



E.C.O. Group

Who we are ?

19 May 2022

Topics

- **Our group: Deutsche Bahn**
- DB Engineering & Consulting – Who we are
- DB Engineering & Consulting – Design Center Romania
- Design Center Romania – Development Opportunities



Our group

Deutsche Bahn

On 33,300 kilometers more than
25,700 bridges and 750 tunnels
in the railway network of the DB

Around 4.6 million passengers
a day on trains and buses in Germany

336,000 employees
around the globe

On weekdays over
1 million metric tons
of goods by rail in Germany and Europe

5,700 stations
in Germany

The DB history

1835

The beginning: Rail line connecting Nuremberg and Fürth with the steam train „Adler“

1933

First DMU trains from Hamburg to Berlin

1991

With the ICE (Inter City Express) starts the first regular high-speed traffic in Germany

2002–2010

Various acquisitions, i.a. Arriva, BAX Global, NS Cargo, DSB Gods, Spain-TIR, Romtrans ...

1920

German Imperial Railway (Deutsche Reichsbahn) established

1949

Split into Deutsche Bundesbahn and Deutsche Reichsbahn

1994

Deutsche Bundesbahn and Deutsche Reichsbahn merge to form Deutsche Bahn AG

TODAY

A leading international mobility and logistics company



Our group

Top market positions – in Europe and worldwide




Freight Transport and Logistics

- #1 Rail freight transport 
- #1 Land transport 
- #4 Air freight 
- #5 Ocean freight 
- #5 Contract logistics 

Infrastructure

- #1 Rail infrastructure 
- #1 Operation of rail stations 

Passenger Transport

- #1 Regional and local rail 
- #2 Long distance rail 
- #3 Public road transport 

Data as of Dec. 31, 2020

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Who we are

What we offer

Advising, designing and implementing infrastructure projects, from the idea to operations.

185 years of
rail expertise

Cutting-edge
technologies and construction

Economic and
environmental aspects
always taken into account

Always the right solution –
for individual jobs and large-scale projects alike

5,800 employees
from 84 countries
for all technical disciplines

Who we are

Our specialists

40

Design

27

Construction supervision

13

Project management

10

Environment, geotechnics and survey

5

Design review and acceptance testing

Consulting services

Functional percentage of production staff, 5 % other (as of March 2021)

Who we are

In Germany



7 regions with more
than 80 locations

Headquarters **Berlin**



Represented on every
continent

Projects in over
100 countries
since **1966**

Who we are

Worldwide



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CENTRUL DE PROIECTARE **DB** IN ROMANIA DESIGN CENTER ROMANIA



70 Engineers Various Specialties

Transport infrastructure planning



Bridge design



Signalling design



Buildings & Stations design



New construction, Rehabilitation, Demolition? We plan that for you!
We offer support to the German regions.

