Seminar 4. A Cadastre

Land Information Diffusion: EU Initiatives

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First some Eurobarometer statistics showing a general trend that the Internet uptake in Europe is steadily advancing...

EU average of household access to the Internet:

- March 2000: 18%
- October 2000: 28%
- June 2001: 36%
- November: 2001: 38%

Countries like Greece and Portugal lying significantly below the EU average and others, like the Denmark and the Netherlands lie clearly above.

Policy Framework: eEurope

The broad EU policy response to realise the potential of the Information Society was given at the end of 1999 with an initiative called eEurope.

In order to ensure that Europe fully benefits from the Information Society, the main goals formulated were to get every European citizen on-line, to ensure a digitally literate Europe and a socially inclusive process.

These objectives should be met following a new so-called «open method of coordination» to spread best practices, achieve greater convergence towards the main EU goals, and help member States to progressively develop their own policies. This method sets concrete timetables to achieve targets and establishes indicators to benchmark progress and compare best practices.

In general, the eEurope initiative should help to reach the ambitious target set by the political leaders at the Lisbon summit in March 2000.

During this special summit a new strategic goal was formulated for the coming decade, which is to make the European Union the most competitive and dynamic knowledge-based economy in the world by 2010, an economy that is capable of sustainable economic growth with more and better jobs and with greater social cohesion.

Here are some key data about the eEurope initiative:

- It was launched by the political leaders at the Helsinki European Council in December 1999.
- A concrete Action Plan until the end of this year, 2002, was adopted at the Feira Summit in June 2000.
- The first progress report appeared nine months later in March 2001.
- An interesting initiative is eEurope+ launched at the Göteborg Summit in June 2001. eEurope+ is a specifc action plan developed by the Candidate Countries and based on the eEurope initiative to stimulate the Information Society in this part of Europe.
- And in February of this year the first comprehensive overview of benchmarking results following the openmethod of co-ordination was published.

In order to get Europe on-line, the Action Plan focuses on the three following main areas:

- A cheaper, faster and secure Internet
- Investing in people and skills
- And stimulate the use of the Internet

These broad areas have been subdivided into 11 action lines and a total of 64 concrete targets were formulated under these action lines to be achieved by the end of this year 2002.

I won't into the details of all the action lines, but if we take a llok at the third broad area aiming to stimulate the use of the Internet, there are two action lines that cover the theme of land information, namely eGovernment under point 8, formulated here as: government on-line:

- electronic access to public services, and
- the action line under poin 11: Digital content for global networks.
- I will first elaborate a bit more on the eGovernment action line and then come back to the digital content action line.

Electronic government or «eGovernment» is a broad term covering several aspects and stakeholders. This figure tries to visualise those main aspects.

eGovernment is all about the delivery of on-line public services, inlcuding relevant public sector information and communication with administrations and leading to real interactive transactions between citizens and businesses on the one side and administrations on the other.

eGovernment is also about the use of Information and Communication Technologies to enhance civil participation in democratic processes, through, for example, on-line consultations and digital discussion fora.

In short, eGovernment offers the possibility to make life easier for citizens and businesses through better public service provision and for administrations themselves too by improving its internal efficiency.

The goal of eGovernment is, therefore, to move customers from being in line to going on-line!

If we apply eGovernment more specifically to land register services, it could be formulated as «the use of ICT to improve the delivery of land register products and services to customers».

The on-line provision of land register products and services could improve:

- *transparency:* citizens will better understand how land registry works and what types of products and services exist,
- *availability* of the services around the clock,
- *speed* with improved electronic case-handling, and
- *customer orientation* with user-friendly information and the possibility of personalised services.

The eGovernment action line addresses several specific aspects, such as

- Electronic access to basic public services,
- Identification and exchange of eGovernment,
- A co-ordinated approach for public sector information,
- Promote the use of open source software in the public sector, and
- Simplified on-line administrative procedures for business

I will focus on the first three aspects... and start with the first one: electronic access to basic public services.

Electronic Access to Public Services

To measure the impact of eEurope and of the Information Society in general, the eEurope Action Plan was complemented by a set of 23 indicators. These indicators were the starting point for benchmarking eEurope.

For eGovernment, a specific indicator was adopted and defined as «*the percentage of basic public services on-line*».

In order to benchmark this indicator, the European Commission negotiated a methodology and a common list of public services with the Member States. This list indludes 12 services for citizens, such as income taxes, job search services and personal documents, and 8 services for businesses, like registration of a new company and public procurement. Land information services were not identified as so-called «basic» public services.

This list of services and the methodology were used for a Commission-sponsored survey to evaluate where Europe stands in the field of eGobernment.

The first results were presented at a Ministerial conference on eGovernment in november of last year.

And in order to measure progress, the eGovernment indicator will be measured every six months. The results of the second measurement will be published next month.

eGov barriers:

Two main conclusions that can be drawn from the results are that:

• Complex administrative procedures and dispersed service provision are two factors that hemper the on-line development of public services.

• Services with rather simple procedures and a co-ordinated service provision, such as job search services or income tax, achieved the best results, whereas services like building permissions or environmental permits are more complex administrative procedcures and received significantly lower scores.

Therefore, it is important to have co-ordinated e Government solutions and extensive back-office re-forms are required to transform complex transactions into simple procedures.

These two elements will stimulate the further development of on-line public services.

eGovernment Best Practices

I will now come to the second element of the eGovernment action line, namely the identification and exchange of eGovernment best practices.

On 29-30 November of last year, the European Commision organised together with the Belgian Presidency the first European Ministerial conference on eGovernment...

35 Ministers and deputy Ministers adopted en eGovernment declaration for future policy action ensuring an inclusive process, promoting trust and security, building on best practice and encouraging participation in democratic activities.

The conference showed how citizens and businesses can reap concrete benefits from on-line public services and brought together in an exhibition interactive eGovernment applications from all over Europe. 60 eGovernment applications were awarded an eGovernment label for good European practice giving them international recognition.

Finally, Commissioner Liikanen announced the organisation of so-called «eEurope awards for innovation in eGovernment» following on the eGovernment labels for good European practice. These new awards will be an important driving force for promoting the exchange of best practices in the field of eGovernment. The first awards will be distributed by the end of this year.

From the 60 selected eGovernement cases, the are also applications that are dealing with land information services.

The first example comes from the city of the Hague in the Netherlands.

The WOZ Infodesk is an application providing citizens and companies of The Hague direct access to information on the fiscal value of property, such as land, houses or business premises. The value of real estate is namely the main determinant of a series of Dutch taxes, such as municipal property tax.

The system has been tailored to the different populartion groups it targets, such as private individuals, companies, public servants and employees of the local tax authorities. Competencies have been detailed according to these target groups, involving access to cartographic and administrative data like cadastral maps, florr plans and cycloramas (360° pictures of buildings and streets covering the whole city). Information on people, the premises, its use and layout, for example, can also be found. Interested parties can conult the assessment report on-line and compare the value of their property with that of three other comparable properties elsewhere in the city. They are also entitled to ask for additional information on the assessment and may react if they disagree with the data provided.

The second example is the website of the Swedish organisation Lantmäteriet, which deals with land and geographic information in Sweden.

The application provides easy access to maps, aerial photos, satellite images, cadastral information, information on house-prices and other kinds of land information through Lantmäteriet's marketplace. The user can browse and llok for information in different areas, zoom in and out and directly order, download and pay for customised products. Lantmäteriet's marketplace has proved to be and effective tool to reach more potential users with updated land and geographic information, which has also allowed for significant savings in the costs of analyses and decision-making.

Another good European practice in the field of land information comes from Austria and concerns the procedure for foreing citizens to obtain permission to acquire land in Vienna.

Trough this eGovernment application requests for the permission to acquire land in Vienna are submitted to the Municipal Department by electronic upload. Once the applicant has been proven eligible, the user can complete and send the necessary electronic forms, which are available on the Internet. Futher documents to be submitted with the application, such as office copis of the land register entry, the plan of the estate, the sales contract, the passport, or additional motives or explanations etc., can also be uploaded as electronic files.

The last example comes from Ireland and is called PlanMap.

The Limerick Country Council has developed a geographical information system which allows a planning officer, area officer, public representative or member of the public, to access via the Internet current planning applications and a full site history.

The includes information on each application, constraints maps, ordnance survey maps and aerial photographs of each site and a scanned image of planning application files, including application from, maps, drawings, correspondence, Manager's Order (decisions) and digitised photographs of the sites. This system is currently running as a «live» system in the Planning Department.

Limerick Country Council has been engaged in this process for the last two years.

The purpose of providing the system, PlanMap, has been to allow the user, at any location, to have access to data from a number of different sources in an integrated fashion. It is envisaged that this system will become the primary avenue for members of the public to examine planning applications in the future. This is the first system of its kind currently operating in the Republic of Ireland.

In order to support wide dissemination and exploitation of the valuable experiences in the field of eGovernment, and to follow up the recommendation made by the European Public Administration Ministers, the Commission is in the process of setting up a European eGovernment platform.

This platform will be build on two existing initiatives, namely the eForum Association and the eGovernment observatory, which are both supported financially by the Commission.

The *e*-Forum association is running under the IST research programme and is open to both the public authorities and the private sector. It provides a consultative basis for promoting the exchange of practical experiences across Europea and to develop the best initiatives.

The eGovernment Observatory aims at creating synergies between the IDA programme, which concerns the exchange of data between administrations, and complementary initiatives in the EU and the member states.

The selected good practices identified for the ministerial conference, of which I showed you some examples, will be integrated in this European eGovernment platform.

Co-ordinated Approach for PSI

I will now come to the third and last element of the eGovernment action line, namely a co-ordinated approach for public sector information.

But why is public sector information so important?

Because public sector information is a prime content resource for citizens and businesses.

Access to public sector information enhances transparency in the way administrations work and can bring citizens closer to administrations. It is very important properly inform citizens about running affairs if you want to ensure a democratic process.

Public sector information is essential for businesses to make the right strategies and especially for companies that want to take advantage of the internal market and get a picture of the rights, duties, and procedures that allow them to operate without difficulties abroad.

