



European Spatial Data Infrastructure Network

How to Create a European INSPIRE Compliant Data Specification

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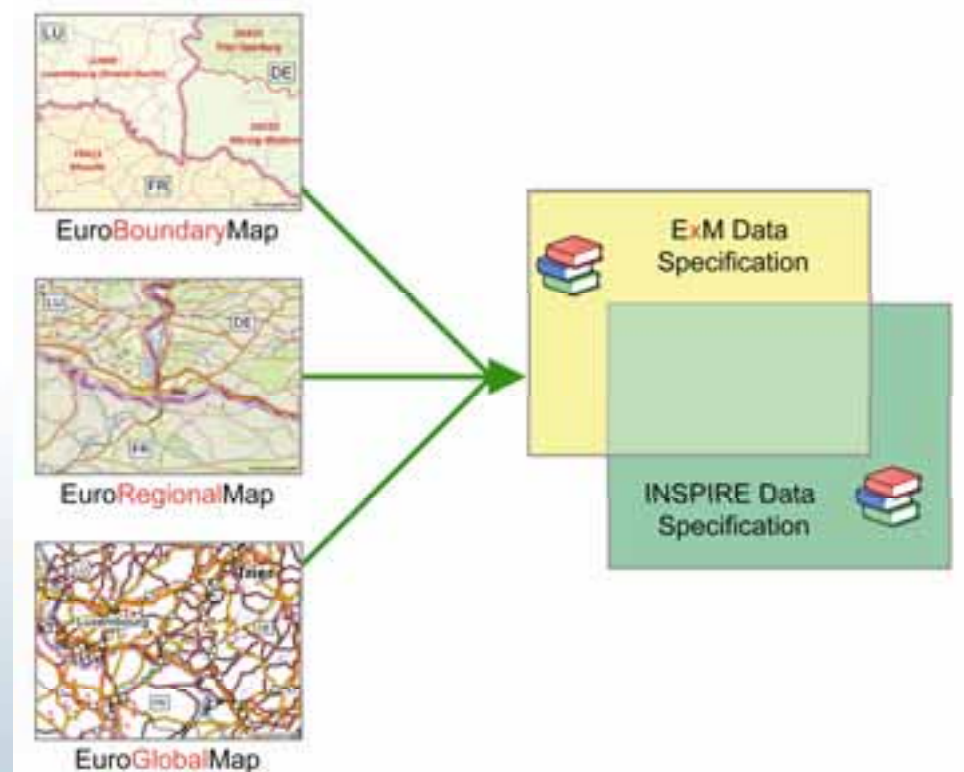


ESDIN Key Goals

- Further the ambition of the European Commission to create a European Spatial Data Infrastructure (ESDI) building on the National Spatial Data Infrastructures (NSDI) in Member States.
- Help member states, candidate countries and EFTA States prepare their reference data for INSPIRE related to Annex I themes in coordinate reference systems, administrative boundaries, transport network, cadastral parcels, hydrography and geographical names
- Improve data access to partners data by **implementing and testing services based on distributed service architecture**
- As a results project will provide the **Data Specifications (ExM)** as a set of profiles of the INSPIRE Data Specifications for large, medium and small scales
- Build a best practice network of all related stakeholders

