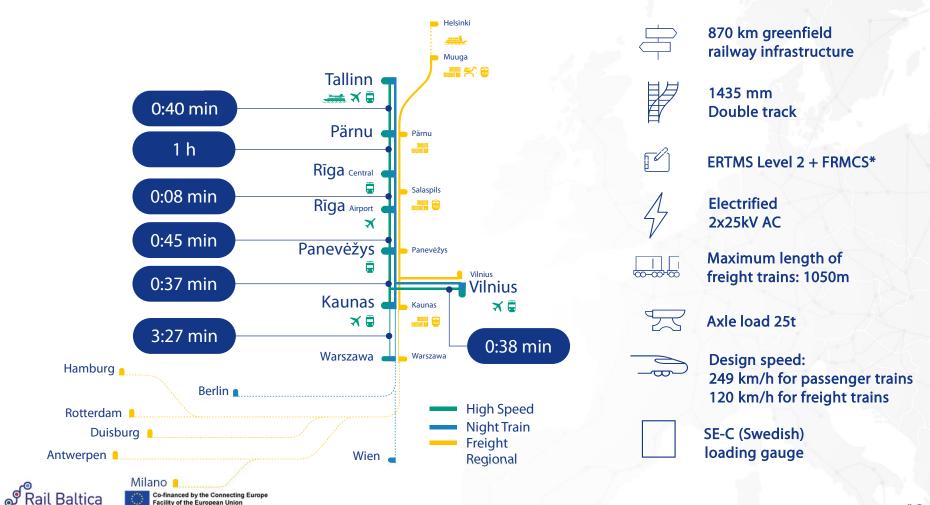


# Digitalization of Rail Baltica Global project

Raitis Bušmanis, Head of Virtual Design and Construction Department at RB Rail AS Jovita Starynina, BIM Team Leader at RB Rail AS



# Basis for new economic corridor, post-Covid recovery and military mobility



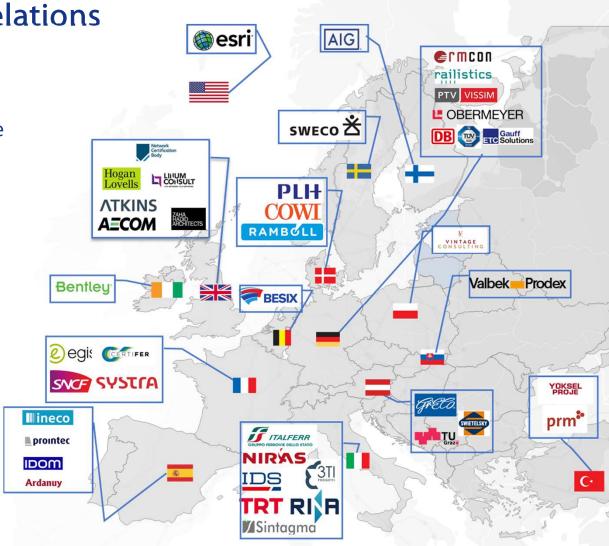
Strong partner and supplier relations

one of our top priorities

 More than 150 active contracts with total value above 900 MEUR. Over 50 international partnerships - European industry strongly represented

- Focus on building long-term strategic partnerships and commitments
- Agile and flexible approach considering the current geopolitical context and challenges
- Rail Baltica existing and potential suppliers

   partners and ambassadors for the
   democratic values and support for Ukraine









at the moment Rail Baltica project

# Rail Baltica **BIM** roadmap

Workflows and design

Construction

**Operations** and maintenance



**BIM Framework** 



**BIM Strategy** 



Software







**Developed BIM** Strategy framework;

Sent a "BIM message" to the market;

Detailed set of rules. including BIM Manual;

Developing training material;

Communication with industry's professionals;

CDE and supporting technology implementation;

GIS integration;

AIM and scheduling solution integration;

Developing and defining workflows;

BEP, MIDP, TIDP;

Work with designers to check and verify their work;

Collecting and updating asset data;

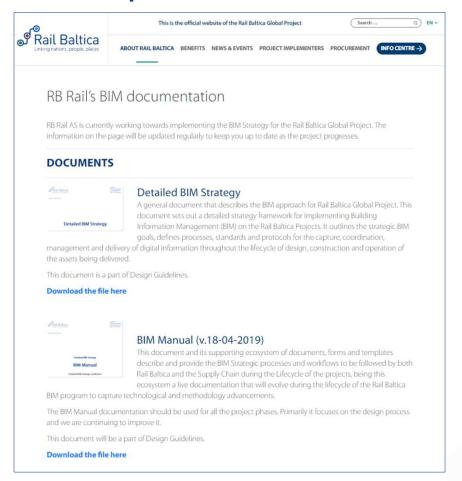
Using BIM models and data in construction; data to manage assets;