And, finally, public sector information is in particular important for the content industries as a valuable source to make new information products.

For the moment, however, public sector information is still underexploited in the EU because of several market barriers:

• No common legal framework for re-using the information
• No common principles for storing the information
• No common meta-data
• No, or little experience of public-private collaboration
• Different languages

eContent in eEurope

Against this background, the European Commission published at the beginning of 1999 a Green Paper entitled «Public sector information: a key resource for Europe.

The objective of this Green Paper was to undertake a broad public consultation involving all the actors concerned to examine the main issues at stake and to trigger a political discussion at European level.

The Green paper was accompanied by several events throughout Europe on the theme of public sector information and a total of 185 written replies were received from stakeholders, wich showed the big interest in the subject.

The input of this public consultation process was used to formulate action to improve the situation at European level.

The follow-on of the Green Paper was a Communication entitled «eEurope 2002: creating an EU framework for the exploitation of public sector information».

This communication was published on 23 October of last year and gave the first directions of EU actioln based on the outcome of the Green Paper.

It outlined the leading principle that everybody has the right to re-use PSI when it's generally accessible, which includes commercial re-use of PSI.

Basic orientations were defined on issues like fair trading, pricing, and transparency and the Communication announced the Commission's consideration to propose a Directive in order to achieve a minimum of legal certainty for all players in the European information market.

So the basic message of the Green Paper and the Communication is:

• That the Commission wants to create the conditions for a healthy content and service market,
• that public sector information is an important component of this market,
• that currently market barriers still prevent the full impact of public sector information on economic activity and employment,
• and that it is, therefore, important to create better framework condicitions for the exploitation of public sector information.

The next step taken by the Commission was to have an on-line consultation on a working document outlining the content of a possible legal instrument for the re-use of PSI.

80 replies were received on this working document, of which 43% came from public sector bodies and 32% from industry.

Potential re-users (industry) are very positive and clearly indicate that a Directive would be the appropiate instrument to ensure a harmonised legal framework for the re-use of PSI (create a minimum of certainty and transparency on the condicitions for re-use).

The data-holders express some concerns about the proposal, in particular about the issue of charging, although the often tend to share the view that the conditions for re-use throughout Europe could and should be improved.

The working document outlines the following principles. Leading principle: right to reuse generally accessible public sector information:

• Transparency: prices and other conditions for re-use should be pre-established and publicly know
• Pricing: non-discrimination (exception for non-commercial use by citizens and NGOs) and cost-orientation
• Prohibition exclusive arragements: exception: provision of service of public interest (no market interest)
• Practicalities: *availability on-line licences & catalogues of data resources; replying times:* in line with time for accessing documents and *format:* availability in all preexisting formats

There is no formal decision taken yet on the draft Directive to re-use public sector information.

Use of Public Sector Information

I will now come back to another action line formulated under the eEurope action plan, which the one indicated under number 11: digital content for global networks.

The main target formulated under that action line was to launch a programme that stimulates the development of European digital content.

This target was realised by the end of the year 2000 with the adoption of the so-called eContent programme.

The context and background of digital content is illustrated by the two following strands, a political and an economic strand.

As I already explained in the beginning, the digital content action line of the eEurope action plan has the overall objective to stimulate the use of the Internet: without digital content there is no reason to use the Internet.

At the Lisbon European Council in March 2000, the political leaders recognised the importance of digital content also by stating that «content industries create added value by exploiting and networking European cultural diversity».

The economic importance of content is shown by the figures on the right side of the slide: the European Information Technology Observatory, EITO, estimated in 2000 the size of the overall content setor at 412 billion Euro, or 5% of the European Gross Domestic Product.

Content production has given rise to rapid job creation in recent years and can continue to do so. If obstacles to growth are removed, the digital media industries could grow at 20% per year, which would mean the creation of up to 1 milion new jobs by 2005. (*Digital Media Aliance, REcommendation for Growth, 1998.*)

Rich content base based on Europe's long history:
• Long publishing tradition since Gutenberg invented the printing technique in the 15th century
• World ranking players like Reed Elvevier, Vivendi, Bertelsman
• Assets in linguistic and cultural customisation: speak different languages, aware of cultural differences

eContent ios a market oriented programme aimed at supporting the production, use and distribution of European digital content on the global networks and promoting the linguistic in the Information Society.

Some key data:
• The programme last for 4 years (Jan 2001 - Jan 2005)
• Total budget: 100 Me
• It has three action lines of which the first is of particular interest to us, namely:
• Improving access to and expanding use of public sector information

With regard to this first action line focusing on public sector information, the eContent programme is looking for:
• projects that concretely showcase the re-use of public sector information.
• Projects that show the European scope of public sector information, meaning the use of that information across borders.
• And a protfolio of projects covering multiple sectors from legal and administrative data, via land and geographical information to cultural and historic information.

The action line is, furthermore, looking to:
• establish common meta-data in the field of public sector information,
• to set up so-called «data sniffer» tools, which help to identify what public sector information assets exist across Europe and how to access them;

• and to have some pilot examples on European digital data collections.

The overall objective is to achieve structural effects on the information market through a bigger use of public sector information.

The types of public sector information addressed by the action line are very broad as you can see.

Geographical information, including land and property, environmental data, and meteo and oceanographic data are specifically mentioned in the working programme.

A good example of a project in the field of land information running under the eContent programme is the EULIS, project, which stands for European Land Information System.

The project is set up by a consortium of 7 national land registries from NL, SE, FIN, NO, England and Wales, Scotland and Lithuania and also includes the Austrian Ministry of Justice and a Swedish technical university.

The project will run for two and a half years and total costs are estimated at two and a half million e, of which 50% is being funded by the eContent programme.

The EULIS project is based on the need to have easy access to reliable information on land real property across borders in order to carry out international transactions on the real property financial market.

Therefore, the overall objective of the project is to create an electronic European Land Information Service to meet that need and giving access to information about, for example, ownership, property values, and encumbrances.

The aims of the EULI projec are, therefore, to Propose how such a system can be designed
• What obstacles might occur
• Show the functionality through a demonstrator
• Establish a long-term solution and investigate the long-term effects on the market

This includes the several issues to be addressed, namely:
• Current legislation on real property transactions
• Basic access principles regarding privacy of land information
• Further investigation of user needs for the service
• Security arrangements and payment methos, and the Impact of the service on European real estate markets.

So, to come back to the action line structure and to shortly summarise:
• the basis for the public sector information action line is formed by the policy actions, such as the eGovernment actions I explained earlier.
• The necessary infrastructural aspect is addressed by projects concerning meta-data and data sniffer tools, and
• on top of that the action line will stimulate concrete examples of projects based on public sector information, including public private partnerships and digital data collections.

If you are interested and have good ideas in the field of land information, you are invited to submit your project at the third call, which will be published in December of this year, or, depending on the type of project, under the continuous submission scheme.

More detailed information can be found on the eContent website, of which I will give the address at the end of the presentation.

To conclude with the eEurope initiative a small word on its near future.

At the European Council in Barcelona two months ago, the heads of state and government recognised the need to continue European actions and co-ordination to stimulate the development of the Information Society.

Therefore, they asked the Commission to draw up a new eEurope Action Plan until the end of 2005 with a focus on digital public services.

GALILEO. European Satellite programme

Let me finally come to the last point on the agenda, which is the GALILEO satelite positioning system.

A global navigation satellite system is a technique that is currently already used to determine the position of an object in the gields of transport, recreation, mobile phones, etc. You all know the American GPS system. The position of an object can only be determined if at least 4 satellite signals have been received.

GALILEO will be the European navigation satellite system which is designed for civil purposes and will make it possible to determine the *exact* position of an object in space and time at any given moment.

It is based on a constellation of 30 satellites in orbit, which cover the entire surface of the earth and a network of ground control stations.

Each satellite is equipped with an atomic clock providing extremely precise time measurements and making it possible to determine precisely the location of any object.

The political and strategic objective of GALILEO is to allow the European Union to have control of a satellite system that can offer huge advantages in many sectors of the economy.

GALILEO will make it possible to develop a whole new generation of services, such as automated vehicle guidance systems to reduce traffic jams and cut the number of accidents, oil prospecting, management of scarce resources like water, financial transactions and safety of persons and property.

GALILEO is a joint initiative of the European Commynity and the European Space Agency, ESA, where the Commission is assuming political responsibility and ESA is leading the project development.

On 26 March of this year, the EU Transport Council agreed on the release of the remaining 450 € necessary to fund the development phase and on the establishment of a management in the form of a joint undertaking between the Community and ESA (*Total = 1.1 billion €, 550 M € EC of which 100 M € already released and 550 M € ESA.*).

The development phase should run until 2005, followed by a deployment phase in 2006-2007. GALILEO should be completely operational by 2008.

Currently, the two existing satellite systems are already used for cadastral surveying in different countries. These are the American Global Positioning System and the Russian GLONASS system, which were both designed for military purposes at the time of the Cold War.

Techniques using at least two receivers allow to reach an accuracy of data of up to one centimetre but there are two main limitations of the existing systems:

Firstly, the coverage is not always guaranteed, meaning the availability of at least four satellites to determine the position of an object, and Secondly the integrity of the data is not guaranteed, because these systems are not capable to send an alarm when bad data are transmitted.

The new GALILEO system will bring considerable improvement, which will benefit cadastral activities.

First of all GALILEO offers an increased number of satellites for the localisation of an object, which will:

• facilitate the data acquisition in difficult areas, such as dense urban centres, canyons or mountain, and

• improve the efficiency of the data acquisition process, notably in terms of speed.

Secondly, GALILEO will improve the accuracy and integrity of the data giving:

• better quality of the acquired data up to milimetres, and

• improve the robustness of the database by avoiding to have wrong localisation information.

Shortly, GALILEO will be an ideal complement ot geographic information systems in general and to the cadastral database in particular. ∎

Citizen's use of the cadastral information: Experiences among the Member States

Utilisation de l'information cadastrale par les citoyens

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Les données cadastrales mises à la disposition des citoyens se présentent sous forme cartographique ou littérale.

