

Géofoncier : a G.I.S website application for protecting land management

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Key words: Cadastre, Protection, Land tenure, regularization of rights

SUMMARY

Géofoncier is an innovative web and mobile application developed by the order of expert surveyors.

Géofoncier is a model for organizing the cartography of France and the cadastre, which combines the aspects of archiving, conservation and digitization of land documents. This geographic information system provides a set of services that aims to improve the legal security of land rights and to allow better protection for landowners. It offers a digital application that allows each expert surveyor to add to a database by inserting demarcation actions and divisions of cadastral parcels. This provides landowners the possibility of storing and consulting data on parcels, lots or agricultural land, regarding location and characteristics such as the location of a previous demarcation and the location in coordinates in Lambert projection (official conformal conical projection of France) of the terminals of a land. In addition, it provides a joint tool for everything related to the implementation of the cadastre and the land register.

The implementation of this land data management system is an approach that is central to the action of Géofoncier. Geofoncier is a tool that allows citizens, communities and the administration to make informed choices regarding the use of land and it is thus an aid to sensible land development. The Geofoncier plays an essential archiving role for future generations. It provides historical and public data on the cadastre, property plans and real estate plots. It allows local authorities and individuals to have centralized access to this information and thus it supports active participation by relevant stakeholders in the legal security of rights.

This tool developed, by expert surveyors, will make it possible to:

- Develop a partnership between public administration and private surveyors;
- To assure fellow citizens of the need for a high degree of qualification of expert surveyors;

- To reassure the administration and citizens in the context of a possible privatization of the cadastre; and
- To provide legal certainty for property boundaries.

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1. INTRODUCTION

The Order of Surveyors-Experts (OGE) was granted legal status as a person by private law 46-942 of May 7, 1946. The OGE is responsible for a public service mission to regulate the French profession of surveyor.

A surveyor-expert is authorized to determine official boundaries between plots of private land. The surveyor-expert is empowered to draw up demarcation plans and legal plans related to the title of property such as easement plans. In this context, the profession always works very close with administrations such as the cadastre, land registration services, but also with its supervisory ministry and to all administrations. To complete this mission a lot of information is needed from the administration. Furthermore, the completed mission must be stored in the archives of the surveyor-expert to protect the property rights of citizens.

In 2007, the OGE began to create an e-portal to facilitate access to the information collected by surveyor-experts. Then, in 2010, the order of surveyor-experts created GEOFONCIER. In close collaboration with land administration, the OGE developed this e-portal further.

Since 2007, this e-portal is constantly evolving and we are going to present to you a short history then how it can be useful for all the surveyors to complete their mission and furthermore how we can secure property. At the end we will see this tool as a help to the administration to conserve their data and to update the cadastre.

2. WHAT IS GEOFONCIER

2.1 Definition:

Géofoncier is a land data infrastructure launched in 2010 by the Order of Surveyors-Experts (OGE). A true one-stop shop for land information in France, the portal is powered by

OpenData as well as by all the surveyors whose internal regulations require them to describe and geolocate each of their land interventions on the territory. Géofoncier, a land knowledge base, has compiled this information since 1997 for all 101 mainland and overseas departments as well as the Overseas Collectivities of Saint-Martin and Saint-Barthélemy.

1. History:

1946	Order of Surveyor experts created by law
2007	Deployment of the e-Foncier portal, the beginnings of Géofoncier, in Midi-Pyrénées
March 2007	Deployment of the “Inspire” directive encouraging the opening of data, foundations of the Geofoncier portal
April 2010	Creation of SAS Géofoncier, portal manager
July 2010	Production of the Geofoncier portal, for the transfer of files by surveyors, during the Marseille congress
April 2011	Launch of a consumer version of the portal for sharing this data
January 2013	Launch of the Geofoncier API, allowing software publishers to offer surveyors software for submitting land files
September 2014	Launch of the mobile application
February 2015	Link with cadastre.gouv.fr to display the PCI-Vector
April 2015	Link with the Town Planning Geoportal
June 2016	Implementation of a free general public version from the site www.geofoncier.fr
December 2017	Implementation of a portal dedicated to the cadastral documents of Alsace-Moselle
February 2020	Opening of version 2 of the Geofoncier Portal with the plot file
February 2021	Provision of the DVF Expert service
June 2022	Redesign of the websites to give more visibility to the general public version and provide a response adapted to individuals.