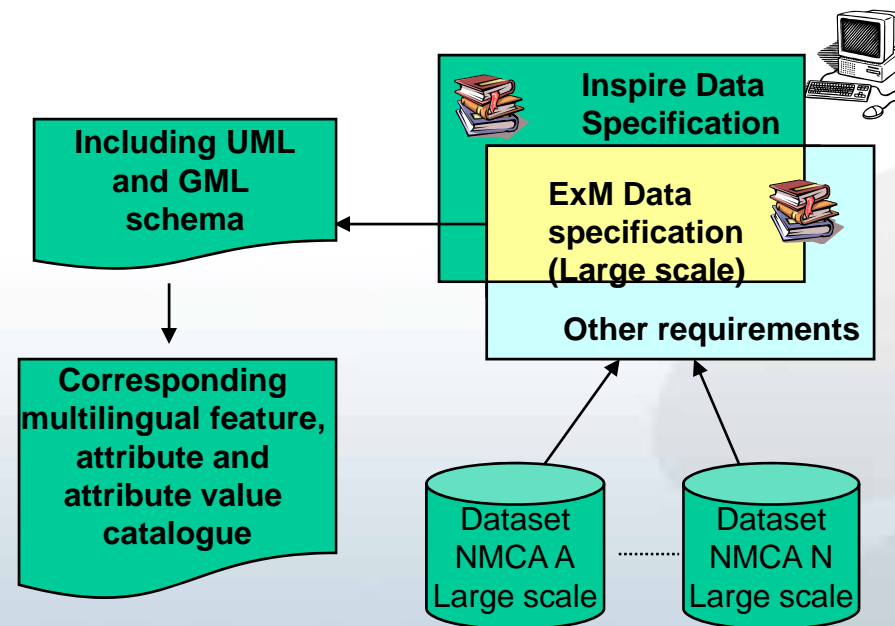
ExM Specifications and Guidelines (1)

- EGM/ERM/EBM specifications migrated into framework of the INSPIRE Data Specifications
 - ExM Data specification (medium/small scale)



ExM Specifications and Guidelines (2)

- National specifications migrated into framework of the INSPIRE Data Specifications
 - ExM Data specification (large scale)



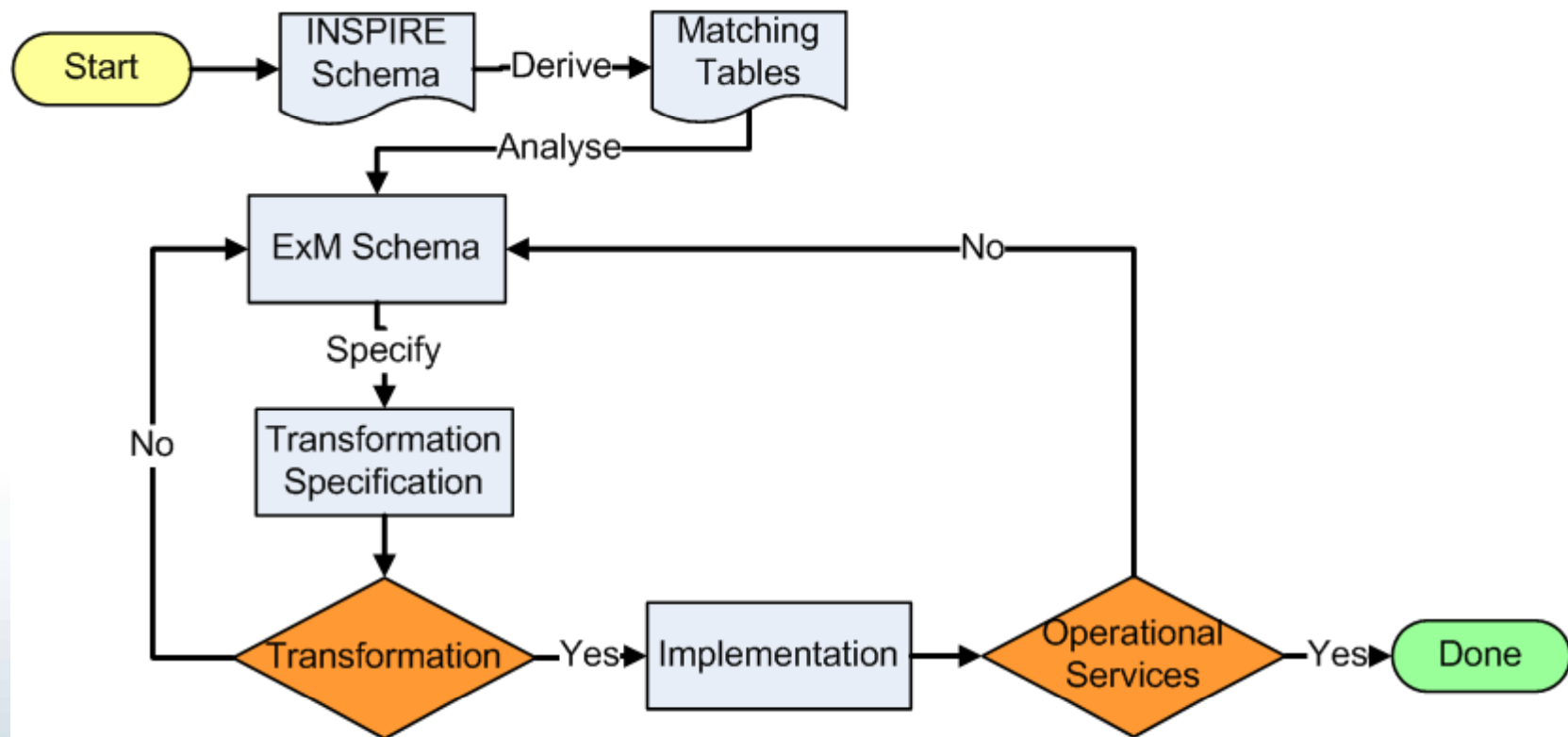
ExM Specifications and Guidelines (3)