BIM data; Utilizing Project BIM

Handover of Project

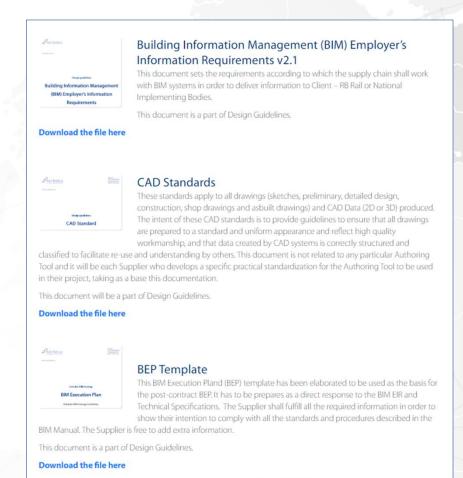
**Educating** construction sector;

#### **BIM** requirements









http://www.railbaltica.org/rb-rail-as-bim-documentation/



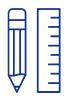


- Rail Baltica Academy public knowledge sharing platform for STEM students and general public
- 7 public lectures on environmental sustainability, railway and airport interoperability, BIM and standards, infrastructure objects in Rail Baltica and other topics available online at: www.railbaltica.org/rail-baltica-academy
- Over 20 different lectures as a part of Rail Baltica Academy's Autumn session, starting in November 2021

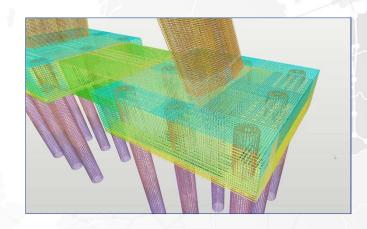
#### Some general numbers



BIM models (\*.IFC) ~14 500



Drawings (\*.dwg/\*.dgn) ~175 000



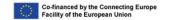


Documents – more than 600 000

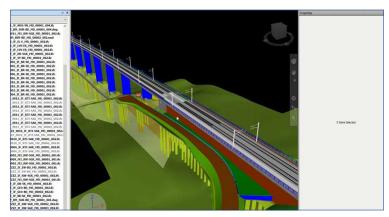


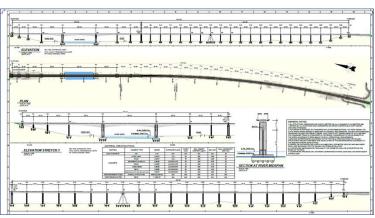
...and counting!

