



Co-funded by
the European Union

Digital Rail Baltica. Geospatial Solutions for Railway Megaproject Management

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Rūdolfs Vingris

GIS Specialist



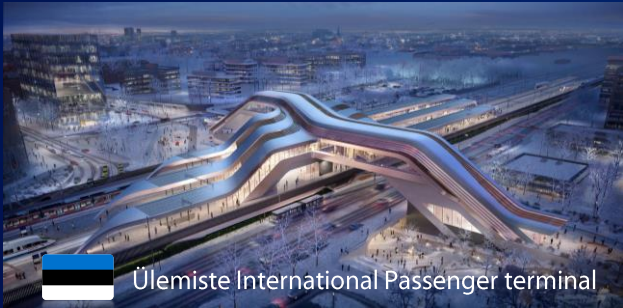
2021 Master of Engineering (Innovative solutions in Geomatics)

- Vilnius Tech - Vilnius Gediminas Technical University
- Rīgas Tehniskā universitāte (Riga Technical University)

2021 Joins Rail Baltica

Since 2010 in GIS industry

A new standard for freight and passenger mobility



Ülemiste International Passenger terminal



RIX Airport Station









Riga Central Station



Vilnius Connect



-  870 km greenfield railway infrastructure
-  1435 mm Double track
-  ERTMS Level 2 + FRMCS*
-  Electrified 2x25kV AC
-  Maximum length of freight trains: 1050m
-  Axle load 25t
-  Design speed: 249 km/h for passenger trains 120 km/h for freight trains
-  SE-C (Swedish) loading gauge

* Subject to confirmation

General progress on Rail Baltica implementation today

Design & Construction

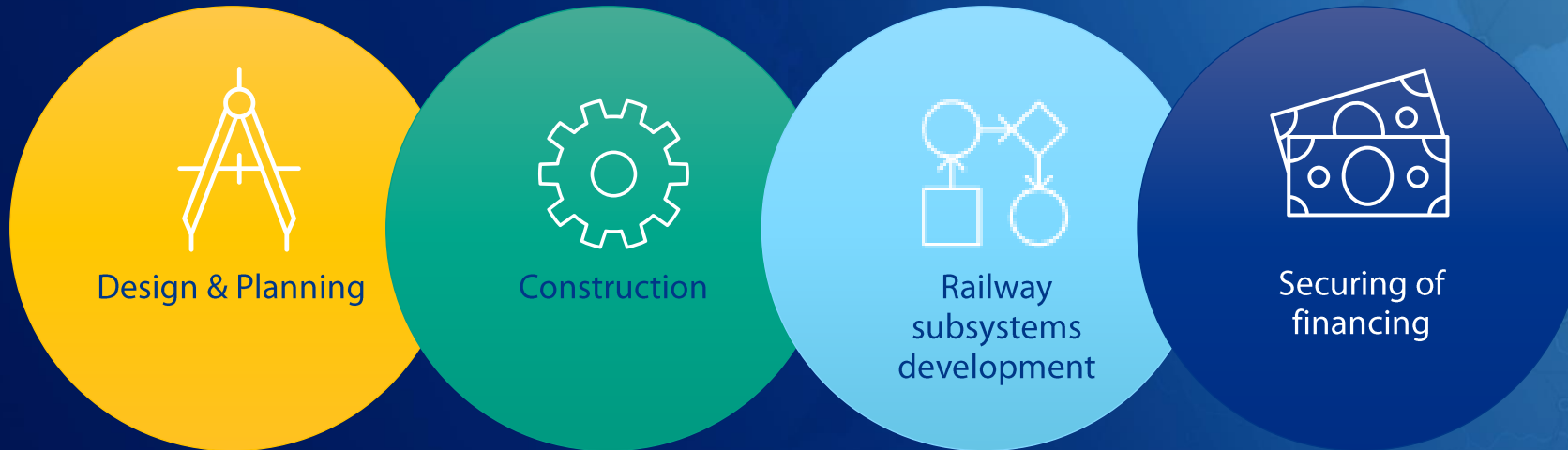
- Master designs for the priority sections are nearing completion
- >100km of mainline to be under construction in the Baltics in 2024
- Consolidated materials' procurements in the final stage
- Electrification & control-command and signalling subsystem 870km design & build procurement ongoing

Delivery Programme 2030

- Project phasing final alignment with the three States
- Investment cost update ongoing, to be finalized with the updated Cost-Benefit Analysis and new-generation Business Plan in 2024
- Inter-institutional Project delivery set-up improvements



