

RAIL Baltica MAIN LINE CONSTRUCTION IN LATVIA



Satiksmes ministrija



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

PRESENTATION OVERVIEW

- EDZL as Implementing Body in Latvia;
- Rail Baltica Project Governance – main stakeholders, structure and financing arrangements;
- Construction procurement process and tender schedule;
- Construction procurement scope – sections overview;
- Planned construction schedule – key dates;
- Contracts overview – FIDIC, pricing basis, payment procedure, bill of quantity extract example;
- Project processes provided by employer;
- Technical scope overview – example of bridge structures, embankment, etc.

ABOUT WORK PROGRESS IN EDZL MANAGED CONSTRUCTION OBJECTS

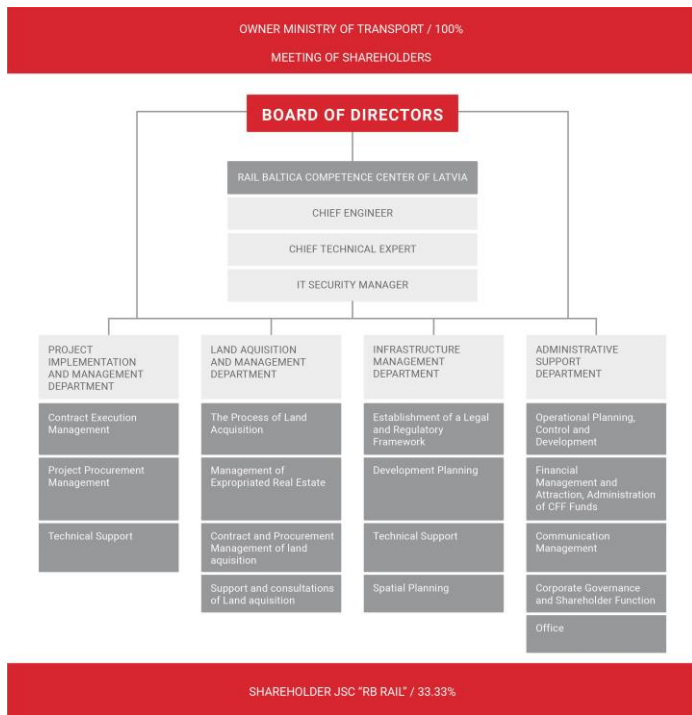
Link to video: <https://youtu.be/5dTccDZXYYo>

PROJECT ORGANISATIONAL STRUCTURE AND FINANCING

Kaspars Vingris

Head of the Management Board

SIA EIROPAS DZELZCELA LINIJAS



Members of board:

Kaspars Vingris

Tālis Laizāns

Established:

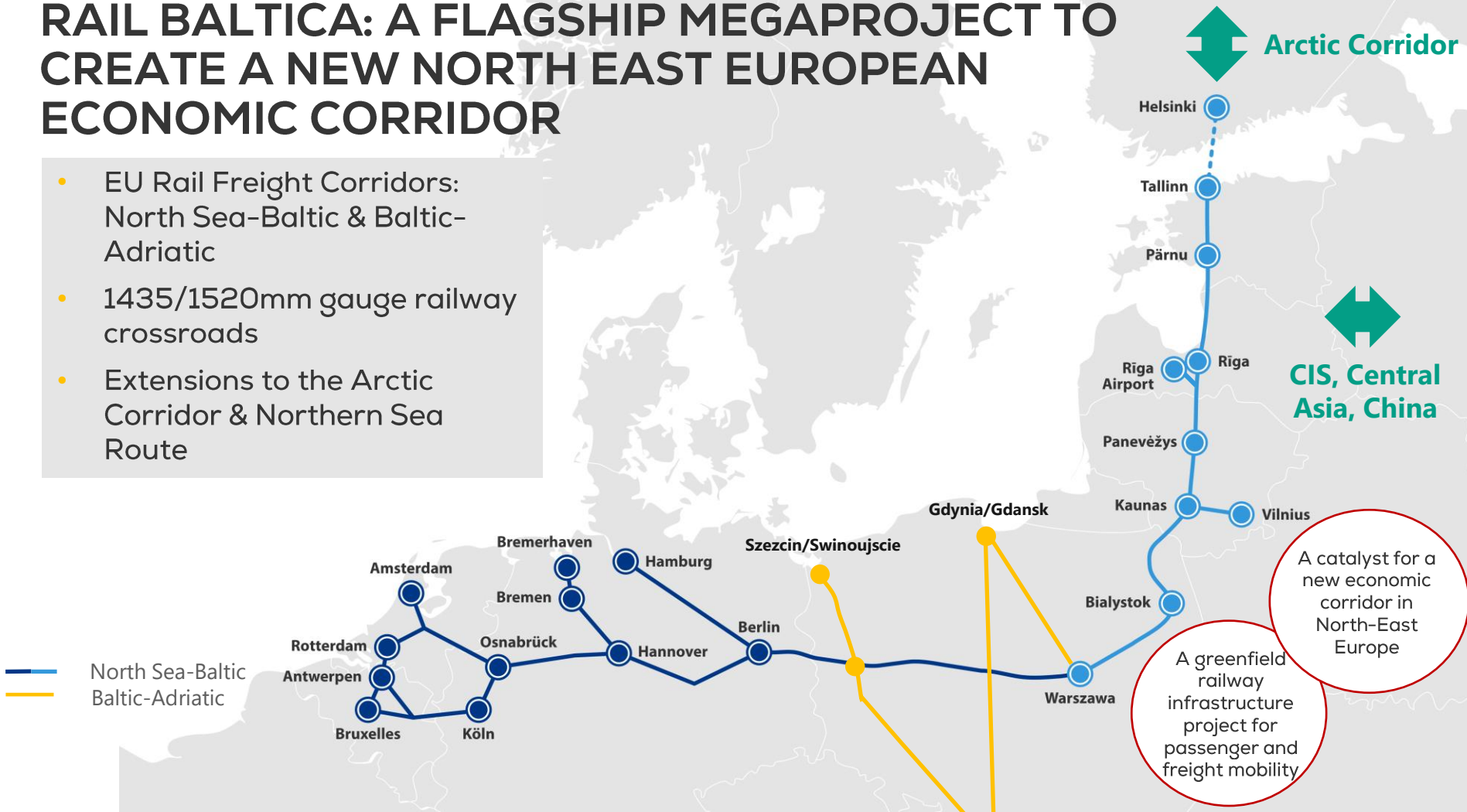
By Ministry of Transport in October 15th, 2014

Share capital

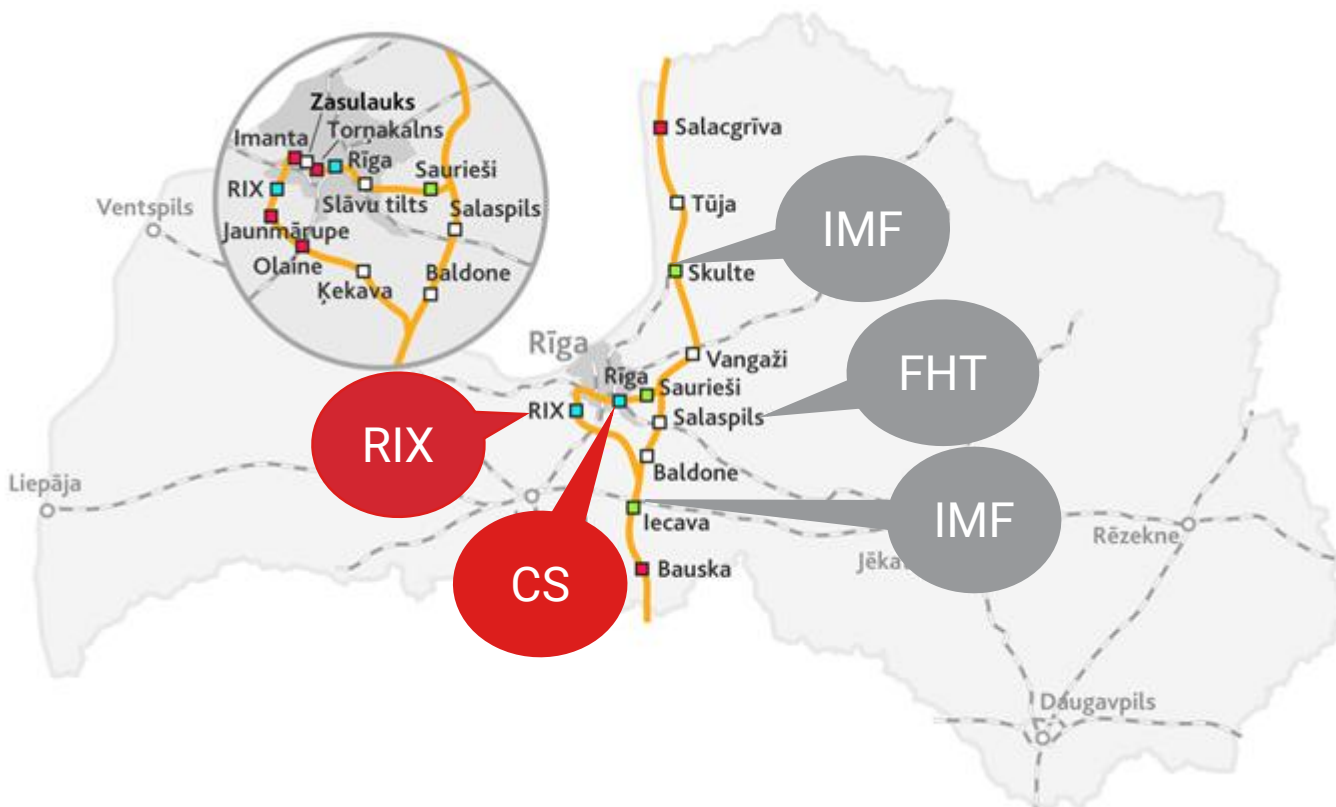
EUR 4 445 400

RAIL BALTICA: A FLAGSHIP MEGAPROJECT TO CREATE A NEW NORTH EAST EUROPEAN ECONOMIC CORRIDOR

- EU Rail Freight Corridors: North Sea-Baltic & Baltic-Adriatic
- 1435/1520mm gauge railway crossroads
- Extensions to the Arctic Corridor & Northern Sea Route