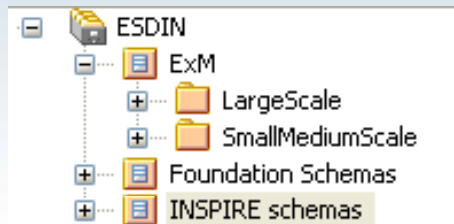
- General Guidelines and rules completed by developed scripts and tools for Edge-matching and Map generalisation
- General specifications and guidelines for sustainable maintenance at the European level for Stable Unique Identifiers, Incremental update delivery and Geo Rights Management services
- Data policy and pricing guidelines
- Prepare guidelines for the creation of discovery metadata and data evaluation
- Develop a quality model

Pan-European User Requirements

- Geographic extent beyond EU27
 - Strongly desired: EFTA, candidate and accession countries
 - Asset: Balkan countries, Ukraine, Belarus, European part of Russia
- Harmonised spatial resolution and accuracy
- Data structure
- Data delivery
- European-wide classifications for
 - Roads
 - Watercourses
 - Settlements

Methodology





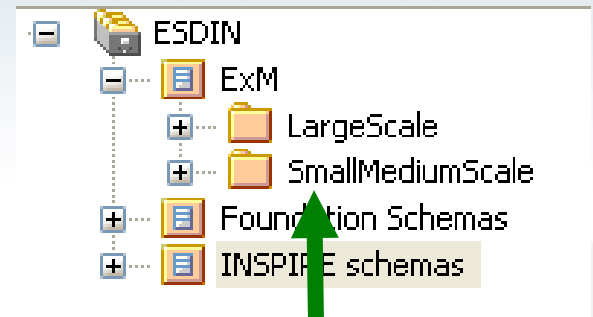
ShapeChange

- Geographical Names Mapping Table_analysis.xml
- AdministrativeUnits Mapping Table_analysis.xml
- Road Transport Network Mapping Table_analysis.xml
- Railway Transport Network Mapping Table_analysis.xml
- Hydro - Physical Waters Mapping Table_analysis.xml
- Hydro - Network Mapping Table_analysis.xml
- Common Transport Elements Mapping Table_analysis.xml
- Cable Transport Network Mapping Table_analysis.xml
- Air Transport Network Mapping Table_analysis.xml
- Addresses Mapping Table_analysis.xml
- CadastralParcels Mapping Table_analysis.xml
- Water Transport Network Mapping Table_analysis.xml
- Sea Regions Mapping Table_analysis.xml
- StatisticalUnits Mapping Table_analysis.xml
- Energy Resources Mapping Table_analysis.xml
- Land Cover Mapping Table_analysis.xml
- Natural Risk Zones Mapping Table_analysis.xml
- Utility and Governmental Services Mapping Table_analysis.xml



