Smart Successful Cadastral New Tools for Real Estate Registration

“all in 16 digits”

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In Spain the Cadastre and the Property Rights Registry are institutions with differentiated competences which need the coordination of their information for a better identification and description of real estates and an adequate provision of services to citizens and administrations.

We have been trying to coordinate both institutions since 1906

Now
• Technologic developments
• Social Changes
• Political decision

Law 13/2015 for coordination
Law 13/2015 implements the coordination:

- using cadastral mapping as the basis of its graphic representation,
- allowing simultaneously the updating of the cadastral data.
Coordination is not a specific action, it is a gradual process that is implemented property to property as entries are made in the Property Rights Registry.

Before law 13/2015

in the case of division, fusion, segregation, land consolidation of the parcels etc...the citizen had to go both
to the registry (change of the titleholder) and
to the cadastre (change physical and economical data)

Cadastre or collaborating administration

Different data
Once the cadastral data have been incorporated in the Property Rights Registry, the **delimitation, location and area of cadastral data are considered to be true for all legal purposes.**

The Property Rights Registry`s record and the cadastral map will indicate if the real estate is **coordinated** and the date of coordination.
The coordination procedures must be **agile and predictable**,

Establishing a **fluid and safe exchange** of information between all the agents involved in the real estate traffic.

*Unattended machine to machine communication*
3 documents

Cadastral certification (with GML)

Alternative geo-referenced representation (in GML)

Graphical validation report

Secure Verification Code
Coordination will be easier if all the agents involved speak the same language.
The Directorate General for Cadastre, Registrars and Notaries have had to develop applications for the new coordination process.

The process begins with GML INSPIRE of the origin cadastral parcel. It can be obtained at the Electronic Office of Cadastre.

1. Through free access from the screen, as query results.

2. As a service using the WFS INSPIRE cadastral Parcel.

3. With the cadastral certification.
1. Free access from the screen, as query results.
2. As a service using the WFS INSPIRE cadastral Parcel
3. With the cadastral certification, obtained by the title holders and public partners agents

The cadastral certification is an electronic document (PDF format).

It includes embedded the GML INSPIRE of cadastral parcel.

The certificate and its attached file are signed electronically using a Secure Verification Code (CSV)

Composed by 16 digits

These 16 digits are the only information that is exchanged
Cadastral certification

1. REFERENCIA CATASTRAL

2. DATOS DESCRITIVOS DEL INMUEBLE:
   - Localización
   - Valor catastral
   - Titularidad
   - Construcción
   - Cultivos

3. PARCELA CATASTRAL

4. REPRESENTACIÓN GRÁFICA

5. COORDINACIÓN CON EL REGISTRO DE LA PROPIEDAD

6. SOLICITANTE. FINALIDAD. FECHA EMISIÓN de la CERTIFICACIÓN
La CCDyG tiene 3 ficheros anexos, a los que se puede acceder usando la herramienta de anexos del Adobe Reader:
With this code CSV on the document it is possible to access in any moment by internet to 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 only the code CSV.
This certificate is now used by citizens to describe the parcel in notaries and registry.
What happened when it is necessary to change the representation of the parcel?

- declarations of citizens: segregations, divisions, joints ..
- land consolidations,
- reparcelling,
- administrative demarcation,
- expropriation
- acts of urban planning and urban managing
- first registration in the PRR or renewal
- cadastral errors
  - from the basic cartography (ortho or topographic map)
  - or wrong delimitation of the parcel
- Property Right Register error that change the physical representation of parcels

Citizens and administrations must provide an alternative geo-referenced representation
Alternative geo-referenced representation

The cadastral cartography is the basis of the new representation. The technicians are required to represent the reality as an overlay on the cadastral cartography,

1. Download GML or other formats: DXF, etc.
2. Modify by private tools (autocad, qgis, etc..)
3. Include the alternative geo-referenced representation
   That must be expresses in GML of CP
AutoCAD

https://github.com/chapulincatastral/generador-gml

QGIS

https://plugins.qgis.org/plugins/SEC4QGIS/

- QGIS: gml, dxf, shapefile from the original cadastral data.
• Important: PPP
It is needed to ensure that the new parcels fit in the continuous cadastral index map.

It’s necessary to validate that the perimeters of the new parcels correspond with those of the old parcels to keep the continuity of the map.

Using an interactive service and web service call “Graphical validation report” available in the Electronic Office of Cadastre.
“Graphical validation report”

- The Graphical Validation report is obtained from the electronic Office of Cadastre with authentication
- Can be obtained by the citizen, or by a technician
- If it is obtained by the technical, specification of the professional work will be asked
Parcelas Catastrales inicialmente afectadas (primeras 14 posiciones de la Referencia Catastral)

Selección de Parcelas
(separadas por comas o en diferentes líneas)

4869055UN5746N
4869054UN5746N

Añadir
Quitar
Quitar todos

Parcelas confirmadas

4869055UN5746N
4869054UN5746N
Captura y generación de ficheros por técnico competente

GML de parcela catastral
If there are twists or shifts of the cadastral maps, it is necessary to record them.