Les données cartographiques

Mode de communication des données cartographiques

Tout usager peut obtenir, sur sa demande, la communication d'informations cartographiques qui sont gérées et mises à sa disposition par les services du Cadastre (centres des impôts fonciers, CDIF) ou par le Service de la Documentation nationale du Cadastre (SDNC) s'agissant de productions cartographiques particulières.

Les documents cartographiques étant essentiellement constitués d'informations non nominatives, ils sont communicables sans réserve à tout usager.

Leur consultation est gratuite et des reproductions sont délivrées moyennant un coût fixé par arrêté ministériel.

Les données cartographiques numériques sous forme vectorielle issues de la dématérialisation du plan cadastral sont diffusées dans les mêmes conditions par les services qui en disposent.

L'utilisation du plan cadastral et ses limites

Le plan cadastral constitue un document dont la production est nécessaire à certaines démarches administratives; il peut également constituer une simple source de renseignements pour le citoyen.

Le plan cadastral dans le cadre des démarches administratives

Identification et détermination physique des biens

• La portée des données cadastrales

La réforme de 1955 a instauré un système de publicité foncière qui repose sur la concordance entre les données cadastrales et les éléments du fichier de la propriété immobilière géré par les conservations des hypothèques.

L'article 870 du Code général des impôts dispose en effet que «la désignation des immeubles, d'après les données actuelles du cadastre, est obligatoire dans tous les actes authentiques et sous seing privé, ou jugements translatifs, déclaratifs, constitutifs ou extinctifs de propriété ou droits réels immobiliers».

Les liaisons obligatoires induites par ce texte entre le service du cadastre et la conservation des hypothèques pour assurer cette concordance rigoureuse entre les données cadastrales et le fichier immobilier reposent sur les extraits cadastraux, les documents modificatifs du parcellaire (dits «documents d'arpentage») et les procès-verbaux.

Le cadastre dit «rénové» apporte une contribution effective en la matière dans la mesure où chaque parcelle est désignée par une référence cadastrale unique, et donc individualisable sans risque d'ambiguïté.

• Les limites des données cadastrales

La délimitation de la parcelle n'est garantie cependant que si elle résulte de l'incorporation des résultats d'un remembrement.

De la même façon, la certification des droits sur un bien ne relève pas du cadastre mais de la responsabilité conjointe du rédacteur de l'acte dans lequel est décrit le droit de propriété, et de la conservation des hypothèques chargée du contrôle de l'effet relatif de la publication.

En cas de litige concernant le droit de propriété, les donnée cadastrales constituent seulement pour les magistrats un élément d'information.

La demande de subventions dans le cadre de la politique agricole commune

Les agriculteurs perçoivent depuis 1993 des paiements compensatoires aux surfaces qui sont destinés à compenser la baisse des prix communautaires décidée dans le cadre de la Politique agricole commune. Ces paiements sont effectués à l'heure actuelle sur la base des déclarations de surfaces dont l'établissement par les exploitants agricoles nécessite l'acquisition de reproductions de plans cadastraux.

Cela dit, le règlement de la Commission européenne n.° 1593/2000 du 17 juillet 2000 prévoit encore une évolution importante dans la gestion de la politique agricole commune. Ce texte impose en effet à tous les états membres la mise en place, avant 2005, d'un système d'informations géographiques fondé sur l'orthophotographie pour gérer le dispositif de déclaration des surfaces agricoles cultivées.

L'achat de planches cadastrales par les agriculteurs ne sera plus nécessaire puisque les exploitants agricoles matérialiseront leurs îlots de culture sur les documents graphiques qui leur seront remis par les directions départementales de l'agriculture et de la forêt.

La constitution de dossiers de permis de construire

Les constructions sont soumises à des permis de construire délivrés par les collectivités locales ou par les directions départementales de l'Equipement. Les dossiers de demande doivent comprendre un extrait du plan cadastral qui matérialisant la configuration géométrique de la parcelle qui doit supporter la nouvelle édification.

Le plan cadastral comme simple source de renseignements du citoyen

Le plan cadastral actuel ou ancien constitue également un outil permettant aux héritiers ou à leurs représentants légaux, que sont les avocats et les notaires, de reconstituer parfaitement et précisément les biens entrant dans les successions.

De même, le plan cadastral est fréquemment utilisé comme support d'étude des travaux des chercheurs et des étudiants qui soutiennent des thèses sur la démographie, l'habitat ou le monde agricole.

Utilisation des données cadastrales littérales

Tout usager peut obtenir la communication d'informations cadastrales littérales dont les centres des impôts fonciers sont dépositaires sous le vocable de «matrice cadastrale».

La matrice cadastrale, qui est composée de microfiches détaillant les propriétés, précise, par ayant droit, les renseignements relatifs aux propriétés bâties et non bâties sur lesquelles il exerce un droit réel dans la commune.

Les informations contenues dans la matrice cadastrale ont vocation à un usage privé qui induit certaines limites dans leur diffusion.

La mise à disposition de la matrice cadastrale

Tout citoyen peut consulter gratuitement la matrice cadastrale ou s'en faire délivrer des extraits aux tarifs précisés par arrêté ministériel.

Les limites d'utilisation des données communiquées

Le caractère public de la matrice cadastrale ne saurait cependant être interprété comme un droit d'accès automatique sans réserve aux informations qu'elle contient.

L'accès aux informations littérales est en effet soumis aux dispositions conjuguées de la loi n.° 78-17 du 6 janvier 1978 modifiée relative à l'informatique, aux fichiers et aux libertés, et de l'arrêté du 16 août 1984 relatif à la gestion décentralisée de la documentation cadastrale sur support magnétique, modifié par l'arrêté du 30 mai 1996.

Ces textes fixent notamment les limites d'utilisation de la documentation par les usagers, dont en particulier:
• l'interdiction d'utiliser les informations communiquées à des fins autres que fiscales et foncières, notamment aux fins de démarchage commercial, politique ou électoral;
• l'interdiction d'user de ces données de manière pouvant porter atteinte à l'honneur ou à la réputation des personnes ou au respect de leur vie privée.

Il résulte de ces limites que toute personne ou son mandataire qui consulte un autre compte que le sien sur la matrice cadastrale ou dont la commande concerne des reproductions de documents relatifs à plus de cinq comptes distincts de personnes physiques, doit préalablement signer un document lui rappelant les limites susvisées ainsi que les sanctions pénales encourues en cas de contravention. ■

Coordination initiatives to improve the use and diffusion of cadastral data

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Director land information and geodesy,
Netherlands Cadastre and Land Registry Agency

The Spanish government has taken the initiative to create a Cadastre Permanent Committee, a new coordinating organisation in the field of cadastre. The initiative is highly appreciated and it is very wise to organise a conference to discuss the initiative and the possibilities to develop this further.

I was asked to present a paper on the subject of coordination initiatives to improve the use and diffusion of cadastral data. In this paper I will describe a number of coordinating initiatives that were taken in the past years in the Netherlands. From these examples I will draw a number of conclusions and I will try to translate these conclusions to a European level.

To start with it is necessary to tell something about where I come from, the Netherlands Cadastre and Land Registry Agency, in short Kadaster, to be able to understand the different coordination initiatives.

Kadaster

Organisation

Kadaster is an independent public agency. This means that Kadaster is a public organisation with a limited political responsibility for the Minister of housing, physical planning and environment. The minister is end responsible for the continuity of the organisation and decides on the fees for the cadastral services. Kadaster itself is responsible for product development, marketing, staff and finance. In this way Kadaster can be run on modern business principles.

The organisation of Kadaster consists of 6 regional management units that run 15 local offices, a directorate for Land Development, and a corporate staff. An Executive Board heads Kadaster and a Supervisory Board controls the decisions of the Executive Board.

An important part of the organisation of Kadaster is the User Council. This council consists of representatives of the main customer groups of Kadaster and advises the Executive Board on all aspects of the services of Kadaster.

The number of staff of Kadaster is 2300.

Products and services

Kadaster is responsible for the maintenance of the cadastral and land registry records in the Netherlands and the dissemination of information out of these registers.

In the framework of this task yearly about one million deeds of transfer and mortgage deeds are registered, 100.000 cadastral measurements are executed and 10 million information requests are answered.

Kadaster also has the statutory task to produce information products from the data that is available in the databases. This information does not serve legal security needs but is bought by organisations that are for example active in marketing and logistics.

A third statutory task of Kadaster is the execution of activities in the framework of the land development program in the Netherlands and finally Kadaster maintains the national triangulation network.

All these activities lead to a turnover of more than 160 million euro.

The main developments in the field of services are the building of a system for electronic conveyance of deeds and the system to make the cadastral information available on the Internet, also for the general public.

In contrast to cadastral organisations in some other countries, Kadaster is not responsible for planning and zoning, valuation and national mapping. However a merger with the National Mapping agency is foreseen for the near future.

Customers

The basic customers of Kadaster are the almost 4 million entitled persons that have a legal right over the 7 million cadastral parcels in the Netherlands. Yet Kadaster mainly does its business with the professional parties that represent those entitled persons like notaries, real estate agents and banks or with government organisations on all levels that need the cadastral information in the framework of their responsibilities.

The tasks of Kadaster in the field of information products, land development and triangulation know different customer groups.

Some coordination initiatives for use and diffusion in the Netherlands

Introduction

Kadaster is involved in a wide variety of coordination and cooperation activities. In the following 5 examples are described that vary from bilateral to government wide. An important remark to make in advance is that cooperation and coordination is not a goal in itself. At the end the customer should benefit.

Cooperation with municipalities

The municipalities are an important counterpart for Kadaster. In the Netherlands the municipalities are keeping the records for natural persons and addresses, information that is also stored in the cadastral records. It is important to keep both records consistent. Kadaster takes the address information on a person's residence from the municipal records. On the other hand the municipalities are depending on cadastral information for their tax-collection, planning and zoning etc.

One example of joint operation of Kadaster and municipalities is the cadastral desk at the municipal office. The Netherlands has about 500 municipalities, Kadaster has only 15 offices. The cadastral desks increases the potential of physical points of distribution to a large extend. The advantage for the municipality is that they can offer the civilian a more complete service. For example all information necessary for a building permit is available at the municipal office.