Main themes

Candidate themes



Analyses of the matching tables

AdministrativeUnits Mapping Table_analysis.xml

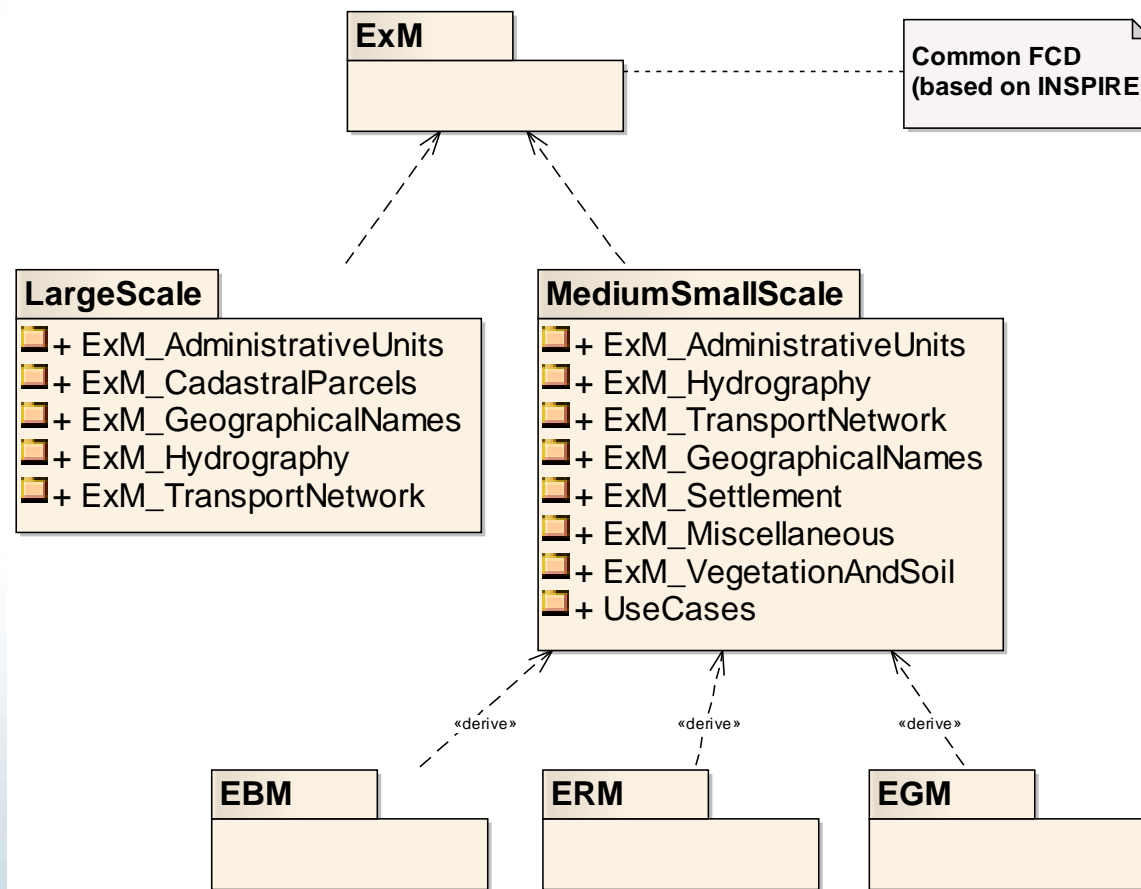
	A	B	C	I	J	K	L	M	N	O	P	Q	R	S	T	U	
1	Application Scher																
2	Type	Documentation	Attribute Association	Norway	Re ma	Sweden	Re mar	Denmark	Rem arks	France	Rem arks	Netherla nds	Re mar	Finland	Re mar	ExM	
3	ResidenceOfAuthority	Data type representing the name and position of a residence of authority.		1 to 1				Easy		Easy	Choic e to			Not available		X	
4			name	1 to 1			1 to 1		Easy								X
6			geometry	1 to 1		Difficult	BEBT ATTX	1 to 1		Easy							
6																	
7	AdministrativeUnit	Unit of administration where a Member State has and/or exercises jurisdictional rights, for local, regional and national governance.		Multiple				1 to 1		Difficult	Highe r level					X	
8			geometry	Easy		Difficult	Kolla Signa	1 to 1		Easy	1 to 1 for comm			lowest level: difficult,			X
9			nationalCode	1 to 1		Easy		Easy		Easy	Easy			lowest level: easy, other levels: not available			X
10			inspireId	Easy		Easy	Har ar det lagra ti Signa?	1 to 1		Difficult	ID exists only on communes (lowest level). From this ID, it is easy			not available			X
11			nationalLevel	Easy		Easy		Easy		Easy	Attrib ute exists only on			lowest level: easy, other levels: not available			X
	nationalLevelNa	Easy		Easy		Easy		Easy	Does not			lowest			X		

