

Nordic Road & Rail collaboration group's (NBC-group) digitalisation and BIM yearbook

3/2026



This report is delivered by the experts of the NBC-group which consists of the public road and rail administrations of the Nordic countries.

The group includes: Väylävirasto (FIN), Bane NOR (NOR), Statens vegvesen (NOR), Nye Veier (NOR), Vejdirektoratet (DEN), Banedanmark (DEN) and Trafikverket (SWE).

Vegagerdin (IS) has been involved in the project but will join the report later.

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Status from each member organisation

In the following sections each member organisation has given status on some chosen topics. These topics are the same for every organisation and even though our development and focus differ from each other, we have chosen this to give a better overview. It also means that not everything is included in the common topics, so to address this we have added a “other ongoing development”-topic.

Content includes following parts:

- Table A – Strategic/non-technical
- Table B – Technical/professional
- One pager status report by each organisation
- Table A – Strategic/non-technical part - clarifications
- Table B – Technical/professional part - clarifications

The chosen topics, and the questions the members have been asked as inspiration:

Strategy view on BIM and digitalisation; What is the strategic view on CAD, BIM and digitalisation? Is there any special strategic work going on?

Tools and software; What are the ongoing status and issues regarding our tools and software? Have there been any major changes in the tools you use?

Tools can be templates and standards (e.g. IDS or template libraries), and new ways of accessing data or CDE setup.

People and processes; How is the process around and the people affected by our digital environment? Is something new on the way?

Education and training; Are education and training of existing employees and onboarding of new employees being done systematic? Or maybe just one of the things? What roles do you educate? Do you collaborate with schools and universities to educate new generations?

Delivery from projects to asset management; How far are you in delivering 3D models and data from models from project to asset management? And have any decisions been made regarding what and how you want to deliver?

Collaboration with the industry; What ongoing collaboration do you have with the industry and are there any major news from these? Have you done any test projects or common development?

Other ongoing development: Is anything major going on that have not been covered and that you want to tell.

Table A – Strategic/non-technical

Nordic overview of active work:

I2 = Implemented / In common use

I1 = Implemented - for some

D2 = in Development - almost done

D1 = in Development - half way

D0 = in Development - just started

N = Not a topic right now / No development started

Table A – Strategic/non-technical							
Target group: Division and project managers, technical directors, decision-makers	Väylävirasto	Bane NOR	Statens vegvesen	Nye Veier	Vejdirektoratet	Banedanmark	Trafikverket
Purpose: Measure strategic maturity, organizational anchoring and profit extraction for BIM/Digital projects							
1. Strategic anchoring							
1.1. Is digital information management clearly embedded in the organisation's strategy and core plans?	I2	I1	D2	D2	I1	D2	I1
1.2. Is there an organisation wide strategy including BIM use and BIM development?	D1	I2	N	I2	N	D1	D2
1.3. Are roles, responsibilities, and incentives for digital practices defined and supported?	D0	D1	I2	D1	D1	I1	D1
2. Management understanding							
2.1. Is the management an active driver of digital transformation and data quality?	I1	D2	I2	I1	I1	I1	D1
2.2. Do project leaders use data- and model-based insights in their decision-making?	I1	I1	I2	I2	I1	I1	N
3. Profit/benefit management							
3.1. Are the benefits of digitalisation incl. work with BIM/GIS models, identified and systematically measured?	D1	D0	I1	D2	N	D2	D1
3.2. Are achieved gains and experiences used to guide future priorities?	D1	D0	I1	D2	I1	D1	D0
4. Competence and culture							
4.1. Do managers and staff receive training in digital information management?	D0	N	I1	I2	I1	D1	D0
4.2. Is digitalisation embedded in onboarding, collaboration, and cultural development?	D0	D0	D1	I1	I1	D2	N
4.3. Do everybody, that needs to, know how to work with the BIM software?	I1	D1	N	I1	I1	I1	I2
5. Maturity and Interaction in the value chain							
5.1. Are data delivery requirements and standards clearly defined and used in contracts?	I1	I1	I2	D2	I2	D2	D0
5.2. Is data seamlessly shared across clients, consultants, and contractors via a common CDE?	I1	D1	I1	I2	I2	I1	D1
5.3. Is BIM a central part of all projects in all project phases?	D1	I2	N	I2	I1	I1	I1
5.4. Is BIM a central part of asset management and maintenance?	D0	D0	N	I2	N	D1	D1
6. Innovation and learning							
6.1. Does the organisation systematically capture and share learning from pilot and innovation projects?	D0	D0	I1	I1	I1	D1	D0
6.2. Is new technology systematically assessed (AI, model validation, digital twins)?	D0	D0	I2	I1	N	D1	D0

