

BIM for Infrastructure

Trafikverkets view on Open standards



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SWEDISH TRANSPORT ADMINISTRATION

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International standardization



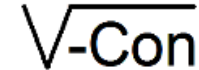
International development



European standardization



European development



Nordic Collaboration



Jernbaneverket



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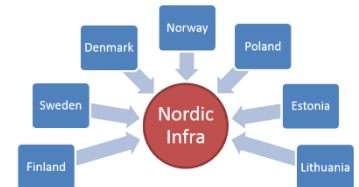


Vejdirektoratet

banedanmark



Statens vegvesen
Norwegian Public Roads
Administration



National development



svensk byggtjänst

National Standardization



Organizational development



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BIM Policy Area

ANDA

Asset Management



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Non formal standardization

Non-formal standards (produced by independent international standards organizations) should be seen as a **first step to formal standardization**.

The benefits of engaging in independent standardization organizations are for example, greater opportunity to **influence** the development of the standard and **shorter implementation** times than is normally the case when it comes to formal standardization.

The benefits of a non formal standardization:

- Shorter implementation times
- Increased knowledge of the standard scope and design
- Guaranteed applicability



Roadmap for standardization activities (BIM/GIS/PLM)

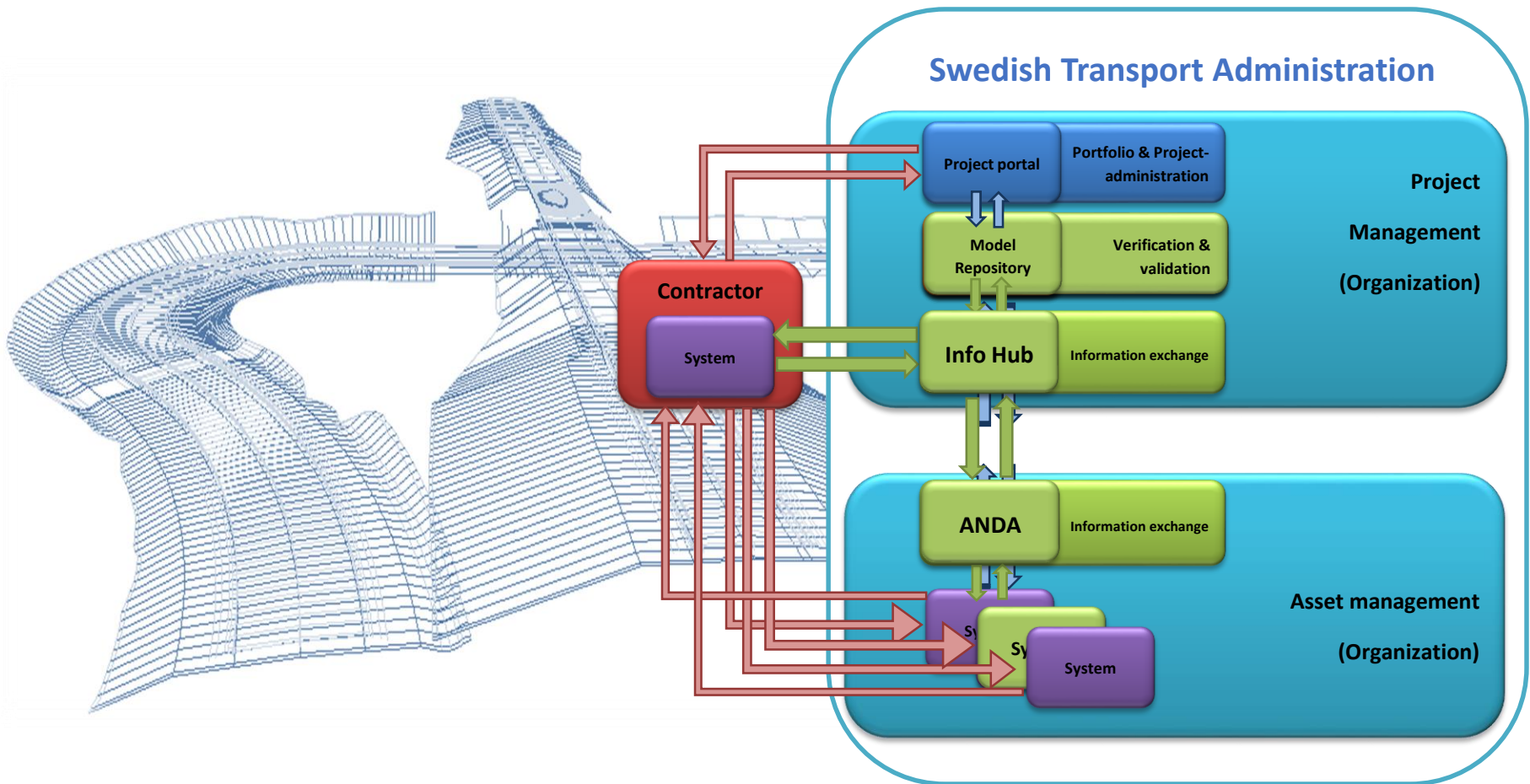
Maturity level	Level 1	Level 2	Level 3 - Not defined		
Start Year		2018	2017-2020	2019-2022	2021-
Information deliveries	Document based work	2B "Open"	2B "Open"	3A Purpose BIM	3B-Z Workflow BIM
		3D BIM	3D BIM		
		Discipline specific files	Start implementation of requirements based on: CoClass InfraGML CityGML IFCinfra ...	IFC's (multiple files) mvdXML (Infra specific) CoClass/bsDD InfraGML CityGML RDF/SPARQL - Linked data	IFC's and GML's ... BCF (BIM Collaboration Format)
		LandXML BSAB-building component table			
Information deliveries	Document based work	Software dependent information transfer according to ANDA specifications):	Software independent information transfer Start work with specifications: ANDA DEX (PLCS) ANDA MVD (IFC) ANDA Profile (GML)	Trafikverkets requirement to make use of open standard is depending on the progress within bSI & OGC	
Technology		Layer based management	Layer and object based management	Object based management Start working with links and references to external services	Object based management with relations, links and references to external services.
To-do-list	InfraGML IFC Infra BSAB 2.0 (CoClass) Integration of existing standards and formats to ANDA	LoD, MVD and IDM (process flow chart) Integration of CoClass to bsDD Integration of open standards to ANDA	First version of conceptual model for IFC Infra & InfraGML Object based deliveries to ANDA RDF/OWL	Integration with Maintenance	

