an online teaching/learning platform.

Introduction of coding in the basic educational programmes

The Minister for Education, Children and Youth introduced coding in all mathematics classes throughout cycle 4 of the basic educational programme, starting in January 2020. The development of digital skills, particularly coding and computational thinking, is now seen as a fundamental precondition for schools wishing to effectively prepare young people for the careers of tomorrow, which will continuously require more and more digital skills. Thus, digital, computational and coding skills will systematically be taught throughout the primary and secondary education programmes in public schools.

Policy of Digital Inclusion

The national policy on eParticipation and/or inclusion, as well as a web strategy insisting on web accessibility have existed for more than 15 years. The law transposing EU Directive 2016/2102 of 26 October 2016 on the accessibility of the websites and mobile applications of public sector bodies was passed by Parliament on 7 May 2019 and was published in the Luxembourg Official Journal on the 28 May 2019. The UN Convention on the rights of persons with disabilities (CRPD) of 13 December 2006 and the optional protocol were ratified by Luxembourg on 26 September 2011.

eHealth Strategy

The government of Luxembourg already approved in 2016 a national eHealth plan which was developed by a working group of stakeholders in the healthcare sector.

Today, the government continues to promote a national health strategy to facilitate the exchange and secure electronic sharing of health data between health professionals and patients, and also to enable better monitoring and better coordination of the patients' healthcare. In pursuit of this objective, the National Agency for Shared Health Information (eSanté) has developed and implemented the National eHealth Platform, which includes basic urban development components pooled in the different cases of use and various users of health services.

In June 2019, Luxembourg launched the EU's first cross-border eHealth service. This new feature of the eSanté portal will ensure a smooth and fast electronic exchange of patient summaries between various countries of the European Union. More concretely, it will ensure that any European patient visiting a doctor during their stay in Luxembourg, will be able to benefit from this service and request that their patient summary be shared with their doctor in another European country.

3.5 Emerging technologies

EuroHPC

In an effort to strengthen the digital competitiveness of Luxembourg and Europe, the government signed a European High-Performance Computing (HPC) declaration. Known as EuroHPC, it promises collaboration in setting up an EU-wide HPC network initiated by Luxembourg.
In signing, Luxembourg, Italy, Spain, France, Germany, Portugal and the Netherlands are reinforcing the Europe 2020 Strategy by helping secure the computing capabilities needed for EU's competitiveness as a digital economy.
On 25 June 2018, the European Commission decided to establish the EuroHPC joint headquarters in Luxembourg, which will equip the EU with a pre-exascale & petascale infrastructure (1 015 calculation operations per second) by 2020 and develop the technologies and applications needed to reach the exascale level (1 018 calculation operations per second) by 2023.
Lastly, the University of Luxembourg is home to an HPC, and a EUR 10 million budget has been allocated for a new, faster one.

Artificial Intelligence (AI) Strategy & NVIDIA partnership

The government is currently preparing a comprehensive national strategy for artificial intelligence.
In March 2018, Digital Luxembourg organised an AI conference for all interested stakeholders.
On 30 January 2019, Luxembourg became the first European country to launch an AI partnership with NVIDIA, a global pioneer in AI technology and GPU computing. As part of this national agreement, a joint AI laboratory will be set up in Luxembourg. The nation's research community will have access to state-of-the-art NVIDIA hardware and software and the chance to work closely with the organisation's computer scientists.
On 24 May 2019, Prime Minister Xavier Bettel and Deputy Prime Minister Etienne Schneider presented the political guidelines for both artificial intelligence and the ongoing digitisation of priority economic sectors, in order to support the emergence of a sustainable and trusted national economy.

Blockchain

A White Paper of technical standardisation related to Blockchain technology was issued by the Luxembourg Ministry of Economics in 2018.
In addition, in December 2019, five leading actors from the technology ecosystem set up a "blockchain hub of excellence", in line with the strategic ambitions of Digital Luxembourg. Their goal is to create a landmark EU hub in Luxembourg for blockchain research, education and industry projects, as well as to develop industry facilities and competences that will foster the deployment of the latest blockchain and distributed ledger technologies (DLT).

Fibre-to-the-home (FTTH)

A fibre-to-the-home (FTTH) rollout quickly connected 60% of households. A 5G taskforce was established and a national 5G strategy was defined and launched on 12 September 2018.

5G strategy

The Department of Media, Telecommunications and Digital Policy of the Ministry of State is in charge of the 5G strategy, as well as its coordination and implementation in Luxembourg.

The 5G CroCo Project

POST Luxembourg, the country's largest provider of postal and telecommunications services, was selected by the European Commission as part of the 5G CroCo (5G Cross-Border Control project) European research project to provide 5G coverage of the Luxembourg portion of the motorway section linking Metz (France), Merzig (Germany) and the Grand Duchy. The aim is to perform life-size tests of 5G technology applied to the needs of autonomous and connected driving.

Upcoming strategies

The coalition agreement for the new Government was adopted on 11 December 2018, and it included a host of new policy initiatives. The Luxembourg government pledged to support start-ups or private sector companies active in emerging ICT technologies (AI, Blockchain, FinTech, Big data, etc.) in different ways, also financially, via the Digital Luxembourg strategy, via research funding programmes or via incentives for start-ups and businesses.

