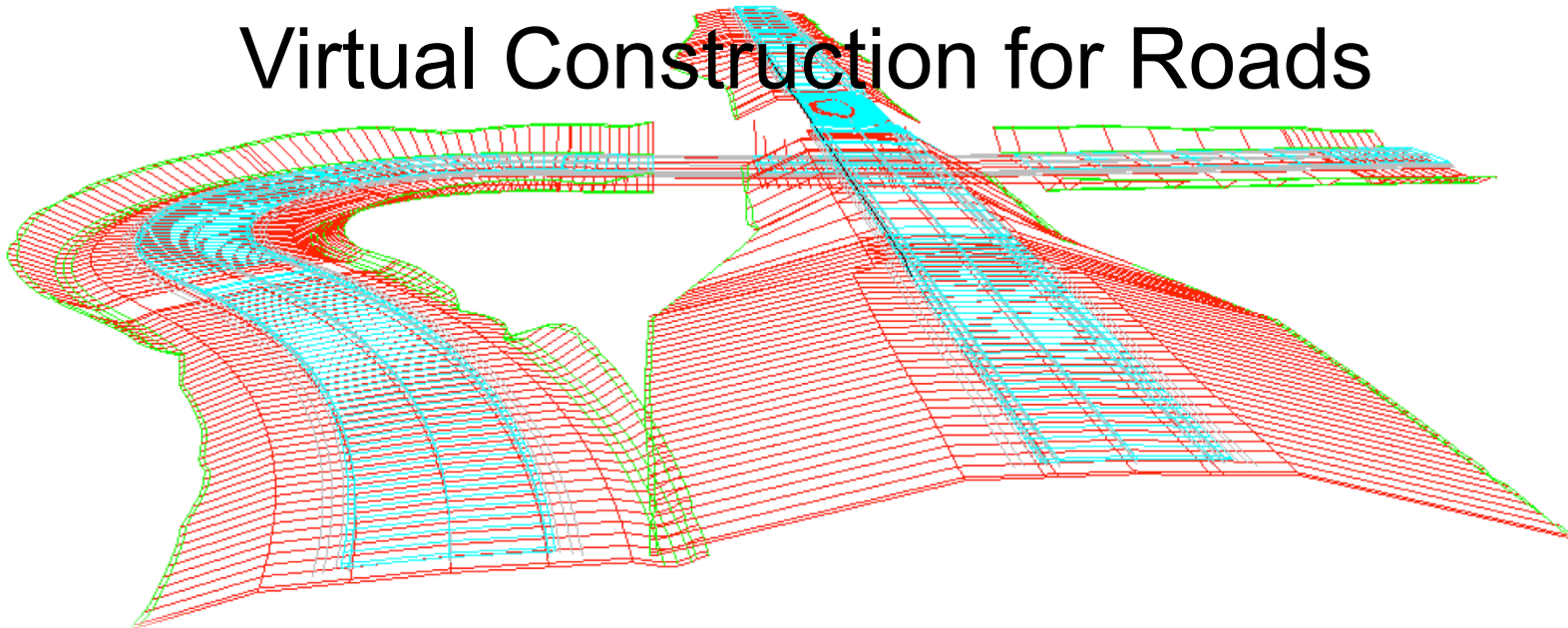


Olle Bergman, Trafikverket



V-Con

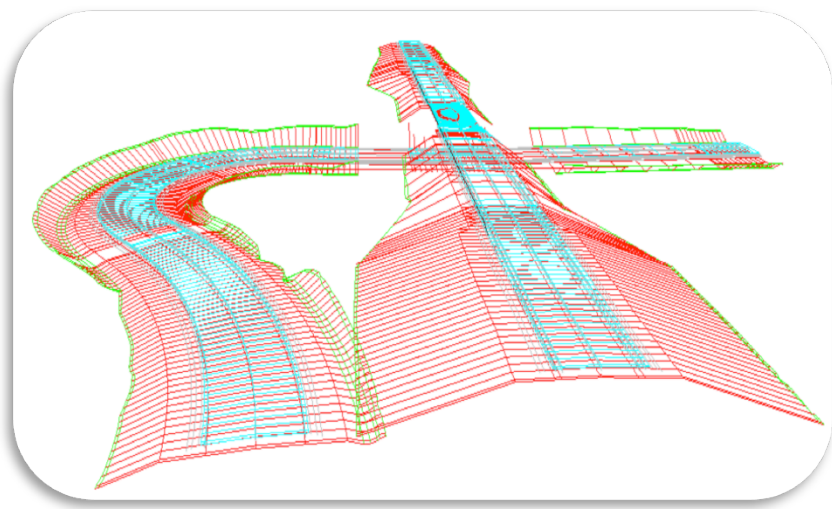
Virtual Construction for Roads



What is V-Con?

V-Con is an EU-funded project which runs over 4 years (start 2012)

V-Con consists of two road authorities and two research institutes



V-Con consists of two parts:

- Research and developing
- Pre Commercial Procurement

V-Con works together with bSI on Alignment and IFC4Roads



Why V-Con?

Adequate information regarding the network and the assets is of vital importance for the management of road infrastructure.

Both road authorities aim to **modernise their information management (including introduction of BIM)** using **open information