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# How the computer-based cadastral map is used to monitor property ownership in France

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**Abstract** The French cadastral map depicts and identifies property ownership for tax purposes. It is the only continually-updated, large-scale plot map that covers all of French territory. The map is published annually in each French municipality and has been available free of charge to the general public since 2008 on the website [www.cadastre.gouv.fr/](http://www.cadastre.gouv.fr/), which has proved to be extremely successful.

The computerisation of the cadastral map, which the Directorate General of Taxes started in 1993 in partnership with local authorities, made additional incremental improvements to the correlation between cadastral and land register information, which was a fundamental principle laid down during the major reform of real property registration in 1955.

In addition to the cadastral map itself, the computerisation of all land, cadastral and mortgage, documentation has made the French cadastral and mortgage system more reliable, flexible and economical, and has contributed to maintaining a form of social order for 200 years in the area of land ownership. It has thus helped to consolidate a climate of trust.

The computerisation of the system has also led to major productivity gains for the administration and offers new services to administration officers, land and real estate professionals, and to the general public.

## INTRODUCTION

Current French land tenure is based on both a cadastre, which forms the basis for tax assessment, and a land register, in which real estate rights are recorded. It is the result of more than 200 years of history that has seen extensive legal, technical and organisational changes.

The French cadastre dates back to the 1789 Revolution. It was created with the aim of apportioning land ownership taxes equitably. In 1807, Napoleon decided to draw up a cadastral map covering all of French territory, which was an essential tool for ensuring fiscal fairness.<sup>1</sup>

The French cadastre can be viewed as an institution devoted to the identification of all types of property, the search for apparent or actual owners, the recognition and the definition of property boundaries, property description, monitoring property developments and property valuation. It takes the form of a set of documents that are purely administrative in nature (cadastral map, lists of real estate and of owners) and drawn up for each municipality, which give a representative and descriptive overview of developed and undeveloped land in France, but are only presumptions and not proof of title.

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<sup>1</sup> Finance Act of 15 September 1807.

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Real property registration is defined as the set of rules designed to inform interested third parties of the legal status of a given piece of real estate via a land register and the registration of liens, mortgages and other rights that encumber the real estate concerned. In France, real property registration dates back to the *Ancien Regime* and the royal edict of 17 June 1771 (Louis XV), which created the corps of mortgage registrars who were tasked with keeping a register in each bailiwick and administrative district. Initially, this register was only used to record liens and mortgages. The Law of 23 March 1855 also made it mandatory to record transfers of title, in order to reduce mortgage loan risk.

These two institutions report to the Directorate General of Public Finances (DGFIP), which was created in 2008 by merging the Directorate General of Taxes (DGI) and the Directorate General of Public Accounting (DGCP), thereby facilitating mutual communication and interaction.

The first section of this document will describe the fundamental principle, which was laid down in 1955, of correlation between cadastral documentation and the land register. The second section will describe the various stages involved in computerising land documentation, which made it possible to consolidate the links between cadastral documentation and the land register, and for major gains to be generated, which will be described in the third and final section.

#### **A fundamental principle: correlation between cadastral documentation and the land register**

Each reform introduced since the creation of the cadastre in 1807 and the mortgage registration system at the end of the 18<sup>th</sup> century acknowledged the other reforms in these areas, but was primarily implemented in isolation, without really taking into account the areas where the cadastre and mortgage registration overlap, namely property owners and ownership. This was because each institution was assigned a different objective: tax assessment for the cadastre and the registration of real property rights for mortgage registries.