4 Digital Public Administration Legislation

4 Digital Public Administration Legislation

4.1 Specific legislation on digital public administration

No legislation has been adopted in this field to date.

4.2 Interoperability

No legislation has been adopted in this field to date.

4.3 Key enablers

4.3.1 Access to public information

Re-use of Public Sector Information (PSI)

The Law of 23 May 2016 on the re-use of Public Sector Information amended the law of 4 December 2007.

Electronic archiving

The law on electronic archiving was adopted on 25 July 2015 (law of 25 July 2015 relating to electronic archiving and amending: 1. Article 1334 of the Civil Code; 2. Article 16 of the Commercial Code; 3. the amended law of 5 April 1993 on the financial sector).

Access to information

The law relating to a transparent and open administration was adopted on 14 September 2018. The purpose of the new law was to define the framework for the implementation of a policy for opening citizens' administrative documents held by government departments, municipalities, local authorities and public institutions and placed under the supervision of the State or municipalities.

4.3.2 eID and Trust Services

eIDAS

The Council approved on 1 March 2019 a draft law revising the amended law of 14 August 2000 on electronic commerce, with the aim of bringing Luxembourgish legislation in line with Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market, known as eIDAS.
The eIDAS Regulation provided the EU with a comprehensive transnational and cross-sector framework to increase trust in the electronic exchange of trust services within the EU and to promote legal certainty and the functioning of the internal market.
Luxembourg has implemented the eIDAS and was among the first Member States to declare use of their eID scheme.
Luxembourg thereby recognises notified electronic eIDs, issued in another EU Member State, to grant access to public online services on the Guichet portal.
This ensures that cross-border citizens and businesses may use their own notified national electronic identification schemes (eIDs) to access public services in Luxembourg.

The discussions about the draft law are still ongoing.

eCommerce Act

The amended eCommerce act of 14 August 2000, complemented by a regulation on electronic signatures and electronic payments of 1 June 2001, transposed the EU Directive on Electronic Signatures (1999/93/EC).

The eCommerce act explicitly mentioned two types of eSignatures: 1) a basic type, which consists of a 'set of data which is linked to the deed in a non-dissociable way and warrants the integrity of the deed […]. The electronic signature must also ensure the signatory is identified and show the latter's obvious consent to the content of the deed', and 2) an eSignature 'supported by a qualified certificate, which must be created with a secure signature creation device under the sole control of the subscriber'.

Certification service providers can only issue certificates with the approval of the National Accreditation and Supervision Authority. Approved (qualified) certificates are valid for a maximum duration of three years and must be archived by the certification service provider for at least 10 years. The certification providers also have to undergo periodic external security audits.

eSignatures supported by a qualified certificate have the same legal validity as handwritten signatures, and the eCommerce act rendered void all laws and regulations that challenged the validity of a contract on the grounds that it was signed electronically. The act's primary importance resided in the recognition of eSignatures and eContracts. Unlike the directive it was based on, it did not use the term 'advanced' eSignature but rather recognised a 'qualified' level of eSignature. It also differs from the directive and similar legislation in other Member States, insofar as it legally recognised electronic wills and electronic deeds and implemented the customer's right to withdraw from an electronic contract within seven days of its creation, free of questions and penalties, with full reimbursement of any money paid to the seller.

The act closely followed the Directive in terms of information requirements from seller to customer, the seller's obligation to acknowledge reception of an order, the rules governing the liability and confidentiality requirements for certificate issuers (domestic and foreign), and provisions concerning the auditing and accreditation of certificate issuers.

4.3.3 Security aspects

EU General Data Protection Regulation (GDPR)

In May 2018, the EU General Data Protection Regulation entered into force in the whole EU and therefore also in Luxembourg. In Luxembourg, the National Commission for Data Protection (CNPD), an independent authority for the protection of individuals with regard to the processing of personal data, acts as data controller to fulfil certain requirements regarding the form and the content.

Law of 1 August 2018 on the organisation of the National Commission for Data Protection and the General Data Protection Scheme

A new law, the act of 1 August 2018 on the organisation of the National Data Protection Commission and the general data protection framework, repealed the previous act on data protection (amended act of 2 August 2002) and completed the General Data Protection Regulation at national level.

The aim of the law of 1 August 2018 was to invest the National Commission for Data Protection (CNPD) with extended tasks conferred by the GDPR and give it greater powers. Second, it defined the legal framework for the specific provisions of Luxembourg law, and in particular those relating to the supervision of employees.

Amended Act of 30 May 2005 (data protection and electronic communications)

The amended act of 30 May 2005, concerning the specific provisions for the protection of the individual as to the processing of personal data in the electronic communications

sector, and amending Articles 88(2) and 88(4) of the Code of Criminal Procedure covered the processing of personal data in the sector of electronic communications. The act governed personal data protection in the field of telecommunications and electronic communications, taking into account recent and foreseeable developments in the field of services and technologies involving electronic communications. It aimed to protect the privacy of internet users (including protection against unsolicited commercial communications or 'spam') and users of added value services, such as GPS.

