



#StandWithUkraine

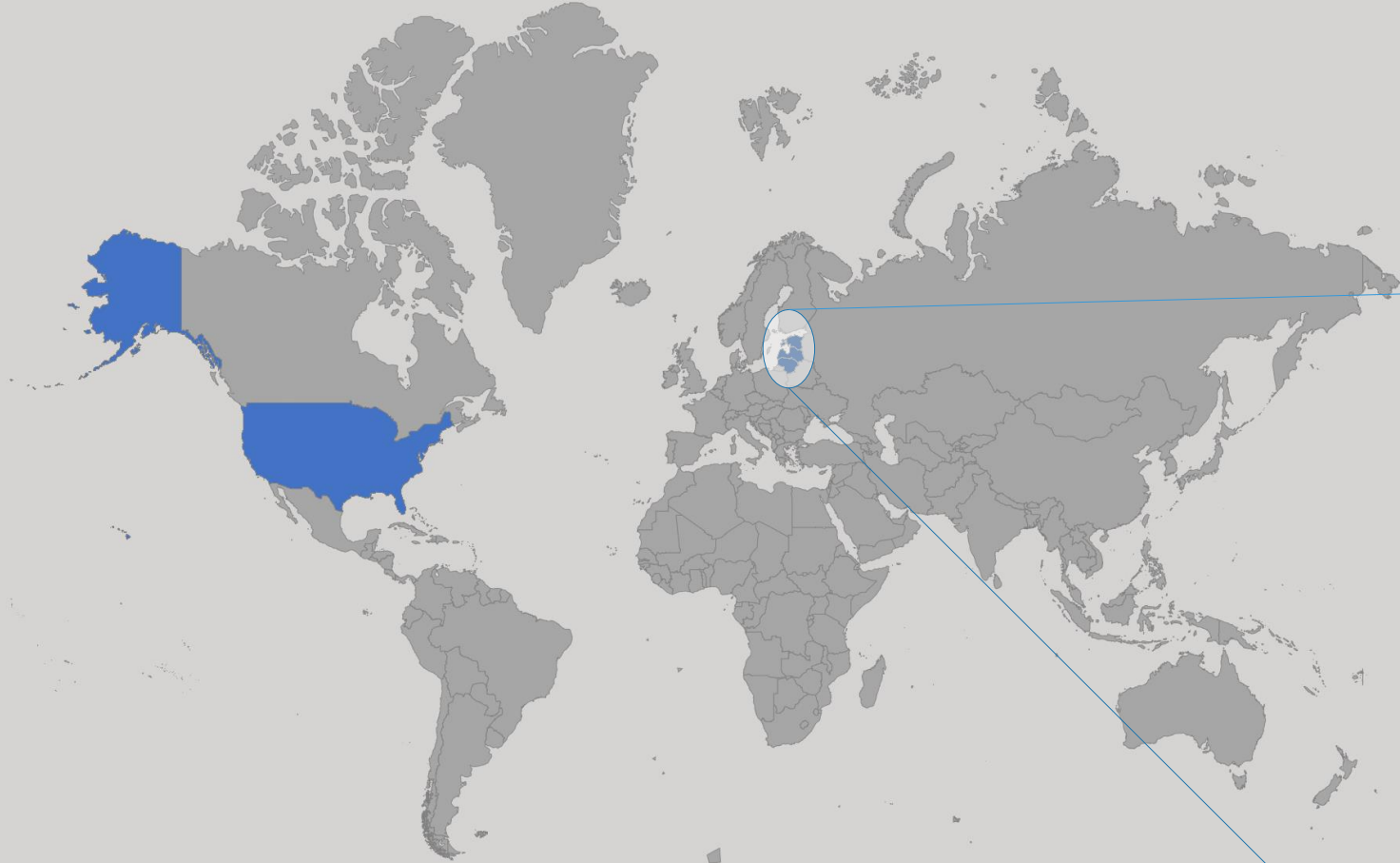
Digital Rail Baltica. GIS Solutions for Railway Megaproject Management

Vaidas Ulenskas,
GIS Team Leader at RB Rail AS

2023 ESRI USER CONFERENCE



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



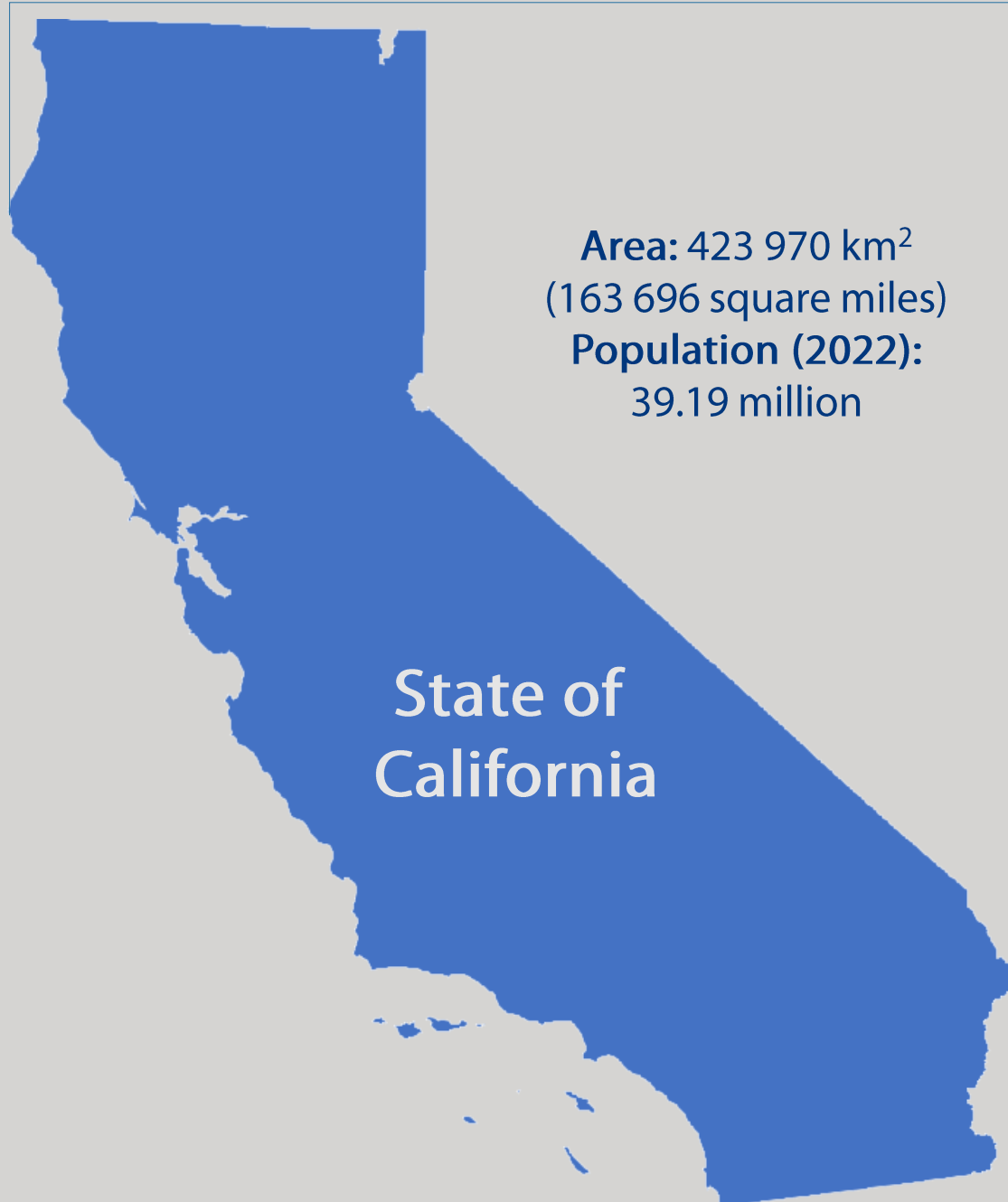
450 km (~280 miles)