2.3 Geofoncier Portal:

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Géofoncier, the first land mapping portal, allows individuals and professionals to consult national repositories such as the cadastre or aerial photographs supplemented by new databases: database of surveyor-expert files, database of the Unified Land Repository (RFU) and basis of Cadastral Parcel Modifying Documents (DMPC) in particular. Géofoncier, through its two EXPERT and PUBLIC portals, offers a multitude of data from OpenData which offers a wealth of information on the territory of its choice as well as services to communities: GEO-DELIM, to land professionals and real estate like DVF Expert or to notaries like My Shared Documents (formerly My Files).

It provides access to multiple geographic data warehouses through the implementation of various interoperable data access technologies, including the following:

- Flow calls from the Geoportail API for the display of certain layers of the Large Scale Repository (RGE) produced and maintained by the National Geographic Institute (IGN)
- OGC standardized flow calls for displaying data layers maintained by partners (e.g. PCI-Vector from cadastre.gouv.fr, the position of geodetic points provided by the IGN Geodesy and Leveling Service)
- Direct access to data held and managed by the EMB: location of files, RFU and old cadastral documents

The objective pursued by these different modes of access to data is to have data that is constantly up-to-date, while minimizing the work of maintenance and integration of new data. Most of the data accessible in the Geofoncier portal is maintained by different partners in a totally transparent way for the user.

3. GEOFONCIER PORTAL



This is the first page of the e-portal where we can access data shared by many administrations.

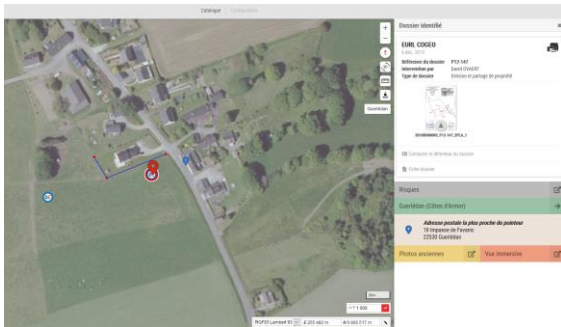


3.1 How does it work :

Géofoncier uses WMS link, which is very useful for data that changes frequently and contains cartography complex details or requires an open source data standard.

This allows us to obtain information from different administrations.

3.2 Developing partnerships between public administrations and private surveyors



In relation with the land administration cadaster, the Order of surveyor-experts has begun to scan all the maps divided documents. These documents are added on the web server and georeferencing.

4. THE ROLE OF ORDER OF SURVEYOR-EXPERTS:

- Citizen security (standardization of practices)
- Better sustainability of land boundaries
- Repository allowing the control of the regulated land activity
- Dematerialization of procedures
- Commitment to publicity of demarcation minutes

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- Constitution of a "land memory"
- Constitution of a "memory of changes to the cadastral plan"
- Land information sharing

5. THE SURVEYOR-EXPERT'S ROLE :

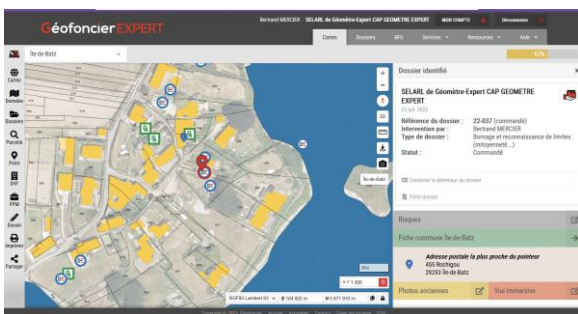
The surveyor-expert has to integrate the files with the boundaries map which have been made. The surveyor has the main role. The surveyor-expert provides legal certainty for the limits of the property. When determining property boundaries, it is necessary to update land administration and also boundary maps. By creating the web service the Order of surveyor-experts has demonstrated its commitment to fellow citizens. The OGE has gone further than the land administration by creating a land genealogy which protects property and citizens in their rights.