German Market Insight

Transport infrastructure – Projects in Germany

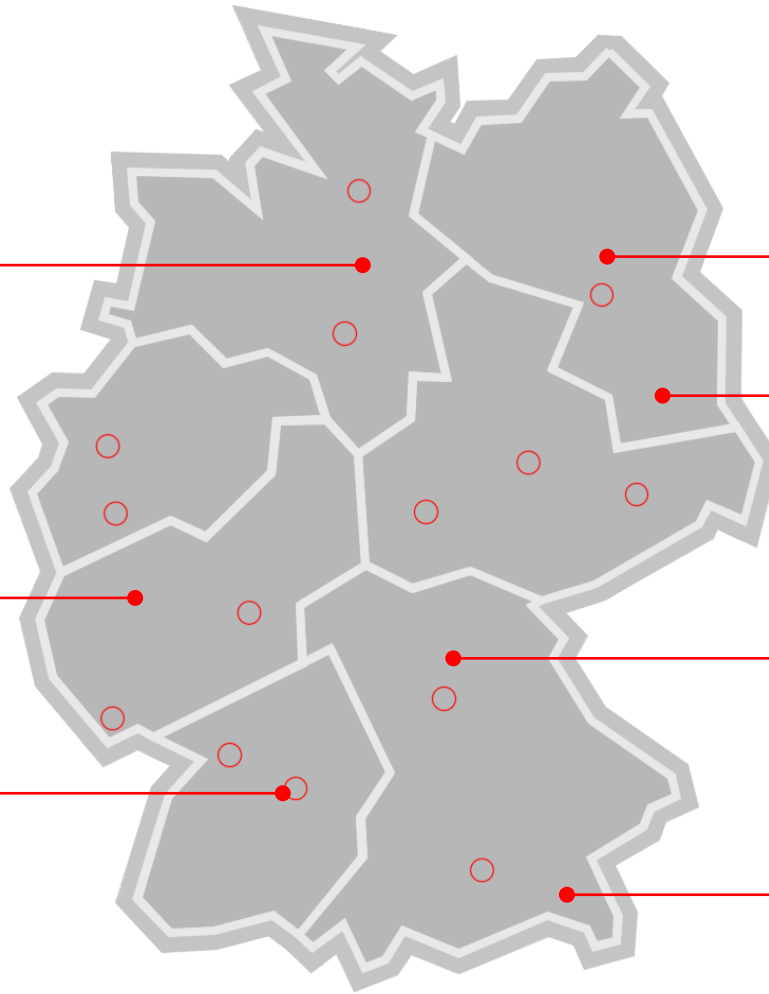
Uelzen Süd–Hannover



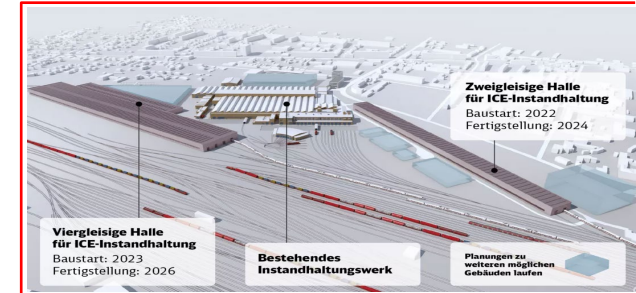
Großprojekt Korridor A ETCS



Stuttgart 21 Projekt



Neues Werk Cottbus („Phönix“ Projekt)



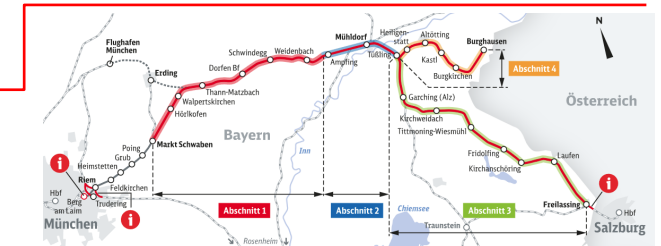
Abstellanlage Schönholz



Knoten Bamberg



Ausbaustrasse 38

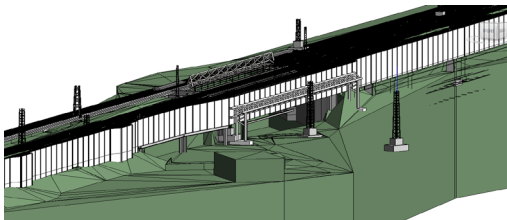


German Market Insight

Bridges & Structures Design – Projects in Germany



Lärmsanierung S4
Hamburg – Altona
Entwurfsplanung



Rhein-Ruhr-Express
BIM Lärmsanierung Lph2



S11 Bahnhof Köln Messe
BIM Planung Lph2



Erneuerung 4EÜ Großenhain Genehmigungsstatik
Bauform: Rahmenbrücke, Stützweite zwischen 8-16m



RC 2018 EÜ Flutbrücke Ausführungsplanung
Bauform: Rahmenbrücke, Stützweite ca.30m



