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**SEMIC 2018**

# Access To Base Registries

Peter Burian (DG DIGIT – EC)

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Initiative supported by the ISA<sup>2</sup> Programme



«I want this service to look so good my Mum could use it»

## Policymaker Laura

Central Government  
Ministry for Taxation, Italy

27,  
Goes running nearly every day

- ▶ Laura works in the Italian Taxation Ministry in Rome. She has always worked on high profile policies, close to the Minister. Now she has been assigned as the tax expert in the team making the online dashboard
- ▶ She expects the project to run smoothly, but isn't familiar with the back end and doesn't always understand why problems have occurred
- ▶ She suspects the team don't take her very seriously because she isn't technical, but sometimes they ask for her help with English

**How do we determine which registry is a base registry?**

**How do we create laws on digital public administrations?**

**What should we do with data protection?**



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*«I like my boss because he lets me build things my way»*

# IT Practitioner Kurt

*Central Government  
Digital Transformation Team, PM's Office, Slovenia*

*46,  
Always online*

- ▶ Kurt works in the Digital Transformation team. His bosses are close to the deputy PM but as a practitioner he feels remote from politics and strategy
- ▶ He used to do the IT in a hospital and for a small business, so he knows the private as well as the public sector
- ▶ He is on a two year contract, which could be extended, but he doesn't feel attached to the Ministry long-term

**How do we interconnect the base registries?**

**How do we create common data models?**

**Which solutions can we reuse?**

**How do we ensure that the data is transferred securely?**

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# Politician John

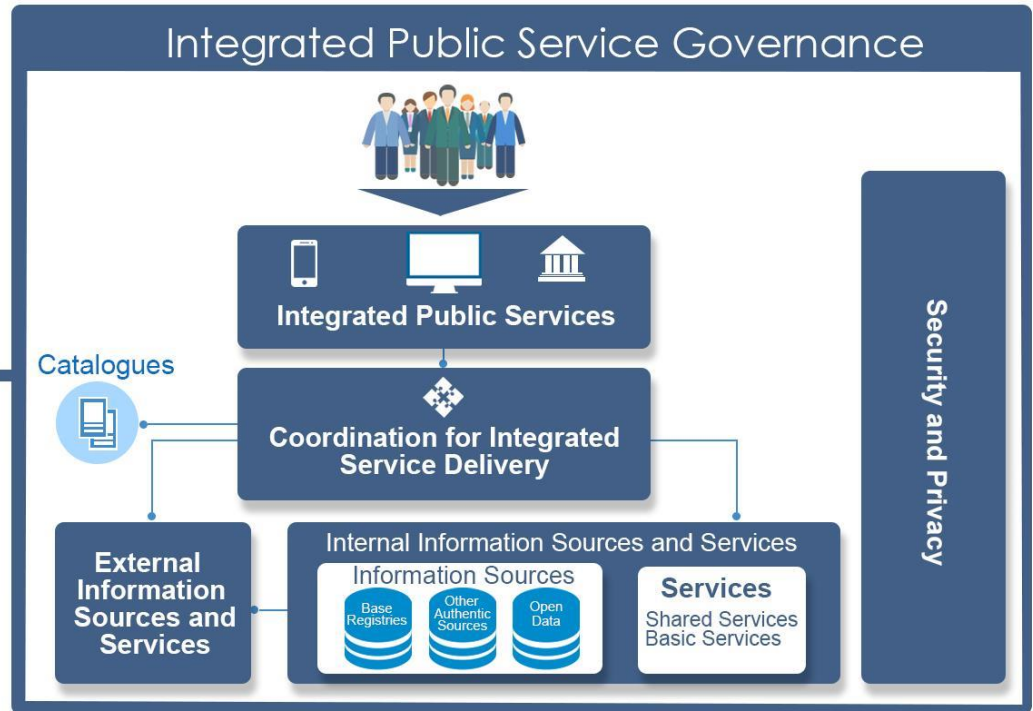
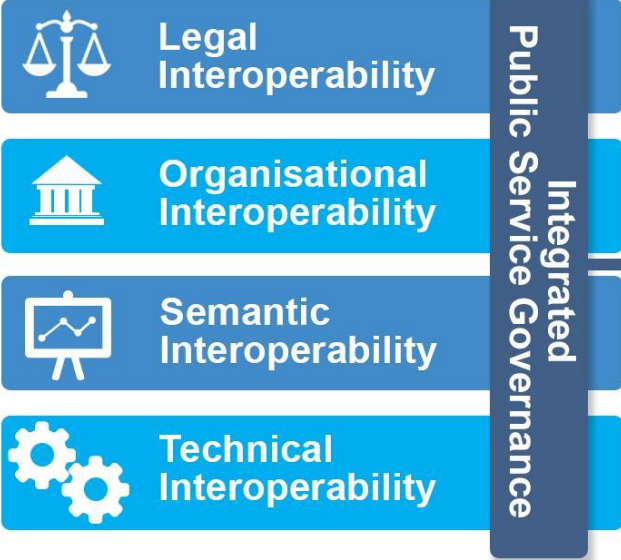




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# EIF Conceptual Model

## Interoperability Governance



Interoperability Principles

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# European Interoperability Framework

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## Recommendation 30:

Perceive data and information as a public asset that should be appropriately generated, collected, managed, shared, protected and preserved.

## Recommendation 31:

Put in place an information management strategy at the highest possible level to avoid fragmentation and duplication. Management of metadata, master data and reference data should be prioritised.

## What is a Base Registry?

Base registries are the cornerstone of European public service delivery. A base registry is a trusted and authoritative source of information which can and should be digitally reused by others, where one organisation is responsible and accountable for the collection, use, updating and preservation of information. Base registries are reliable sources of basic information on data items such as people, companies, vehicles, licences, buildings, locations and roads. This type of information constitutes the **'master data'** for public administrations and European public service delivery. 'Authoritative' here means that a base registry is considered to be the 'source' of information, i.e. it shows the correct status, is up-to-date and is of the highest possible quality and integrity.

## Recommendation 37:

Make authoritative sources of information available to others while implementing access and control mechanisms to ensure security and privacy in accordance with the relevant legislation.

## Recommendation 38:

Develop interfaces with base registries and authoritative sources of information, publish the semantic and technical means and documentation needed for others to connect and reuse available information.

## Recommendation 39:

Match each base registry with appropriate metadata including the description of its content, service assurance and responsibilities, the type of master data it keeps, conditions of access and the relevant licenses, terminology, a glossary, and information about any master data it uses from other base registries.

## Recommendation 40:

Create and follow data quality assurance plans for base registries and related master data.

