



Factsheet:

Access to Base Registries in Luxembourg

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Table of Contents

Luxemburg towards Interoperability 3

Legal Interoperability 5

Organisational Interoperability..... 7

Semantic Interoperability 9

Technical Interoperability..... 10

Cross-border Interoperability 12

E-Government Public Services making use of Base Registries data..... 13

Luxemburg towards Interoperability

As in many other countries, the awareness for automation and informatics in Luxembourg started back in the 1970s. In 1974, the **Centre des technologies de l'Information de l'Etat (CTIE)**¹, was created with the mission to “automate the collection, circulation and treatment of data of the administrations’. Most of the data of the administrations was until then spread and held in various decentralised repositories, sometimes even paper repositories with no unique identifiers.

A law in 1979² changed the situation for natural and legal persons, describing the need for a **unique identifiant** to complement the specific data. It also described the minimum required fields needed to be captured in a centralised repository for natural and legal persons.

The technological evolution fostered new working methods as well as new opportunities for the improvement of the public services as part of the administrative reform. Over the course of the years, actions were undertaken to address several topics:

- Lengthen the unique identifiers to cope with the need for more record;
- Improvement of the protection of the data in the registries;
- Regulation of access to the repertoires.

In 2005, the **Master Plan of the Electronic Governance**³ was launched to increase the **access to services and administrations data for citizens and companies**. It stated that to achieve interoperability a series of factors have to be met: the cooperation between the involved actors (government – both internally and internationally, citizens and businesses), the coordination between different initiatives and projects and the centralization of infrastructure and technical solutions. Other steps would be the definition of standards for the data exchange, the use of generally accepted standards and open technologies. Luxembourg also valued that a combination of both front and back-office integration was the approach to improve the access to data registries and their interconnection. In 2008, the **Guichet.lu portal** was an important milestone in this plan to allow for quick and easy access to all administrative procedures.

In 2012, action plans were launched to continue the momentum by building new services and to optimise and standardise the practices for the front and back-office integration:

- A plan for administrative simplification of the procedures and formalities of the state
 - Elaboration of the **Once Only principle**: The Front and Back-office integration approach aimed at facilitating the different applications and related processes used to implement the OOP.
- A **new master plan for ICT**, focusing on:
 - Creating multi-channel access
 - Building Interactive access
 - Securing sensitive data exchange
 - Creating a momentum for interoperability between public administrations and economic actors at national and European level.
 - Implementation of APIs for databases or registries containing authentic sources

While the main focus was on the front office and the integration with the back office, there were also some improvements to the back office registries. In 2013, the **National Registry** of Natural and Legal Persons was created, with the following purposes:

- Expand on the rules and formalities of access to the data;

¹ <http://www.fonction-publique.public.lu/fr/structure-organisationnelle/ctie/index.html>

² <http://eli.legilux.public.lu/eli/etat/leg/loi/1979/03/30/n1>

³ <http://www.fonction-publique.public.lu/fr/publications/documents-strategiques/plan-directeur.pdf>

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- Improve the preservation of the data and guarantee the data quality;
 - The CTIE would now be responsible for all operations relating to the management and maintenance of the National Registry under the Ministry of Public Service and Administrative Reform's authority;
 - Art. 4. (2) prescribed that authentic data already contained in the Registry of physical persons have to be reused by public administrations and that these administrations cannot ask the citizen to produce once more the pieces to prove the exactitude of the data already existing in the Registry.

To improve both the digitisation efforts of administrative procedures and the organisational interoperability, the **Digital Lëtzebuerg** initiative, in 2014, set up a horizontal approach to design, putting in place a cross-ministerial steering team, involving public and private stakeholders as well as academia. This team had to coordinate policies and address cross-cutting issues, based on six themes, including e-administration and infrastructure, and touching aspects of interconnection and access to registries, mainly through the further development of the portal and services accessing the registries.