Table B – Technical/professional

Nordic overview of active work:

I2 = Implemented / In common use

I1 = Implemented - for some

D2 = in Development - almost done

D1 = in Development - half way

D0 = in Development - just started

N = Not a topic right now / No development started

Table B – Technical/professional							
Target group: BIM coordinators, information architects, IT architects, consultants, professional resources	Väylävirasto	Bane NOR	Statens vegvesen	Nye Veier	Vejdirektoratet	Banedanmark	Trafikverket
Purpose: Document the degree of implementation of standards, systems and data flow to achieve business goals							
I. Standardised requirements							
1.1. Is there standardised contracts to order BIM/GIS used in all projects	I1	I2	N	I2	I2	I1	I1
1.2. Are model geometry requirements aligned so that similar projects follow consistent requirements?	I1	D1	I2	I2	I2	I1	D0
1.3. Are model-information requirements aligned so that similar projects follow consistent requirements?	I1	I1	I1	I2	I2	D1	D0
1.4. Is there a standardised use of IFC properties?	D0	I1	N	D2	N	D0	D0
2. Standards for naming							
2.1. Is there a standard for naming of all documents, used in all projects?	N	I2	I2	I2	I2	I1	I2
2.2. Is there a standard for naming of CAD/BIM files (models, drawings, discipline data), used in all projects?	N	I2	I1	I2	I2	I2	I2
2.3. Is there a standard for naming of CAD/BIM elements, used in all projects?	N	D1	D1	I2	I2	I1	I1
2.4. Is there a standard for the use of classification, used in all projects? (This object type is always named this way)	I1	D1	N	I2	N	D1	I1
2.5. Is there a standard for level/layer naming, used in all projects?	I1	N	I2	N	I2	I2	I2
2.6. Is there a standard for naming of (BIM)-properties, used in all projects?	I1	I2	N	I2	I1	D0	I1
3. Open formats							
3.1. Is ifc-format (no IFC-standard specified) being used?	I1	I1	I1	I2	N	D0	D1
3.1. Is ifc-format (following IFC 4.3) being used?	D0	I1	I1	I1	N	D0	D0
3.2. Is LandXML being used?	I2	I1	I1	I1	I2	I1	I2
4. Requirements							
4.1. Are drawings required in all projects	I2	I2	I1	I2	I2	I2	I1
4.2. Is digital 3D geometry required in all projects?	I1	I2	I2	I2	I2	I1	I1
4.3. Is digital information linked to geometry required in all projects?	I1	I2	N	I2	D2	D0	D1
4.4. Is classification required in all projects?	I1	I1	N	I2	N	D0	D1

5. Use of models							
5.1. Are models being used in planning of field work?	I1	I1	I2	I2	I1	I1	I1
5.2. Are models being used for quantities for bids/payment?	D1	D1	I1	I2	I2	D1	D2
5.3. Are models being used for quantities for LCA?	D0	D1	I1	D0	I2	D0	D1
5.4. Are models being used for safety documentaion of projects?	D0	D0	I1	I1	N	N	D0
5.5. Are models being used for technical evaluation of projects?	D1	D1	I1	I2	D1	N	N
6. Formats and Classification							
6.1. What BIM/CAD formats are being actively used in your organisation?	Inframodel (LandXML), IFC 2x3, DWG	IFC 4X3 /2X3 & DWG	DWG, DXF, GML, LandXML, KOF, SOSI, VIPS, Laser Data,etc	IFC, XML	DGN, LandXML	DGN, DWG, Landxml	DWG, DGN, IFC, LandXML
6.2 What classificationsystem is being used/developed in your organisation?	Infra classification system (Finnish)	RDS - 81346		RDS - 81346	CCI, ISO/IEC 81346	CCI	BSAB, AMA (PR), 81346, CoClass