5.1 Creating files:

The land-surveyor will create a file with an icon to inform that we are going to work on a field.

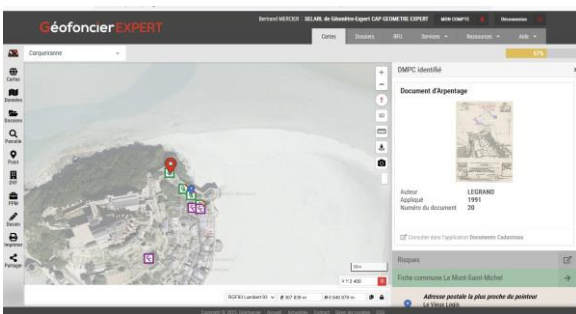
In order to do it, he will create a file and then an icon on the land field where the land surveyor will work.

It will allow other surveyors to know the land genealogy. As we can see, 2 others surveyors worked near this place.



5.2 Information:

The land-surveyor can have a lot of information about the history of the field we will work on. This enables us to determine boundaries.

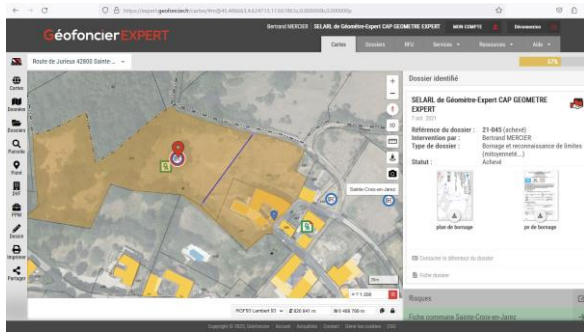


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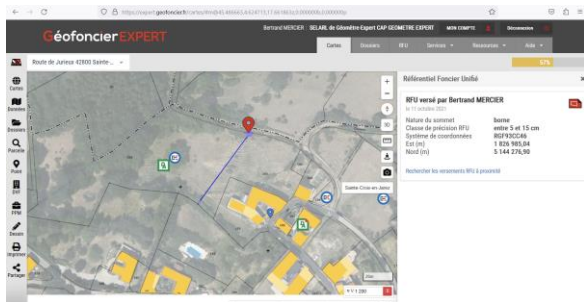
5.3 Increment data:

At the end of the file, each surveyor has to input data to guarantee the property. All of the documents are uploaded to be saved.



5.4 Increment data: United Land Referential (Référentiel Foncier Unifié , RFU)

More than the maps each surveyor has to increment boundaries in Lambert Projection which the legally projection in France



RFU versé par Bertrand MERCIER
le 11 octobre 2021

Nature du sommet	borne
Classe de précision RFU	entre 5 et 15 cm
Système de coordonnées	RGF93CC46
Est (m)	1 826 985,04
Nord (m)	5 144 276,90

[Rechercher les versements RFU à proximité](#)

You can have the information of the boundary and staking out it.

5. The Surveyors-Experts's value:

Since the beginning of Geofoncier, Surveyors have uploaded on the web server. The data uploaded includes the following:

- 5,150,000 files that have been created
- 21,899,000 United Land Referential had been uploaded
- 12,328,000 limits
- 9,571,000 summits

The Order of surveyor-experts is committed to protecting property rights. With a partnership with the administration we can offer legal certainty for the limits of the property. An other point is to simplify analysis and make easier for fellow citizens public information about a field like property valuation. We can be a link between fellow citizens and administrations in order to protect our world and conquer new frontiers.

References

<https://site-expert.geofoncier.fr/>
<https://www.geometre-expert.fr>

Biographical notes

Bertrand MERCIER (FRANCE)

Land surveyor engineer, he started his career as an intern to a U.S. land surveyor. Upon returning to France he worked as an industrial geometre expert for several years until he created his own company near Lyon. He was elected to the Order of Licensed Geodetic Surveyors (2011-2014), and then served as President, chamber of Surveyors, Loire Department (2014-2019). Since 2012, he has been a commission member of CRP, OGE. In 2021, he joined CLGE. He has a small vineyard to the south of Lyon inspired by a land surveying client.

Contacts

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