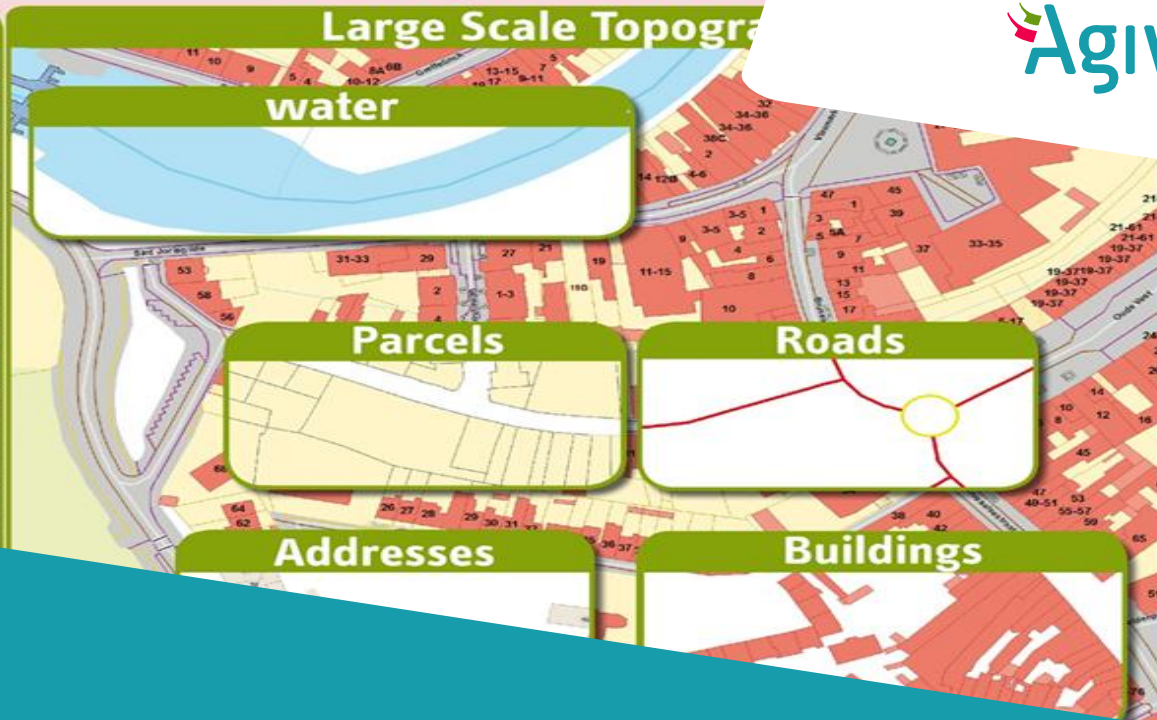


Terrain



Large Scale Topography



water



Parcels



Roads



Addresses



Buildings



Persons



Enterprises

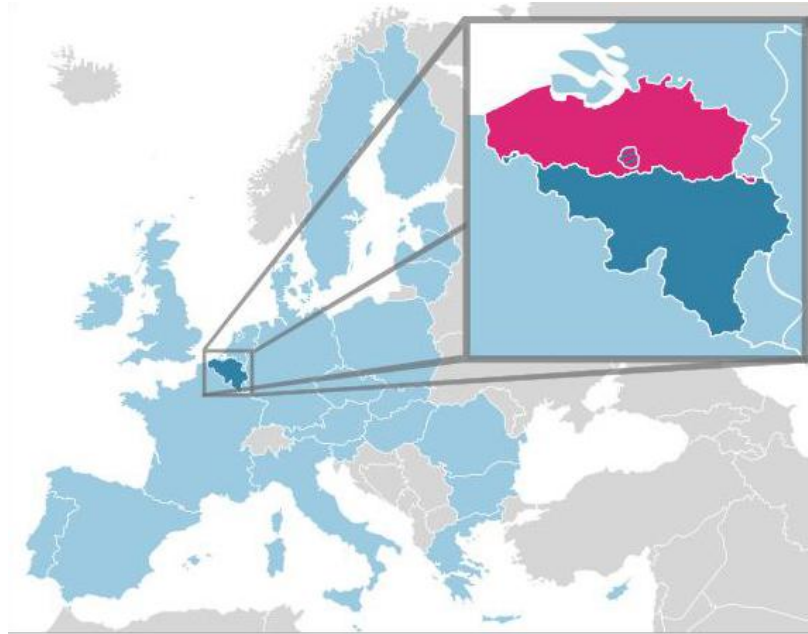


Geographical Base Registries for Flanders

Layout

- Geographical Base Registries for Flanders
 - FGIA (Flemish Geographical Information Agency)