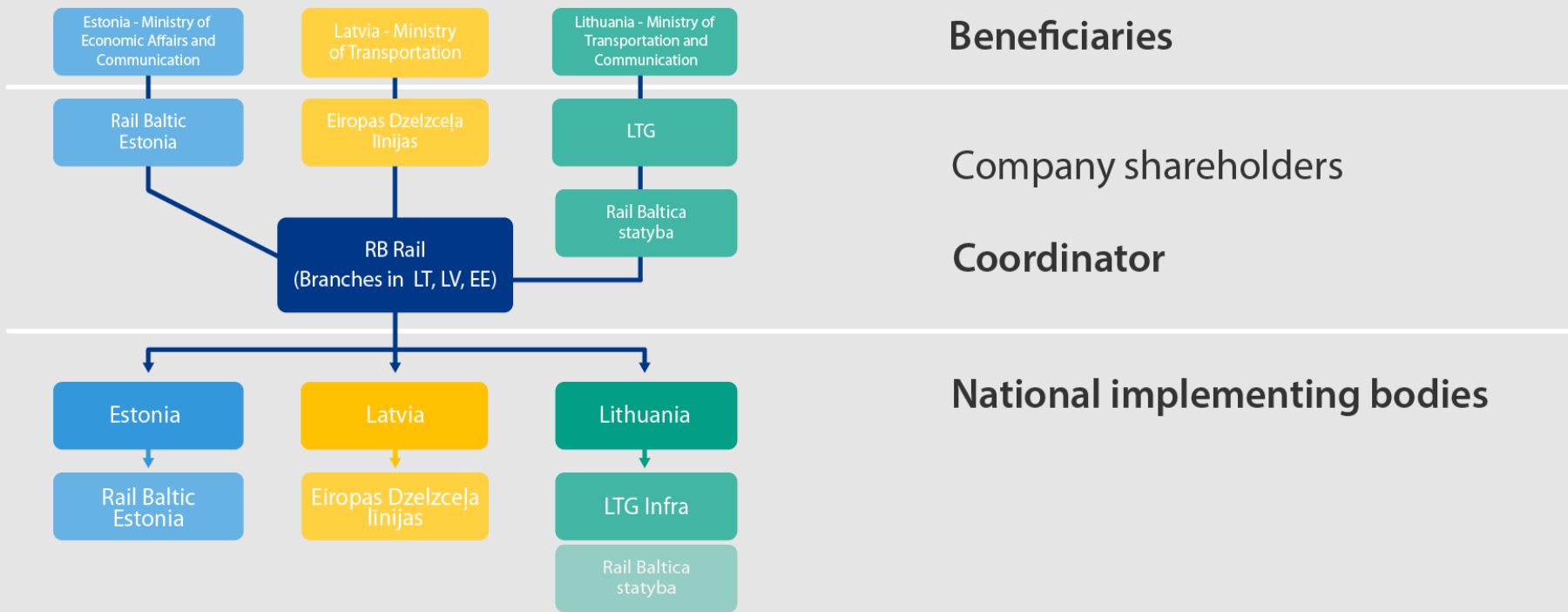


EDZL ROLE AND RESPONSIBILITIES



1. Implementation of project by:
 - Design and construction of point type objects;
 - Construction of main line;
 - Organization of land acquisition;
2. Establishment of infrastructure management system in cooperation with other Baltic states
3. Shareholding of Joint Venture

Rail Baltica Governance structure



PROJECT FINANCING

Beneficiary

Ministry of Transport
of the Republic
of Latvia

AVERAGE 85%
OF NEEDED FINANCING

←
REMAINING 15%
FROM STATE BUDGET



**EUROPEAN CLIMATE,
INFRASTRUCTURE AND
ENVIRONMENT EXECUTIVE
AGENCY**

The Connecting Europe Facility
for Transport Fund

Implementing Body

Eiropas Dzelzceļa
līnijas SIA

GA : Grant Agreements are signed between 3 Beneficiaries and CINEA (European Climate, Infrastructure and Environment Executive Agency).

CEF: Connecting Europe Facility: object of GA.

MFF: Multi annual Financing Frameworks:
plan of financing object of several Agreements.

STRUCTURE OF RAIL BALTICA FINANCING

CINEA FINANCING

- The implementation of the Rail Baltica project is financed by co-funding from the European Union up to 85% of the total eligible costs and from national state Budgets – Estonia, Latvia and Lithuania. EU financing is included in framework of the Connecting Europe Facility (CEF) funding instrument.
- Generally financing of each activity is forecasted between 81 - 85% for CINEA and 15% - 19% for Beneficiary (State).
- Compensation, time and description of related activities to be performed are fixed at signing of each Grant Agreement signed between Beneficiary and CINEA (5 Grant Agreements signed till now).
- Each Grant Agreement is based on a project application to be prepared by Beneficiary following input of coordinator and Implementing bodies and evaluated by CINEA mostly on the basis of maturity of project and specific criteria defined in Call.

STRUCTURE OF RAIL BALTICA FINANCING

STATE FINANCING

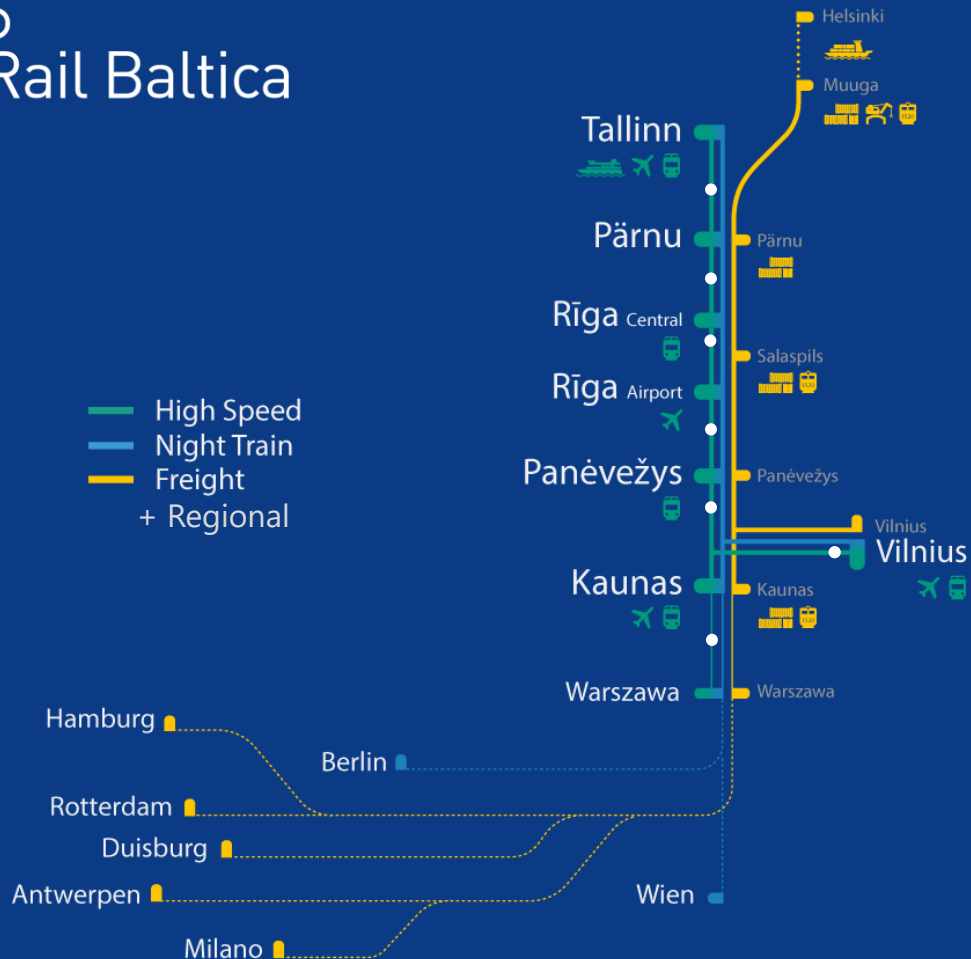
- State contribution is included in State budget of each year and already reserved.
- VAT is financed by the state but does not impact the Budget (actually in Latvia on construction Reverse Tax VAT is applied).
- The Ministry of Transport by law is not a VAT taxable person The Ministry shall transfer VAT directly to the State budget as a non-eligible cost, VAT is fully financed from the state budget.
- The invoices are paid to the Contractor by the Beneficiary Ministry of Transport of Latvia on base of instruction received from Implementing Body (the contracting authority).

RAIL BALTICA GLOBAL PROJECT NEED-TO-KNOWS'

Girts Bramans

Head of Strategic stakeholders and Communications
Rail Baltica joint venture RB Rail AS

Rail Baltica



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

Rail Baltica Procurement Types



Contracting
authority
RB Rail AS

- Global project studies
- Design of main line
- Common Standards
- Business Development
- Marketing & Branding



Contracting
authority RB
Rail AS on
behalf of BEN
and IB

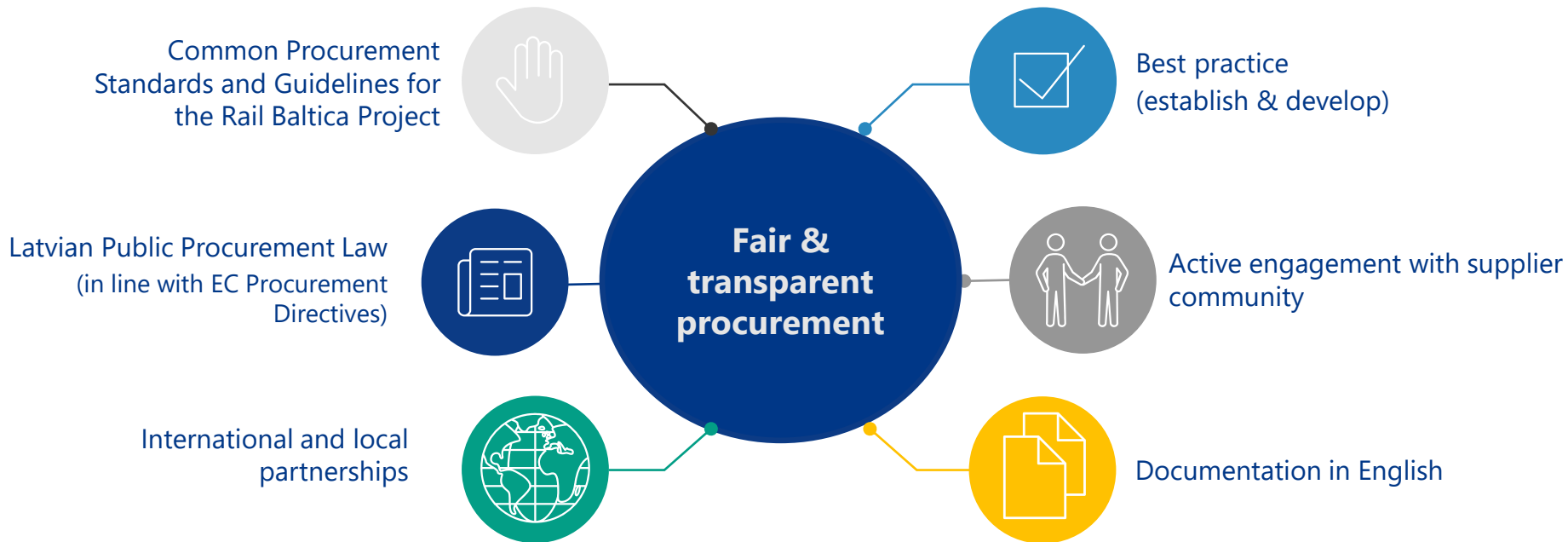
- Sub-systems (CCS&ENE)
- Raw Materials and Key Components
- Cross-border Mainline Sections