For the above-mentioned reasons the cooperation with municipalities is very important. Kadaster cannot change the structure of its products or databases without very careful consulting of the municipalities. Therefore Kadaster and the municipalities have a very tight structure of cooperation, starting with the representation of the national society of municipalities in the User Council (see above). Kadaster has regular bilateral meetings on the level of the Executive Board and technical working groups on various aspects with this society. Finally the marketing organisation

of Kadaster employs specialised account managers to keep in touch with the individual municipalities.

Large scale base map

In the past the Dutch government has decided that the production of large-scale topographic maps (1:500-1:2000) is not a government task. Organisations that need such a map had to find a way themselves to produce it. This has lead to the creation of joint ventures that, with some ups and downs finally have succeeded in producing a large-scale base map for the whole territory of the Netherlands. Main participants in the joint ventures are the municipalities, utility companies and Kadaster. The maps only contain the basic topographic data (buildings, roads and waterways, street names). In the future the regional joint ventures will probably grow into a (more) national structure to create one window for national customers. Also selling and viewing will be made possible through the Internet.

National clearinghouse for Geo-information

The National clearinghouse for Geo-information (NCGI) is a distributed network of organisations that produce, store or use geo-information. The goal is to make the existing geo-information transparent and accessible by metadata and to exchange the information in a digital way. The participants produce topographic, soil, land use environmental, cadastral information etc.

The first activity of the NCGI was to produce a meta-data description. This is partly ready. The meta-data standard of CEN proved to be too complicated. However in general the objectives in the business plan of NCGI were not achieved. Main problem was that there were no transactions executed through the website. Participating organisations did at the end not see the added value of such a point of distribution.

The decision was taken to privatise the NCGI, however it still has a strong link to the public administration.

Authentic registrations

The Netherlands government organisations all-together maintain many thousands sets of information. The result is that civilians often are asked the same questions, that there are inconsistencies in the datasets and therefore that decisions often are not accurate. A fragmented data administration is also more costly then necessary. This is more an organisational problem than an ICT-problem.

The Netherlands government has recognised the necessity of sustainable data management. Objective is to have a one-time collection of all data and multiple use and not to have a separate system for each government task.

It is recognised that the only way to achieve this is by legislation. A law should determine authentic registrations that are databases of high quality with explicit guarantees for quality management. These are datasets that are vital for the government service and the use by government organisations is compulsory.

The cadastral registration along with the registrations of natural persons and the company register are the first candidates to become an authentic registration.

National spatial data infrastructure

The Netherlands government has no mayor program to build up a national spatial data infrastructure but more in general there is an investment program to stimulate the creation of new flexible knowledge networks. One of the themes of this program is high quality spatial use. 50 organisations in the geo-information sector, private, public and research, have decided to make a proposal for a structural improvement of the geo-information supply, in the framework of this investment program. This means that these organisations have to find a new structure to be able to make the proposal.

Conclusion

Looking into the examples of coordination initiatives in the Netherlands it can be seen that there is a wide variety, from small (bilateral cooperation) to big (many organisations involved, ambitious objectives), from bottom up (voluntary cooperation) to top down (leading to legislation). Most of these initiatives had their own added value and proved to be necessary one or the other way.

Most initiatives are bottom up. It is the explicit vision of the government that the geo-information sector has to run its own business as much as possible. It also realises that government decisions without a high level of support of the sector do not have a big chance of success. But at the end, decisions have to be taken and legislation is a good way to do that.

Looking to the European landscape there is a big similarity with the national level. There are bottom up and small initiatives: the bilateral cooperation between cadastral organisation is in place. Kadaster went to Sweden to discuss ICT-developments, we went to Britain to see electronic conveyance and we ourselves get many visitors too. The Eulis project, discussed elsewhere during the conference, has a very modest objective with respect to the creation of a European portal for 8 national information systems. Yet a big number of issues have to be discussed and concluded to create such a portal.

Bigger coordination structures are WPLA and Eurogeographics, two organisations that unite most of the cadastral and/or mapping organisations in Europe.

The European Union has until now only produced a limited amount of regulations that are relevant for the cadastral sector. Examples are the directives on privacy issues and data base protection. Looking to the objectives of the Inspire program to create a legislative framework for a European spatial data infrastructure, it can be concluded that the involvement of the EU in cadastral issues is growing and that it is important for the cadastral organisations in Europe to coordinate closer to influence the decision making in the European Union. In this a respect the initiative of the Spanish government to create a coordination body that is closely linked to the decision structure of the European Union is worth wile considering. ■

Legal aspects of the Cadastre

DIARMUID CLANCY
*Solicitor. Director of Operations, Land Registry
and Registry of Deeds, Ireland*

There are certain characteristics of land, which influence its ability to meet the needs of society. Location, extent,

ownership and encumbrances are four such characteristics. These characteristics are common to most land information systems in the market economies of the Western World. The accepted name for such a land-information system is a Cadastre and the legal Cadastre for Ireland is the Register of Titles maintained by the Land Registry.

To quote J van Hemert on Land Registration in Eastern Europe – 1993.

«— we have to realise what land registration in a modern society means, what it means in a market economy. In the West the Land Registry is an important instrument for the protection of the owners of land, based in all countries on their own civil code. The common factor was that ownership of land was in some way guaranteed in the civil code and registered in the Land Registry. Land Registration made it possible for land and real estate transaction and the establishment of mortgages to be executed in a reliable way. Private investments in real estate are very high, the amounts that are borrowed yearly are enormous and it is impossible at the moment to imagine how the economy in Western Europe would work without these transactions. All this private financial activity is only possible because a reliable land registration system exists based on legislation that gives private investors maximum protection—»

Different systems for recording land-based information have evolved among the countries now within the European Union. Within each jurisdiction, the systems support interdependent frameworks, although the systems themselves are not always homogenous. There are broad similarities in the systems that support the registration of real property in each country; however, there are marked differences in many countries in the manner in which the administration of the registration process is undertaken. Each country is more comfortable with building on its own registration system and each system has evolved and has been refined to meet its own national market needs. Measures aimed at increased harmonisation must ensure that the imposition of EU regulatory control does not prejudice the effectiveness of national systems. At the same time, there is an acceptance of the reality of a more federal Europe with cross-frontier land acquisition and financing together with the increasing importance of Information and Communication Technologies (ICTs) as a key resource in the restructuring of EU economies, in line with the eEurope Action Plan. This plan was launched at the Lisbon Summit in 2000 and set the goal of establishing Europe as the most competitive and dynamic knowledge-based economy in the World. Indeed, an obvious example of financial harmonisation is the fact that I did not have to change currency to attend this conference because I am within the Euro zone. These initiatives lead inevitably to increasing pressure for uniformity in the availability, accessibility and cost of information on land ownership and title. A natural consequence of any such initiatives is to consider the development of a consistent system for land information within Europe and to make progress in developing universal systems for land registration within the member states. The issue of harmonisation of information relating to land was raised during the Stockholm Summit and it is anticipated that further progress in this regard will be one of the goals of the Seville Summit.

What is the Cadastre

The concept of the Cadastre has its origins in the European states with legal systems based on the Roman Civil Code. The United Kingdom, Scotland and Ireland operate under Common Law and have developed a different approach in the establishment of systems of registration of title and mapping. This can lead to confusion in terminology regarding the nature of the Cadastre, its role and the agencies with responsibility for its creation and maintenance. Registration of title provides an essential service to the State. Actual legal ownership is readily ascertainable and parcels of land can be identified with certainty. Rouff and Roper, the leading authority on registered conveyancing, states that *«The principal object of registration of title is to confer certainty. One way in which this object is achieved is by the provision, for every registered title, of an accurate plan based on the latest revision of the Ordnance Survey map revised to date, which identifies the registered land».* The requirement for a map to support the textual information relating to registration of title mirrors the position in jurisdictions operating under the Roman Civil Code. In these states the Cadastre is required to support information relating to title, ownership and mortgages. Irrespective of the relative priorities assigned to the different components of land related information, be it the Cadastre or the textual information, the purposes for which such systems are established and maintained are similar in most regards.

While there are a number of Cadastres in Ireland, such as those retained in the Valuation Office, the Planning Offices and the Department of Agriculture, the focus of this presentation is registration of title. This area encompasses the role of the legal Cadastre for recording the location and extent of land on large-scale maps and the maintenance of title information, such as ownership and mortgages relating to land.

Land Registry and Registry of Deeds

There are two systems of registration of land in Ireland. These are the Registration of Deeds system introduced in 1707 and the Land Registry system introduced in 1891. Both systems are mutually exclusive in relation to the same title in land and the intention is to replace the Registration of Deeds system with the Land Registry system over time. It is important to recognise the distinction between the two systems because many systems in other jurisdictions referred to as Land Registry systems are in fact Registration of Deeds systems linked to a Cadastre. The Registry of Deeds system provides for the registration of documents relating to land, the effect of which confers priority on the documents registered. Synopses of the deeds together with indices for searching are maintained in the Registry. On the other hand, the Land Registry provides for registers showing the ownership to land. The registers also contain details of any encumbrances or charges affecting the land. Thus a search in the Registry of Deeds will only disclose the existence of documents relating to the land whereas a search in the Land Registry will reveal the ownership of the land and the title shown is given the backing of a State guarantee. Generally, the Land Registry registers are said to «mirror» the title but this is subject to certain limitations. One critical distinction between the two systems is that the Registry of Deeds system has no map to identify the land. The Land Registry system makes provision for the description of all registered land on Ordnance Survey maps retained in the Land Registry and these are the legal Cadastre for the country. Similar twin systems of Registration of Deeds and Land Registry registration exist in the United Kingdom and Scotland where the approach of

converting to universal Land Registration is also being pursued.

Significant progress has been made in the development of computerised registration and records systems for the Land Registry and Registry of Deeds in Ireland and these are linked to Internet based information and application service facilities. At this stage, the map is still retained in paper form. However, the Ordnance Survey has a complete digital mapping system for the country and plans are now advancing for the introduction of a digital map into the Land Registry and the conversion of its paper based records into digital format.

