

The Register of the Domain of the State

An essential infrastructure in public land management

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SUMMARY

Many different government departments and bodies grant or acquire rights in public land in Québec,¹ mainly in connection with natural resource exploitation. They may also impose constraints over land use. The information concerning the rights granted was previously recorded in many different registers kept by various departments and bodies, a situation that hindered coherent action and in some cases led to the granting of conflicting rights.

To correct the situation, the Ministère des Ressources naturelles et de la Faune (MRNF, the Québec department of natural resources and wildlife) launched a process to modernize the system used to register rights in public land. The project led to the establishment of the Register of the Domain of the State. This public register can be accessed via the Internet, and provides all players with complete, accurate and up-to-date information.

The new Register of the Domain of the State (known by its French acronym, RDE) revolutionizes the rights registration system. Registration systems are generally made up of two components, one graphic, showing the object of the right, and the other descriptive, stating the right concerned. The RDE innovates not only by combining these two components in a single register, but also by using geomatics, electronic signatures and the Internet for the registration of rights and the consultation of the register.

The new register gives a new, integrated overview of all the rights and constraints (in all, more than 300 000) affecting public land in Québec. It is an essential infrastructure in public land management and a concrete example of Cadastre 2014, a vision of the future cadastre proposed by the International Federation of Surveyors (FIG).

RÉSUMÉ

Sur tout le territoire public québécois², de nombreux ministères et organismes consentent ou acquièrent des droits, liés principalement à l'exploitation des ressources naturelles, ou établissent des contraintes. L'information relative à ces droits est dispersée dans une dizaine de registres répartis dans divers ministères et organismes. Cette situation peut nuire à la cohérence des actions et entraîner l'attribution de droits conflictuels.

Pour remédier à cette situation, le ministère des Ressources naturelles et de la Faune (MRNF) a entrepris de moderniser l'enregistrement des droits sur le territoire public. Ce projet a conduit à la mise sur pied du Registre du domaine de l'État. Accessible sur Internet, ce

registre public fournit désormais à tous les acteurs sur le domaine de l'État, une information complète, fiable et à jour.

Le nouveau Registre du domaine de l'État (RDE) révolutionne l'enregistrement des droits. En effet, les systèmes d'enregistrement des droits sont généralement constitués de deux composantes, l'une géométrique, qui montre l'objet du droit, et l'autre descriptive, qui présente l'énoncé du droit. Le Registre du domaine de l'État innove non seulement en fusionnant ces deux composantes en un seul et même registre, mais également en ayant recours à la géomatique, à la signature électronique et à Internet, tant pour l'enregistrement que pour la consultation des droits.

En outre, il fournit une perspective intégrée de l'ensemble des droits et contraintes affectant le domaine de l'État (plus de 300 000 droits et contraintes). Le Registre du domaine de l'État est une infrastructure essentielle à la gestion du territoire public et un exemple concret de Cadastre 2014, une vision du cadastre du futur proposée par la Fédération internationale des géomètres (FIG).

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1. MODERNISATION OF THE SYSTEM USED TO RECORD RIGHTS OVER PUBLIC LAND

The State acts as the owner of public land, and no person may appropriate or perform work on publicly-owned land without authorization. Given the large number of government departments and bodies involved in land management, the State must have an accurate idea of the rights granted and acquired, and must know where they apply. The means at its disposal did not, previously, give the State a complete, reliable summary of information concerning public land, especially since the information was scattered and hard to access. The government departments and bodies authorized to acquire or grant rights in public land recorded the information in around ten sectoral registers, making the compiling of an accurate summary of the rights affecting a given tract of land a long and difficult process.

To correct this situation, the Ministère des Ressources naturelles et de la Faune (MRNF) began to modernize the system used to record rights in public land in the fall of 2002, a process that led to the establishment of the Register of the Domain of the State, implemented three years later.

2. MODERNIZATION OBJECTIVES

The modernization of the registration system for rights in public land by the MRNF had the following objectives.

- Set up a computerized register to constitute an official, complete and integrated source for all information concerning rights in public land
- Promote the coherent management of public land and prevent the granting of conflicting rights
- Publicize the rights granted over public land to ensure compliance
- Facilitate access to information about rights in public land
- Simplify the procedure used by the various right-granting government departments

3. REGISTER OF THE DOMAIN OF THE STATE

The Register of the Domain of the State is used to record, preserve and publicize all information concerning rights in public land.

The new register contains the following information.

