



Factsheet:

Access to Base Registries in France

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France towards Interoperability

France has made a lot of effort towards ensuring interoperability in public services and towards the promotion of e-Government in general. The French e-Government has already existed for three decades, and through these years, many steps have been taken to introduce and consolidate digital transformation of French public ICT systems.

The **Development Plan for Digital Economy - Digital France (2012)**¹, in **Action 126**, sets out the necessity of interoperability between administrations. In line with this Action, the implementation of the first version of the General Repository for Interoperability (RGI) was created, where administration communication sites started being accessible in XML format for interoperability reasons. Moreover, the Plan encouraged the development of new products and services through the creation of a single access portal for public data, whose design was to be driven by the APIE (Action 39).

Furthermore, alongside with the French **NIF**² (*Référentiel Général d'Interopérabilité*³) at the national level, there was also developed a set of frameworks to ensure interoperability in French Public Administration. The aforementioned General Repository for Interoperability (RGI) has already been specified in 2009. It sets out the rules which must be respected by administrative authorities to ensure the ease of integration of new systems and interoperability among them. It consists of three parts:

1. The avant-propos (foreword);
2. The cadre d'interopérabilité (interoperability framework);
3. The guide d'interopérabilité (interoperability guide).

These chapters describe the problems and expected benefits of the repository, the principles, the scope and the proposed implementation based on specifications and norms. Also, a number of legislations have been introduced with the aim of establishing the Administrative Simplification through simple and secure interactions between citizens and public authorities.

In line with the NIF, the **Common Architecture Framework for Data Repositories**⁴ states that interoperability can be achieved through standardisation of data, defined by a common vocabulary. However, it should be possible to contextualise this data and combine it in a modular way. In addition, the **Ordinance on electronic interactions between public services' users and public authorities and among public authorities**⁵ defined the provisions for the interoperability of electronic services. The document also established the technical rules ensuring interoperability of information systems, including specifications for data directories, norms and standards to be used by the administrative authorities.

More recently, the **Digital Transformation of the State**⁶ (2014) program included measures to promote interoperability, and the following ones concern the base registries' interoperability in particular:

- **“Place de Marche de services”** promotes the reusability and interoperability of services between administrations;

¹https://web.archive.org/web/20081111194322/http://francenumerique2012.fr/pdf/081020_FRANCE_NUMERIQUE_2012.pdf

² http://references.modernisation.gouv.fr/sites/default/files/Referentiel_General_Interopabilite_V2.pdf

³ https://references.modernisation.gouv.fr/sites/default/files/RGI_Version1%200.pdf

⁴https://references.modernisation.gouv.fr/sites/default/files/Cadre%20Commun%20d'Architecture%20des%20R%C3%A9f%C3%A9rentiel%20de%20donn%C3%A9es%20v1.0_0.pdf

⁵https://www.legifrance.gouv.fr/affichTexte.do;jsessionid=19EBC4859D783AB5C1E67F939B509709.tpdjo16v_3?cidTexte=JORFTEXT000000636232&dateTexte=20080117

⁶ http://www.gouvernement.fr/sites/default/files/action/piece-jointe/2014/09/dp_-_transformation_numerique_-_version_web.pdf

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- The “**BANO**”⁷ project, initiated by OpenStreetMap France, is aiming to create an Open National Address Database. Address data is an essential reference particularly in France, where over 200 000 new addresses are created each year. Furthermore, data collected in the Cadastre is regularly updated with data from OpenStreetMap, allowing for more accurate and useful information for public use;
 - The “**Government as a Platform**” strategy⁸ led by DISIC, the inter-ministerial Directorate for Information and Communication Systems, provides a set of guidelines to choose among highly diverse technical and architectural options. These take the form of a repository of interoperability guidelines, a common architectural framework, proven Web standards and a shared co-creation platform, that is open to all actors. “Government as a Platform”⁹ is a strategy to improve public services in alignment with the ongoing digital revolution. The aim is, therefore, to bring simple and innovative solutions to the user of public services, all while increasing public involvement in an “Open Government”. Accordingly, the strategy includes guidelines¹⁰ geared towards bringing the French public administration and the French citizens and residents closer to each other:
 1. Focus the design of digital public services around the needs and situations of the user while taking their input into account;
 2. Facilitate the movement of data between administrations and allow the user to control the data exchange, especially when the exchanged data includes personal data.
 3. Foster the emergence of digital public service ecosystems;
 4. Frame the diverse technological and architectural options, by choosing common solutions to be used by all;
 5. Raise and apply the paradigm shift in the management of projects
 6. Register and participate in new initiatives launched internationally.

Digital revolution¹¹ has been the key enabler for the delivery of electronic public services. **DINSIC**¹² the Inter-ministerial Department for Digitalisation of State Information and Communication Systems is in charge of monitoring the states’ unified system of information’s performance. **Beta.gouv.fr**¹³ an incubator of digital services was deployed by DINSIC with the intent to spread digital innovation culture through state start-ups. **Mes-aides.gouv.fr**¹⁴ and **data.gouv.fr**¹⁵ mentioned below are examples of state start-ups.

Lastly, 16th October 2017 was the launch of **Public Action 2022**¹⁶ (Action Publique 2022), an action for the transformation of public services. The government aims to render all public services digital by 2022 and available on desktops as well as mobile. The first initiatives announced in early February include: a new social contract aiming to rebuild trust with public services agents and users, reinforcing transparency on public service efficiency when interacting with citizens, offering new online services for citizens and accelerating the digital transformation of French public administrations.