The 1955 reform and its series of decrees (Decree no. 55-22 of 4 January 1955 that reformed real property registration and its implementing Decree no. 55-1350 of 14 October 1955, as well as Decree no. 55-471 of 30 April 1955 on the overhaul and maintenance of the cadastre) provided greater legal certainty for land tenure in France, and also made major improvements from a technical perspective:

- starting on 1 January 1956, a land register was created with the possibility of searching by property and by name (previously, mortgage documentation could only be searched by name);
- it became mandatory to use a deed witnessed by a *notaire* for registered deeds;
- it was made mandatory for the deed held by the alienating party or the most recent holder to be registered, except for deeds prior to 1 January 1956, in order to ensure enforceability against third parties;
- it became mandatory to identify real estate “*using current cadastral data, for all deeds and private deeds or judgments that convey, declare, create or extinguish title or in rem rights to real estate*” (Article 870 of the French General Tax Code).

Thus, starting in 1955, the French cadastre was given a new official remit in addition to its original tax function, namely the precise identification and correct physical description of the real estate to be taken into account in the land register on the basis of the deeds and decisions filed by the general public (via *notaires*).

Above all, and for the first time in the history of real estate records, systematic cross-referencing between the cadastre and land register was set up with the aim of maintaining complete correlation at all times between cadastral documentation and the land register.

From a technical perspective, three types of documents are used for this cross-referencing:

- **cadastral extracts**, primarily in the form of a “model 1 cadastral extract”, which, on penalty of registration refusal, must be submitted in support of any document that is filed with the land register and that evidences a change in the legal status of a property. Each model 1 cadastral extract contains the “cadastral references” (identification number) for the cadastral parcels and co-ownership lots that must be registered. It is issued by the cadastral office and is certified as compliant with the cadastral documentation on the date of issue. Only deeds or decisions that transfer title for land development purposes (consolidation of land parcels) are exempt from this rule;

- **documents that alter the cadastral map, also known as survey documents**. They are used to identify new cadastral parcels, in order to update the cadastral map. Thus, according to Article 25 of Decree no. 55-470 of 30 April 1955, *“in municipalities where cadastral information must be registered, all changes in ownership boundaries, in particular as a result of divisions of cadastral parcels, property allotments, must be evidenced in a document drawn up at the expense and initiative of the parties and certified by them, which shall be submitted to the cadastral office, prior to the drafting of the deed that achieves the boundary change, so that the new property allotments can be checked and numbered.”*

The persons who are accredited by the tax administration for the preparation of survey documents are mainly chartered surveyors, who are registered with the governing body for this profession. Amending documents that record the agreement of the parties on the position of the new boundaries must be signed by these parties and by the surveyor who witnessed their agreement. Around 230,000 such survey documents are prepared each year, in close consultation with the general public and using fieldwork, in order to reflect the intentions of land owners;

- **cadastre reports**. In addition to changes in property boundaries, Article 33 of Decree no. 55-470 of 30 April 1955 states *“the cadastral office shall be empowered to record, ex officio, for the purposes of the recordkeeping for which it is responsible, changes of all types that do not affect the legal status of real estate.”* In such situations (mergers of cadastral parcels, transfers of cadastral parcels to state property, replacement of a current *cadastral map* by a *new cadastral map* (procedure called *“remaniement”*), etc.) and with a view to ensuring continued correlation between cadastral and mortgage documentation, the cadastral office files a report with the land registry that notifies changes in the description and surface area of real estate.

In France the cadastral map therefore represents the basis on which real property rights are exercised and thus to a certain extent acts as the physical medium for the land register, which is itself the repository designated by law for registering such rights.

Since the seventies, the DGI has computerised its land documentation, a process that was completed in the 2000s.

### **The computerisation of land documentation**

This structural change affected all land documents, both cadastral documents, whether cartographic (cadastral maps) or descriptive (lists of owners), and the land register.

#### ***The computerisation of the cadastral map: from the printed plan to the launch of the website [www.cadastre.gouv.fr](http://www.cadastre.gouv.fr) early in 2008***

The compilation of the computerised cadastral map started in 1993 with the signature of a national protocol between the Directorate General of Taxes and the major geographical information providers in France, at the forefront of which are local authorities.

