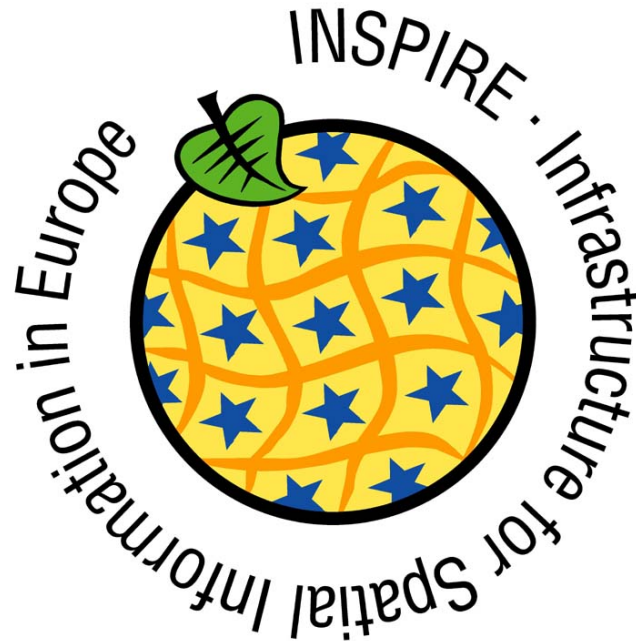




## DANISH INSPIRE IMPLEMENTATION



**Jes Ryttersgaard**  
**National Survey and Cadastre**



## **INSPIRE in a Danish Context**

**From international and national standardisation via Inspire**

**Creating awareness among producers and users**



DANISH MINISTRY  
OF THE ENVIRONMENT

National Survey  
and Cadastre

MAPS, GEODATA AND SPATIAL INFRASTRUCTURE

## INSPIRE IN A DANISH CONTEXT

DANISH MINISTRY  
OF THE ENVIRONMENT

National Survey  
and Cadastre

MAPS, GEODATA AND SPATIAL INFRASTRUCTURE

## INFRASTRUCTURE FOR SPATIAL INFORMATION IN EUROPE



ENVIRONMENT IS THE DRIVER ON EUROPEAN LEVEL





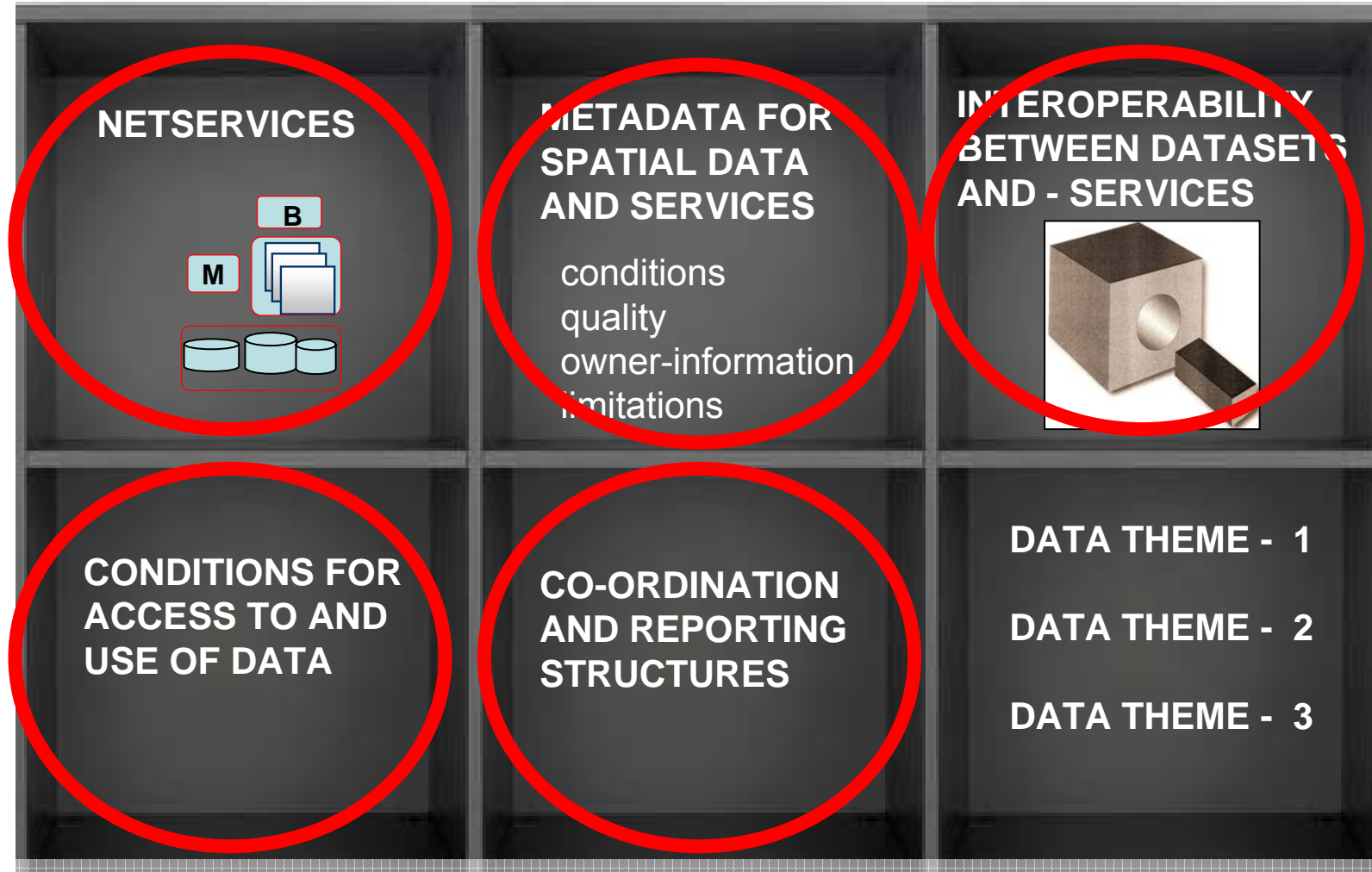
## **INSPIRE**

- An initiative taken by the environmental sector in the European community.
- Builds on national infrastructures.
- Second generation of global SDI developments
- Builds on existing digital datasets
- Starts with environmental data.