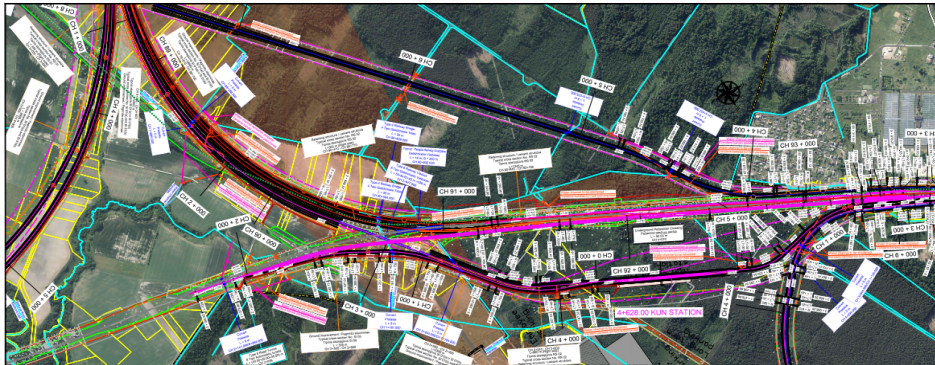
Ersatzneubau EÜ Rude -Ausführungsplanung
Bauform: Stahltrog, Stützweite ca.43m



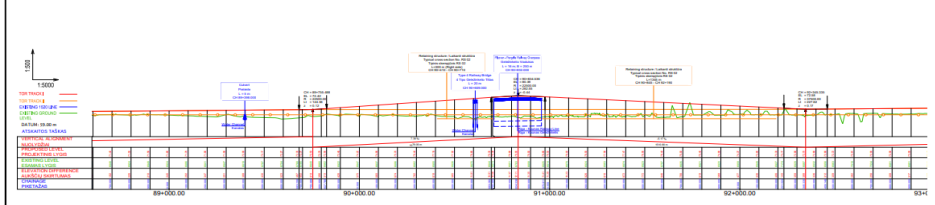
Rail Baltica Projects



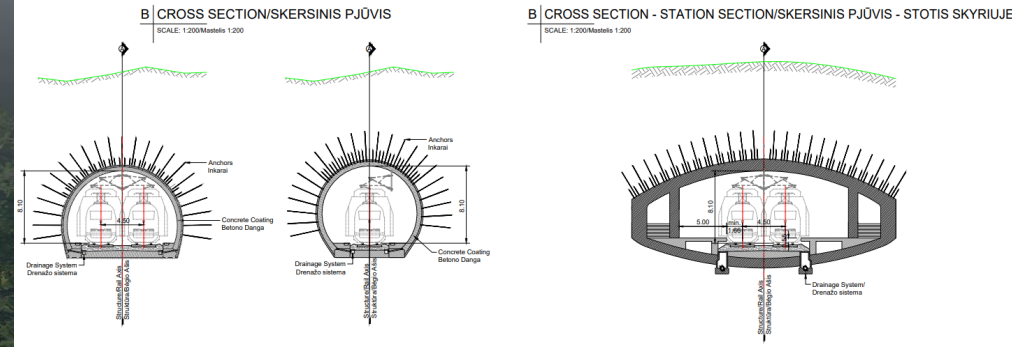
Vangazi – Misa (Latvia)



Layout plan / Kārtējās izbūves plans
Scale / Mastelis 1:5000



Kaunas-Vilnius (Lithuania)



Riga Main Station – (Latvia)



BIM Excellence

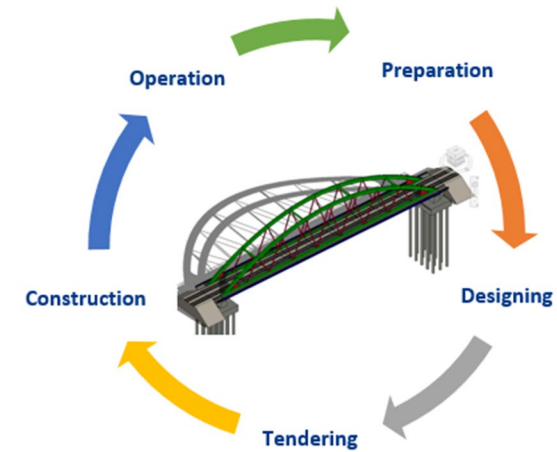
Rail Baltica Projects

May 2022 | Bucharest

BIM – Building Information Modelling



Building Information Modeling (BIM) is an intelligent 3D model-based process that gives architecture, engineering, and construction (AEC) professionals the insight and tools to more efficiently plan, design, construct, and manage buildings and infrastructure.