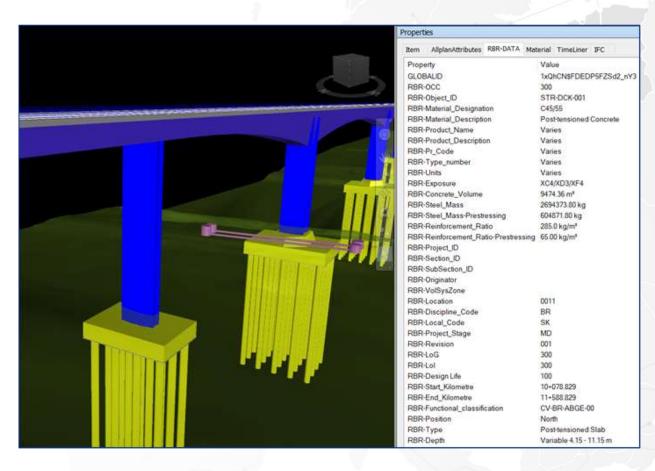




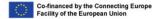
#### BIM process – models and drawings



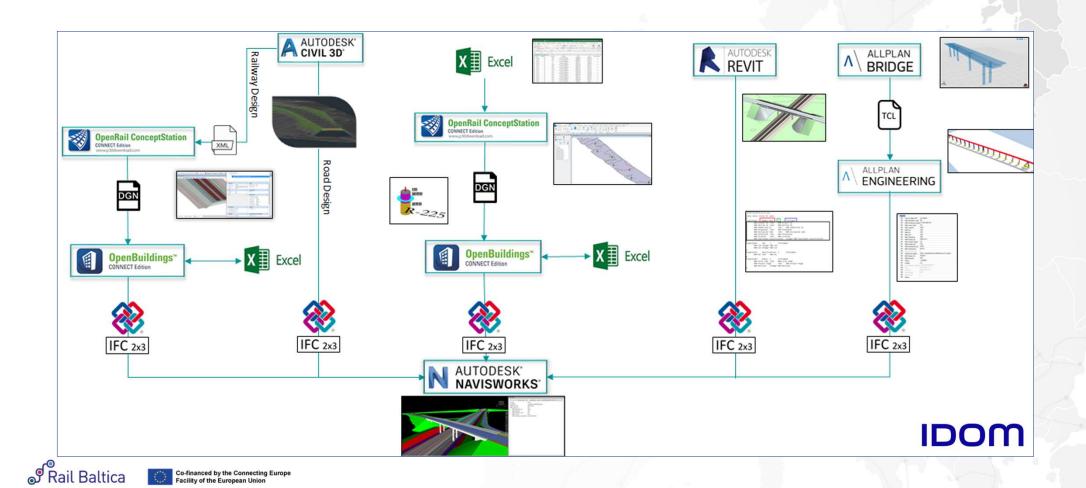




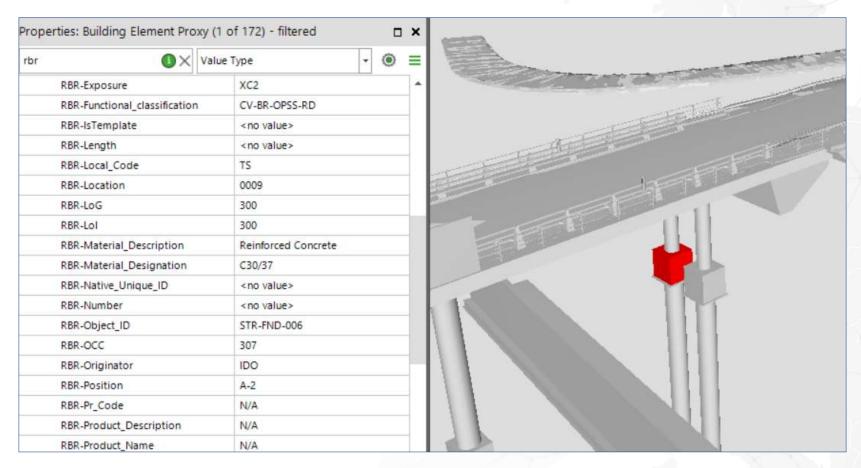




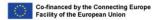
#### Attribute information in BIM models



