

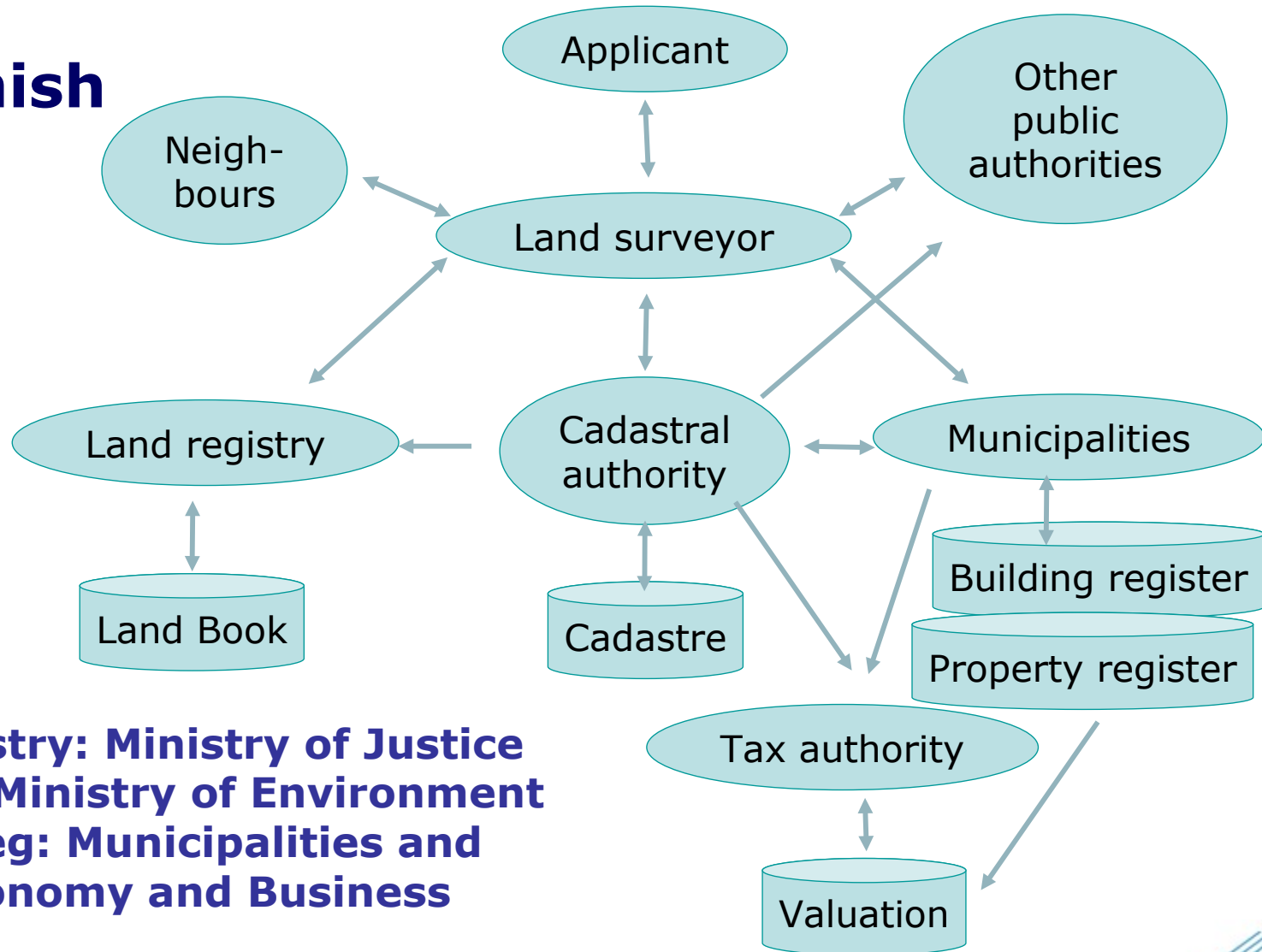
New Danish e-Cadastre and its role in the Danish e-government

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The danish context



Land Registry: Ministry of Justice
Cadastre: Ministry of Environment
Building reg: Municipalities and
Min. of Economy and Business