In July 2015, the Luxembourg Government Council, as an outcome of this digital strategy, adopted five principles aimed at accelerating state modernisation and the digitisation of administrative procedures (including the OOP):

- **Digital by Default**, states that any new law must integrate its electronic implementation from the design stage,
- **Once Only Principle**, to oblige each administration to reuse the information already held by another administration, **in the presence of an expressed user agreement**. This way Luxembourg sets a balance between administrative simplification, modernisation and data protection. To ensure trust, Luxembourg applies the principle that explicit consent has to be given by the "data subjects" before their data can be processed. The data is therefore collected straight from one central registry, e.g. the National Registry of Persons, in the case of personal data related to physical persons, or Company Registry and the eVAT Registry, in the case of businesses, and shared across public administrations through the back office of the Guichet platform. This data can also be made available to citizens to perform an electronic public service.
- **Transparency**, which gives citizens the ability to view their electronic data that the administration holds. They can also check which administration has viewed or used their data. The transparency principle also gives citizens, when possible, the ability to track the processing status of their records online.
- Improved electronic payment methods.
- "MyGuichet" as the main channel of interactions with public administrations, where administrations have access to authentic sources with the consent of the users, compliant with data protection, where they can correct data that concerns them, to increase the quality of government data and with little need for users to provide supporting documents.

To further harmonisation of the interoperability, Luxembourg considers implementing a National Interoperability Framework as one of the goals of the **Luxembourgish Public Service Commission (PSC) Framework**. The PSC framework will cover the exchange of information between the local administrations and the cross-border interoperability. It will also deal with access to e-services and the relation between the private and public sector.

Legal Interoperability

Legal interoperability, in the context of base registries, is about ensuring that Public Administrations in charge of the registries operate under a harmonised legal framework. Thus the policies and strategies included in this common framework enable base registries to cooperate, resulting in cost and time savings.

In Luxemburg, there are specific legislations for most of the base registries, including the main ones, corresponding to the activities and responsibilities of the particular base registries and the authorities responsible for them.

- The **National Registry of Natural Persons (RNPP)** (Civil Registry) is covered by the **Law No. 107 of June 25th 2013, Identification of Natural Persons**⁴. The law doesn't give a proper definition regarding the National Registry of natural persons, but it covers the aim of the National Registry, which is identification of physical persons, the 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 physical persons**, for example, in its Art. 4. (2) prescribed that authentic data already contained in the Registry of physical persons have to be reused by public administrations and these administrations cannot ask the citizen to produce once more pieces to prove the exactitude of the data already existing in the Registry.
- The main law regarding the **Company Registry** (Commercial and Companies' Registry) is the **Law of December 19th 2002 on the Registry of commerce and companies and the accounting and annual accounts of companies**⁵, amended by the **Law of May 27th 2016**⁶. Again, no proper registry definition is provided. The information available is related to the general provision regarding which societies have to be registered, which the 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.
- The **Land Registry** main pieces of legislation are the **Act of July 25th 2002**⁷ on the reorganisation the administration of cadastre and topography, which provides details regarding the main functions of the administration of cadastre and topography:
 - The creation, management, updating and dissemination of official land and cartographic documents in the Grand Duchy of Luxembourg;
 - Cadastral surveying in the Grand Duchy, regulated by the Law of July 25th 2002 establishing and regulating the profession of surveyors and official surveyor, is run and supervised by the ACT;
 - Management of national geodetic networks.
- **The Act of November 11th 2003 on land registration**⁸ makes a number of amendments to the Act of March 30th 1979 regarding the tariffs and fees to be assumed by different actors, the digital directory of individuals and makes provision for access to the notaries' directory and other persons who are responsible for creation or execution of the legal documents. It also introduces the national identification number of the parties in such documents.

⁴ Loi N° 107 25 juin 2013, Identification Des Personnes Physiques

<http://www.legilux.public.lu/leg/a/archives/2013/0107/a107.pdf>

⁵ <http://eli.legilux.public.lu/eli/etat/leg/loi/2002/12/19/n1>

⁶ https://www.rcsl.lu/mjrscs/jsp/webapp/static/mjrscs/fr/mjrscs/pdf/rgd_2016_05_27.pdf?time=1469175027998

⁷ <http://www.legilux.public.lu/leg/a/archives/2002/0108/a108.pdf#page=6>

⁸ <http://www.legilux.public.lu/leg/a/archives/2003/0163/a163.pdf#page=5#page=5>

The transposition of the PSI Directive was done in Luxemburg via the **law on the reuse of Public Sector Information (2007)**⁹. This law sets the minimal set of rules for the reuse of information. It lists which documents are not eligible for reuse, the response times to document requests, data formats, licensing and pricing. It establishes a "fair use" policy regarding the reproduction of government documents by third parties which are not for commercial purposes.