⁷ <http://openstreetmap.fr/bano>

⁸ <http://www.cio-online.com/actualites/lire-jacques-marzin-disic-%C2%A0-%C2%A0nous-voulons-mettre-en-place-l-etat-plateforme-un-socle-de-partage-interministeriel%C2%A0-7068-page-2.html>

⁹ <http://etatplateforme.modernisation.gouv.fr/a-propos-de-letat-plateforme>

¹⁰ http://etatplateforme.modernisation.gouv.fr/sites/default/files/etat-plateforme-cadre_strategique.pdf

¹¹ http://www.strategie.gouv.fr/sites/strategie.gouv.fr/files/atoms/files/17-27_digital_gb_web.pdf

¹² <http://www.modernisation.gouv.fr/documentation/publications/direction-interministerielle-des-systemes-d-information-et-de-communication-de-letat-deux-ans-dactions>

¹³ www.beta.gouv.fr

¹⁴ www.mes-aides.gouv.fr

¹⁵ <http://www.data.gouv.fr/fr/>

¹⁶ <http://www.gouvernement.fr/action/action-publique-2022-pour-une-transformation-du-service-public>

A few tools will be adopted for the latter:

- An open dashboard launched on the June 30th 2018,
- **FRANCEConnect Identité** an identity authentication service, allowing to access information and data held by the State,
- The technical architecture of **FRANCEConnect Plateforme** enabling the secure exchange of data and services via APIs and application programming interfaces, and
- A rapid development kit for online services to fast-track the launch times of new connected services.

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Legal Interoperability

Base registries are constituted under their specific legislations which define their functions. However, the definition for base registries as a concept is not yet established. Accordingly, the following French base registries are regulated by the legislations below:

- The **Civil Code**¹⁷, especially Title II about records of civil status, where it states that records on civil status include information on the first names, occupations and residence of all persons named therein. Additionally, according to the **Decree 97-852**¹⁸ which amended certain rules related to acts of civil status, the records of civil status are kept in each municipality on one or more registries in duplicate. Conservation, updating and issuing acts are tasks performed by the officers of civil status manually or in automated processes.
- The **Commercial Code**¹⁹ is the main **Company Law in France**. This law stipulates the most important requirements and rules for a company's organisation and structure. **The Company Law in France** also refers to some rules in the Civil Code, Monetary and Financial Code. As far as **company registration in France** is concerned, the Act of December 19th, 2002 mentions the obligations of all companies **which are set up in France**, to the Registry with the **French Registry of Commerce and Companies** (Registre de commerce et des sociétés).
- The **Transport Code**²⁰ sets out the necessary information and procedures that are necessary to register a vehicle. However, the most interesting development about the Vehicles Registry is the fact that, since February 2016, all registrations in the Vehicle Registry must be done through the new online Vehicle portal (VTC)²¹.

Additional principles forming the legal framework for interoperability in France are described below. They include France's approach to the Once-Only Principle, open data, the creation and reuse of data, as well as legal constraints in data sharing related to personal data protection.

- The **Tell-Us-Once principle**, France's approach to the Once-Only Principle, has revolutionised the responses to the public tenders. It is currently being implemented in France along with a wide range of base registry initiatives introduced through a number of strategies and respective initiatives. The strategy **Development Plan for Digital Economy - Digital France 2012** under the wings of the Directorate General for Government Modernisation, foresees the implementation of Tell-Us-Once through guidelines and service level agreements. More concretely, the **"Dites-le nous une fois"**²² (Tell us once) is an inter-ministerial program launched at the **CIMAP**²³ in 2012 which was designed to simplify and reduce the administrative burden on businesses by 2017. The aim is to reduce the amount of redundant information that businesses are asked to provide by 50%. E.g. the digital tool will enable the pre-filling and digitisation of administrative forms that businesses are required to

¹⁷ https://www.legifrance.gouv.fr/content/download/1950/13681/version/3/.../Code_22.pdf

¹⁸ https://www.legifrance.gouv.fr/affichTexte.do;jsessionid=D909A555027CD7FA19833E1B3E88FF81.tpdil.a19v_1?cidTexte=JORFTEXT000000738457&dateTexte=19970918

¹⁹ https://www.legifrance.gouv.fr/affichCode.do;jsessionid=607FC4F59801E5FDEC68F5FE57D497DC.tpdila19v_1?cidTexte=LEGITEXT000005634379&dateTexte=20161004

²⁰ <https://www.legifrance.gouv.fr/affichSarde.do?reprise=true&page=1&idSarde=SARDOBJT000023002715&ordre=null&nature=null&g=ls>

²¹ https://registre-vtc.developpement-durable.gouv.fr/public/accueil.action;jsessionid=FA149ADD777AC11D5BC9EF0C64E3AA26.TC80_08_M

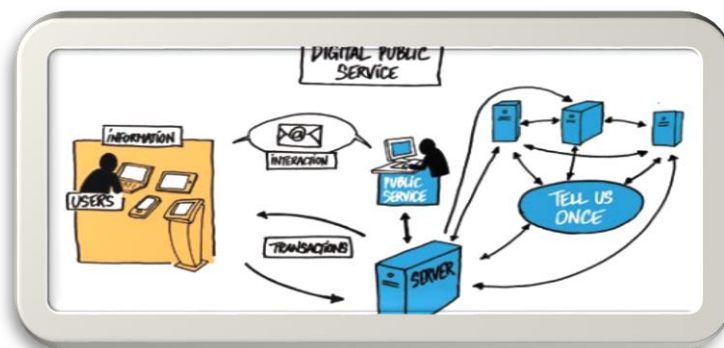
²² http://www.gouvernement.fr/sites/default/files/contenu/piece-jointe/2015/05/dnuf_dp_6_052015.pdf

²³ Inter-ministerial Government Modernisation Council

complete, in particular, to enable the exchange of information between the different departments and agencies. Since 2014, there are two projects running within the inter-ministerial program.

Accordingly, the three cornerstones of the “Dites-le nous une fois” by 2017 are:

- **Unique ID SIRET** (Système d’Identification du Répertoire des Etablissements);
- All the **company-related documents** (revenues, accounting data, etc.) will be provided **only once**;
- **Availability for companies** no longer have the duty to supply information (such as proof of ID to public authorities).



