



  
**FINEST  
LINK**

# Helsinki-Tallinn Tunnel

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EUROPEAN UNION  
European Regional Development Fund

 **Interreg**  
Central Baltic

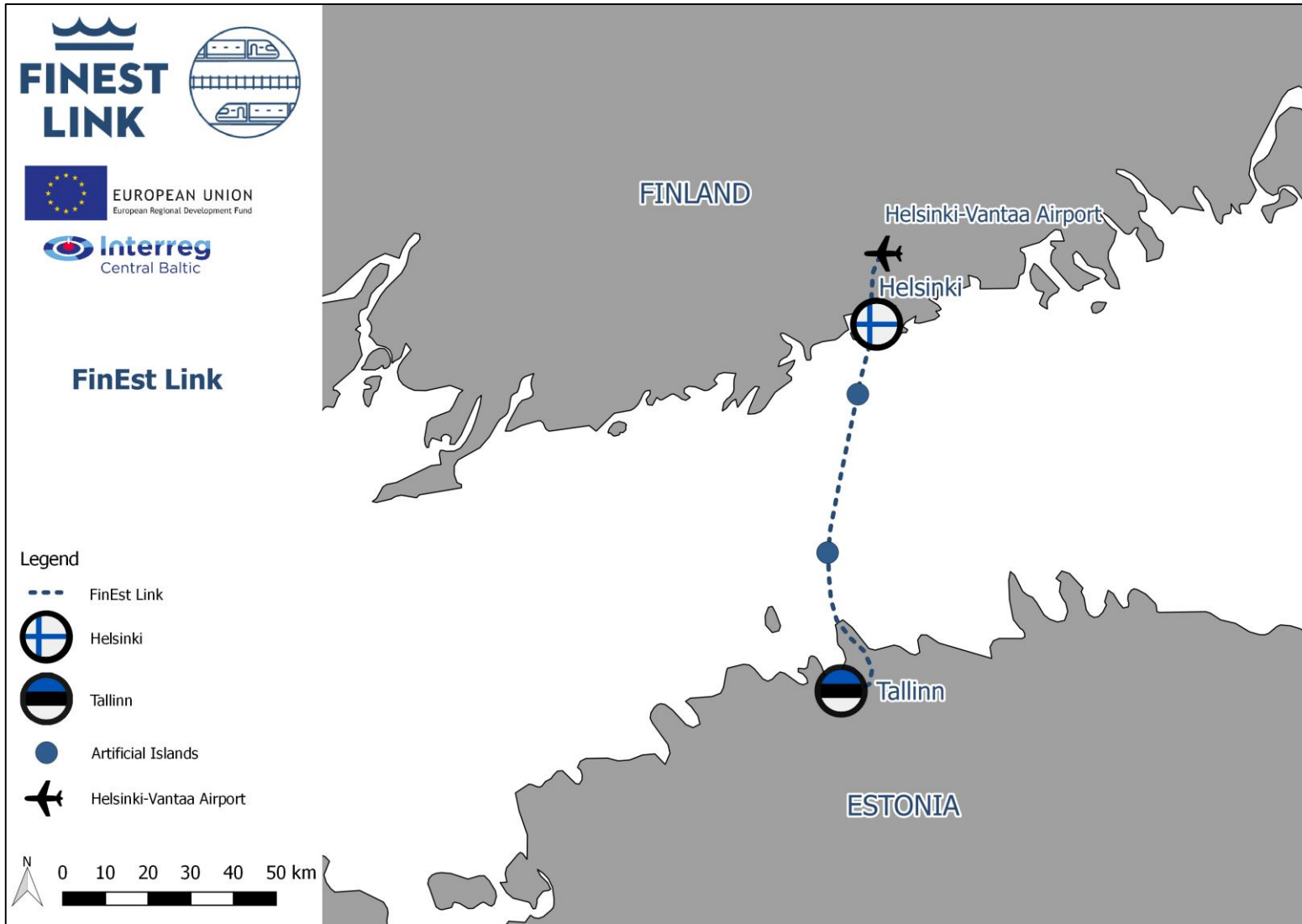
# Helsinki-Tallinn Railway Tunnel and Rail Baltica form European Gateway



- European Gateway provides accessibility between core EU transport networks, High North, Black Sea area and Asia
- European Gateway connects an intensive cross-border area between two capitals separated by the Gulf of Finland
- The vision of Helsinki-Tallinn tunnel requires Rail Baltica