 - Project 'Geographical Base Registries'
- Data Modelling Process
 - Principles
 - Modelling rules
 - Model-driven architecture
 - Use of INSPIRE
- Conclusions

SDI-Flanders - FGIA

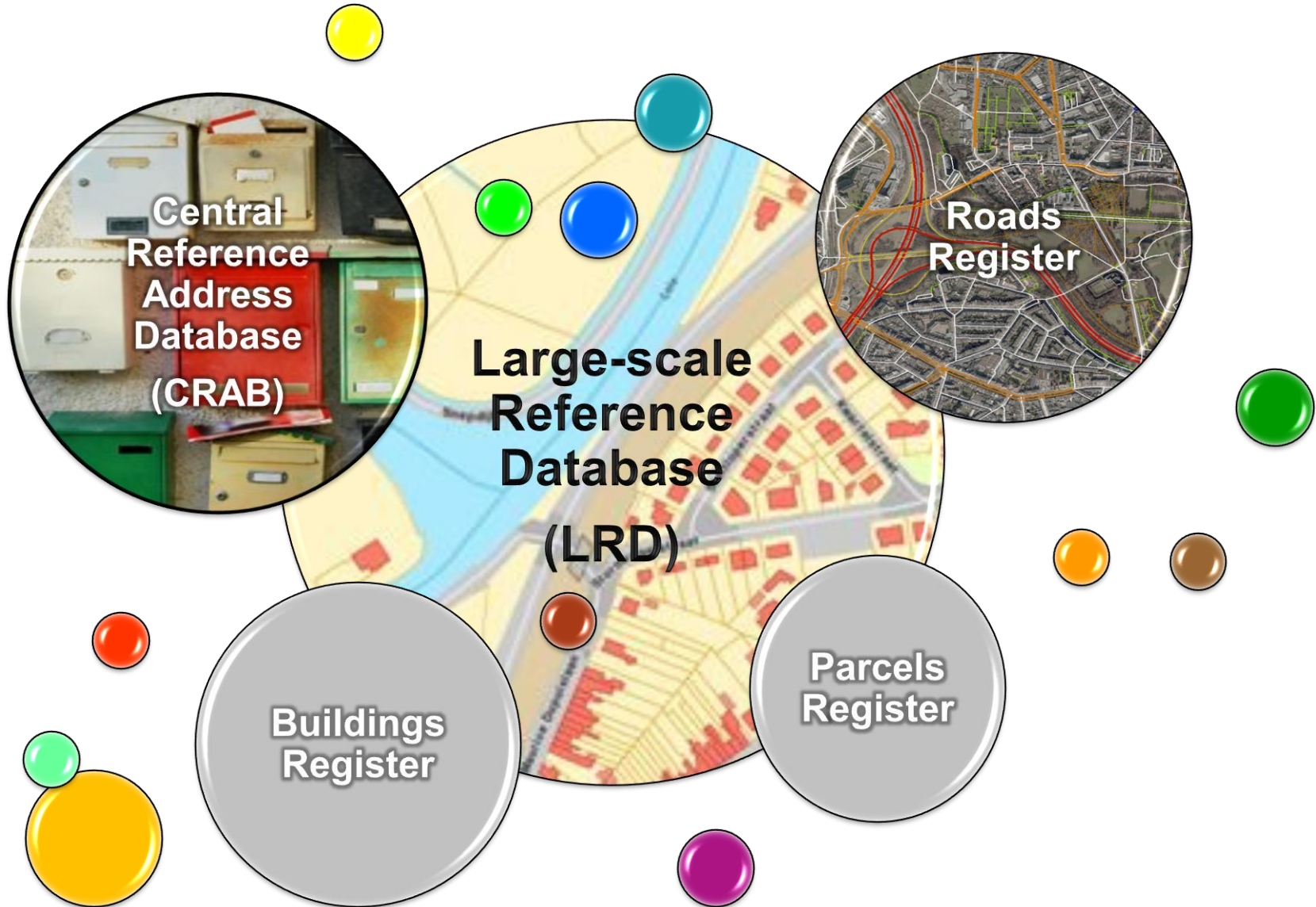


SDI-Flanders is a collaborative framework in order to develop and implement a sound communication and management system for geographical information in Flanders