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**The different parts of public administrations work in silos.**

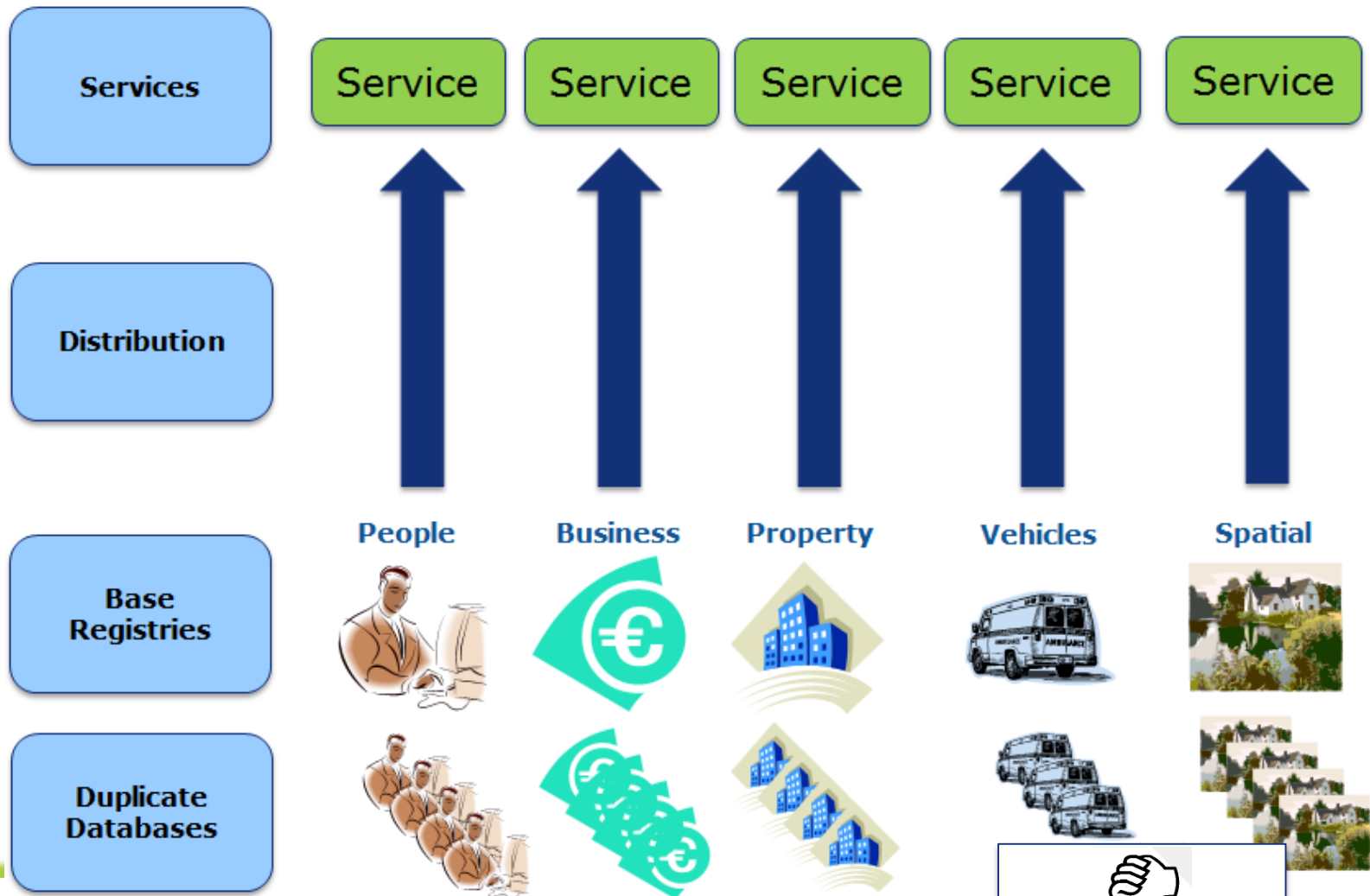
Public administration entities collect data in different contexts, but many times it is the same data.

The processes to deliver public services to citizens and businesses are often complex and require that the same data be provided more than once.

# Current State of Affairs



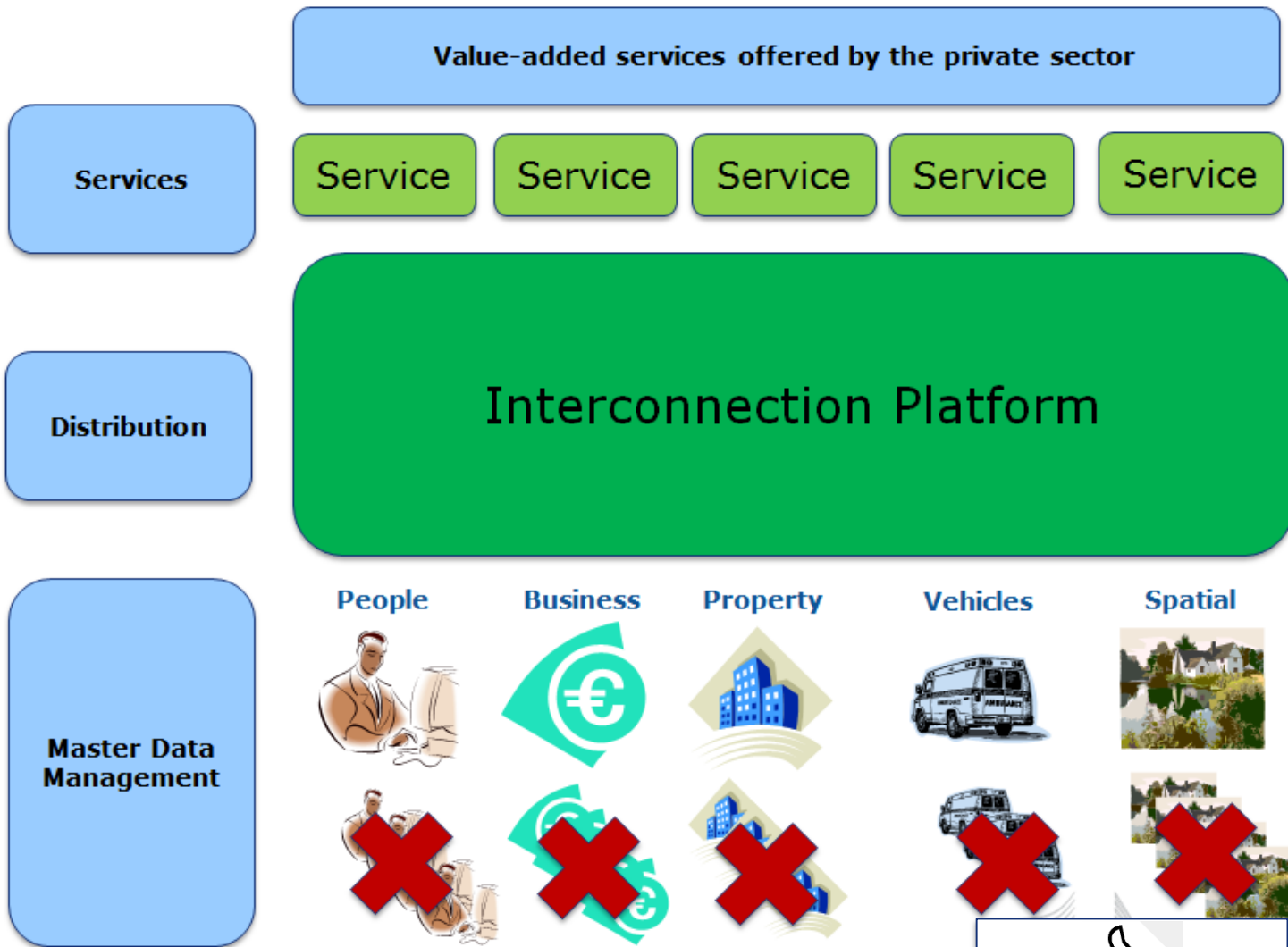
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# Future State of Affairs