Current global project priorities – GIS involment



Design works matured to commence construction and descoped for further acceleration of construction works

Railway infrastructure construction procurements are ongoing with mainline construction set to be launched in early 2024

The design and build procurements for the 870km railway subsystems are approaching the 2nd stage

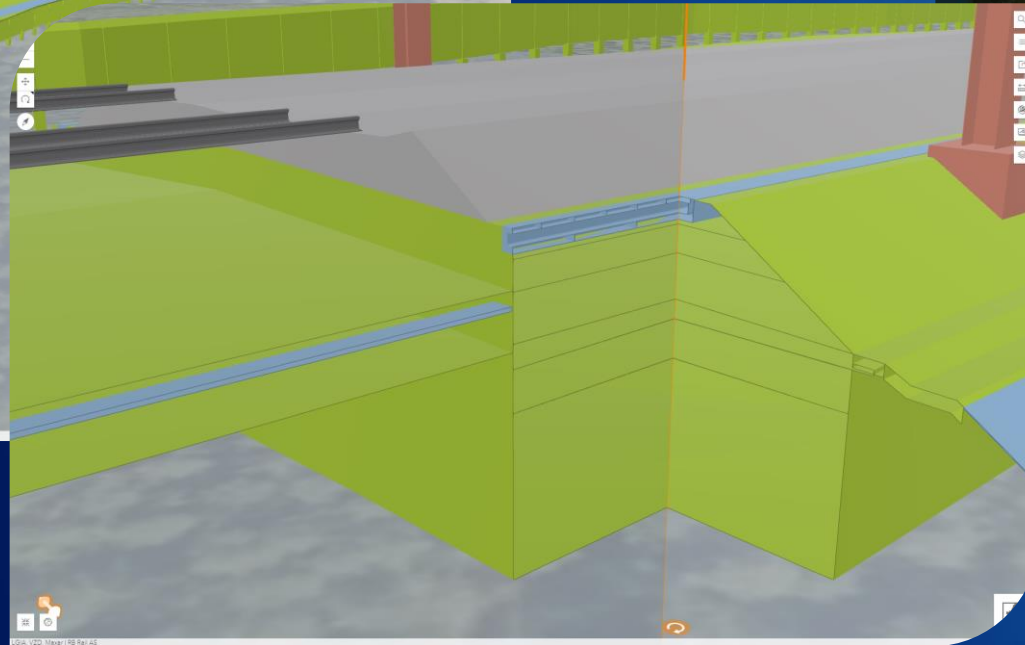
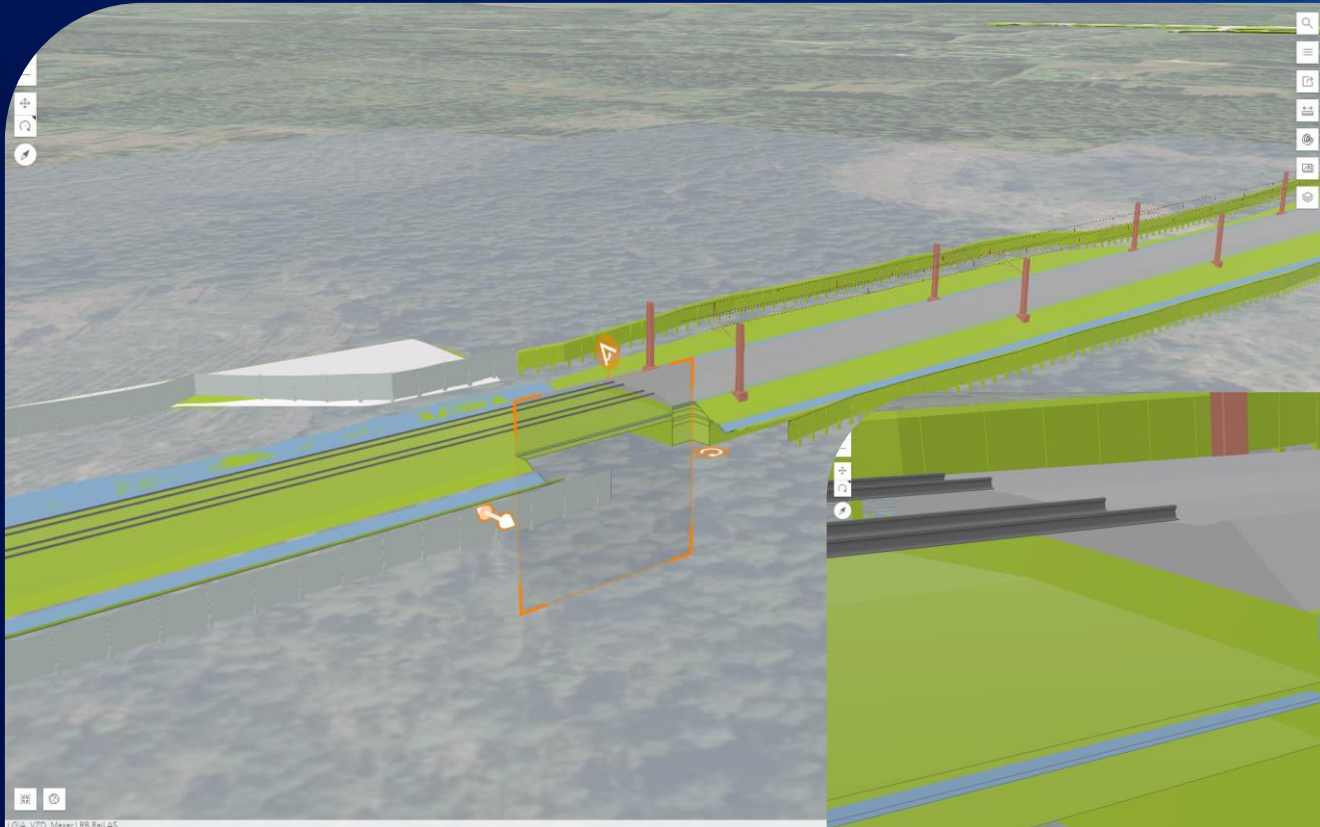
Investment costs to be finalized with the CBA and new-generation Business Plan in 2024;
Securing financing through available EU funds; alternative financing options being explored