Estonia, Latvia and Lithuania, called the Baltic States as they lie on the shores of the Baltic Sea, have been members of the European Union since 2004. With a combined area of 175,228 km², the Baltic States are slightly larger than twice the size of Austria or somewhat smaller than the U.S. state of Missouri.

**Area: 175 228 km²
(67 573 square miles)
Population (2022): 6.04 million**

~930 km (~578 miles)



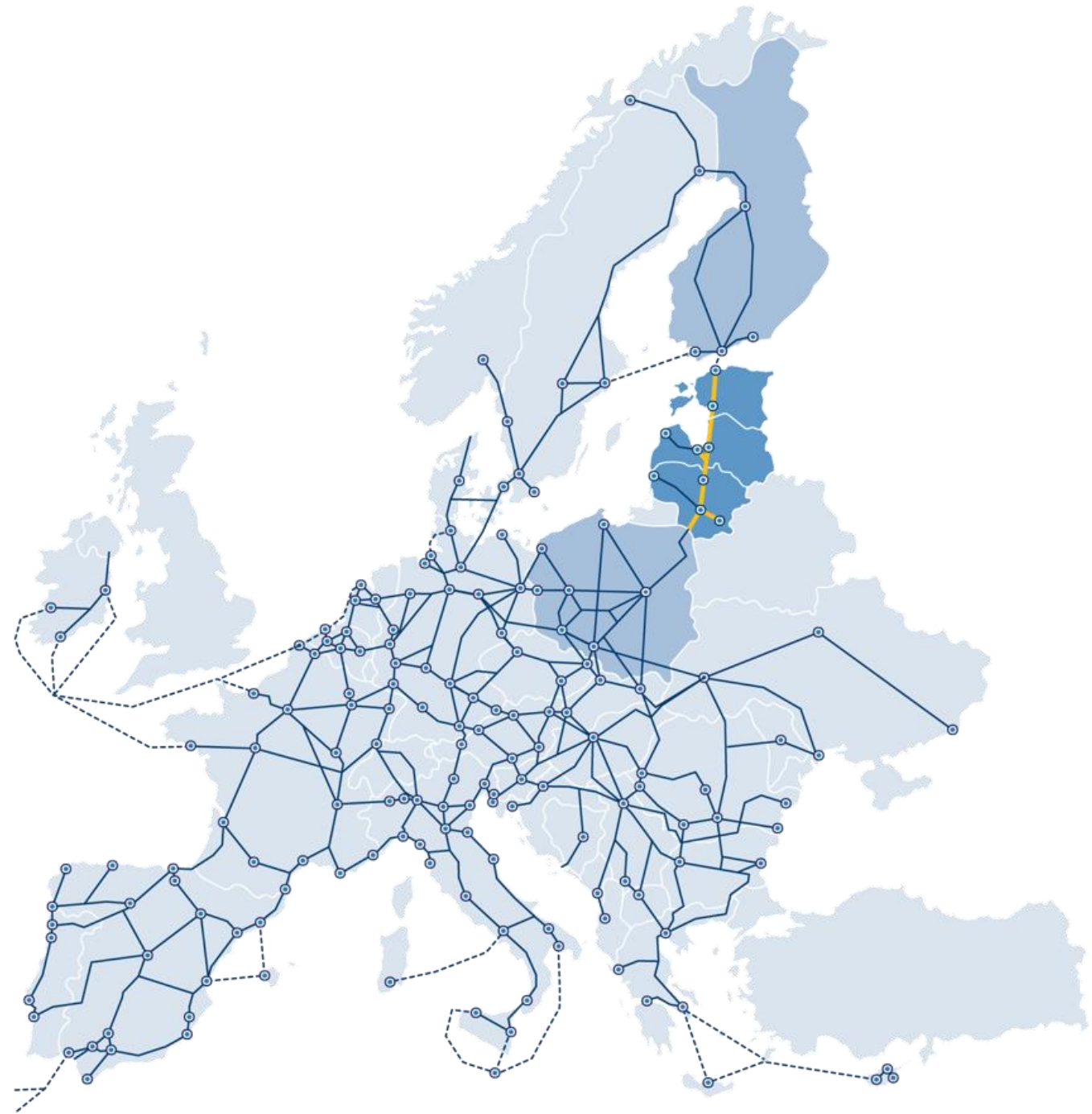
~450 km (~280 miles)