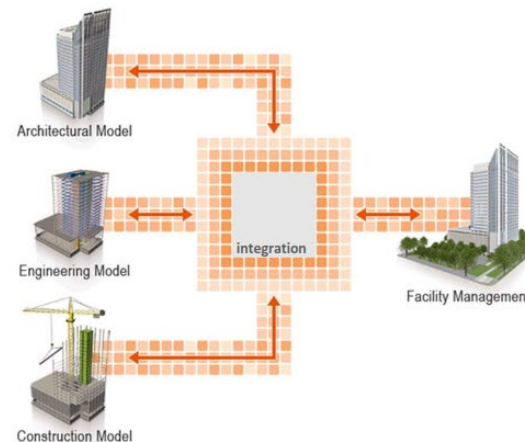
3D, 4D, 5D, 6D BIM

3D + scheduling = 4D

4D + cost = 5D

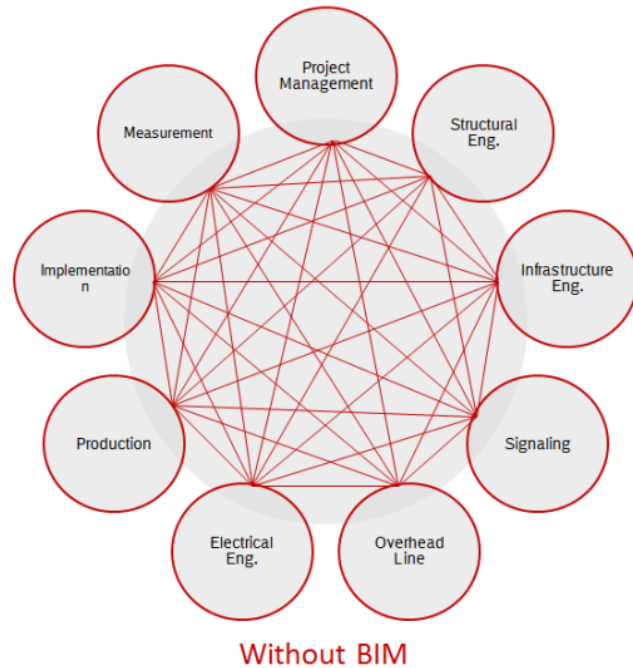
maintenance = FM

5D + FM = 6D



BIM = Project

BIM Advantages



- Collaborative design
- Life centric approach
- Single source of truth
- Preventing possible conflicts during building directly in the design phase
- Possibility to track costs during building and compare it to the baseline from design
- Better understanding of the designed solution from the client
- 3D model with all the information inside, basis for maintenance and operation