Design & Planning – Rail Baltica in 3D

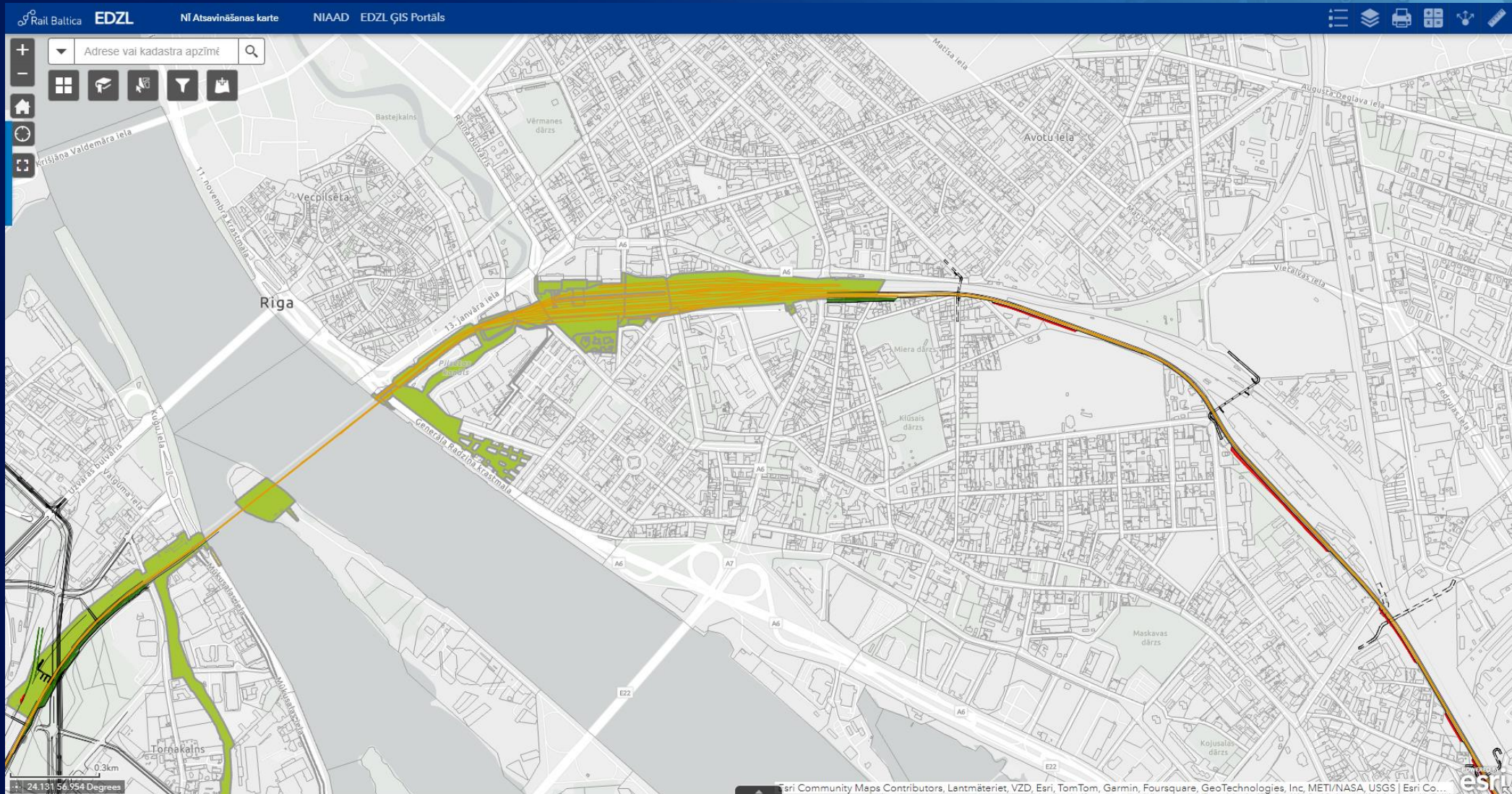
BIM & Mesh data combine in GIS not only allows to show how future infrastructure will fit into the existing environment, but also allows to identify potential issues and shows everything in a very simple and understandable way for everyone.