Contracting
authority
Implementing
bodies (IB)

- Mainline Construction
- Major Engineering Structures
- Local Facilities (including terminals)

Rail Baltica Procurement Governance



DISCOVER
RAIL BALTICA

Series about the **most ambitious transport project**

WATCH THE SERIES

Ongoing Tenders
RB Rail Tender Archive
Procurement Plan 2021
Contracting Authorities
Fair and transparent project implementation
Procurement Regulation & Supplier Qualification
Apply for Procurement News
E-Procurement System
General terms of agreement



Rail Baltica
Academy

LEARN ABOUT
THE LATEST TENDERS!



Version 3, date 15.04.2021

Effective as of 16 June 2021

Approved by RB Rail AS Supervisory Board decision No 7/146/2021 on 15/04/2021

COMMON PROCUREMENT STANDARDS AND GUIDELINES FOR THE RAIL BALTICA PROJECT

Updated as of June 2021

Ongoing Tenders






RB Rail Tender Archive
Procurement Plan 2021
Contracting Authorities
Fair and transparent project implementation
Procurement Regulation & Supplier Qualification
Apply for Procurement News
E-Procurement System
General terms of agreement

Information
tenders
notified
closed tenders of RB RAIL AS, g



www.railbaltica.org/tenders/

RB Rail AS

Procurement ID No.	Title	Announced	Updated	Submission Date	Language
	Invitation to consultation with interested suppliers for procurement procedure "Rail Baltica mainline construction in Latvia"				
RBR 2021/21	Global Project Cost Benefit Analysis (CBA) and Long Term Business Plan	26.08.2021	26.08.2021	30.09.2021	
RBR 2021/18	Data center services	11.08.2021	26.08.2021	07.09.2021	
RBR 2021/16	Railways tunnels expert services	11.08.2021	02.09.2021	02.09.2021	
RBR 2021/15	Competitive procedure with negotiations "Consolidated supply of rails for Rail Baltica railway construction"	09.08.2021	01.09.2021	23.09.2021	

www.railbaltica.org/procurement/procurement-regulation-supplier-qualification/

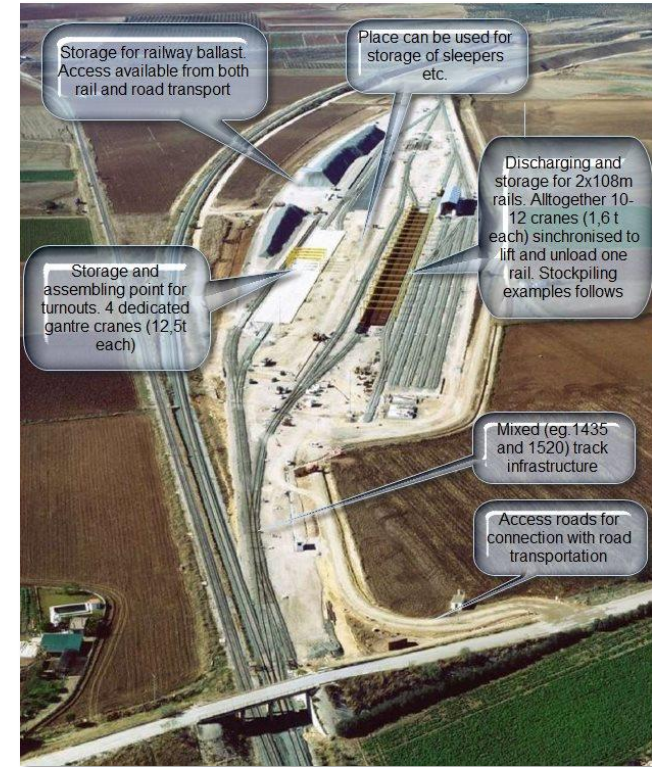
Consolidated Procurement of Components/Elements

Scope: 8 types of construction materials incl. cable troughs (cable ducts, cable channels and manholes), rails, turnouts, sleepers and fastening systems, ballast, standardized small concrete elements (e.g. culverts, bridge logos), noise barriers, fencing and other rail infrastructure elements (e.g. rail expansion joints, buffer stops etc.)

All procurements to be launched 2021 under Latvian Public Procurement Law. Tenders for cable troughs, sleepers and fastening systems, turnouts and expansion joints and rails already started. Next week publication of tender for supply or railway ballast planned.


Supply/delivery phase under specifically developed Framework agreement providing access to materials based on contractor call-offs.

Future IMF's (2 per each country) likely to be used as material storage bases. Initial stockpiling of key superstructure materials will be ensured, further stock replenishment - responsibility of the superstructure construction company



ADIF, the Administrator of Railway Infrastructure in Spain

BIM requirements


 This is the official website of the Rail Baltica Global Project EN

ABOUT RAIL BALTICA BENEFITS NEWS & EVENTS PROJECT IMPLEMENTERS PROCUREMENT **INFO CENTRE →**

RB Rail's BIM documentation

RB Rail AS is currently working towards implementing the BIM Strategy for the Rail Baltica Global Project. The information on the page will be updated regularly to keep you up to date as the project progresses.

DOCUMENTS




Detailed BIM Strategy

A general document that describes the BIM approach for Rail Baltica Global Project. This document sets out a detailed strategy framework for implementing Building Information Management (BIM) on the Rail Baltica Projects. It outlines the strategic BIM goals, defines processes, standards and protocols for the capture, coordination, management and delivery of digital information throughout the lifecycle of design, construction and operation of the assets being delivered.

This document is a part of Design Guidelines.

[Download the file here](#)




BIM Manual (v.18-04-2019)

This document and its supporting ecosystem of documents, forms and templates describe and provide the BIM Strategic processes and workflows to be followed by both Rail Baltica and the Supply Chain during the Lifecycle of the projects, being this ecosystem a live documentation that will evolve during the lifecycle of the Rail Baltica BIM program to capture technological and methodology advancements.

The BIM Manual documentation should be used for all the project phases. Primarily it focuses on the design process and we are continuing to improve it.

This document will be a part of Design Guidelines.

[Download the file here](#)



Building Information Management (BIM) Employer's Information Requirements v2.1

This document sets the requirements according to which the supply chain shall work with BIM systems in order to deliver information to Client – RB Rail or National Implementing Bodies.

This document is a part of Design Guidelines.

[Download the file here](#)



CAD Standards

These standards apply to all drawings (sketches, preliminary, detailed design, construction, shop drawings and asbuilt drawings) and CAD Data (2D or 3D) produced. The intent of these CAD standards is to provide guidelines to ensure that all drawings are prepared to a standard and uniform appearance and reflect high quality workmanship, and that data created by CAD systems is correctly structured and classified to facilitate re-use and understanding by others. This document is not related to any particular Authoring Tool and it will be each Supplier who develops a specific practical standardization for the Authoring Tool to be used in their project, taking as a base this documentation.

This document will be a part of Design Guidelines.

[Download the file here](#)



BEP Template

This BIM Execution Plan (BEP) template has been elaborated to be used as the basis for the post-contract BEP. It has to be prepared as a direct response to the BIM EIR and Technical Specifications. The Supplier shall fulfill all the required information in order to show their intention to comply with all the standards and procedures described in the BIM Manual. The Supplier is free to add extra information.

This document is a part of Design Guidelines.

[Download the file here](#)

Construction stage

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

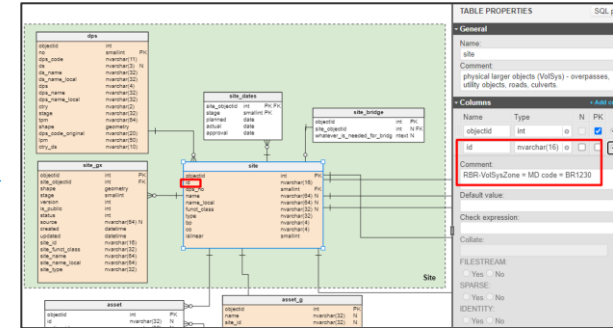
BIM attributes

Properties: Building Element Proxy (1 of 172) - Shared	
Property	Value
RBR-Exposure	NC3
RBR-Functional_classification	Cv-BR-QP5-4D
RBR-isTemplate	<no value>
RBR-Length	<no value>
RBR-Local_Code	TS
RBR-Location	0009
RBR-Lot	300
RBR-Lot	300
RBR-Material_Description	Reinforced Concrete
RBR-Material_Description	C30/37
RBR-Native_Unique_ID	<no value>
RBR-Number	<no value>
RBR-Object_ID	STR-FND-006
RBR-OCC	307
RBR-Originator	IDO
RBR-Position	A-2
RBR-Product_Description	N/A
RBR-Product_Name	N/A

Item	Attributes	RBR-Data	Material	TimeLine	IFC
Property	Value				
GLOBALID	hGNONF0EDP5F25d2_y13				
RBR-Object_ID	STR-DOK-001				
RBR-Material_Description	C45/55				
RBR-Material_Description	Prestressed Concrete				
RBR-Product_Name	Varies				
RBR-Product_Description	Varies				
RBR-Product_Type	Varies				
RBR-Exposure	NC4/ND3/NC4				
RBR-Concrete_Volume	9479.36 m³				
RBR-Steel_Mass	284277.88 kg				
RBR-Steel_Mass_Prestressing	604571.88 kg				
RBR-Reinforcement_Ratio	28.0 kg/m³				
RBR-Reinforcement_Ratio_Prestressing	65.00 kg/m³				
RBR-Project_ID					
RBR-Section_ID					
RBR-SubSection_ID					
RBR-Originator					
RBR-VolumeZone					
RBR-Location	0011				
RBR-Discipline_Code	BR				
RBR-Local_Code	04				
RBR-Project_Silage	MD				
RBR-Revision	001				
RBR-Lot	300				
RBR-Lot	300				
RBR-Design_Life	100				
RBR-Start_Kilometre					
RBR-End_Kilometre					
RBR-Functional_classification	North				
RBR-Position	Post tensioned Slab				
RBR-Type	Variable 4.15 - 11.15 m				
RBR-Depth					

Client's DMS for information exchange and management

Asset Register database



ArcGIS platform

Designer

Contractor

MAIN LINE CONSTRUCTION WORKS PROCUREMENT

Einārs Jaunzems

Head of Project implementing
department

EXPECTED STRUCTURE OF PROCUREMENT PROCEDURE

The procurement procedure will be organised in accordance with the regulatory enactments of the Republic of Latvia EU procurement regulation and Latvian Procurement law.