Väylävirasto



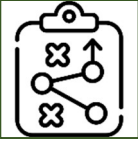




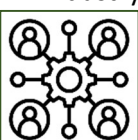

<p>Strategy view on BIM and digitalisation</p>		<p>Finnish Transport Infrastructure Agency (FTIA) has published 2019 Inframodel strategy (InfraBIM targets) for 2020-25 https://urn.fi/URN:ISBN:978-952-317-769-7. After that the FTIA project information framework containing information management and BIM use in projects was updated. It consists of 4 key sectors: people, guidelines and requirements, processes and tools. The Ministry of Transport and Communications has set FTIA 3 strategic targets to reach in the end of 2027: 1) increase productivity of the whole industry 2) establish fluent information flow from design to construction and to asset information systems and 3) advance the development of a digital twin for the traffic ecosystem together with other ministry partners.</p>
<p>Tools and software</p>		<p>FTIA has implemented a Common Data Environment (CDE) — Buildercom — which is mandatory for all projects. A BIM tool (Vektorio) has been integrated into the CDE. Both systems are off-the-shelf solutions procured through public tendering. In addition, FTIA operates several asset information systems that have been developed in-house to meet specific needs.</p>
<p>People and processes</p>		<p>Open BIM-based processes have been in use within our organisation since around 2014. We have assessed BIM maturity across our projects, which shows a wide range - from highly advanced to less mature implementations. The Asset Information Lifecycle Management development programme (VETO) aims to harmonise information processes and support professionals across FTIA. The programme includes, among other subprojects, the implementation of ISO 19650 and involves all divisions.</p>
<p>Education and training</p>		<p>We organise common trainings for FTIA and local EVK (Economic Development Centres) for project information and BIM. We also organise some mass trainings for the industry working with us.</p>
<p>Delivery from projects to asset management</p>		<p>FTIA is continuing to develop the handover process from projects to asset management. The Asset Information Lifecycle Management development programme aims to systematise asset information requirements for project use and improve the flow of information. We have piloted bSDD and are exploring further development opportunities and initiatives related to them.</p>
<p>Collaboration with the industry</p>		<p>FTIA is collaborating in BuildingSMART Finland with other infrastructure clients such as big cities, contractors and consultants. We are the biggest client organisation in Finland's infrastructure market and have continuously development projects going on with the industry and universities.</p>
<p>Other ongoing development</p>		<p>FTIA is developing a common and systematic situational awareness tool for project management to provide a comprehensive view of projects by integrating data from multiple organisational sources, repositories, and systems. AI has been piloted and is currently being further developed for project use, with significant potential identified..</p>

Bane NOR



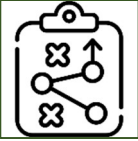




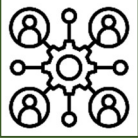

Strategy view on BIM and digitalisation		Bane NOR has a BIM strategi from 2017. Bane NOR has in their overall strategy several relevant focus areas. The most relevant to BIM is Digitalization, efficient use of new technology with good data flow between our systems. This delivers on overall goals for efficient ways of solving tasks, more for our money with standardized processes and increased productivity.
Tools and software		Bane NOR has procured Novorender as our new BIM software to be used both in planning, projects, building process and maintenance. IT has developed an integrations platform for all our softwares. This is key so achieve seamless dataflow between all the software and systems we use.
People and processes		BIM has been used in our Project division for 12 years and all railway disciplines are involved. We completed a development project I 2025 to standardize delivery from projects to maintenance. Maintenance was involved in that project, but it will take several years to fully implement the use of BIM in all aspects of maintenance.
Education and training		As part of implementing our new BIM system, Novorender all projects go through a standard training for all projects members. We have also developed a training program for alle BIM personal as super users. We are planning to develop a BIM training program, e-learning for all of Bane NOR.
Delivery from projects to asset management		All BIM based projects is delivered to maintenance with the BIM model and supplementing drawings. We have standardized object information in our BIM models for automatic delivery to our maintenance database, Maximo. We have also standardized which drawing to deliver in addition to models. This standardization process will be further developed and maintained.
Collaboration with the industry		Bane NOR is part of a BIM collaboration between the public owners for road and rail and well as the organizations for contractors and consultants. We have regular information meeting and workshops to share information and coordinate standardization and BIM development. Bane NOR is a board member in buildingSMART Norway and an active part of national standardization through Standard Norway.
Other ongoing development		Bane NOR has two major ongoing BIM developments: 1) Requirement database, project KIM. The main goal is to structure and standardize all information requirement for all objects, disciplines and plan phases in one requirement database. 2) Further develop delivery of BIM to maintenance and the use of BIM in relevant processes in maintenance.

