



BIM implementation for the Rail Baltica Global Project

Jovita Starynina, BIM and AIM Coordinator
Raitis Bušmanis, BIM Manager
RB RAIL AS



Co-financed by the Connecting Europe
Facility of the European Union

About us

In couple of sentences



Jovita Starynina

BIM and AIM Coordinator

About me

- In RB Rail AS since July 2018
- Worked in railway design and construction companies
- From 2015 PhD student including BIM research

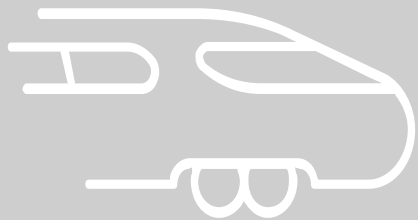


Raitis Bušmanis

BIM Manger

About me

- In RB Rail AS since January 2018
- Before working at Trimble Solutions Oy
- "Involved" with BIM since 2012



What is Rail Baltica?

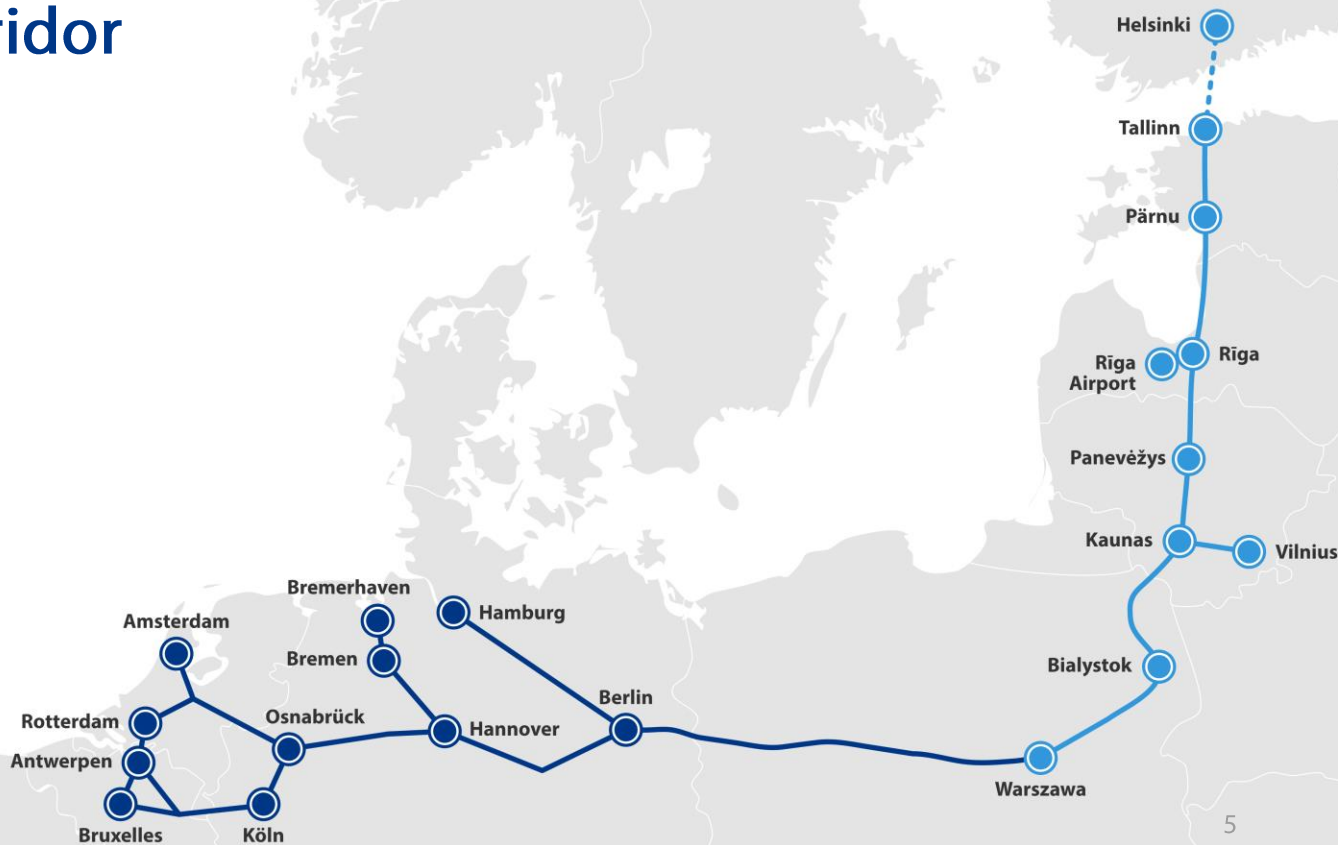
What is Rail Baltica?