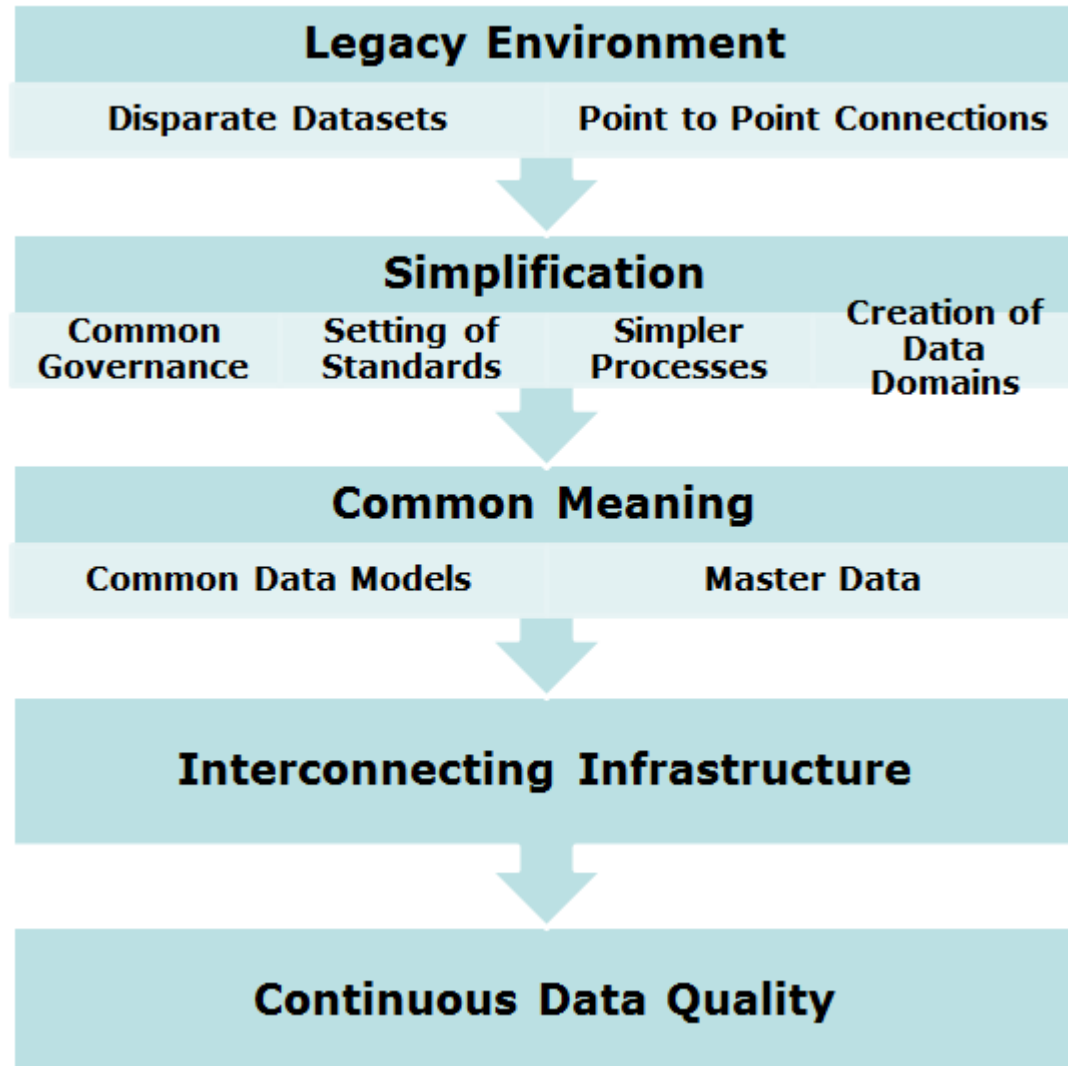
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# How to move from a legacy environment?



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Setting up a  
strategy is  
important!



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# Simplification

Processes and working together

**Break down silos.**

**All the different stakeholders should be on board and understand what you want to achieve.**

Create new ways of working between the different parts of the public administration.

Look at the processes, decide whether they make sense, and try to keep things as simple as possible.

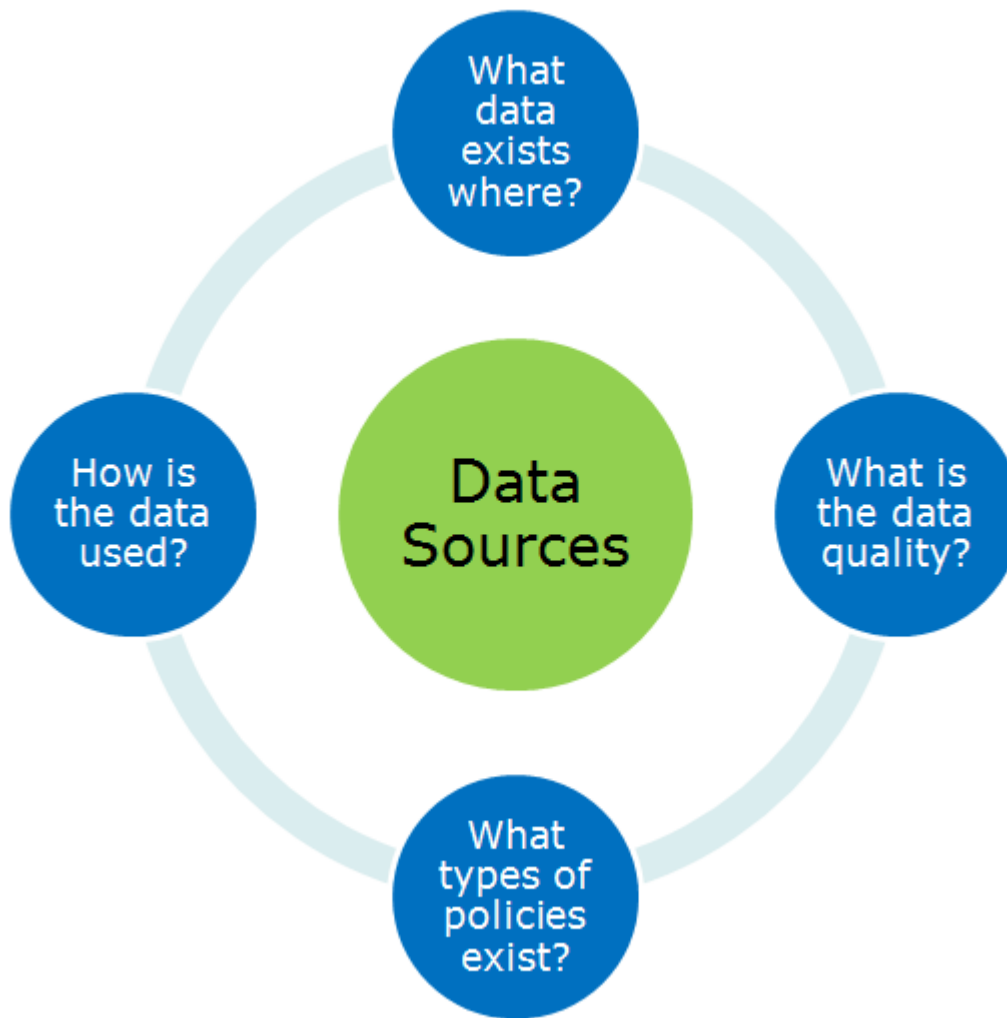
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# Simplification