exchange standards** and have formally joint forces to break out of a circle of ICT-standstill by working together in The Virtual Construction for Roads (V-Con) project.

V-Con aims at enabling national road authorities to introduce **IT technology** based on open standards for exchanging/sharing comprehensive road (highway) information with commercial parties in the sector and applying them in their life-cycle processes.

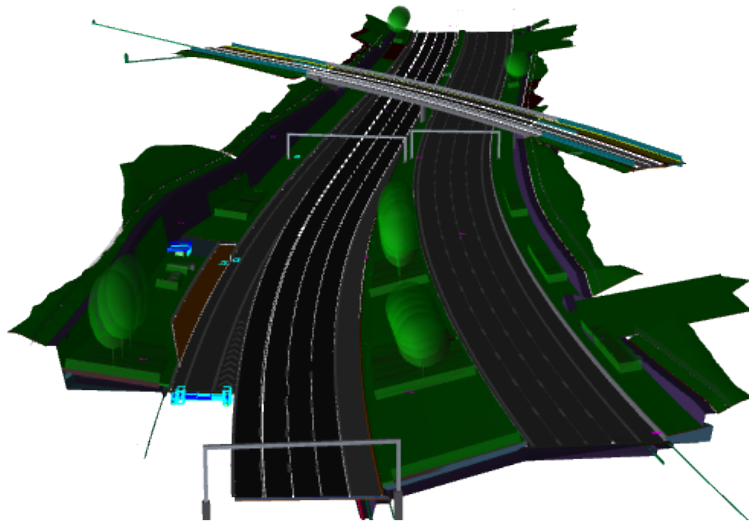
What does **V-Con** mean for the Infra sector? $\sqrt{\text{V-Con}}$

A more effective exchange of information in the construction industry

The V-Con solution will enable information transfer from a BIM-project to systems for asset management