Statens Vegvesen

<p>Strategy view on BIM and digitalisation</p> 	<p>NPRA follows the Norwegian Government's national digitalisation strategy and the requirements and recommendations from the Norwegian Digitalisation Agency, which guide our digital development. We are working towards an integrated digital value chain for roads, emphasising standardised and reusable information, information models, shared terminology, and seamless data flow from planning and construction to operation and maintenance. Digitalisation is used as a foundation for management, analysis, climate follow-up, and lifecycle management.</p>
<p>Tools and software</p> 	<p>NPRA is standardising the use of tools, data formats, and structures to ensure consistent practice across projects and lifecycle phases. Open standards, information delivery requirements, and common templates are key elements. Solutions for data sharing, collaboration, and analytics are being developed to better connect models, documentation, and management data.</p>
<p>People and processes</p> 	<p>Work processes are shifting from document-focused to more model- and data-driven practices. This requires clear information ownership, new roles, and closer collaboration between technical disciplines, IT, and management. These changes are integrated into regular project and line processes to ensure lasting impact.</p>
<p>Education and training</p> 	<p>Competence development takes place through projects, internal initiatives, and participation in professional networks. The need is increasing in areas such as information modelling, data literacy, standards, and digital requirements. More systematic training and stronger links between technical and asset management competence are under development.</p>
<p>Delivery from projects to asset management</p> 	<p>NPRA is defining which model and object data shall be transferred from projects to operation and maintenance. The goal is structured and reusable information that can be directly applied in asset management, analysis, and decision support throughout the road lifecycle.</p>
<p>Collaboration with the industry</p> 	<p>NPRA works closely with consultants, contractors, and system suppliers on standardisation, digital deliveries, and new ways of working. This includes collaboration arenas such as <i>Samferdselsrådet</i> and other cross-sector forums where public clients and industry align on common challenges and directions. Pilot projects and joint development activities are used to test solutions before broader implementation.</p>
<p>Other ongoing development</p> 	<p>Ongoing work includes management information and further development of data governance and enterprise architecture. Climate- and sustainability-related data is an area we are examining more closely with the aim of gradual improvement. The objective is to strengthen decision support and enable scalable digital development across the organisation.</p>

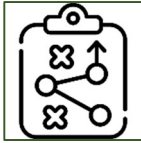
Nye Veier



<p>Strategy view on BIM and digitalisation</p> 	<p>Nye Veier has established a plan for how data and information management will be applied across the organization. The plan is intended to provide a common direction and governance for data and information, ensure robust processes for data quality, monitoring, and use, ensure compliance with current and future regulations, and strengthen the organization's digital maturity and capacity for innovation. BIM and Information Management are key components in ensuring that projects have a reliable basis for decision-making and that quality-assured data contributes to value across all project phases.</p>
<p>Tools and software</p> 	<p>To ensure effective information flow within Nye Veier's Common Data Environment (CDE), software solutions are configured to enable automated data transfer with minimal human involvement. This reduces risk while improving efficiency. The objective is to achieve the best possible information flow within existing systems and constraints, and to prepare for the future through sound planning and integration. Today, Omega365 is used for data intake, while Novorender is used to visualise the Asset Information Model (AIM).</p>
<p>People and processes</p> 	<p>People are the most important element of digitalisation, and investment should be focused there to ensure increased digital maturity. Training and presenting opportunities are integral parts of Nye Veier's daily work. To ensure clarity and efficient working practices, processes must be well designed and intuitive. Nye Veier continuously works to improve processes for needs assessment, data collection and the use of data across the organisation, applying established international standards such as ISO 19650.</p>
<p>Education and training</p> 	<p>Nye Veier has established processes to ensure knowledge transfer, training and professional development of its employees. Internally, this is supported through networks, training courses, intranet content, videos, presentations and onboarding programmes for new employees. In addition, Nye Veier contributes externally through guest lectures at universities and by providing input to BIM-related educational content at universities and vocational colleges. There is a Strong focus on increasing AI knowledge across all work.</p>
<p>Delivery from projects to asset management</p> 	<p>A key aspect of Nye Veier's information requirements is that data shall contribute to increased value and improved decision-making across all project phases. At handover from construction to operation and maintenance, it is essential that assets are structured, of high quality, reliable, and meet the needs of stakeholders in the operational phase. Today, the operations contractor uses Nye Veier's Enterprise Asset Management System, Digital Operations Support System, and Asset Information Model when planning and executing their work.</p>
<p>Collaboration with the industry</p> 	<p>Nye Veier participates in the Nordic collaboration NBC and several national collaboration platforms. Samferdslesrådet (The Transport Council in Norway) is an important forum where Nye Veier, Statens Vegvesen and Bane NOR engage with the industry. The aim is to support development, standardisation and predictability through alignment among public clients, contributing to increased digital maturity across the sector.</p>
<p>Other ongoing development</p> 	<p>Nye Veier continuously seeks to be prepared for the future by increasing its digital maturity and enabling innovation and development. At the same time, standardisation is essential for development efforts to reach their full potential. Nye Veier was established in 2016 to challenge traditional approaches to road development, and questioning established practices is embedded in the organisation's DNA. As a result, continuous measures are taken daily to improve efficiency and achieve greater value for money.</p>