Railway
infrastructure for
passenger and
freight movement –
870 km

Catalyst for an
economic corridor
in North-East
Europe



Rail Baltica – part of the North Sea-Baltic core network corridor



Design Speed

249 km/h – passenger trains
120 km/h – freight trains

Standard Gauge

1435 mm

Double-track Electrified

2x25kV AC

Axle Load

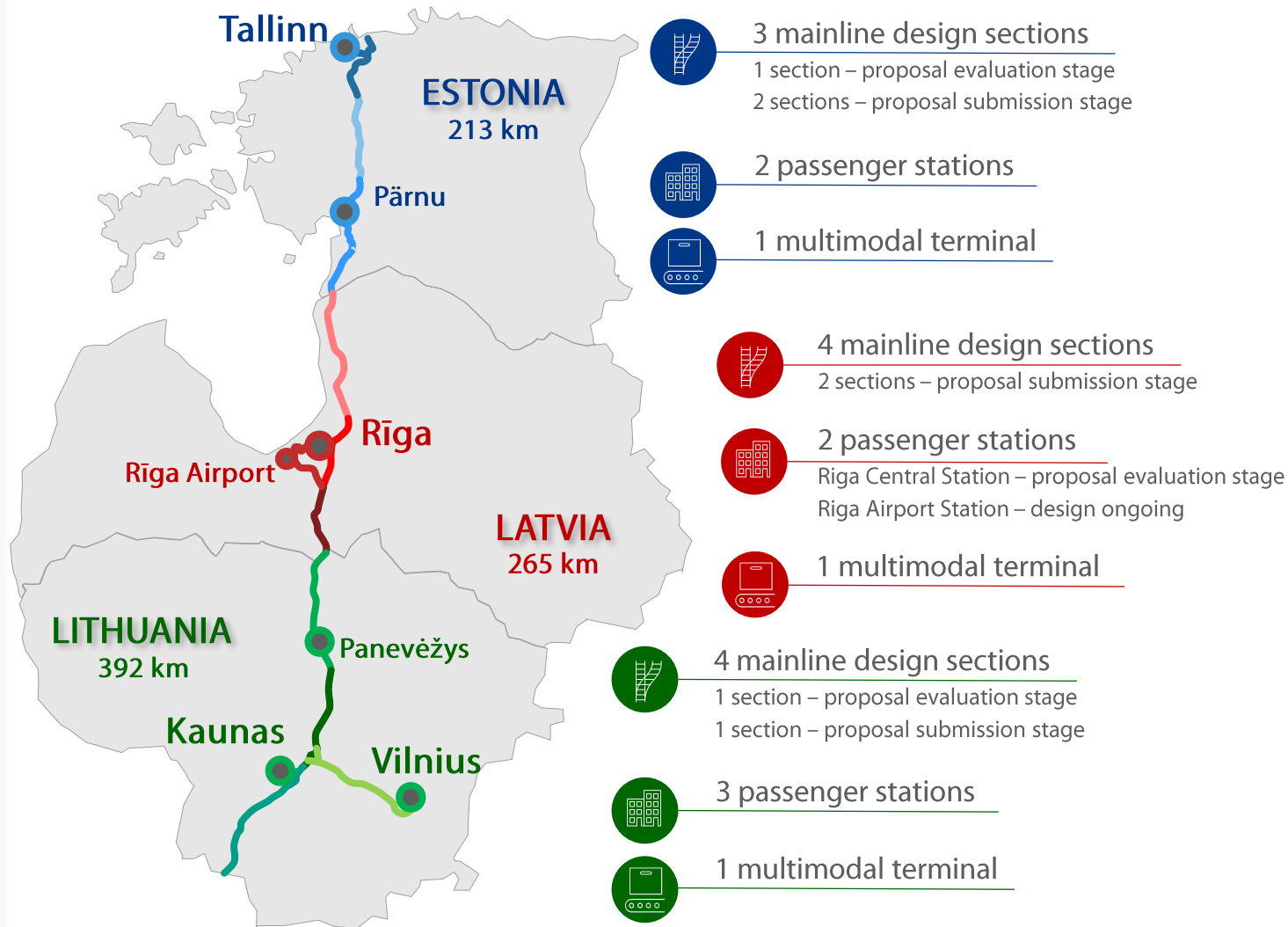
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Traffic Management

ERTMS 2

Max. Freight Train Length

1050 m



ESTONIA



REPUBLIC OF ESTONIA
MINISTRY OF ECONOMIC AFFAIRS
AND COMMUNICATIONS

LATVIA



Ministry of Transport
Republic of Latvia

LITHUANIA



Ministry of Transport
and Communications

Beneficiaries – three ministries

Rail Baltic Estonia

Eiropas Dzelzceļa līnijas

Lietuvos geležinkeliai

RB Rail shareholders

RB Rail
(Branches in LT, EE)

Rail Baltica statyba

Central project coordinator
Joint venture

Rail Baltic Estonia

Eiropas Dzelzceļa līnijas

Lietuvos geležinkeliai

National implementing bodies

Rail Baltica statyba

Project Implementers

Five Rail Baltica Countries

TOTAL AREA:

826 125 km²

Almost **19%** of
the EU territories

338,424 km²

FINLAND

45,227 km²

64,589 km²

LATVIA

ESTONIA

POLAND

LITHUANIA

65,200 km²

312,685 km²

Finland...