Design & Planning – Rail Baltica in 3D



Design & Planning – Land acquisition



Design & Planning – Building permits

Building Permits (Submission packages)

Select country: Baltic Estonia Latvia Lithuania

Select DPS: No DPS selected

Choose building permit:

- Railway main line
- LT-DS2-DPS1-02-01
LRA Roads major repair
- LT-DS2-DPS1-02-02
Road-Regional
- LT-DS2-DPS1-02-03
Underpass-Road
- LT-DS2-DPS1-03-01
Melioration
- LT-DS2-DPS1-04-01
330 kV power distribution networks
- LT-DS2-DPS1-04-02
110 kV power distribution networks
- LT-DS2-DPS1-05-01
Amber Grid
- LT-DS2-DPS1-06-01
ESO Gas

Sites in selected BP:

11

Total in DPS: 175

◀ 1 of 11 ▶

Site details:

OR6105 Local Road

OP code	
DPS	LT-DS2-DPS1
Site ID	OR6105
Stationing	20050
Name	Local Road
OP name	
Funcnt descr.	Road-Local
Funcnt.Class	CV-RO-ROAD-LO
Type	Road
Type code	6
PD code	16/32
VE code	
Priority	
Comments	UP-601
Construction Package	
Construction Object	
Submission Package	02-01
Local name	
Local PM	
Design status	
Stage	MD1
Line number	
Weather point?	
Organization	n/a
Document SiteID	
Building reg ID	

Building permit (SP) details:

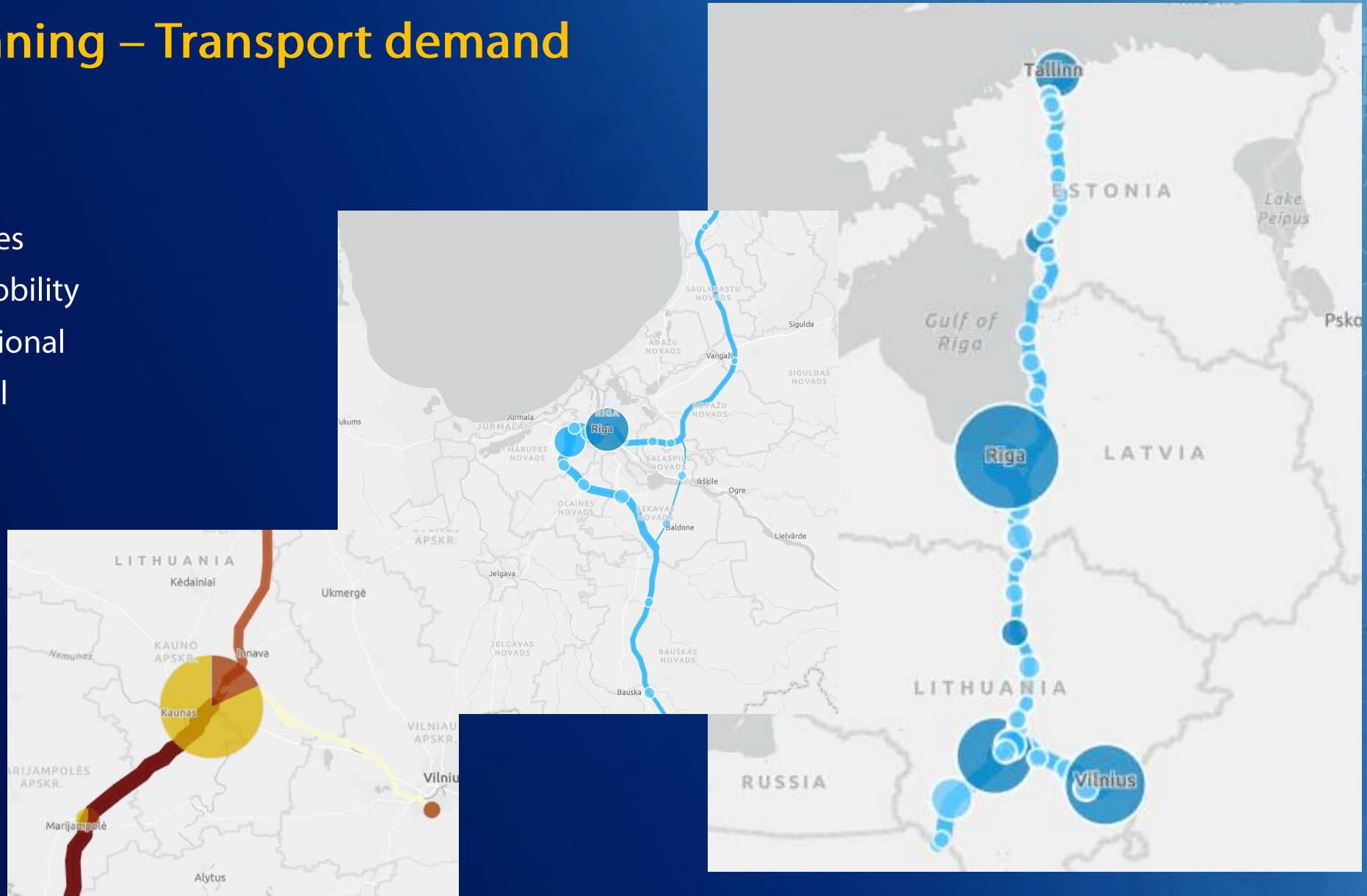
LRA Roads major repair

OBJECTID	41
DPS SP	LT-DS2-DPS1-02-01
Submission Package	02-01
SP name	LRA Roads major repair
Description	LRA Roads major repair
MD target date	
MD contractual date	
MD planned date	
MD actual date	
MD approved date	
DTD target date	
DTD contractual date	
DTD planned date	
DTD actual date	

Type	Count
Blocksection	1
Road	10

Design & Planning – Transport demand

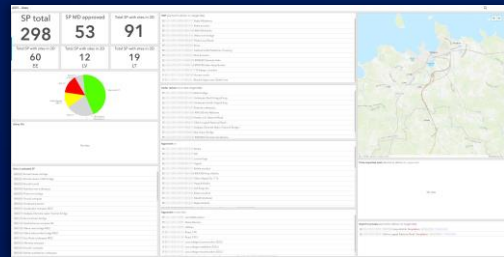
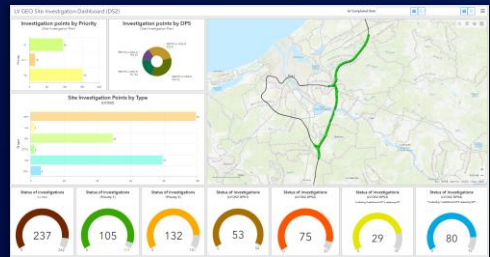
- Cargo volumes
- Passenger mobility
 - International
 - Regional



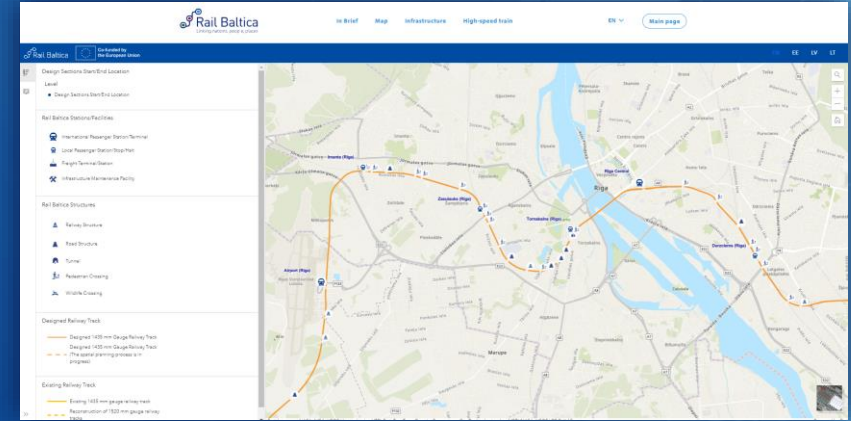
What Design Phase brings to Construction Stage