## What about the data?

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### Step 1



**Don't forget  
data  
protection!**



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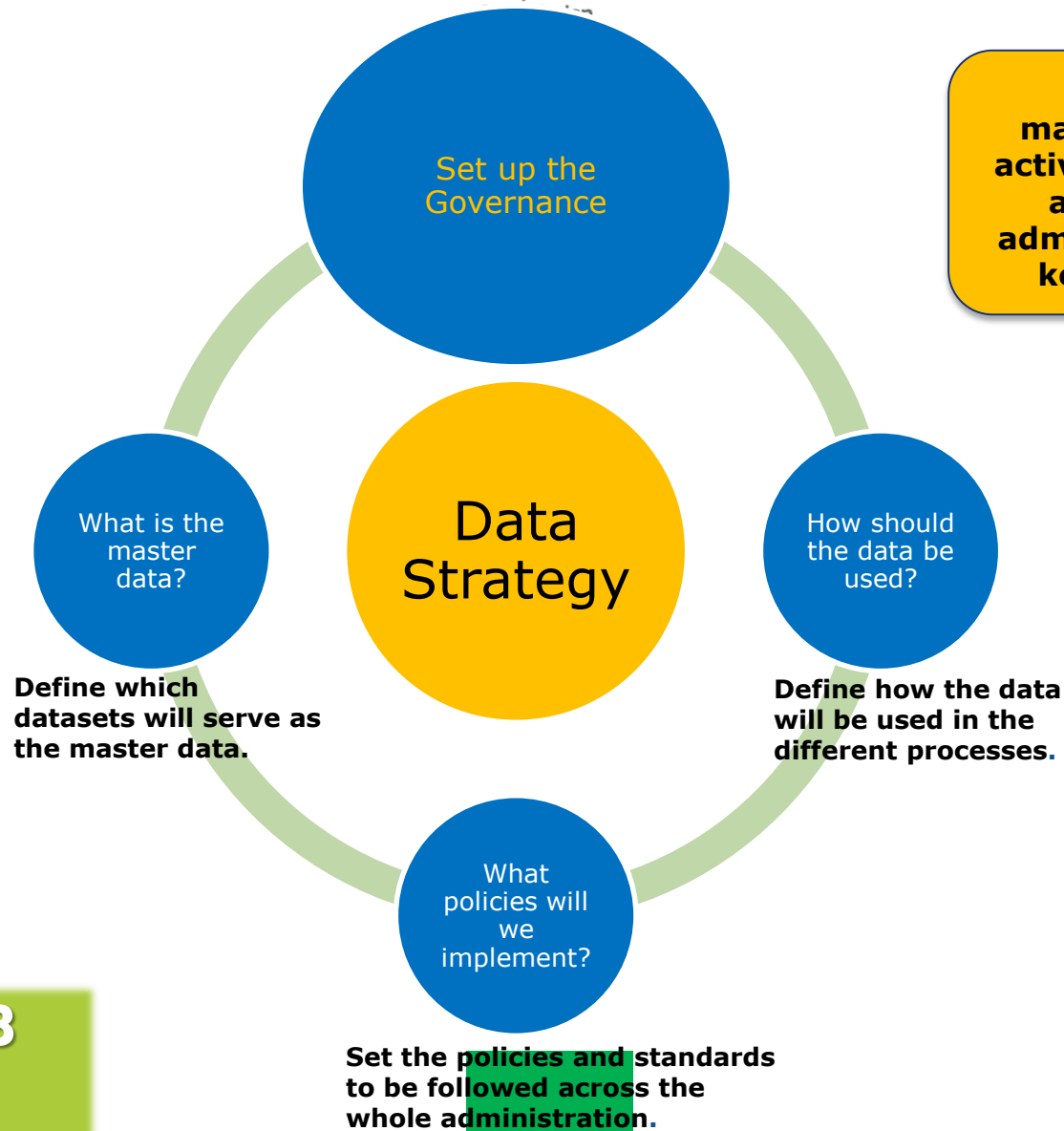
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# Simplification

What about the data?

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## Step 2



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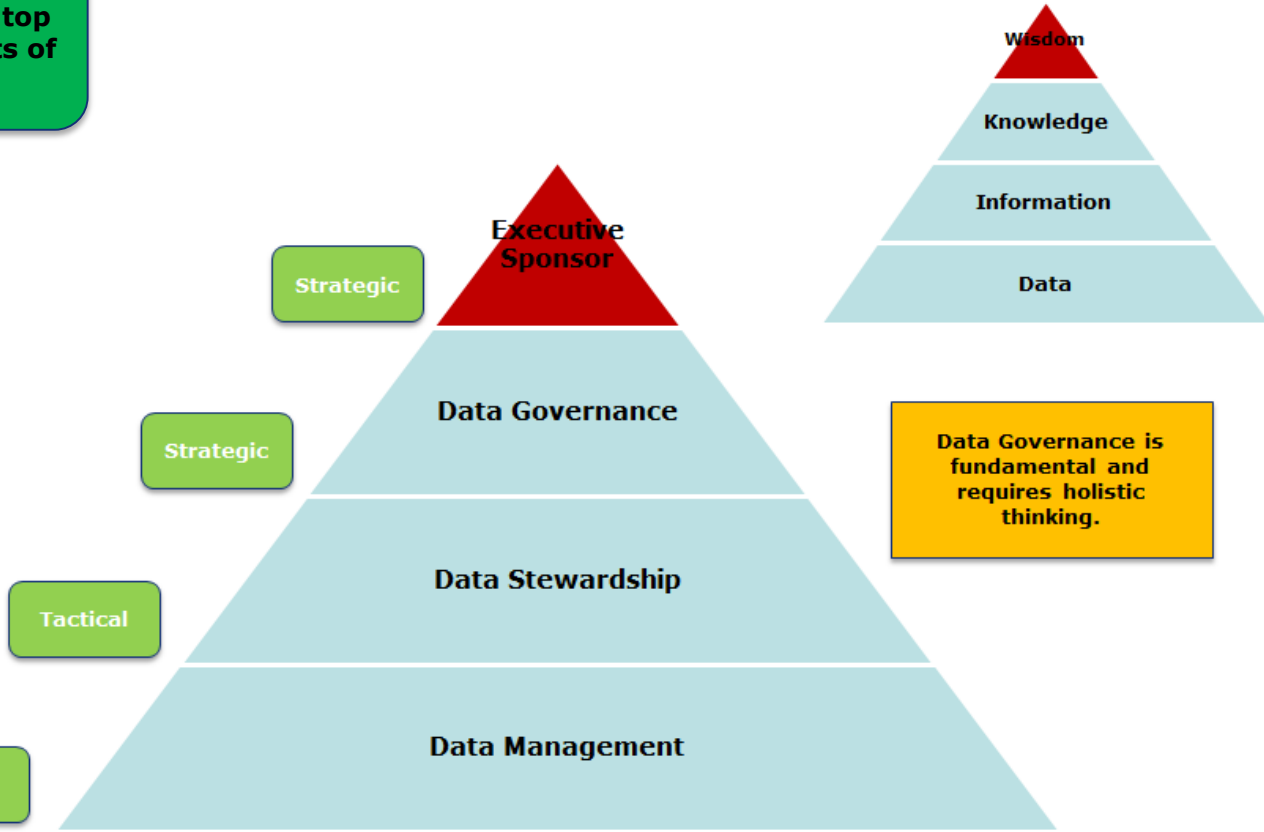
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# Simplification Data Governance



Let's hope the  
guys at the top  
will have lots of  
wisdom!



Data Governance is a collection of practices and processes which help to ensure the formal management of data assets within an organization.

