



Work package 6

Road Data Specification Framework

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Agenda

- Background and prerequisites
- Deliverables
- The first report
- Preliminary recommendations
- Questions and comments



Background

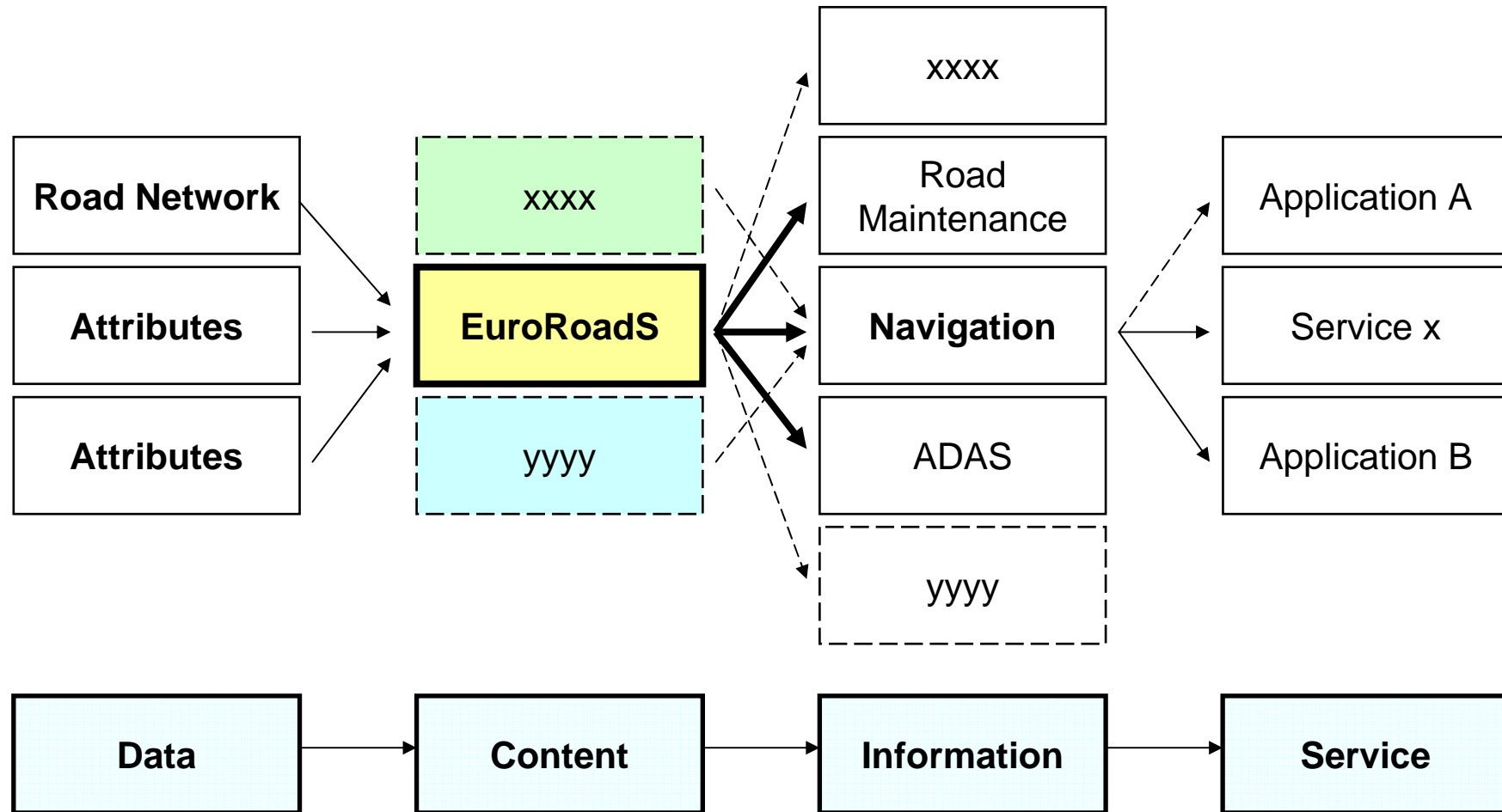
- The objective for WP6 is to deliver a Road Data Specification Framework, defining:
 - **Structure** (Road Data Information Model)
 - **Content**
 - **Exchange Model and Format**
- For Core European Road Data