For the management of municipal land, supra-municipal land and even provincial land, local authorities make regular use of the cadastral map, whether for their own requirements (town planning, road safety, management of local authority buildings or infrastructures, street furniture, etc.) or pursuant to regulatory obligations (town planning regulations, coordinated land use charts, public easements, etc.). The 1993 protocol forms a contractual framework for the digitisation of the cadastral map in vector format. In return for the contractual partners financing the vectorisation work, the DGI (and subsequently the DGFIP):

- provides the original, geo-referenced versions of the cadastral map;
- ensures technical monitoring of the operations and guarantees the quality of the services via certification;
- assigns extremely extensive rights of use, distribution and redistribution to the database thus compiled;
- provides the updates of the digitised plan (up to four times a year) throughout the lifespan of the agreement (there is no time limit).

In order to manage the digital files, which must comply with the data exchange standards for the DGI's digitised cadastral map, local cadastral offices were equipped with the PCI-Vecteur software, which was developed by the central IT department.

After a slow start, the contractual policy gained traction in the 2000s through the strength of the partnership between local authorities and the DGI.

In 2000, the DGI decided to scan the 460,000 map sheets that were still printed on tracing paper, in order to complete the vector-based digitisation that had been started. This industrial-scale operation was completed in 2004. In order to manage the scanned cadastral maps, the local cadastral offices were equipped with the PCI-Image software.

Thus, since 2004, the entire French cadastral map exists in digital form and in practice has become one of the most frequently consulted geographical frames of reference.

The logical sequel to the digitisation of the cadastral map was to make it available on the Internet in 2008.

Online access enables the public:

- to consult the cadastral map and to print extracts from the map free of charge in A3 and A4 format for all French territory, regardless of the initial form of the digitisation (vectorisation or scanning);
- to order sheets from the map, on A0 paper or plastic, or by downloading the digital files.

In parallel with the public version of the [cadastre.gouv.fr](http://cadastre.gouv.fr) website, an internal version entitled Cadastral Information Intranet Homepage was developed for DGFIP officers, which has enriched functionalities, such as, for example, cadastral parcels searches by owner's name. This type of search was not authorised for the public version by the "Commission Nationale Informatique et Libertés" (CNIL), the

French independent administrative authority tasked with ensuring compliance with the principles laid down in the French Data Protection Act of 6 January 1978.

In parallel with the online publication of the cadastral map, the work on digitisation under the contract with the DGFIP continued. At present, 3,361 digitisation agreements cover more than 31,406 municipalities and numerous entire provinces. They include 91.70% of the 590,000 cadastral sheets, which cover 75% of the territory and 85% of the population.

As of 31 August 2014, 512,419 cadastral sheets, *i.e.* more than 86% of the total number of sheets, were managed into vector format by the cadastral offices and made available in this form at [www.cadastre.gouv.fr](http://www.cadastre.gouv.fr), while 77,581 sheets were still in image format. The vector-based data covers 84% of French municipalities, *i.e.* around 81 million plots and 48 million buildings.

The data is updated daily in order to offer bimonthly updated cadastral map sheets for all of France. The [cadastre.gouv.fr](http://cadastre.gouv.fr) website currently uses 52 servers on a DGFIP secure site and is supplied by 413 IT databases that are located throughout France.

The website use statistics for 2013 confirm its popularity with users:

- 12.8 million hits;
- 108 million pages viewed;
- 16.7 million cadastral map extracts printed by users in A4 and A3 format.



Figure 1 [www.cadastre.gouv.fr/](http://www.cadastre.gouv.fr/) (homepage)

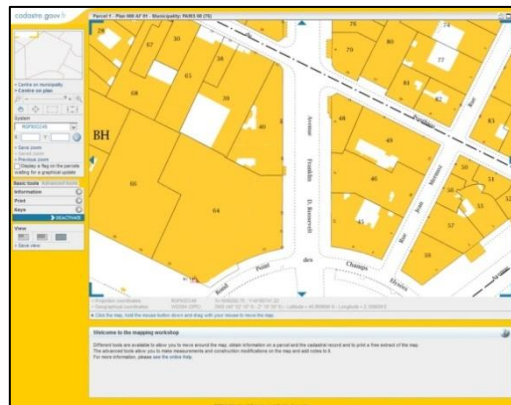


Figure 2 Screenshot of a french cadastral map from the website "cadastre.gouv.fr"