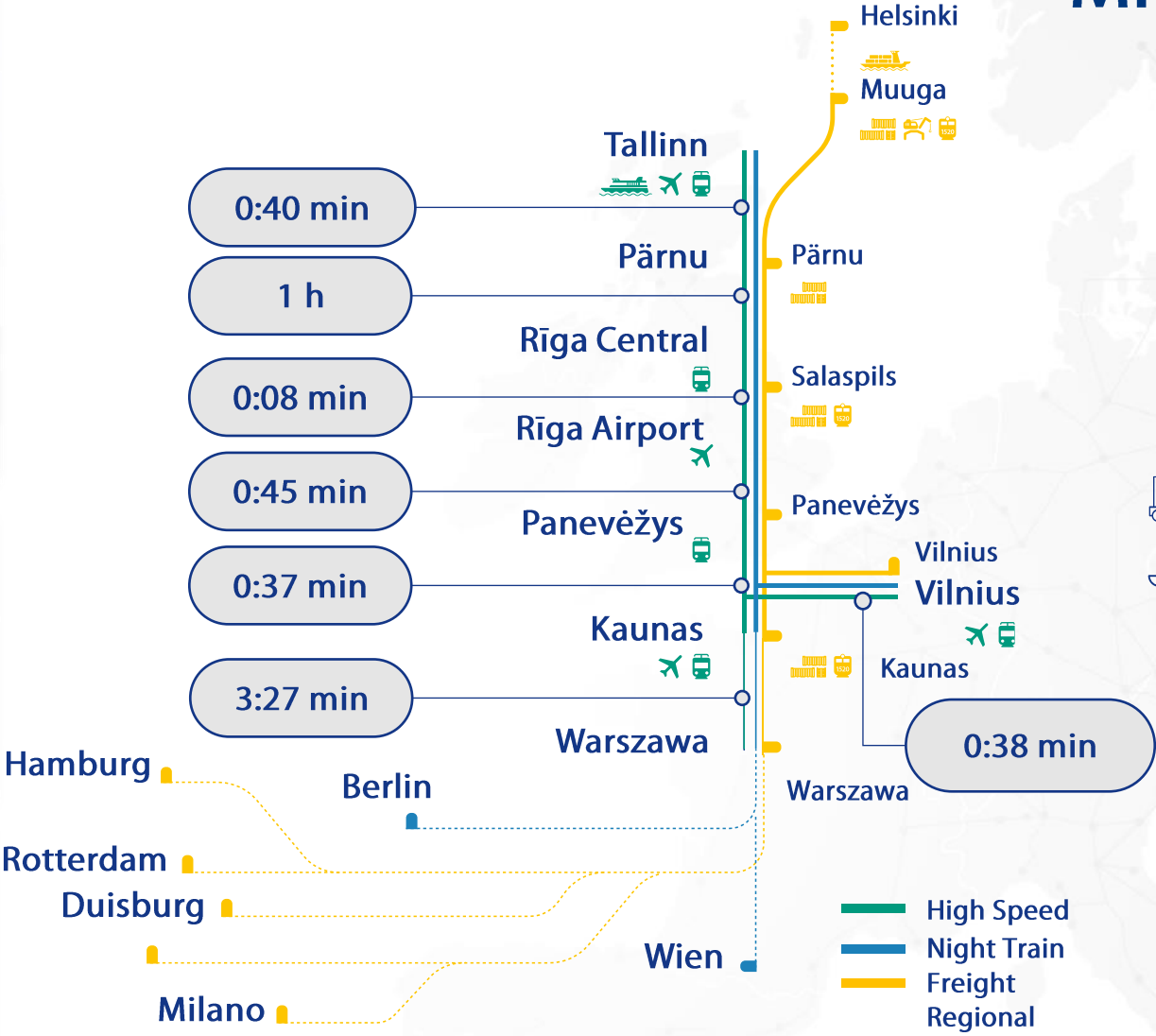
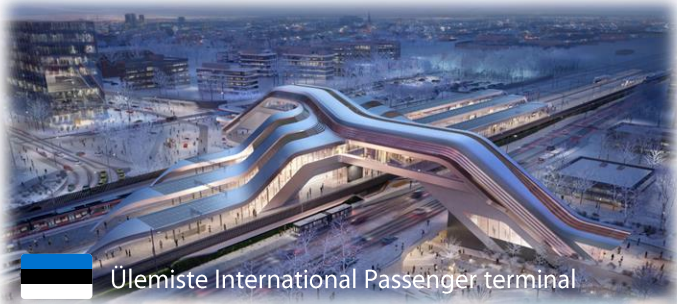
Area: 175 228 km²
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Population (2022): 6.04 million

Connected Baltics in a Connected Europe

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



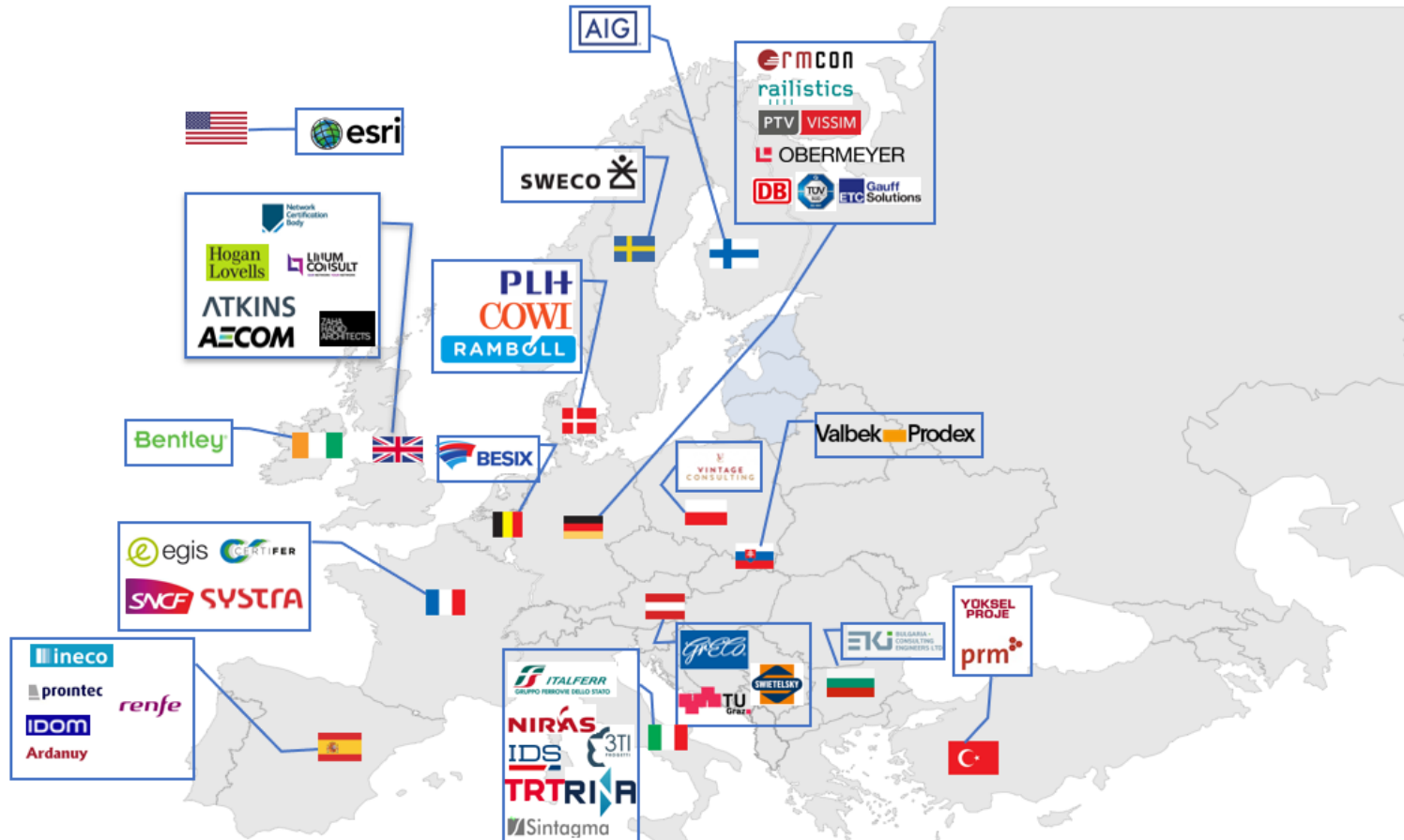
Basis for a New Economic Corridor and Military Mobility