Public Awareness and External Data Sharing Policy

2D data: Thematic Maps, Dashboards etc.



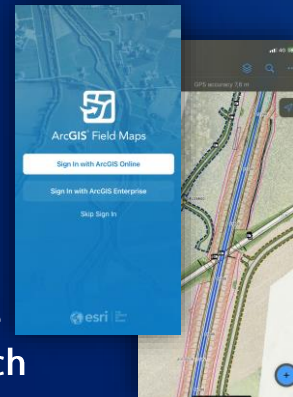
Internal Data Sharing Policy



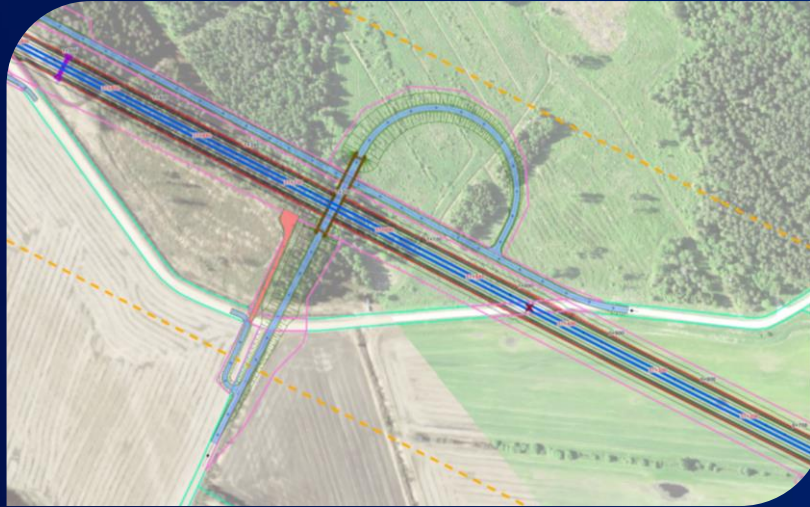
3D data: BIM



Mobile Approach



From Design....