Users of Cadastral Information on Title and Ownership

Registration has a multi-purpose function, which serves the needs of many sectors of the economy and government. The original thrust for registration of title related to the requirements of commerce and government and these still remain major driving forces behind developments.

• *The Financial Sector*

Hernando de Soto in the Mystery of Capital states that «*Capital is the force that raises the productivity of labour and creates the wealth of nations. It is the lifeblood of the capitalist system, the foundation of progress, and the one thing that the poor countries of the world cannot seem to produce for themselves. – most of the poor already possess the assets they need to make a success of capitalism – but they hold these resources in defective forms: houses built on land whose ownership rights are not adequately recorded. – In the West, by contrast, every parcel of land, every building – is represented in a property document that is the visible sign of a vast hidden process that connects all these assets to the rest of the economy. Thanks to this representational process, assets can lead an invisible, parallel life alongside their material existence*»

An effective registration of title system is a prerequisite for the establishment of a market economy. Financial institutions cannot advance money without a registration of title system for securing loans. The financial sector has a vital central role in initiatives directed towards the creation of growth in the European economies. With the introduction of the Euro, an increased dynamic exists for the removal of barriers to cross-frontier transactions. This gives rise to challenges for national land registries to develop common approaches leading to increased harmonisation in information provision, registration requirements and registration costs. One such initiative is the EULIS project, which is directed towards establishing a common framework for registration information among a number of European states.

• *Government*

National land information systems form a vital part of the government infrastructure. Without this information, it would not be possible to control land use. A number of such systems are those that support the judicial process, planning, land use, environmental control, requirements for utility companies, land valuation, taxation, grant schemes and identification of criminal assets. This list, which is not exhaustive, relates to the service delivery elements of the public sector. In addition, the State requires systems to support decision-making and for management information

purposes in the public sector. A key element in the support of all these areas and also performing a central role in any national spatial or land information systems is information on registration of title. Where such information is retained on an integrated Cadastre developed as a geographic information system, it greatly increases the extent of its value and its significance as a contributor both to national spatial planning and general policy formulation.

• *National Resource*

The most significant feature that distinguished the first modern humans, Cro Magnon Man, from their predecessors was the ability to think representationally. All art, literature and the sciences stem from this ability. Information on land and title is retained in a representational form and, throughout the developed world, intricate systems have evolved, which enable us to extract value from representations. Hence, it is possible to raise money on the security of registered land while still retaining possession of the land. Increasingly, there is a recognition that information systems which are easily accessible, simple, cheap and open are a stimulus to the economy and that they are an aid to the generation of business opportunities. Registration of title and the Cadastre have a major role to play in this area.

• *Purchasers*

One of the fundamental reasons for the establishment of land registration is the protection of purchasers. This is achieved through the provision of reliable information on title to land. A number of features are common to most systems of land registration. However, the manner in which this information is maintained often differs from one jurisdiction to another. The main features relating to the Land Registry system in Ireland are as follows:
• A State guarantee backing the Land Registry information
• A reliable map, based on large scale Ordnance Survey maps, showing the boundaries and extent of the land
• A register which is deemed to be conclusive as to its contents
• A register giving details of the location and extent of the land, the ownership and any mortgages or encumbrances
• A system of priority for registrations
• Registers, maps and indices that are open to the public
• Independence of the Land Registry defined in legislation
• An appeals procedure to the Courts

Limitations with Land Registration

Taking the Irish Land Registry system as an example, I will set out a number of limitations with the current system. In other jurisdictions these limitations may not arise or others may exist.
• Not all rights are capable of registration and those dealing with registered land must make enquiries to ascertain if any unregisterable rights exist. Examples of such rights are rights under adverse possession in the course of statute barring registered interests, short term tenancy interests and subsisting rights predating first registration of the land.
• Ordnance Survey maps show physical features whereas Land Registry maps show registered legal

boundaries; these are not necessarily the same. Where conflict arises due to subsequent Ordnance Survey map revisions, the agreement of the registered owners may be required to amend the title maps

• Land registration deals with ownership; it does not show possession

• Land registration does not indicate all statutory prohibitions or conditions relating to the use of the land. The most significant of these matters are the subject of Planning Laws and fall within the remit of local authorities. Because each agency maintains its own Cadastre, it is necessary to make separate enquiries for a complete search.

Access to and Cost of Information

A tension exists between competing demands in the provision of access to public information. On the one hand, there is a dynamic for more openness in the availability and accessibility of all information to support transparency within the Public Sector, for commercial reasons and as a stimulus to economic growth. Freedom of Information is a policy that stems from this. On the other hand, there are issues in relation to protection of State investment, personal privacy and protection of confidential information.

A number of issues pertaining to access to information, which have a direct bearing on the Land Registry, are those relating to:

• Copyright over information being accessed by commercial customers

• The application of a public interest test in the supply of information to the public or the media

• Aggregation of information for decision making or other uses through data warehousing

• Development of information systems on non-registration information supplied to the Land Registry

• Commercial rights to Land Registry information

• Intellectual property rights

• Fees charged for information

«There is no such thing as a free lunch». Investment in ICT's and associated data capture and surveying is expensive. Land Registry organisations are almost universally within the sphere of government control. A question to be addressed in whether Land Registry systems should operate on a cost recovery basis, whether the Land Registry should receive State subvention and what fees should be charged for access to information.

Generally, Land Registry fees are fixed on a cost recovery basis. The corollary of this is that fees should relate to the cost of providing the service being delivered. However, a factor to be borne in mind is that the true cost for the provision of certain services can be prohibitively expensive and this gives rise to a need for an element of cross-subsidisation or, in the alternative, State subvention. A primary issue is how to assess the true nature of costs for service provision. Under commercial accounting principles the cost of service provision is significantly higher than under cash based government accounting.

The overheads associated with land registration fall mainly into three areas: staff costs, data capture and conversion costs, and Information Technology costs. The principal source of Land Registry revenue is through application fees for registration. Fees received from the provision of information services generally constitute a minor part of total revenue. The State benefits from many services, which the Land Registry is required to provide for no fee. Examples of such services are those provided to

other government departments or those provided for no fee through statutory provisions such as transfers of family homes between spouses. In contrast, the State underwrites the Land Registry through an open-ended guarantee on title. A question in assessing the true cost to the State of social initiatives is whether they should be fully costed and charged to the State by the Land Registry to ensure true transparency. Otherwise, private sector applicants may find themselves subventing the provision of these services through cross-subsidisation.

Where business opportunities exist, private sector companies will generally seek to take advantage. Provision of information is often regarded as ancillary to the principal functions of Land Registries, whose focus is directed towards fulfilling their statutory functions relating to registration. Often, Land Registries are not adequately resourced or structured to fully exploit the commercial potential of their information. Some private companies have formed Public Private Partnerships with Land Registries to develop information systems and to exploit the commercial opportunities of the information held. The advantage for the Land Registry in such a relationship is that it benefits from the early delivery of effective and efficient information systems with complete databases. The disadvantage is that the Land Registry may be inhibited or even precluded from developing new systems for the delivery of its services. This could be a significant inhibitor to development of improved services in an environment where the opportunities afforded by information and communication technologies are rapidly evolving.

Land Registry information is a national resource and should be available equally to all sectors for commercial exploitation. Exclusive commercial arrangements, whether through Public Private Partnership arrangements or otherwise, are not appropriate for this reason. Similarly, it is important to ensure that companies who have developed value added services based on particular data sets or have linked data sets to proprietary software do not gain rights to the supply of those data sets in a particular format.

The Land Registry should ensure that it has copyright over its information. An issue to be addressed in this regard is copyright over information supplied for one purpose such as registration and subsequently made available or developed as an information service. Appropriate measures should be taken to protect the status of information on registration against claims for copyright by the authors of the information supplied. An example of this is possible claims to copyright over boundary data supplied for registration purposes. Similarly, access to Land Registry information must not prejudice the intellectual property rights of companies who have developed information systems in collaboration with the Land Registry.

Measures Towards Cross Border Information Services

The obstacles to be overcome to implement measures for cross border property information services within the EU cannot be overstated. No common principles exist for collecting and storing information; for agreed principles governing access to information; for an agreed approach to pricing; or for the development of common legal and regulatory frameworks. At a fundamental level, jurisdictions operate under different legal systems. Information technology, particularly ICT's, are both a vehicle and a driver for the development of uniform gateways to information.

The goal of fully integrated cross border property information services may be more of an aspiration than an achievable objective. However, measures can be taken in a phased approach towards introducing a common framework to certain information. Similarly, measures could be introduced, which would lead towards harmonisation of registration services. Some of the issues that may need to be addressed in this regard are:

• Establishment of an EU network on Land Registration (including associated agencies) with representation from all countries within the union

• Benchmarking Land Registry / Cadastral systems through an agreed set of Key Performance Indicators

• Agreement of common approaches towards access to information for commercial use

• Agreement on principles governing copyright over information

• Agreement on principles governing cost recovery, State subvention and the involvement of Public Private Partnerships

• Establishment of universal data sets to form the basis of EU wide registration of title information systems

• Co-ordination of approaches to electronic information systems and electronic registration

• Establishment of common protocols for file transfers and language

• Development of a heightened awareness at government and EU level of the importance of land registration / Cadastres and its role in spatial planning. ■

The UK «Cadastre»

MARK PROBERT
Ordnance Survey. United Kingdom

The word *cadastre* is generally used to describe «a methodically arranged public inventory of data concerning properties, within a certain country or district, based upon a survey of their boundaries (1)». There are numerous models however for it's use and implementation throughout Europe. Using the land parcel as it's foundation, the cadastre is used to record information about land rights, valuation, land use, etc.

There is no UK Cadastre - the word cadastre is not one commonly used in the UK, where for historical reasons the development of land administration institutions has taken place in a different way from the rest of Europe. While mapping remains the basis for those activities considered as «cadastral», in the UK there is no single organisation responsible for the cadastre.