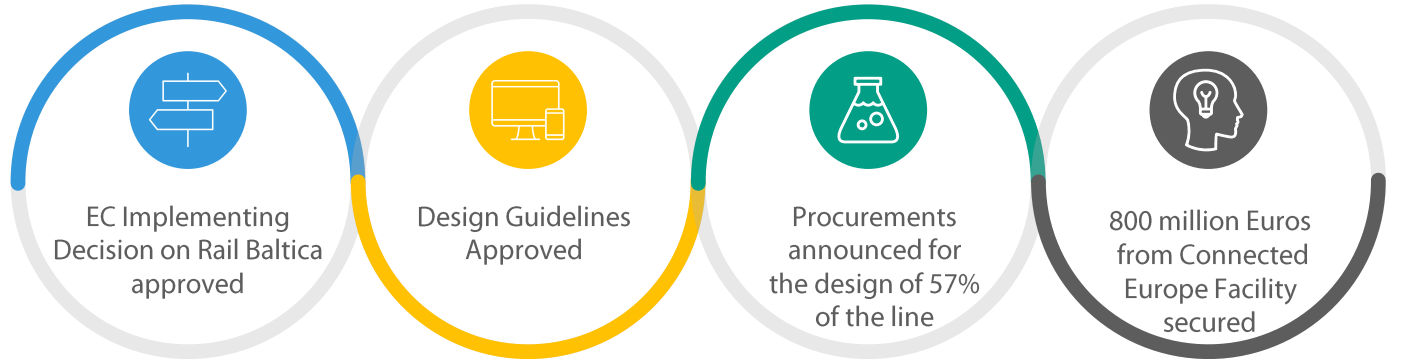
EconMinEstonia @EconMinEstonia · 10 Dec 2018

Estonia, Latvia and Lithuania also gave Finland a formal invitation to join the Rail Baltic Joint Venture. "When we talk about #RailBaltic, we have to keep our neighbors in mind," minister @kadrisimson said while giving the invitation to @LindstromSabina. +



Twitter @EconMinEstonia
Estonian Ministry of Economic Affairs & Communications

Rail Baltica in 2018



01 Political
Commitments

02 Technical
parameters of the
main line

03 Detailed
Technical Design

04 Global Project
Financing



BIM implementation

“No-BIM” and other challenges

Different legislations and construction laws



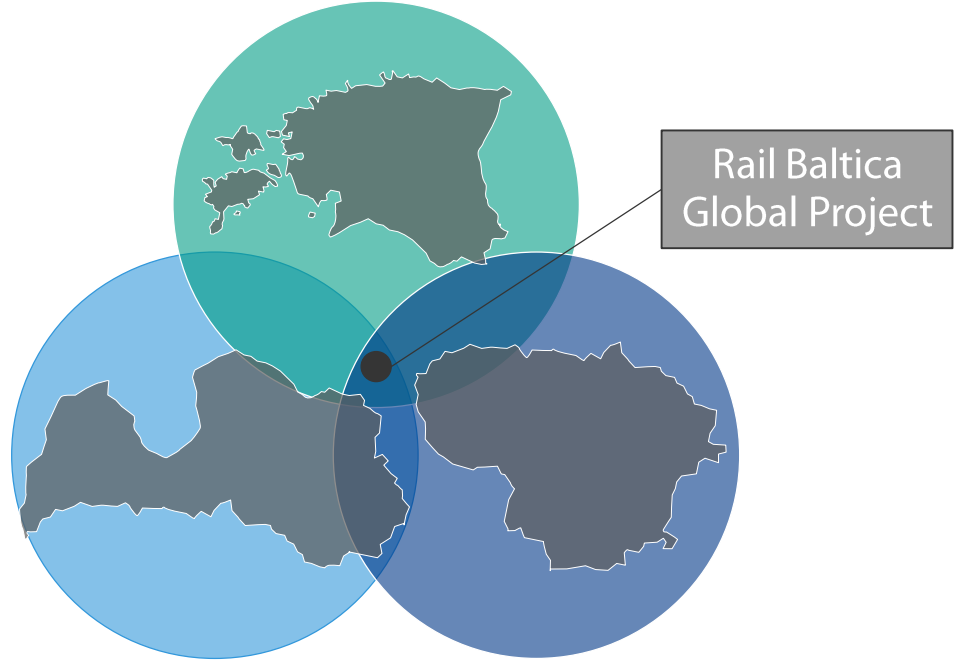
No BIM standards or mandate



Classification?