The role of the cadastre

- The cadastre defines the real properties (objects)
- The cadastre gives a reliable picture of the actual property situation – is kept up-to-date daily – and is thereby the basis for the property marked in Denmark
- The cadastral information is the basis for:
 - Registering of rights and restrictions (Land Book)
 - Collection of property tax (Ministry of Tax)
 - Administration of land use and building control (municipalities)
- The cadastral data is daily distributed (automatically) to the Land Registry, Ministry of Tax and municipalities



Multipurpose use of the cadastral map

- The cadastre (cadastral map) is increasingly used as a reference for registering of public restrictions and for public administration, eg.:
 - Planning (local plans)
 - Building permits
 - Contaminated soil (also registered in the Cadastre)
 - Natural parks
 - ...
- Therefore demands for data to be
 - Accessible
 - Up to date and reliable
 - Geometrically consistent and accurate



The content of the Cadastre

- Cadastral identification of parcels eg. 1a Ll. Skensved By, Højelse (numeric code: 1a 050655) – approximately 2,5 million parcels
- Area of parcel including area of private road, etc.
- Boundaries of parcel
- Definition of real property (one or more parcels)
- History of cadastral changes and origin of property
- Restriction of public rights:
 - agricultural land - land designated for continued agriculture purposes
 - forest conservation areas
 - windfall - financial aid for rebuilding forests after windfall
 - coastal zoning – registration of seashores and dunes
 - soil contaminated areas



The role of the Land Register

To document rights and restrictions:

- General information
- Title information (Rights)
- Easements/ servitudes (Restrictions)
- Mortgages (Responsibilities)



Books in the past – today digital



Contents of the Land Register

- General information
 - Owner
 - Address
 - The cadastral identifier
 - Size/area
- Title information
 - Where to find deed
 - Date of deed
 - Price (when bought)
- Easements/servitudes
 - Restrictions on use, heights, roads, planning etc.
 - In abstract
 - Full document against fee
- Mortgages
 - Who has secured upon the property

- Registration of condominiums

FADKO	T I N G L Y S N I N G		03.05.2000 tid 15:	
-----		ADKOMSTER	----- Antal adkomster:	
Ejd.berørt 27 04 2000	Dok.afsendt: 18 04 2000	Dagbog: Ja	Aktnr.: B 46	
Matr.nr. : 12 A mfl Ejerlav	: Ll. Skensved By, Højelse			
.	Adresse : Kratvej 12			

Nr.	Dato	Skøde	Sum	Anmærkni
001A	17 11	Skøde	385.000	
	1970	Knud Villemoes Hansen	Dkk	
	10106			
001B	28 06	Skøde	750.000	hæftelse
	1989	Knud Villemoes Hansen	Dkk	
	9180	Herefter ene ejer		

Vælg: FADKO Vælg nr: ____ Matr.nr.: 19 LSK 12__ A__ T: __ B: ____ L: ____				



Goals for new e-cadastral system

- Technological innovation
 - Integration of registry and map data in one database
 - Open formats to other systems
 - SOA (Service oriented IT Architecture) external and internal
- Streamline data flow and registrations
 - Direct use of digital data from private land surveyors
 - Digital workflow in cadastral applications
- Expected performance
 - Reduction of human resources - 10-20%



New e-cadastral system

– Implemented September 2008

- New version of the system used by the surveyors for preparation of cases (MIA)
- New database and system for control and registration of changes in the Cadastre (miniMAKS)
- All types of cadastral applications
- All types of registration of public restrictions
- The whole country in one go
- 50 users at National Survey and cadastre - 400 external MIA users