4.3.4 Interconnection of base registries

Act on the Identification of Natural Persons, the National Register of Natural Persons, the Identity Card, the Communal Registers of Natural Persons

The National Registry of Natural Persons (RNPP) (Civil Registry) is covered by the amended law of 19 June 2013 on the identification of natural persons.
The law encompasses the National Registry mandate to hold identifying information for natural persons, data contained in the Registry (reference data such as ID number, name, first name, address, date and place of birth, family status, nationality, refugee status, sex, ID number of parents, ID number of kids, date and place of death, noblesse title), the commission of the National Registry, the communal registry and its maintenance, the entries to be made in the Municipal Registry, etc.
The law on the Registry of Natural Persons, in Article 4(2), prescribes that authentic data already contained in the Registry of Natural Persons must be reused by public administrations, and that the administrations cannot ask citizens to produce more evidence to prove the exactitude of data already existing in the Registry.

Company Registry

The main law regarding the Company Registry (Trade and Companies Registry) is the amended law of 19 December 2002 on the Trade and Companies Registry and companies' accounting. The information available is related to the general provisions regarding which societies must be registered, which ministry is in charge of the Registry, the data to be provided by each society when registering (reference data), followed by information on how to write the annual accounts, balance sheet, etc.

Land Registry

The Land Registry's main piece of legislation is the amended law on the reorganisation of the cadastre and topography administration of 25 July 2002, which provided details regarding the main functions of the administration of cadastre and topography.
As a manager of reference land information and maps, the Land Registry and Topography Administration provides the geodata required for town and country planning and enables the property market to function thanks to effective management of property ownership.

Land registration

The act of 11 November 2003 on land registration made a number of amendments to the act of 30 March 1979 regarding the tariffs and fees to be incurred by different actors and the digital directory of individuals: It also included provisions for access to the directories of notaries and other persons responsible for the creation or execution of the legal documents and introduced the national identification number of the parties in such documents.

4.3.5 eProcurement

Law on eProcurement

The Luxembourg Parliament adopted a new law on public procurement in 2018, the modified act on public procurement of 8 April 2018.
This new law had four main objectives:
- enabling public markets to become an instrument of political strategy;
- introducing simplification measures;
- preventing conflicts of interest, favouritism and corruption; and
- clarifying certain rules.

eInvoicing Legislation

The law on electronic invoicing in public procurement and concession contracts was approved on 26 March 2019. It transposed into Luxembourgish law Directive 2014/55/EU of the European Parliament and of the Council of 16 April 2014, on electronic invoicing in public procurement.
The law establishes for all electronic invoices issued under a public contract or a concession contract an obligation for contracting authorities and contracting entities to accept them, to receive them in electronic form and to process them, provided they comply with the European standard on electronic invoicing and one of the syntaxes appearing on the list published by the European Commission. This obligation on the part of contracting authorities and contracting entities obviously entails that the undertakings concerned have the right to send compliant electronic invoices, and no longer have to provide invoices in paper format or in another electronic format.

4.4 Domain-specific legislation

No legislation has been adopted in this field to date.

4.5 Emerging technologies

Accessibility of the websites and mobile applications of public sector bodies

On 7 May 2019, the Parliament passed the law on the accessibility of the web sites and mobile applications of public sector bodies. This law transposed into Luxembourgish law Directive (EU) No 2102/2016 of 26 October 2016, on the accessibility of the websites and mobile applications of public sector bodies.
Though the text focuses on accessibility for people with disabilities, it ultimately benefits all citizens. Indeed, everyone should benefit from improved access to public sector services via websites and mobile applications and benefit from services and information that facilitate their daily lives, and the exercise of their rights at the level of the public dimension and at Union level, including the right to move and reside freely within the territory of the Union and the right to freedom of establishment and freedom to provide services. The law supports the objectives of the *Digital Lëtzebuerg* government strategy to promote access to new technologies for every citizen.

Law amending the circulation of securities

A new law amending the amended law of 1 August 2001, on the circulation of securities, was published on 1 March 2019. The purpose of this new law was to create a legal framework enabling the circulation of securities by the new secure electronic registration technologies, in particular those based on the 'Blockchain', with the aim of increasing legal certainty in this area.

5 | Digital Public Administration Governance

5 Digital Public Administration Governance

5.1 National

5.1.1 Policy

Ministry of Digitalisation

Following the general elections on 14 October 2018, Luxembourg's new government created a Ministry of Digitalisation in charge of all the topics linked to digitalisation and responsible for guaranteeing even higher speed and quality. The Ministry of Digitalisation is a facilitator and coordinator for other ministries and other partners wishing to develop their activities in the field of digitalisation and eGovernment. Offering more eGovernment services in collaboration with the CTIE is one of the top priorities of the newly created ministry, in order to foster the modernisation of public administrations and improve the daily life and administrative processes of citizens and businesses.
The powers of the new Ministry of Digitalisation were defined by the Grand Ducal Decree on the establishment of ministries on 5 December 2018 and can be summarised as follows:

- implementation of the Digital *Lëtzebuerg* Action Plan and monitoring of the ICT sector (shared competence with the Minister for Economy and the Minister for Communications and Media);
- promotion of the ICT sector (shared competence with the Minister for the Economy);
- digitisation of administrative procedures and digital transformation of the public administration;
- follow-up on the work of the newly created High Digital Transformation Committee;
- development and implementation of a plan on the Internet of Things.
- development of the digital infrastructure (in consultation with the Minister for Communications and Media);
- development of a national strategy in the field of artificial intelligence (AI) (in consultation with the Minister for Communications and Media and the Minister for the Economy);
- implementation of the 5G national strategy and development of pilot projects (in consultation with the Minister for Communications and Media);
- assuring a policy of digital inclusion;
- promotion and organisation of the automation of state administrations, in particular as regards the collection, transmission and processing of data;
- seeking synergies between the different ministries and optimising their exchange of information;
- assistance to the various administrations of the State in the execution of the routine IT work and the management of fixed and mobile communication systems; and
- electronic filing with the State.

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Ministry of State - Media and Communications Service

The Media and Communications Services of the Ministry of State is responsible for the coordination and development of the national communications infrastructure (national and international connectivity, wired and wireless networks, data centres).

Ministry of the Economy

The Ministry of the Economy is responsible for creating a business environment that fosters innovation in the IT sector by granting public aid to start-ups, implementing a seed funding and venture capital framework, and simplifying and improving the relationship between IT innovators and the public sector.

Ministry of Finance

The Ministry of Finance is responsible for supporting the development of innovative IT tools for the financial sector, such as electronic and/or mobile payment solutions, virtual currencies and financial data analytics tools and services.

Ministry of Higher Education and Research

The Ministry of Higher Education and Research is in charge of promoting eSkills, IT training and R&D programmes in IT.

Ministry of the Civil Service

The Ministry of the Civil Service is responsible for promoting and assuring:
- an attractive and exemplary public service enabled by performance-oriented, dynamic and highly motivated public officials; and
- a quality public service based on a simple, innovative and effective regulatory framework, which favours social cohesion and the economic prosperity of Luxembourg.

Government IT Centre

The Government IT Centre was established in 2009 (*Centre des technologies de l'information de l'État*, CTIE). The Centre constitutes an active part of the Ministry of Digitalisation and is the main administration of the government in the fields of eGovernment, IT and modernisation of the State through information and communication technologies.

5.1.2 Coordination

Ministry of Digitalisation

The Ministry of Digitalisation coordinates eGovernment developments in the Public Administration.

Government IT Centre (CTIE)

The Government IT Centre provides service coordination and planning to government bodies and assists those bodies in the reorganisation and optimisation of their tasks. To this end, the Centre coordinates the following activities:
- organisation of the automation of government departments regarding the collection, transmission and processing of data;
- development and maintenance of administrative processes' mapping and their interoperability status;
- provision of organisational support to state administrations and assistance in their reorganisation efforts;
- identification of synergies between the various state administrations and optimisation of the information exchange among them.

Furthermore, the Centre is responsible for specific tasks such as the management of the *MyGuichet* portal.

5.1.3 Implementation

Government IT Centre (CTIE)

The CTIE is responsible for implementing the provisions that originate directly from the government programme and the eGovernment strategy. The production and personalisation of secure administrative documents, together with the processing of biometric data (ePassport) are also part of the Centre's tasks. Furthermore, the Centre is responsible for the establishment of an electronic document management system (GED).

Government ministries and administrations

Government ministries and administrations are responsible for the implementation of the eGovernment projects falling within their respective fields of competence.

5.1.4 Support

Government IT Centre (CTIE)

The CTIE is an IT service provider for various state administrations, providing them with:
- assistance in the implementation of regular IT works;
- management of security, IT and electronic equipment necessary for the execution of their mandate;
- purchase and management of IT and office equipment;

- administration of the IT network and the government's electronic messaging facilities;
- secure IT infrastructure;
- compliance with the provisions of the law on the protection of individuals with regard to the processing of personal data;
- management of a support centre (helpdesk) for the internal and external users of the systems operated by the CTIE.

5.1.5 Interoperability coordination

Government IT centre

The main body responsible for interoperability activities in Luxembourg is the Ministry of Digitalisation, assisted by the Government IT centre.

5.1.6 Base registry coordination

Government IT Centre (CTIE)

For the main registries in Luxembourg, the responsibilities for different aspects (legal, operational, semantic or technical) of base registries are partially decentralised, to the Registry itself and partially centralised to a central organisation.
The centralised management by the CTIE - *Centre des Technologies de l'information de l'Etat*, under the control of the Ministry of Digitalisation, enables the digital exchange of information across the public sector. Their responsibilities are, aside from maintaining one specific registry (the National Registry of Persons), to provide general support for interoperability between administrations and to devise a broader strategy that drives the evolution of base registries
Most of the responsibilities are managed in a decentralised way by each authority in charge of the corresponding registry, and include the operational and legal ownership of the Registry, the operational aspects, such as service levels and access formalities, and the decision on semantic levels. Authorities are, for example, the National Society for Technical Control (SNCT), the Ministry of Justice, the Ministry of Finance and the Land Registry and Topography Authority of the State of Luxembourg.