Public administrations can access this information through APIs (Apientreprises²⁴) that provide information from different base registries. The base registries that available through APIs are:

- INSEE (Administrative information / contact details and identity);
- Infogreffe (Legal information / legal status);
- DGFIP (fiscal information / taxation / turnover);
- ACOSS (social situation / social security contributions);
- Caisses retraites (pension funds)

Since the Declaration of the Rights of Man and of the Citizen, France has recognised that “**Society has the right to require of every public agent an account of its administration**”²⁵. This expectation of public transparency was a common thread and was expressed with the recognition of a right to access the national archives²⁶ (1794), the creation of a major public service for statistical information (INSEE, 1946)²⁷ and the establishment of a public service for online access to the law.

Regarding open data, from a legislative point of view, the **right to access and reuse information** is stipulated in the **Law**²⁸ **concerning “The free reuse of public sector information and the terms to reuse it”**. Specifically, it is stated: “The reuse of public information is free” (art. 5). “When they are made available electronically, that information, if possible, should be in an open and easily reusable standard, i.e. to say, machine readable”. However, the government may establish a fee for reuse in certain circumstances (art. 15). This Law specifies the nomination of public representatives responsible for the reuse of public

²⁴ <https://api.apientreprise.fr/documentation>

²⁵ https://www.europeandataportal.eu/sites/default/files/2010_france_psi_re_use_in_france_overview_and_recent_developments.pdf

²⁶ <http://www.archives-nationales.culture.gouv.fr/fr/web/guest/histoire-de-l-institution>

²⁷ <http://www.insee.fr/fr/insee-statistique-publique/default.asp?page=connaître/histoire/1946-1961.htm>

²⁸ <https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000031701525&categorieLien=id>

information, the setting up of repositories ensuring the availability of key public sector information and the definition of standard licenses. The Commission for Access to Administrative Documents (CADA)²⁹ is responsible for the supervision of all processing operations, ensuring the correct application of the right to access. Also, the law mentioned above on the free reuse of public sector information was amended by a governmental **ordinance**³⁰, which transposed the **European Directive 2003/98/EC** and set out the terms of re-usage of the public sector information.

A number of legislative initiatives ensure **open data availability**. The Law³¹ on the measures to improve relations between the administration and public sets the right for free access to administrative documents and the right is exercised towards all public entities and private bodies with a public service mission. On October 18th, 2011, the government announced the creation of the **Open License** (License Ouverte) for open government data, with the objective to enable free reuse of public data and as broadly as possible. It was designed through extensive consultation with all relevant stakeholders within government and amongst civil society.

The Open License regulates the right to use the Open Data portal. The portal facilitates and encourages the reuse of public data made available free of charge. Its three main characteristics consist in providing great freedom about information reuse, a strong emphasis on data transparency and quality of the data source and finally it puts in place a reusable standard to allow for the further unimpeded opening of data by organisations interested in doing that. The architectural basis of the Open Data portal is described in the “**Common Architecture Framework for Data Repositories**”³².

Moreover, the **Common Architecture Framework for Data Repositories**³³ which is the second edition to the **Common Framework of Urbanisation**³⁴, introduces a language, principles and common rules in the establishment, maintenance and operation of data repositories.

According to the Common Architecture Framework for Data Repositories, the State must ensure:

- That the data is available and accessible to all public administrations through connections that are easy to use;
- The data must be available to be processed to come to decisions that are needed for public policies;
- The data must be made available to third parties for reuse if it is not confidential.

The document also established a framework of basic concepts, rules and guidelines, in particular:

- On the semantic modelling,
- On the quality criteria,

²⁹ <http://www.cada.fr/>

³⁰ <https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000000636232>

³¹ <https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=LEGITEXT000006068643&dateTexte=20080117>

³² Chapter “MODÈLE DE CATALOGUE DE RÉFÉRENTIEL ET DE SERVICES ASSOCIÉS”, https://references.modernisation.gouv.fr/sites/default/files/Cadre%20Commun%20d'Architecture%20des%20R%C3%A9f%C3%A9rentiel%20de%20donn%C3%A9es%20v1.0_0.pdf

³³ Common Architecture Framework for Data Repositories, https://references.modernisation.gouv.fr/sites/default/files/Cadre%20Commun%20d'Architecture%20des%20R%C3%A9f%C3%A9rentiel%20de%20donn%C3%A9es%20v1.0_0.pdf

³⁴ Common Framework for the Urbanization of the Information Systems, http://references.modernisation.gouv.fr/sites/default/files/Cadre%20Commun%20d'Urbanisation%20du%20SI%20de%20l'Etat%20v1.0_0.pdf

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- On what is expected to be included in a database,
 - On the contribution of the databases to the overall innovation of the IT system of the State.

To ensure interoperability, data must be standardised (concepts, features, formats), defined by a common vocabulary, contextualised and be combinable with each other through establishing and maintaining a catalogue of data repositories. Moreover, data must be reusable, shareable and accessible across borders. It should also be public while at the same time secured and archived.

The **Ordinance on electronic interactions between public services' users and public authorities and among public authorities** provided the legal basis for the portal "Mon.Service-Public.fr". It established the use of e-signature in the public administration, giving it the same value as hand-written signatures. The digital identification and authentication allow users using the platform to create personal accounts and customise their information.

Another significant milestone was the appointment of a **National Chief Data Officer**³⁵. The role is defined in the Decree n° 2014-1050³⁶ and encompasses different actions:

- Implement best use of data as well as its correct release and the respect of privacy terms;
- Create tools, frameworks and methodologies to support data mining and discovery;
- Make recommendations to promote interoperability between IT systems and data.

Currently, the available datasets in the data.gouv.fr from the principal base registries are 18 for the Vehicles Registry, 6 for Population Registry, 106 for Tax Registry and 53 for the Land Registry.

Nevertheless, there are some legal restrictions on data sharing, which are introduced and implemented through the French Data Protection Act³⁷. The act sets out data handling procedures, rights of the data subject and establishes the "Commission Nationale de l'Informatique et des Libertés" (CNIL) as the French Data Protection Authority. In the case of breach of the Data Protection Act, the penalty varies, but cannot exceed the amount of 300,000 EUR (Article 47).