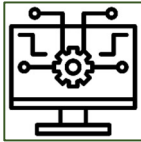
Vejdirektoratet

Strategy view on BIM and digitalisation



Vejdirektoratet views BIM and digitalisation as core instruments for data-driven project management. We have utilised BIM to realise benefits such as machine control and a Single Source of Truth. Digitalisation is anchored in the organisational strategy under the principle of "simplify, standardise, and digitalise", and a dedicated BIM and Geospatial Strategy is set to commence development next year. The long-term goal is to transition from project-centric delivery to a data-centric lifecycle.

Tools and software



Vejdirektoratet utilises Bentley Systems and Esri as the technical foundation for delivery and operations. Bentley ProjectWise serves as the Common Data Environment, while OpenRoads and MicroStation are primary authoring tools. iModel is used as a viewer across design and construction. Infrastructure Cloud is actively used during construction and is being expanded to the design stages to digitise quality assurance and reduce reliance on email.

People and processes



Vejdirektoratet has implemented frameworks to align internal roles with project scopes. A key initiative is restructuring the BIM Manager role to ensure proactive governance and strict adherence to standards, particularly when managing external appointed parties. Additionally, a development project is mapping current business processes for information exchanges across all project disciplines to streamline collaboration.

Education and training



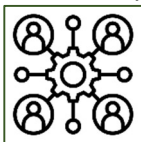
Mandatory training in digital standards and ProjectWise is conducted every two to three months for new employees and is open to existing staff. Bespoke project-specific startup meetings supplement the standard kick-off training provided to external partners.

Delivery from projects to asset management



Discipline models from the construction phase are currently converted into 2D GIS data, which forms the foundation for maintenance work. Following a thorough analysis of maintenance deliverables, a concrete initiative is commencing to establish a systematic, standard GIS-based solution for asset management, focusing on asset classification and further digitisation of operational processes.

Collaboration with the industry



Vejdirektoratet collaborates through networks such as BIMinfra.dk and DiKon, having recently adopted DiKon's delivery specifications. A broader initiative involving public clients, consultants (FRI), and contractors (DI) is dedicated to streamlining information management nationally across the infrastructure sector. Active memberships in buildingSMART Denmark and the Danish Standards S-808 committee ensure alignment with national and international developments.

Other ongoing development



A pilot implementation of classification on two major road and tunnel projects aims to structure data in alignment with CCI (Construction Classification International) and ISO/IEC 81346. This comprehensive initiative extends across all areas of the organisation and is linked to the ongoing work on delivery of data from projects to asset management.

Banedanmark



<p>Strategy view on BIM and digitalisation</p>		<p>BIM & Digital Innovation has joined up with the departments for data storage of asset management and tactical asset management planning. New projects to benefit lifecycle for all of us and the use of BIM is in the scope. We are trying to get a forum with our top management where ideas can be presented, to see if it would benefit our path for Fail-Fast or implementation. We want a political push for requirement for digitalisation and BIM, for everyone in infrastructure projects. This is work in progress.</p>
<p>Tools and software</p>		<p>Our focus is software neutral when we define the delivery of data and cad files. We have Revizto for BIM coordination and it works well with all data exchange, but not so much IFC files. We are starting to use Speckle to enrich our material with CCI and further metadata information. Speckle is opensource python scripting and we see good potential in this solution, while also being software neutral.</p>
<p>People and processes</p>		<p>We are seeing a good development from disciplines and project management to include BIM coordination for better constructability in each of our projects. We will push for it and if they ask for more, we are ready to do more. In that scheme we have implemented BIM LOOP in our project schedule to be more involved in project in all phases, but also support very specific disciplines in getting involved and using BIM coordination earlier.</p>
<p>Education and training</p>		<p>We are training people in using Revizto, and they do their own training in their specific software for design. We need to buy more Revizto licenses because more and more people has the need and request to get access.</p>
<p>Delivery from projects to asset management</p>		<p>AM focus is to have data to evaluate predictable maintenance, and we need to figure out which data in the handover that is sensible. Our current focus is that when a maintenance assignment has been created, then what data is needed to do the actual task, f.e. track adjustment</p>
<p>Collaboration with the industry</p>		<p>We have started our dialog meetings with the industry again and there has been good attendance and dialog. We get good feedback and experience on what they think of our purposed solution, and we are open for interaction and adaption of changes from their suggestions. We are planning our BIM for Rail Bootcamp this June in Riga – please join. See linkedin post.</p>
<p>Other ongoing development</p>		<p>We are developing our survey standard for pointcloud survey and we are happy to share and get input on this. We are testing other BIM collaboration solutions than Revizto with the focus to be more visible and get more users into this environment.</p>

