The “back office” of the Spanish cadastre that makes possible the interaction with partners

Amalia Velasco Martín-Varés
Spanish Directorate General for Cadastre
The Spanish Cadastre is principally a fiscal cadastre.

Its databases of cadastral values of rural and urban real estate are the basis for the calculation of real estate tax and other local, regional and national taxes.

The real estate tax is the main income for municipalities.

The success or failure of the valuation of the real estate and therefore of real estate taxation depends on DATA.
– Real Estate Identification data:
  » cadastral reference, province, municipality, addresses or location.

– Juridical data of real estate:
  » Titleholders’ name and national identity number, addresses of titleholders and the notification address, date of acquisition and rights data....

– Physical data of real estate:
  » land area, representation of the Buildings (even with the description of every floor) buildings area, class of crops, conservation status of the constructions, use (legal and actual one), construction typology, year of construction.....

Economic data of the real estates:
value of land, value of construction and cadastral value, criteria and valuating module, real estate taxable value, exemptions and benefits.
**Employees:** 2,300 employees, 93% in regional and province offices (52)

*but many other collaborators*

The Spanish General Directorate for Cadastre is responsible of creation, maintenance and diffusion of the cadastral data either directly or in collaboration with local authorities and other public entities,
The Spanish Cadastre, to achieve its main task (valuation) in a proper way, has as priority to keep a regularly updated database.

The Spanish Cadastre Law stipulates

- the obligation to declare of the individuals subject to become cadastral titleholders as owners of any of the rights that originate registration

- the obligation of
  - notaries,
  - property registrars,
  - local authorities
  - and other public institutions that act over the territory to communicate all change in the characteristics of the real estates to the cadastre.
Data are kept continuously updated through field work and other technologies.

All citizens, notaries and registrars and the public administrations which work in the territory are obliged by law to submit information on the changes in the real estate in the Cadastre with the technical conditions defined by the cadastre that verifies that the graphical information is correct.
Agreements with Municipalities and other Public Entities

- The strategy consists of gathering other Public Administrations, as well as other organizations, sharing useful information for all of them.
- They are all considered as providers and beneficiaries: they help us to maintain our data base updated, they acquire all necessary data for their goals.
- Collaboration means breaking down several bureaucratic procedures. This is an advantage for the citizens and means cutting down expenses for our organization.

- Data is electronically provided by collaborators: they can even process the information working directly in our system or sending data through the E-Office.
Municipal taxes

- Municipalities are very much interested in collaborating with cadastre in updating the cadastral data base

Recurrent Property tax

83% of Urban real Estates
We had to change our model of business

- From a direct processing......................
  to management and control.
- Transition from a corporate system .................
  to a system of information available to all agents collaborators

- Definition of services available.
- Collaboration Scenarios
- Identity Management of internal users and collaborators
• 2300 employees from cadastre (internal users)
• External users:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizations with users</td>
<td>13.525</td>
</tr>
<tr>
<td>Registered users</td>
<td>68.768</td>
</tr>
<tr>
<td>Users with direct access to applications of cadastre</td>
<td>3.069</td>
</tr>
</tbody>
</table>
The modifications that are realized on the property elements are carried out across “administrative records” - with number, cadastral reference, and administrative record type. - Each type of administrative record has different processing.

Importance of setting:
- How the collaborators are going to access to data and services
- Who (how to control the “good” use)
- When they are going to access
- Which tools are they going to use

The information system contains:
- Data
- Detailed information about the processing of administrative records, and the incorporated and generated documentation.
Where are the data?
Modules of the Cadastral System

- real Cadastre
- historical cadastre
- Provisional cadastre
- External cadastre
- Test environment
- Processing by external collaborator
- Massive valuation
- Modification
- test
Declarations Models

901N: Legal data changes: ownership, co-ownership, easement,...
Documentation: Deed of sale, purchasing contracts, deed of inheritance

902N: Physical data changes: new buildings, refurbishment, division into urban real estate
Documentation: Notarial documents, technical documents, maps, photographs

903N: Division, union, addition, segregation
Documentation: Notarial documents, maps (before and after)

904N: Demolition, change of use or crop
Documentation: Technical documents, maps, administrative authorization

The citizens can choose to present the request:

- in the cadaster,
- in the offices of the collaborators
- or by Internet
Citizens released from the responsability of self declaration

1. Notaries and land registers
2. Tax department (Persons data)
3. Municipalities (Giving authorization for new constructions, extensions, reforms, reorganizations of properties etc...)
4. Other Administrations (expropriations, land consolidation, other actuations...)

Breaking down bureaucratic steps.
They only send information, it loads automatically into our database: No papers, No cadastral approval
- Compulsory declarations from titleholders (more than 2000000 a year).
  - Directly update in our offices or by internet
  - Update by the collaborating administrations
    - Collaboration agreements to maintain de data

- Communications of the collaborators in cadastral maintenance, mainly 4500 local authorities, 2900 notaries and 900 property registrars.