Trafikverket will have to align and influence requirements and planning with the execution plans of bSI, OGC and other stakeholders

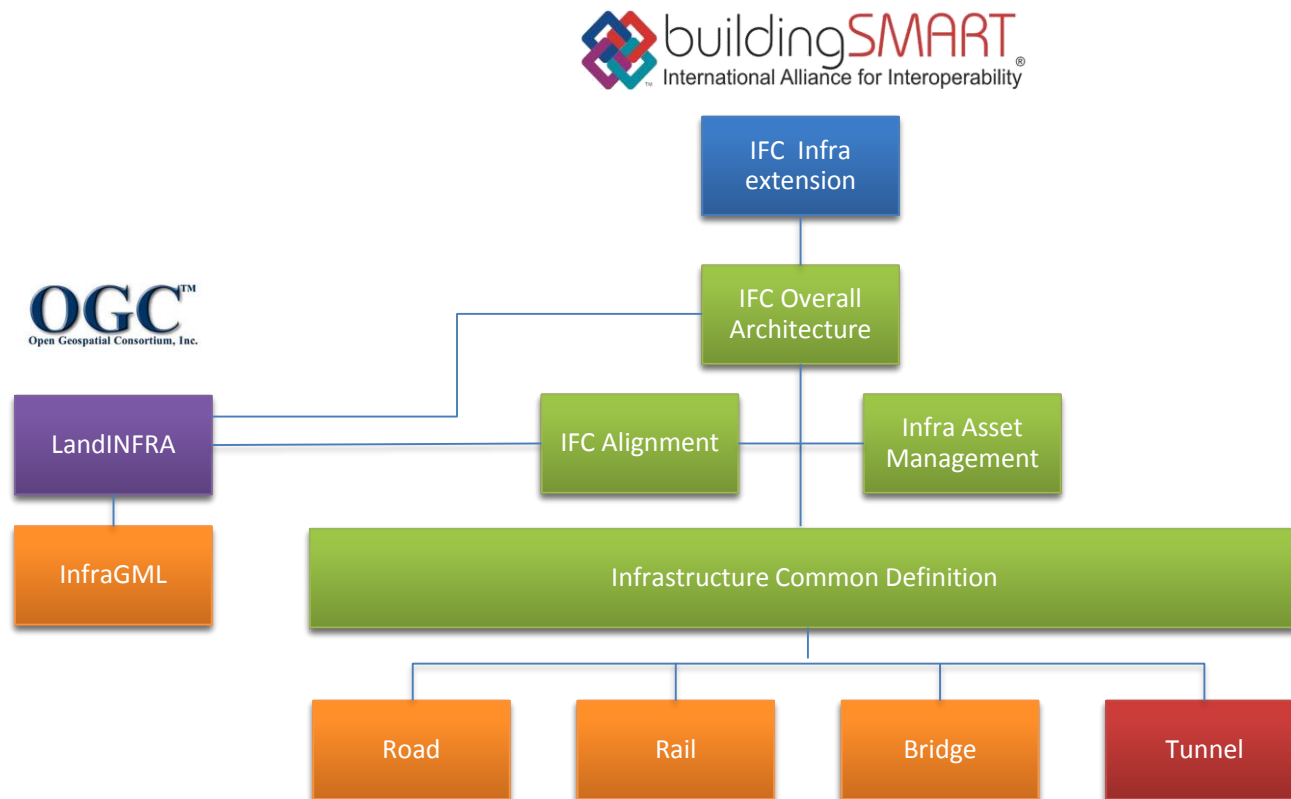
Trafikverket supports and contribute to official bSI & OGC-standardization projects