#### IFC model with required attributes

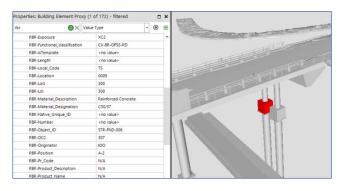


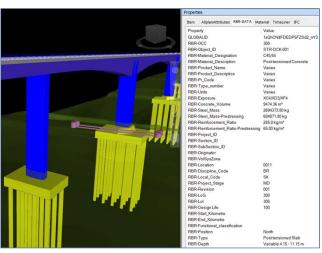




#### Native BIM model with attribute data -> IFC -> Asset Register

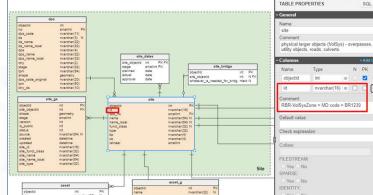
#### **BIM attributes**



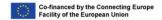




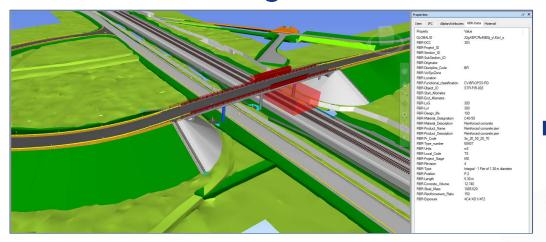
#### **Asset Register database**

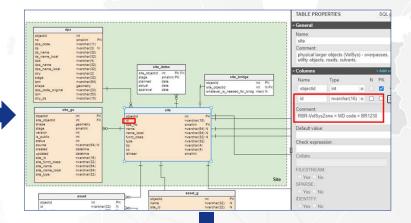






### IFC -> Asset Register in ArcGIS

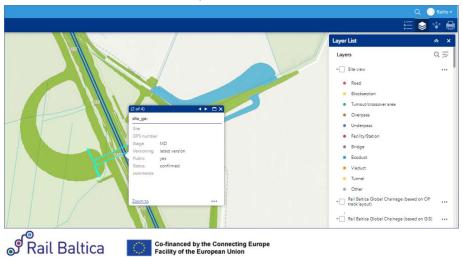




2D footprint

#### Web interface





Co-financed by the Connecting Europe



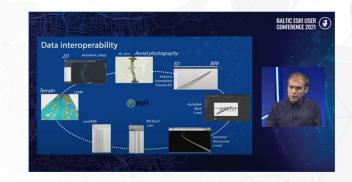




https://youtu.be/TtR5oAuyo7q

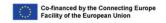


# GIS Development at Rail Baltica: What Solutions are in Place and What Lies Ahead



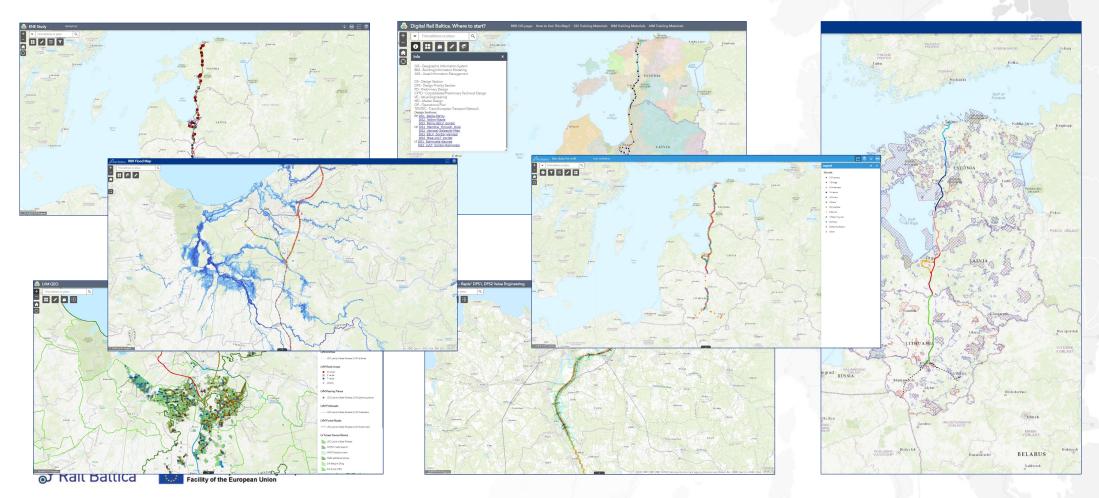






# **GIS Web maps**

All key information in one place

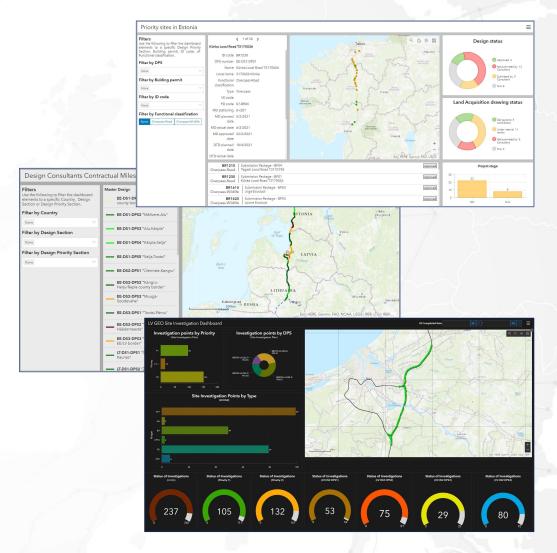


#### Monitoring and Reporting in GIS

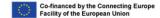
Dashboards that provide key information and are available to all parties at any time and in any place