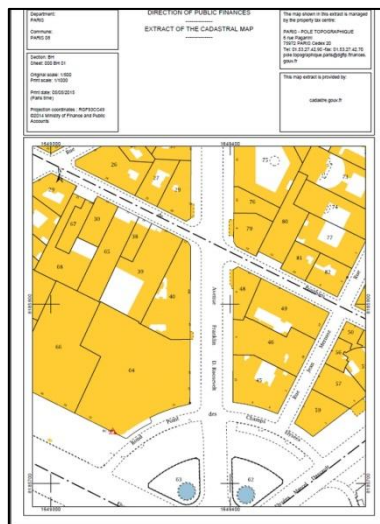


Figure 3 Extract of a french cadastral map provided by [cadastre.gouv.fr](http://cadastre.gouv.fr)

The cadastral offices are responsible for updating the cadastral map. Cadastral parcels are updated by incorporating the surveying documents produced by professionals accredited by the administrations into the cadastral map, once the deeds that evidence these changes have been registered with the land register. The other items on the cadastral map (such as buildings and streets) are updated by the 1,200 official surveyors using modern topographical techniques (GPS and laser meters, for example). Fieldwork by official surveyors is carried out using various information sources:

- planning permission files, under an agreement with the ministry for town planning and the DGFIP;
- aerial photographs taken by the "Institut national de l'information géographique et forestière" (French National Geographic Institute or "IGN");
- data provided by town halls and other branches of the administration.

The digitisation of the cadastral map has profoundly altered its scope: it was originally designed for tax purposes alone, but over the last decade has become a *de facto* frame of reference that is used by numerous French geographical information providers and spatial planners in order to build their own geographical information systems by matching the descriptive and cartographic data from the cadastre. These providers and planners include local authorities, which now has access to a management and decision-making tool for land use, town planning and easement policies, for example.

This change was enacted by the Law of 12 May 2009 on the simplification of the law, which provides that "for cadastral parcels divisions and mapping buildings, the cadastral map is the baseline data" (Article L127-10 of the French Environment Code).

Early 2015, the DGFIP launched a new Web Map Service (WMS) for viewing the cadastral map. This new service allows users to obtain personalised images of the cadastral map easily and free of charge so that they can produce their own maps, as a complement to the existing offer, or in order to visualise cadastral data at the same time as other geographical data, such as aerial photographs. This type of

service, which is provided for by the European INSPIRE Directive<sup>2</sup>, is part of the government initiative to open up access to and share public data.

However, the next major change to the cadastral map will be the "Représentation Parcellaire Cadastrale Unique"<sup>3</sup> (Single Cadastral Parcel Representation or "RPCU") project, which is run jointly by the DGFIP and IGN, the State mapping agency, the remits of which include mapping all land that makes up French national territory and how it is used.

Following a parliamentary report in the autumn of 1999 on the development prospects for French geographical information, the government decided that the IGN would constitute a large-scale repository (LSR). One of the four components<sup>4</sup> of this LSR was cadastral parcel information, which was compiled on the basis of the computerised cadastral map, on the understanding that the cadastral map would remain the only legal documentary source for land and cadastral parcels data.

In order to compile the LSR plot database, an agreement was signed between the DGI and the IGN on 28 February 2001 that defined the respective roles of each party and included a timetable for the deliverables. The LSR was completed in 2009.

However, the coexistence of two different representations of the cadastral parcels is a source of difficulties for users, in particular due to a lack of complete geographical continuity and reliable representation of the municipal boundaries of the two products. This is the reason why the need for correlation between the computerised cadastral map and the LSR cadastral parcel database emerged.