Requirements

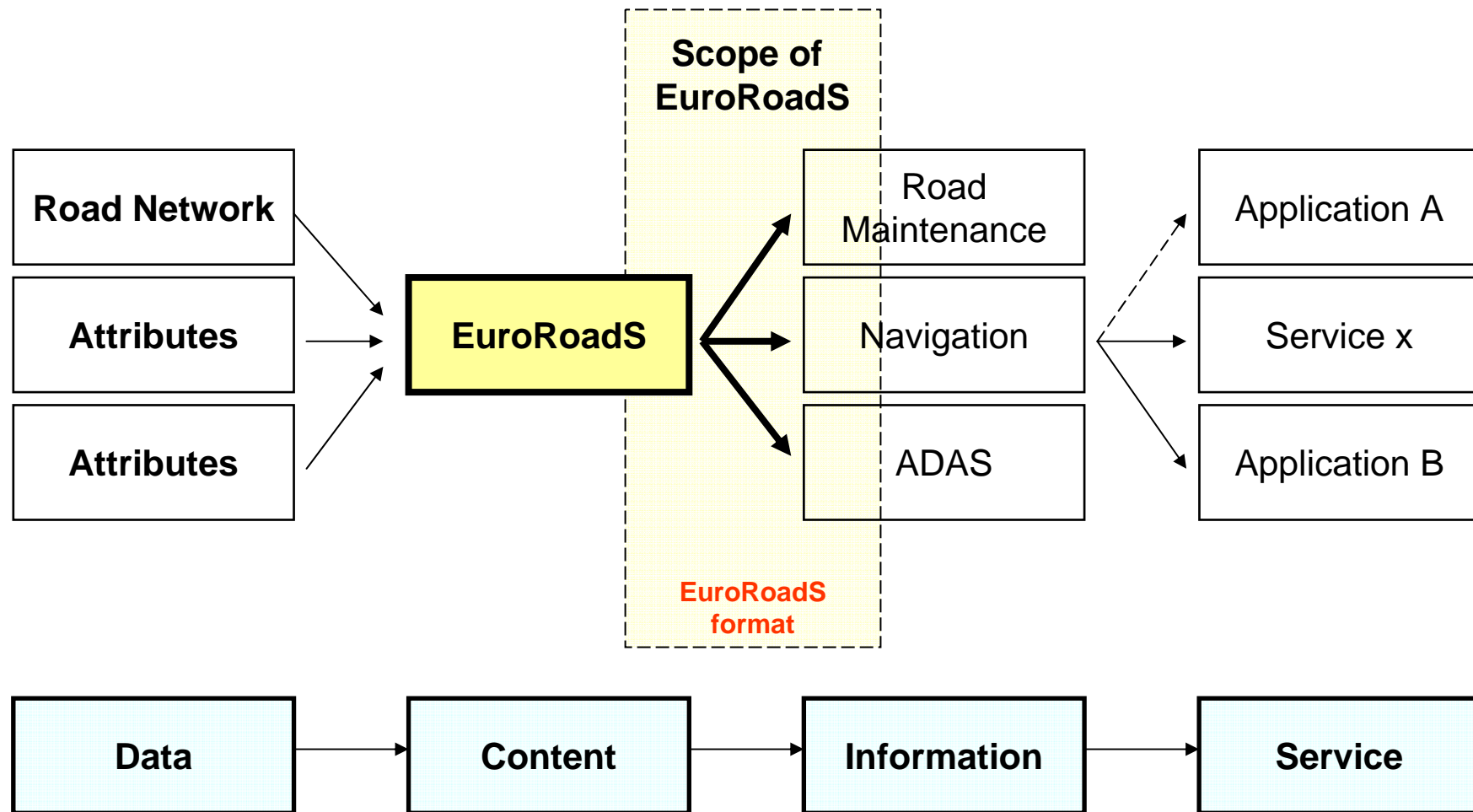
- Important requirements from the project specification:
 - The aim should be to prepare for a European standard (a profile based on **ISO 19100** components)
 - Road data exchange format must be able to communicate both the whole data set and just the changes
 - EuroRoadS are focusing on core European road data; not end user datasets for certain applications

Information refinement





Information refinement..