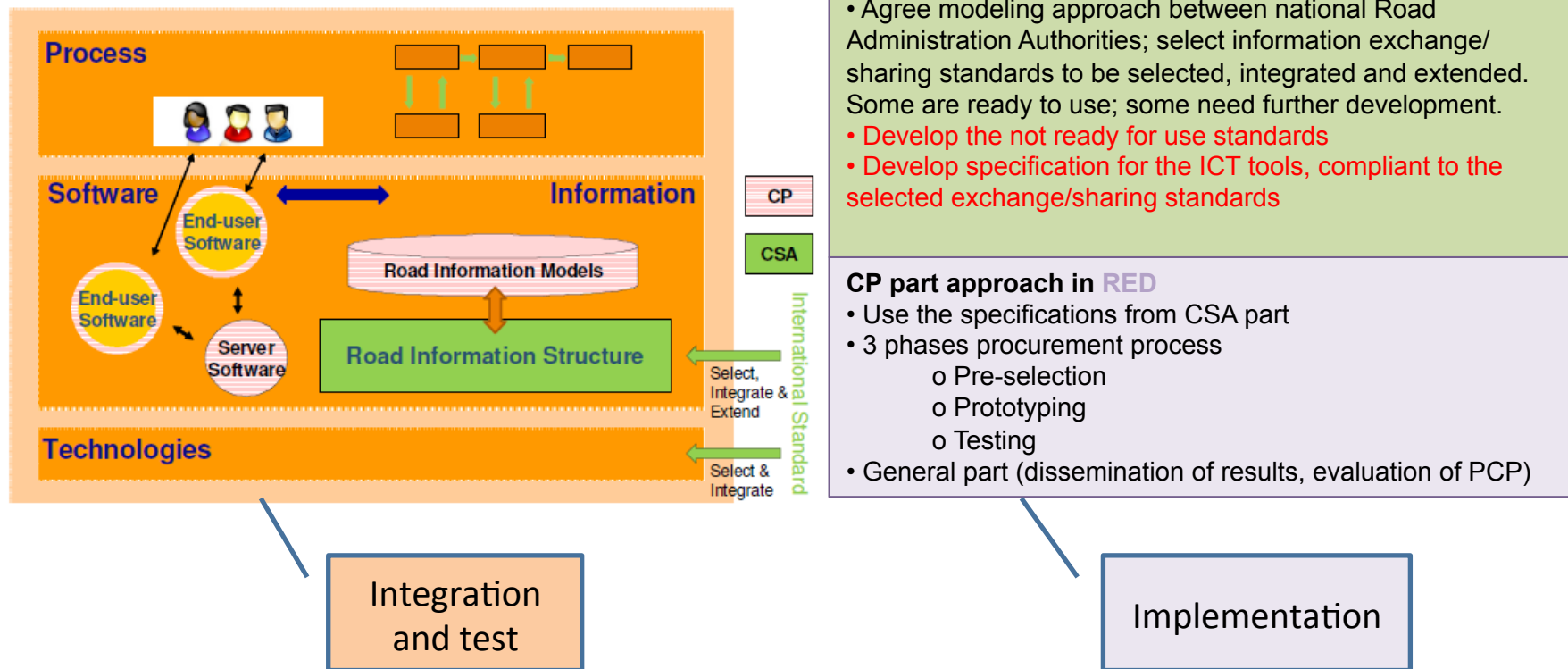
Let the market develop solutions that enables open information and data exchange between a Client software and the Project management (organization)