³⁵ <https://agd.data.gouv.fr/>

³⁶ <https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000029463482>

³⁷ <https://www.cnil.fr/sites/default/files/typo/document/Act78-17VA.pdf>

Organisational Interoperability

The administration of the specific base registries takes place at the national level through their respective Ministries/Authorities. Nevertheless, coordination of base registries is mostly carried out at the local level by bodies such as town halls or local registry offices. The information gathered by the local offices is then made retrievable and accessible via redirecting portals such as the single access point **Service-Public.fr**³⁸.

The Common Architecture Framework for Data Repositories identifies different models and systems architectures for the management of the base registries, depending on the type of database, users, workflow, etc. These can be consolidated at the national level or managed at the local level with varying degrees of data synchronisation.

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

Base Registry	Authority	Master Data
Civil Registry ³⁹	Ministry of Justice	PERSONAL DATA (NATURAL AND LEGAL PERSONS)
Vehicle Registry ⁴⁰	Ministry of Environment, Energy and Sea	VEHICLES
Business Registry ⁴¹	National Institute of Intellectual Property	BUSINESS
Land Registry ⁴²	Ministry of Economics and Finance	LAND, PARCELS
Tax Registry	Ministry of Economics and Finance	TAX

The **civil registries** are kept separately throughout France by the respective town halls in the country. It is the duty of each town hall to maintain and update their registry of births, deaths, marriages, etc. in line with the information provided by the citizens residing in the area of jurisdiction of any given town hall. Accordingly, due to the legal implications that civil matters and their registrations may have, the central authority responsible for the civil registry is the French Ministry of Justice.

The official system of land registration in France is called the **Cadastre**, it is maintained by the French public land registry, under the auspices of the French tax authority (the *Direction Générale des Finances Publiques (DGFIP)*). The 354 French property registries are independent of each other, and there is no interaction between them. Accordingly, in France, each commune has its cadastral office, however, since 2007 **cadastre.gouv.fr** has been providing view and other services for digitally available cadastral plans of all French communes in the country.

Similarly, entries in the **business registry** at the national level are not made directly. Instead, business owners must registry their businesses with the local business registry office (Greffé du Tribunal de Commerce) in charge of the area where the business is located. The National Institute of Intellectual Property of France is the body that is in charge of it.

³⁸ <https://www.service-public.fr/>

³⁹ <https://mdel.mon.service-public.fr/acte-etat-civil.html>

⁴⁰ https://registre-rtc.developpement-durable.gouv.fr/public/accueil.action;jsessionid=FA149ADD777AC11D5BC9EF0C64E3AA26.TC80_08_M

⁴¹ <https://www.infogreffe.fr/societes/>

⁴² <https://www.cadastre.gouv.fr/scpc/accueil.do#>

Furthermore, the overall organisation and coordination of digital reforms in France are the responsibility of the Prime Minister who makes use of the number of authorities as mechanisms for steady digitalisation of information systems in the public sector.

First and foremost, the authority responsible for strategy implementation is the **Secretary of State for Reform and Simplification of the State**⁴³. Additionally, the **General Secretariat for the Modernisation of Public Action**⁴⁴ (SGMAP) supports the Government in the implementation of the state reform and supports governments in their modernisation projects. The Secretariat encourages public actors to take ownership of new ways to design and implement public policies, and as a result, deliver better public services. With the citizen at the centre from all of its goals and its methods, SGMAP works for a more efficient public action. It develops and distributes digital technologies within the administration to adjust services to the needs and use of the citizens. **DINSIC**, aforementioned, was created from the merger of DISIC and Etalab (see below). Its main objective is, among others, the direction and coordination of the State Administrations' actions that are aimed to improve the quality, effectiveness, efficiency and reliability of the services provided by the state systems and administrative authorities. DINSIC is also in charge of operating FranceConnect.

The French government also established a **National Chief Data Officer**. In coordination with the public administration she/he:

- Advises the Prime Minister on the exploitation of existing data, received or collected by the public administration;
- Devise tools, classifications and methodologies allowing a better exploitation of the data and in general advises on the development and use of data science in the public administration;
- Advises the Inter-Ministerial Directorate on the ICT systems about technical issues about systems interoperability;
- Can also work on creating semantic assets for the databases;
- Can be in charge of the use of databases to inform the public policies and improve services for the users;
- Can receive queries from companies and citizens on the use and circulation of data;
- Advises the prime minister on matters regarding data in international fora about EU policies.

To successfully achieve the mission of increasing availability and reuse of public sector data, the **French Open Data policy** was enhanced with the creation of the taskforce **Etalab**⁴⁵ (data.gouv.fr) by Prime Ministerial decree on 21st February 2011. Attached to the Secretariat General for the Modernisation of Public Action, under the authority of the Prime Minister, the taskforce Etalab is responsible for coordinating public administrations for releasing their public data, developing the national Open Data platform data.gouv.fr to that effect and encouraging the reuse of public data by the government itself as well as the private sector. In 2013, Etalab began a "Co-Design" operation. It's a collaborative process which makes use of open source tools. It takes into account usage of feedback, user suggestions, requirements related to the increase in resources made available online and the new audiences interested by the opening of public data. Thus, in line with the information gathered, the government has emphasised its commitment to open formats and will continue the provision of machine-readable data. It will also progress towards the automated provision of data through Application Programming Interfaces (API).

⁴³ <http://www.gouvernement.fr/simplifier-transformer>

⁴⁴ <http://www.modernisation.gouv.fr/le-sgmap>

⁴⁵ <http://www.modernisation.gouv.fr/sites/default/files/fichiers-attaches/sgmap-presentation-en.pdf> and <https://www.etalab.gouv.fr/thenextgenerationofdata-gouv-fracommunityofpublishersandusersofopengovernmentdatahttps://www.legifrance.gouv.fr/affichSardec?reprise=true&page=1&idSardec=SARDOBJT000031372599>

The **Open data portal data.gouv.fr**⁴⁶ is the state portal that provides open data in France. It has been piloted under the authority of the Prime Minister through the establishment of Etalab⁴⁷, which was formed as part of DINSIC. Data.gouv.fr can be considered as a concentrated open data repository that any citizen or organisation have the right to use or provide information to. Additionally, the portal allows customised access, that's based on users' type, including citizens, data producers, re-users, developers and integrators.