Partnership between Flemish public authorities (local and regional)

The Flemish Geographical Information Agency (FGIA) is the executive body of the SDI-Flanders

Authoritative data FGIA



Drivers for base registries

Data operate in independent silos

- Well established, widely used
- Growing difficulties with cross theme data management

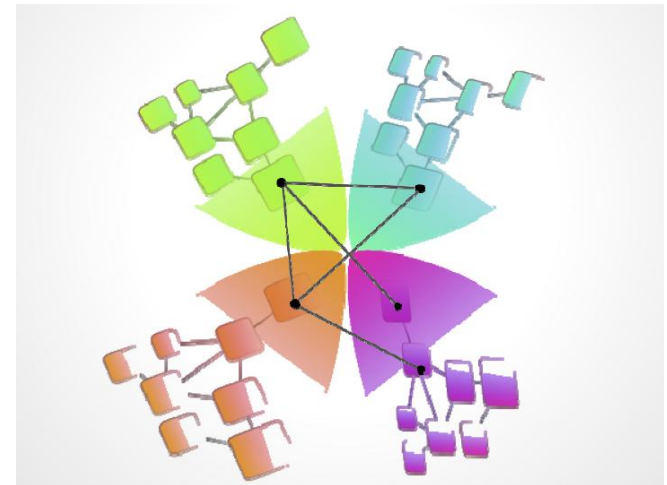
Need for a buildings register

- Building information in both CRAB and LRD

Need for 'linked data'

- Data work together
- Unambiguous objects and relations
- Cfr ISA: cross sector interoperability