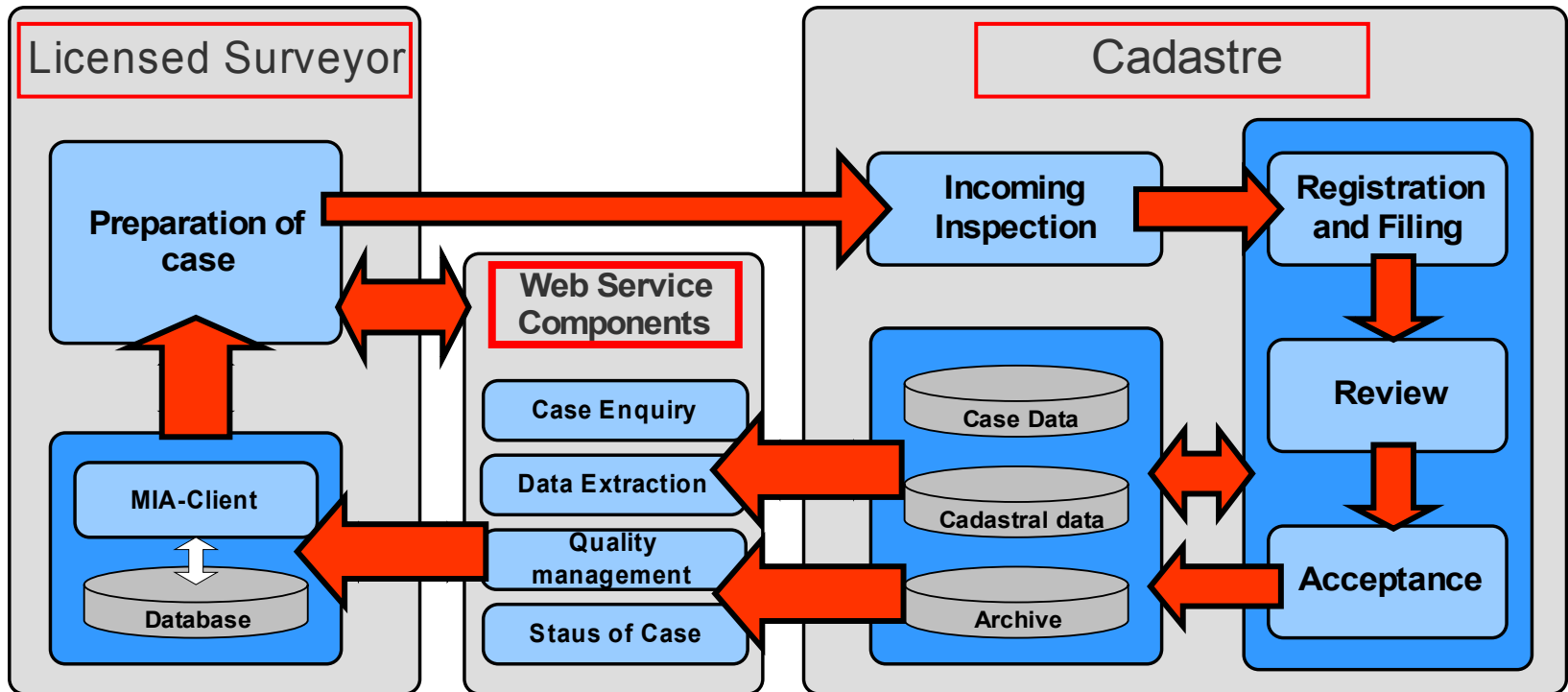


The screenshot displays the Sag software interface, which integrates registry and map data. The main window shows a map with yellow outlines of land parcels, labeled with identifiers such as 1e, 1c, and 1a. A central text overlay reads: **Integration of registry and map data in one database**.

The interface includes a menu bar with 'Sager', 'Funktioner', 'Vinduer', and 'Hjælp'. Below the menu is a search bar containing '100001037' and tabs for 'Oversigt', 'Revision', and 'Hændelser'. On the left, there are two tree views: 'Ejendomme før (5)' and 'Forandringer (2)'. The 'Forandringer (2)' tree is expanded, showing a list of documents including 'Lsp.erkl. oph. ldb.pligt (1)', 'Lsp.erkl. hvid erklæring (1)', 'Måleblad (1)', 'Oversigtskort (1)', 'Skematisk redegørelse (1)', and 'Ændringskort (1)'. The central tree view shows a hierarchy of data layers: 'Sag', 'EFTERDATA', 'ÆNDRINGER', 'FØRDATA', and various WMS layers like 'Kort10 WMS', 'DTK Skærmskort WMS', 'Ortofotos WMS', and 'Målebordsblade WMS'. A toolbar with various icons is located above the map. At the bottom, a status bar shows coordinates (6.117.266,192N : 606.971,454E), a scale of 1:15954, and a bounding box (2.228,814m x 2.347,008m). The Windows taskbar at the bottom shows the 'start' button, several open applications, and the system clock at 09:06.