⁹ Loi du 4 décembre 2007 sur la réutilisation des informations du secteur public, 4/12/2007, Mémorial Luxembourgeois A N° 212 of 07/12/2007): <http://eli.legilux.public.lu/eli/etat/leg/loi/2007/12/04/n1>

Organisational Interoperability

This aspect of interoperability covers how public administrations align their responsibilities and expectations to achieve commonly agreed and mutually beneficial goals. For the main registries in Luxembourg, the responsibilities related to different aspects (legal, operational, semantic or technical) of base registries are organised partially in a **decentralised** way, by the Registry itself and partially **centralised** by a central organisation.

Most of the responsibilities are managed in a **decentralised way** by each authority of the corresponding registry, including the operational and legal ownership of the Registry, the operational aspects such as service levels and access formalities and the decision on semantic levels such as data model, etc.

These responsibilities are often embedded in the laws. Some detailed aspects are described below:

- According to the Law of December 19th 2002 on the Registry of Commerce and Companies¹⁰, art. 2, this Registry operates under the authority of the Minister of Justice. The Commercial Registry and the corporate management is entrusted to an economic interest grouping, bringing together the State, the Chamber of Commerce and the Chamber of Trades, established for that purpose.
- Luxembourg's Land Registry is owned and maintained by the Land Registry and Topography Authority of the State of Luxembourg. **An electronic version of the Land Registry does not exist yet.** A fee is payable for access to the paper version.
- A special case is the Committee on the National Registry, established under the authority of the responsible Minister of National Registry. It is a commission consisting of multiple parties, including ministries such as justice, immigration, internal affairs as well as the commission for data protection. The Committee's specific functions are to:
 - Analyse and adjust wherever possible practical application difficulties arising from laws and regulations relating to the National Registry;
 - Issuing opinions requested by the Minister on requests for access to the National Registry;
 - Make appropriate proposals to improve the legislation and regulations relating to the National Registry;
 - Issuing opinions requested by the Minister as to the identity card readings by reading processes
- The "General Affairs" division, is responsible for the National Registry of natural persons. According to Article 8, this service is in charge of:
 - Keeping the National Registry of natural persons;
 - Determining, allocating and conserving the individual's identification number;
 - Managing and communicating the listed data in the National Registry of natural persons;
 - Processing and storing the information received from the State administrations related to data listed in the National Registry of Natural Persons.

The following table describes the main base registries in Luxembourg, the Public Administration bodies to which they belong and the Master Data Type/s they handle:

¹⁰ <http://eli.legilux.public.lu/eli/etat/leg/loi/2002/12/19/n1>

Base Registry	Authority	Master Data
National Registry of Natural Persons	Technology Information Centre of the State (CTIE), under the Ministry of Public Service and Administrative Reform's authority.	PERSONAL DATA (NATURAL AND LEGAL PERSONS)
Vehicle Registry	National Society for Technical Control (SNCT)	VEHICLES
Company Registry ¹¹	Ministry of Justice	BUSINESS
Tax Registry ¹²	Ministry of Finance, Administration of Registration and areas	TAX
Land Registry	Land Registry and Topography Authority of the State of Luxembourg ¹³	PARCELS, ADDRESSES, BUILDINGS, STREETS.

Aside from the decentralised management, there is **centralised** management by the Center of Information Technologies of the State (CTIE - Centre des Technologies de l'information de l'Etat), under the control of the Ministry of Civil Service and Administrative Reform to enable the digital exchange of information across the public sector. Their responsibilities are, aside maintaining one specific registry (the National Registry of Persons), to provide general support for interoperability between administrations and a broader strategy that drives the evolution of base registries¹⁴

Also, to improve organisational interoperability, the CTIE created the Business Process Management Office (BPMO) which is its competence centre for **business process management and organisational related issues**. The office coordinates at the national level the **PROMETA**¹⁵ approach (framework and platform), a common framework with methods, standards and tools to apply governance at all organisational dimensions and define business process standards.

Finally and according to the European Interoperability Framework, the organisational interoperability is implemented within four elements: business process alignment, inter-governmental coordination, organisational relationships and change management. This being said, PROMETA is used as an approach to improve the organisational interoperability for registries through:

- Business process alignment, documented by the administrations in charge of the registries in an agreed way using PROMETA as a common framework;
- Inter-governmental coordination, trying to improve the coordination between different administrative levels interconnecting and accessing the registries;
- Description of common processes in inter-administration processes
- Promotion in the management change via awareness and eLearning. As an example, the process publication portal (NextGen Portal) warns subscribers by email about every change in a procedure and related document.