Trafikverket

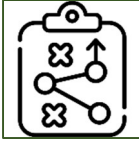
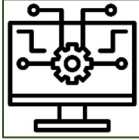


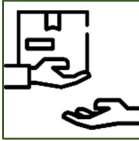
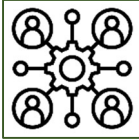

<p>Strategy view on BIM and digitalisation</p> 	<p>The STA's strategy focuses on efficient, standardised and interoperable information management across the asset lifecycle. BIM has evolved from a project tool into an integral part of asset management and digital business development. The goal is data-driven and sustainable management where information is object-based, accessible and reusable. Collaboration through national and international networks ensures alignment, open standards and long-term digital transformation of the infrastructure sector.</p>
<p>Tools and software</p> 	<p>The current tool environment is still fragmented but improving. Wider CDE adoption, common templates and emerging IDS standards drive progress. Upcoming deliveries from the Dalmas project address major needs: machine-readable information requirements, the Dalmas Hub for automated data flow to asset systems, governance of common ontologies, IFC-based open exchange, and strengthened capabilities for receiving and maintaining digital models in daily operations and maintenance workflows.</p>
<p>People and processes</p> 	<p>STA's digital transformation is ongoing and closely tied to how people and processes evolve. Strategically, the aim is a data-driven culture with shared responsibility for digital information. In practice, digital maturity is still modest, and information management in investment projects often remains document-based and inconsistent. Initiatives based on international standards are introduced, and focus is on developing prerequisites and managing change.</p>
<p>Education and training</p> 	<p>Education and training within STA include information management and data governance based on international standards. STA collaborates with universities as well as with industry partners through BIM Alliance Sweden and buildingSMART Nordic, to align training with evolving BIM standards and best practices. Certification is under discussion.</p>
<p>Delivery from projects to asset management</p> 	<p>Transferring structured model data from projects to operations is one of STA's main priorities. Most major projects now apply object-based 3D models, though consistency and standards vary. Development initiatives are focused on methods and structures for standardized and automated data exchange. However, many existing O&M systems are legacy solutions not yet fully capable of receiving or managing object-based information, creating gaps between digital project deliveries and long-term asset information use.</p>
<p>Collaboration with the industry</p> 	<p>Collaboration on an international, Nordic and national level with other clients and industry stakeholders, through interest organizations is a cornerstone of STA's digital transformation. STA contributes to BIM definitions, standards, information structures and supports the implementation of IFC and openBIM principles. STA contributes to the general contract conditions, including the new concept of <i>digital model</i> as a contractual document using open formats.</p>
<p>Other ongoing development</p> 	<p>Beyond formal programs, several cross-cutting initiatives are advancing digital infrastructure management. Work on data governance, AI-driven asset analytics, and digital twin pilots is expanding. STA is involved in developing the National Guidelines for Lifecycle Information, supporting common data structures and interoperability across the built environment.</p>