Data harmonisation INSPIRE

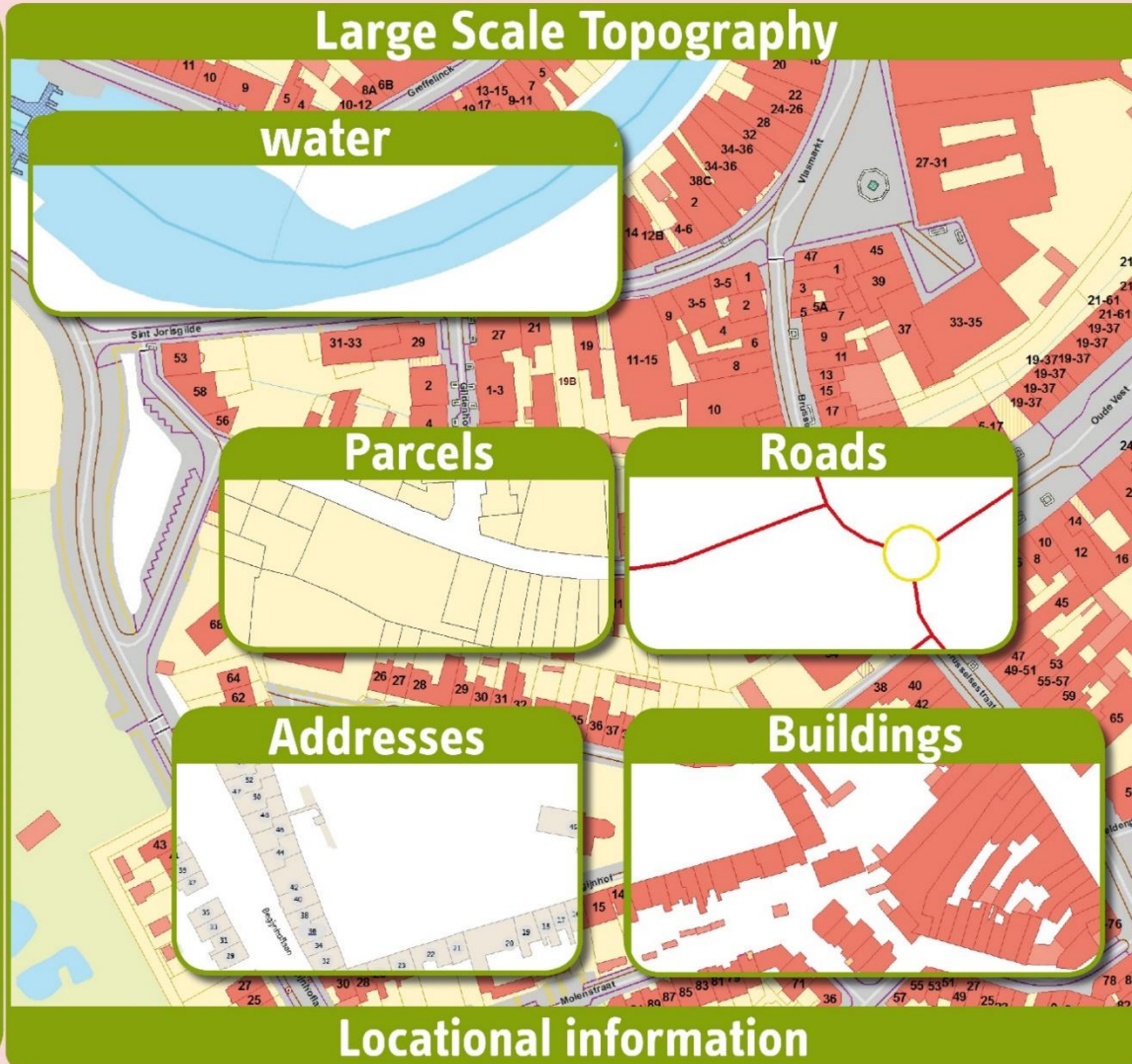


Basic Registries for Flanders

Terrain



Large Scale Topography



Persons



Enterprises



Definition

Base registries are authoritative (geographical) data sources