Time



"No-BIM" and other challenges

Solution: Create

Different legislations and construction laws



- No workaround. We need to comply with local legislation and laws;
- Engage in discussions regarding digital construction requirements.

No BIM standards or mandate



- We create and define our standards and requirements;
- Based on the best practices from "BIM leader" countries;
- International standards.

Classification?



- Currently Uniclass2015 chosen;
- Option for re-mapping to local system if one is developed during the project's lifecycle.

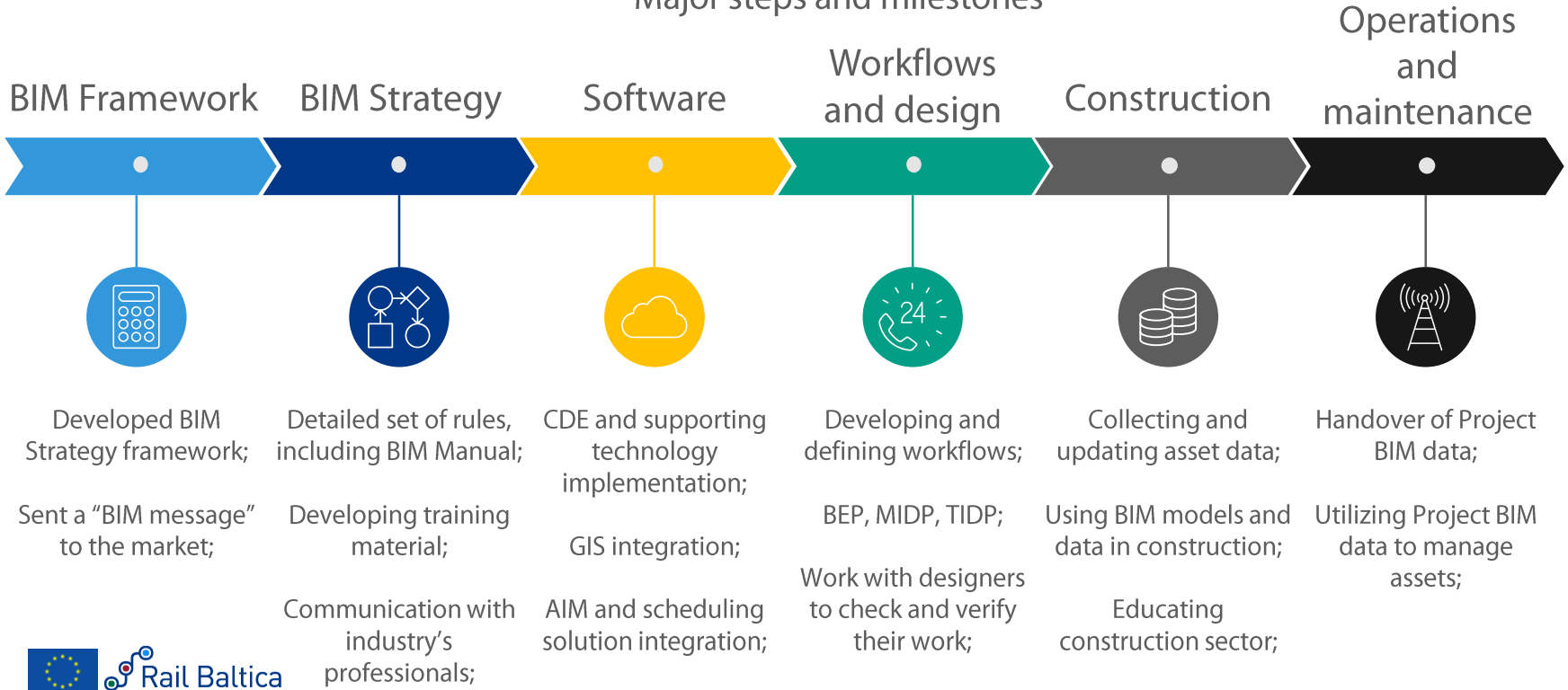
Time



- BIM standards and systems must be set up as-soon-as possible;
- We cannot wait for national standards.