- Private and public ownership of land (tenure)
- For public land, the name of the government department having authority

- Transactions concerning public land (via an automated link with the Québec Land Register, the register in which private land rights are recorded)
- A list of properties belonging to Québec government departments and bodies
- Rights of use granted by the State and constraints imposed by the State over public or private land (represented graphically and located geographically). The register also provides an integrated overview of all the rights and constraints affecting public land, a total of over 300 000 rights, constraints and protected areas
- All land surveys officialized after the establishment of the new register
- Archived data from the former register, known as the Terrier, replaced by the RDE

The main features of the register are as follows.

- Simple access (via Internet) and safe operation (public-key government infrastructure)
- Input on an ongoing basis by government departments and bodies granting rights and imposing constraints
- Input from the Land Register and the cadastral division concerning purchases and sales by the State
- Access based on spatial reference data and no longer on lot numbers or other designations

In addition, any information contained in the RDE may be located using the following types of reference data.

- Québec boundaries
- Survey compilations
- Lots of the Cadastre of Québec
- Administrative entities (administrative regions, registration division, municipalities, etc.)
- Planimetric and hydrographic data from maps at various scales

The development of the Register of the Domain of the State was based on the following principles.

- Government departments and bodies must ensure that the rights they grant and constraints they impose are legal and compatible with other rights. They must also preserve the documents that evidence the rights and constraints and describe them in detail
- Only summary information on rights and constraints (including location) is recorded in the RDE
- Requests for registration must come from issuers duly accredited with the RDE. An amendment to an existing right or constraint can only be made by the party that originally issued it
- Requests for registration must comply with the established exchange specifications and signed electronically, in accordance with the government public-key infrastructure. The signature establishes the probative force of the information in the

register and the non-repudiation of the rights and constraints recorded. The signature is applied to the E-mail messages sent by the issuer's user or system

4. A CONCRETE EXAMPLE OF CADASTRE 2014

The new Register of the Domain of the State revolutionizes the registration of rights. Registration systems are generally made up of two components, one graphic, showing the object of the right, and the other descriptive, stating the right concerned. The RDE innovates not only by combining these two components in a single register, but also by using geomatics, electronic signatures and the Internet for the registration of rights and consultation of the register.

FIG Commission 7 has described its vision of the cadastre of the future, known as Cadastre 2014. This sets out the full legal situation of a given territory, including rights and restrictions of public right, and abolishes the separation between maps and registers. The Register of the Domain of the State is therefore a concrete example of the Cadastre 2014 approach, as applied to public land.

For any given piece of public land, it is now possible to identify the location and configuration of all rights granted by the State, all restrictions on land use and the extent of protected areas, via an on-screen Internet connection. It is also possible to view other cadastral lots in the vicinity and the property transactions to which a Québec government department or body is a party.

5. A COLOSSAL TASK

To establish the Register of the Domain of the State and develop the related computer system, a wide range of activities and deliverables were necessary. These included:

5.1 For the business domain

- overall and detailed planning of the project
- consideration of concerns relating to access to information and the protection of personal information
- determination of the rights to be included in the Register
- drafting of the required legislative amendments
- design and implementation of strategies to manage change for the staff and issuers involved, ensure the support of issuers for the new Register, prepare data for the initial loading of issuer information into the Register, build the systemic solution needed to support the Register and put the website on line

5.2 For the development of the computer system

- design of the overall system architecture (work, processing, data, technology)
- acquisition, installation and management of the technological infrastructure

- system development, operation and maintenance
- adaptation of the computer systems of rights issuers
- adaptation of the computer system used to support other register to enable exchanges with the RDE: cadastre, land register

At the height of the operation, over 70 people were working on the project, which required a total of around 50 000 person days.

6. RESULTS

The Register of the Domain of the State has already created benefits for users. Although the MRNF made the main investments required, the main beneficiaries are the other government departments and bodies that manage public land and issue rights.

6.1 Simplified processes

Many government departments and bodies are involved in planning public land use. Previously, each team responsible had to search for, document, locate and map rights in land before issuing a new right. Now, the register provides up-to-date information to all users. Each department and body can now concentrate on its own specialized activities, leaving the MRNF responsible for keeping an integrated, up-to-date register.

6.2 Increased productivity

The teams responsible for land planning in the various departments and bodies can now concentrate on their primary mission. Several rights issuers have improved their productivity by automating the process used to file applications for the registration of new rights.