Base registries have an important social relevance and are being used within relevant business processes of the government

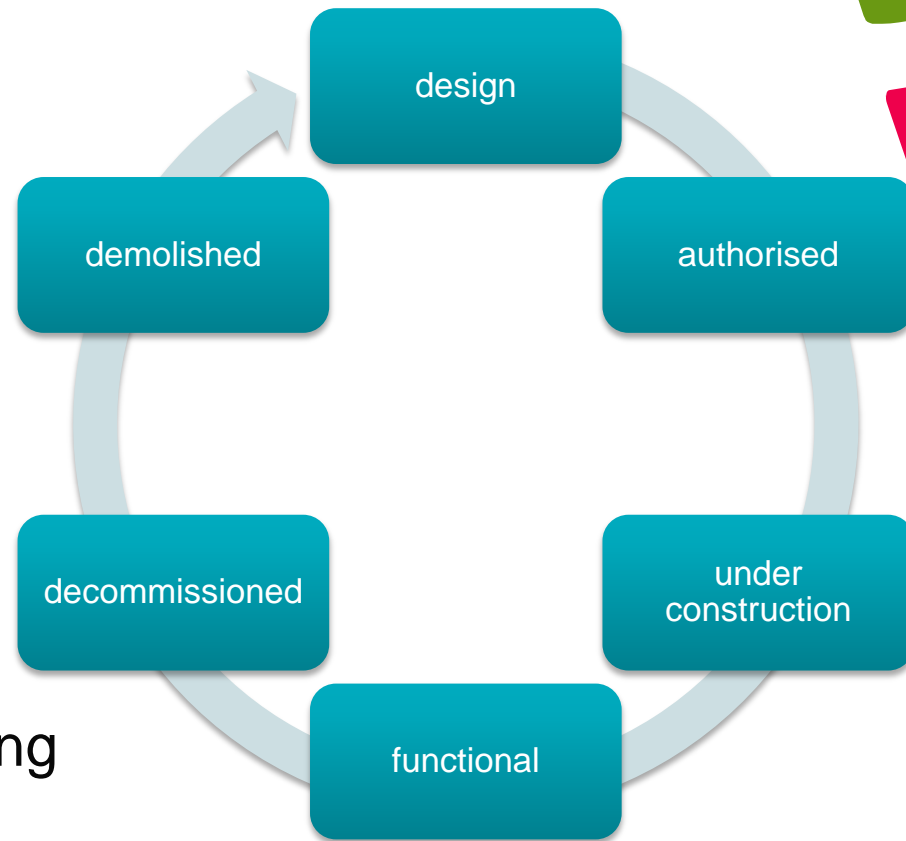
Base registries are part of a semantic coherent system of objects and relations