Source of definition: DAMA

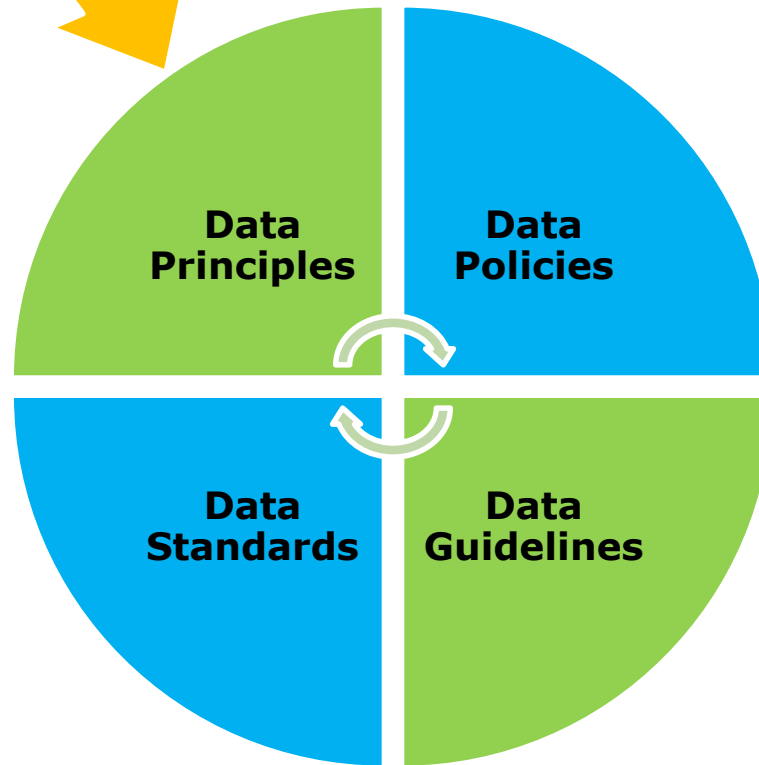
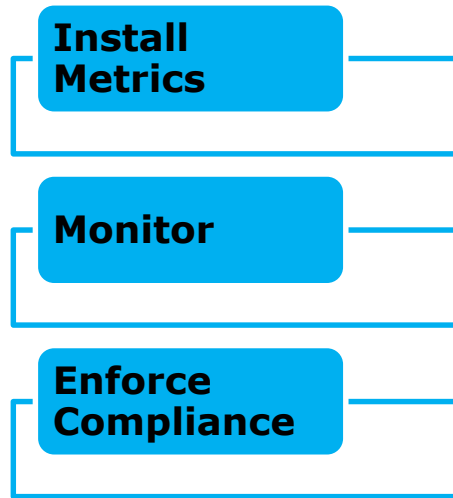
# Simplification

## What about the data?

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Zooming in

What policies  
will we  
implement?



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# Simplification

## What about the data?

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What  
policies will  
we  
implement?

Zooming  
in

**Data  
Principles**



### INSPIRE principles



- Data should be collected once and maintained at the level where this can be done most effectively
- Combine seamlessly spatial data from different sources and share it between many users and applications (the concept of interoperability)
- Spatial data should be collected at one level of government and shared between all levels
- Spatial data needed for good governance should be available on conditions that are not restricting its extensive use
- It should be easy to discover which spatial data is available, to evaluate its fitness for purpose and to know which conditions apply for its use

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# Airplane!!!



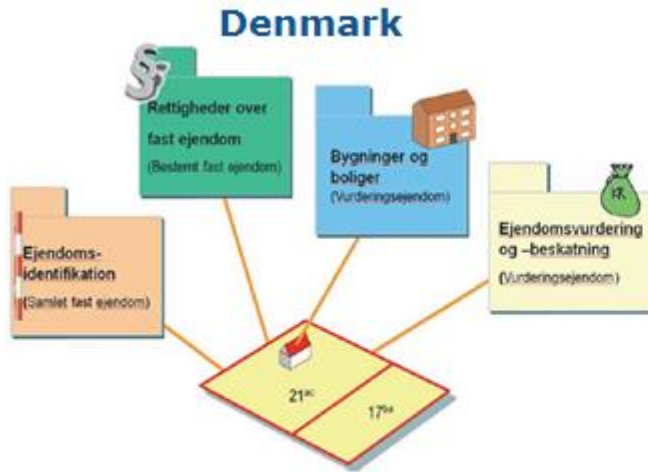
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# Creation of Common Meaning

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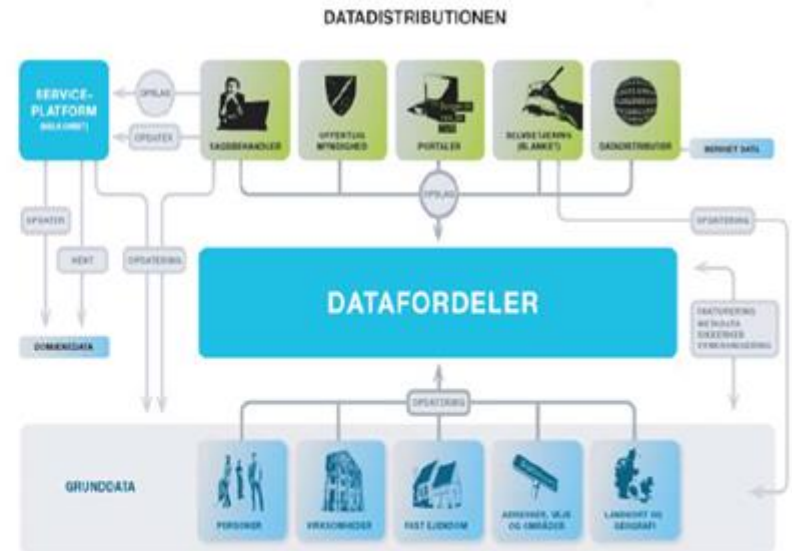
**Initial state of affairs:** three different property concepts across three different registries (Cadastral, Land, BDR and Property)

**Solution:** one common term across all registries

## How was this done?

**Danish Basic Data Program:** established an infrastructure to share data for free in both the public and private sector

As part of the program, all basic data was harmonized



# Creation of Common Meaning

## Flanders (Belgium)

**Initial state of affairs:** lack of machine readable information, once-only principle not in place, integration expensive and inefficient

**Solution:** semantic interoperability becomes a key part of the Flemish e-government strategy

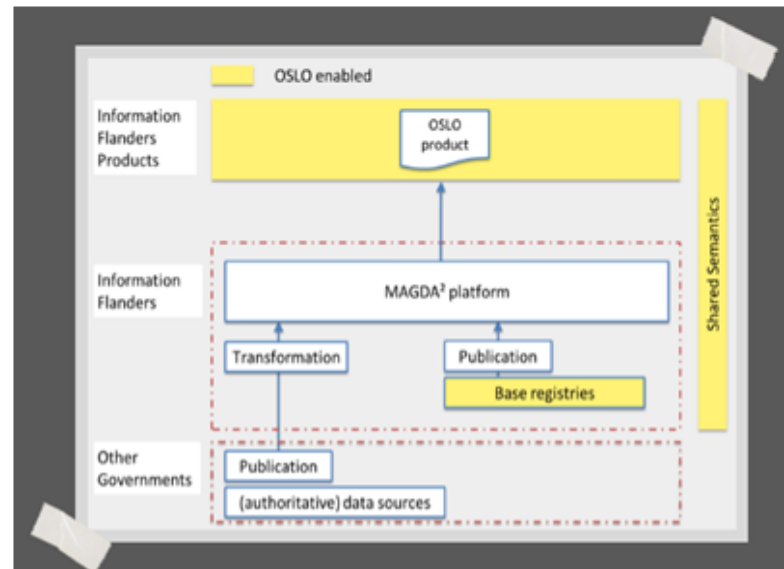
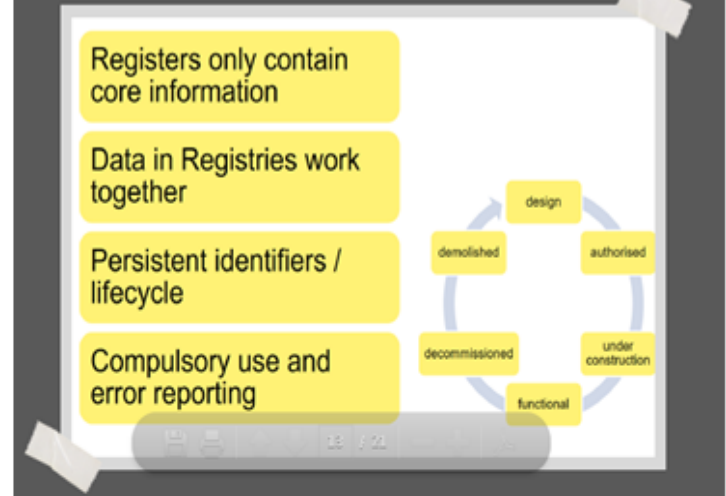
### How was this done?