6.3 Improved coherency in government actions

When an application for the registration of a new right is received, the Register system validates its spatial superposition with existing rights, and advises the applicant of the results. The applicant can then take action to avoid situations of conflicting rights.

6.4 Improved access to information

All government stakeholders have access to the Register via the Internet. Besides consulting the register, they can also order structured geomatic information and download it to their own systems. The general public will also have access to the Register, once the initial loading of data is complete.

6.5 More accurate information

Since all applications for the registration of a right are forwarded via the Internet, they must be signed electronically by the issuer. This ensures the reliability and integrity of the data recorded in the Register, and maintains the responsibility of each issuer for registration.

6.6 Improved service delivery

Previously, a search in the Terrier (the public register in which land rights granted or obtained by the State were registered) was an arduous process. It could only be carried out by a handful of experts, who necessarily had to know the lot number of the piece of land concerned. This has changed with the advent of the new Register. Via the Internet, using a map of Québec, users can select a region and sector and view increasingly detailed maps. They can then search for existing rights, which are recorded on the basis of their coordinate (geo-referenced) position.

6.7 New possibilities

The creation of links with the computer systems for the cadastre and the land register enable the MRNF to carry out previously impossible tasks, such as drawing up an inventory of all State-owned properties. It is also possible to identify and locate all the transactions involving a large number of responsible departments and bodies.

7. COST

It has cost over \$18 million to establish the Register of the Domain of the State.

8. STRATEGIC ALLIANCES

8.1 With issuing departments and bodies

The project required the support of all the Québec government departments and bodies that issue rights. The MRNF agreed with each department on body on the way in which data on active rights would be prepared and initially loaded into the system, and on the procedure for registering new rights. It also helped some issuers adapt their computer systems, and paid for a large part of the cost of the adaptations made.

8.2 With land surveyors

The establishment of the new register has led to changes in the way land surveyors in private practice conduct surveys of public land. The office of the Surveyor General of Québec, part of the MRNF, has agreed with the Ordre des arpenteurs-géomètres (the professional order of land surveyors) on the best way to facilitate the changes.

8.3 Integrated organization

Since 2000, the cadastre, the land register and the office of the Surveyor General of Québec have formed part of a single organization, Foncier Québec, within the MRNF. Previously, the land register was under the responsibility of the department of justice.

This integration within a single organization of three areas of activity has improved access to data from the cadastre and land register and the development of inter-system links.

9. TECHNICAL ASPECTS

The Register is based on a flexible, open-ended and efficient combination of various technologies to respond to the needs of the office of the Surveyor General of Québec and market trends. The combination is based on.

- Suitability for MRNF sectoral applications, and protection for the autonomy and integrity of various other computer systems (land register, downloading, E-commerce, etc.)
- Flexibility in the integration of business processes and products from various suppliers, to retain all native functions and facilitate system changes
- Compliance with government technology guidelines and best practice in the area of information security

9.1 Technical specifications

Information in the Register data is stored in Oracle 9iR2 and Oracle Spatial databases. Geomedia WebMAP software, operating on a Windows Server platform, allows the dynamic generation of maps via an Internet browser and the Java 2 “Jmapview” microapplication.

Staff at the office of the Surveyor General of Québec also uses software in the ESRI ArcGIS family in native mode to consult and enrich the data stored in the databases.

The integrity of the Register is ensured by the Infoclés, the electronic signature service of the Ministère de la Justice du Québec (Québec department of Justice), which issuers of rights and constraints are required to use to file an application for registration.

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BIOGRAPHICAL NOTES

Daniel Roberge graduated from the Faculty of Forestry and Geomatics at Laval University in Québec City. He also holds a graduated studies diploma in international administration from the École nationale d'administration publique (Québec school of public administration)

He has written several publications and papers on the cadastre, land reform and land management, and has been involved for several years in the work of Commissions 3 and 7 of the FIG

Daniel Roberge is currently director of the Office of the Surveyor General of Québec, and was previously in charge of the project to implement the new cadastre as part of the program to reform the Québec cadastre

He is a member of the Ordre des arpenteurs-géomètres du Québec and member a Council member of the Champlain Branch of the Canadian Institute of Geomatics.

Mr Roberge is the chair elect for the next term of FIG Commission 7 (2010-2014).

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¹ In Québec, public land covers an area of 1 397 218 km² and generates 10% of all economic activity in Québec, in other words \$26 billion.

² Au Québec, le domaine de l'État couvre une superficie de 1 397 218 km² et génère 10 % de l'activité économique du Québec, ou 26 milliards de dollars.