Ordnance Survey, as a national mapping agency, maintains large scale mapping for England, Scotland, and Wales. In Northern Ireland this is the responsibility of Ordnance Survey Northern Ireland. The detailed digital

mapping maintained by these two Government Agencies provides the definitive framework upon which other organisations can «hook» and manage their data. Another difference with most mainland European countries is that the base mapping in UK is topographic – it shows features that exist on the ground but not the fixed boundary points and monuments usually associated with a cadastre.

The responsibility for the recording of land rights in the UK is divided between Her Majesty's Land Registry (HMLR – England and Wales), by Registers of Scotland (RoS) in Scotland, and Land Registers of Northern Ireland. Land and Property valuation is the responsibility of the Valuation Office Agency (for England and Wales), Assessors in Scotland, and the Valuation and Lands Agency in Northern Ireland. Land Use information is managed by a number of Government Departments e.g. Environment, Agriculture, devolved Government departments, and by Local Authorities. This paper will concentrate on the products and services of Ordnance Survey GB, but all of the other organisations mentioned above are also developing services to the citizen – the main topic of this session of the Cadastral Congress.

Ordnance Survey provides a wealth of free mapping on its web site (2) including map extracts at scales up to 1:50,000. This service, called Get-a-Map allows users to select areas by town, post-code or co-ordinate, and to pan, zoom and centre a map before printing it out. A recent research project has also looked at the possibility of extending this service to kiosks – placed in public places such as airports or railway stations. The result of the trial has not yet been announced but it is likely that any future development of the service will depend more on the business case than the technical feasibility.

Ordnance Survey has made Great Britain one of the few countries in the world to have a complete digital national topographic database, including complete large scale data for all urban areas. In the last year Ordnance Survey Northern Ireland has completed the UK picture with large scale digital data covering the entire province. Within Great Britain there is now widespread use of digital mapping across many user sectors, in one of the most developed GI markets in Europe, based on a robust data infrastructure which enables major contributions to national economic development.

Over the last twelve months Ordnance Survey has embarked on a number of projects under the umbrella of a new «e-Business strategy», the vision of which is:

«Ordnance Survey and its partners will be the content provider of choice for location based information in the new knowledge economy».

As part of its new e-Business strategy, Ordnance Survey is developing its digital mapping products and services within a coherent infrastructure known as the Digital National Framework. The DNF combines the British National Grid and GPS referencing system to create a new spatial reference standard that provides both location **and the link to topographic objects**. A unique 16 digit Topographic Identifier (TOID) is used for all points, lines, and areas, and provides a common link that will allow different data to reference the same feature, allowing users to cross-reference data in a way that should help to release the potential and value of their data.

(1) Jürg Kaufmann, Chairperson FIG Working Group 7.1, Reforming the Cadastre.

(2) http://www.ordnancesurvey.co.uk/.

In November 2001 Ordnance Survey released the first layer of its OS MasterMap, the first data product based on the DNF. The re-engineering of over 430 million point, line, and area features, each referenced by a unique TOID, has created a seamless, object-based, large scales topographic layer that initially includes nine themes. Additional layers will be added later in 2002 and into the future, driven by customer requirements. Some of the planned layers, in addition to the existing topographic layer, are shown in the following diagram:

The data is intended to provide a definitive reference that acts as a common template onto which users can link their own data, by using the TOID. TOIDs support explicit linkages and therefore enable data sharing. The object based approach provides a more intelligent database including, where necessary, inferred links to close polygons. Service features such as on-line ordering and theme selection, user defined area selection, change only update, and on-line delivery make OSMasterMap data extremely accessible. Delivery is in industry standard GML which is supported by all major systems providers.

Having a national framework of data allows users to integrate and cross-reference data using the common ids (TOIDs). In Great Britain, the 400+ local government administrations have entered into a joint agreement with Ordnance Survey allowing access a portfolio of Ordnance Survey data products. Very recently a new pilot Pan-Government Agreement project has been initiated that enables Central Government departments also to have access to a similar portfolio of Ordnance Survey products. Both of these agreements allow government departments to provide free internet mapping services to the citizen, within certain licensed conditions. For example a new planning portal is being developed that will allow citizens to view planning development plans of their local areas free of charge. The service will eventually be expanded to allow citizens to make on-line planning applications. This is an example of what is being called in the UK «joined-up Government» i.e. it is helping government departments to work in a co-ordinated way to help the citizen.

Two other significant developments are NLUD and NLIS. NLUD is the acronym for the National Land Information Database and is a joint Central / Local Government initiative which has two main objectives. Firstly, a database of vacant and derelict land is being created, including previously developed land and buildings that may be available for redevelopment. Secondly a «NLUD-Baseline» database is being created that will be a comprehensive and up to date land use map of England based on Ordnance Survey MasterMap™.

The National Land Information Service (NLIS) is part of the UK Government «modernising government» initiative and is a project being jointly developed by HMLR, Local Government, and the Coal Authority. It features private sector partners that provide access to a National Land and Property Gazetteer.

The various UK Land Registry services are all developing their own services to the citizen also. In England and Wales HMLR operate a «Land Registry Direct» on-line service to professionals, and internet users are able to access up to date statistics on property prices. Registers of Scotland also have a «Registers Direct» service and are developing an automated registration of title to land. Similar services are under development by the Land Registers of Northern Ireland.

Ordnance Survey is working closely with the Land Registries in Great Britain, and other users, to help to develop more effective ways of managing data that will result in better services to the citizen. As an example, studies are underway to see how the object based properties of OS MasterMap might be used to manage land and property ownership data.

In conclusion, while there is no cadastre in the United Kingdom the activities normally considered to be part of the cadastre on continental Europe are performed by a variety of agencies. Although the organisational framework is different, many of the issues facing UK institutions are similar to those faced by our colleagues involved in cadastre in other parts of Europe. There is a need to create co-ordination of effort in a way described in the UK as «joined-up government» in order to maximise the efficiency of effort and to provide the best value and service to the citizen. Issues such as serving customers, data interoperability, institutional and technological change, finances, and access to data, to name but few, will be high on our agendas in the coming years. ■

Cadastres as Focuses on Environmental Protection

JARMO RATIA
Director General
National Land Survey of Finland

The topic assigned to me is very challenging. What do cadastres have to do with environmental protection? Do they contribute to environmental protection in some positive way? If we have a good cadastre, is the state of our waters better, can we further decrease emissions into the air than otherwise, are we better able to organize waste management, especially with regard to dangerous chemicals, can we decrease noise pollution, is it possible for us to improve the sustainable utilization of natural resources, protection of endangered species, protection of various biotypes, etc.?

In short, does a good cadastre promote sustainable development?

In this presentation I will not deal with the good and bad points of different cadastral systems from the point of view of environmental protection. Nor will I give any recommendations for proenvironmental cadastres. I will try to find features that are common to all cadastral systems and important from the standpoint of environmental protection.

Cadastres always relate to the land. They are a creation of man, while the earth was created by God. Basically, the question deals with man's relationship with the land.

«We know that the white man does not understand our ways. One portion of land is the same to him as the next, for he is a stranger who comes in the night and takes from the land whatever he needs. The earth is not his brother, but his enemy, and when he has conquered it, he moves on. He leaves his father's graves behind, and does not care. He kidnaps the earth from his children, he does not care. His

fathers' graves and his children's birthright are forgotten. He treats his mother, the earth, and his brother, the sky, as things to be bought, plundered, sold like sheep or bright beads. His appetite will devour the earth and leave behind only a desert.»

«How can you buy or sell the sky, the warmth of the land? This idea is strange to us. If we do not own the freshness of the air and the sparkle of the water how can you buy them?»

«This we know: the earth does not belong to man; man belongs to the earth. This we know. All things are connected like the blood which connects one family. All things are connected.»

These words were said to have been uttered by Chief Seattle in 1854 when the President of the USA made an offer for the purchase of a vast territory populated by Indians by giving a reservation for the Indians.

We know now that the text is a speech made in the late 70s by Ted Perry, scriptwriter, for a film called «Home» produced by the Southern Baptist Convention in the USA.

Environmentalists have largely mentioned the speech, only a few parts of which have been quoted here, as one of the most noble and profound made for the defence of nature and native culture. When this was revealed to be a fake, some environmentalists stated that Chief Seattle at least should have spoken like this.

However beautiful the praising of nature the speech by Seattle and Perry may be, after man settled down and started farming, it was necessary to somehow show who controlled which land and who could be levied taxes based on ownership. It was a start with the centuries-old development of land holding that led to the creation of a modern cadastre. Agriculture bound the people to the land. The feudal system prevailing in Europe watched over it.

It was only the Industrial Revolution that broke this strong physical tie with the land. The Industrial Revolution made the land a commodity and created land markets. The land was changed into capital in the balance sheet. Cadastres made this development possible.

The rebuilding after the Second World War, strong economic growth and increase in population made it necessary to plan land use, both regional and urban. This rapidly led to concern over the state of the environment and its quality. More information was required on the land and its use. Once again, cadastres played significant roles in specifying the objectives of environmental protection measures or the regions in need of protection. In the last two decades, the importance of cadastres as a basis for the LIS and GIS systems has grown and thus contributed to better management of the environment.

Cadastre

Different countries interpret the term «cadastre» in different ways. FIG has also defined the term (The Fig Statement on the Cadastre/No.11/1995, Cadastre 2014, A Vision For a Future Cadastral System). In this context, it is not necessary to go into great detail to define cadastres. It is enough to say that cadastres record certain human interests, both public and private, regarding each area of land. These data on human interests may include information on the owner of a parcel, geometric data (coordinates, maps), land use etc. Cadastral data may be used to support land transactions, land markets, assist in administration of diverse sections of the economy such as agriculture, environmental protection, fishery, forestry, housing, land-use management and zoning, public utilities and transportation.

Cadastres have developed in the same way as land administration. At first, land was an object of utilization, then it changed into an exchangeable commodity and capital and finally into an object of planning and protection. Land administration and cadastres have followed these trends. The system has acquired more layers to meet the new demands.

Cadastre-containing data collected from cadastral surveys only is no longer enough. To fulfil the new expectations, the data context of the cadastres must be broadened. Data covering land use, rights and restrictions such as zoning, environmental protected areas, historical monuments etc. are essential as well.