⁴⁶ <https://www.data.gouv.fr/fr/search/?q=catalogue>

⁴⁷ www.etalab.gouv.fr

Semantic Interoperability

The **Common Architecture Framework for Data Repositories** establishes the importance of the semantic data standardisation. The document makes reference to widely accepted international standards, like *Core Concept Library (CCD)* of the United Nations Centre for Trade Facilitation and Electronic Business. In fact, the RGI was based on the CCD.

Semantic Interoperability assets are key components and include reusable metadata as well as reference data. Thus, the French government has embedded these assets in the **RGI**⁴⁸, which is also a guide to semantic interoperability. According to this document, two standards are identified for modelling: the **Unified Modelling Language** - version 2.0 is recommended to be used, and the **BPMN** (Business Process Model Notation). Along with these identified standards, the data formats commonly utilised in France to represent and manage base registry Information correspond to HTML, CSV, XML, ZIP, XLSX, MARC, DC.

Moreover, France makes use of **Thesauri and Ontologies** to ensure data consistency and integration. As far as Thesauri are concerned, France uses UDDI, Universal Description Discovery and Integration, XML schema, WSDL. Those are some of the standard technologies for implementing **SOAP Web Service**⁴⁹.

Here are some examples of **Ontologies**⁵⁰:

The screenshot displays a web-based ontology interface with the following content:

- generate**^c (Return to Table of Contents or back to classes)
IRI: <http://givingsense.eu/frscol/FrBloom/generate>
Its super-classes: [create](#)^c
Its subclasses: [assume](#)^c
Its members: [generate](#)^{or}
is also defined as: [individual named](#)
- identify**^c (Return to Table of Contents or back to classes)
IRI: <http://givingsense.eu/frscol/FrBloom/identify>
Its super-classes: [recognize](#)^c
Its members: [identify](#)^{or}
is also defined as: [individual named](#)
- illustrate**^c (Return to Table of Contents or back to classes)
IRI: <http://givingsense.eu/frscol/FrBloom/illustrate>
Its super-classes: [exemplify](#)^c
Its members: [illustrate](#)^{or}
is also defined as: [individual named](#)
- implement**^c (Return to Table of Contents or back to classes)
IRI: <http://givingsense.eu/frscol/FrBloom/implement>
Its super-classes: [apply](#)^c
Its subclasses:

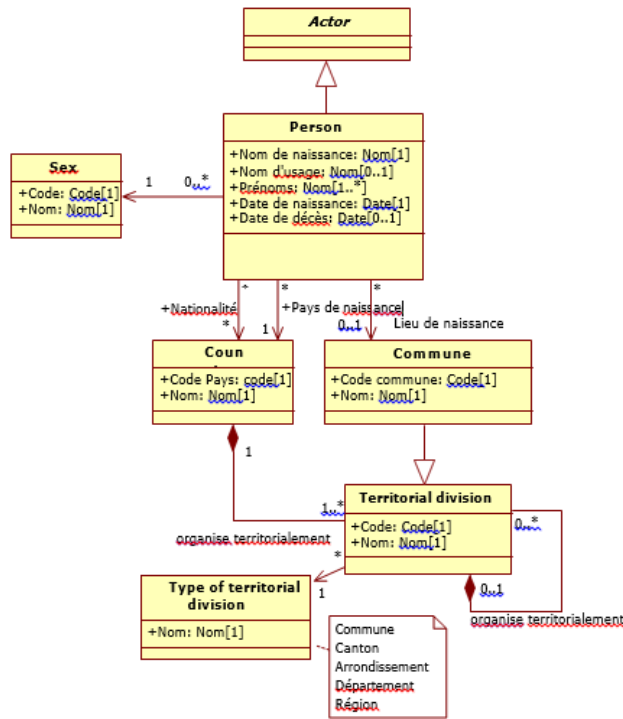
Following the above, details on French semantic interoperability can be found in the RGI. In particular with regard to format pivots (semantic + syntax), which aim is at describing the main business objects exchanged between administrative authorities and users, as well as authorities among themselves. It is also worth

⁴⁸ https://references.modernisation.gouv.fr/sites/default/files/Referentiel_General_Interoperabilite_V2.pdf

⁴⁹ MTOM, XOP, XSD, SAMLv2, WS-Security, WS-Addressing,

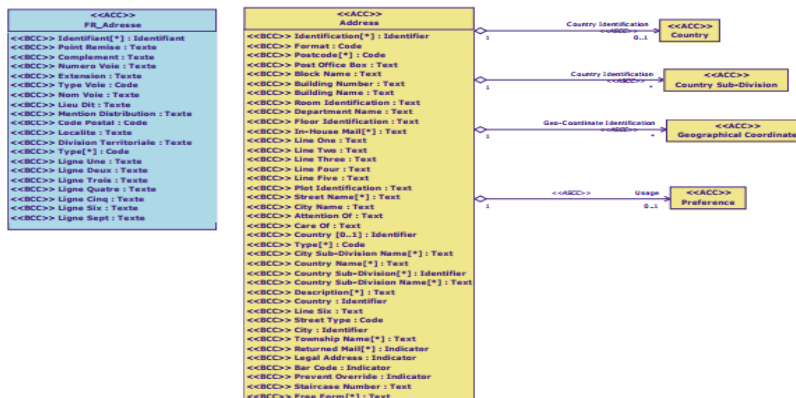
⁵⁰ <http://givingsense.eu/>

mentioning that ISA Core Vocabularies are being used as a reference in the field of developing these format pivots. The following example represents the UML Model of a person's identity pivot:



UML Model of a person's identity pivot

Furthermore, France is using XML and UML for their common data model, which can then be applied to packages. For French addresses it appears as follows:



The following is an example of the common data model applied for geographical coordinates:

<<ACC>> FR_Coordonnees Geographiques	<<ACC>> Geographical Coordinate
<<BCC>> Altitude [0..1] : Mesure	<<BCC>> Altitude : Measure
<<BCC>> Latitude [0..1] : Mesure	<<BCC>> Latitude : Measure
<<BCC>> Longitude [0..1] : Mesure	<<BCC>> Longitude : Measure
<<BCC>> Direction Latitude [0..1] : Indicateur	<<BCC>> Latitude Direction : Indicator
<<BCC>> Direction Longitude [0..1] : Indicateur	<<BCC>> Longitude Direction : Indicator
<<BCC>> Systeme Geodesique : Identifiant	<<BCC>> System : Identifier
<<BCC>> Identifiant [0..1] : Identifiant	<<BCC>> Identification : Identifier
<<BCC>> Systeme Altimetrique [0..1] : Identifiant	<<BCC>> Altimetric System : Identifier
	<<BCC>> Description[*] : Text

Furthermore, the **General Repository for Interoperability, Action 127** states⁵¹ that to ensure accessibility of government websites, there should be alignment between the General Repository of French administrations and the international recommendations of the **WAI** (Web Accessibility Initiatives). Thus, to ensure alignment and adhere to international recommendations, other formats defined in the RGI are used for:

- **State Foundations Platform:** IPv4 / IPv6, TCP, HTTPS, CORS, TLS, URI, JSON, Internet media type, SFTP, JavaScript, HTML, ATOM, CSS, OAuth 2.0, OpenID Connect, CMIS, PDF, JPEG, SOAP Web Service;
- **Interpersonal Communication and between Public Authorities:** SIP, MGCP, XMPP, H.323, H.264, FLAC, Vorbis, WebM, JPEG, GIF, SVG, ZIP, 7z, SMTPS, POP3S, IMAP4S, iCal, PDF, ODF
- **Archive:** SEDA, OAIS, PDF/A, ODF, JPEG, JPEG 2000, SVG, MP3, MPEG-2, MPEG-4, H.264, XML, CSV, SIARD, ZIP, TAR
- **Geomatics:** GML, KML, WFS, WMS, WCS, WPS, WMTS, CSW, GeoJSON, ATOM, Shapefile, GeoJSON, GeoSpatial-Metadata, OpenLS, OWS Context, GeoTIFF, JPEG 2000
- **Interoperability for Bodies of Social Protection:** InterOPS

Additionally, the Open Data Portal⁵² apart from the +13 000 available datasets, also provides reusability descriptions with an exhaustive list of components, code lists, services, data models, ontologies, common vocabularies as well as sources of metadata for the public sector. **Data.gouv.fr** is based on CKAN, which allows governments, public administrations and companies to develop a data management system to publish, share knowledge and information. More specifically, it uses CKAN API v3 to exchange information on data sets. Accordingly, for the French Open Data portal, Etalab developed an extension for CKAN which is available on **GitHub**⁵³ and shared with the Open Source community. Etalab also provides **APIs** for Data.gouv.fr.

⁵¹ Action 127 of RGI

⁵² <http://www.data.gouv.fr/fr/reuses/?type=api>

⁵³ <https://github.com/etalab/adresse.data.gouv.fr>

Technical Interoperability

The key levers for technical interoperability between base registries are secure technical systems and infrastructures as well as common sets of standards.

The decree⁵⁴ of August 1st, 2014 confirms the establishment of a single state's information system. This base, comprised of recommended hardware and software for the state information system in France and now it's common to all departments. The system is under the governance of the Prime Minister, complemented with continuous consultancy with the Inter-ministerial Directorate for Information and Communication Systems (DISIC) and the General Secretariat for Modernisation of Public Action (SGMAP).

Another key lever for technical interoperability among French base registries is the RIEor inter-ministerial network of the State, (*Le Numérique, pour Transformer l'État*⁵⁵). This is a network which currently interconnects approximately 4000 public sites.

RIE is a shared network that carries data exchanged within each Ministry, and between Ministries. Thus, it functions as the single main channel for exchanging data between Ministerial Departments.

The main target is to connect all government sites, central and decentralised administrations, located and operating on French territory. Moreover, by 2017, 17.000 sites will be connected. This is a number representing a 4th-fold increase when compared to the platforms currently connected.

The inter-ministerial network of the State (RIE) is a key project in the modernisation of the State's information system, as its principal objective is to pool existing networks as well as the installation and consolidation of a new unified infrastructure. In line with this, the RIE objectives are:

- To simplify and optimise the exchange of information between ministries and departmental entities, as well as services for the users;
- To ensure security to the Information Systems of the State;
- To optimise the infrastructure to provide unified service catalogues and fewer costs.

From the architecture point of view, the common approach for the French State Information Systems is REST (Representational State Transfer), which is neither a protocol nor format but an architectural style. This style of architecture must comply with six requirements:

1. Constraints on the client-server: the responsibilities are shared between the client and the server. The user interface is separate from the data storage. This allows both to grow independently.
2. Stateless: each request from a client to a server must contain all the information necessary to allow the server to understand the application, with independence on context stored on the server.
3. Caching: This allows proxy servers to unload constraints on the server, in turn, removing the need for clients to make unnecessary queries. This also improves the extensibility of servers.
4. A uniform interface (four essential rules define this constraint):
 - Identification of resources: each resource is identified in a unitary manner
 - The manipulation of resources through representations (resources define the representations).
 - A self-descriptive message is the messages which explain their nature. For example, if an HTML representation is encoded in UTF-8, it means that the message contains the information necessary to say that this is the case.