¹¹ <https://www.rcsl.lu/mjracs/jsp/IndexActionNotSecured.action?time=1469439400220&loop=1>

¹² <http://www.aed.public.lu/enregistrement/index.html>

¹³ <http://www.act.public.lu/fr/index.html>

¹⁴ Grand Ducal decree of 28 January 2015 on setting up the ministries

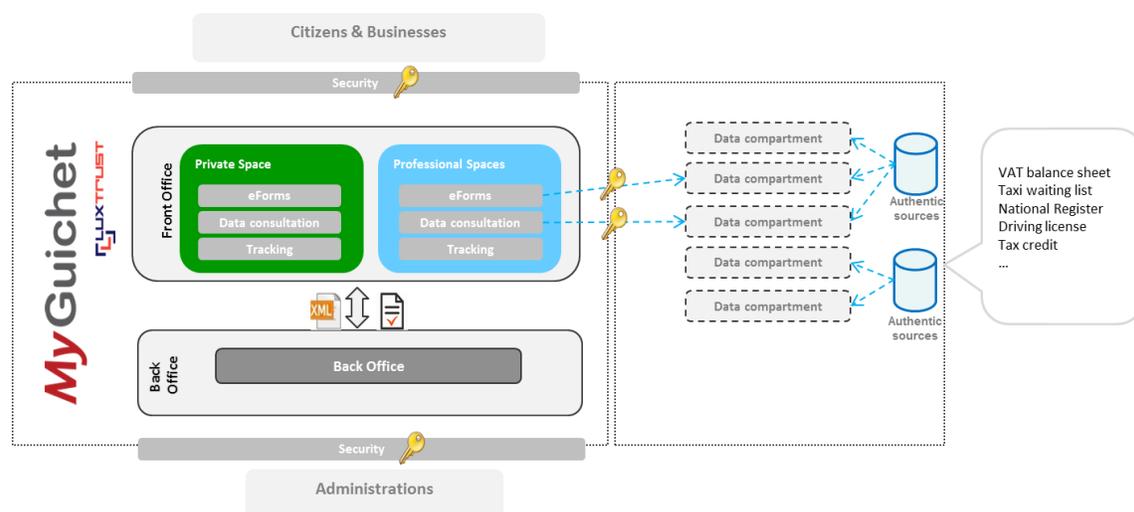
¹⁵ <https://joinup.ec.europa.eu/community/nifo/case/prometa-organisational-interoperability-framework-eservice-design-luxembourg>

Semantic Interoperability

Regarding semantic interoperability, there is no harmonised approach in Luxembourg. The registries individually maintain their vocabularies and schemata to describe data exchanges. The data models are not published. When connections need to be made between registries, the matching is performed on an ad-hoc basis to ensure that data elements are understood in the same way by the involved parties. However, the CTIE has set some standard formats and protocols for web services to exchange data specifically between the registries.

For other semantic aspects, such as processes and data governance, the PROMETA framework also provides common vocabularies, allowing public administrations to understand and align the overall business processes to align them.

The Authentic Sources are compliant with data protection rules. Hence, users can access their data in a secure way. To enhance the security and efficiency of the data transport and data use, provided by the authentic sources is compartmentalised in semantic units, grouped for their use in services. Overall, the data is collected in the existing registries and made available to citizens/business to perform an electronic public service and shared across public administrations.



Work is ongoing to encrypt the data entered in the front office (encryption key by citizens) and the back office (encryption key by public administrations). This type of encryption should be operational by 2016.

In the same context, the Council of Luxembourg approved the establishment of an **Open Data portal**¹⁶. This portal was created to make available the public information of the State, the government and local authorities, as well as any person or entity willing to share data in an “open data” mode. The information is accessible and usable by anyone for free, further reinforcing the goal of transparency.

Currently in preview mode, data.public.lu lists datasets related to **Land Registry**, but also geospatial data in different fields, environmental data, public health data, road data or statistical data.