### **In a Danish context**

- INSPIRE is in line with the general Danish developments
- INSPIRE creates the legal framework for further development of Danish infrastructures for spatial information.
- INSPIRE will become the standard for public data sets.
- INSPIRE could be a facilitator for e-Government.

## GENERIC INFRASTRUCTURE FRAME





---

## INSPIRE outcome

---

A Danish geoportal

Harmonised metadata for data and services

Services for discovery, viewing, download and transformation

Harmonised rules for data access

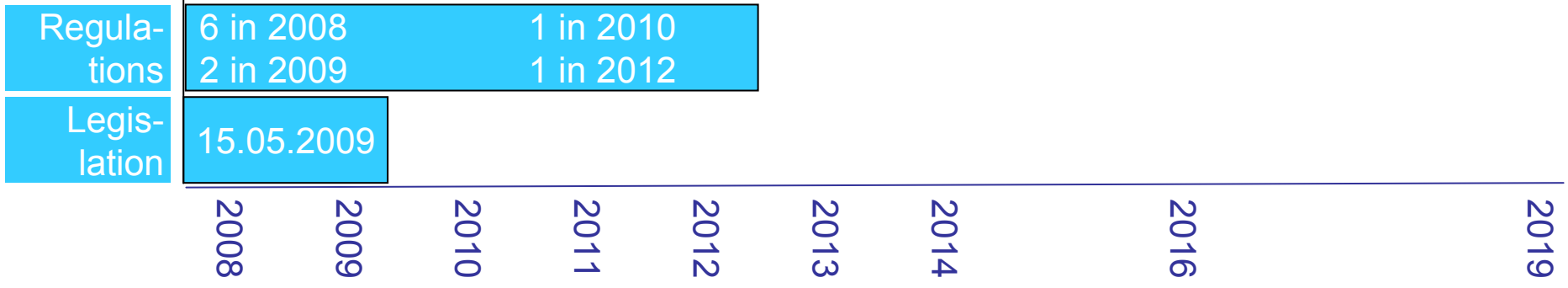
Access to 34 “environment related” data themes