Deliverables from WP6

- Documents that will be produced are:
 1. Report on preliminary findings and directions for the specification work (Due 30/09/2004)
 2. Road Data Network Information Model
 3. Core European Road Data
 4. Road Network Exchange Model
 5. Road Network Exchange Format
 6. Meta-data catalogue
 7. Terminology catalogue



Deliverables

#	Public reports	Due
D6.1	Report on preliminary findings and directions for the specification work (F)	30/09/04
D6.2	Draft specification of the road data network information model (WD)	31/11/04
D6.3	Final specification of the road data network information model (FD)	31/03/05
D6.4	Draft specification of core European road data (WD)	31/11/04
D6.5	Final specification of core European road data (FD)	31/03/05
D6.6	Draft specification of the Road network exchange model (WD)	31/05/05

Deliverables ...

#	Public reports	Due
D6.7	Draft specification of the Road network exchange format (FD)	31/05/05
D6.8	Meta-data catalogue (F)	31/07/05
D6.9	Draft terminology catalogue (WD)	31/07/05
D6.10	Final specification of the Road network exchange model (FD)	30/09/05
D6.11	Final specification of the Road network exchange format (FD)	30/09/05
D6.12	Final terminology catalogue (FD)	31/10/05



The first deliverable

- The first document will point out the direction for the following work in WP6
- Content of the report:
 - Survey of national and European road data solutions (limited)
 - User requirements from WP 4 and 5
 - Results from standardisation work within ISO, CEN and on national levels
 - Existing de facto standards
 - Conclusions drawn from the analysis which then form the basis for preliminary recommendations



Survey of existing Road data solutions in Europe

- A Questionnaire was sent out to:
 - Members of the EuroRoadS project:
 - Austria (M), **France** (M), Germany/Bavaria (R), **Sweden** (R) and **UK** (M)
 - Five selected countries:
 - **Estonia** (M), **Finland** (R), **Italy** (R), **Norway** (R) and Spain (M)
 - To the companies:
 - Navteq and TeleAtlas



Questionnaire

- The questions regarded:
 - Ownership
 - Content
 - Coverage
 - Attribution
 - Generalisation rules
 - Conceptual models
 - Road network
 - Attributes
 - Metadata & Quality
 - Data exchange
 - Rationale and experiences



Questionnaire, answers...

- Similarities:
 - Road segments represent carriageway centre line
 - Some attributes are the same or similar
 - Geometry mostly points and lines
 - Similar generalisations



Questionnaire, answers...

- Dissimilarities...
 - Network representation
 - Explicit topology
 - Derived topology
 - Dimensionality – 2D/3D
 - Attribution of the network
 - Linear referencing mechanisms
 - Attributes directly on road features
 - Affects the segmentation



Questionnaire, answers...

- Dissimilarities...
 - The existence and meaning of attributes
 - Incremental updates supported/not supported
 - Identification of objects and versions of objects
 - Generalisation:
 - Node - Surface



Preliminary recommendations

- Challenges...
 - Fulfil functional and other requirements
 - Gain acceptance among content providers and customers
 - Mapping between existing data and EuroRoadS must be theoretically possible and not too difficult or expensive
 - Not too simple (least common denominator) interface. Too simple may not be usable enough



Preliminary recommendations...

- Decide track...
 - ISO 19100 according to project spec
 - GDF
 - Comprehensive specification for the ITS domain.
 - Not ISO 19100 compliant
 - X-GDF, when??



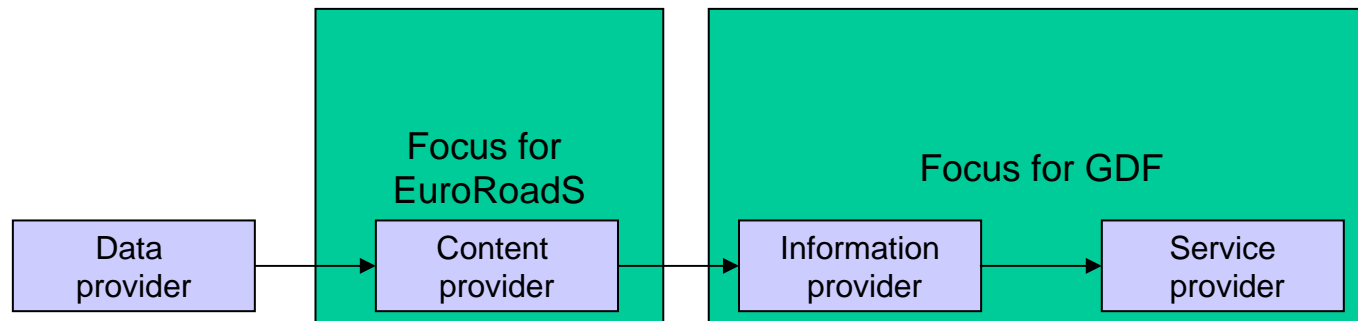
Preliminary recommendations...