This does not mean that all the data should be collected and updated by the same organization; it is not even desirable. The most important thing is that the different databases of authorities and possibly private companies should be able to communicate with each other.

Sustainable Development

The first global conference on environmental matters was held in Stockholm in 1972: the United Nations Conference on the Human Environment. In 1989 came Gro Harlem Brundtland's report «Our Common Future», which laid the foundations for the second global conference held in Rio de Janeiro in 1992: the United Nations Conference on Environment and Development. And in a few months´ time the third global conference will be held in Johannesburg, South Africa: the World Summit on Sustainable Development, 10 years after Rio.

Sustainable development calls for improving quality of life for all people without increasing the use of natural resources beyond the earth's carrying capacity. The Rio Conference recognized three areas that should be integrated to build a truly sustainable way of life. These are:

— economic growth and equity
— social development and
— conserving natural resources and the environment.

The major outcome of the Rio Conference was «The Rio Declaration on Environment and Development» and the directive Agenda 21, both of which define how the aims of sustainable development could be achieved with national and international collaboration. The second notable political result was a strong consensus over how the environment, economic and social development are involved with each other.

The European Union, soon after the Rio Conference has also approved the Fifth European Action Plan on the Protection of the Environment and Sustainable Development under the title «Towards Sustainability».

The European Council held in Lisbon on March 23-24 2000 set the ambitious objective for Europe to become the most competitive and dynamic economy in the world. It recognized an urgent need for Europe to quickly exploit the opportunities of the new economy, particularly those available on the Internet.

The Gothenburg European Council approved a Strategy for Sustainable Development, which added a third environmental dimension to the Lisbon strategy and requested the Council to develop the arrangements for implementing the strategy.

The decision on the 6th Environment Action Programme «Environment 2010: Our Future, Our Choice» will give an

enlarged European Union the direction, impetus and tools needed to create a clean and safe environment. It will involve citizens and business in this endeavour and will contribute to sustainable development.

The programme identifies four priority areas:
— Climate Change
— Nature and Biodiversity
— Environment and Health
— Natural Resources and Waste

The Barcelona European Council (March 15-16, 2002) underlined the importance of the 6th Environment Action Programme in attaining the goals of sustainable development. This programme is still in progress, to be approved by the European Parliament and the European Council by the year 2002.

In sustainable development, it is important to strike a balance between nature and man's action. It is essential to secure the sufficiency of natural resources and the quality of the environment at the same time as fostering economic growth.

Sustainable Development and Cadastres

When reviewing the programmes of the United Nations and the European Union, which I have quoted above, it can be seen that the term «cadastre» is not mentioned at all. What is the importance of cadastres in sustainable development and environmental protection?

From the standpoint of my topic, I conclude that its importance lies at least within three aspects:
— the importance of cadastres in fostering development and economic growth
— cadastres as bases for LIS and GIS systems
— cadastres as means of environmental management.

Cadastres as Promoters of Development and Economic Growth

The world-famous Peruvian economist Hernando de Soto examined this topic in his 1993 article in The Economist entitled «The Missing Ingredient».

De Soto wondered why only 25 of the 189 world states have risen to the status of developed market-economy countries, although developing countries have received funding amounting to billions of dollars. De Soto's answer is the «formalization» of property rights. A system must be established in which objects of property rights are registered (cadastre), the property right itself is entered in the records and the society guarantees the owner's rights if someone tries illegally take property away from the rightful owner.

Only, when the owner knows that his land property is under his control, does he have the interest in working for it, investing in it and obtaining a loan against the mortgage, improving its quality, fighting against erosion, removing waste etc.

In developed market-economy countries, this development has required centuries. It has become obvious and it is therefore not easy to perceive its importance. As de Soto mentions, a start towards this development was made in Germany as early as the 12th century, when written documents first replaced the informal oral rites used by the peasantry. It was not until 1896 that this development ended, when the German «Grundbuch» system covered the whole of the country.

Only this type of «formalization» of property rights makes it possible to change the land property from a means of production into capital and thus into a prerequisite for economic growth, which in turn enables investing in environmental protection. Cadastres are an essential part of this development.

On the other hand, this realization may also lead to incorrect conclusions. Land surveyors like to emphasize the importance of cadastres as basic pillars of the society and as necessary prerequisites for the market economy. It is often stressed, as de Soto also does, that a modern cadastral system must be established in order to promote development. No doubt this is the case, but it is only part of the truth. A functioning cadastral system is a consequence rather than a cause. In the countries meant by de Soto, general development has, out of necessity, produced a functioning cadastral system, not the other way around. The cadastral system is a tool and a means, not the purpose in itself. Most problems related to land ownership are not solved by land surveyors. Cadastres should not be described as the solutions to a problem. In developing countries issues of ethnic, class and political nature related to land ownership are the most difficult to address. Societal circumstances must be stable before any cadastral system can be operational.

What Types of Society are Stable?

It may sound naïve, but the country must be democratically ruled and must respect human rights before any cadastre can function effectively. Those in power must be accepted as legitimate by the people and the administration should be transparent. In this type of society it is possible to create a land policy furnishing guidance for land ownership, land management, land-use planning, environmental protection, sustainable use of natural resources and cadastres. This is not often the case but decisions concerning cadastres are sometimes made separately by different official bodies without being aware of the targets. These bodies formulate land policy, enact legislation and push through the necessary implementation.

The most essential feature in a stable society is the existence of private property rights. The collapse of the communist system in the former Soviet Union and other socialist countries has revealed the senseless waste of natural resources and shocking lack of concern for the state of the environment.

De Soto described this as follows:

«When I was growing up in Peru, I was told that the farms I visited belonged to farming communities and not to the individual farmers. Yet as I walked from field to field, a different dog would bark. The dogs were ignorant of the prevailing law; all they knew was which land their masters controlled. In the next 150 years those nations whose laws recognise what the dogs already know will be the ones who enjoy the benefits of a modern market economy.»

Cadastres as Bases for LIS and GIS Systems

When acting in 1999-2000 as a UNECE Focal Point for land administration issues in the Balkans, especially in Kosovo, I presented a vision of a well-functioning LIS system in a society. In my view, it also has a wider meaning. In my vision, every piece of land is divided into cadastral units. Land registers provide information on ownership and mortgage for every unit in the cadastre. There is also a system for buildings and dwellings. Land- use rights and restrictions are described in their own system. These four systems are integrated; for the end user, they appear as one

system, the Land Information System. Since all four data systems are integrated, logical data consistency between different systems is guaranteed.

This division into different data systems is based on the logical division of objects; it does not define the organizational structure. Each of the four systems may be maintained by a different administration.

This system is only the first in a series of steps in which registers of persons and enterprises would be integrated into the system.

And finally, many other GIS systems, e.g. those handling all environmental data, can also be connected to the system.

To integrate data from different systems, relationships between register units in different systems must be described. The question of unit identifiers is extremely critical. Identifier systems must be designed on a sound theoretical basis.

This vision could be made a reality if it were possible to build up the system from scratch. As we all know, this is not normally the case in developed countries like the EU Member States. Improving the system existing within different organizations to accommodate realization of this vision is a very difficult and painful operation.

Even in those organizations responsible for topographic mapping and cadastres, integration of these two datasets is very difficult. Each dataset results from different processes, usually with no coordination between the datasets which always leads to discrepancies. This is harmful to many applications.

Inspire

DG Environment and Eurostat started a new initiative in 2001 called the Environmental European Spatial Data Infrastructure (E-ESDI). Since the aim has been from the very beginning to create a general spatial infrastructure in Europe, the name of the project has recently changed into INSPIRE, Infrastructure for Spatial Information in Europe. The aim of the initiative is first to make available relevant, harmonized and high-quality geographic information for the purpose of formulation, implementation, monitoring and evaluation of Community environmental policy-making. At a later stage, the initiative will be broadened to cover other sector policy such as transportation, agriculture etc. and will eventually culminate in the establishment of a cross-sectoral European Spatial Data Infrastructure. The mandate and timetable of this initiative is very challenging. The aim is to prepare a proposal for a Community framework legislative act by the end of 2002. Work will be carried out in numerous working groups.

What is the Role of Cadastres in this Exercise?

It is one of the most important components of reference data.

The ETeMII (Accompanying Measure to Support the Setting Up of a European Territorial Management Information Infrastructure) project defined the term «reference data» as a dataset (or datasets) that everyone involved with geographic information (GI) «references» needs in order to do his/her jobs. Not only do these datasets provide a spatial context and structure to carry out these GI tasks, but they also provide a mechanism to integrate or link other georeferenced datasets and to ensure that this information is correctly related in a spatial context. It follows that if this dataset (or datasets) is standardised at a European level, significant economies of scale and scope would result not only for the use of these datasets but for

the development and provision of any datasets and applications that used them on the most basic level.

The project listed the reference data components as follows:

1. Geodetic reference system (i.e. a coordinate system for both horizontal and vertical measurements)
2. Units of administration
3. Units of land rights, i.e. cadastral parcels
4. Addresses
5. Selected topographic themes – notably elevation, transport networks and hydrography, and
6. Orthoimagery.

The INSPIRE Working Group on «Common Reference Data and Metadata» has accepted this ETeMII definition of reference data as the basis for their work, to be developed further at its meeting in February 2002. The Working Group also stated that reference data should function on three basic levels:

1. European level
2. Border level between countries and
3. Local level

Cadastral data by nature can serve as reference data on a local level.

EuroGeographics, which is the European organization of national mapping agencies, has also expressed its medium- to long-term vision by saying:

«EuroGeographics will achieve interoperability of the European NMAs Reference Data within 5 to 8 years».

Environmental Management and Cadastres

Since the term environmental management is commonly used, it is associated with protection of the earth and its resources. The **Environment** consists of: a diversity of chemical, physical and biological elements; their complex, interdependent relationship; and the effect of human activities on the delicate balance that exists in nature. Sustainable development also has an economic developmental function that translates as a balance between growth and protection.