Trade and Companies Registry

The Trade and Companies Registry (RCS), managed by the Luxembourg Business Registers, is an official inventory of all natural and legal persons engaged in trade which helps to identify the persons whose registration or subscription is required by law.
The national registry of national persons groups all data relating to the identification of natural persons (residents or non-residents) who are in contact with a national government administration or public body.

5.1.7 Audit

Court of Auditors

The Court of Auditors monitors the legality and regularity of the State income and expenditure; furthermore, it controls the use of public funds.

5.1.8 Data Protection

National Data Protection Commission

The National Data Protection Commission (CNPD), created in December 2002, is an independent agency whose task is to control the processing of personal data in Luxembourg and to ensure compliance with data protection regulations.

5.2 Subnational (federal, regional and local)

5.2.1 Policy

Association of Luxembourg's cities and communes (*Syvicol*)

The Municipalities of Luxembourg are the government's interlocutors on matters concerning future eGovernment strategies and laws at a local/municipal level.

5.2.2 Coordination

Association of Luxembourg's cities and communes (*Syvicol*)

The Association of Luxembourg's cities and municipalities (*Syvicol*) is the political representative body of Luxembourg's municipalities. It is the government's interlocutor for issues of general municipal interest. It promotes cities' interests and advises on legislative and regulatory projects that have an impact at the local level.

Inter-Communal IT Management Association (SIGI)

The Inter-Communal IT Management Association (SIGI) is a service provider set up by Luxembourg's municipalities to coordinate the development of common systems and to promote the exchange and re-use of solutions and good practices. 101 out of the 102 local authorities in Luxembourg are members of SIGI and benefit from its IT services related to citizenship (population records, births, deaths and marriages, electoral registers, tax cards, etc.), invoicing and administrative accounting.

5.2.3 Implementation

Inter-Communal IT Management Association (SIGI)

The Inter-Communal IT Management Association (SIGI) project management office's role is to take charge of the new demands of different actors and to formalise them in a portfolio of projects before proceeding with their planning and execution.
The application of methodological standards, in a structured framework and with experienced staff, guarantees the implementation of quality solutions.

5.2.4 Support

Inter-Communal IT Management Association (SIGI)

Support is a key element of the service offered by the Inter-Communal IT Management Association (SIGI), which includes incident management and change management. It is often the first point of contact of municipalities with SIGI, either to solve a problem or simply to receive advice.

5.2.5 Interoperability coordination

No responsible organisation has been reported to date.

5.2.6 Base registry coordination

No responsible organisation has been reported to date.

5.2.7 Audit

No responsible organisation has been reported to date.

5.2.8 Data Protection

National Commission for Data Protection

The National Commission for Data Protection (CNPD) is an independent authority established by the law on the protection of persons with regard to the processing of personal data of 2 August 2002.
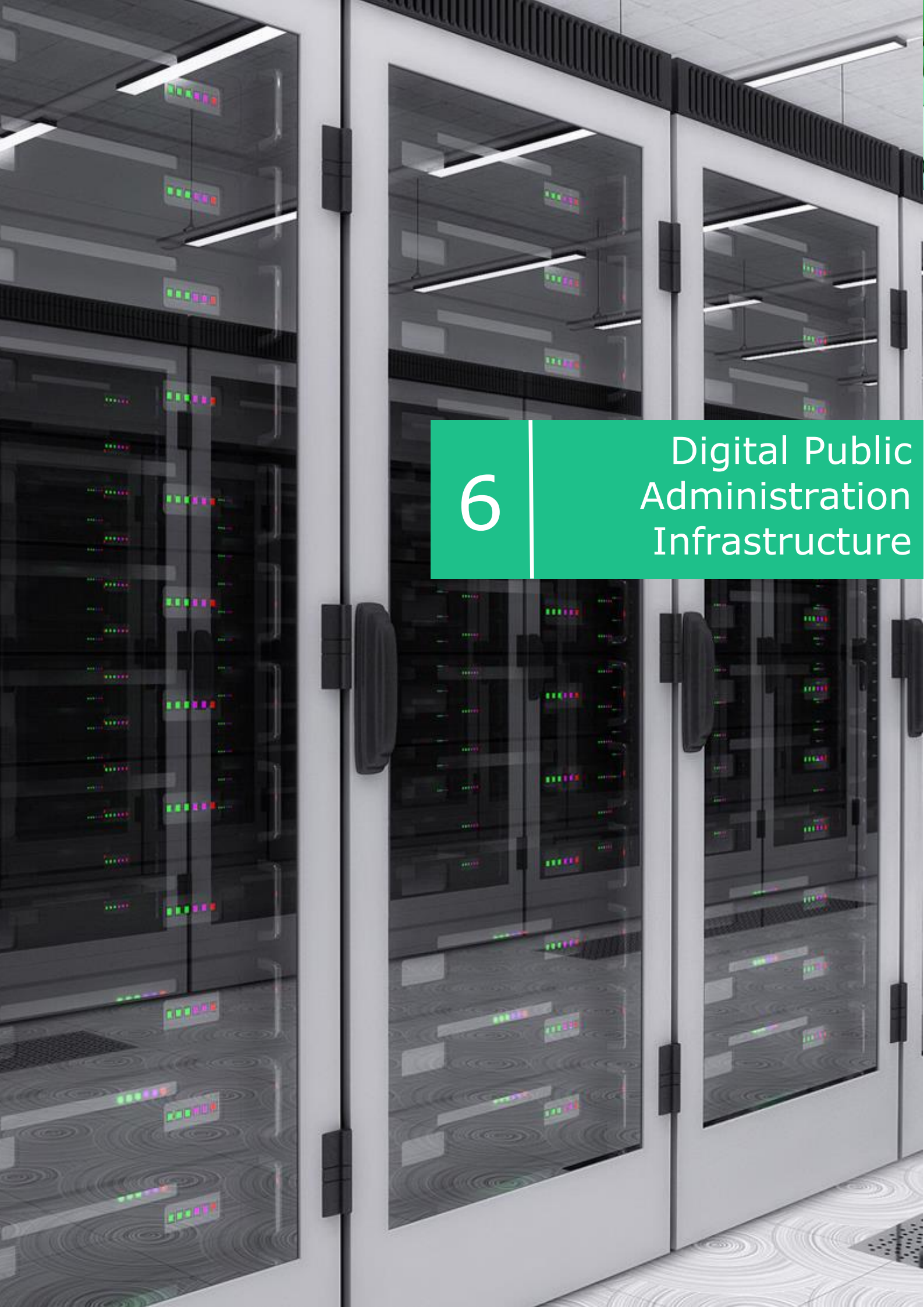
6 Digital Public Administration Infrastructure