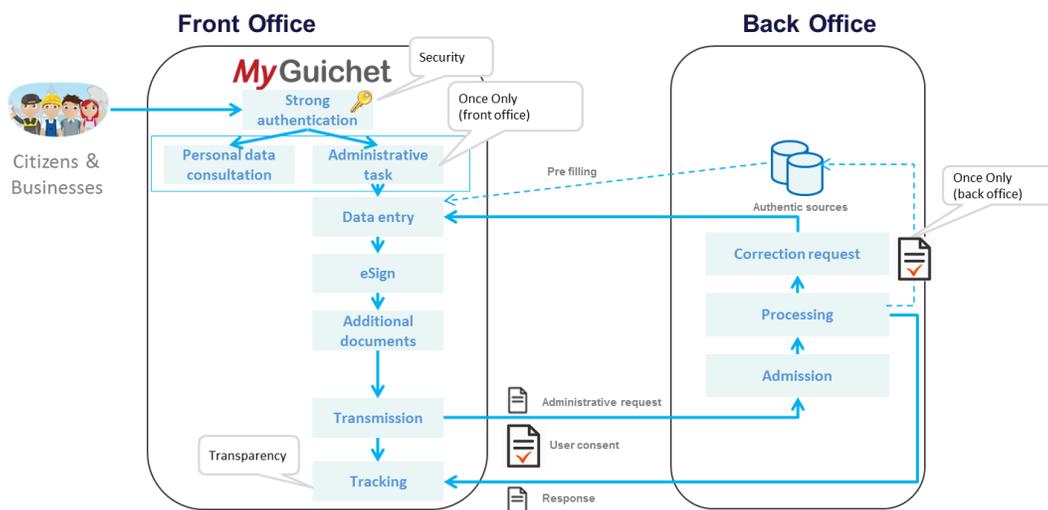
¹⁶ <https://data.public.lu/en/>

Technical Interoperability

Key levers for technical interoperability between base registries, to provide access to the data inside, are secure technical systems and infrastructures with a common set of standards.

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

From an applicative perspective, both a front office solution (**MyGuichet**, for citizens to access the data in the registries) and a back-office solution (to exchange information between the front office and the registries) were put in place to allow administrations to access and exchange the information.



The CTIE has also set some standard formats and protocols for web services to exchange data specifically between the registries.

Finally, from a security perspective, Luxembourg implemented a set of security measures to ensure secure access and interconnection:

- **Authentication (access control)** to identify who is accessing the data and ensure that they are who they say they are, using:
 - **Strong authentication via different means** (via tokens, smartcards, SMS, etc.) as well as via **eID card**.
 - Electronic ID card (using LuxTrust certificates)
 - LuxTrust solutions (Smartcard, Signing stick, Token)
- **Authorisation (access control)** to give adequate access rights to end-users who are accessing authentic data sources and verify whether they have the rights to do what they are trying to do, using:
 - Access Control Lists (ACL), defining which access rights each user has to a particular system or data object. Each object has a security attribute that identifies its access control list.
 - Role-Based Access Control (RBAC) whereby users are given a role, which inclined a permission to perform certain operations.

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- **Confidentiality** to prevent unauthorised access to information stored in authentic data sources, using:
 - Encrypting the data: Transferred data is encrypted to ensure that none of the data can be deciphered. Sensitive personal data is encrypted (e.g. the SSL protocol). Work is ongoing to encrypt the data entered in the front office (encryption key by citizens) and the back office (encryption key by public administrations). This type of encryption should be operational by 2016;
 - Restricted access to the data: Access to data is limited only to a restricted set of users.
 - Sign confidentiality agreements: Confidentiality and non-disclosure agreements to be signed when accessing specific data;
 - A secure dedicated network is widely used, when the transmitting data from the location where they are stored to a public administration.

 - **Integrity** to ensure that information can be relied upon and is accurate and complete, using
 - Luxemburg uses eSignature to ensure data integrity

 - **Traceability & Non-repudiation:**
 - Luxemburg uses a combination of different measures.
 - It uses mainly eSignature to ensure traceability, to chronologically interrelate any transaction on authentic data sources to a person or system that performed the action in a way that is verifiable;
 - For non-repudiation, to prevent the intervening person or system from accessing authentic data sources in an event or action to deny or challenge their access to authentic data sources, it uses:
 - Log files
 - Time stamping added before the document transmission

Cross-border Interoperability

Since the early 90s, Luxembourg together with other 4 EU Member States (Germany, Belgium, The Netherlands and the United Kingdom) were involved in the first form of cooperation in the field of data exchange regarding European Car and Driving Licence Information System (EUCARIS), an organisation called after the name of the implemented system.