- Inspection Works and other proceedings done by DGC

- General works, with the assistance of private firms, under technical specifications
Permanent Committee on Cadastre in the European Union

Bratislava 2016

Aplications

Cadastral data base

USERS:
- internal users
- and collaborators
• SIGECA (Cadastral management):
  • Integrated Management of ALL the procedures for updating the Cadastre
• **SIGCA (cadastral Graphic System):**
  • Maintenance of the graphical information (cartography, FXCC, images).
SAUCE (Cadastral maintenance):

- Assistant to maintain the cadastral information
- Validation and valuation
In the year 2015:
• more than 53 M of visits
• more than 6.5 M of certificates
Deliver more than 1 million maps a day

- Exchange of information with collaborators.
  - Regular XML Files
  - Direct Connection
  - Registration of administrative files
  - Recording of alterations
  - Desktop of cadastral applications (Citrix)
- Web services
Catastral services on Internet.

Personalisation - citizens and Administrations see and act according to their role, so that the system has three types of access profiles clearly differentiated:

- Public Administration access to the area territorial for which they have competences.
- Private users and citizens have access to data personal using electronic signature.
- Access to not personal data that it is free for everybody.

The “administrative records” have different “stages of procedure” that can be done by persons with a certain role.

Each stage has a footprint of the person that have done it.
3 scenarios of collaboration

• Interactive services
  – They are used directly by the user who connects directly with the CVO

• Services application- application (Web)
  – They are invoked directly from other public sector applications, collaborators or companies.

• Update both information systems
  – Each organization uses its own application and exchange information
Exchange formats

The offices of the Cadastre, to achieve its objectives, exchange information with various external agents using for them, formally defined standard formats. This exchange is done through the Electronic Office of Cadastre, by sending regular swap files, or through timely invocation of Web Services.

- Computer models of collaboration and interchange formats
- Considerations on the revision of information in XML
- Incidents and Validation Errors in Cadastral Information
- XML Schema
- Errors style sheet
- example instance
- Using templates Excel / OpenOffice formats exchange

You can subscribe to news exchange formats using the RSS of the news of the Electronic Office of Cadastre.

 alphanumeric information

Cadastral description language

- XML Schema (constitutes the core of the formats in XML NOTARIOS, PADRON, VARPAD and FIN).
- Dictionary of terms

Format Padrón (Padron, DOC, PADVALCO)

- Explanatory instance
- Example instance
- XML Schema
- Download flat file
- Padron style sheet
- DOC style sheet
- Technical specifications Padrón (IBI)
- Technical Specifications DOC
- Technical specifications PADVALCO / UNIP/VALCO

Exchange of ownership (VARPAD)

- Explanatory instance
- Example instance
- XML Schema
- Download flat file
- Technical Specifications

Exchange of land (FIN)

- Explanatory instance
- Example instance
- XML Schema
- End sheet output style
- Download flat file
- Technical Specifications

Sending information to the Autonomous Communities (FINCA)

- Download format

Cadastral information without Protected data (CAT)

- Download format

Exchange of roads (VIA)

- Download format

Capture the IBI bonuses collective assessment procedures (BONIFVALCO)

- Download format

Sending Items land valuation

- Download format

Messaging exchange with Cadastre (MXC)

- IntegraCatastro_in.xsd
- IntegraCatastro_out.xsd
- ValidacionGrafica.xsd
graphic information

GML format cadastral plot
- explanatory example
- Technical specifications

Building GML format
- explanatory example
- Technical specifications

Cadastral mapping exchange (FX-CC)
Incorporated as appropriate within the END format.
- Download format.
- Syntactical validation tool FX-CC and FIN (version: 3.0.4).

FICC format mapping
Formats 2011:
- Variations 2007 FICC format to suit the Unified Land Registry Model.
- Classification and coding of the elements.

download massive cadastral mapping information
- Download cadastral mapping (shapefile)
3 scenarios of collaboration

**Disconnected systems.** By exchanging XML files: standardized exchange formats

**Connected systems.** Through direct access to our cadastral applications served from the desktop Cadastral applications.

**Interconnected systems.** Through Web services protocols of query and update information.

Cadastral maintenance that directly access the Cadastral applications (SIGECA, SIGCA, SAUCE etc...)
Tools for the on-line edition

**Graphic**

- **Objet**
  - Select
  - Create
  - delete
  - joint
  - Divide

**SIGLA - Sistema de Información Geográfica catastral**

- Archivo
- Edición
- Ver
- Impresión
- Herramientas
- Ventana
- Ayuda

**Parcias**

- Cualquier objeto
- Masas (manzanas, polígonos)
- Parcelas
- Descuentos
- Construcciones urbanas
- Subparcelas rústicas
- Líneas
- Puntos
- Textos (rótulos)
GEORREFERENCE

Permanent Committee on Cadastre in the European Union

Bratislava 2016
SIGCA - Sistema de Información Geográfica catastral

Archivo  Edición  Ver  Impresión  Herramientas  Ventana  Ayuda

Abrir
Cerrar

Guardar
Guardar como...