6 Digital Public Administration Infrastructure

6.1 Portals

6.1.1 National Portals

luxembourg.lu

The official portal of the Grand Duchy of Luxembourg offers general information on various subjects, together with a thematic directory of links, that guides users to sites that offer detailed information on their topic(s) of interest. This site is of interest not only for the inhabitants of Luxembourg, but also for any foreigners wishing to find pertinent information on Luxembourg.

Guichet.lu

The government of Luxembourg launched, on 17 November 2008, the new *Guichet.lu portal*, which targets both citizens and enterprises. The portal was relaunched on its tenth anniversary.

The portal comprises information on various topics and related administrative procedures, grouped by theme (taxes, employment, family, education, accommodation, citizenship and transport). This interactive platform allows citizens to complete their administrative formalities online in a simple and transparent manner. The platform is regularly updated with new elements such as the interactive tax return (introduced in January 2009) and the content of the Business portal, which has been entirely restructured and integrated in this website. Both the citizen and business parts of *Guichet.lu* were completely redesigned in 2013 in order to improve ergonomics and accessibility, and to integrate applications for mobile devices (smartphones and tablets). Beyond the visual makeover and the restructuring and updating of the content, *Guichet.lu* was also migrated to a new technical platform in order to provide a more user-friendly transactional service (the myGuichet eSafe) on the user side, and better back- and front office tools on the provider side.

Guichet.lu's primary objective is to improve the value and quality of electronic services, integrating various administrative formalities in a single internet portal that gathers all relevant procedures, forms and information made available by the State.

In addition, the portal guides the user throughout the several stages thanks to online service wizards (*assistants de service*), which are accessible to users if equipped with an electronic authentication certificate (LuxTrust Token, Smartcard, Signing Stick, or ID Card). These certificates guarantee highly secure information exchanges and personal data confidentiality along with an electronic signature.

Exchanges between the State and citizens through this portal are mandated by the Ministry of Digitalisation in collaboration with the competent ministries. Thanks to the active participation of all concerned actors, the administration has progressed towards a faster, simpler and lower-budget relation with citizens and businesses.

The Luxembourg government IT Centre is also currently working on the implementation of an application for MyGuichet.lu so that users can carry out their procedures directly via their smartphone.

Furthermore, five descriptive factsheets were published at the beginning of 2020 in a "easy language" (*leichte Sprache*) on the Guichet.lu information portal, with the aim to help people with limited reading and writing skills to navigate and get information through the portal.

etat.public.lu

The website is a directory of all Luxembourgish public websites, which are grouped by theme into state affairs, online portals, and different ministries. It also provides all

ministries and administrations' phone numbers. Furthermore, newly launched websites are highlighted.

gouvernement.lu

The website gouvernement.lu is the information portal of the government press and information office. It gathers all information – such as news and press releases - concerning the Luxembourg government. The portal was relaunched in February 2018, making it available in four different languages: French, German, English and Luxembourgish.

legilux.lu

legilux.lu is the official legal journal of the Grand Duchy of Luxembourg, i.e. the portal where all laws and other legal norms are officially published.

data.public.lu

data.public.lu is the government official portal for open data. The use and reuse of data is driven forward in the context of the national Open Data strategy. Luxembourg ranked 6th in the field of Open Data environment in the European Union

sante.lu

sante.lu is the official portal for all health-related topics.