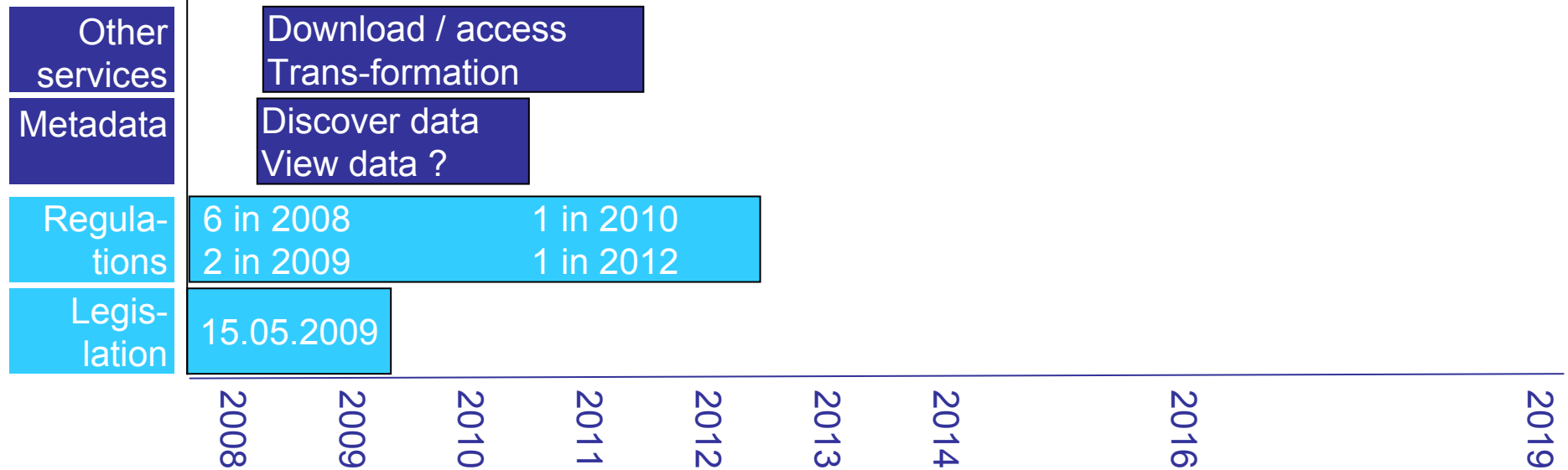
---

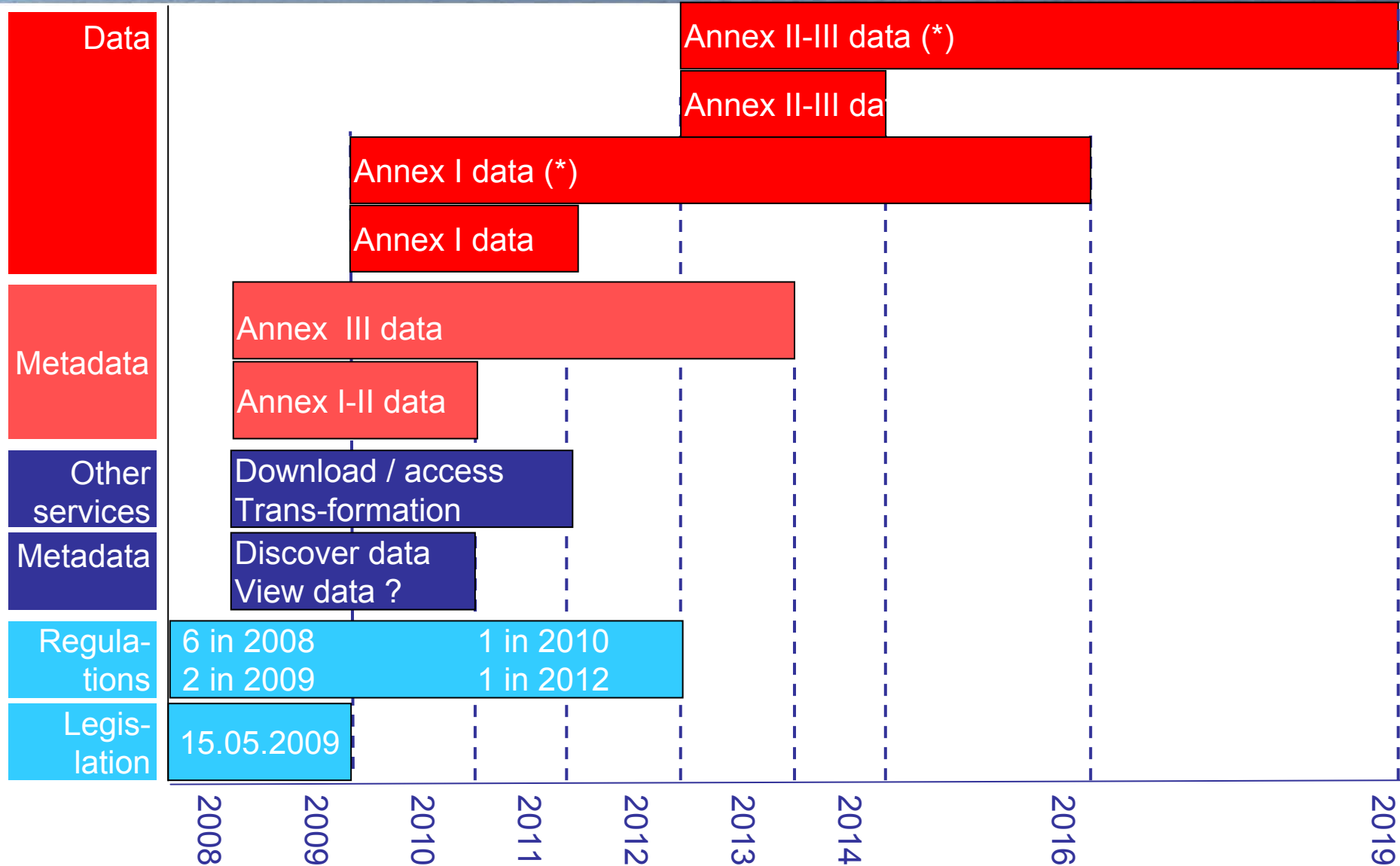


## **IMPLEMENTATION 2007-2019**











**FROM INTERNATIONAL  
TO NATIONAL STANDARDIZATION  
VIA INSPIRE**



## **E-GOVERNMENT AND INSPIRE**





## E- GOVERNMENT

### infrastructure for e-government

With e-government one becomes very much dependent

- on access to data via standardised interfaces,
- that data sets are updated regularly in accordance with approved standards,
- that nationwide data sets are available,
- that common keys exist and are maintained,
- that users and providers respects technology standards,



## eGOVERNMENT STRUCTURES

	<b>Business architecture approach</b>	<b>Infrastructure approach</b>
<b>The strategic track</b>	<b>Ministry of Finance</b> the digital taskforce public-public steering committee	<b>Ministry of Science Innovation and Technology</b> standardisation committees for data and it-architecture
<b>The operational track</b>	<b>Domains</b> domain committees	<b>Sectors</b> sector standardisation committees



## OIO architecture framework



The OIO architecture framework is the common public framework for working with architecture and standards. The framework comprises principles, methods, standards for documentation and classification of architecture work, and also a number of tools.