Procurement commission will choose between most common procedures (in past generally competitive procedure with negotiation according to the Article 8, Paragraph Six, Point 3 of the Public Procurement Law).

The procedure consists of two stages:

- **The first stage** – selection of candidates;
- **The second stage** – evaluation of the bids submitted by candidates which will be invited to submit an initial bid and award of rights to conclude a contract.

The second stage may include negotiations that may be relevant to be undertaken as specified by the Contracting Authority. The procurement commission shall be entitled to make a decision not to organise negotiations and award the contract on the basis of the initial bids submitted by the tenderers.

1st phase



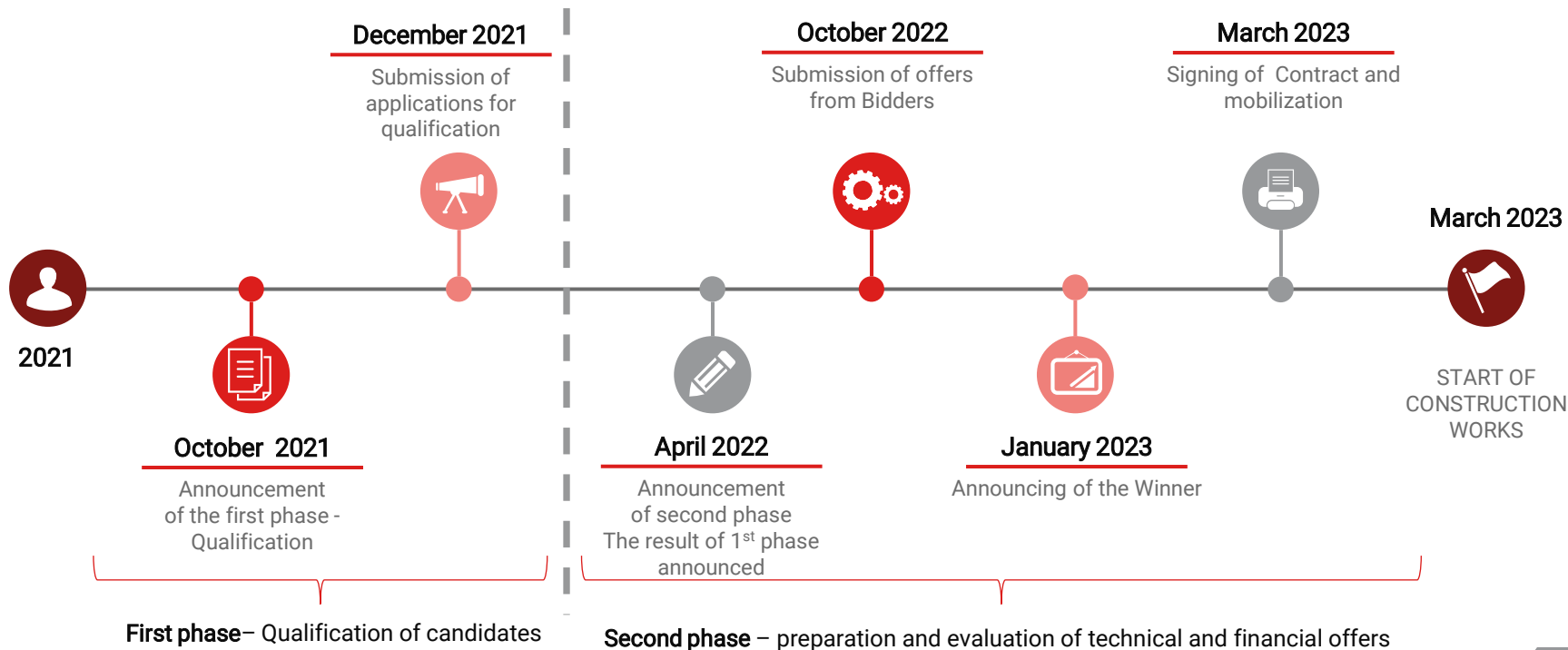
Qualification

2nd phase



Submission of proposals
and negotiation

MAIN LINE CONSTRUCTION PROCUREMENT TARGET TIME SCHEDULE



TO BE PROVIDED BY EMPLOYER

Land Acquisition

May take up to 2 years depending on the acquisition process and ownership at starting of the procedure (State, Municipality or Private), thus difficult to predict precisely when land in a specific section would be available to start construction.

The procedure has started but calendar of availability of land will be known second half of 2022.

Approved detailed technical design

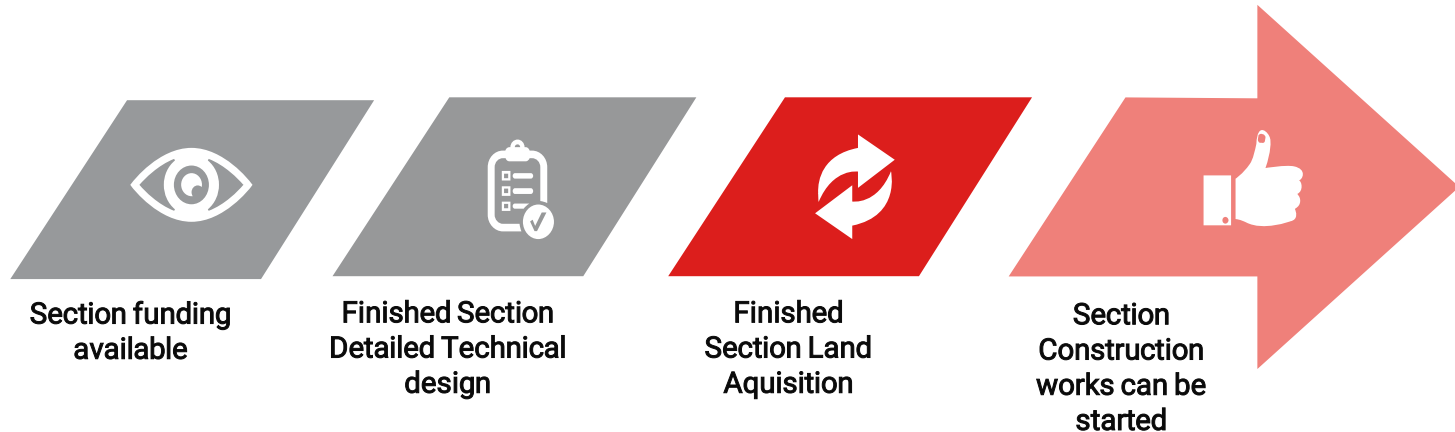
RB Rail AS is the contracting Authority for the Design of the main line, all contracts are signed and most of the sections are in between Value Engineering Phase and Master Design phase, due to the complexity of Latvian construction law, the high number of stakeholders and a number of Building permit sections in which mainline design is divided is difficult predict precisely when land in a specific section would be available to start construction.

In despite design works are progressing in every section precise and final calendar of delivery of approved Detailed Technical design will be available second half of 2022.

TO BE PROVIDED BY EMPLOYER

Project funding

It is expected, that project funding will be available in stages, and the contract conditions will be developed to suit this approach using principle of committed and conditional amount of contract Taking in consideration that beneficiaries can commit for an amount only when funding is secured making sure at each stage that works will be ordered only if full finance will be available



MAIN LINE CONSTRUCTION WORKS CONTRACT CONDITIONS

Andrea Laudanna

Chief Engineer

CONTRACTUAL PRINCIPLES AND MAIN STAKEHOLDERS

Contract administration will be based on the application of Latvian Construction and Procurement law with fairness, equilibrium, and independence.

Contract will be structured on principle of Phasing of Works:

- **Accepted Contract Amount** awarded amount (for example 400 MEUR);
- **Committed Contract Amount** committed amount at starting of works (for example 100 MEUR) the part of the accepted contract amount that is committed at the signing of Contract or step by step activated at confirmation of the availability of funds;
- Accepted contract amount will reflect offer of the bidder for performing all works subject of the contract;
- On the basis of availability of funds, approved Detailed Technical Design, and availability of Land, Contracting authority and Beneficiary will commit in compensating works in specifically defined 6 months in advance section with a contractual obligation to warrantee a regular wealthy and financially sustainable progress of work for Contractor.

CONTRACTUAL PRINCIPLES AND MAIN STAKEHOLDERS

Main Project Legal stakeholders

- **FIDIC Engineer:** will administrate the construction contract on behalf of the Contracting authority and perform Construction Supervision Works;
- **Author supervisor:** will perform Author Supervision during the Construction as defined by Latvian construction law;
- **Public stakeholders:** municipalities, utility owners, state forest, etc.;
- **NoBo:** Independent party for verification of application TSI requirements. Contracted to CERTIFIER S.A.;
- **AsBo:** Independent party appointed to assess the application of the hazard management safety risk process applied during a project. Contracted to CERTIFIER S.A.
- **RB Rail AS:** coordinator and manager of design, etc.;

PLANNED CONTRACTS OVERVIEW

- **Parties of the Contract:**

Employer: SIA EDZL on the base of delegation Agreement signed by Ministry of Transport of Latvia;

Construction Contract: FIDIC Red Book 2017 edition 2; Contract delivery in 2 phases – see slide No. 14 ECI;

Engineer's Contract: FIDIC White Book 2017 edition 5.