V-Con contributes to further development of open standards for the infra sector

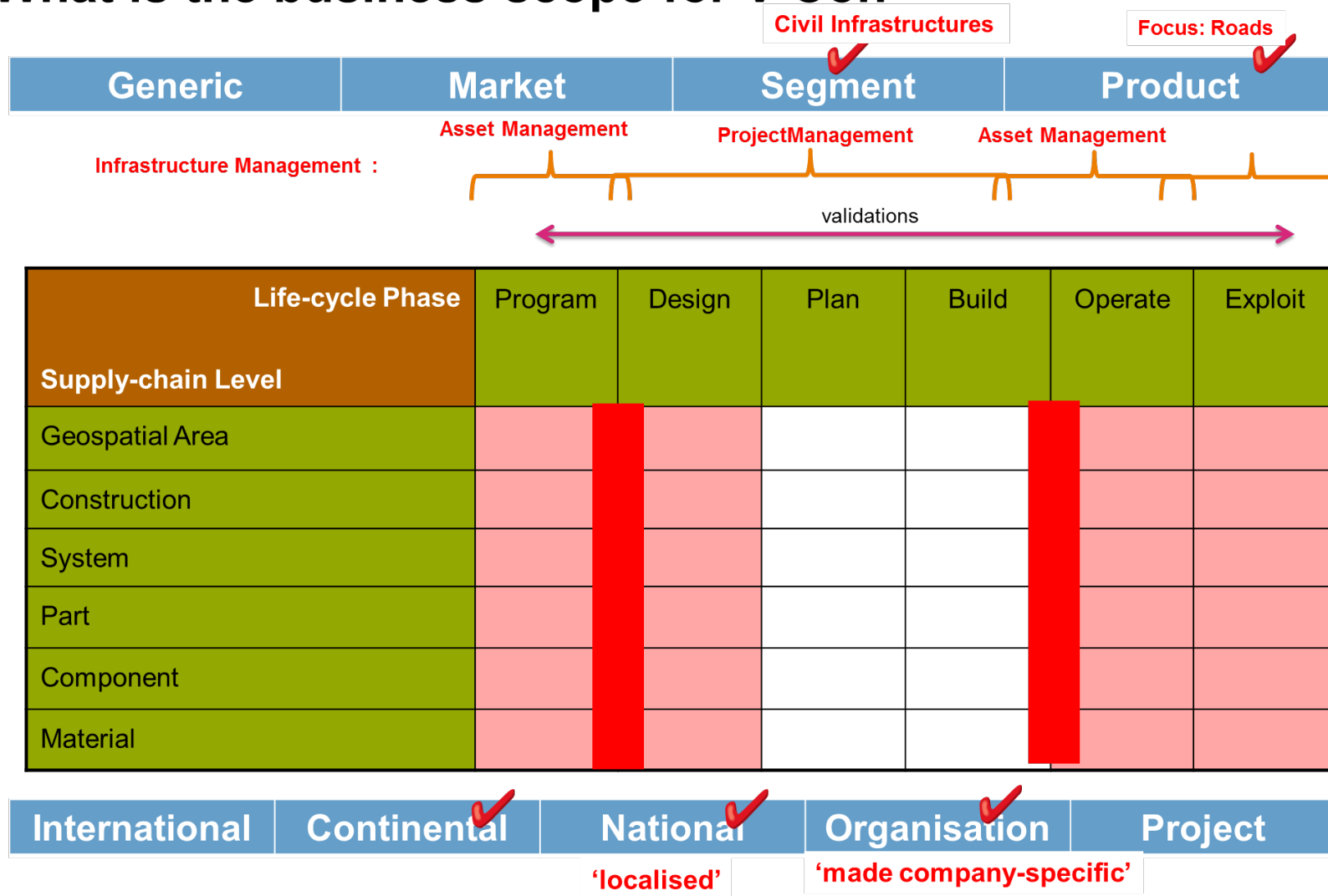


What are the results from V-Con?

These two main objectives are depicted in the following architectural picture.



What is the business scope for V-Con



Conclusions in V-con project

The new approach V-con assumes is a world where:

- There exist **no one unique view** on reality but different perspectives on reality are desirable;
- **Not one process is leading** for a data structure but data structures should support multiple processes;
- Communication between processes and data standards need **mapping and transformations** by adding intelligence provided by semantic information structures;
- There will **not be just one unique data source**, organizing all concepts and perspectives on concepts. Therefore there will be **distributed collaborative ontologies/libraries**, preferably based on semantic modelling to ease connectivity and alignment.

Which are the challenges for V-con?