## OIO COMMITTEE FOR LOCATION BASED REFERENCEDATA

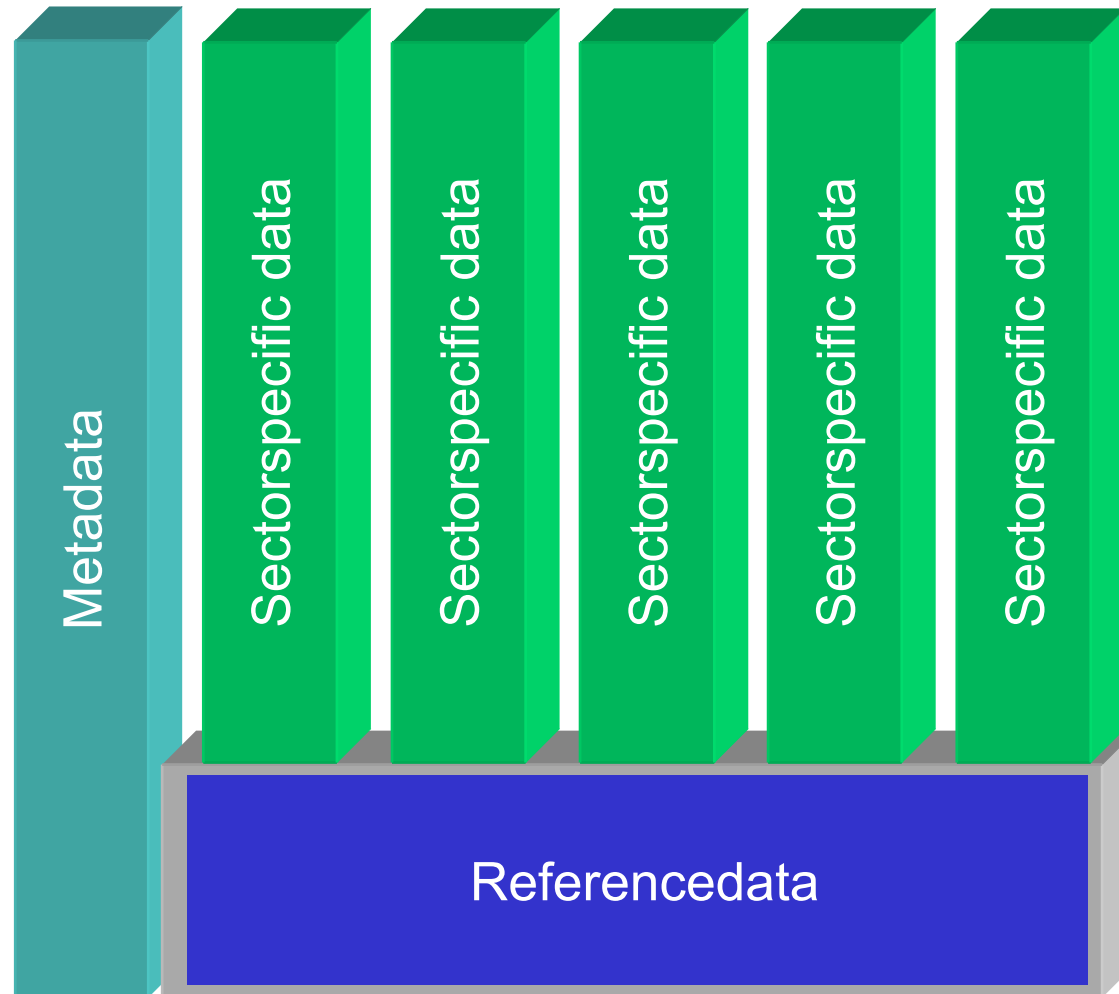
### Scope:

1. To develop OIO standards for INSPIRE annex I and II data and the belonging services.
2. To develop conceptual models for the geographic component for the remaining data
3. To identify additional reference-data

### Annex 1 og 2 data - Referencedata

Coordinatereference systems  
Geographical grid systems  
Geographical name  
Administrative units  
Transport networks  
Hydrography  
Protected sites

Addresses  
Cadastral parcels  
Geology  
-----  
Elevation  
Land cover  
Orthoimagery