# FinEst Link



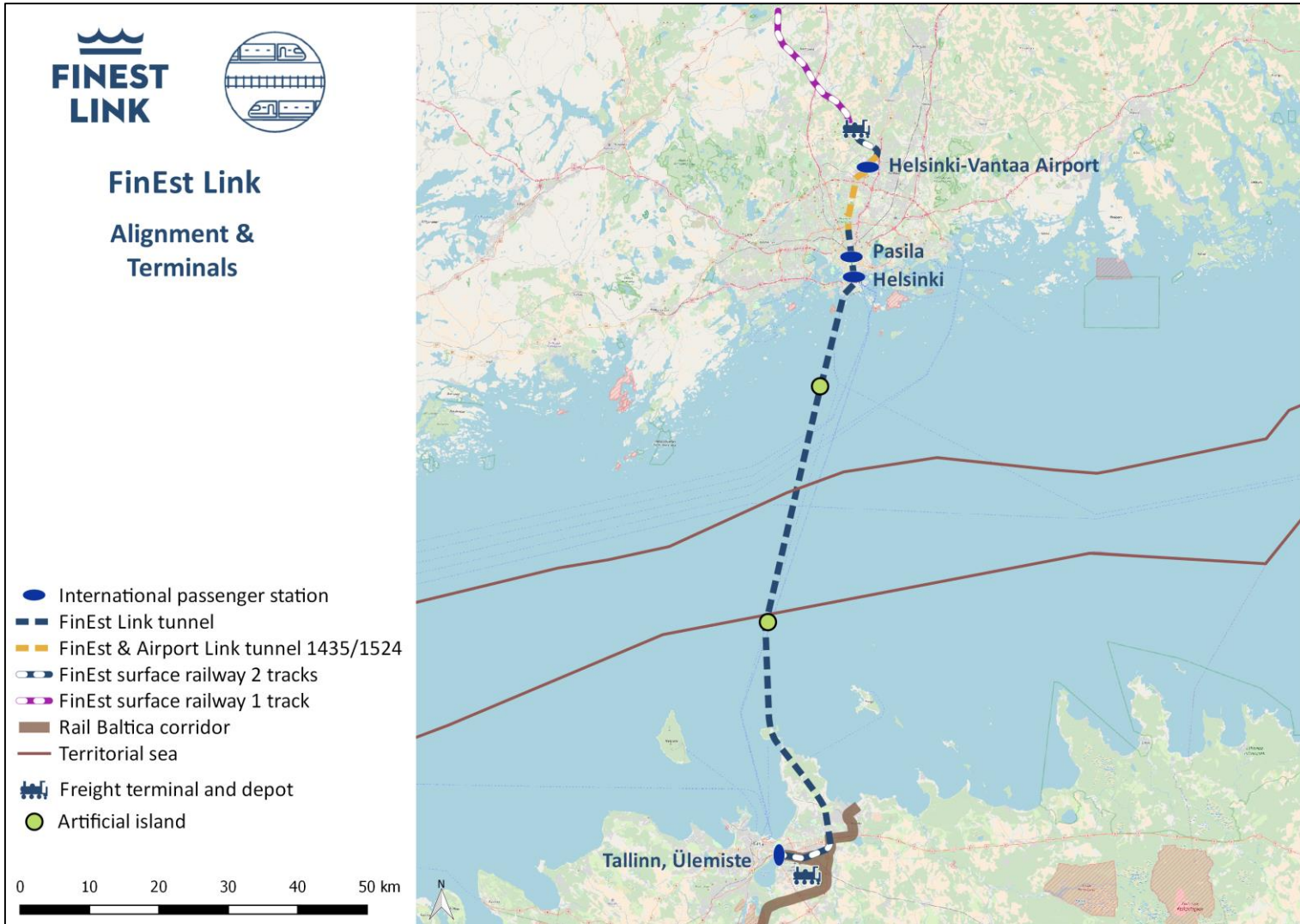
# Feasibility Study



- Alignment study
- Geology
- Tunnel concept
- Tunnel construction
- Maintenance and operation concept
- Tunnel safety management
- Train operation concept
- Strategic environmental assessment
- Economic assessment