General Principles

- Extensions shall not
 - Change the specification but normatively reference it with all its requirements
 - Set any additional requirements that break any requirement of the INSPIRE data specification
- Extensions may
 - Add new application schemas importing INSPIRE or other schemas as needed
 - Add new types and constraints in the new application schemas
 - extend INSPIRE code lists if not centrally managed
 - Add portrayal rules

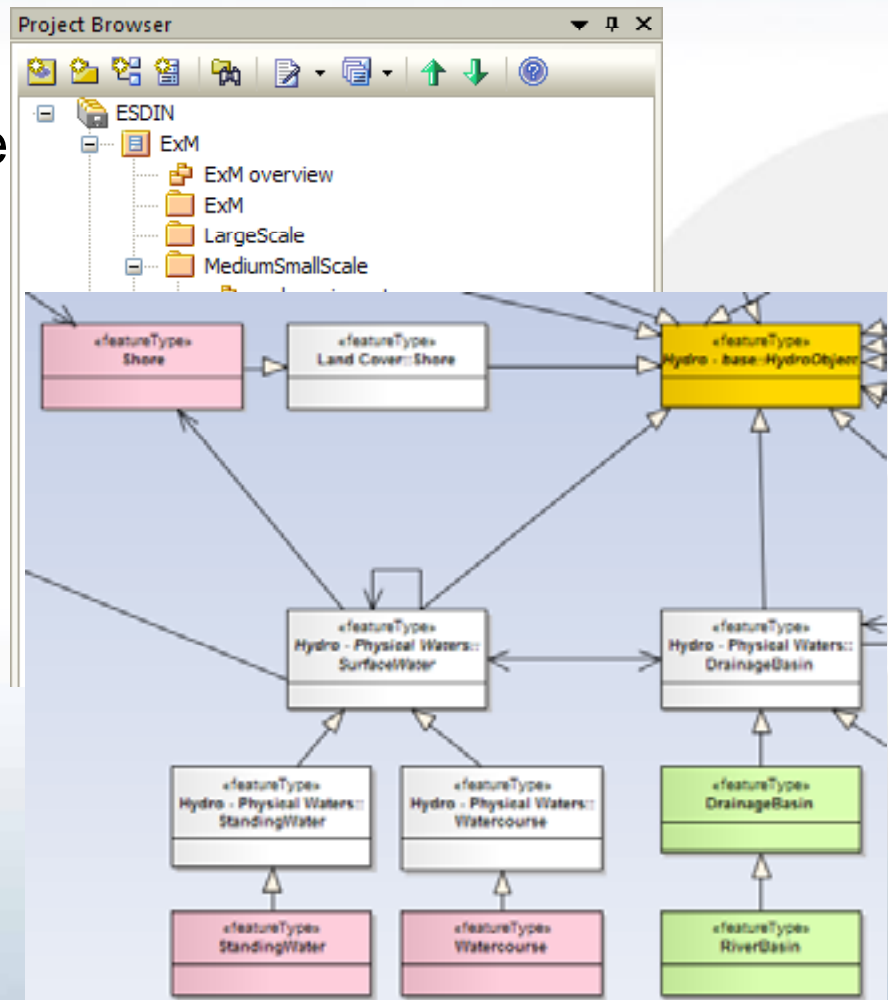


UML Model - Overview

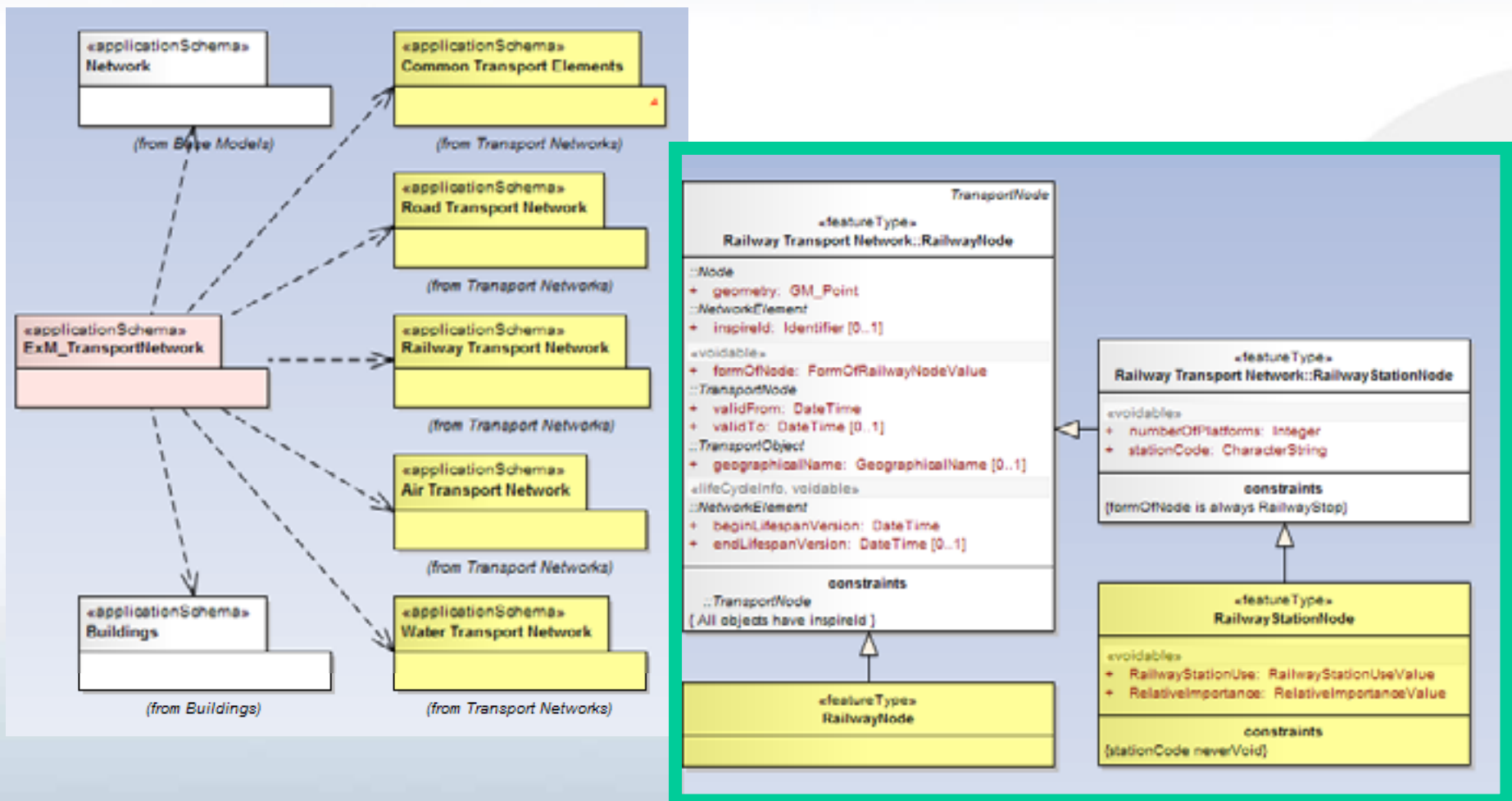


How to read the ExM model

- 1 application schema per theme
- Per application schema
 - Overview
 - Feature Types
 - codeLists
 - Detailed views for HY and TN
- ExM features marked
 - Red = mandatory
 - Green = optional



UML Model - detailed



Results