## Open Standards for Local administrations (OSLO):

The **OSLO Vocabulary** is a simplified, reusable and extensible data model that captures the fundamental characteristics of information exchanged by public administration in the domains: contact information, localisation and public services.



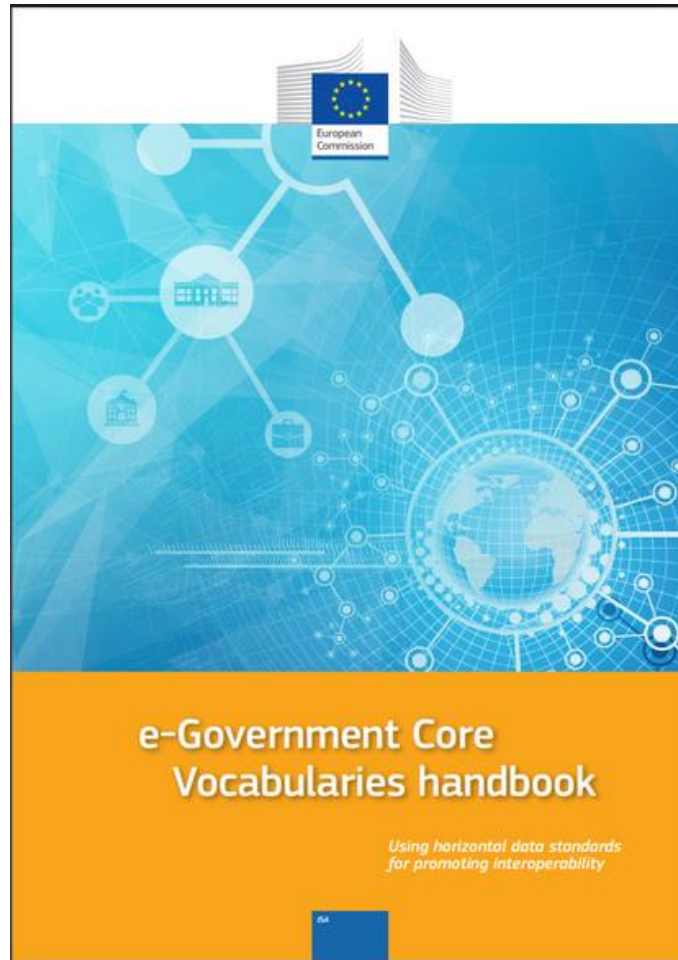
## Base Registries Concept



# Creation of Common Meaning

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## ISA<sup>2</sup> Core Vocabularies



CORE  
BUSINESS  
VOCABULARY

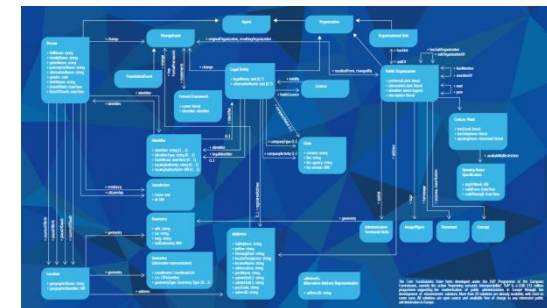
CORE  
LOCATION  
VOCABULARY

CORE  
PERSON  
VOCABULARY

CORE  
PUBLIC  
SERVICE  
VOCABULARY

CORE  
CRITERION &  
EVIDENCE  
VOCABULARY

CORE  
PUBLIC  
ORGANISATION  
VOCABULARY



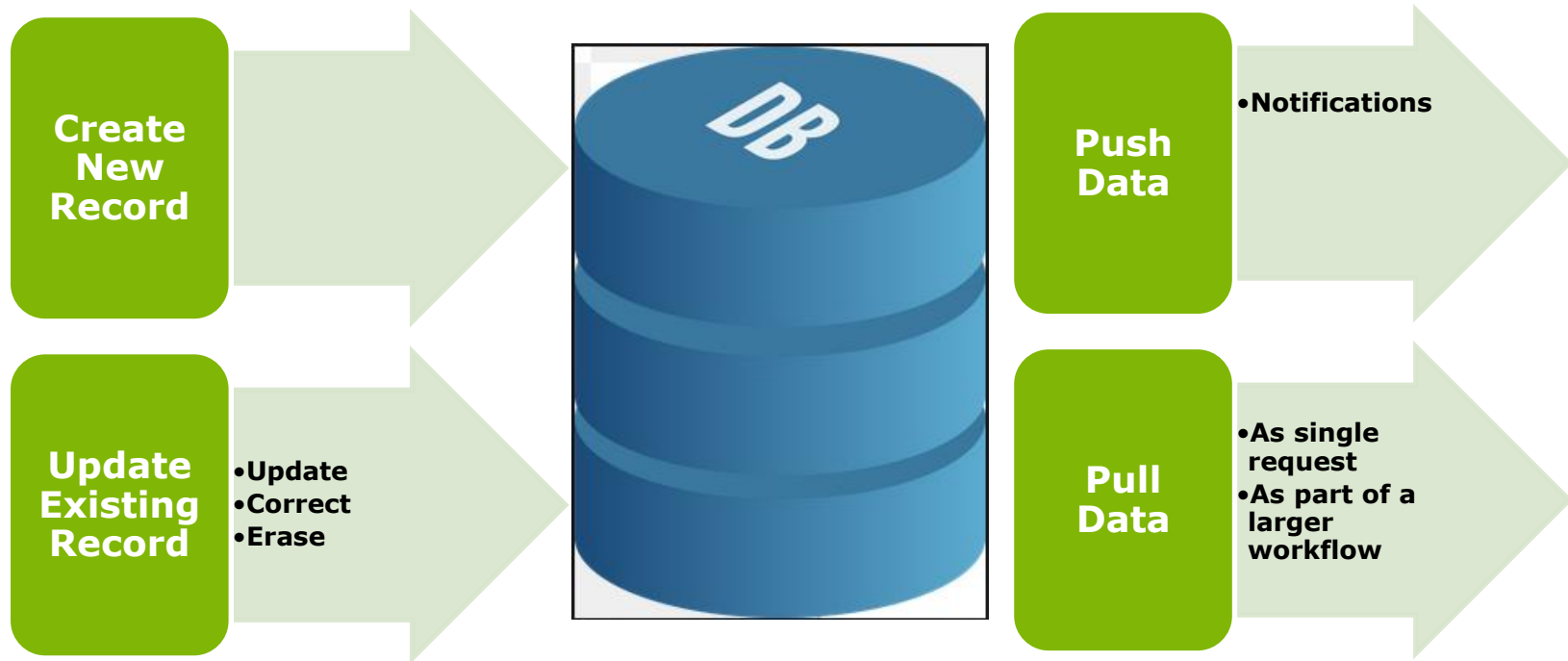
Data Model

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# Interconnecting Infrastructure

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## What happens with the data from base registries?