Since then, Luxembourg joined as a member of the European Base Registry¹⁷ network via the “Registre du Commerce et des Sociétés”. It is also participating in the SPOCS¹⁸ project.

¹⁷ <http://www.ebr.org/index.php/member-countries/>

¹⁸ http://www.eu-spocs.eu/index.php?option=com_content&view=article&id=1&Itemid=42

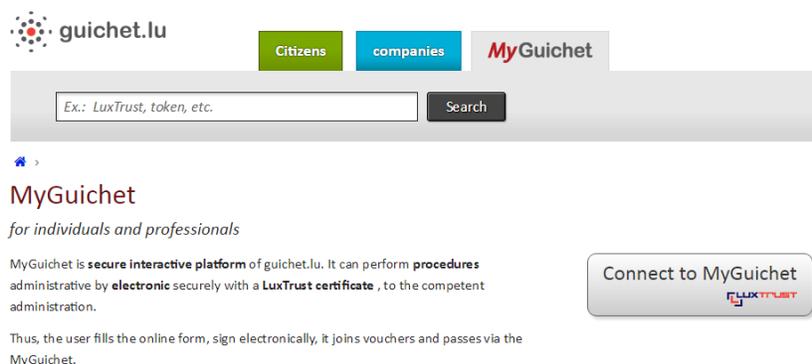
E-Government Public Services making use of Base Registries data

The portal **Guichet.lu**¹⁹ was launched in November 2008 as one of the key stages of e-governance strategy in 2005. The portal acts as an interactive portal aiming at simplifying the exchanges between the users and the state, offering quick and easy access to all administrative procedures online. The portal mainly provides information on different administrative procedures, grouped by life events (taxes, employment, family, education, accommodation, citizenship and transport).



Emphasising the once-only principle again, the portal allows a pre-filling function that uses the personal data saved in the user's secure personal **myGuichet** space, both by the user in a prior transaction and from trusted government sources, to pre-fill forms and to minimise the work and time necessary for different procedures.

Also, the electronic signature mechanism was aligned with the government's overall policy on eIDs. The eID serves to make the user's personal space more secure and sign documents and transactions. Users can also access both their personal and professional transactions with the same eID, since the citizens' and business e-space have been relocated to the same platform.



The platform has been progressively improved and updated with new information. In 2013, both the citizens' and business' divisions were redesigned boosting accessibility and integrating applications free of charge

¹⁹ <http://www.guichet.public.lu/home/fr/index.html>

for mobile devices (smartphones and tablets). The mobile version of myGuichet's features provides information regarding all administrative formalities, the possibility to contact the public agencies directly and continuous updates on administrative procedures.

Regarding base registries, businesses can consult and update the company information held by the Land Registry or citizens have the possibility to view or request correction of their data that the government has stored in the National Registry of Natural Persons.

The following set of common life events will result in inputs in a series of base registries:

- Land Registry²⁰: purchase/sale of real-estate;
- Civil Registry²¹: birth/deceased of person, certificates (birth, marriage) - information only. Certificate requests are handled by local authorities;
- Tax Registry²²: change in income, change in assets, information regarding VAT, etc.;
- Business Registry²³: creation/dissolution of company;
- Car Registry²⁴: Information and forms to download regarding car registration.

It is also worth mentioning eDouane²⁵, which is an interactive platform for online services that enables businesses to accomplish online all customs-related paperwork regarding the Grand Duchy of Luxembourg.

²⁰ <http://www.guichet.public.lu/entreprises/en/organismes/administration-enregistrement-domaines/> and <http://www.act.public.lu/fr/index.html>

²¹ <http://www.guichet.public.lu/citoyens/fr/citoyennete/index.html>

²² <http://www.impotsdirects.public.lu/> and <http://www.guichet.public.lu/citoyens/fr/impots-taxes/index.html> and <http://www.aed.public.lu/functions/faq/index.html>

²³ <https://www.rcsl.lu/mjrsc/jsp/IndexActionNotSecured.action?time=1469439400220&loop=1>

²⁴ <http://www.snct.lu/> and <http://www.guichet.public.lu/citoyens/fr/transports-mobilite/transports-individuels/vehicule-motorise/numero-immatriculation-personnalise/index.html>

²⁵ http://www.do.etat.lu/edouanes/Accueil/EMCS/eDouane_Accueil_EMCS.htm