- 870 km (~540 miles) greenfield railway infrastructure
- 1435 mm (4 ft 8+1/2 in) Double track
- ERTMS Level 2 + FRMCS*
- Electrified 2x25kV AC
- Maximum length of freight trains: 1050m (~0.65 miles)
- Axle load 25t (~27.5 US tons)
- Design speed:
249 km/h (~155 mph) for passenger trains
120 km/h (~75 mph) for freight trains
- SE-C (Swedish) loading gauge

— High Speed
— Night Train
— Freight Regional

A Truly European Project



1+ B EUR (1.08+ B USD) of suppliers contracts signed

- Strong partnerships between Baltic and EU companies (over 50 international & 200 local partnerships)
- Lessons learned in developing long-term relationships
- Recognition of Rail Baltica geostrategic importance - ensuring stability for the suppliers within changing market conditions

GIS - Significant Part of Rail Baltica Digital Twin

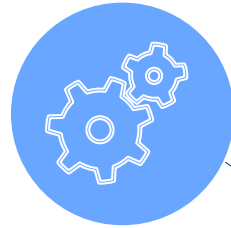
Internal & External training and Support service

- Provide basic training materials to RB GIS users



Operational & Maintenance

- Create Rail Baltica Digital Twin
- Prepare GIS for Infrastructure Manager



Monitoring the Construction process

- Collect and analyze data from the field to monitor the construction process
- Create assignments for field workers



BIG Data Management

- BIM
- AIM
- Raster
- LAS
- 3D



GIS

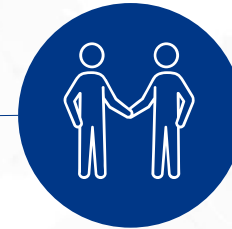
Data Management System

- Create, Collect internal and external GIS data
- Convert non-GIS data to GIS data
- GIS data accessibility
- GIS integration with other software's



Global Project Partners Engagement

- Create GIS connections between RB Rail AS and partners (BENs, IBs, Designers, etc.)



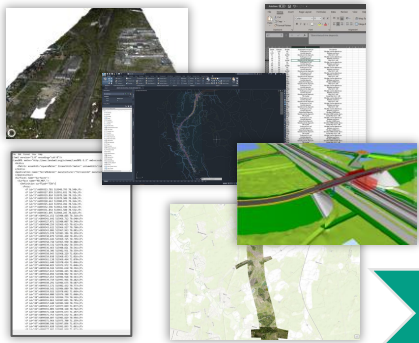
Public Engagement

- Provide official information about Rail Baltica Global Project to public and 3rd parties
- Open Data Portal

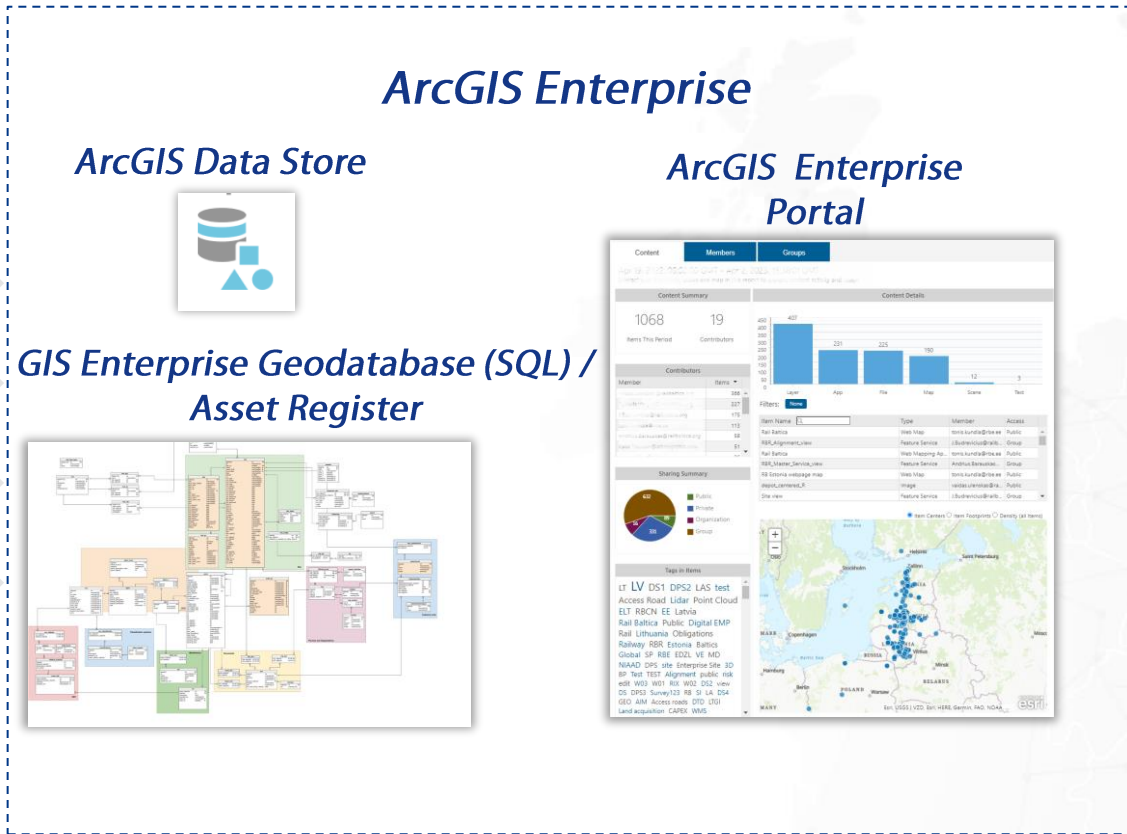
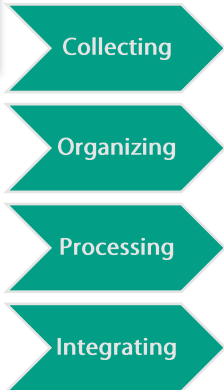