Less time spent updating PowerPoint presentations and Excel spreadsheets

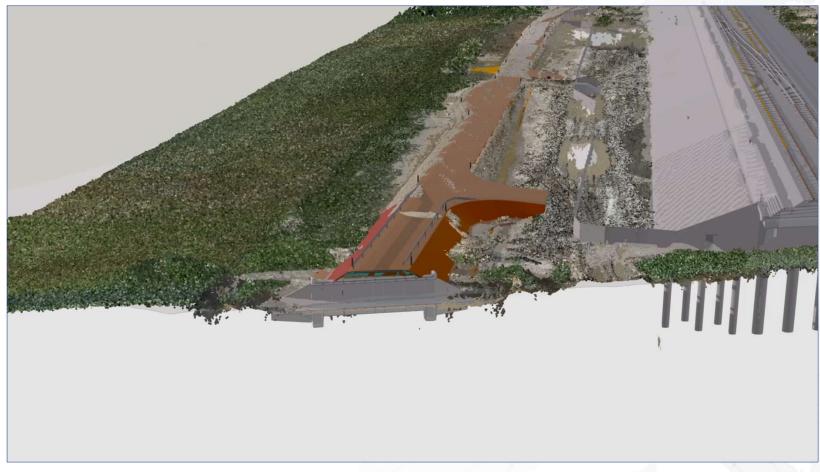
Ongoing integration with ArcGIS and Oracle Primavera P6 will ensure rapid transmission of information without additional human intervention (machine to machine communication)



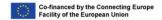




# Monitoring and Reporting in GIS







#### **Global Project Partners Engagement**

RB Rail AS & Rail Baltic Estonia OÜ

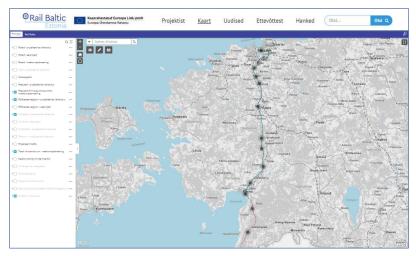
Sharing common environment and data creates new cooperation opportunities between project coordinators and implementing bodies