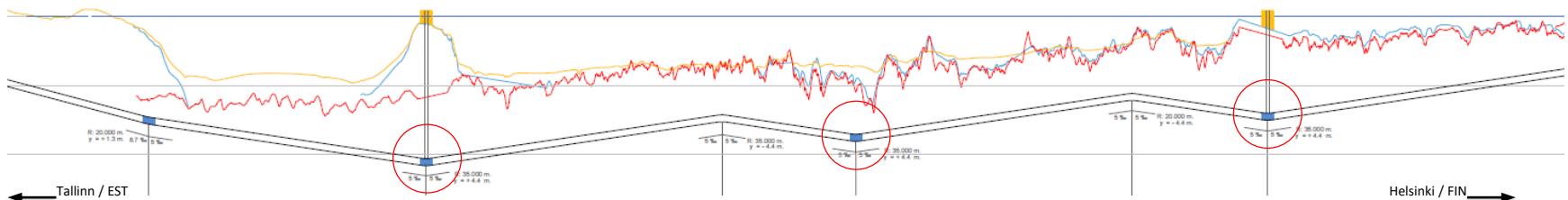
# FinEst Link - Alignment



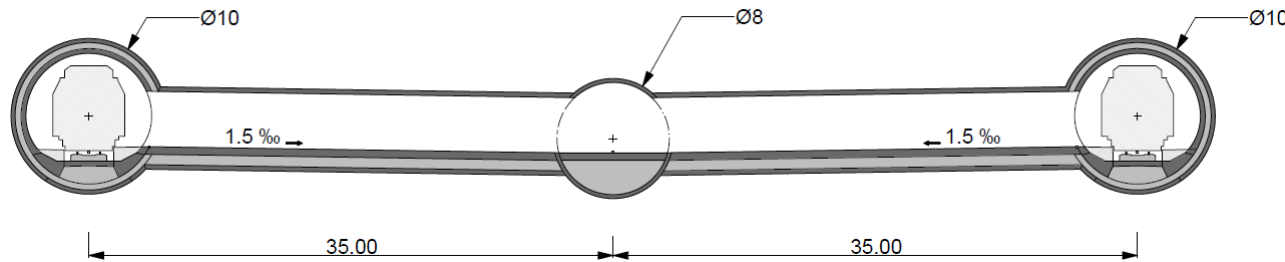
# Vertical alignment under seabed



- Tunnel is situated mostly in crystalline bedrock
- Two access points (Uppoluoto and Tallinna Madal)
- Deepest point of tunnel runs approx. 215 m below sea-level
- Min. longitudinal gradient of 5 ‰ to ensure water flow
- Max. longitudinal gradient 8.7 ‰



# Tunnel concept



- Two single-track tunnels and one service tunnel with cross passages
  - Cross passages for emergency escape routes
  - Storage of tunnel equipment / technical plants
- Two artificial islands
- European standard gauge 1435 mm railways
- Horizontal distance of 70 m between axis of the two running tubes



# Train operation concept

Train traffic based on Traffic Volume Forecast

Trains per day in each direction:

- 40 Passenger trains
- 11 Car shuttle trains
- 19 Truck shuttle trains
- 3 Cargo trains



# Key impacts of environmental aspects (SEA)



- Tunnel will have positive impact on sea ecosystems due to less pressure on coastal ecosystems
  - presumably commuter trains will to some extent replace fast ferries, that cause waves
- Building and use of artificial island will have negative impacts on marine habitats
- Tunnel option will have less traffic impacts in urban system (cargo)
- Considerable impacts on climate during construction phase

# Social impacts need more studies



- Indirect and social impacts are still largely positive but need supportive strategic programs to maximise positive effect
- Wider impacts for human settlements needs more studies

# Infrastructure investment costs



	Mean value	Lower value	Upper value
<b>Tunnel Construction, shafts and artificial islands</b>	8 426 300 000€	7 583 670 000€ (-10%)	10 954 190 000€ (+30%)
<b>Surface rail connections</b>	217 000 000€	195 300 000€ (-10%)	238 700 000€ (+10%)
<b>Stations, terminals and depots</b>	1 985 000 000	1 588 000 000 (-20%)	2 580 500 000 (+30%)
<b>Rail technology and utility equipment</b>	2 130 000 000	1 917 000 000 (-10%)	2 449 500 000 (+15%)
<b>Material management</b>	465 000 000	325 500 000 (-30%)	604 500 000 (+30%)
<b>Owners costs 15% (planning, administration etc.), environmental cost 3%, investigations 3%</b>	2 776 900 000	2 397 000 000	3 483 600 000
<b>Infrastructure investment TOTAL</b>	<b>16 000 200 000</b>	<b>13 811 170 000</b>	<b>20 072 290 000</b>

# Conclusions

- Technically possible to build the tunnel
- Environmentally possible to make the tunnel
  - EIA should be done
  - mitigation measures for environmental impacts
- Concerning safety the tunnel is possible
- Infrastructure investment costs 16 billion €