Data Workflows

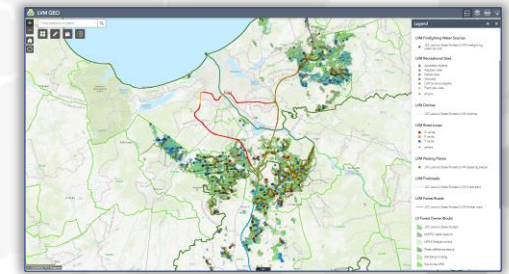
Design Data



National/Worldwide Databases Open Data Portals



2D maps



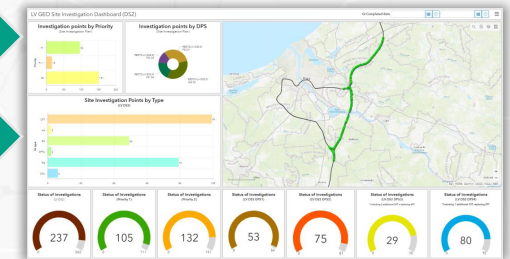
3D maps



2D maps

3D Maps

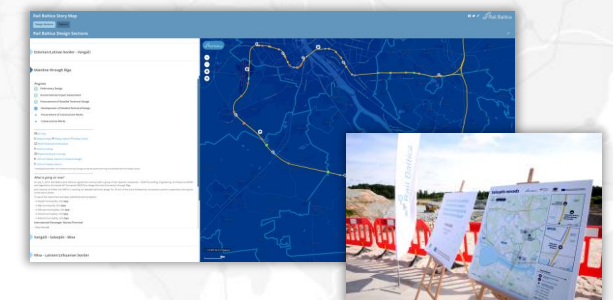
Dashboards



Dashboards

Public Data

Public data

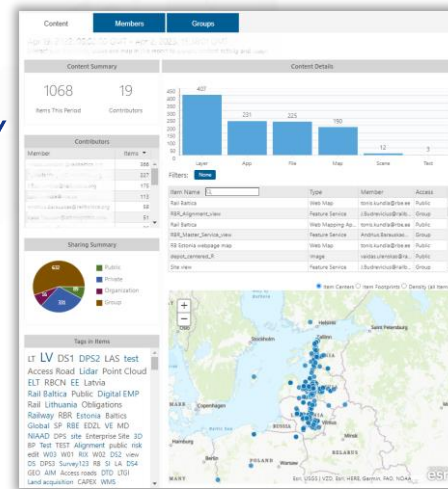


ArcGIS Enterprise

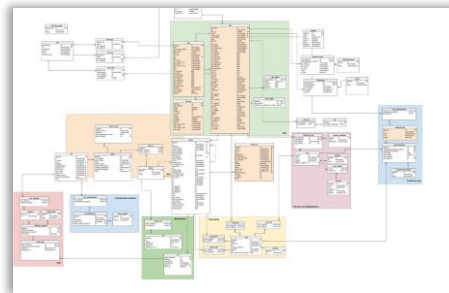
ArcGIS Data Store



ArcGIS Enterprise Portal

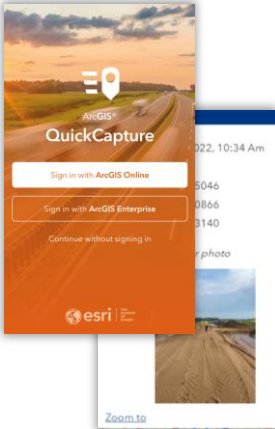


GIS Enterprise Geodatabase (SQL) / Asset Register

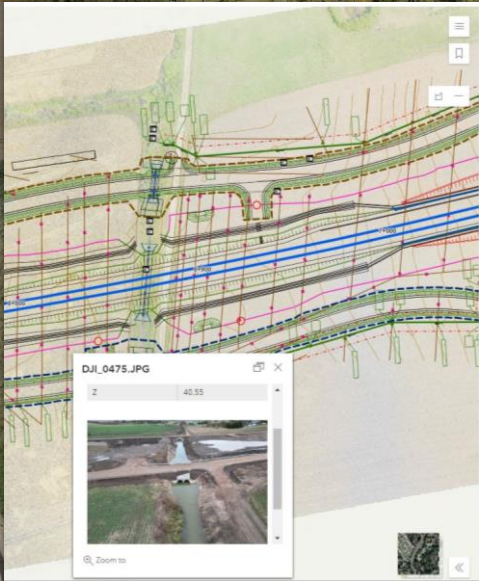