- **Pricing basis:** unit prices divided in manpower, tolls and material components equivalent to Contractor direct costs will be the base of contract BoQs with escalation factors for labour, materials, plant & equipment for construction works; on top will be included overheads and profit as a pre-agreed percentage of direct costs to cover general overheads, site running facilities, project and construction management;
- **Payment procedure:** payment approved monthly by Engineer compensated on the base of actual measured quantities on the base of precisely defined method of measurement;
- **Material procured by Contracting authority:** Railway materials such as cable ducts, rails, ballast, sleepers, turnouts, will be procured by RBR and delivered to the Contractor. Materials call-off/handling procedure will be defined in the Construction Contract;
- **Early contractor involvement:** the contractor will be involved in the last phase of preparation of Detailed Technical design.

EXAMPLE OF EDZL CONTRACT APPROACH

Defect Notification Period:	5 years
Liability limitation:	Under evaluation
Language of contract:	English
Dispute arbitration /avoidance:	Appointed permanent or ad hoc DAAB
Payment terms:	Generally, 30 days after receipt of IPC signed by Engineer
Applicable Laws:	Latvian
Litigation:	Latvian national courts

PRINCIPLES OF EARLY CONTRACTOR INVOLVEMENT

The Construction Contractor planned to engage in an early cycle of the project while detailed engineering and land acquisition process is ongoing.

Contract delivery is divided into 2 phases both remunerated:

1. Planning: Constructability, Execution Plans, and Detailed Scheduling of the Works
2. Execution: Perform the Work to the Plans developed in Phase 1

Deliverables for Phase 1 – Planning:

- Prepare Level 3 In-depth Construction Driven Schedule
- Prepare Detail Construction Organization
- Perform Constructability reviews based upon the status of Engineering
- Prepare in Depth Logistics Management Plan complete with Warehousing and Laydown areas
- Prepare Temporary facilities/utilities plan, including identification of proposed work bases, parking craft areas and land requirements
- IMF – facility development

PRINCIPLES OF EARLY CONTRACTOR INVOLVEMENT

- Review and input to building permits to ensure they comply with proposed construction methodology;
- Partial handover approach and how to allow other contractors to access the site prior to completion;
- Stakeholder and PR management plan, including how they will keep stakeholders informed, hotlines for the public to call to report issues, community engagement during construction etc.;
- Bill of Quantity review report;
- Solution on carbon impact – greener methods of execution, etc.

TECHNICAL SPECIFICATION EXAMPLE

BR.5 REINFORCEMENTS

DEFINITION

Steel reinforcing for cast in situ concrete

DESCRIPTION

Steel reinforcing for cast in situ concrete for concrete structure such as foundations, piers, abutment and walls, slabs, beams and where defined in structural detailed drawings;

This section has to be read in conjunction to the previous specification "Cast in situ concrete", the following specification "Formworks" and Structural drawings.

MATERIAL

STEEL REINFORFING FOR CAST IN SITU CONCRETE

The steel reinforcing S500 for cast in situ concrete is characterized by the following nominal values of the characteristic yield and breaking stresses that have to be used in the calculations:

Features	Requirments	Fractile (%)
Characteristic yield stress f_{yk}	$\geq f_{ymin}$	5.0
Characteristic breaking stress f_{tk}	$\geq f_{tmin}$	5.0
$(f_t / f_y)_k$	≥ 1.15	10.0
$(f_t / f_{ymin})_k$	< 1.35	
$(f_t / f_{tmin})_k$	≤ 1.25	10.0
Elongation (A_{gk}) _k	$\geq 7.50\%$	10.0
Spindle Diameter for bending tests to 90° and following straightening without cracks:		
$\Phi < 12$ mm	4 Φ	
$12 \leq \Phi \leq 16$ mm	5 Φ	
$16 \leq \Phi \leq 25$ mm	8 Φ	
$25 \leq \Phi \leq 40$ mm	10 Φ	

ELECTRO-WELDED MESHES AND TRAILERS

The steel of the welded mesh and lattice girders must be weldable.

The spacing of the bars must not exceed 330 mm.

The trusses are reticular components composed of bars and assembled by welding; For meshes and lattice made of S500 steel, the basic elements must have a diameter Φ that respects the limitation:

$$6 \text{ mm} \leq \Phi \leq 16 \text{ mm.}$$

The ratio between the diameters of the mesh components and lattice bars must be:

$$\Phi_{\min} / \Phi_{\max} \geq 0.6.$$

DEFINITION
DESCRIPTION
MATERIAL
APPLICABLE REGULATIONS:
MATERIAL'S CHARACTERISTICS
AND CONDITION OF SUPPLY
EXECUTION PROCEDURES
CERTIFICATIONS, SAMPLES
AND TESTS
QUALITY ASSESSMENT -
ACCEPTANCE CRITERIA
MEASUREMENT CRITERIA

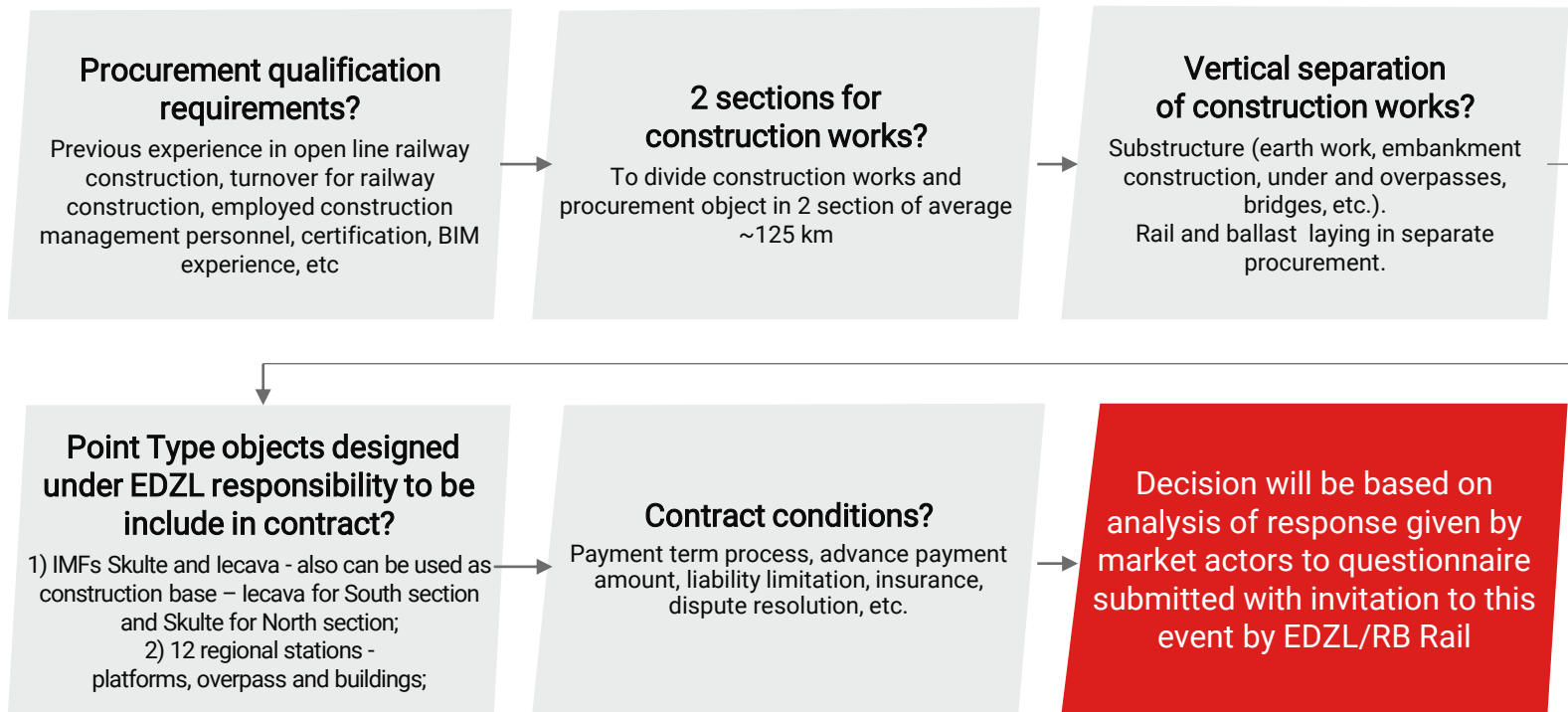
BILL OF QUANTITY EXAMPLE FOLLOWING LATVIAN STANDARD LBN 501-17

Izmaksu pozīcija / Cost position	Specifik. Nr. / Specs No.	Title of work	Rasējuma Nr. / Drawings No.	Mērvienība / Darba daudzums Unit of measure / Quantity		Vienība cena / Unit pricing						Kopējā cena / Total pricing				
						Laika norma (c/h) / Time norm (m/h)	Darba smāknes likme* (euro/h) / Hourly rate* (euro/h)	Darba alga / Salary	Būvstrādājumi / Materials	Mehānismi / Tools	Kopā / Total unit rate (euro)	Darbiatlīdzība (c/h) / Total work (m/h)	Darba alga / Salary	Būvstrādājumi / Materials	Mehānismi / Tools	Kopējā izmaksa EUR / Total in EUR
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
5	DZELZCEĻA SLIEŽU CĒĻI, ZEMES KLĀTNE, GARENPROFILI UN ŠĶĒRSPROFILI, ŪDENSNOVADE / RAILWAY TRACKS, ROADBED, LONGITUDINAL PROFILES AND CROSS SECTIONS, DRAINAGE													Kopā / Total:		- €
5.1.	Dzelzceļa uzbērums / Railway embankment															
5.1.1	Earthworks			N/A												
5.1.1.1	EM-01, EM-02	Top soil removing, thickness 0.3m	SC-25, SC-29 / SC-48	m ³	39,998.70							- €	- €	- €	- €	- €
5.1.1.2	EM-01, EM-02	Excavation under top soil (included service road, fence, ditches,...) plus transportation and storage	SC-25, SC-29 / SC-48	m ³	82,002.70							- €	- €	- €	- €	- €
5.1.2	Embankments															
5.1.2.1	EM-01, EM-02	Compaction of subgrade (foundation of embankment) after removing topsoil	SC-25, SC-29 / SC-48	m ²	133,093.60							- €	- €	- €	- €	- €
5.1.2.2	EM-01, EM-04	Non-woven geotextile, CBR > 3.0 kN, T > 10/10kNm	SC-25, SC-29 / SC-48	m ²	141,287.40							- €	- €	- €	- €	- €
5.1.2.3	EM-01, EM-03	Base of foundation - granular crushed filling, ø 0/63mm, thickness 0.7m, compaction roller, 1 layer max. 0.3m	SC-25, SC-29 / SC-48	m ³	90,095.60							- €	- €	- €	- €	- €
5.1.2.4	EM-01, EM-02	Replacement of excavated peat - granular filling	SC-25, SC-29 / SC-48	m ³	18,444.40							- €	- €	- €	- €	- €
5.1.2.5	EM-01, EM-03	Embankment - filling material + compaction	SC-25, SC-29 / SC-48	m ³	358,569.90							- €	- €	- €	- €	- €
5.1.2.6	EM-01, EM-03	Prepared subgrade, thickness 50cm	SC-25, SC-29 / SC-48	m ³	25,158.70							- €	- €	- €	- €	- €
5.1.2.7	EM-01, EM-03	Sub-ballast, thickness 32cm	SC-25, SC-29 / SC-48	m ³	14,865.90							- €	- €	- €	- €	- €
5.1.2.8	EM-01, EM-03	Protecting layer	SC-25, SC-29 / SC-48	m ³	4,238.80							- €	- €	- €	- €	- €
5.1.2.9	EM-05	Final treatment of embankments to its required slopes	SC-25, TS-L-01, TS-L-02	m ²	42,284.60							- €	- €	- €	- €	- €
5.1.2.10	EM-05	Sowing of agricultural land or slopes with grassing hydro-seeding	SC-25, TS-L-01, TS-L-02	m ²	42,633.00							- €	- €	- €	- €	- €
5.1.2.11	EM-05	Supply and planting of shrubs		each	1,697.00							- €	- €	- €	- €	- €