Streamlined dataflow



Use of external created data (from land surveyor) and digital exchange of data

The screenshot shows a software application window titled "Kortvindue - sag 2005-05-16-1 - importeret d. 11-10-2004". The main area displays a map of "Bandholm By, Bandholm" with various land parcels outlined in red and yellow. Below the map is a table with the following data:

Ejendom før	Matrikulære ændringer	Ejendom efter	Ber.	Areal	Vejareal	Vandareal	Skovareal	Strandareal	Klitareal
Der sker følgende matrikulære ændringer									
ESR ejendomsnr.	Ejerlavskode	Matr.nr.	Delnumre	Nyt nr.	Matrikulære ændringer				
		3			tilgår matr.nr 2a Bandholm By, Bandholm, ved ejendomsbenigtigelse mod s	8938	0		
	480251	3o			arealoverføres til "Matr.nr. 2a Bandholm Hgd."...	19520	0		
	480251	2bd	2	Delnr. 2	udstykket	3684	0		
	480251	5a	10	Delnr. 10	udstykket	6976	0		
	480251	5a	7	Delnr. 7	udstykket	6995	0		
	480251	5a	6	Delnr. 6	udstykket	6672	0		
	480251	5a	8	Delnr. 8	udstykket	7786	0		
	480251	5a	4	Delnr. 4	udstykket	7640	0		

Data is registered as changes with a certain code

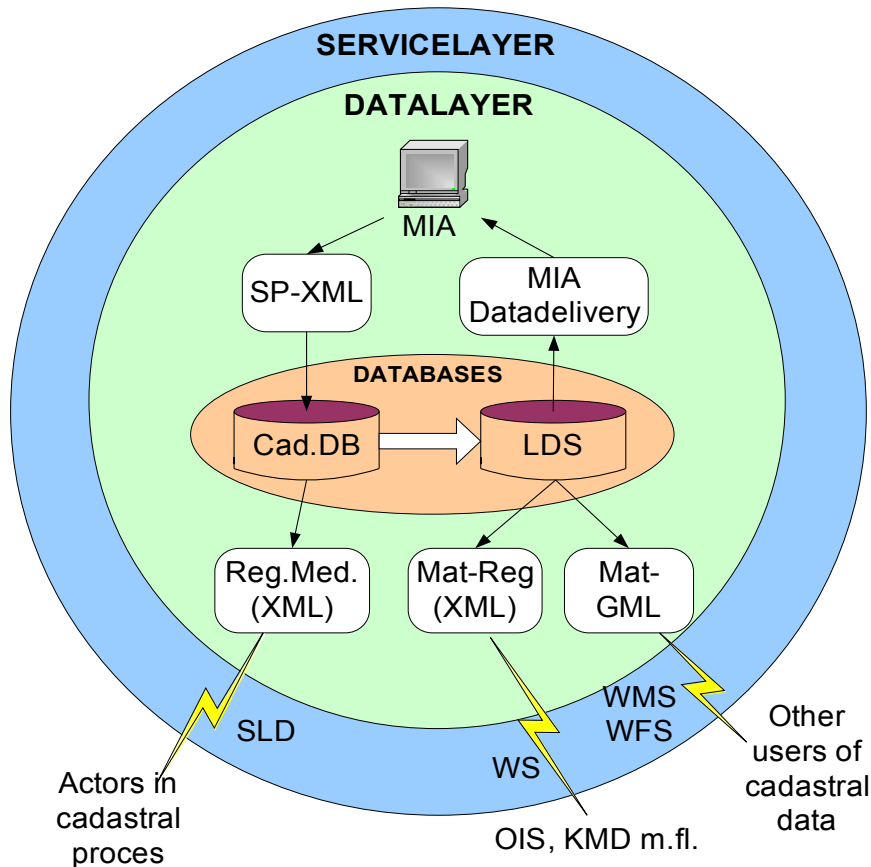
MIA creates transaction data (XML)

The application contains:

- documents
- data (before, changes, after)
- measurement sheets



Service Oriented Architecture - open formats

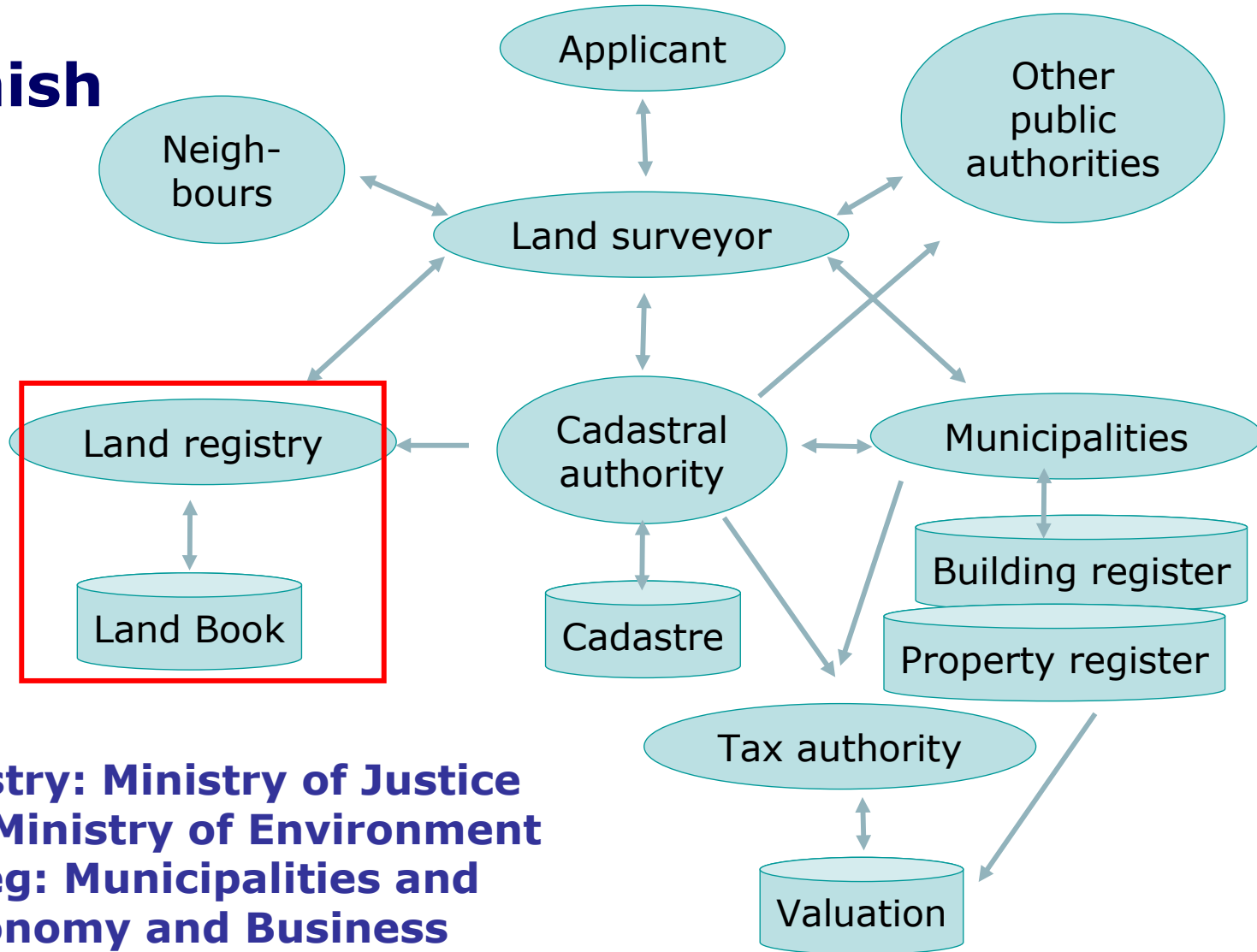


Service oriented IT Architecture

- External standardized integration and services (XML)
- Internal in the system (WMS/WFS)



The danish context



Land Registry: Ministry of Justice
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New system for land registration (e-TL)

Purpose

- Digital registration – based on exchange of digital data and digital signatures (goal 69% automatic registration)
- One land-book court
- Digital access to scanned files (70 millions)

- Access via portal for private users
- Access direct via system-to-system for businesses

- Geographical location of servitudes based on the cadastral map as a new development



New e-registration system

- Implemented September 2009

- System available for users internally at Land Registry
- System available for external users via portal and system-to-system solutions
- Financial sector had established system-to-system access