Collection and Evaluation of Factual Data from Construction Sites

Field Applications. On-site Data Collection



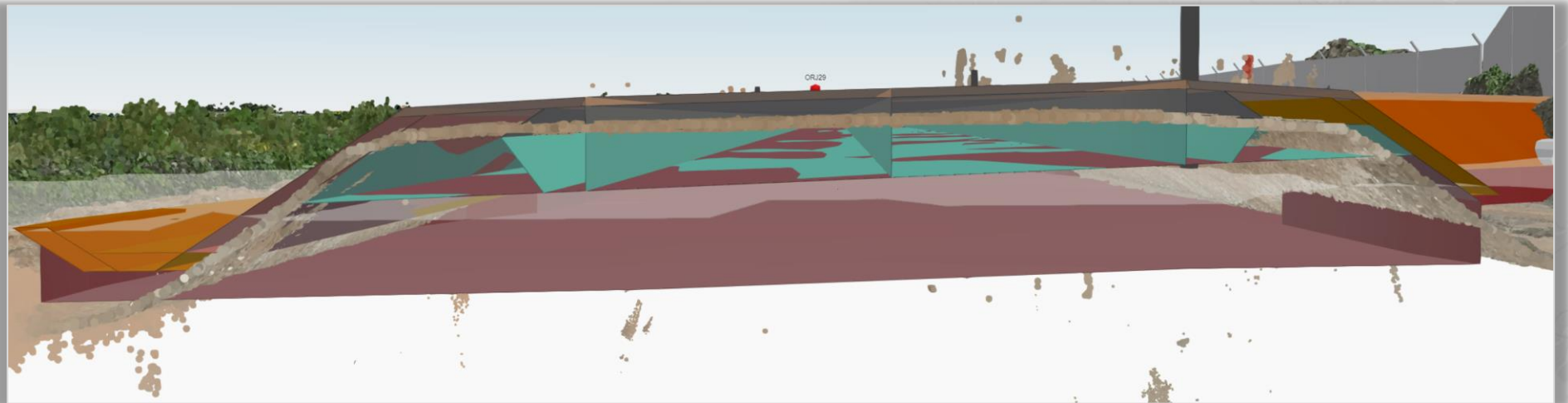
Drones. Quick and Efficient Assessment of the Situation and Data Collection



Collection and Evaluation of Factual Data from Construction Sites



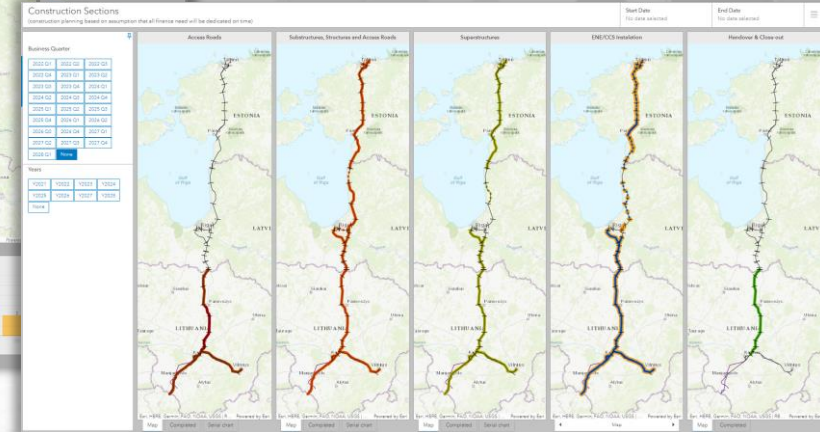
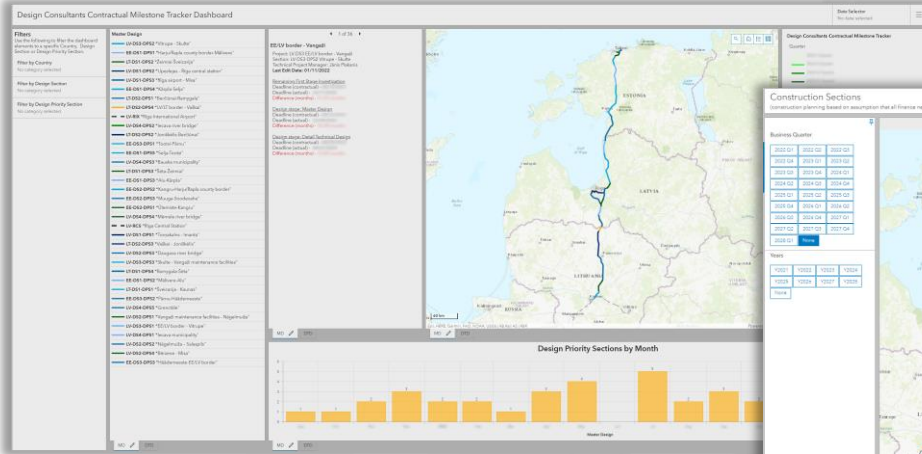
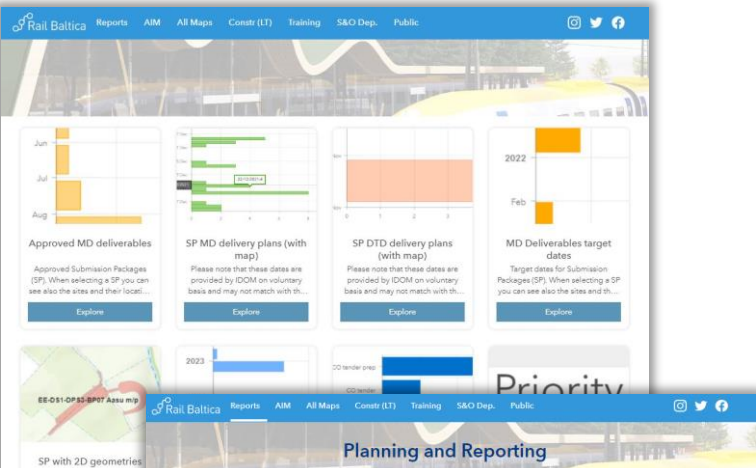
BIM and Lidar integration allows a quick and simple comparison between what has been designed (BIM) and what has been built (Lidar)