- Differences in approaches needs a flexible solution.
- ISO 19100 pointed out by project spec.
- GDF seems to be designed for those who produce all data themselves
 - Not possible to deliver attributes only???



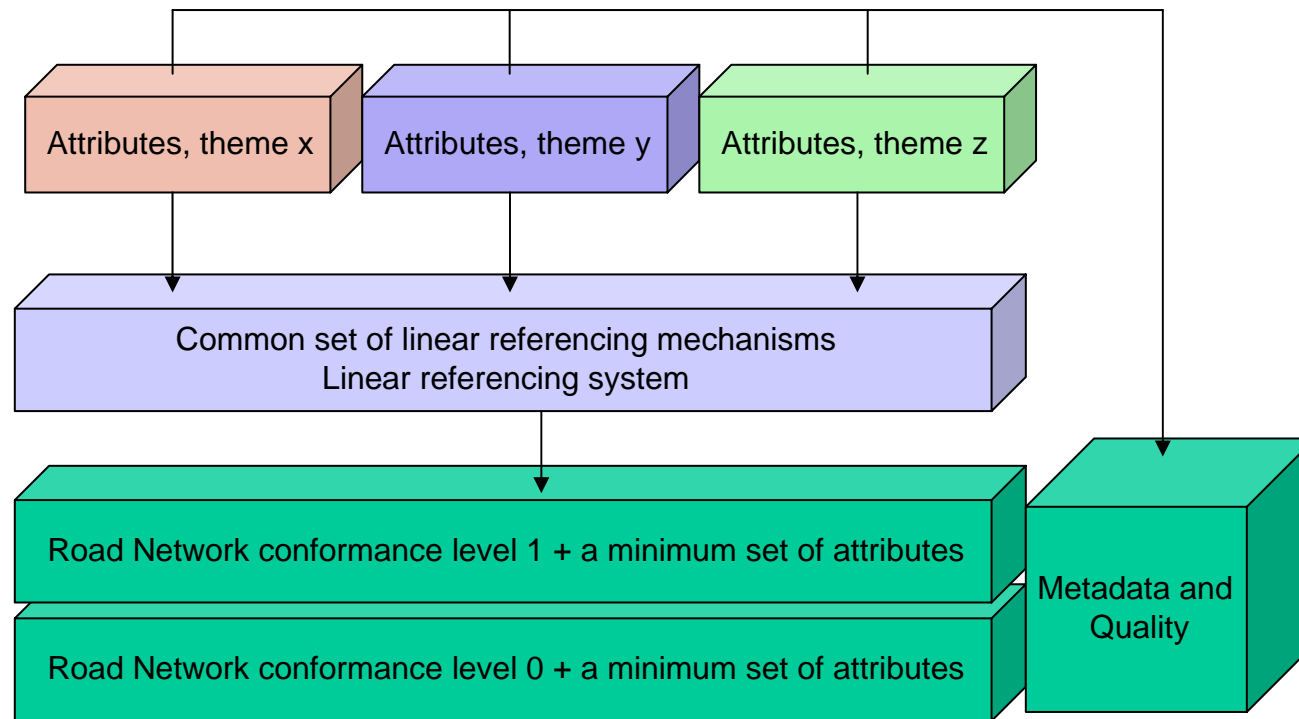
Preliminary recommendations...

- Use ISO 19100 for specification
- Use GDF as an important source of requirements.
 - Must map easily



Preliminary recommendations...

- Suggested model architecture:





Preliminary recommendations...

- Road Network
 - Conformance levels for networks could make it easier to adapt differences among content providers
 - A minimum set of required attributes
 - Can imply rules and measures for other attributes
 - Base models on ISO 19107
 - Catalogued according to ISO 19110



Preliminary recommendations...

- Road Network...
 - Linear referencing system
 - Stable entities to enable loose coupling of additional attributes
 - Linear referencing mechanisms
 - Enables a unified way of attaching attributes to the network in a loosely coupled way.
 - Use ISO 19133 way for linear referencing



Preliminary recommendations...