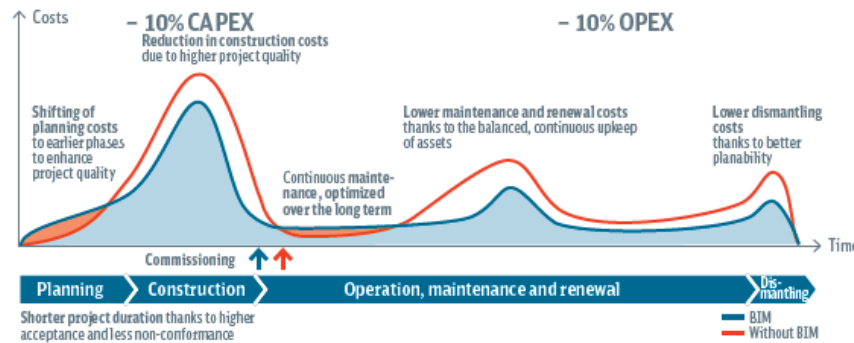
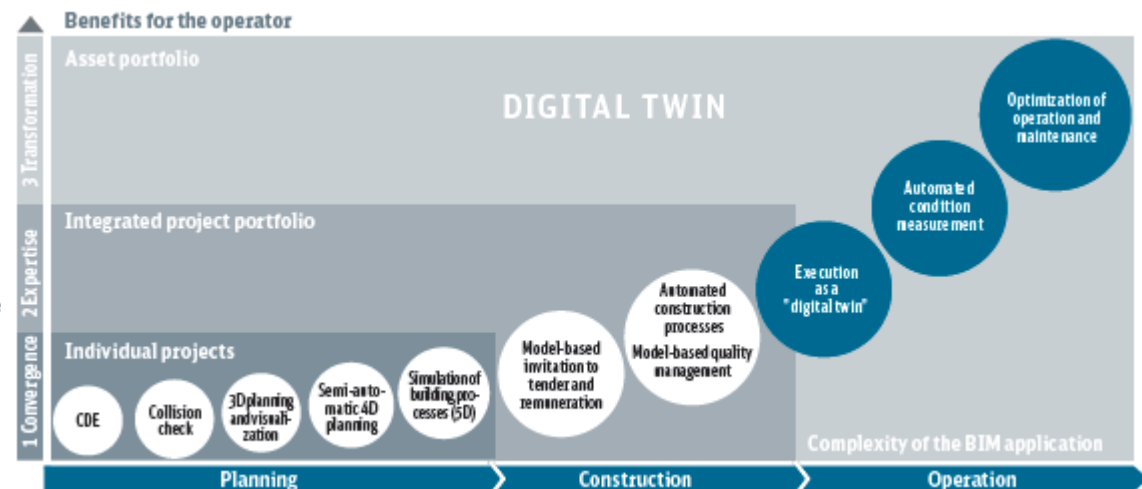
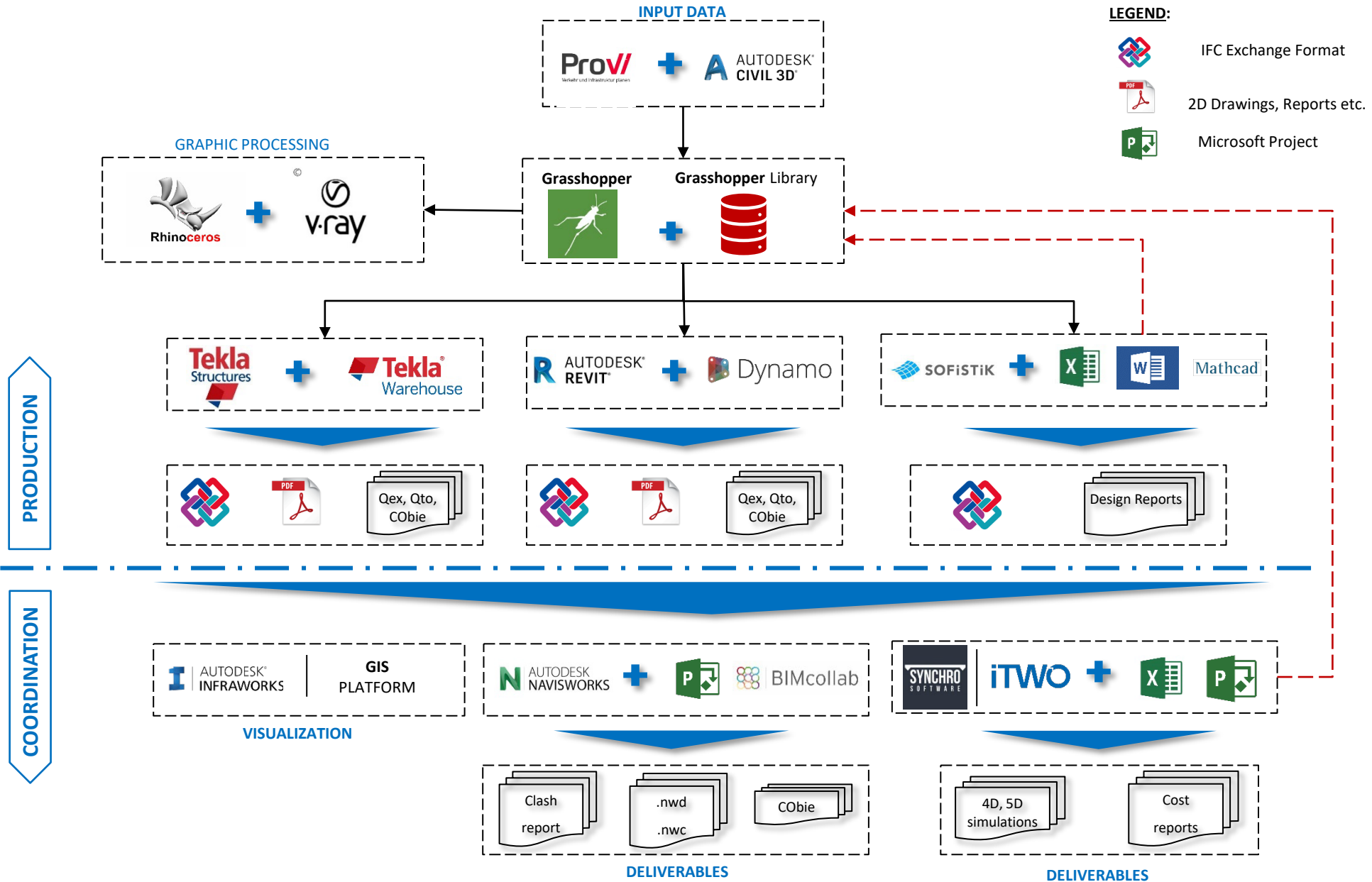