- facilitating the interoperability of topographic and administrative reference data according to the requirements set in the INSPIRE directive and to other user requirements at the European and global levels
- conceptual data model for creating harmonised cross-border, cross-theme and cross-resolution pan-European reference data from national contributions
- base for the definition of future user-oriented pan-European data services and products of EuroGeographics
- aggregation of data in a more cost effective and efficient way within a co-ordinated production and maintenance program for the EuroGeographics product range

ExM Added Value

Pan-European Products

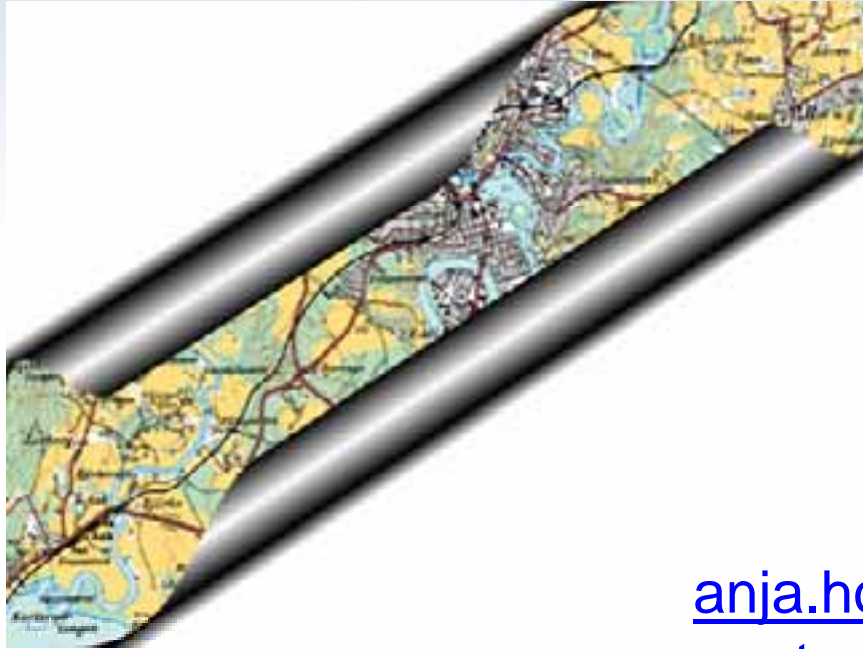
- Experience of real products
- Cross-border consistency
- Cross-theme consistency
- Homogeneous levels of details
- European classification

INSPIRE Specifications

- INSPIRE expertise
- Feature Concept Dictionary
- Glossary
- Unique Identifiers and temporal attributes
- Multilingual aspects
- Consistent network model

Open Issues

- General
 - To discuss and agree on the data content
- Technical
 - To resolve UML modelling issues
 - To provide a physical implementation of the data model



Any questions?

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Session	Advantages of ArcGIS Spatial Data Infrastructure Interoperability and Advanced Technology
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Date	Thursday, July 15 th
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Time	10:15 AM – 11:30 AM
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Room	28D
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