Trafikverkets requirement to make use of open standard is depending on the progress within bSI & OGC

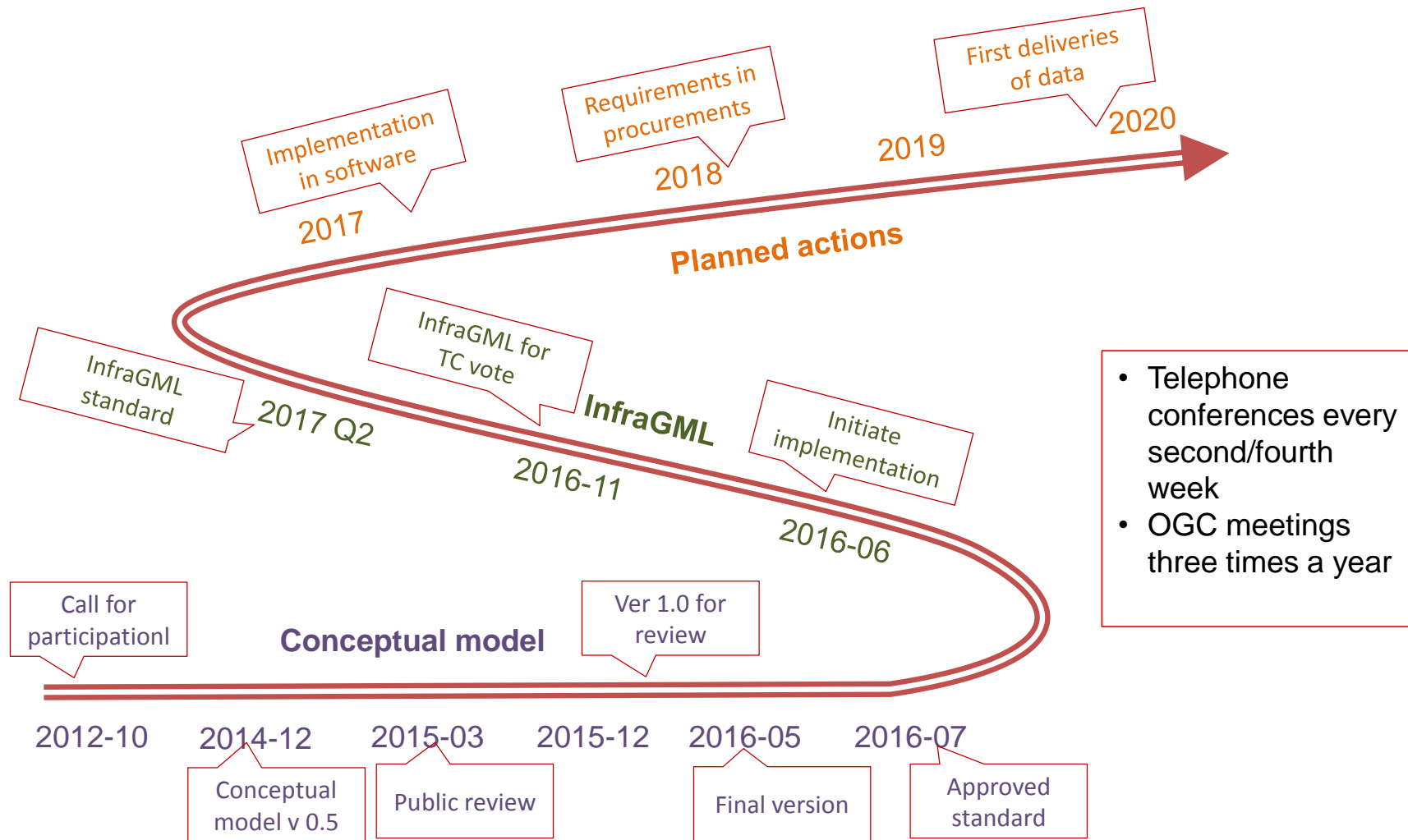
Open standards in a future modularized Trafikverket-environment