Base registries describe the (real world) lifecycle of objects

Base registries are modelled according to the 'Modelling rules for basic registers'

Concept

- Registers will only contain core information
- Data in registers work together
- Persistent identifiers / lifecycle
- Shared updating effort
 - FGIA – municipalities - partners
- Compulsory use and error reporting
- Free open data



Work packages

Business case

- Cost benefit analysis / scenarios

Data model

- Uniform methodology
- Meets known user requirements
- Compliant with INSPIRE data specifications / ISA core

Architecture

- Implements the data model into databases
- Makes data operations manageable
- Is flexible and extensible

Shared updating effort

- Organised for the whole system of basic registers
- Based on agreed business rules

Data modelling process

- Principles
- Modelling rules
- Model-driven architecture
- Use of INSPIRE

Principles of the modelling process

Common methodology for distribution of geodata

Methodology
is model
based

Coherent
information
models

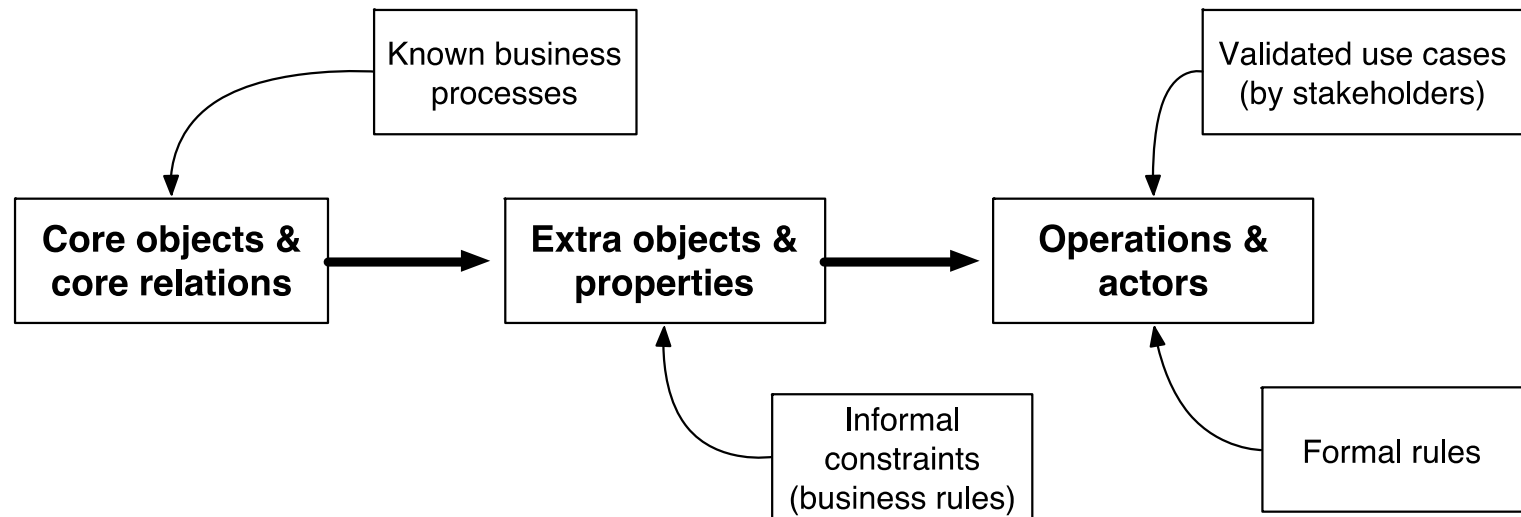
'Inspired' by
INSPIRE
models

Modelling rules

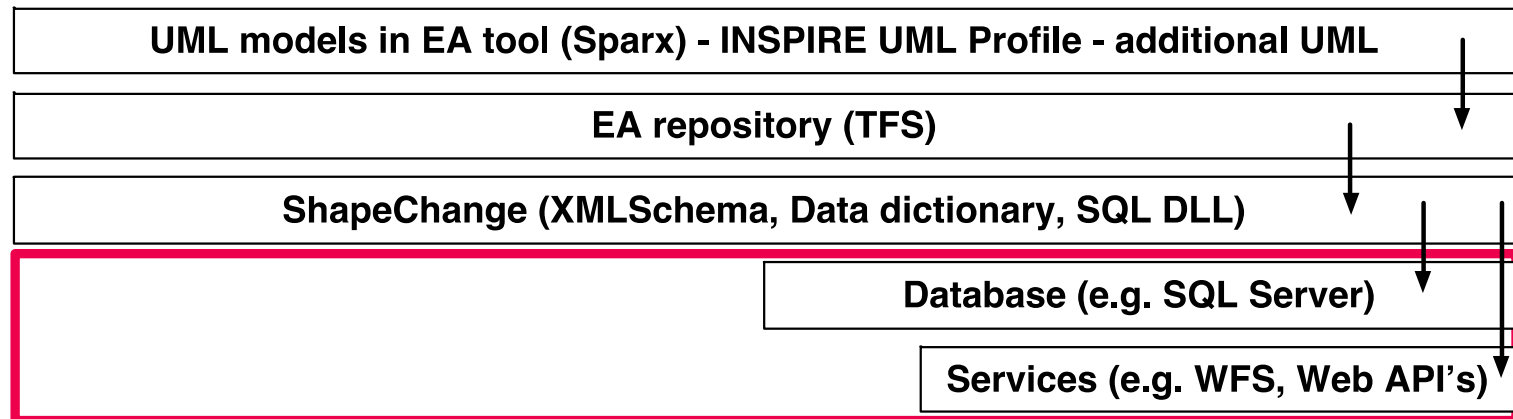
- General guidelines for data modelling
 - “Inspired” by Danish “Modelregler for grunddata”
 - Specify the application of standards
 - What standards? ISO/OGC/UML/INSPIRE/ISA ...
 - How to apply?
 - Add specific guidelines for base registries in Flanders
 - Core objects (with full lifecycles), core relations, objects, relations, ...
 - Naming conventions
- Iterative process
 - 1st version published
 - Will be tested during the modelling process
 - Can be modified if need occurs