Figure 5-1: Hypothesis on the economic benefit of BIM (based on "BIM Revolution or Evolution", 2017 MEED Insight)



BIM Workflow



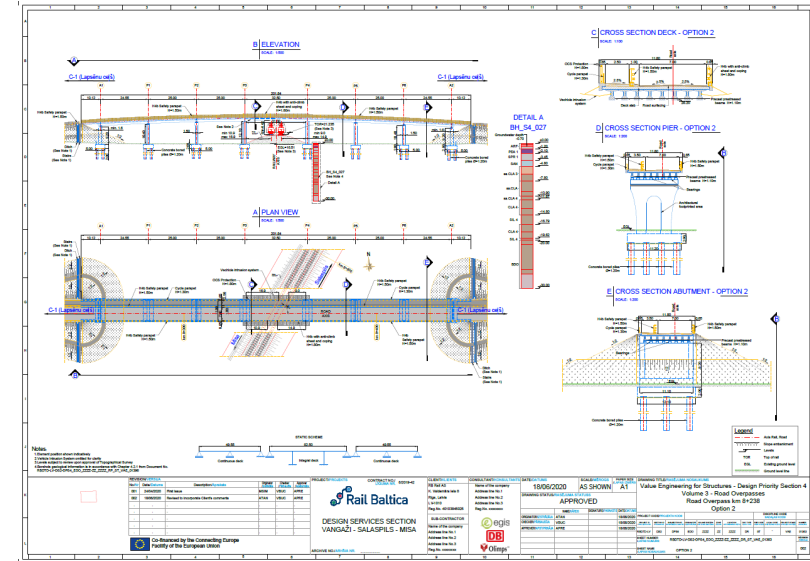
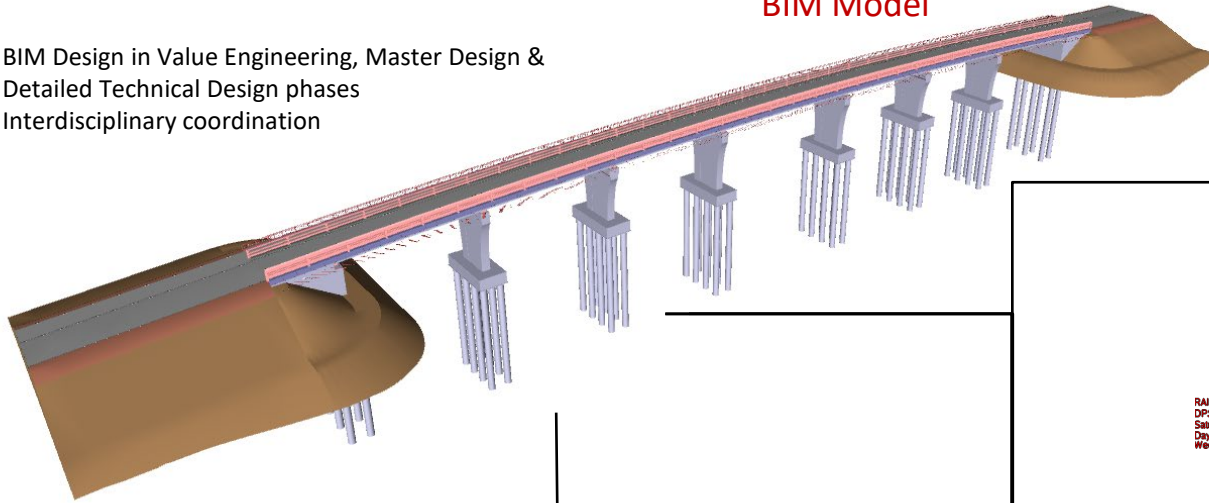
BIM for Rail Baltica