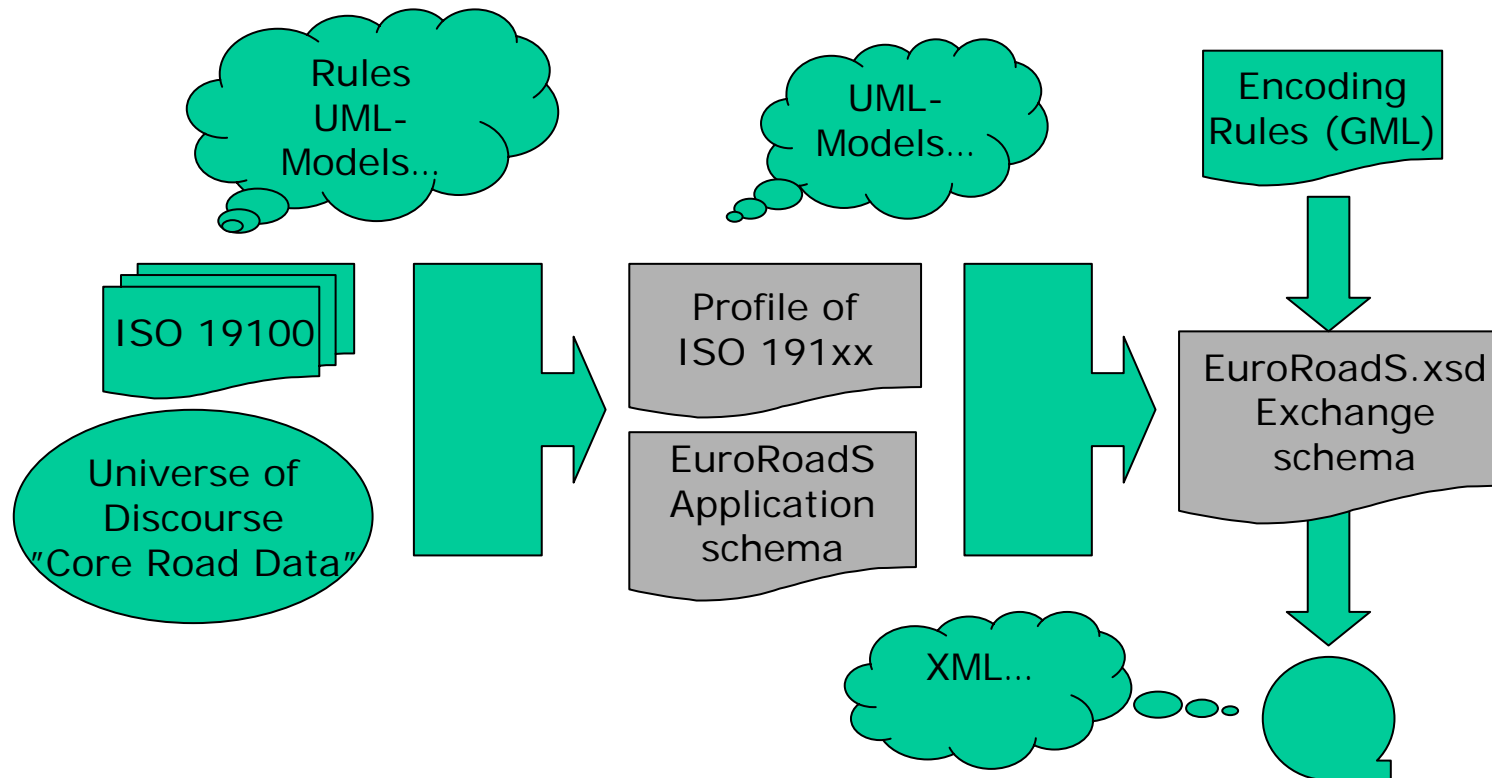
- Attribute model
 - Attributes outside of the inner core are loosely coupled using linear referencing.
 - Offers an easy way of delivering attributes separately from the network core.
 - Offers possibilities for attribute handling outside of EuroRoadS
 - Modelled using UML according to ISO 19103/ISO 10109
 - Catalogued according to ISO 19110



Preliminary recommendations...

- Metadata
 - Use a profile of ISO 19115 for metadata and quality measures.
 - This is a very difficult area
 - A pragmatic approach needed...
 - But it will be really important
 - Data from different parts of Europe will differ.
 - How can a customer find out if data is worth the price?

Preliminary recommendations...





Comments on the recommendations?

Feed-back is warmly welcome,
from the reference groups and
others!

Questions?

