BIM implementation for the Rail Baltica Global Project

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

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
Five Rail Baltica Countries

TOTAL AREA: 826,125 km²

Almost 19% of the EU territories

FINLAND: 338,424 km²
LATVIA: 64,589 km²
POLAND: 312,685 km²
ESTONIA: 45,227 km²
LITHUANIA: 65,200 km²
Finland...

The proposed tunnel alignment and stations

EconEstonia @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 Rail Baltic, we have to keep our neighbors in mind," minister @kaarisimond said while giving the invitation to @LindstromSabina.
Rail Baltica in 2018

01 Political Commitments

02 Technical parameters of the main line

03 Detailed Technical Design

04 Global Project Financing

EC Implementing Decision on Rail Baltica approved

Design Guidelines Approved

Procurements announced for the design of 57% of the line

800 million Euros from Connected Europe Facility secured
BIM implementation
“No-BIM” and other challenges

- Different legislations and construction laws
- No BIM standards or mandate
- Classification?
- Time

Rail Baltica Global Project
“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

BIM Framework
- Developed BIM Strategy framework;
- Sent a “BIM message” to the market;

BIM Strategy
- Detailed set of rules, including BIM Manual;
- Developing training material;
- Communication with industry’s professionals;

Software
- CDE and supporting technology implementation;
- GIS integration;
- AIM and scheduling solution integration;

Workflows and design
- Developing and defining workflows;
- BEP, MIDP, TIDP;
- Work with designers to check and verify their work;

Construction
- Collecting and updating asset data;
- Using BIM models and data in construction;
- Educating construction sector;

Operations and maintenance
- Handover of Project BIM data;
- Utilizing Project BIM data to manage assets;
CDE core functionality

- Reporting / Dashboarding
- Document Management
- Data Security
- Information Viewing Capabilities
- Mobile/Field Support
- Integration Potential
- File Publication
- Search Capability
- Information Deliverables Planning & Controls

- GIS
- AIM
- Other

- Organization
- Communication
- Management
- Sharing/Viewing

Rail Baltica
CDE principle
Open BIM as far as possible

- Delivery of exchange and proprietary file formats
- Agree the software versions and file formats in BEP
- Proprietary formats only were Open BIM not applicable
- Defined data and file formats for deliverables not software
- Enable cross project information sharing and coordination
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 will be there.
Useful information about BIM

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

**General information**
- buildingSMART
- buildingSMART Nordic

**Handbooks and guides**
- 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: Ika 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
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.
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