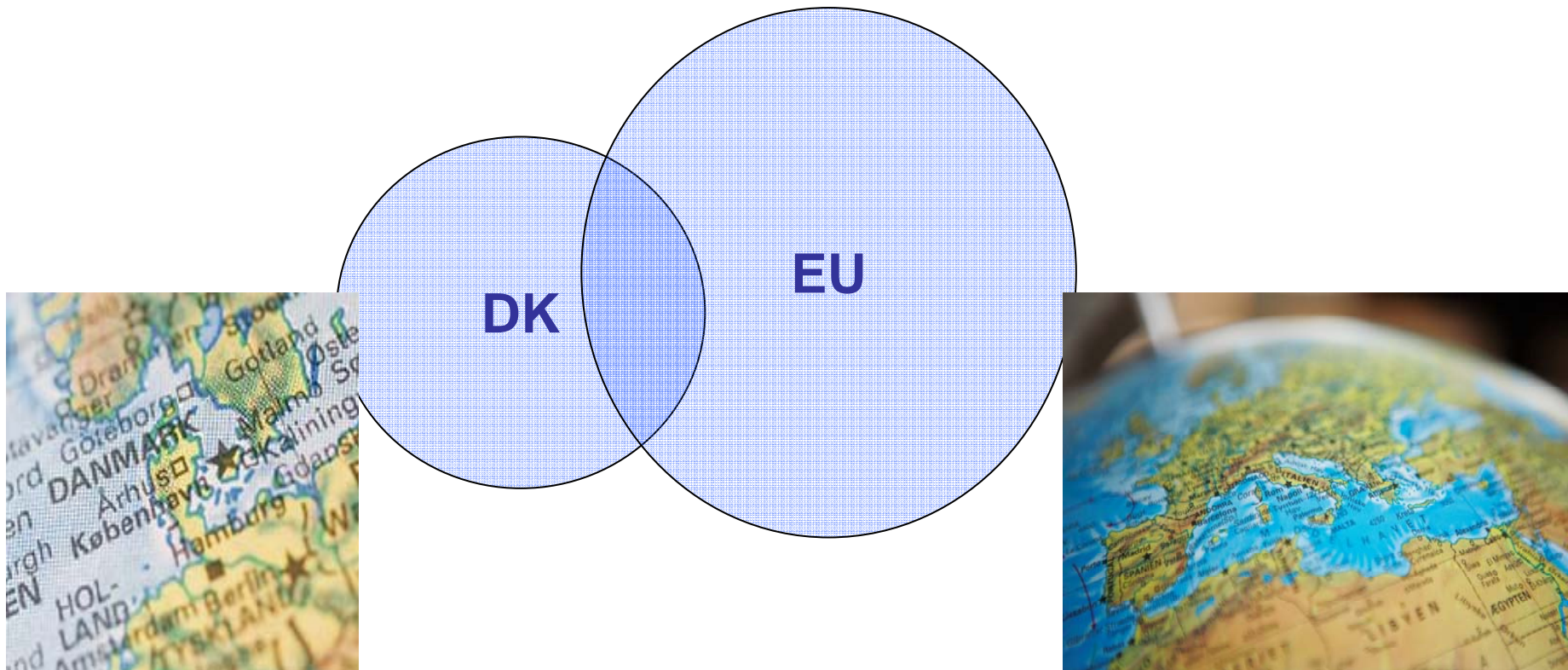


The Danish infrastructure model





## Danish and European infrastructure





DANISH MINISTRY  
OF THE ENVIRONMENT

National Survey  
and Cadastre

MAPS, GEODATA AND SPATIAL INFRASTRUCTURE

# CREATING AWARENESS AMONG PRODUCERS AND USERS



## How can we obtain widespread use of standards?

The individual user      takes standards for granted

The institutional user: through demands (eGovernment)  
financial stimulus

The industry:              if it can benefit from using standards



## How can big producers of spatial data and information be forced to use standards like ISO/TC211?

Legislation:           like Inspire and the derived laws

User demands:       interoperability  
                          terms of delivery  
                          reduced prices



## **How can big usergroups within specific sectors like environment, transportation, geology, culture, health be made interested in standards like ISO/TC211?**

Legislation

Interoperability is a precondition for eGovernment

Use of service oriented it-architecture

Easy access to data

Exchange of data without loss of information

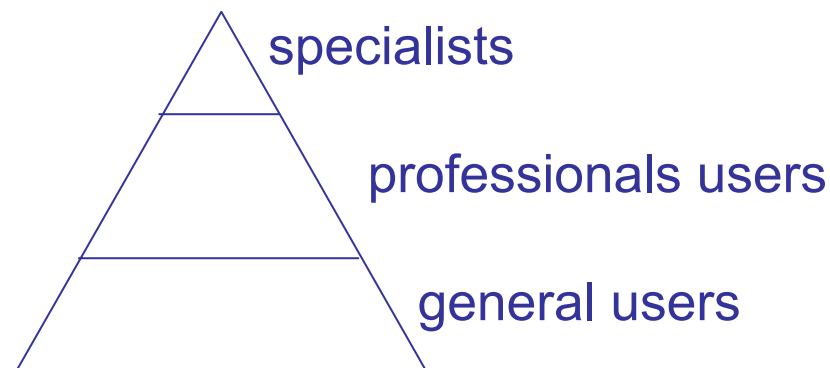
Via their system provider





## How can spatial data be made mainstream?

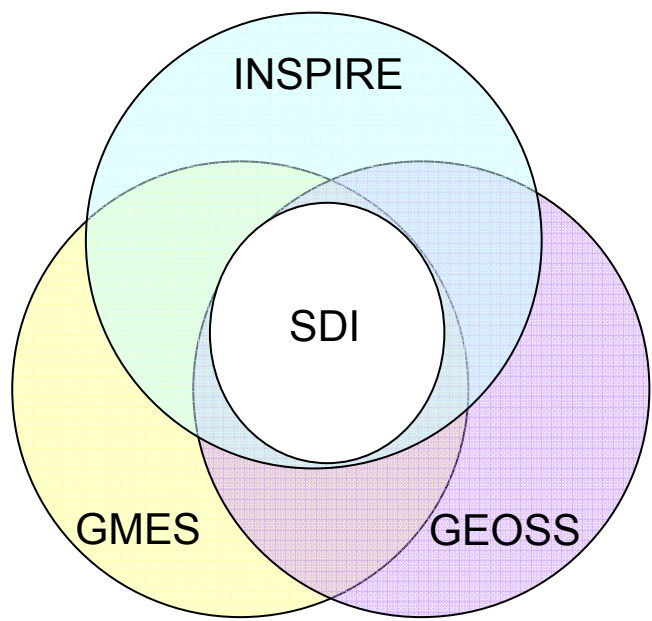
- It is necessary to bridge the possible gaps between SDI and business architecture.
- Time has come to accept that SDI is an element of Data infrastructure, or the eGovernment infrastructure
- We need a more mainstream vocabulary or perhaps different languages for different groups/users