#### **Land Acquisition**

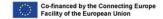


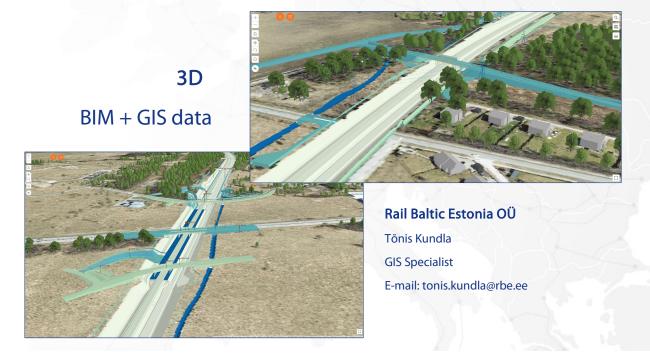
https://rbestonia.ee/









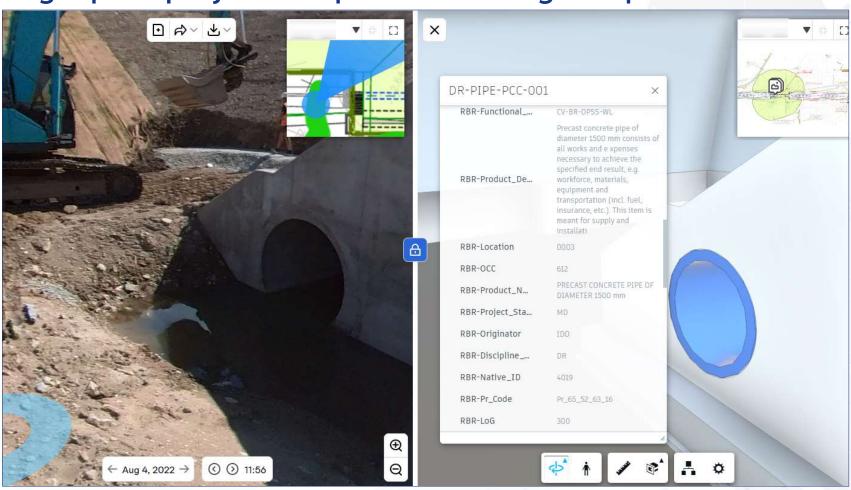


## Testing – pilot project – supervision using 360 photos

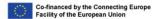




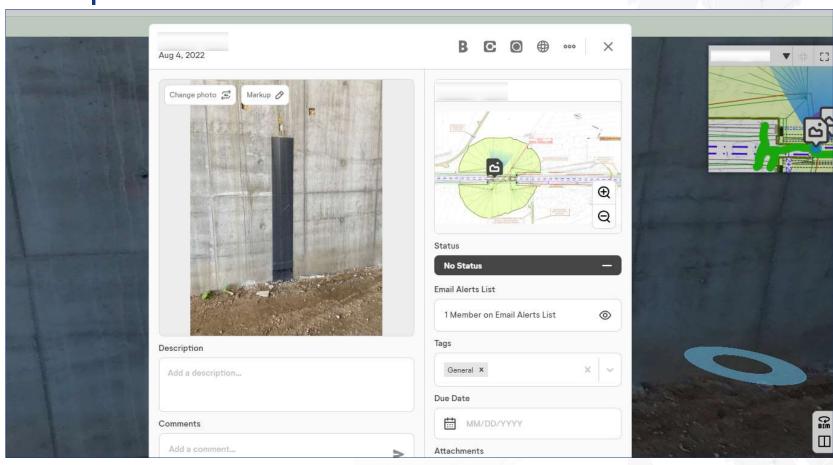
## Testing – pilot project – supervision using 360 photos



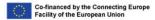




# Testing – pilot project – supervision using 360 photos – field notes and markups





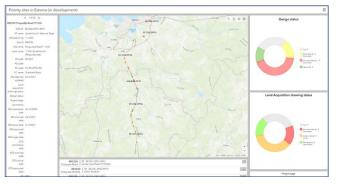


#### **CDE** integration example

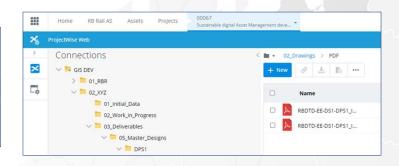
ArcGIS Online

**API** 

Accessing information directly in ProjectWise







#### ArcGIS and P6 integration



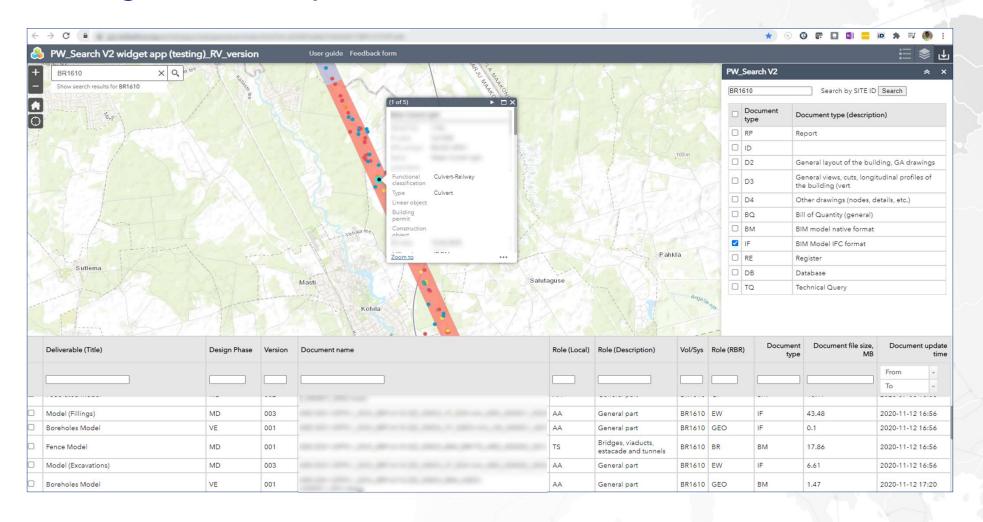




Co-financed by the Connecting Europe Facility of the European Union

https://www.youtube.com/watch?v=3AgxBVEnbCw&t=1035s - Integrate Project Schedules with ArcGIS; David Reeves

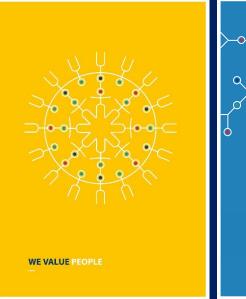
#### CDE integration example: ArcGIS Online - PW

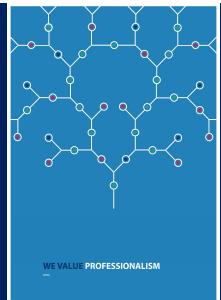


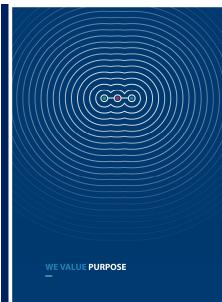


#### **OUR MISSION**

We are delivering a seamless mobility for people, goods and services to accelerate social and economic development in the Baltics and beyond







# Thank you!