Agregar mapa de fondo
Buscar ortofoto...
Quitar mapas de fondo

Imprimir borrador

Propiedades

\c:Tmp\IMAGEN~1\JMO\ELASTI~1.BMP
\c:Tmp\IMAGEN~1\JMO\HELMER~1.BMP
\c:Tmp\IMAGEN~1\JMO\AFINV~1.BMP

Salir

Add background map
DIGITAL ARCHIVE
Processing of an administrative record in the cadastral office

Permanent Committee on Cadastre in the European Union

BRATISLAVA 2016

Mantenimiento catastral: SIGECA y SAUCE

Real cadastre
External cadastre

- Pending
- Returned back
- To record
  - Check by external user
- Pre-available
- Available
- With errors
  - Validation
- Accepted
- Ready
- Suspended

Devolution:
- Modification
- Check by external user
External user

Record the data

Pass to available

real cadastre

Cat.externo

Cat.externo

Cat.externo
Check by internal user
Final process

update

Valoration

Close

notification

Cat.externo

real cadastre

historical cadastre
Proceding with exchanged files

Incorporation → valuation → Close the record stage → notification

real cadastre
from 2015 we have a new coordination process with notaries and Land Registries that have improve the tools in our back-office

- The cadastral certification, obtained by the title holders and collaborators, include attached a GML INSPIRE cadastral parcel. The certificate is used by citizens to describe the parcel in notaries and land registry.
• The cadastral certification is an electronic document (PDF format).

• It is electronically signed using a Secure Verification Code (CSV).

• With this code on the document it is possible to access the digital file in the Electronic Office of Cadastre.

• Citizens can be sure that the image on the document reflects the true coordinates.

• Applications of notaries and registrars use a web service to access the content of the GML attached file using the code CSV.
It is possible to obtain the INSPIRE GML free by our electronic office

And start a proceding of division, joint, segregation, anexion....

Or make a correction
• If there is an alteration or disagreement, citizens can provide an alternative geo-referenced representation.

• This geo-referenced representation is used to update the cadastre if it passes the appropriate graphical and technical validations.

• The technicians, the notaries, the registrars need to ensure that the new parcels fit in the continuous cadastral index map. It’s necessary to validate it.
1. You assure the graphical fit using an interactive service and web service call “Graphical validation report” available in the Electronic Office of Cadastre.

The technician`s identification
And characteristics of the work
2: Select the cadastral parcels
3: Add new GML

Possibility to overlap with other information
4 Check

La representación gráfica respeta la delimitación de la finca matriz y reúne los requisitos técnicos necesarios que permiten su incorporación al Catastro.

Significado simbólico

Leyenda
- Superficie de la parcela catastral fuera de la representación gráfica aportada
- Superficie de la representación gráfica aportada fuera de la parcela catastral
- Superficie coincidente

Resumen
La geometría proporcionada coincide exactamente con la cartografía catastral
Superficie de la cartografía catastral: 1370 m²
**Validez gráfica**

- **Leyenda**
  - Superficie de la parcela catastral fuera de la representación gráfica aportada
  - Superficie de la representación gráfica aportada fuera de la parcela catastral
  - Superficie coincidente

- **Resumen**
  - La geometría proporcionada coincide exactamente con la cartografía catastral.
  - Superficie de la cartografía catastral: 113 m²

---

**Positivo**

---

**Validez gráfica**

- **Leyenda**
  - Superficie de la parcela catastral fuera de la representación gráfica aportada
  - Superficie de la representación gráfica aportada fuera de la parcela catastral
  - Superficie coincidente

- **Resumen**
  - La geometría de la cartografía catastral no coincide con la geometría proporcionada.
  - Superficie de la geometría proporcionada: 6032 m²
  - Superficie de la cartografía catastral: 12101 m²

- **Listado de discrepancias**
  - 1. Por defecto de: 6543 m²
  - 2. Por exceso de: -474 m²
5: Report

- The report is an electronic document signed with the secure verification code.
- The report shows the result of the graphic validation.
- The technician’s identification and the technical data of his/her work.
- The XML file is attached to the PDF.
- The report avoids the physical exchange of files, shows the new representation and enables the automated capture of its contents preventing transcription errors.
• Notaries incorporate the PDF directly to the deed
• Notaries send the graphical validation report to the registrars
• Registrars access the graphical content in the XML file automatically.

They trust that the representation on the document reflects the true coordinates of the new parcels. They can represent the content of the report using its CSV code in a service available in the Electronic Office of the Cadastre.
• All the exchange of information is made through web services between the College of Registrars and the Electronic Office of Cadastre.
• The use of paper is expressly eliminated!!
• When the Registrar authorizes the transaction, automatically, without human supervision in most cases, the information in Cadastre is modified and the documents for the citizens are generated.
• Notary and registrars have a feedback. They can communicate the results to the citizens.
To conclude:

I have tried to show you some of the processes, protocols and tools that allow the Spanish Cadastre to work collaboratively and to maintain the database that is needed to assess the values that are the base of various taxes on property and mainly the recurrent real estate tax that is the main income of municipalities in Spain.
Thank you for your attention

Amalia Velasco Martín-Varés
Spanish Directorate General for Cadastre