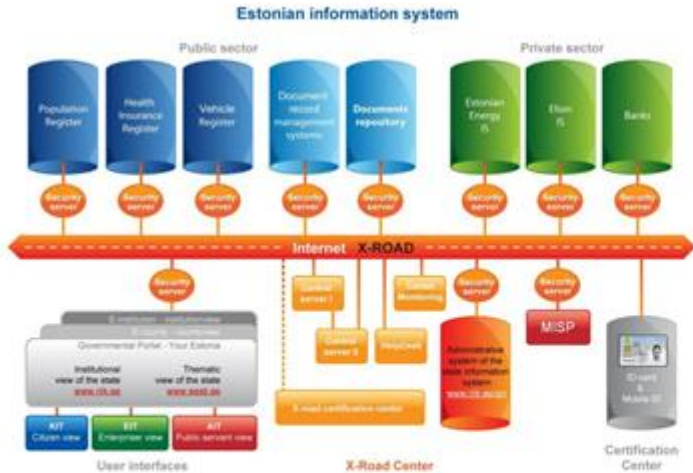


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# Interconnecting Infrastructure



**Estonia (X-Road)**



**Denmark (Data Distributor)**

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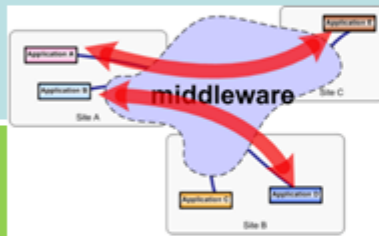
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# Interconnecting Infrastructure

There seems to be a trend away from SOAP/XML – based web services towards Rest/JSON – based APIs.

What will the future bring? Maybe GraphQL (data query language developed for Facebook)?

I have a headache!  
Too many choices.



**Orchestration**



What to set up? ESBs (older tech) or API Gateway (newer trend)? Or combine both?

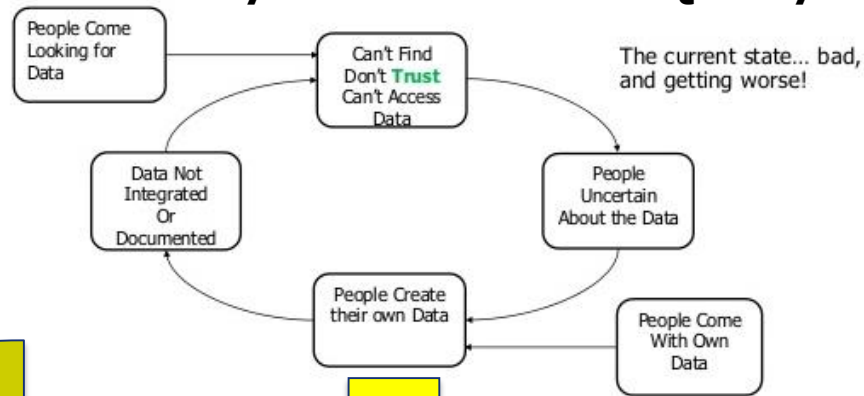
Many other choices and patterns that you can implement.

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# Continuous Data Quality

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## Data Cycle with **Poor** Data Quality



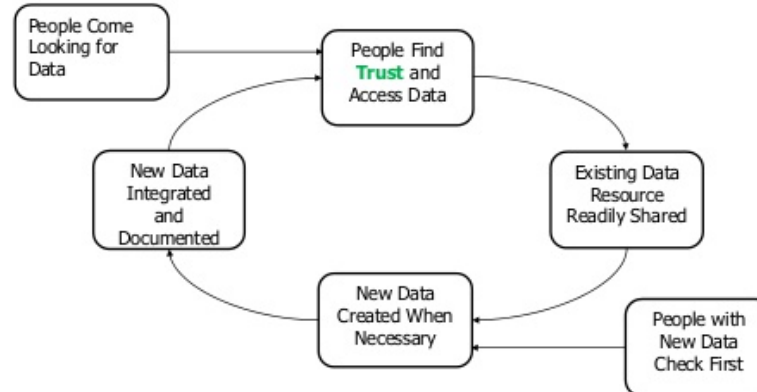
Source "Data Simplicity" Author: Michael Brackett - 2011

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**Bad Quality Data**

**People don't trust the data**

## Data Cycle with **Good** Data Quality



Source "Data Simplicity" Author: Michael Brackett - 2011

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**Good Quality Data**

**People trust the data**

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I am definitely not Tiny!



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# Continuous Data Quality

## Different Types of Data Quality Issues

**Duplicate Data**

- Name: Tyrion Lannister
- ID: 23456789
- Passport: TL2345
- Name: Tyrion Lannister
- ID: 23456789
- Passport: TL2345

**Unstandardized Data**

- First Name: Tyrion
- Last Name: Lannister
- ID: 23456789
- Name: Lannister Mr. Tyrion
- ID: 23456789

**Inconsistent Data**

- Name: Tyrion Lannister
- ID: 23456789
- Passport: TL2345
- Name: Tyrion Lannister
- ID: 11111000
- Passport: TL1111

**Mistakes in Data**

- Name: Tiny Lannysterr
- ID: 23456789
- Passport: TL2345

**Incomplete Data**

- Name: Tyrion Lannister
- ID: 23456789
- Passport: ....
- Tax ID: Idontpaytaxes
- Phone No: ....
- Address: The Palace, King's Landing, Westeros