⁵⁴ Decree August 1, 2014,

<https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000029337021>

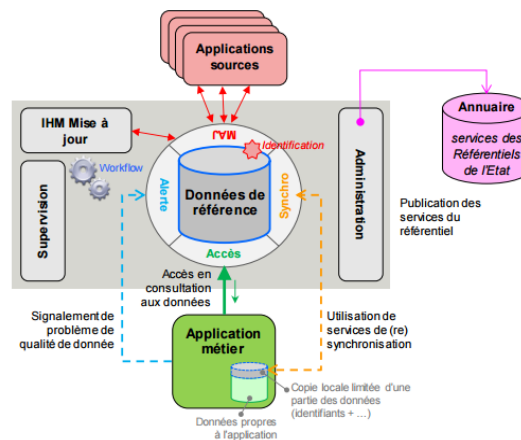
⁵⁵ http://www.gouvernement.fr/sites/default/files/action/piece-jointe/2014/09/dp_-_transformation_numerique_-_version_web.pdf

- Hypermedia as the engine of the application state shows that each access to reports following the application is described in the current message.
5. A hierarchical system by layer: individual resources identify the application states. Information is sent to multiple resources. Requests/responses between the client and the server can increase, in terms of lowering the performance of the importance of caching, etc. The benefit is that it makes for a more flexible system evolution.
 6. Code-On-Demand (optional): the ability for customers to run scripts obtained from the server. This prevents the processing from taking place only on the server side and thus allows to change the client functionality over time. However, this reduces the visibility of the organisation of resources. A state becomes dependent on the client and not the server which contradicts Rule 2, described in the **RGI defining the norms and applicable standards**⁵⁶.

The data distribution architecture in the Information Systems, and thus the repository must use principles that rely on two major orientations: “API first” and “Open first”. This means it has to be open and accessible through APIs complying with the interoperability technologies and principles of the web. The list of available APIs is available online⁵⁷.

Each component of the architecture must:

- Use an open-source interface (e.g. REST/JSON or OpenID);
- Be compliant with the DISIC regulations;
- Provide a documentation of the public interface in an open source community;
- Be suitable to be “instantiated” in most languages, especially for the multi-channel;
- To take into account the RGAA (Référentiel Général d’Accessibilité pour les Administrations)⁵⁸.



The technologies that used for **orchestration and transmission of data elements** are WS-BPEL, WS-CDL, while Electronic Signatures are based on PAdES, XAdES, CAAdES, ASiC.

⁵⁶ https://references.modernisation.gouv.fr/sites/default/files/Cadre%20Commun%20d'Urbanisation%20du%20SI%20de%20l'Etat%20v1.0_0.pdf

⁵⁷ <https://api.gouv.fr/api/>

⁵⁸ http://etatplateforme.modernisation.gouv.fr/sites/default/files/etat-plateforme-cadre_strategique.pdf

Cross-border Interoperability

France has been amongst the good performers regarding cross-border interoperability. In line with that, the past decade has witnessed significant progress in accessibility for cross-border users.

In 2009, **EUCARIS**⁵⁹ (European CAR and Driving Licence Information Systems) which was initially backed by Luxembourg, Belgium, Germany, the Netherlands and the United Kingdom welcomed France as well as other EU and EFTA countries. Through EUCARIS solutions France signed multiple bilateral agreements aiming to pursue traffic infractions. This agreement was first signed by Belgium, Spain, Germany, The Netherlands, Poland, Romania, Italy and Luxembourg and eventually by Austria in 2016.

In addition, France is also a member of **EULIS**⁶⁰ (European Land Information Service) and **ECRIS**⁶¹ (European Criminal Records Information System). In these initiatives, standards and protocols are shared and implemented among several Member States' systems.

Similar to Switzerland, border security and migration are important issues with terrorism at bay. Being an EU country, France is a participant of all EU information system initiatives such as **Eurodac**⁶², **Schengen Information System (SIS)**⁶³, and future systems **Entry/Exit System (EES)** and **European Travel Information and Authorisation System (ETIAS)**⁶⁴.

In addition to being one of the countries that has no public services offline, France is collaborating with the UK through the **UK-France Data Innovation Taskforce**. Sharing data and creating common data language between the two countries is a critical success factor of this initiative.

⁵⁹ <https://www.eucaris.net/countries/france/>

⁶⁰ <http://eulis.eu/service/countries-profile/france/>

⁶¹ <http://www.consilium.europa.eu/en/press/press-releases/2017/12/08/european-criminal-records-information-system-ecris-council-agrees-its-position/>

⁶² <https://www.schengenvisainfo.com/etias/>











⁶³ https://ec.europa.eu/home-affairs/what-we-do/policies/borders-and-visas/schengen-information-system_en

⁶⁴ <http://www.consilium.europa.eu/en/press/press-releases/2017/11/20/entry-exit-system-final-adoption-by-the-council/>

E-Government Public Services making use of Base Registries data

The new French portal **Service-Public.fr** can be considered as the main single access point for e-Government services. It is an improved version of **Mon.Service-Public.fr**, which has been deactivated since the introduction of Service-Public.fr. Functioning from the beginning as a one-stop-shop for both citizens and businesses, it is enriched with a unified, personalised and secure access to electronic services. Both citizens and businesses can handle procedures online, as the one-stop-shop offers a number of integrated online services enabling every citizen to make her/his online administrative procedures from registration on electoral lists to change of address, death certificate or loss of identity paper.

The portal offers access to information and services relevant to **citizens, businesses and associations and encompasses different life events respectively**. The life events are the building blocks and are categorised by domain as illustrated in the figure below. Additionally, the new portal provides with the ability to remain in frequent contact with the government through a dedicated e-mail service.