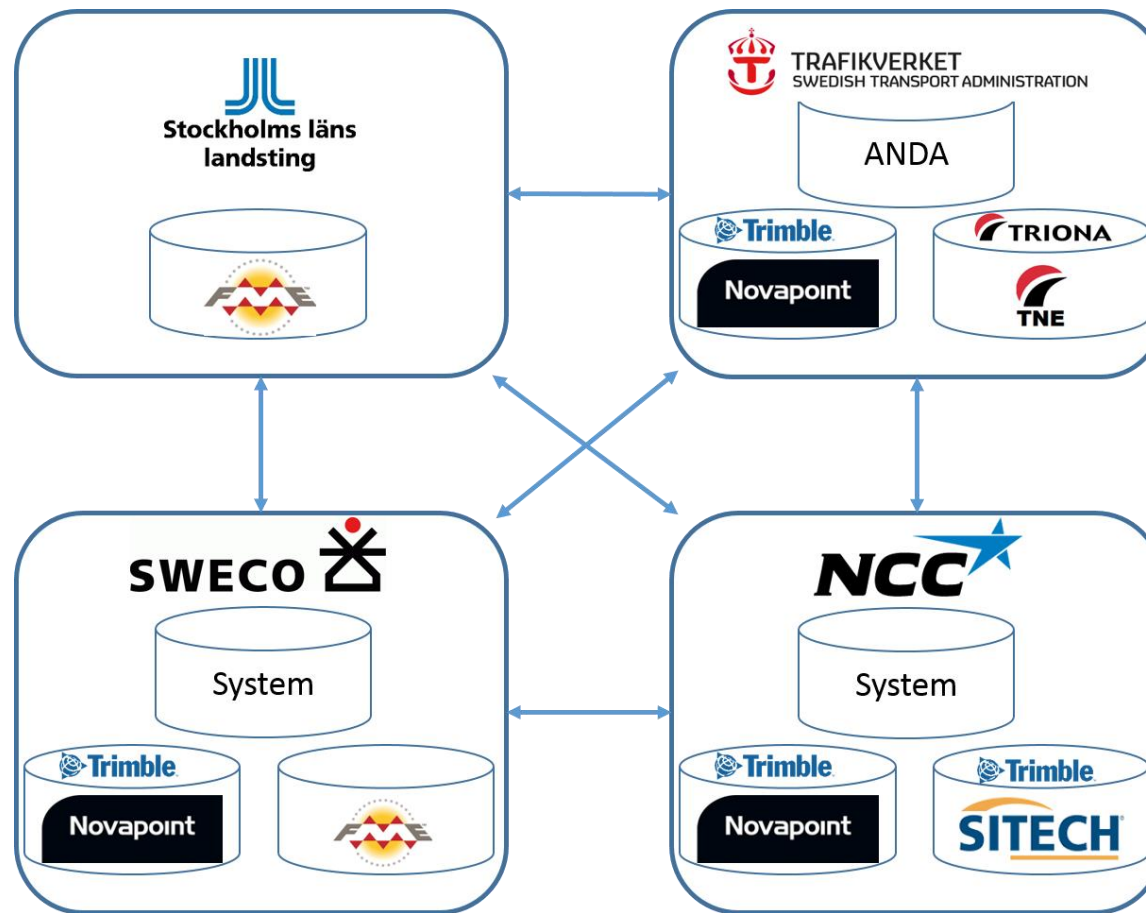
Infrastructure activities



InfraGML, making a standard..



Information roundtrip – IFC & InfraGML Deployment



Letter of Intent (PROPOSAL)

- That open and relevant exchange standards contributes strongly to the industrialization of the building and construction industry, and thus to an increased overall productivity.
- To start *now* moving towards open international standards such as IFC and InfraGML when exchanging data between parties, and by this gradually replace proprietary formats
- That all new road and railway projects starting after July 1th 2018 will use “ifc Alignment” or “InfraGML Alignment” as exchange formats for alignment information, and the road & rail authorities has a clear intention to start requiring this.



Thank you!



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