**Outdated Data**

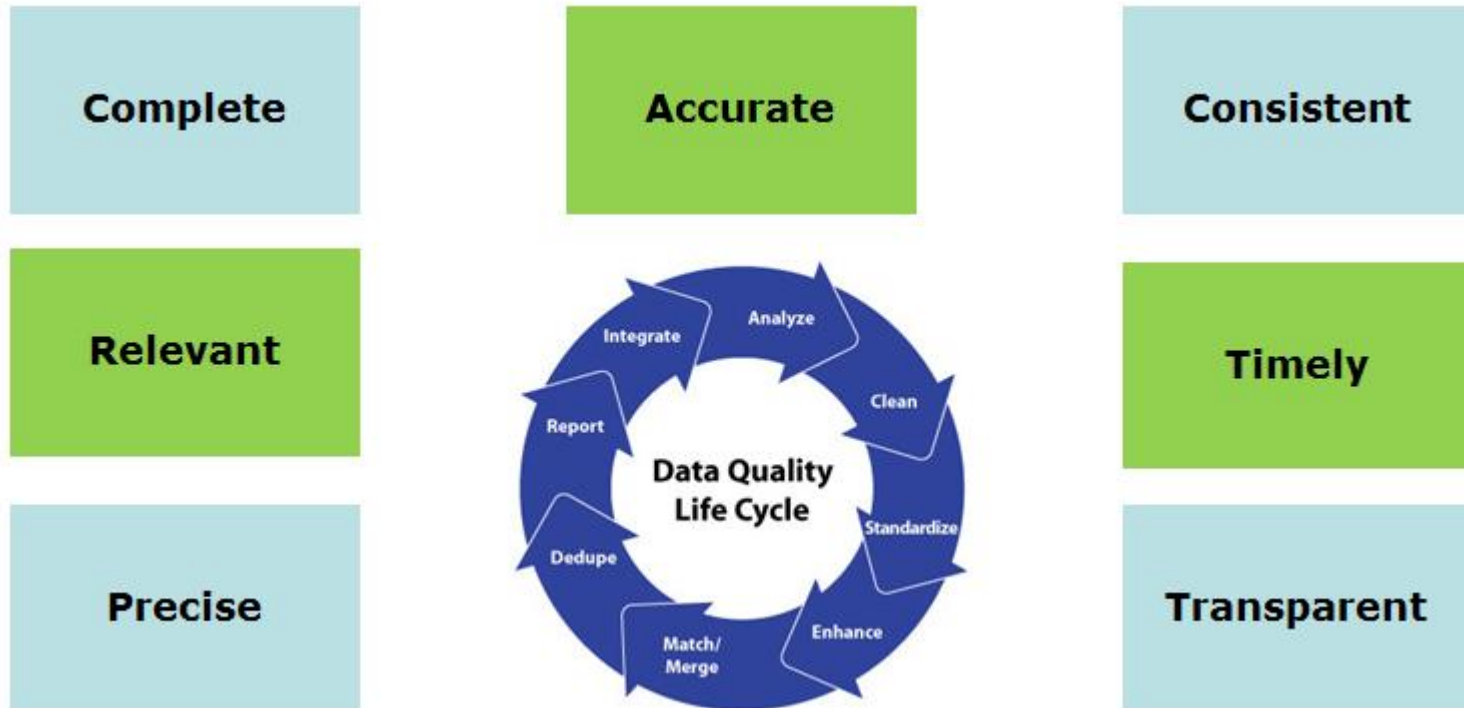
- Name: Tyrion Lannister
- Tax ID: Idontpaytaxes
- Address: The Castle, Casterly Rock, Westeros

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## Characteristics of Good Quality Data

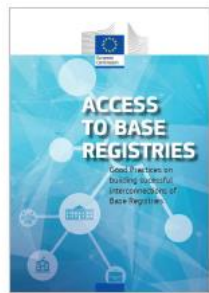


### 🛠️ Recommendation 40:

Create and follow data quality assurance plans for base registries and related master data.

# You have questions? We have answers!

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The identified Catalogue of Good Practices is a selection of 17 good practices based on national and European solutions for accessing and interconnecting base registries.



More than 100 solutions are part of the Cartography of Reusable Solutions to inspire public administrations or allow for their direct reuse.



The Guidelines for Successful Base Registry Interconnection to Base Registries include recommendations on specific actions to improve access and interconnection of authentic sources of information in all EIF four layers.



The Factsheets summarise the state-of-affairs of access and interconnection of base registries at national level.

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# What Are We Working On Now?

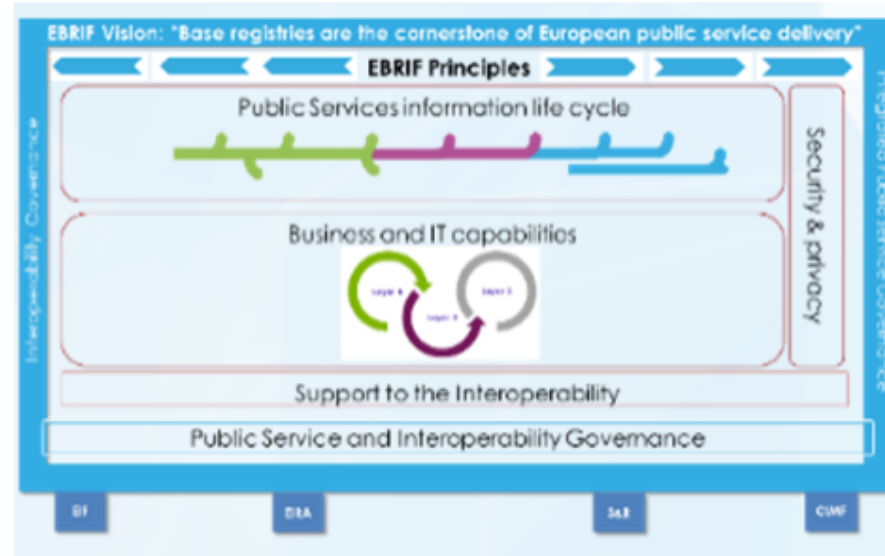
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## What already exists?



**Methodology for  
Metadata  
Governance**

## What will exist in the future?



**Base Registry Access and Interconnection  
Framework**

**Master  
Data**

**We need your help!**

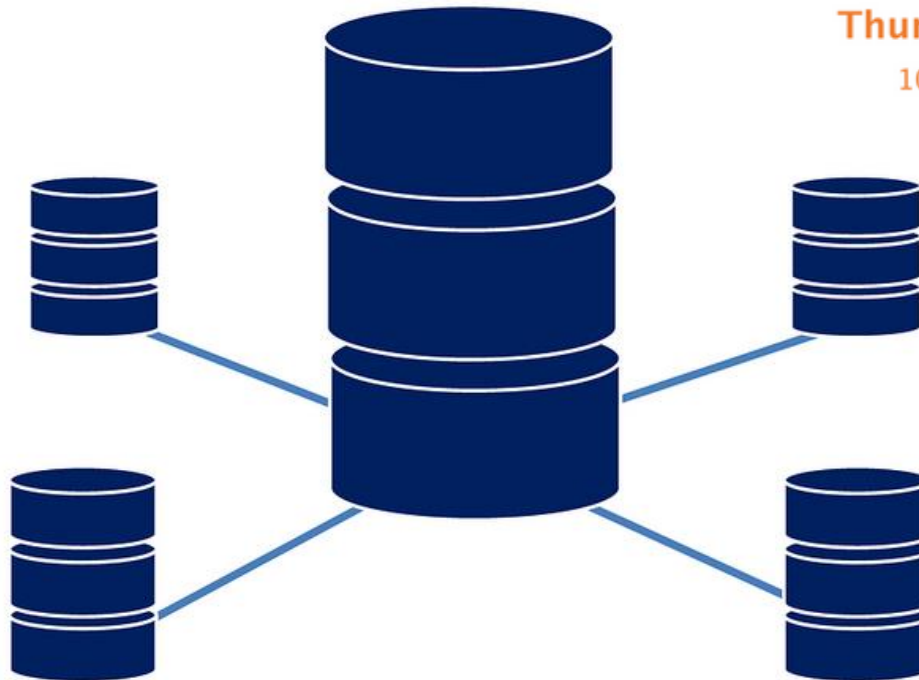
# What Are We Working On Now?

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ABR WEBINAR ON EUROPEAN REGISTRY OF  
REGISTRIES

Thursday, June 21<sup>st</sup>

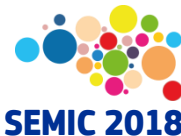
10:30 - 12:30 CET



## European Registry of Registries

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**Spoilers!!!**

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## Happy Citizens



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Iceland

Norwegian Sea

Kola Peninsula

You see interconnecting base registries is the best way to get the Iron Throne!



And they all lived happily ever after!





# ISA<sup>2</sup> programme ABR Community Page

[https://joinup.ec.europa.eu/collection/access-base-  
registries](https://joinup.ec.europa.eu/collection/access-base-registries)

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