At present, experimental work led by the DGFIP and the IGN on the RPCU, in consultation with the major geographical information providers, should start to yield results in 2014. The time needed to produce this new, exhaustive representation of French territory is currently estimated at seven years. The RPCU will ultimately become the new version of the cadastral map, which the DGFIP will still be responsible for updating and managing.

This large-scale project should generate a cadastral map with continuity of cadastral parcels boundaries, cadastral map sheets and municipal boundaries throughout French territory, which reflects the reality of the land and the regulations. The accuracy of non-regular cadastral maps (40% of sheets) will be improved.

Ultimately, all the cadastral plots will be geolocalized with greater accuracy and in correlation with the other available geographical data, in particular orthophotographic data. The land-related remit of the cadastre to identify and physically describe real estate will therefore be expanded.

### ***Computerisation of descriptive cadastral data: from printed lists to the MAJIC3 software***

The computerisation of descriptive cadastral documentation, *i.e.* all the data concerning owners, cadastral parcels, buildings, roads and hamlets, was started in the seventies by the DGI, which used early IT techniques that were adapted to mass processing. The computer file thus compiled was one of the largest at that time and listed more than 100 million cadastral parcels and 40 million premises.

Thereafter, the lists of owners, which the public could consult at cadastral offices or in each town hall, were produced electronically and no longer filled out manually. It then became possible to consult them in microfiche form using a suitable reader.

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<sup>2</sup> Directive 2007/2/EC of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE): [www.eur-lex.europa.eu/legal-content/IT/TXT/PDF/?uri=CELEX:32007L0002&from=IT](http://www.eur-lex.europa.eu/legal-content/IT/TXT/PDF/?uri=CELEX:32007L0002&from=IT)

<sup>3</sup> <http://proxy-pubminefi.diffusion.finances.gouv.fr/pub/document/18/17552.pdf>

<sup>4</sup> The three other components are orthophotographic information, topographical information and information on addresses.

Following the creation of the first computer files identifying land, which at the time were still managed at central level, the DGI's IT departments developed databases that could be directly accessed by the local cadastral offices. In 1988 this complex work led to the deployment of the MAJIC 2 software, which allows for continual updating of the documentary data throughout French territory by cadastre officers. In 2002, part of the descriptive data managed under MAJIC2 was made accessible to *notaries* and to chartered surveyors via the SPDC (the professional server for cadastral data). This extranet allows these professionals to obtain model 1 cadastral extract directly, which, as stated above, must be attached to all requests for registration with the land register in order to certify that the cadastral descriptions of the real estate are up to date. The data that is accessible to *notaries* and to chartered surveyors is confined to the description of the real estate (cadastral parcels and co-ownership lots) and of their owners, but excludes all tax and personal information.

In 2013, more than 97% of *notaries'* chambers used the SPDC and 4.8 million model 1 cadastral extract were printed.

Finally, since 2004, the VisDGI application (now known as VisuDGFIP) has made it possible to consult descriptive cadastral data on CD-ROMs, which have replaced microfiches in local cadastral offices and tax offices and town halls, which themselves had replaced printed lists of owners.

#### ***The computerisation of the land register: from index cards to the FIDJI application***

The land register that was created by the real property registration reform of 1955 originally used index cards on which the Mortgage Registry officer wrote a summary of the key data contained in the deeds to be registered. Three types of index cards were kept up to date:

- cards classified by name (under the names of the parties to the deed and that included the formalities for rural properties or that were cross-referenced with the property cards for formalities involving urban properties);
- cards classified by property (solely for urban real properties, *i.e.* properties in municipalities with more than 10,000 habitants or that were the subject of joint ownership regulations or plot demarcation);
- cards classified by cadastral parcels (that are used to monitor the existence of all cadastral parcels).

This file was computerised between 1998 and 2003. The Law of 6 April 1998 adapted the regulations issued under the 1955 decrees to the computerisation of the land register.