DANISH MINISTRY  
OF THE ENVIRONMENT

National Survey  
and Cadastre

MAPS, GEODATA AND SPATIAL INFRASTRUCTURE





DANISH MINISTRY  
OF THE ENVIRONMENT

National Survey  
and Cadastre

MAPS, GEODATA AND SPATIAL INFRASTRUCTURE



DANISH MINISTRY  
OF THE ENVIRONMENT

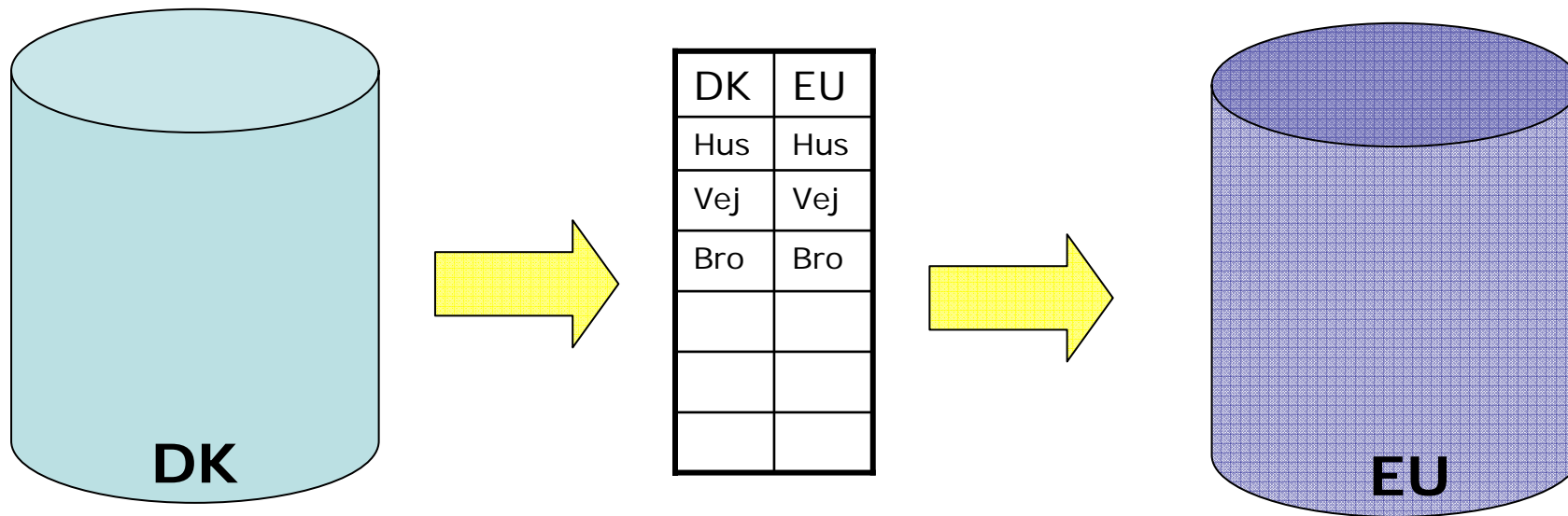
National Survey  
and Cadastre

MAPS, GEODATA AND SPATIAL INFRASTRUCTURE

## Final remarks



## Semantic transformation – on the fly







DANISH MINISTRY  
OF THE ENVIRONMENT

National Survey  
and Cadastre

MAPS, GEODATA AND SPATIAL INFRASTRUCTURE

# ORGANISATIONAL FRAMEWORK



## ORGANISATION

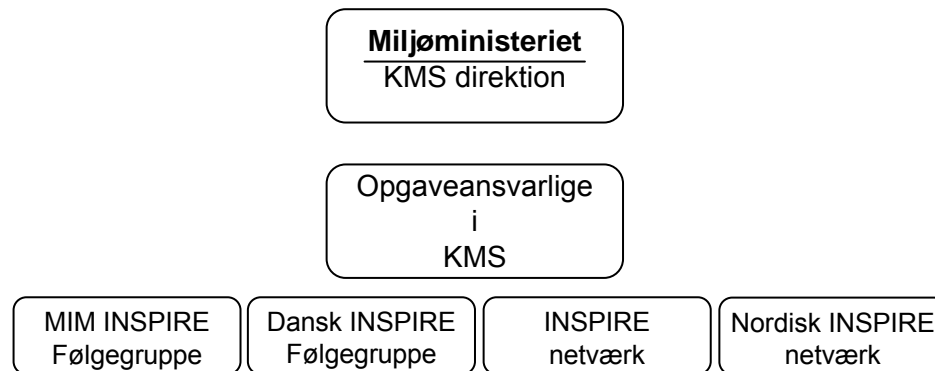
**KMS is the national contact point**

**KMS represents Denmark in the INSPIRE Committee**

**Danish INSPIRE committee**

**Danish INSPIRE network**

**Ministry of Environment working group**





## **Legislation**

**Why?**

**What?**

## **Implementing rules**

**Regulations or  
commission directives**

**Guidelines**

**from**

**FRAMEWORK DIRECTIVE**

**“How to get there”**

**to**

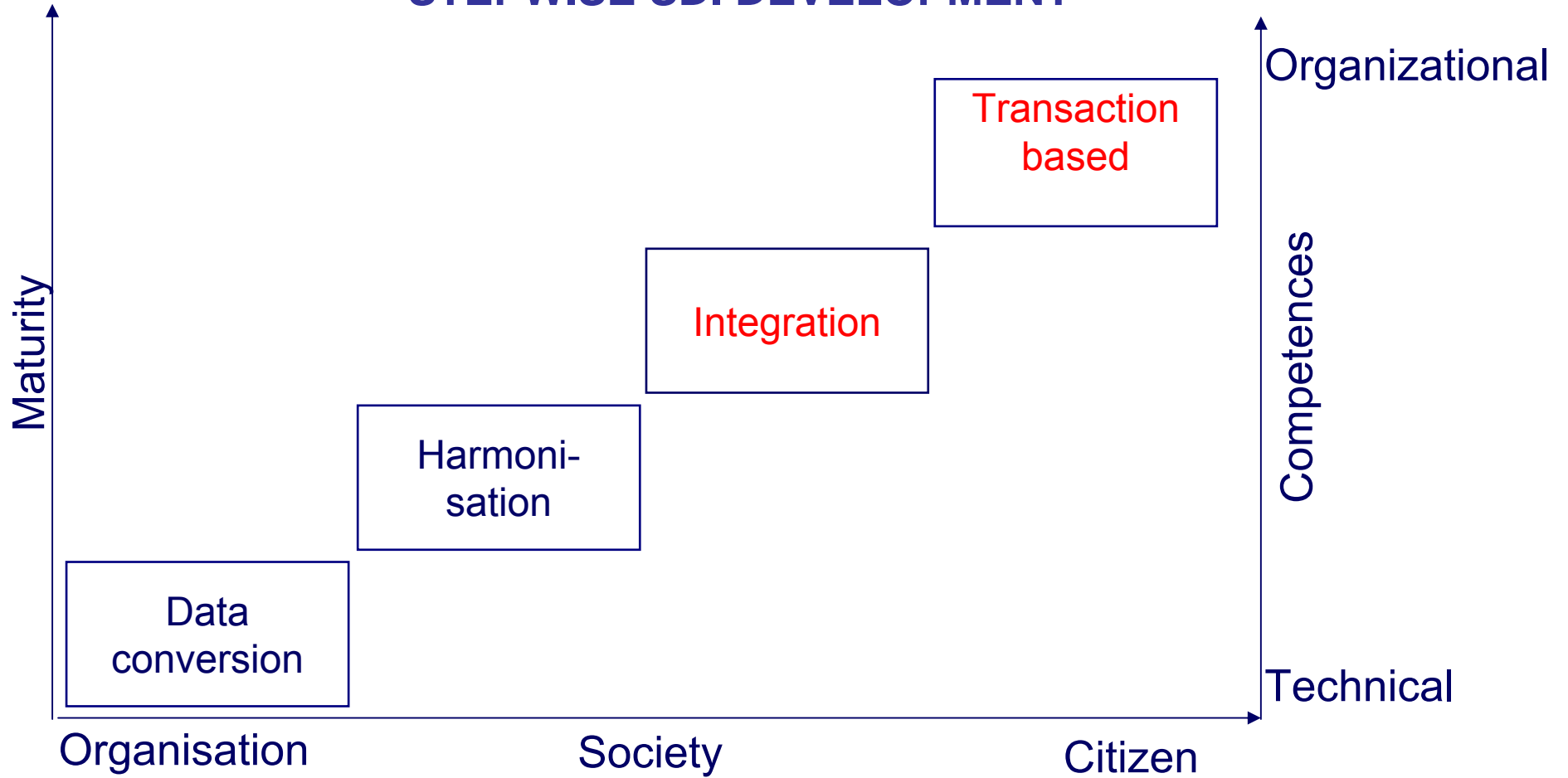
**IMPLEMENTATION RULES**

**(regulations or Commission directives)**

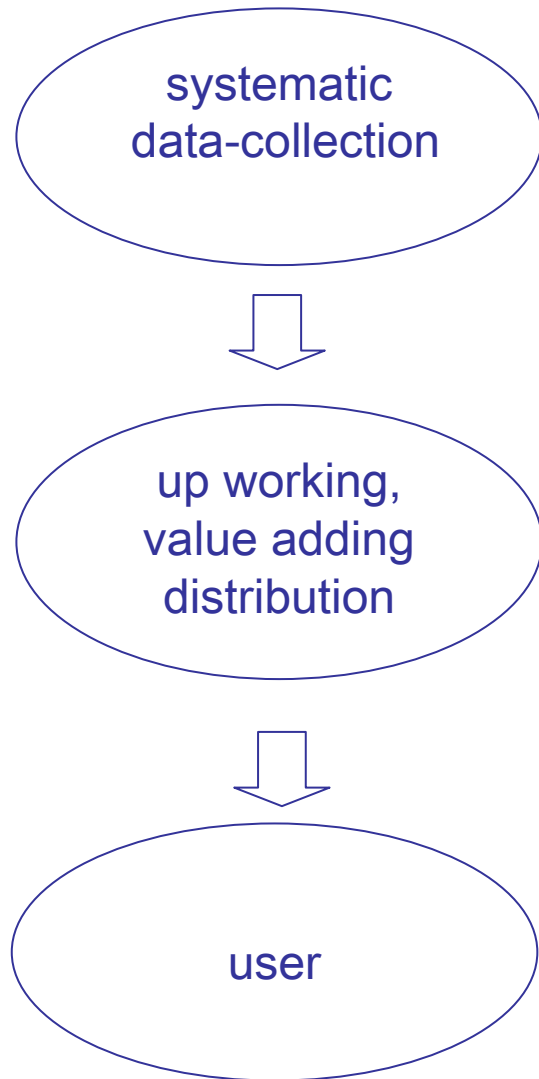
**“What to do”**



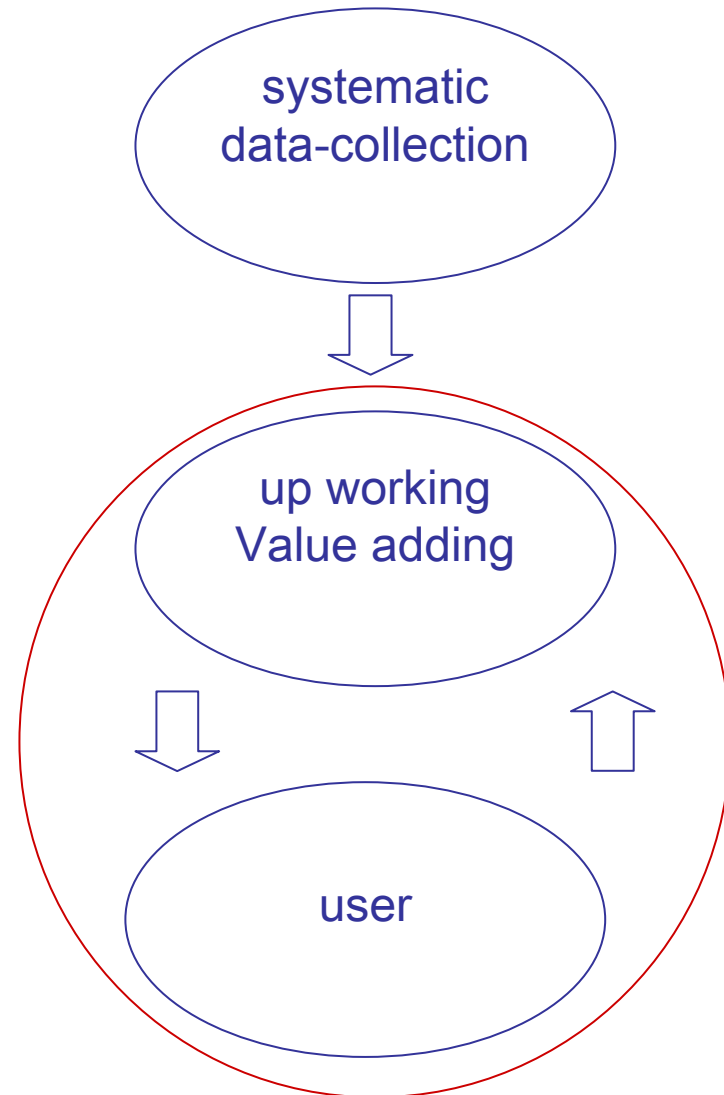
## STEPWISE SDI DEVELOPMENT



L  
I  
N  
E  
A  
R  
D  
E  
L  
I  
V  
E  
R  
Y  
C  
H  
A  
I  
N



T  
R  
A  
N  
S  
A  
C  
T  
I  
O  
N  
B  
A  
S  
E  
D







## **National solution**

Metadatasolution