Rail Baltica BIM Roadmap

Major steps and milestones



CDE core functionality



GIS



AIM



Other



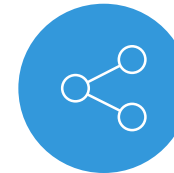
Organization



Communication

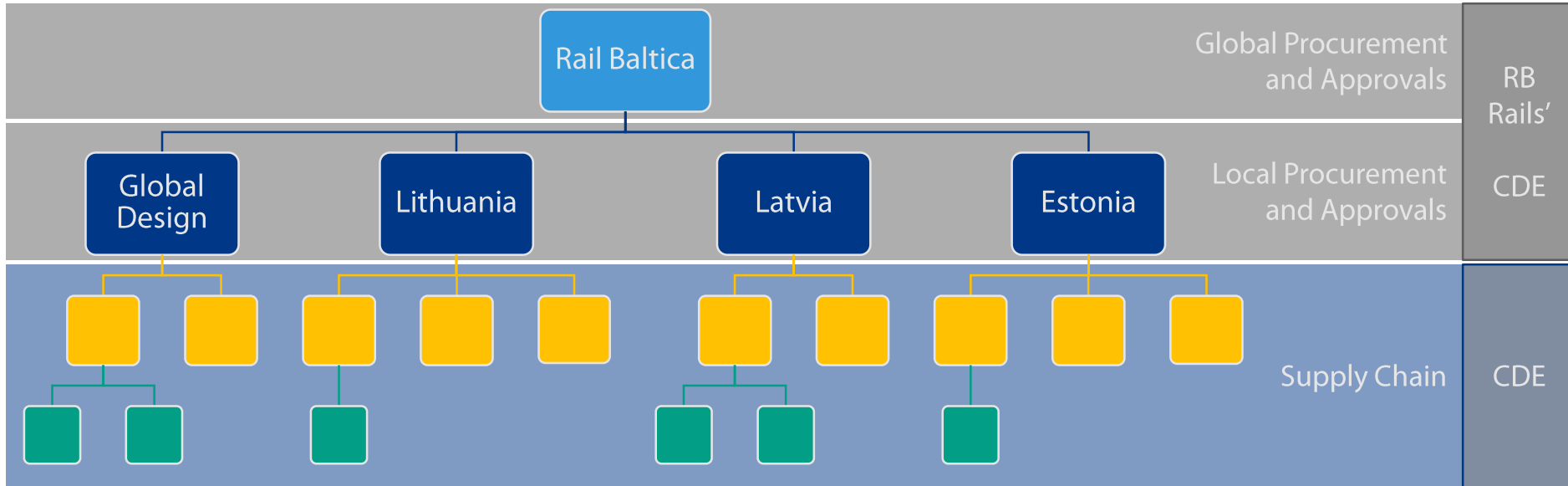


Management

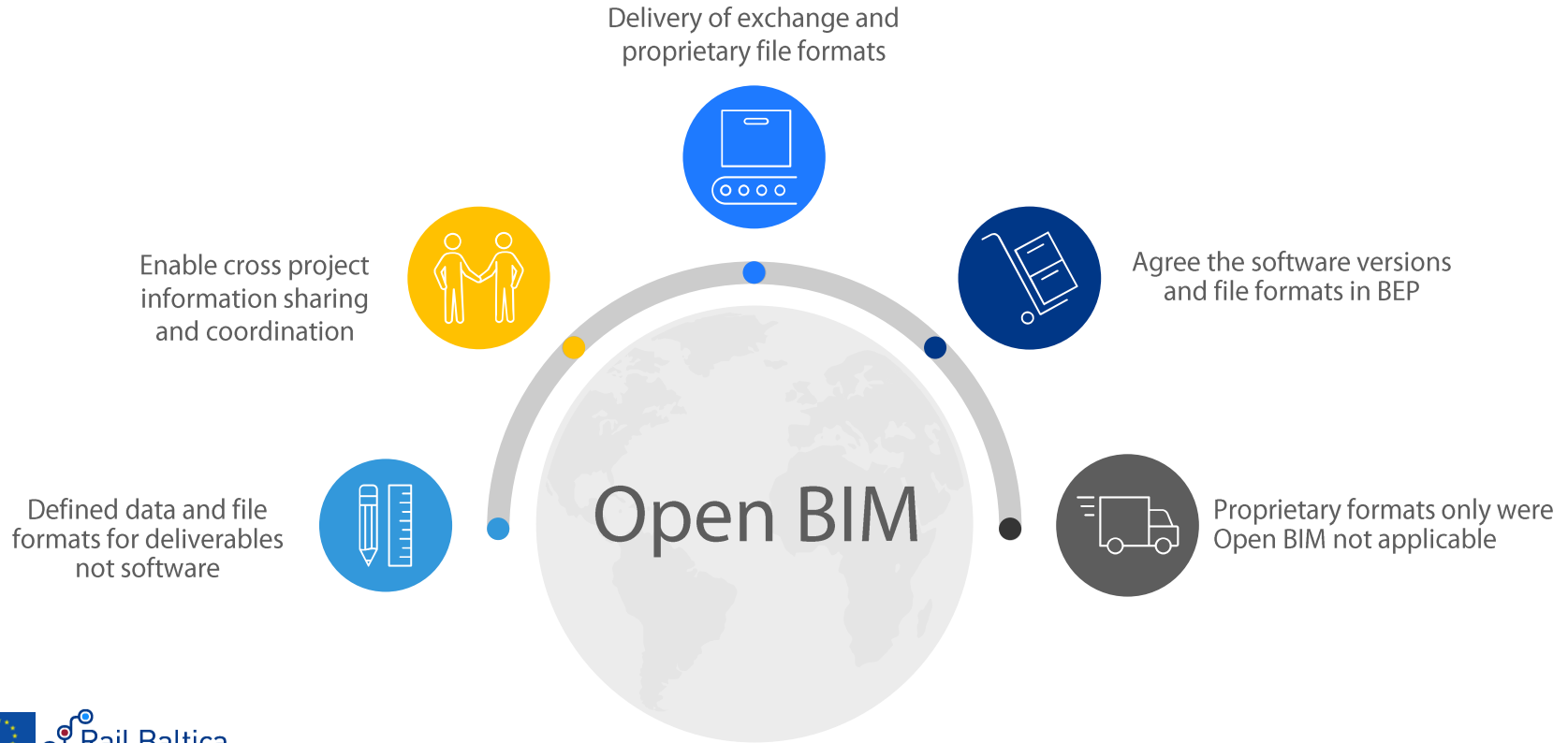


Sharing/Viewing

CDE principle



Open BIM as far as possible



Rail Baltica's BIM website – BIM Knowledge Center

Currently available



RB Rail's BIM documentation

All the published documents are and will be there



Useful information

General information about BIM

Future plans/ideas



Training materials, videos




Forum for the community



RB Rail's BIM documentation

All the published documents are and will be there





This is the official website of the Rail Baltica Global Project


ABOUT RAIL BALTICA BENEFITS NEWS & EVENTS PROJECT IMPLEMENTERS PROCUREMENT CONTACTS

RB Rail's BIM documentation

RB Rail AS is currently working towards implementing the BIM Strategy for the Rail Baltica Global Project. The information on the page will be updated regularly to keep you up to date as the project progresses.

PUBLIC DRAFTS

NOTE: These documents are the first "Public draft" versions, which we have released for review and we would like to hear your opinion about them. Your feedback, comments and constructive criticism are very important to us in order to improve the content. Please submit your feedback using [this online form](#) or send us an email to bim@railbaltica.org.




BIM Manual (Public draft v0.2)

This document and its supporting ecosystem of documents, forms and templates describe and provide the BIM Strategic processes and workflows to be followed by both Rail Baltica and the Supply Chain during the Lifecycle of the projects, being this ecosystem a live documentation that will evolve during the lifecycle of the Rail Baltica BIM program to capture technological and methodology advancements.

The BIM Manual documentation should be used for all the project phases. Primarily it focuses on the design process and we are continuing to improve it.

This document in its final version will be a part of Design Guidelines.

[Download the file here](#)




CAD Standard (Public draft v0.1)