Some 145 million files were scanned in 51 months. Progressively, all the real property registration offices have changed over to the FIDJI application, which makes it possible, firstly, to consult the stored files (stock) and, secondly, for deeds that are registered following the changeover to FIDJI (flow), to record and manage the information digitally, thus creating a new digital real estate file as and when deeds are registered.

As a logical continuation of this computerisation process, a system of electronic exchanges between the DGFIP and French *notaries* has developed since 2006 that goes by the name of **Téléactes**. This system allows *notaries* who have the appropriate hardware and software to use the application to transfer deeds of sale or to obtain the information needed to prepare deeds (enquiries or information requests) electronically. By the end of 2013, 63% of enquiries had been made and 27% of deeds had been filed via Téléactes.

In order to give new impetus to this computerisation initiative, on 18 February 2013, the DGFIP and the *notaries'* governing body, the "Conseil Supérieur du Notariat", signed a joint declaration in order to make the electronic transfer of formalities via Téléactes mandatory by 31 December 2014.



### **The changes and gains brought about by computerisation**

The computerisation of land-related documentation has made it possible to generate numerous gains, both for the administration and for the public.

#### ***Major productivity gains for the administration***

This point can be illustrated by the automatic link that has existed since 2004 between the FIDJI and MAJIC3 softwares. This computer connection enhances and at all times ensures correlation between the cadastral and mortgage documents, by eliminating the risks of error linked to double entries. In practice, this link automatically updates changes in de jure titleholders (owners, usufructuaries, etc.) that are made in the FIDJI software on the basis of deeds that are filed or electronically registered by *notaries*. Thus, the addressees of land tax collection notices and the list of real estate owners in the MAJIC3 software are automatically updated in 80% of cases, with no need for action by officers. Only 20% of cases require analysis and manual processing by cadastral officers.

#### ***Increasing digitisation of exchanges with real estate professionals***

In addition to use of the SPDC (the professional server for cadastral data) by *notaries* and chartered surveyors to produce model 1 cadastral extract and the increasingly widespread use of the Téléactes system for *notaries*, it was also necessary to modernise the production of surveying documents, which, as we have already seen, are one of the document types that are vital for updating the cadastral map and for the link between the cadastral map and the land register to function correctly. The computerisation of the cadastral map now makes it possible to partially digitise these documents, thus facilitating exchanges between chartered surveyors and cadastral offices, as well as updates to the cadastral map.

The digitisation of surveying documents, which started in 2006 with the development of a standard for exchanges between the administration and the governing body of chartered surveyors, the "Ordre des Géomètres-Experts", is now extensive, since more than 80% of surveying documents are now produced digitally, thereby contributing to greater reliability in the identification and physical description of real estate that has to be registered in the computerised land register. Consideration is being given to the possibility of allowing *notaries* to register deeds concerning property divisions electronically via Téléactes.

In July 2010 the chartered surveyors, who are the main producers of surveying documents on behalf of the administration, launched the GéoFoncier portal<sup>5</sup> which can be used to consult the database that will progressively bring together all the land-related work performed by chartered surveyors since 1997. For example, a member of the public can use it in order to find out whether a piece of land was previously demarcated. Through the partnerships formed with the various public-sector stakeholders, including the DGFIP, the GéoFoncier portal makes it possible to visualise simultaneously a significant amount of geographical data on a large scale, such as aerial photographs, cadastral maps and environmental protection zoning.

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<sup>5</sup> [www.geofoncier.fr/](http://www.geofoncier.fr/)

***New services for the public***

Early in 2014, the DGFIP launched a new service known as PATRIM<sup>6</sup>, which makes information on real estate transactions available to the public and is designed to help them estimate market value of their property for certain administrative and tax purposes.

Persons who have dealings with the administration must estimate the market value of their real estate in several cases:

- in order to fulfil their reporting obligations for wealth or inheritance tax and in order to make a gift;
- in order to answer the administration's questions as part of a tax audit or expropriation procedure.