Table A – Strategic/non-technical part – clarifications

Clarifications by the organisations to table A (if needed).	
Väylävirasto	
1.-2.:	Information based leadership is a priority strategy. The organisation's information management will develop through the Development program for asset information life cycle management -project - and ISO19650- project during 2026-29.
3.-4.:	Benefits of BIM is widely understood in design and construction projects, organisation wide benefits (like asset management) under development.
5.-6.:	The maturity of digital information flow through life cycle is increasing. The systematic learning from project to project is under development.
Bane NOR	
1.-2.:	
3.-4.:	
5.-6.:	
Statens Vegvesen	
1.-2.:	
3.-4.:	
5.-6.:	
Nye Veier	
1.-2.:	A plan for data and information management for Nye Veier is nearing completion. This will implement further implement information management at organizational level and will also clearly define roles and responsibilities. (1.1 and 1.3)
3.-4.:	A plan for data and information management for Nye Veier is nearing completion. This will ensure systematic measurement and help define needs based on achieved gains and experiences. (3.1 and 3.2)
5.-6.:	D2 has been chosen because the requirements are planned to be more clearly framed in accordance with the ISO 19650 standard. Otherwise, the status would have been I2. (5.1)
Vejdirektoratet	
1.-2.:	Digitalisation is anchored in the overarching organisational strategy under the principle of "simplify, standardise, and digitalise". However, a dedicated organisation-wide BIM strategy has only recently commenced development. Digital roles are being refined to ensure stronger governance from Project BIM Managers, and management acts as a driver for transformation primarily through the BIM Steering Group, though this engagement is not yet fully uniform across all divisions.
3.-4.:	Systematic measurement of digitalisation benefits is not yet established, but achieved technical gains and experiences are actively used to guide future priorities. Training is implemented for relevant staff, with a shared curriculum available during onboarding. Technical specialists maintain high proficiency in authoring tools, particularly within core disciplines, while project leaders are supported through BIM and GIS viewer-based applications for decision-making.
5.-6.:	Contractual data delivery requirements and CDE usage are fully standardised. However, the centrality of CAD and BIM deliverables varies across the lifecycle; while implemented in certain phases, they are not yet integral to every project throughout all stages. Notably, integration into asset management remains a future goal. Learning from pilots is captured via central governance, although emerging technologies currently lack a systematic validation framework.
Banedanmark	
1.-2.:	We are working on getting our management to understand what BIM is and how it can benefit in projects. BIM will not save a project, since it is only about 20% for a project delivery, and therefore it is not a focus by project management. But our project leads and disciplines are asking more frequently about getting BIM to be part of the project understanding and review
3.-4.:	When it comes to implement and ask for funding, there has been a challenge to find examples and use-cases of where the benefit is financial. So cases are more on a human level and goal ambitions of benefit, and we don't measure these. From time to time we get asked to do training i Revizto, but that is our world and not theirs. There is an interest from AM to store CAD files, but that is not our interest. Ours would be to store the data within, and regenerate the CAD based on that.
5.-6.:	Our organisation isn't ready for the big BIM push and the maturity is rather low. We do have our standards in order but on a lower level of BIM. We do have our CDE working and sharing between parties are working fine. Data quality in the material shared is medium level.
Trafikverket	
1.-2.:	Trafikverket has relevant strategy documents, "Digital Maturity" and "Information about assets including BIM" but ongoing implementation suffers from competing drivers of business development
3.-4.:	Because digital maturity is low, many have difficulty linking business improvements to digitalization.
5.-6.:	The gap between those who have low knowledge of the concept of BIM and those who consciously use BIM and observe its effects, is increasing. The Swedish Transport Administration (STA) is focusing on reducing the gap by establishing a concept for a learning organization.