Unit Pricing – the unit price that will be filled by bidder following above split as for requirement of Latvian construction and procurement law

KOPĀ / TOTAL =
Virszdevumi / Overhead cost =
Peļņa / Profit =
KOPĀ BEZ PVN / TOTAL WITHOUT VAT =

MAIN BUSINESS DECISION TO BE TAKEN BY CONTRACTING AUTHORITY ON BASE OF RESULT OF ANALYSIS OF QUESTIONNAIRE FILLED BY MARKET ACTORS



MAIN LINE CONSTRUCTION WORKS OVERVIEW OF THE TASK

Einārs Jaunzems

Head of Project Implementation Department

MAINLINE CHARACTERISTICS IN LATVIA

Mainline total length

255 km

- Railway bridge 60
- Road overpass 85
- Animal passage 9
- Construction of Regional station (optional) 12
- IMF (optional) 2
- Prepared subgrade 4 Millions m³;
- Embankments 12 Millions m³;
- Cutting 2 Millions m³;
- Sub-ballast 1 Millions m³;
- Ballast construction 1 Millions m³;
- Rail instalation works 71 000 t;
(consolidated procurement of materials done by RBR)
- Concrete 263 000 m³;

Mainline construction does not include construction works in Riga city.



CONSTRUCTION WORKS IN SECTIONS WILL BE ORGANIZED BY BUILDING PERMITS



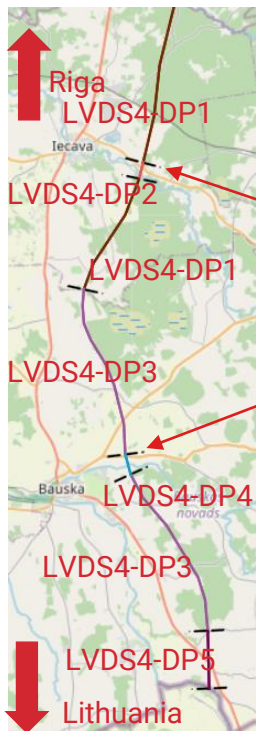
LVDS4 - Misa-LV/LT border

Main parameters

- 45 km long
- 4 railway bridges
- 16 road viaducts
- 1 animal crossing
- 4 railway viaducts

DESIGN SECTION	SECTION TOTAL BUILDING PERMITS
LVDS1 - Upeslejas-Rīga-Misa (56 km)	20
LVDS2 - Vangaži – Salaspils – Misa (67 km)	31
LVDS3 – EE/LV border - Vangaži (94 km)	14
LVDS4 - Misa-LV/LT border (45 km)	11
TOTAL	76

CONSTRUCTION WORKS IN SECTIONS WILL BE ORGANIZED BY BUILDING PERMITS

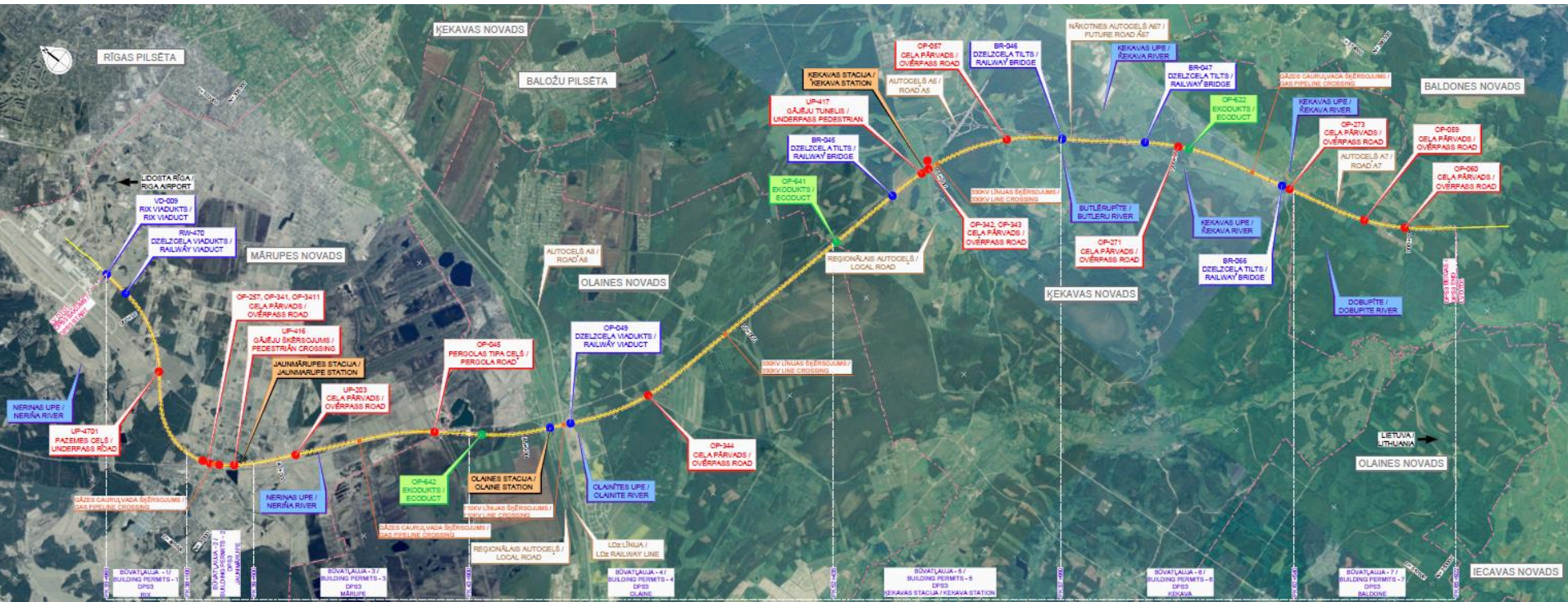


Building permits of first section where works can be started

LVDS4 – Misa-LV/LT border

- BP 1 / 4-1 - Mainline - Iecavas Passing Loop (147+000 - 152+000)
- BP 2 / 4-1 - LDZ Railway Crossing section (152+000 - 156+000)
- BP 3 / 4-1 - Iecava RB Station section (156+000 - 157+000)
- BP 4 / 4-2 - Iecava River Bridge section (157+000 - 158+000)
- BP 5 / 4-1 - Iecava South Section (158+000 - 165+665)
- BP 6 / 4-3 - Bauska North section (165+665 - 176+300)
- BP 7 / 4-4 - Memele River Bridge section (176+300 - 177+600)
- BP 8 / 4-3 - Bauska Station section (177+600 - 182+000)
- BP 9 / 4-3 - Bauska South section (182+000 - 188+600)
- BP 10 / 4-5 - Ceraukste section (188+600 - 190+000)
- BP 11 / 4-5 - Lithuanian border section (190+000 - 192+134)

**EXAMPLE OF CONSTRUCTION SECTION
FROM RIX TO OLAINÉ MUNICIPALITY BORDER (DESIGN SECTION
LVDS1 DSP3)**



Section length – 24,67 km;
Building permits – 7;

Regional stations – 3;
Railway bridges/viaducts – 7;

Pergola crossing – 1;
Overpass road – 9;

Underpass road – 1;
Ecoducts – 3;

RELATED OBJECT DESIGN/CONSTRUCTION STATUS

Type of object	Name of object	Progress status		Author of design Amount of contract signed/committed	Main contractor Amount of contract	Engineer Amount of contract
		Design	Construction			
	Riga central train station (+ Daugava railway bridge)	Ongoing (FIDIC Yellow book)		BERERIX (Signed 430 538 203 EUR)		EGIS&DB (23 959 441 EUR)
Point	RIX (airport) train station	Completed	Ongoing (FIDIC Red book)	General Partnership PROSIV (4 545 774 EUR + Author supervision 864 864 EUR)	B.S.L.Infra (Signed 236 961 150 EUR)	Prointec&Forma2 (5 849 797 EUR)
	Salaspils FHT	Ongoing	-	-	-	-
	IMFs Skulte and Iecava	Procurement phase	-	-	-	-
	Regional Stations (17 buildings)	Procurement phase	-	-	-	-



RELATED OBJECT DESIGN/CONSTRUCTION STATUS

Type of object	Name of object	Progress status		Author of design Amount of contract signed/committed	Main contractor Amount of contract	Engineer Amount of contract
		Design	Construction			
System	Rolling depo Jaunmarupe	PRE Procurement phase	-	-	-	-
Rural mainline	LVDS1 - Upeslejas-Rīga-Misa (section length 56 km)	Ongoing Master design Estimated completion End of 2022	PRE procurement phase (FIDIC Red book)	IDOM-INECO (12 989 200 EUR)	PRE procurement phase	PRE procurement phase
	LVDS2 - Vangaži – Salaspils – Misa (section length 67 km)			EGIS & DB CONSULTING (12 024 529 EUR)		
	LVDS3 – EE/LV border - Vangaži (section length 94 km)			Cons. Ingeniería y Economía del Transporte S.M.E. M.P. S.A. and Ardanuy Ingeniería S.A (13 523 414 EUR)		
	LVDS4 - Misa-LV/LT border (section length 45 km)			IDOM, CONSULTING, ENGINEERING,ARCHITECTURE S.A.U. (6 903 802 EUR)		

ineco
IDOM

egis
DB

Ardanuy
Ingeniería s.a.