The aim of this new service is to enable the public to access land use and real estate data held by the administration so that, for the sake of transparency, they have the same degree of information. The search for real estate transactions can be performed in various ways, with, in particular the possibility of geolocalising the search address (as well as the search results) via a map interface, the IGN Géoportail, which is itself populated with cadastral cartographic data.

The information provided to users is taken from a database known as "Base Nationale des Données Patrimoniales" (National Database of Heritage Data or "BNDP"), which is itself populated by information from the registration of deeds with the land registry offices (the FIDJI software) and from cadastral documentation (the MAJIC3 software). The database currently contains 20 million real estate transactions that have been published since 2004 and could not have been compiled without the initial digitisation of the land register and the cadastre.

There is a specific version of this service for administration officers, with enriched functionalities compared to the version for the general public. There is also a specific version for the local authorities officers, which gives them better knowledge of real property markets and thus facilitates the fulfilment of their remits in terms of their land use and development policy.

**CONCLUSIONS**

The French cadastral map depicts and identifies property ownership for tax purposes. It is the only large-scale cadastral parcels map that covers all of French territory and is continually updated. The French cadastral map is published annually in each municipality in France and has been available free of charge for the general public at the website [cadastre.gouv.fr](http://cadastre.gouv.fr), which has proved to be extremely successful.

Although it is part of current French law, it does not carry absolute legal weight as the French Civil Code primarily confers responsibility for the definition of title on the owners themselves. Nevertheless, owners still attach considerable importance to cadastral documentation.

As regards land ownership, the State plays a role of witness and of guardian of rights by providing owners with a system that allows them to register and protect their rights. Admittedly, the land registry offices do not check the substance of the deeds, only the formal aspects, which does not completely rule out the risks of errors. However, it is recognised that errors which lead to transfers of title being called into question are extremely rare.

The computerisation of the cadastral map, which the DGI started in 1993 in partnership with local authorities, made additional incremental improvements to the correlation between cadastral and land register information, and helped to enhance the strengths of French land tenure, which:

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<sup>6</sup> [www.impots.gouv.fr/portal/deploiement/p1/fichedescriptive\\_6851/fichedescriptive\\_6851.pdf](http://www.impots.gouv.fr/portal/deploiement/p1/fichedescriptive_6851/fichedescriptive_6851.pdf)

- provides certainty for real estate transactions, with increased reliability and accuracy of descriptive information on real estate;
- protects owners' rights;
- protects creditors' rights and therefore facilitates access to loans;
- reduces the risks of disputes;
- for the State, determines with certainty the persons who are liable for land taxes on developed and undeveloped land and ensures the efficient collection of the registration duties and various land taxes that are levied each time there is change in the legal status of a given property.

Ultimately, the French cadastral and mortgage system is both reliable and flexible. It is economic and just as efficient as other types of system which are primarily used to prove ownership. It has contributed to maintaining a form of social order for 200 years in the area of property ownership and has helped to consolidate a climate of trust. The computerisation of the system has led to major productivity gains for the administration and offers new services to administration officers, property and real estate professionals, and to the general public.

#### References

AA.VV. (2006), *De l'estime au cadastre en Europe, le Moyen-Age*, CHEFF.

AA.VV. (2008), *De l'estime au cadastre en Europe, les systèmes cadastraux aux XIXe et XXe siècles*, CHEFF.

Herbin René, Pebereau Alexandre (1953), *Le cadastre français* (The french cadastre).

Maurin André (2012), *Guide pratique du cadastre* (Practical guide to the cadastre), Edilaix.

Rousselet Bruno (2002), *Utilisation du Cadastre au sein des Etats membres* (Use of the Cadastre in the member states), ([www.eurocadastre.org/pdf/rouselet.pdf](http://www.eurocadastre.org/pdf/rouselet.pdf)).

Touzery Mireille (2003), *De l'estime au cadastre en Europe, L'époque moderne*, CHEFF.