These standards apply to all drawings (sketches, preliminary, detailed design, construction, shop drawings and asbuilt drawings) and CAD Data (2D or 3D) produced. The intent of these CAD standards is to provide guidelines to ensure that all drawings are prepared to a standard and uniform appearance and reflect high quality workmanship, and that data created by CAD systems is correctly structured and classified to facilitate re-use and understanding by others. This document is not related to any particular Authoring Tool and it will be each Supplier who develops a specific practical standardization for the Authoring Tool to be used in their project taking as a base this documentation.

This document in its final version will be a part of Design Guidelines.

[Download the file here](#)




BEP Template (Public draft v0.1)

This BIM Execution Plan (BEP) template has been elaborated to be used as the basis for the post-contract BEP. It has to be prepared as a direct response to the BIM EIR and Technical Specifications. The Supplier shall fulfill all the required information in order to show their intention to comply with all the standards and procedures described in the BIM Manual. The Supplier is free to add extra information.

This document in its final version will be a part of Design Guidelines.

[Download the file here](#)

DOCUMENTS




Detailed BIM Strategy (update from BIM Strategy Framework)

A general document that describes the BIM approach for Rail Baltica Global Project. This document sets out a detailed strategy framework for implementing Building Information Management (BIM) on the Rail Baltica Projects. It outlines the strategic BIM goals, defines processes, standards and protocols for the capture, coordination, management and delivery of digital information throughout the lifecycle of design, construction and operation of the assets being delivered. Detailed BIM Strategy is an update of BIM Strategy Framework.

This document will be a part of Design Guidelines.

[Download the file here](#)



Building Information Management (BIM) Employer's Information Requirements v2.0

This document sets the requirements according to which the supply chain shall work with BIM systems in order to deliver information to Client – RB Rail or National Implementing Bodies.

This document will be a part of Design Guidelines.