Scheduling & Reporting

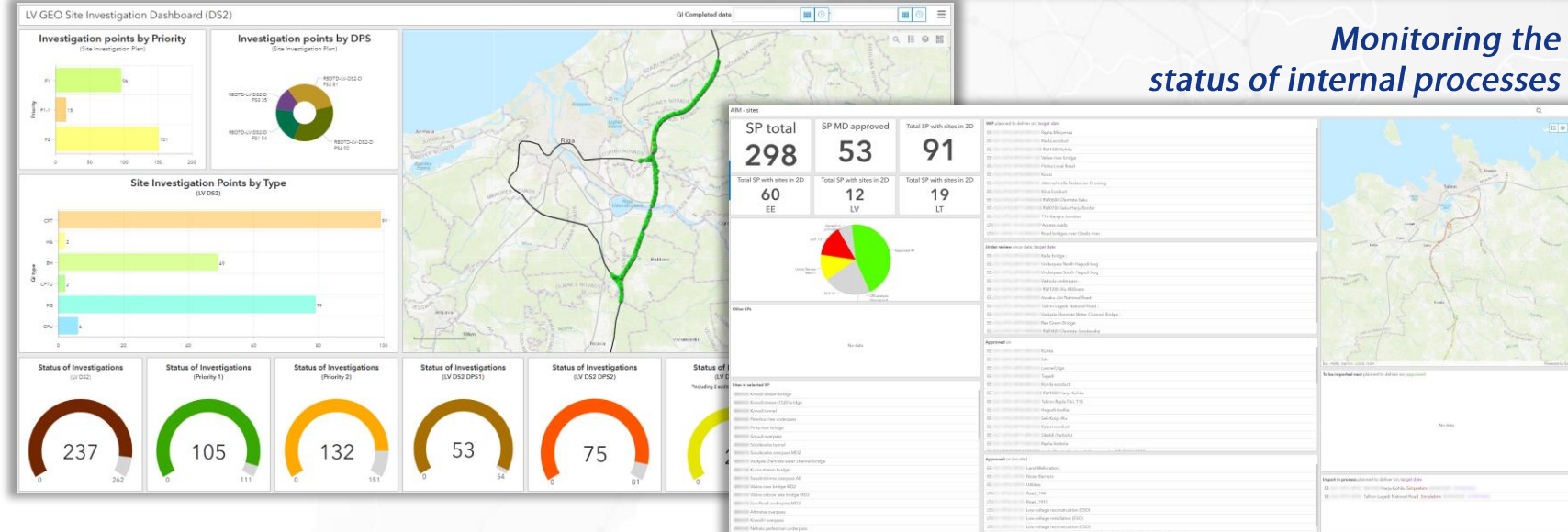
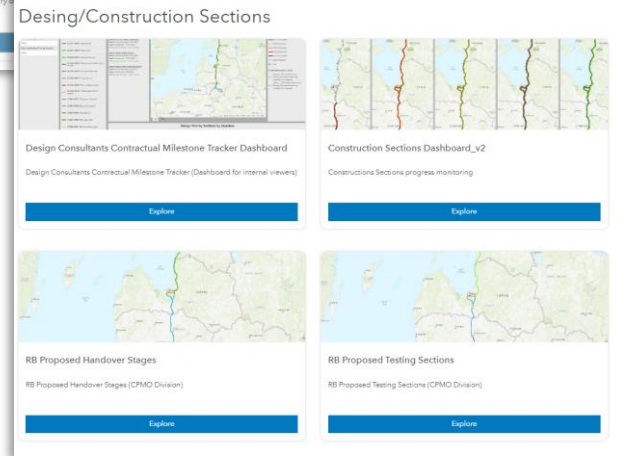
Dashboards that provide key information and are available to all parties at any time and in any place

Timing of design and Construction works in all 3 countries



Monitoring the progress of geological investigation

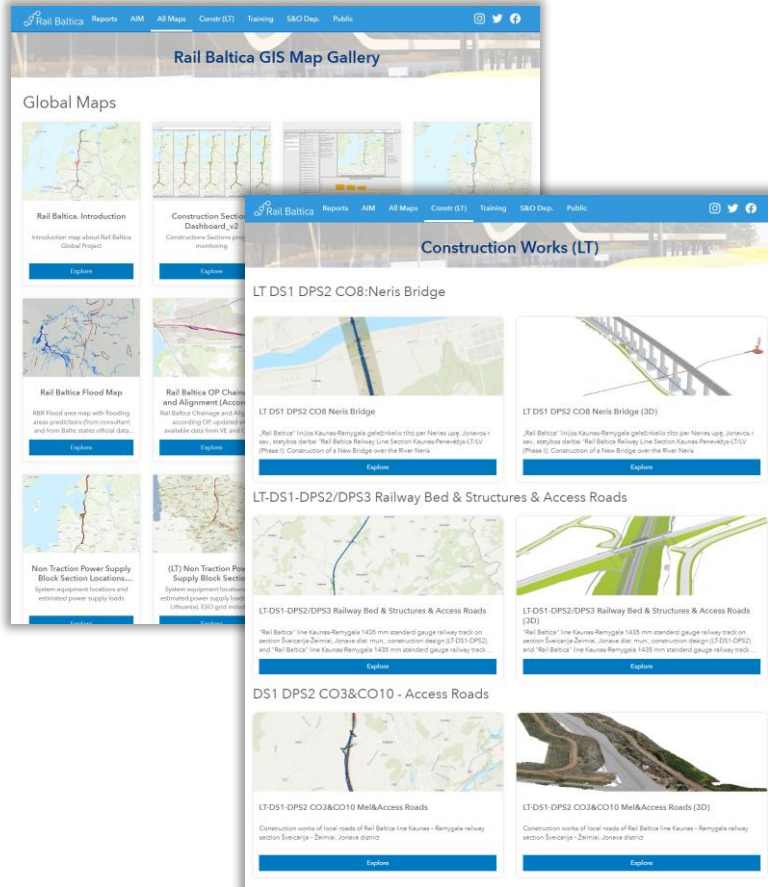
Monitoring the status of internal processes