Cadastres are important parts of different Spatial Data Infrastructure (SDI) systems that produce information crucial to decision makers in environmental management. The European Union takes the environment into account at every decision-making level. Stressful pressure against the environment can be efficiently decreased by good land-use planning. Sensitive areas can be protected, traffic emissions reduced by good road planning, location of polluting industry directed to places where the harmful effects are minimized, areas used for agriculture protected from urban construction etc. In all these planning processes information provided by cadastres is necessary for providing data on the land units included in the plans and their spatial dimensions such as borders.

In large environmental projects such as Natura 2000, information on cadastral units is necessary. Good administration also implies that information on plans by the authorities is given to the people concerned. Cadastral information connected to land registration information can identify all those individuals whose rights are affected by the plan. They can be informed personally beforehand and thus avoid resistance, which is usually based on poor information pertaining to the plan.

Future Prospects

In the European Union, cadastres are included in each country's national policy. The Commission has no power in cadastral issues. Each nation's cadastre has been developed over the course of centuries to meet national requirements

depending on historical development, nature and social circumstances. Policies and legislation covering environmental protection are undergoing a strong process of harmonization within the European Union. The INSPIRE initiative is focused on the creation of infrastructure for spatial information in the European Union. Since land administration and cadastres are essential parts of the INSPIRE project, it is possible that cadastral systems will also be harmonized in Europe in due course. On the other hand, land and credit markets over national borders can also increase the demand to harmonize land administration and cadastral functions within the European Union.

Also, the EULIS Project funded by the EU may in the long run lead to harmonizing land administration within the European Union. At the first stage, it will provide a tool to obtain information of land related data systems via Internet over borders.

The real harmonization of cadastral issues is possible only by supranational measures; in the European context, it means an initiative by the Commission. It may, however, be that this is not in the mandate of the Commission. Cadastral issues may belong to the national authorities.

Conclusions

1. Cadastres enabled changing the land from an object of utilization into capital and thus economic growth;

2. Economic growth is a prerequisite for investments in environmental protection;

3. Cadastres are essential parts of LIS and GIS systems. These systems provide information crucial to decision-making;

4. Cadastres are tools for environmental management. They are a means, not a purpose in itself.

Finally, I will revert to the question I asked at the beginning of this presentation: Does a good cadastre promote sustainable development?

My answer is that sustainable development is not possible without a modern cadastre.

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Official Closing of Congress

ESTANISLAO RODRÍGUEZ-PONGA Y SALAMANCA
Secretary of Finances. Spain

Good morning to you all:

It is an honour to conclude this First Congress on Cadastre in the European Union, held in Granada during the Spanish presidency of the EU Council between January 1st and June 30th 2002.

Within the political priorities that have oriented the Government's activity during this semester of EU presidency, the highlights in the economic area are the introduction of the Euro, the economic and social reforms to achieve full employment, and the continuation of negotiations regarding expansion of the European Union to include countries that are now candidates to accession.

From the fiscal and taxation perspective, our objective is to progress towards simplicity and transparency in the tax systems of member States in order to improve the way the markets for goods, services and factors work, and thus to stimulate the Union's economic growth. To achieve this goal, several different initiatives are now under way in the fields of direct and indirect taxation, and determined efforts are being made to increase and improve the degree of co-operation between the tax administrations of the member States, since we believe that this is the way to achieve more efficient tax systems for the European Union.

The first congress on Cadastre in the European Union aims to resolve, in its field, the need to increase and improve co-operation between member States. The main goal of the Congress was to share experiences on Cadastre in the European Union and to progress in their coordination.

The Cadastre is today a key public institution in EU countries; a land-based database containing the physical, legal and economic characteristics of all real estate, with the principal mission of describing real estate property to allow for its use by both citizens and the administration in multiple ways and for multiple applications (tax, environmental, planning and urban development...)

In Spain, for example, the General Directorate of Cadastre, under the Secretary of State of the Treasury, is responsible for the functions of elaboration, maintenance, management and revision of the Cadastre of rustic and urban real estate. It is a permanent source of information for the development of public investment policy, the design and execution of major infrastructures, urban planning, environmental protection and any other activities of value for the country's territorial structure.

Therefore, a key characteristic of the Cadastre, and its principal quality, is its multi-functionality. Unfortunately, another characteristic that also defines Cadastre in the EU is the lack of harmonisation between different Cadastres, causing a fragmentation that in practice prevents citizens and administrations from using available cadastral information for cross-border purposes.

The existence of a fragmented network of Cadastres, lacking common cadastral regulations, has generated a series of inefficiencies that makes it extremely difficult for users —citizens, administrations, and companies— to make the best possible use of the huge amount of information contained in the Union's different Cadastres.

It is therefore necessary to overcome existing barriers to access the information contained on public databases, since this makes it impossible for organisations to answer the demand for territorial information at the European level.

It will also be essential to harmonise geographic information systems in general, and cadastral information systems in particular, to the greatest possible extent, since although the Cadastre exists in all member States, there is no coordination between the respective national centres, nor a European cadastral model that can be used as a common guideline for future projects.

Therefore, the diversity of uses that cadastral information is put to, and the fact that the Cadastre is not a harmonised activity, make it especially necessary to develop

initiatives directed at defining common standards for the preparation, processing and diffusion of cadastral information; moreso if we take into account that there are currently several candidates to accession with projects underway to create or reinforce their own cadastral systems. This is very important because the process of expansion of the Union will signify in the medium term an increase in the Union's surface area by more than one million square kilometres, information on which will have to be entered onto cadastral information systems.

It is for all these reasons that the subject of the Cadastre has been included in the Agenda of a European presidency for the first time.

The Spanish Government, conscious of the importance of the Cadastre as a public information infrastructure at the European level, included on its Official Performance Programme of the Spanish presidency of the EU, the first congress on Cadastre in the EU that today has reached its end.

The Congress has featured the participation of the public institutions responsible for the Cadastre both in member States and candidate countries, and other institutions that carry out related activities, such as property registers, real estate evaluation agencies or national geographic institutions.

There have been over 400 representatives from Europe and other continents, which gives us a good idea of the expectation and success the Congress has enjoyed.

The programme of the Congress has been open and plural, which was essential given the scope of the matter as it relates to the future of the Cadastre in the European Union, and the existence of common problems and needs. Significant progress has been made thanks to the work done both in the general sessions and in the various seminars.

Therefore, the Congress has served to review the current status of the Cadastre in the Union from the perspective of the use made of its information and the different initiatives underway in candidate countries to place their Cadastres at the same level of development as those administered in member States.

On the other hand, taking into account the progressive approximation of taxation systems in the Union, and the increasing opening-up of real estate markets to citizens from different countries, the Congress has discussed questions such as the role of the Cadastre in real estate taxation, or the matter of existing information models that allow mass evaluation of real estate from cadastral data.

Two examples: in Spain, cadastral information feeds seven different taxes, chief among which is the Real Estate Tax, a tax representing nearly 35% of the budget of local authorities, while Spanish properties owned by residents of other member States number nearly one and a half million.

Special mention must be made of the initiatives agreed upon to coordinate and standardise cadastral activity in the EU and especially, the agreement of all the representatives of EU Cadastres on the need to adopt initiatives to define common standards in mapping, cadastral references, data models, etc., which will no doubt contribute to improve coordination in the creation of new cadastres, and the public and private use of cadastral information.

Other activities that have been carried out during this Congress and which will be useful in the near future are related with the improved diffusion of cadastral information. We must not forget that the diffusion of the knowledge housed in the existing major information banks is essential to drive economic development, as repeatedly manifested by numerous organs of the EU.

We must take advantage of the far-reaching changes achieved in the use and exchange of information thanks to the generalised use of Internet and information highways. The diffusion of cadastral data through Internet and the projects to guarantee a similar level of access to information in all countries are essential objectives for our organisations; if the future of Europe is to occur in the sphere of the Information Society, the Cadastre, the principal base of territorial information, must have a leading role in that future.

But what without a doubt is the most important accomplishment of this Congress is the interest shown by the attending organisations in creating a Cadastre Permanent Committee. This organism will be formed by representatives of each member State, and its main aim will be to drive and develop the policies and initiatives related to coordination and cooperation propounded over the last few days, and to collaborate with those responsible in candidate countries to improve their cadastres and bring them closer to the situation achieved by the member States.

One of the first tasks to be carried out the by Committee is the approval of a Declaration on Cadastre in the EU, which will reflect the principal common elements, characteristics and needs of the Cadastre in Union countries. To be able to advance in the development of joint initiatives, it is first necessary to define the elements that are common to these Cadastres, the objectives to be achieved and the future lines of action to be developed. The approval of the Declaration on Cadastre in the EU would constitute an appropriate answer to these needs.

Therefore, in view of the work accomplished and the results obtained, one can say that this first inclusion of the Cadastre on a European presidency agenda of a presidency has been a great success. The first Congress on Cadastre in the European Union which ends today has proved to be a very useful forum where the different cadastral organisations can discuss their concerns and the challenges facing them in the future.

I wish to point out the hard work done by personnel of the General Directorate of the Cadastre, and thank them for their efforts. Without their dedication it would not have been possible to organise this Congress. A congress that has represented three days of intense work for the attendees, and that has shown the need to progress in the integration and cooperation of the different Cadastres in an ever more united Europe.

Conclusion

Ladies and gentlemen, the theme of the Spanish presidency of the Union is «More Europe»; I am convinced that with the organisation of this Congress this is precisely what we are achieving. We have advanced in the process of coordination in the field of Cadastre between the different member States and potential members, and have established the basis of what in the future will be the European Union Cadastre, which will allow all citizens and administrations to access and use cadastral information in equal conditions.

Lastly, I would like to end by referring to the inauguration that will take place this afternoon in Jaen of the exhibit of the work of the Marquis of Ensenada. This is a fantastic idea on the part of the organisers, since the congress coincides with the third centenary of the birth of a man who was a key figure in the development of Cadastre in Spain and Europe, responsible for drawing up in the 18th century a Cadastre of all the townships of the crown of Castille. I am fully convinced that you will enjoy your visit this afternoon.

That is all. Thank you very much. ■