Transports.public.lu and mobiliteit.lu

These are the official portals for transport-related subjects in Luxembourg. On mobiliteit.lu, users can interact and ask any questions related to public transport in Luxembourg. Buses, trams and trains' schedules can be checked in real time. Users can also access various services on *Guichet.lu* through the portal.

justice.lu

justice.lu is the official portal of the courts and of the judicial system for all topics related to the judiciary.

chd.lu

chd.lu is the Parliament's website. All parliamentary work is available for public consultation, including law projects and sessions. Public petitions can also be signed online.

eDouane

eDouane is an interactive platform for online services that enables businesses to process online all customs-related paperwork regarding the Grand Duchy of Luxembourg. The portal was completely relaunched in September 2018.

geoportail.lu

Luxembourg's national official geoportal is a governmental platform, which gathers, describes and publishes geospatial data and related products. It has the great advantage of functioning as an integrator of the data supplied by various public actors such as ministries, administrations, public enterprises, municipalities but also private firms. All the data are grouped and displayed together in the map portals. This collaboration has also helped to initiate common projects of data sharing, data creation, project management and knowledge transfer between all involved actors.

In addition, on 29 December 2019 the government also launched a new mobile application displaying topographic maps, aerial photos and cadastral parcels.

6.1.2 Subnational Portals

communes.lu

communes.lu, edited by Syvicol, is the official portal of the municipalities with, among others, links to the specific websites of the municipalities.

6.2 Networks

RACINE

RACINE is the network connecting all government institutions in Luxembourg. It is set up and maintained by the Government IT Centre (CTIE).

Trans European Services for Telematics between Administrations (TESTA)

Luxembourg uses the Trans European Services for Telematics between Administrations (TESTA) network as the main cross border infrastructure to communicate digitally among the EU agencies, institutions and Member States".

6.3 Data Exchange

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

6.4 eID and Trust Services

eID and eSignature

In Luxembourg, a common national electronic signature, used by both public and private sectors and managed by the private company LuxTrust, has been available for more than 10 years. LuxTrust is the central eIdentity infrastructure in Luxembourg that provides several products connected to a person such as tokens, smartcards or signing sticks. It is a public/private partnership created to manage the development of a common Public Key Infrastructure (PKI) in order to secure eCommerce and eGovernment in Luxembourg. The consortium that was awarded the PKI contract was presented in July 2006.

LuxTrust is the standard solution used for qualified eID and eSignature in the context of online administrative procedures. It is used by all the important banks for online banking and it is therefore offered by banks to their clients free of charge.

Any EU citizen and business can use their own national electronic identification scheme (if notified) to access public services on the personalised platform *MyGuichet* in Luxembourg.

Furthermore, the progressive introduction of biometric documents in Europe forces Member States to have highly secure certification services in order to protect their official documents. Consequently, LuxTrust will adhere to the relevant international standards in order to be in a position to protect the biometric documents issued in Luxembourg. This will initially apply to biometric passports.

Implementation of a Cybersecurity Competence Centre (C3)

The new Cybersecurity Competence Centre (C3), established at the end of 2017, promotes the national cybersecurity ecosystem by focusing on three areas of expertise: observation, training and testing.

In the area of training, different modules are offered, including simulation tools for cyberattacks. To contribute to job access for men and women, workshops facilitating job re-skilling are proposed, and short-term certification possibilities based on local needs are currently being studied.

GouvCheck

The IT Centre of the Luxembourg government launched GouvCheck, a mobile application which allows any person to verify the authenticity of an official document issued by an administrative body. The app can verify the authenticity of all documents with a QR code, including the certificate of registration, the certificate of life, the road-building permit, to name just a few.

6.5 eProcurement

Public Procurement portal

A central public procurement portal was created in February 2006. This portal includes an informative part on legal issues related to eProcurement, as well as a platform for publication of calls for tender, tender documents and terms of reference, electronic submission of tenders, electronic catalogues and electronic auctions. The platform provides businesses with a one-stop research and notification tool on opportunities in the public sector.

PEPPOL

The PEPPOL access point, which allows to receive and process eInvoices in the context of public procurement, was implemented at the end of 2016. This platform is adapted and amended regularly in order to keep up with users' needs.

6.6 ePayment

Digicash

A solution allowing the use of Digicash for electronic payments on *Guichet.lu* has been set up in collaboration with the Government IT Centre (Centre des technologies de l'information de l'Etat - CTIE), thus enabling users to make certain payments to different administrations such as:
- motor vehicle taxes (Customs and Excise Administration);
- certain fines (Grand-Ducal Police);
- the electronic identity card (eID) or the passport.

6.7 Knowledge Management

DMS programme (GED)

A DMS programme (GED) was launched in May 2006 in the context of the General eLuxembourg project. This project aims at defining and setting up an electronic document management system for the entire public administration.
The life-cycle control of all documents is the cornerstone of any administration aiming at new forms of eGovernment. A pragmatic approach was chosen to deploy the GED programme, which currently comprises two closely related projects.