incremental modeling process



Data models → **Service models**

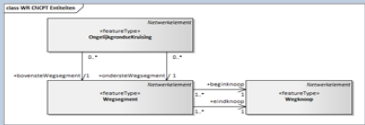


Our MDA in a diagram

Real world

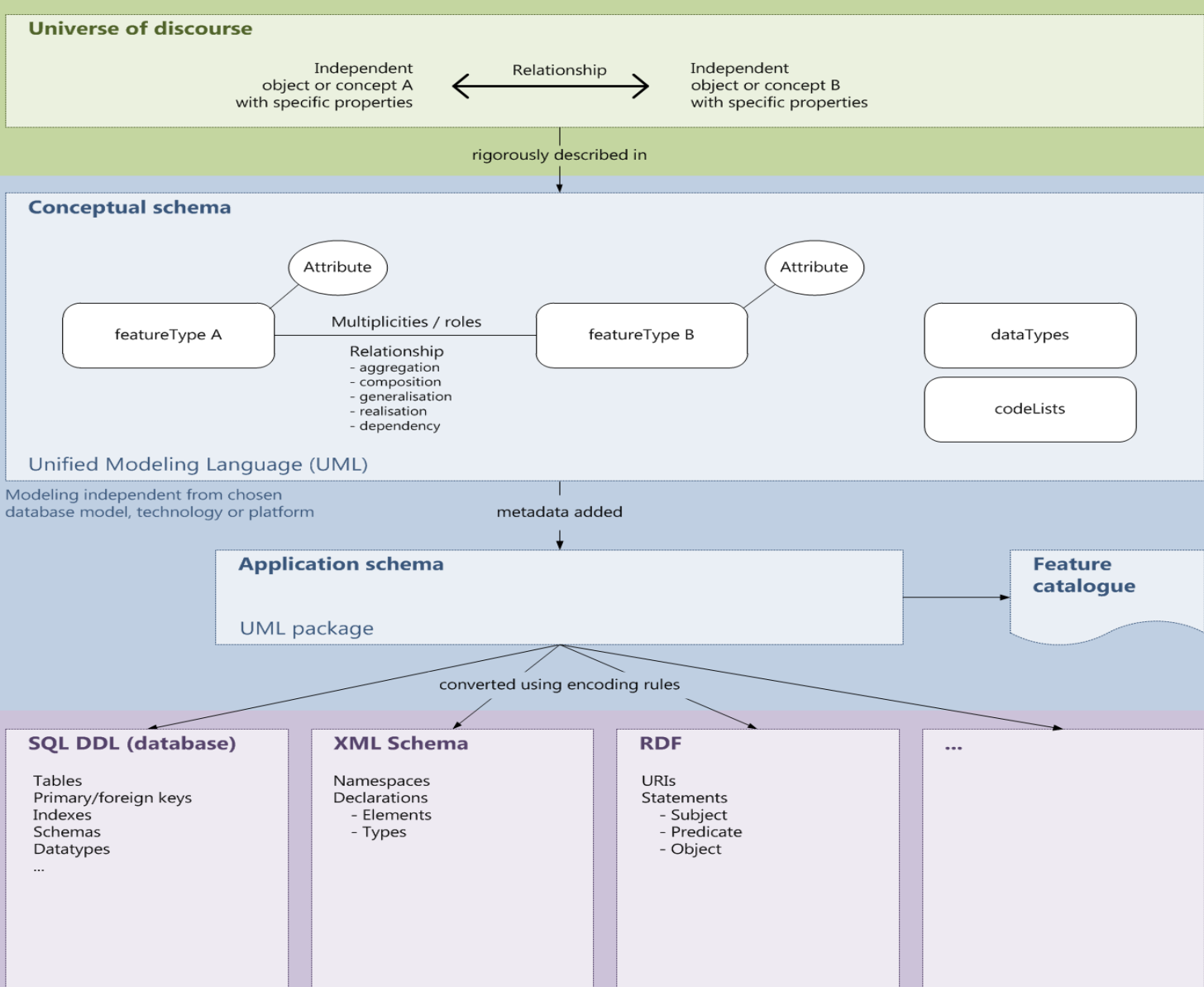


Modeled world



Registered world

	wegsegmentID	beheerder	begintijd
1	1	71022	2014-02-20 14:35:32 237
2	2	-8	2014-02-20 14:35:32 237
3	3	-8	2014-02-20 14:35:32 237
4	4	AWV712	2014-02-20 14:35:32 237
5	5	71022	2014-02-20 14:35:32 237
6	6	AWV712	2014-02-20 14:35:32 237
7	7	71022	2014-02-20 14:35:32 237
8	8	AWV716	2014-02-20 14:35:32 237



Use of INSPIRE

■ Data specifications

- Semantic compliance with INSPIRE data specifications
- No direct reuse of INSPIRE's data models
 - Own semantics can be more specific
 - Data models are in Dutch
 - More elegant inclusion of specific user requirements



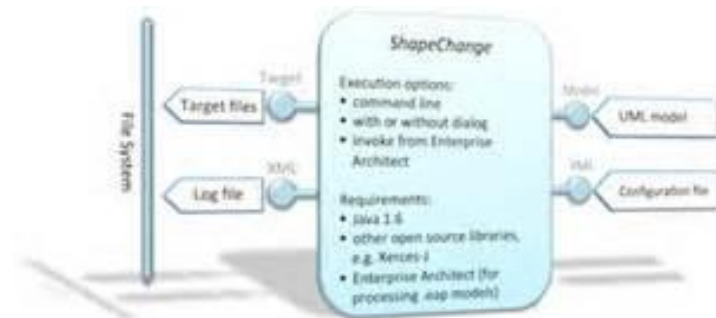
■ Data modelling

- Use of INSPIRE UML profile



■ Tools

- Enterprise architect (data modelling in UML)
- ShapeChange (conversion to XML schema, feature catalogue)



Conclusions

- Reorganisation of information into registries is a business requirement
- Use of INSPIRE to suit our purpose
 - Gets the work done
 - Semantics/data specifications
 - Data modelling methodology
 - Tools (enterprise architect/ShapeChange)
- INSPIRE harmonisation is a means to an end, not an obligation