Rail Baltica

TYPICAL TIMELINE FOR SECTION CONSTRUCTION WORKS

Construction work phase	Date
Preparatory work	
Approval of Detailed technical design in section	End of 2022
Finished land acquisition in section	End of 2022
Construction works	
End of procurement process. Signing of agreement and mobilization	March 2023
Start of early construction contractor involvement phase	April 2023
Receiving permit to start construction works (BUN)	April 2023
Site office installation	May 2023
Start of construction works	May 2023
End of construction works	TBD
Systems construction works	
Systems ENE+CSS construction works	
Defect notification period for systems, ENE, CSS construction works	

EXAMPLE OF STRUCTURES TO BE BUILT

Ēriks Dīļevs

TECHNICAL DIRECTOR, AS RB Rail

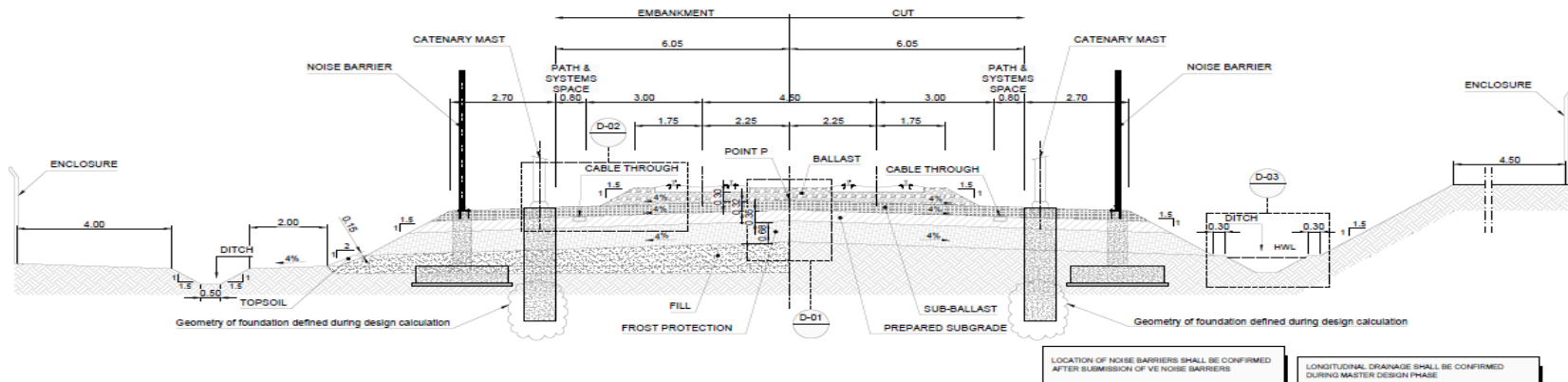
EMBANKMENT

Main parameters of the structure:

Height: 1.50m to 12.00m

Width: 12.00m

Layer	E _{v2} (DIN 18134)		D _{pr} (EN 13286-2 standard Proctor)	
	Target value	Testing frequency	Target value	Testing frequency
Subballast	≥ 120 MPa	Once per 100 m	≥ 103%	Once per 20 m
Prepared subgrade	≥ 80 Mpa (untreated material)	2 locations - beneath the railway and near the edge	≥ 100%	2 locations - beneath the railway and near the edge
	≥ 120 Mpa (treated material)			
Upper embankment (embankment/excavate surface)	≥ 45 Mpa for fine soils ≥ 60 Mpa for sandy or gravelly soils ≥ 80 Mpa (treated material)		≥ 97 %	



BRIDGES, ROAD OVERPASSES

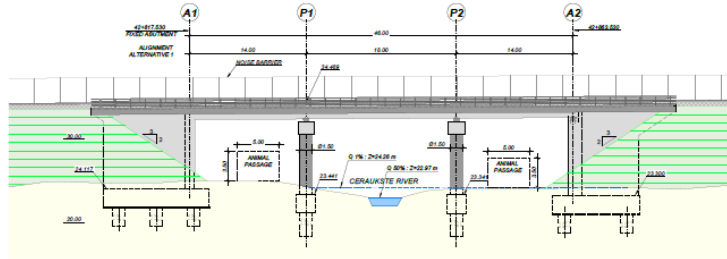
Main parameters of the structure:

- Precast or cast in situ
- Structural steel S355
- Concrete minimum strength requirements:
 - For span (superstructure): $f'c$ 28 days = 45 MPa;
 - For pier cap, pier: $f'c$ 28 days = 35 MPa;
 - For foundation: $f'c$ 28 days = 30 MPa.
- Permanent loads (according to EN 1991-1-1):
 - Ballast (including sleeper) 20.0 kN/m³
 - 2 rails per track + fastening 1.5 kN/m/track
 - 1 handrail on each side (2 units) 0.7 .0 kN/linear meter

	Code	Unit	Quantity
Concrete C45/55. Deck (beams)	1.2.1	m3	667,80
Concrete C45/55. Deck (slab)	1.2.1	m3	868,13
Concrete C30/37 transition slab	3.8.1	m3	365,00
Reinforcement steel 500MPa beams	1.3.2	kg	100.169,36
Reinforcement steel 500MPa slab	1.3.2	kg	130.219,35
Reinforcement steel 500MPa transition slab	1.3.2	kg	29.200,00
Prestressing reinforcement	1.3.3	kg	23.372,85
Post-tensioned steel 835/1030 mpa in bars		kg	0,00
Planks	1.1.8	m2	3.774,00
Deck formwork	1.1.4	m2	0,00
Parapet	1.4.6	m	0,00
Falsework (overpass)	1.3.8	m2	0,00
Launch of Deck T-beams	1.1.5	each	143,00

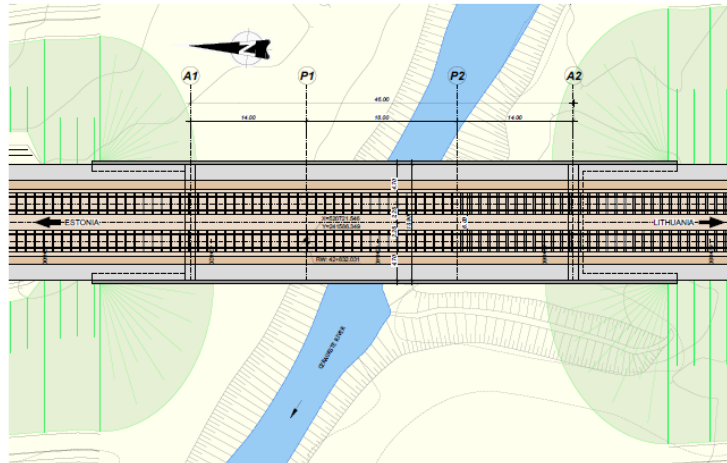
Deck for 26m long road overpass specification

BRIDGES, ROAD OVERPASSES



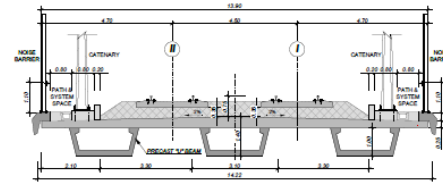
ELEVATION

SCALE 1:500
UNITS IN M



PLAN

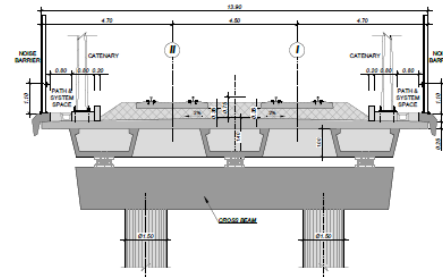
SCALE 1:500
UNITS IN M



CROSS SECTION

SCALE 1:50
UNITS IN M

NOTE:
UNDER SECTION SECONDARY ELEMENTS
AND ONLY INDICATIVE AND WILL BE CONFIRMED
IN THE FINAL DESIGN PHASE



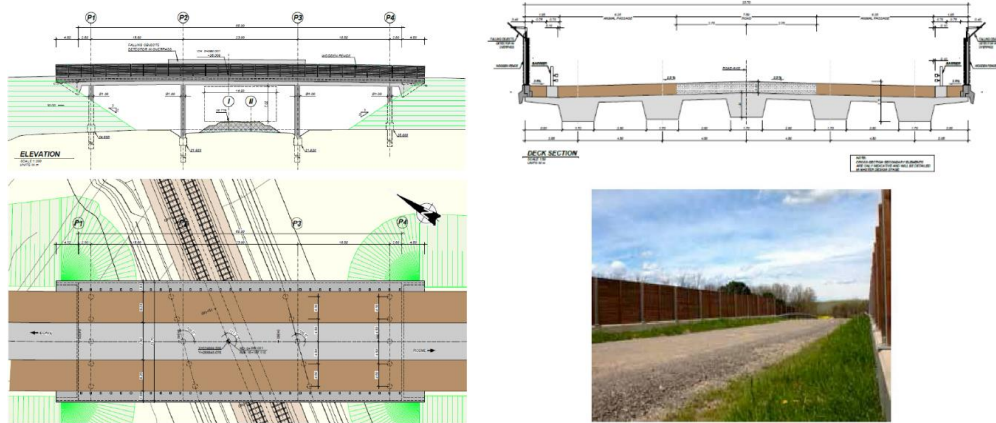
**DECK SECTION
AT PIERS**

SCALE 1:50
UNITS IN M

COMBINED ROAD/ANIMAL OVERPASS

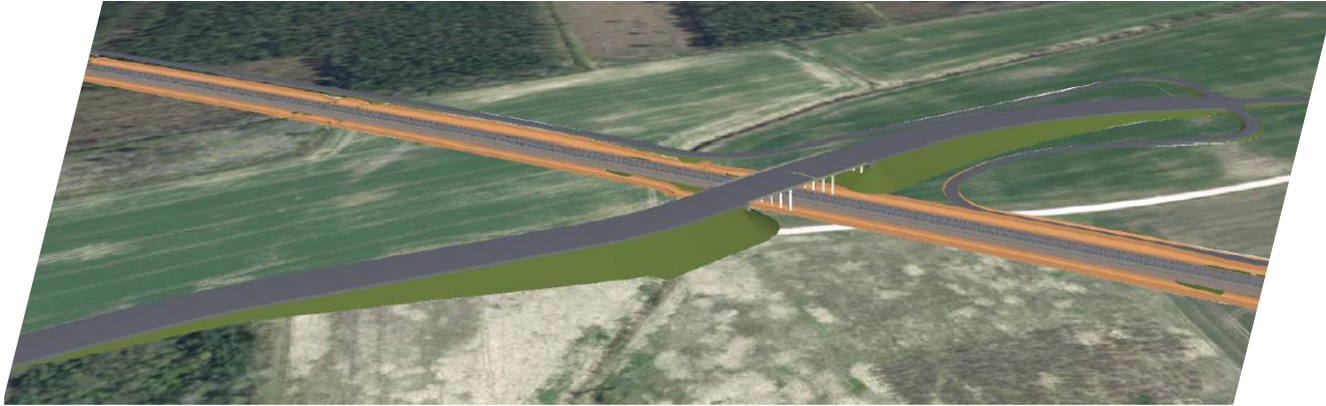
Main parameters of the structures:

- Total length: 66.0 m
- The width of structure: 22.0 m
- Traffic lane of gravel road: 7.5 m
- Animal walkway: 15.0 m



Combined Road/Animal crossing structure

COMBINED ROAD/ANIMAL OVERPASS



GAUJA RIVER BRIDGE NEAR MURJANI

Main parameters of the bridge:

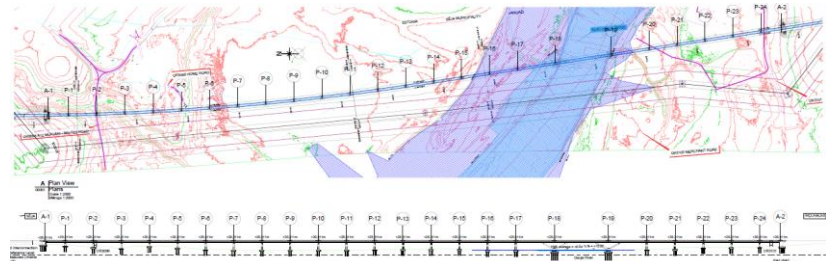
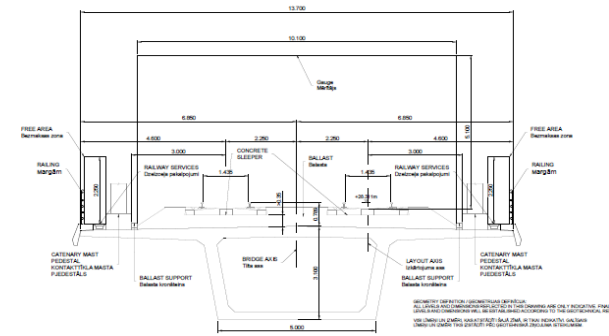
- Multispan haunched reinforced concrete box girder
- Total length – 1 400 m
- Total number of spans – 25
- Central span width – 110 m
- Central span height – 7 m



B East View
Skats no 35rumiem
Scale 1:1000
Bridge 1000



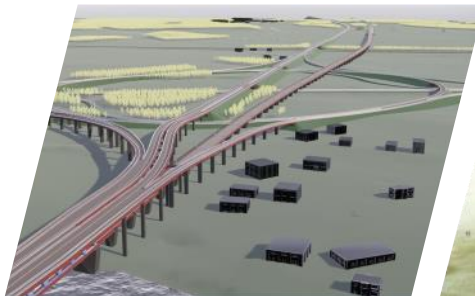
C Project Sections
Projekta sadzās
Scale 1:100
Bridge 1010



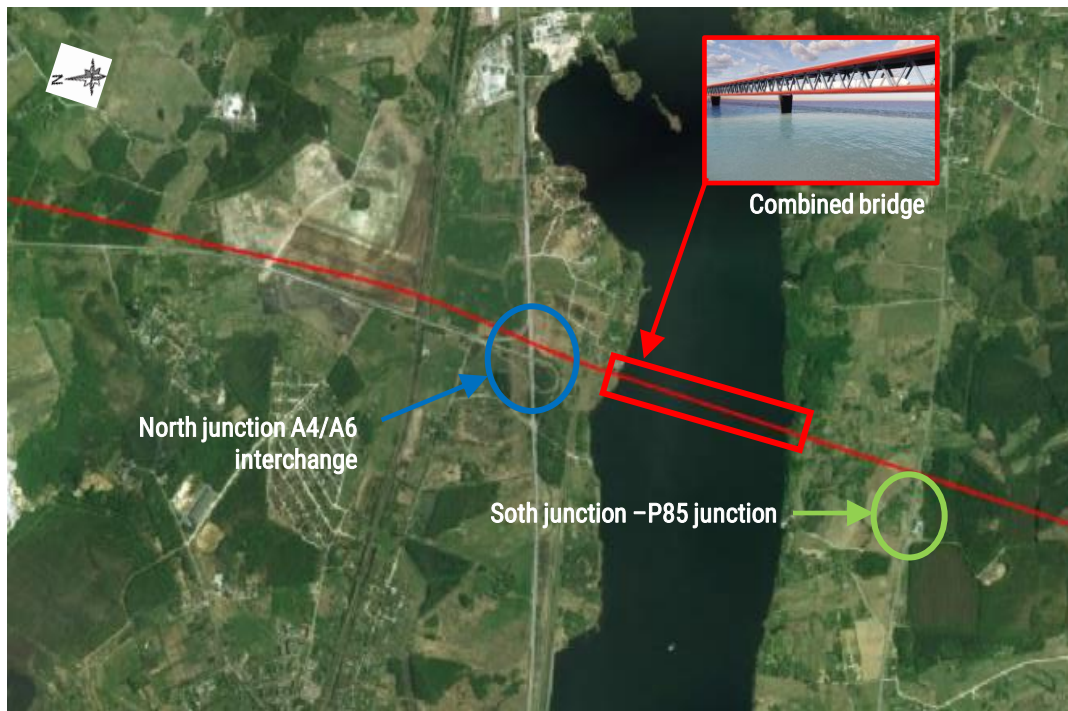
COMBINED BRIDGE OVER DAUGAVA RIVER NEAR SALASPILS

Main parameters of the bridge:

- Total length 1150m
- 2+2 road carriageway
- 2 highspeed railway lines
- Steel truss girder with
 - 6 spans of 150m,
 - 2 spans of 125m
- Bottom chord height approx. 12m over river level



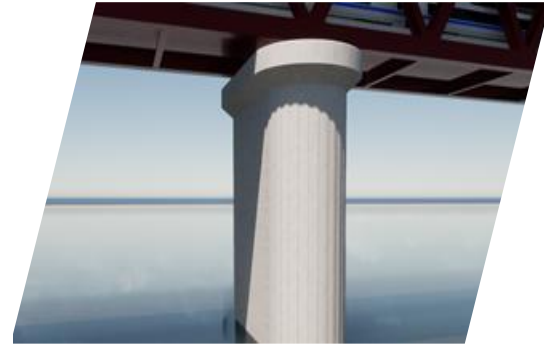
COMBINED BRIDGE OVER DAUGAVA RIVER NEAR SALASPILS



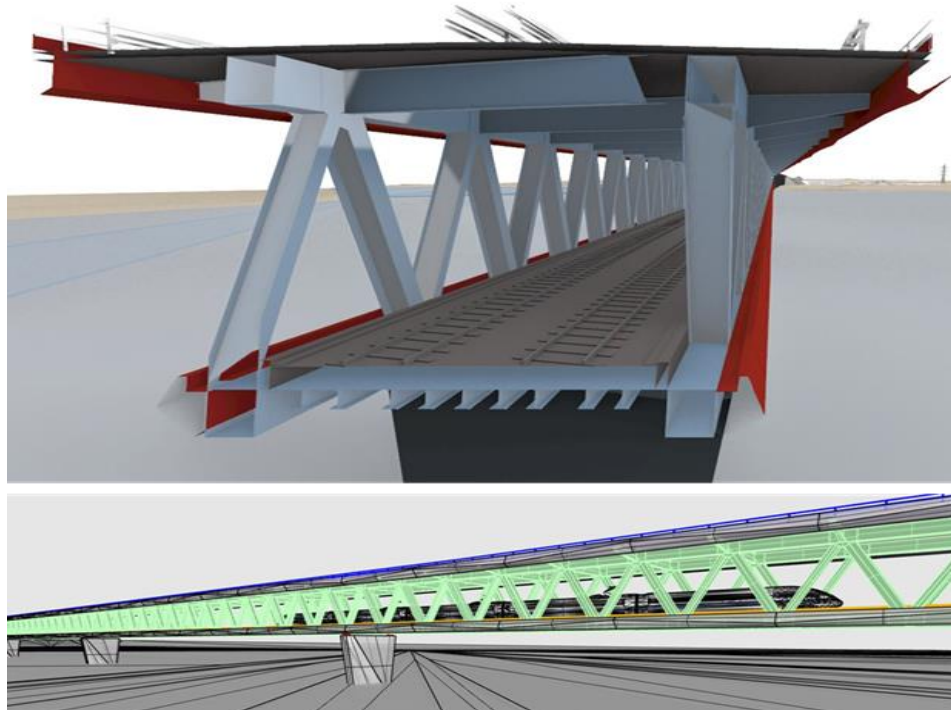
COMBINED BRIDGE OVER DAUGAVA RIVER

Specific parameters of the bridge:

- The bridge deck carries at top chord level a carriageway (4 traffic lanes), and at bottom chord level a high speed two track railway line 12.10m wide
- At top chord level, steel cantilevers are disposed transversely to provide the required transverse clearance, and a reinforced concrete slab provides the support for the road carriageway



COMBINED BRIDGE OVER DAUGAVA RIVER



NOISE BARRIER



THANK YOU FOR
ATTENTION!
**We are ready to answer
any questions.**

edzl@edzl.lv
Gatis.gangitis@edzl.lv



www.edzl.lv



Ģenerāļa Radziņa krastmala 9
Rīga, LV- 1050