Data Centres

Taking full advantage of its strategic location and of massive private and public sector investments, Luxembourg has become a key hub for ICT with highly secured data centres. In fact, Luxembourg has the highest density of TIER IV Data Centre infrastructures in Europe.
Creating a strong general infrastructure and high-performance data centres is an essential element of the *Digital Lëtzebuerg* strategy. These data centres use very large and continuously growing cloud technologies.

Intensive negotiations with Google, one of the greatest multinational technology company specialised in internet-related services and products, were launched by the government in order to implement the EUR 1 Billion European Google Data Centre in Luxembourg (Bissen). It has been recently announced that Luxembourg will host in 2020 the European Investment Bank data and IT systems, in the new data centre located in Bissen.

The electronic virtual archives of the European Patent Office and the backed-up IT infrastructure of the European Commission are already housed in Luxembourg's data centres, which are operated by the Luxembourg Government IT Centre.

Once Only principle and Transparency Management

Luxembourg has been systematically implementing the Once Only Principle (OOP) for more than 5 years now.

Via their personal space on *MyGuichet*, users have the possibility to access the data that public administrations keep on them online in around 15 authentic sources. For some of these authentic sources, users can also request online the correction of data that they do not consider accurate and can reuse most of these data in the context of administrative procedures. Furthermore, for some of the authentic sources, they can check directly online which organisation has accessed their data and ask the organisation to justify their access, if they have legitimacy concerns. The number of authentic sources available in the context of this OOP approach is regularly growing.

Blockchain

Infrachain a.s.b.l. is a Luxembourg-based non-profit organisation, created by the emerging Blockchain industry and supported by the Luxembourg government, aiming to implement Blockchain technology solutions in a trusted manner in the current regulatory environment.

Another example is the project of the Luxembourg Government IT Centre, implemented in 2019, namely a Notary system based on Blockchain to demonstrate the benefits of this new technology.

Furthermore, a White Paper on technical standardisation related to Blockchain technology was issued by the Luxembourg Ministry of Economics in 2018.

LuxTrust, the provider of eID, eSignature and other trusted services for the public and the private sector in Luxembourg, is working on the implementation of an SSI (Self Sovereign Identity) solution based on Blockchain technologies.

During the Infrachain Summit on 23 May 2019, the Minister Delegate for Digitalisation Marc Hansen announced a first public sector blockchain platform which will be operated by a range of public sector actors, including CTIE and SIGI. The public sector blockchain will help to improve the transparency, reliability and security of the public sector's digital information and process systems.

6.8 Cross-border platforms

EUCARIS

Since the early 90s, Luxembourg together with other four EU Member States (Germany, Belgium, The Netherlands and the United Kingdom) has been involved in the first form of cooperation in the field of data exchange regarding the European Car and Driving Licence Information System (EUCARIS), an organisation called after the name of the implemented system itself.

Data Embassy

The Estonian government is using a data embassy infrastructure to host a copy of their most important servers and databases. Luxembourg thus hosts the very first Data Embassy ever.

In addition, the Grand Duchy of Luxembourg and the Principality of Monaco agreed in 2018 to launch a study to safeguard sensitive data in a Luxembourg Data Centre with immunity guarantees and privileges resembling those of the above-mentioned Data Embassy.

6.9 Base registries

RACINE

Luxembourg has an infrastructure network called RACINE connecting all government institutions. It is set up and maintained by the State Information Technology Centre (CTIE) and it is the communications system that represents the network backbone for Public Administrations.

7 Cross-border Digital Public Administration Services

7 Cross border Digital Public Administration Services

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.

1.1 Life and Travel

For citizens, the following groups of services can be found on the website:
- Travel (e.g. Documents needed for travelling in Europe);
- Work and retirement (e.g. Unemployment and Benefits);
- Vehicles (e.g. Registration);
- Residence formalities (e.g. Elections abroad);
- Education and youth (e.g. Researchers);
- Health (e.g. Medical Treatment abroad);
- Family (e.g. Couples);
- Consumers (e.g. Shopping).

1.2 Doing Business

Regarding businesses, the groups of services on the website concern:
- Running a business (e.g. Developing a business);
- Taxation (e.g. Business tax);
- Selling in the EU (e.g. Public contracts);
- Human Resources (e.g. Employment contracts);
- Product requirements (e.g. Standards);
- Financing and Funding (e.g. Accounting);
- Dealing with Customers (e.g. Data protection).

The Digital Public Administration Factsheets

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

The factsheets are published on the Joinup platform, which is a joint initiative by the Directorate General for Informatics (DG DIGIT) and the Directorate General for Communications Networks, Content & Technology (DG CONNECT). This factsheet received valuable contribution from Carlo Mreches and Gérard Soisson (CTIE).

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

An action supported by ISA²

ISA² is a EUR 131 million programme of the European Commission which develops digital solutions that enable interoperable cross-border and cross-sector public services, for the benefit of public administrations, businesses and citizens across the EU.

ISA² supports a wide range of activities and solutions, among which is the National Interoperability Framework Observatory (NIFO) action.

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