Inspire-geoportal

services

semantic transformation

agreements on access to data

## **Dataadministrators**

Connection to network



## INFRASTRUKTUR KOMPONENTERNE

Infrastructure elements	eGOV	INSPIRE	FOT	Remarks
Metadata		✓	✓	
Harmonisation/ Interoperability	✓	✓	✓	
IT architecture / services	✓	✓	✓	
Agreements		✓	✓	
Reporting		✓		



# INFRASTRUCTURE COMPONENTS



## Examples on Danish spatial infrastructure components (2):

Map-services and portals

The Map-supply (5.000.000 events pr. Month)

Public Information Server (875.000 sessions pr. Year)

The Environmental Portal

Geodata-Info

New Cadastral System

New Land Registry System

Component like “Vis stedet” ( show location)



## Examples on Danish spatial infrastructure components:

WMS and WFS cookbooks etc

GML standards





## THE DANISH e-GOVERNMENT INITIATIVE (1)

- Cooperation between Government, regional and local administrations
- Became a reality in 2002
- The 2007-2010 strategy – is entitled: “Towards better digital services, increasing efficiency and stronger cooperation”

The e-government project is based on the fundamental ideas

- That the responsibility for the implementation of e-Government is at the decentralized level,
- That consensus between stakeholders is more efficient than legislation.



## THE DANISH e-GOVERNMENT INITIATIVE (2)

The present objectives are to:

- create improvements in the services to citizens and business,
- enable resources to be transferred from administration to citizen-focused service,