...to Construction

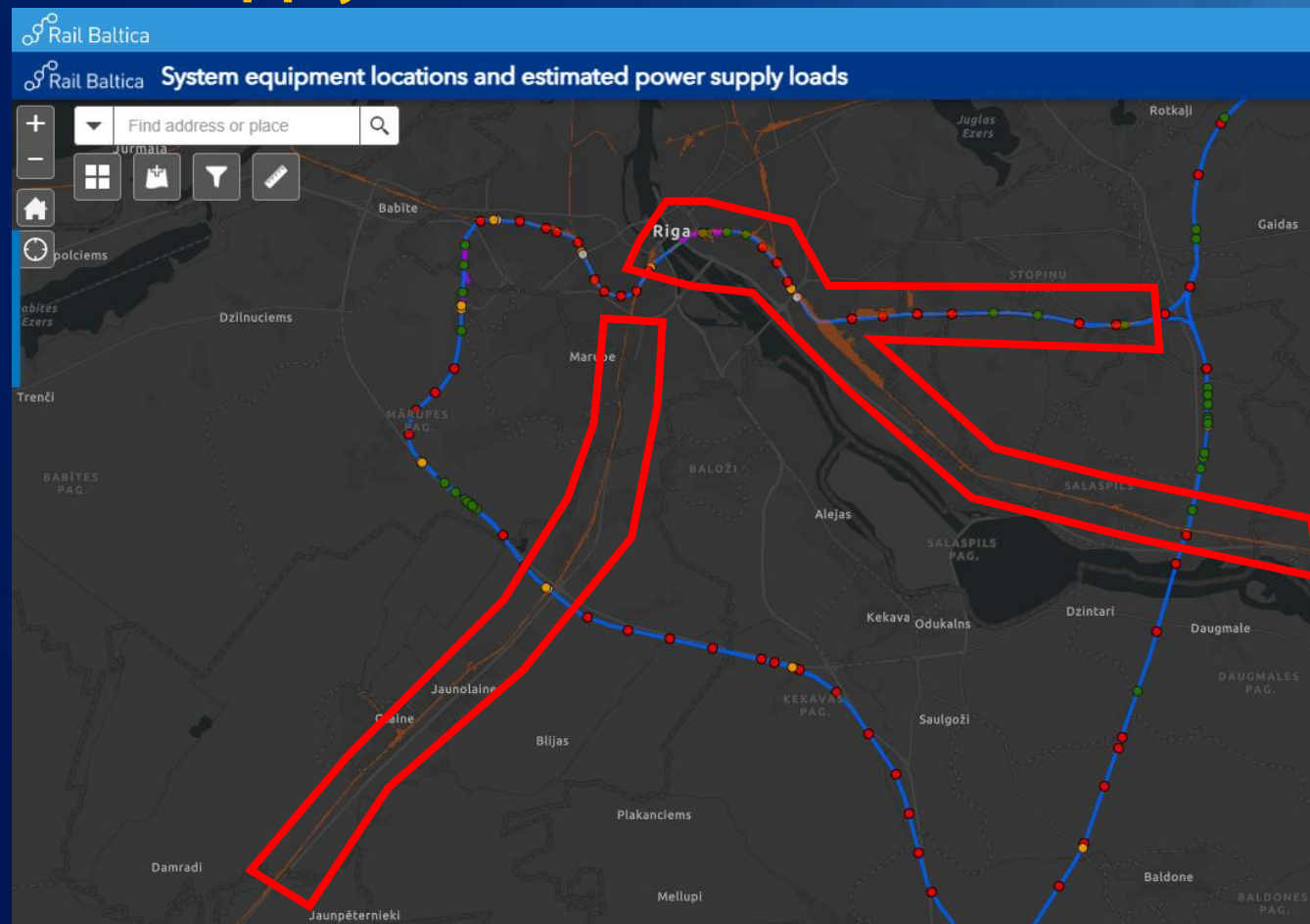
GIS



Construction



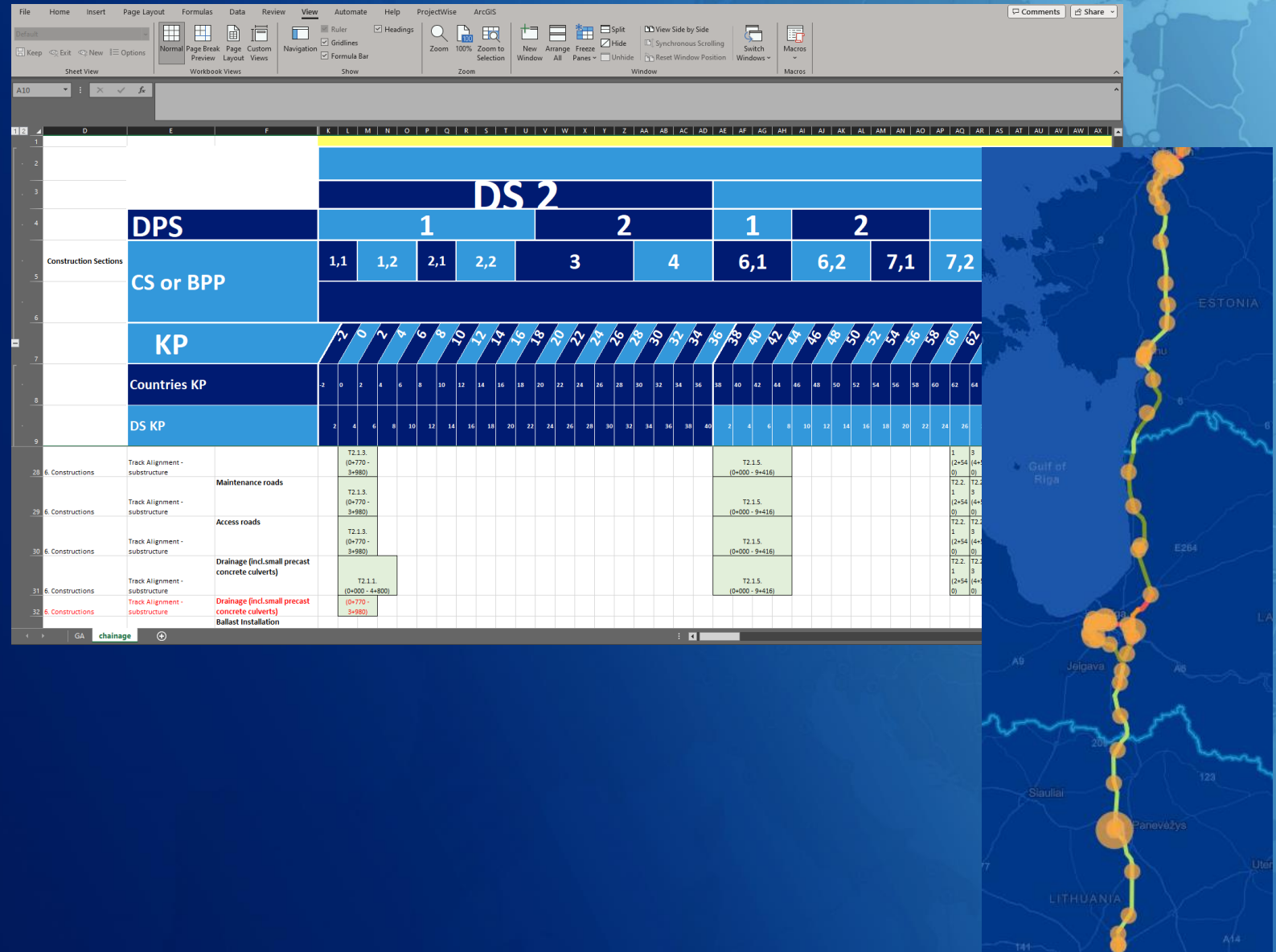
Railway subsystems development - System equipment and estimated power supply load research