[Download the file here](#)



Useful information

General information
about BIM





Linking nations, people, places

This is the official website of the Rail Baltica Global Project

Search ... EN

[ABOUT RAIL BALTICA](#) [BENEFITS](#) [NEWS & EVENTS](#) [PROJECT IMPLEMENTERS](#) [PROCUREMENT](#) [CONTACTS](#)

Useful information about BIM

Want to learn more about BIM? Here is some useful information.

General information

- buildingSMART
- buildingSMART Nordic
- National Building Specification (NBS), <https://www.thenbs.com/>

Handbooks and guides

- Level of Development Specification BIMForum, 2017. The US chapter to buildingSMART International, <http://bimforum.org/>

Handbook for the introduction of Building Information Modelling by the European Public Sector

- English language version
- Lithuanian language version
- Estonian language version
- Latvian language version

Articles

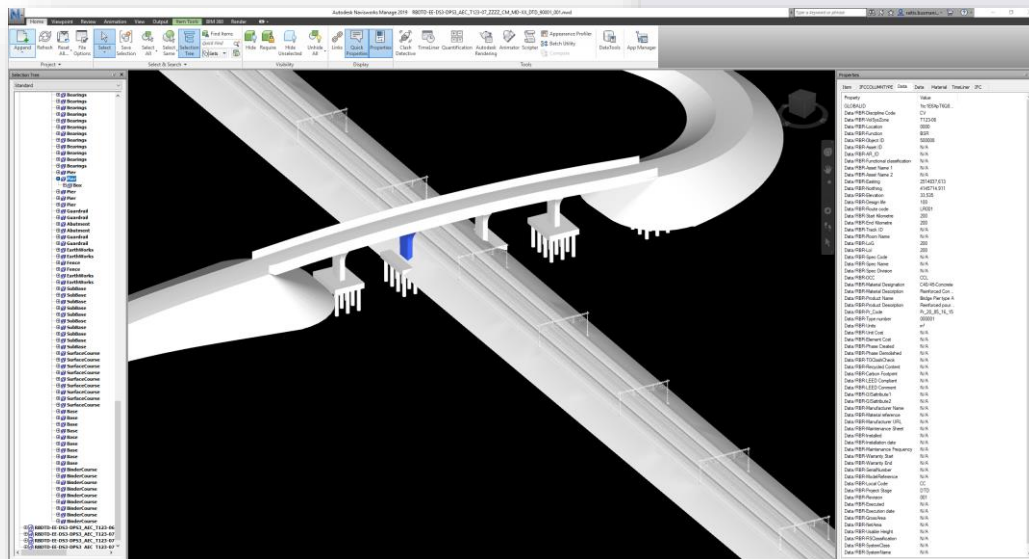
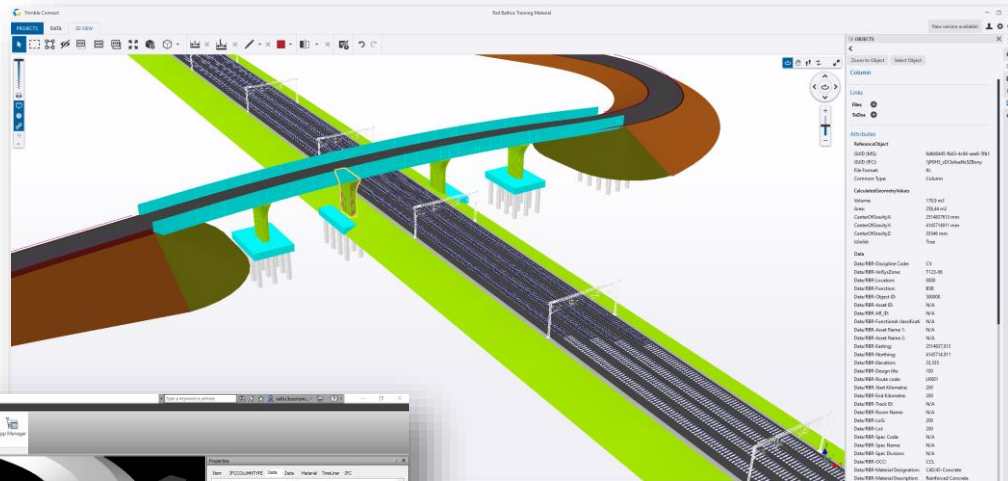
Rail BIM 2030 Roadmap
Source: Ministry of Land, Infrastructure, and Transport of the Korean government; YONSEI University; Korea Railroad Research Institute; Korea Rail Network Authority
http://big.yonsei.ac.kr/railbim/reports/RailBIM2030Roadmap_Full_Eng_Final.pdf

Case Studies

Crossrail – A Case Study in BIM
Authors: Ilka May; Malcolm Taylor; Daniel Irwin – ETH Zurich
https://www.ethz.ch/content/dam/ethz/special-interest/baug/igt/tunneling-dam/kolloquien/2016/May_Crossrail_BIM_Implementierung_ohne_Risiko.pdf