 <p>PAPER - CITIZENSHIP Civil status , passport , elections , Papers to keep , ID card ...</p>	 <p>FAMILY Family allowances , birth , marriage , Pace , schooling ...</p>	 <p>SOCIAL - HEALTH Vital card , unemployment , handicap , RSA , The elderly ...</p>	 <p>JOB CSD , contest , retirement , resignation , Trial period ...</p>	 <p>HOUSING Housing allowances , Building permits , Social housing , End of lease ...</p>
 <p>TRANSPORT NETWORK Gray card , Driving license , Technical control , Offences ...</p>	 <p>MONEY Mortgage , taxes , consumption , Livret A , insurance , overindebtedness ...</p>	 <p>JUSTICE Criminal record , complaint , Legal aid , seizure ...</p>	 <p>FOREIGN Residence permits , Proof of accommodation , Family reunion ...</p>	 <p>HOBBIES Pets , Boat license , tourism , Hunting permit ...</p>

Regarding useful assets, France has created and made available a catalogue of APIs⁶⁵. It contains all of the APIs currently in use by the French authorities, as well as the purposes for which they are to be used.

TOUTES LES API DE L'ADMINISTRATION	
<p>API Entreprise DINSIC Simplifier les démarches des entreprises en récupérant pour elles leurs documents administratifs</p> <p>OUVERT sous contrat</p> <p>Données confidentielles</p>	<p>API Particulier DINSIC Simplifier les démarches de vos usagers , ne demandez plus de justificatifs</p> <p>OUVERT sous contrat</p> <p>Données confidentielles</p>
<p>API Prélèvements sociaux DINSIC Estimer le coût d'embauche en France</p> <p>OUVERT</p> <p>Le droit calculable</p>	<p>Base Adresse Nationale ETRIAL Un référentiel national ouvert , de l'adresse à la coordonnée géographique</p> <p>OUVERT</p> <p>Données de référence</p>
<p>Données transports Brest métropole Brest métropole Données théoriques et temps-réel des transports publics de Brest métropole</p> <p>OUVERT</p> <p>Données de référence</p>	<p>FranceConnect DINSIC FranceConnect est un dispositif qui garantit l'identité d'un usager en se reposant sur des comptes certifiés existants.</p> <p>OUVERT sous contrat</p> <p>Données confidentielles</p>
<p>GeoAPI DINSIC Interroger les référentiels géographiques plus facilement</p> <p>OUVERT</p> <p>Données de référence</p>	<p>leTaxi DINSIC & DSCR (Ministère de l'Intérieur) Un clic , un taxi</p> <p>OUVERT sous contrat</p> <p>Etc Data</p>
<p>Médicapi DINSIC Base de données publique des médicaments de l'Agence nationale de sécurité du médicament et des produits de santé</p> <p>OUVERT</p> <p>Données de référence</p>	<p>OpenFisca Etab Moteur ouvert de simulation du système socio-fiscal</p> <p>OUVERT</p> <p>Le droit calculable</p>
<p>API RVA Rennes Métropole Rennes Métropole Voies et adresses de Rennes Métropole</p> <p>OUVERT</p> <p>Données de référence</p>	<p>API travaux Rennes Métropole Rennes Métropole Connaitre à l'avance les perturbations dues aux travaux sur Rennes Métropole</p> <p>OUVERT</p> <p>Données de référence</p>

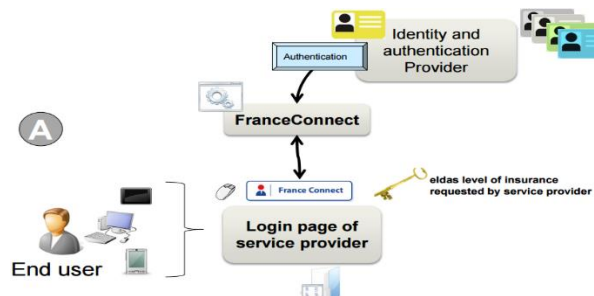
⁶⁵ <https://api.gouv.fr/api/>

In essence, an API allows for communication between computer systems which were not necessarily originally designed to work together.

Furthermore, **France Connect**⁶⁶ is an **Identification and Authentication System** initiated by the **General Secretariat for the modernisation of public action (SGMAP)**. The system enables connection to multiple accounts via a single authentication of the user's credentials. An excellent example of FranceConnect's functions is evident in the case of checking French driver's license points⁶⁷. By using his/her France Connect account, the driver can access his/her account, where she/he can consolidate it with his/her driver's license through the identity pivot⁶⁸. When this is completed, the driver will be able to see his license details and points by simply signing on to France Connect.



Moreover, there will be no imposed centralization of user accounts nor single digital identity systems, as the user is free to choose the accounts he wants to federate. The new e-ID services offered on the portal will allow citizens, businesses and civil servants to access all of France's e-Government services. Nevertheless, it must be stated that there will be account federation with eIDAS compliant eIDs from the other Member States who are part of the eIDAS interoperability framework.



Finally, in line with the French government modernisation and their statement of objectives regarding "simpler, more efficient and fairer public services"⁶⁹, the following initiatives should enhance public services even further, also regarding the Once-Only Principle:

⁶⁶ France Connect, <http://www.modernisation.gouv.fr/ladministration-change-avec-le-numerique/par-son-systeme-dinformation/france-connect-un-acces-universel-aux-administrations-en-ligne>

⁶⁷ <https://franceconnect.gouv.fr/usages/telepoints>

⁶⁸ UML Model of Identity pivot figure in Semantic layer

⁶⁹ <http://www.modernisation.gouv.fr/sites/default/files/fichiers-attaches/sgmap-presentation-en.pdf>

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- The **Marché Publique Simplifiée**⁷⁰ aims to simplify access to public tenders:
 - The **Aide Publique Simplifiée (APS)**⁷¹ is a platform of secure digital services with the possibility to enable reliable and constantly updated data sharing between administrations. With APS one can seek help by providing the SIRET number.

⁷⁰ <http://www.modernisation.gouv.fr/les-services-publics-se-simplifient-et-innovent/par-des-simplifications-pour-les-entreprises/marche-public-simplifie>

⁷¹ <http://www.modernisation.gouv.fr/les-services-publics-se-simplifient-et-innovent/par-des-simplifications-pour-les-entreprises/aide-publique-simplifiee>