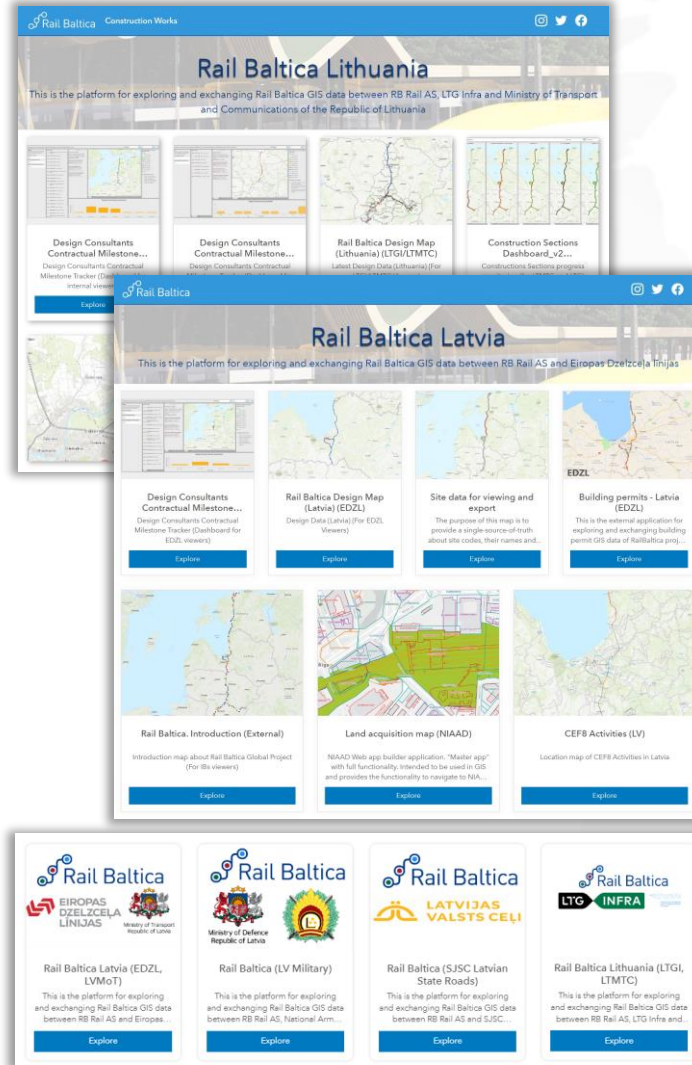
Communication & Data Sharing

Fast and efficient information sharing between all participants in the design and construction processes: implementing bodies, coordinators, contractors, public.

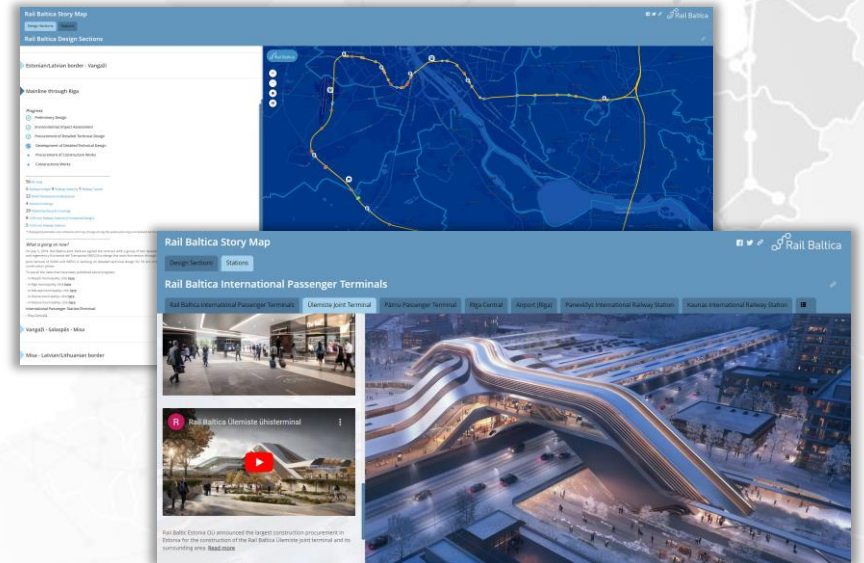
Internal Engagement



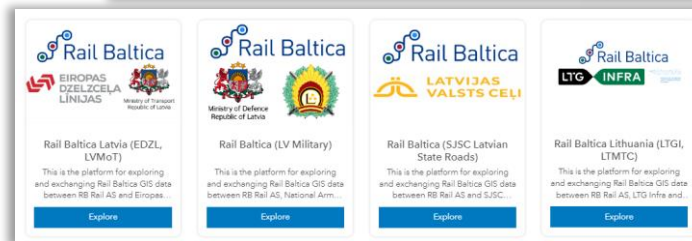
External Engagement (~50 companies)



Public Awareness



Public Events



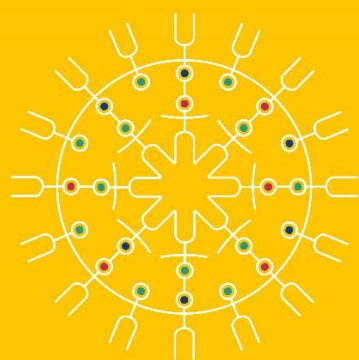


OUR VISION

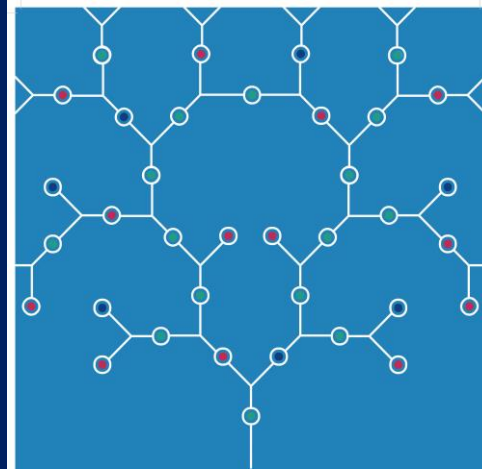
**Connected Baltics in a
connected Europe**

OUR MISSION

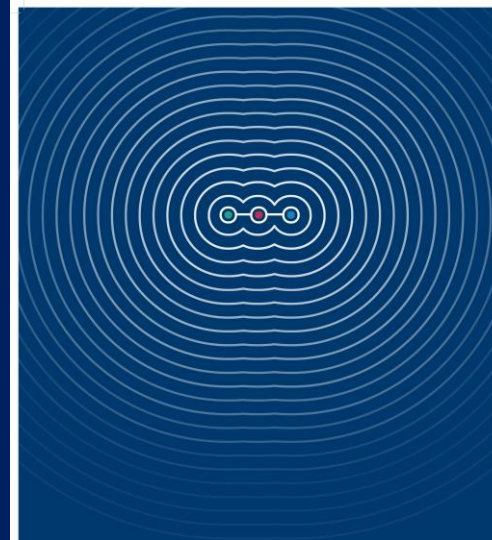
**We are delivering a seamless mobility for
people, goods and services to accelerate
social and economic development in the
Baltics and beyond**



WE VALUE PEOPLE



WE VALUE PROFESSIONALISM



WE VALUE PURPOSE

Thank you!