Table B – Technical/professional part – clarifications

Clarifications by the organisations to table B (if needed)	
Väylävirasto	
1.-2.:	Standardised requirements are defined in information requirement documents and are used in most projects. Harmonised naming is generally not a current issue.
3.-4.:	Currently, we rely on Inframodel and document-based requirements. The Asset Information Lifecycle Management development programme (2025–2028) will transition these towards more systematised, IFC- and digitally based requirements. In bridge projects, IFC 2x3 is currently in use.
5.-6.:	Models are used on worksites very actively. BIM requirements are based on buildingSMART Finland's General Inframodel requirements (IM, LandXML, IFC 2x3 in bridges, 3D dwg). 5.5. In some advanced projects models are used for technical evaluation before the documents.
BaneNOR	
1.-2.:	2.5 Has requirement for spatial breakdown structure in Project/Site/Railway/etc. 2.6, Implemented and under development
3.-4.:	
5.-6.:	We are evaluating RDS as a classification system in all parts of our organization but have not yet implemented it
Statens Vegvesen	
1.-2.:	
3.-4.:	
5.-6.:	
Nye Veier	
1.-2.:	
3.-4.:	Supplementary drawings are required in cases where this is specifically required or requested by a third party. (4.1)
5.-6.:	Nye Veier participates in national and Nordic collaborations to ensure an industry standard for applying LCA using BIM (5.3). Reference Designition System (RDS), NEK/IEC 81346-1, -2 and ISO 81346-12 (6.2)
Vejdirektoratet	
1.-2.:	Standard ICT specifications mandate CAD and GIS deliverables across all lifecycle stages. Requirements for geometry and information are fully aligned and implemented, extending to both element and property naming. These are supported by common resources via the CDE and the organisation's standardisation portal, with technical consistency further achieved through pre-configured Feature Definitions and standardised Item Types.
3.-4.:	IFC usage is implemented only in specific pilot instances, whereas LandXML is a standardised requirement for alignment models. General contractual requirements strictly mandate both 2D drawings and 3D geometry. While Item Types successfully link data to elements.
5.-6.:	Models are utilised for specific tasks such as expropriation. For commercial purposes, quantity extraction for bids and payment is a standardised requirement, and model data is mandated for life cycle assessment using InfraLCA. Regarding technical evaluation, internal clash detection is actively practised. Systematic model-based quality control of external deliverables is not yet fully implemented but is currently under development.
Banedanmark	
1.-2.:	We are working on a national standardization of ICT use for all infrastructure projects, with a larger cost of X.mio, similar to what has been done for construction back in 2013. If it works, than we can define some national standards and can reconize the ICT requirement and what is included in that, across all infrastructure projects. Work In Progress.
3.-4.:	We have controll of all of our CAD standards, manuals, templates etc. We are good on that and only maintenance of these is relevant, for the majority of the standards. More and more people and experiences show that there are challenges when using IFC files, and we will look more at IFC data to regenerate models based on IFC data
5.-6.:	If the national ICT gets approved, then we will see an improved BIM environment through all phases of a project, and maybe also in AM. Right now we are using Revizto, and it works well. We dont have a CMS system for fiels yet. We are using models more and more, and will improve the model/3d production using parametric and AI solutions, for quick first draft and faster production

Trafikverket	
<p>1.-2.: - Since at least 10 years all major projects have had contractual requirements for BIM. For example, Models are higher ranked in the contractual structure.</p> <ul style="list-style-type: none"> - Some bigger projects have aligned the requirements, but the work has now started to align across all projects. - Same as for geometries. The work for information requirements has just started and being aligned with the requirements from the long term O&M phase. - This work is part of the same initiative as the two previous questions. 	
<p>3.-4.: - IFC has been introduced as optional exchange format in some Requirements documents, ie for Bridge handover and development is ongoing and a step by step intro is being done to require IFC4.3 in all projects</p> <ul style="list-style-type: none"> - Dialogue with the industry is ongoing and a "challenge" to deliver according to a simple IDS was launched and answered last year, with eye opening results. - Yes, for exchange of all Road and Rail alignment files. - Yes, in most, due to mainly two reasons. Low maturity to review as models and lack of intuitive BIM tools. Reluctancy in smaller projects to "double deliver" O&M still require drawings so BIM is not cost efficient enough - Yes and no, but for smaller projects drawings are being prioritised due to the reason above and as a result models are might be used for coordination, but sometimes not at all. - No, but with the introduction of IFC4.3 requirements in coming years, this will change. With the exception for the symbol library for railways, see previous answers - No, except for CAD layers, komponent ID and production result as mentioned above. Also this is being developed in the introduction of the IFC4.3 	
<p>5.-6.: - This is the contractors field of work, it was seen as one of the low hanging fruits and why Trv introduced models more than 10 years ago. The site surveyors are actively using models where they exist and appreciate if they have a higher contractual status than drawings, so the models are trustworthy</p> <ul style="list-style-type: none"> - We see this as part of the coming development. Also an on-going national project, BIMtoBOM by the contractors. - Several ongoing projects are looking at this possibility - To a certain extent the models are being used for analysis of small spaces where work environment issues quickly can be detected and actions taken to change the design. - Where they exist, models are a central part of the communication and coordination of a project, many specialists use them for technical evaluation and optioneering - dwg was required for road design and deliverables from Novapoint was part of the handver from design to construction such as VIPS database. In the same way dgn was required for railway design. Since 2010 there are no requirements on design tools to be used, however requirements on dwg and dgn is still valid with the same split between railway and roads. Landxml is being used only for handover of alignment files. - Since the eighties Sweden has had a system called BSAB96 (87). This system has many implementation variants both for railway and roads. Productions Results AMA has also existed for many years and is mostly used for the technical descriptions for production. CoClass and 81346 has started being implemented at various departments at Trv. 	