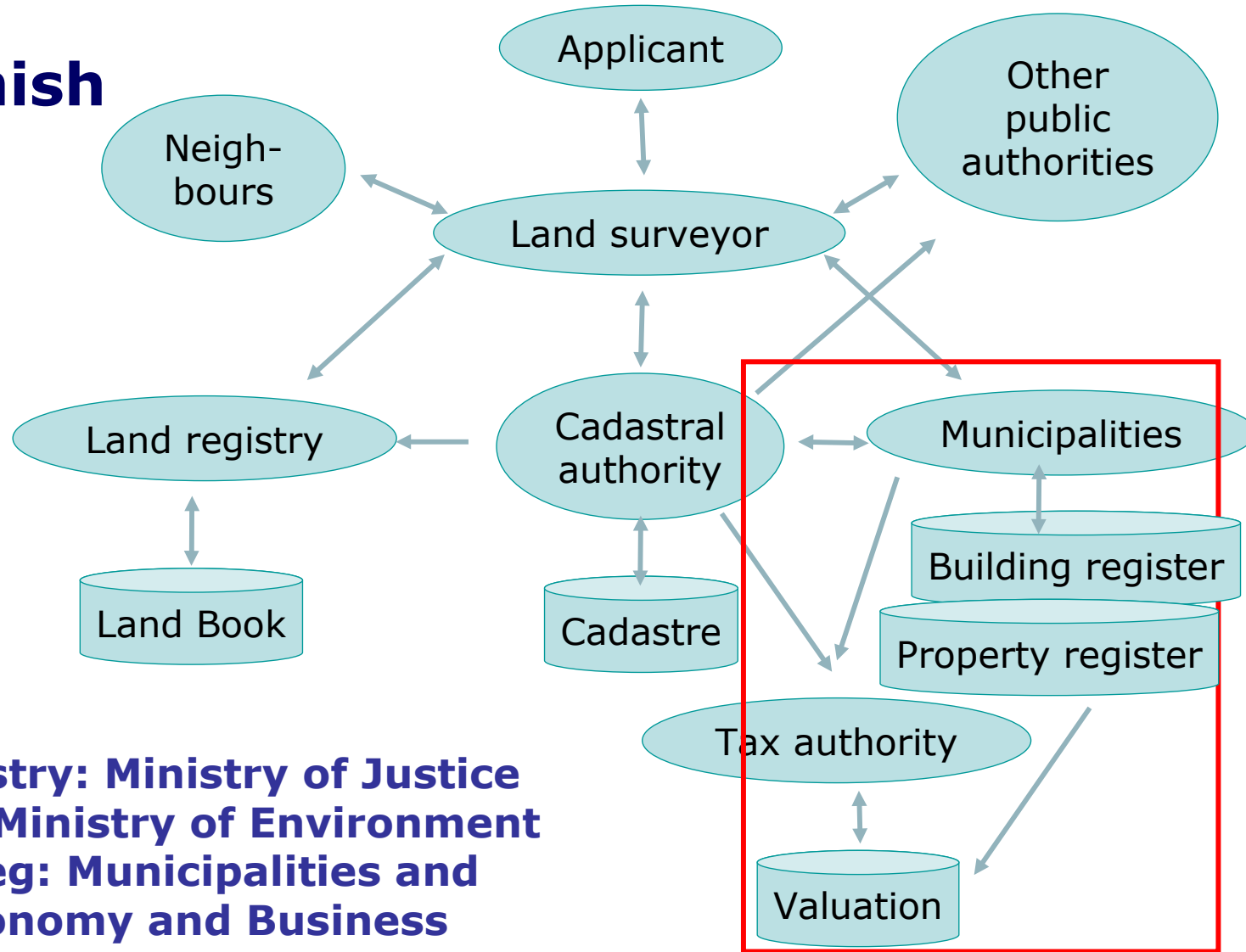
- One land-book court established (previous 82 courts)
- New staff engaged (approx. in total 120)

- Transfer of cadastral change data via system-to-system
- Treated as a registration application – staff of Land Registry updating in local copy of the cadastre

- Geographical location of servitudes registered in separate database, which is operated by the KMS



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New Building and Property Registers

- New Building Register
 - 2010 accessible for local authorities
 - 2011 accessible for other authorities
 - Include address register
- New Property Register
 - Copy of data from Cadastre and Land Register with own information added
 - Planned renewal 2013
- New taxation system – no!
 - Government policy that taxes do not increase



Perspective for e-Government within the cadastral proces

- More intelligent data from MIA (documents)
- Use of data from MIA in local authorities in their workflows
- Closer connection to e-Land Register (use same data)
- All registration of property objects in the cadastre (incl. condominiums)
- Introduction of a new common property identifier, which links all property related registers together

and within public administration in general

- Cadastral data (via web-services) to be used as reference data in solving administrative tasks in the public sector