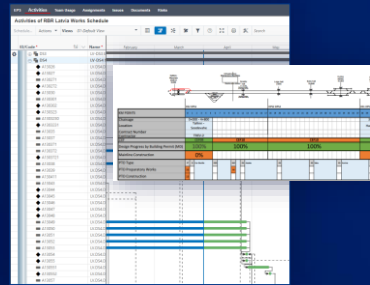
“Sabiedrisko pakalpojumu regulēšanas komisija” data

Securing of financing

- CEF financing maps
- Estimated CAPEX
- Project complexity
- Finance allocation
- No double financing
- Support for project control



Securing of financing



Project Control Management and Reporting



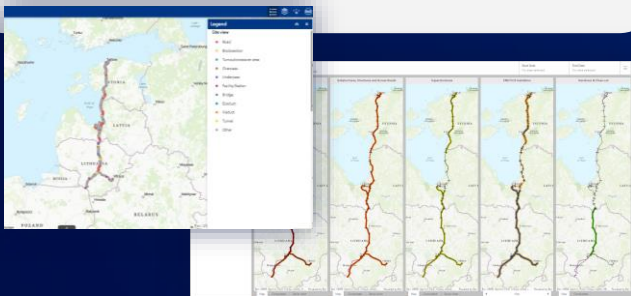
Global Project Finance



Communications

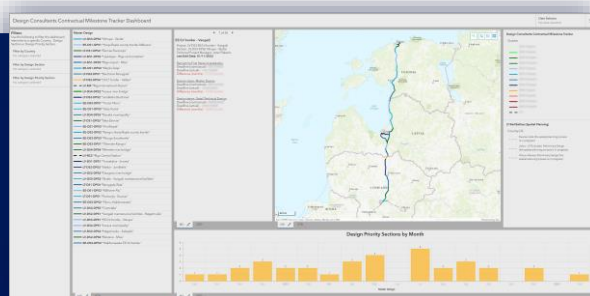
Construction Progress for Technical Teams

Technical construction progress data. High level of detail of information depending on the topic



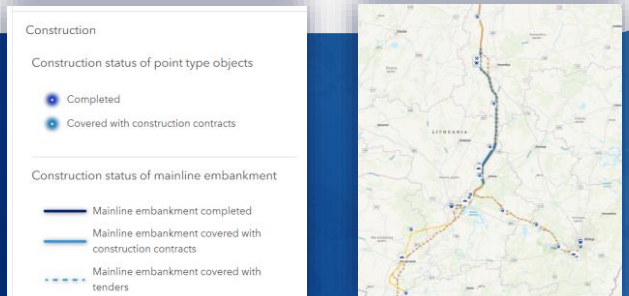
Construction Progress for Decision Makers

Financial, planning and construction progress data linked together in order to understand if everything is happening according plan



Construction Progress for Public

Clear and structured information about ongoing processes. Scope of information limited to mainline and PTO





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Thank you!

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