- Coordinate and prioritize digitalization efforts in the public sector through more binding, cross-governmental collaboration at all levels.

Status:

- number 2 in the UN e-Government survey 2008
- Denmark has demonstrated that collaboration provides a better path



## **CITIZEN-FOCUSED E-GOVERNMENT**

Look at the world through citizens' eyes,  
not the government's nor the industries'



## THE INSPIRE INFRASTRUCTURE DEFINITION

<b>NETWORK SERVICES AND TECHNOLOGIES</b>	<b>METADATA FOR SPATIAL DATASETS AND SERVICES</b>	<b>INTEROPERA- BILITY BETWEEN DATASETS AND SERVICES</b>
<b>AGREEMENTS ON SHARING, ACCESS AND USE</b>	<b>COORDINATION AND MONITORING</b>	<b>DATATHEME - 1 DATATHEME - 2 DATATHEME - 3</b>



---

**Do we have a Danish spatial data infrastructure y/n?**

---

The answers are:

Yes - because of the many existing infrastructure components

No - because of the lack of a legal basis






---

**Consensus based development**

---



## INFRASTRUCTURE COMPONENTS

Infrastructure Components	Level of readiness	Activity
Metadata		“Geodata-info” based on ISO standards INSPIRE compliant
Harmonization/ Interoperability		FOT data-specification; GML standard Reference-data committee; OIO-datastandards
IT architecture and services		OIO – It standards; SOA; WMS, WFS KMS map-supply; various portals
Conditions for use		In a preparation phase
Co-ordination and Reporting Structures		Provisional co-ordination structure in place.