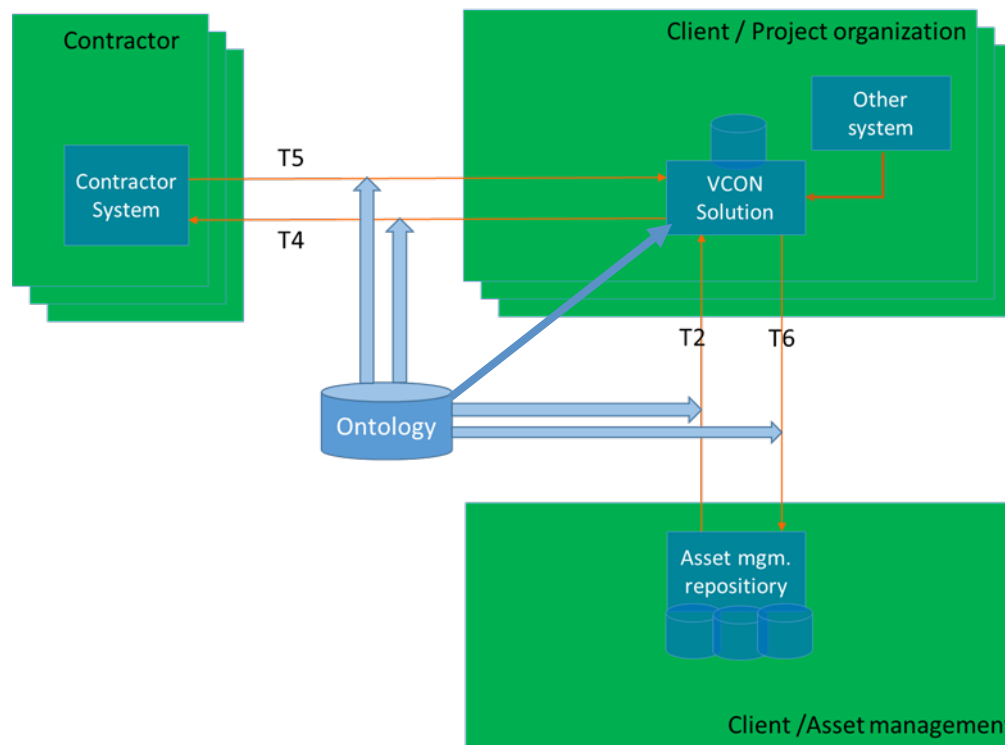
*For a national road administration authority, who procures design, construction, operation and/or maintenance of road infrastructure from contractors, the V-Con Solution **supports the Linked Data approach and open information exchange/sharing** between stakeholders using various software solutions, tools and open standards during the various life cycle stages.*

*Unlike the available solutions that exist today, the V-Con Solution **enables integration of different tools and open standards** that are used within the whole lifecycle of the road infrastructure in a vendor neutral fashion.*

*These tools and open standards may concern areas such as building information model (**BIM**) data, geographic information system (**GIS**) data and Systems Engineering (**SE**) data.*

What solution is provided by V-con?

V-Con focuses on supporting the road authorities project management primary with translation and transformation of datasets based on a (finite) set of semantic and syntactic standards and concepts (should be extendable)



Key Challenges for V-Con standardization

- Select a comprehensive set of existing information exchange standards
- Extend IFC with IFC for roads
- Develop methodology, guidelines and tools to develop semantic web technology based libraries
- Develop object type libraries (regional, national, company):
 - Common context neutral "core" model – basic semantics
 - Context specific models/semantics
 - Mapping and transformation of semantic and syntactical information

Key Technical Challenges for V-Con solution



Given the V-Con approach towards information exchange for road authorities, V-Con has defined the key technical challenges to be fulfilled by the V-Con Solution (VCS):

1. [Support ontology based information exchange](#)
2. [Support information exchange for open domain standards](#)
3. [Support exchange of other data formats](#)
4. [Manage and store data structures and data](#)
5. [Connect information from different domains](#)
6. [View \(connected\) information](#)
7. [Ease of use](#)
8. [Future proof system](#)

Why Ontology based information exchange?

√-Con

- Fundamental for business agreements, data sharing etc is common understanding i. e a need for translation between different semantics - supported by IT
- No one sits on the one and only vocabulary – there are many and they are "in the cloud"
- Semantic web technology supports linking data "in the cloud" and translation/transformation of as well concepts (semantics) as data in different formats (syntax).
- Semantic web technology is successfully applied within other areas, e. g Oil and gas, based on STEP like IFC(BIM).
- Semantic web technology is on its way to be implemented in GIS (ISO 19150-X)

What happens after V-Con?

V-Con project



Lots of pices yet to put in place by:

- Some "body" maintaining the result
- New projects
- ...



V-Con

Thank you for showing interest!!

25.04.14