There is software that calculates the best formula of transformation from a set of origing and destination points.
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: 2140 m²
“Graphical validation report”

Obligatory to quote to adjacent affected.
Recomended: extend until positive report
The report is an electronic document signed with the secure verification code.

It has an XML file with all the information.
PCC 2017. Malta
Parcelas catastrales afectadas

La representación gráfica facilitada a continuación expone las parcelas catastrales que se relacionan a continuación. La reconfiguración de esta representación gráfica en la cartografía catastral producirá una alteración de la determinación y superficie de estas parcelas, por lo que se requiere la notificación previa a los titulares catastrales de las intervenciones en el procedimiento correspondiente.

Referencia Catastral: 37136A0405231
Dirección: FUENTEQUINALDO (SALAMANCA)
AFECTADA TOTALMENTE

Referencia Catastral: 37136A0405230
Dirección: FUENTEQUINALDO (SALAMANCA)
AFECTADA TOTALMENTE

Parcelas resultantes

Parcera UOK_30-31
superficie: 1570 m²

Límites exteriores:
37136A0405228
37136A0405232
37136A0405201
37136A0405202

COORDENADA UTM

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• The report avoids physical exchange of files, only de 16 digits are exchange between cadastre and notary.

• The report shows the new representation and enables the automated capture of its contents preventing transcription errors.

• All the exchange of information is made through web services.

• Notaries don’t need to use GIS. And they can check the content using its CSV code in a service available in the Electronic Office of the Cadastre.

• If the validation report is correct, in between 5 days the cadastre send the new cadastral certificate to the Notary.
Notaries send to the registrars the deeds with

- the new cadastral certificate
- Or the graphical validation report of an alternative graphic representation.

- The registrar can consider to register the alternative graphic representation because the cadastre is wrong.
- The registrar communicates to the cadastre the new representation.
- Cadastre corrects the data, incorporates the new representation and send the new cadastral certificate to the registrar.
• The technical solution developed by the Directorate General of Cadastre allows registrars to link, without the need for specialized GIS tools, the list of coordinates present in the format and its graphic representation.

• The coordinates are incorporated to the registration in a paper sheet.
Once the real estate has been registered in the land registry automatically, without human supervision in most cases, the information in Cadastre is modified and the documents for the citizens are generated.

Then Notary and registrars have a feedback. Also with the CSV they can communicate the results to the citizens.
Nota Simple del Registro

6135806XH9263NC001AY

Se hace constar expresamente que ha quedado inscrita la Representación gráfica Georreferenciada de la finca matriz de la que ésta procede coordinada con Catastro
Not only citizens but the public authorities that work in the territory have the duty to communicate to the Cadastre: land consolidations, reparcelling, administrative demarcation, expropriation and acts of urban planning and urban managing.

Theses administrations are obliged to provide an alternative geo-referenced representation:
- In GML format,
- Represented on the cadastral cartography,
- With technical the validation report by the cadastre

Collaboration with municipalities and other administrations is needed.
In order to register a building the georreference of its position is also needed.

We use then INSPIRE GML BU

The alternative geo-referenced representation is voluntary in several other cases as for example the Georreference of Crops, Installations and improvements, or buildings already registered.
The geo-referencing of the parcels, expressed through the GML INSPIRE format of a cadastral parcel, is now widely used by all agents involved in property transactions in Spain.
During 2016 more than seven million certificates and fifty thousand reports were issued.

And this is only the beginning because not all the tools were ready and not all the stakeholders prepared...
As summary

The key parts of the process are the electronic documents:

- The “Cadastral certification” and

- The “Graphic validation report” of a new alternative georeferenced representation.

Both products can be obtained via web service or interactively by citizens and agents from the Electronic Office of Cadastre.

They include embedded the GML INSPIRE of cadastral parcel and they are signed electronically using a Secure Verification Code (CSV) composed by 16 digits.
The Secure Verification Code unequivocally identifies the document in the Documentary catalog of the Directorate General of Cadastre that ensures the authenticity and integrity of its content.

The exchange between the different agents just only needs the 16 digits of these codes.

It avoids the physical exchange of computer files,

allows the visualization of the new representation without GIS tools and enables the automated capture of its contents,

preventing possible transcription errors.
The Smart System of coordination between the Cadastre and the Property Rights Registry is now operational, producing results and involving all agents active in the Real Estate market. The tools, systems and protocols developed by the Directorate General of Cadastre are being widely used.

With the introduction of this system, not only we are making advance in the coordination between Cadastre and Property Rights registry but also we are standardizing the processes within all the actors involved in the real estate sector.

We are enhancing interoperability between them, simplifying administrative procedures and reducing costs,

and increasing legal security, since once the cadastral data have been incorporated and marked as coordinated in the Property Rights Registry, the delimitation, location and area data are considered to be true for all legal purposes.
Many thing to do still. We just have begonnen

- Promote the generalization of the use of the system to all stakeholders.
- Improve the knowledge between the organizations

- Monitoring of communications of disparity evidenced in cartography
- Marking of areas which should not be taken as a starting point the cadastral information
- Treatment of the public domain that not cadastred

- Design of joint plans for massive coordination
- Visualization of coordination internally and externally. Advertising of its effects.
- Return of information to the register about the modified subsequent to the coordination.
Thanks a lot for your attention