Training materials, videos

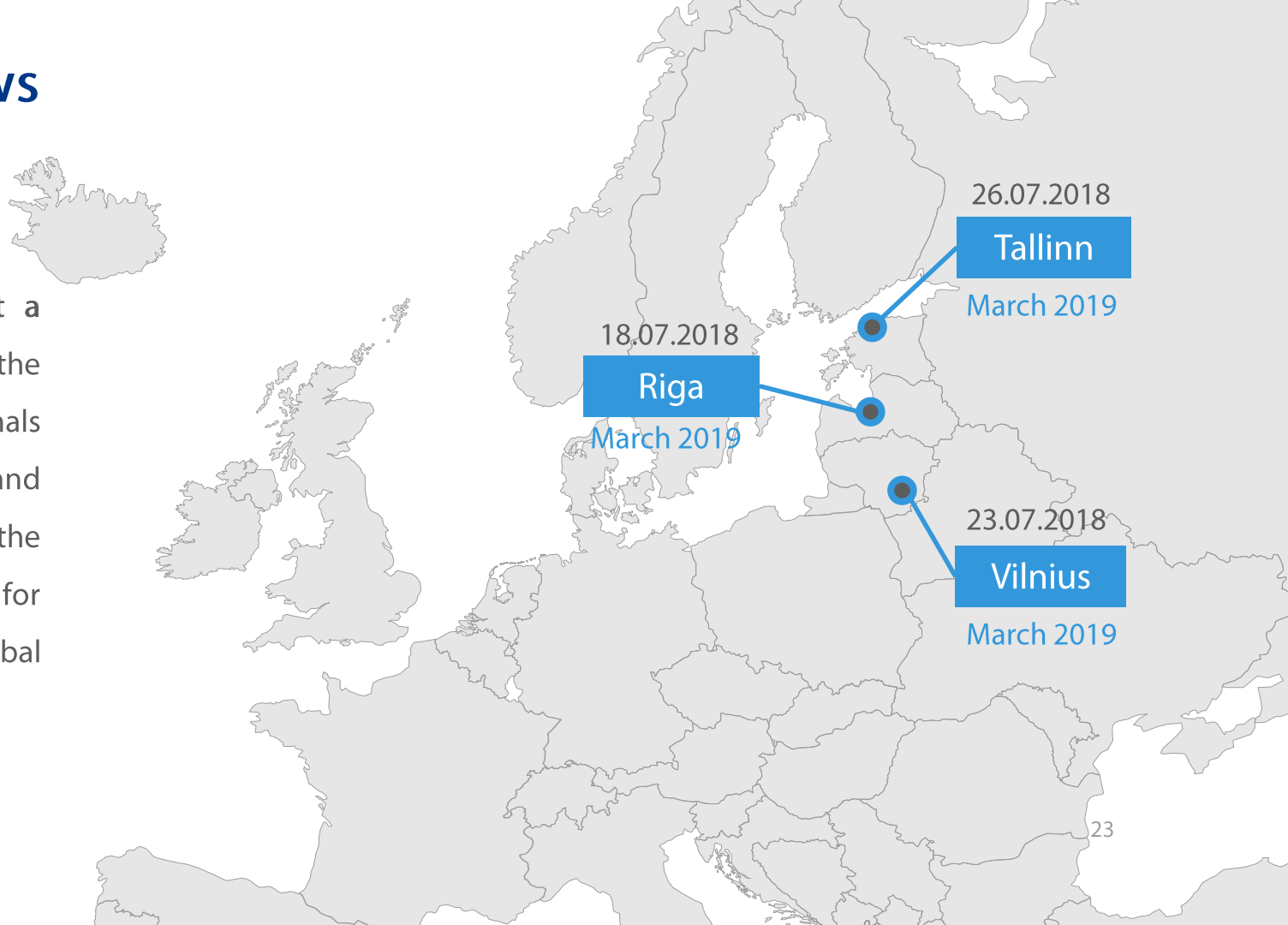


Visiting Crossrail & HS2



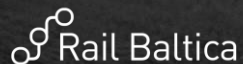
Road shows

To inform, start a dialog and engage the industry's professionals in the discussion and development of the BIM implementation for the Rail Baltica Global Project



Contact us

RB Rail AS is a multi-national joint venture of the Republics of Estonia, Latvia and Lithuania, which has been established to implement Rail Baltica



RailBalticaGlobalProject



Info@railbaltica.org



railbaltica.org



K. Valdemara iela 8, 4th floor,
Riga, Latvia



+ 371 66 967 171



linkedin.com/company/rb-rail



@RailBaltica



**PALDIES!
THANK YOU!
AITÄH!
AČIŪ!
KIITOS!
DANKE!
MERCİ!
DZIĘKUJĘ!**