Vangazi – Salaspils - Misa:

- BIM Design in Value Engineering, Master Design & Detailed Technical Design phases
- Interdisciplinary coordination

BIM Model



2D Drawings:
Extracted directly from the model in order to minimize errors



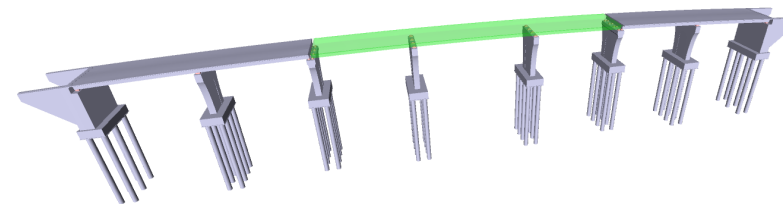
5D BIM: Quantity Extraction

Rail Baltica - QEX Report Template

Project Name		File Name	Extracted from	
8B0TD-LV-012_VSM	8B0D-RPL-017-0101_QEXTemplate_Test_08	8B0D-LV-012-0154_010_2202-02_2202_RM_VAR_011020_Road Overlay	Project Name	8B0D-LV-012-0154_010_2202-02_2202_RM_VAR_011020_Road Overlay
EDD	1	18.05.2020	Originator	EDD
		Prepared Date	Prepared By	EDD
		18.05.2020	EDD	EDD
		Prepared By	BIM Coordinator	Artemasovs, George

Native Unique ID	MEMBER MARK			OBJECT LOD	SPECIFICATION			COSTING QUANTITIES						
	Discipline (Code)	Vol/Sys/Zone	Location		Function	Object ID	LOG	Lot	Spec Code	Spec Division	UNCLASS 2015 Product Code(Pr_Code)	Type number	Product Description	Unit
21ccPjgLS6RND0UMZ_vR	BR	ZZZZ-ZZ	0008	N/A	618411	200	200	00	00000	Pr_20_RS_62_18	001	Concrete piles	M3	22.619
2a6XjH0h0Eh8Cj1T48x	BR	ZZZZ-ZZ	0008	N/A	619168	200	200	00	00000	Pr_20_RS_62_18	001	Concrete piles	M3	22.619
23O5S5Uuh58FmE_nHvu	BR	ZZZZ-ZZ	0008	N/A	619915	200	200	00	00000	Pr_20_RS_62_18	001	Concrete piles	M3	22.619
2Q2UstH17PABZa096Gk	BR	ZZZZ-ZZ	0008	N/A	620667	200	200	00	00000	Pr_20_RS_62_18	001	Concrete piles	M3	22.619
1y6sBtrSc481HvZ95Hvv	BR	ZZZZ-ZZ	0008	N/A	621419	200	200	00	00000	Pr_20_RS_62_18	001	Concrete piles	M3	22.62

RAIL BALTICA 4D TEST
DPS4 - Road Overpass CH 0-238.0004
Startday: 8:00:00 AM 5/5/2020
Days=104
Week=15



4D BIM:
Construction Simulation Animation Video



Visualizations:
For a better understanding of the project

Topics

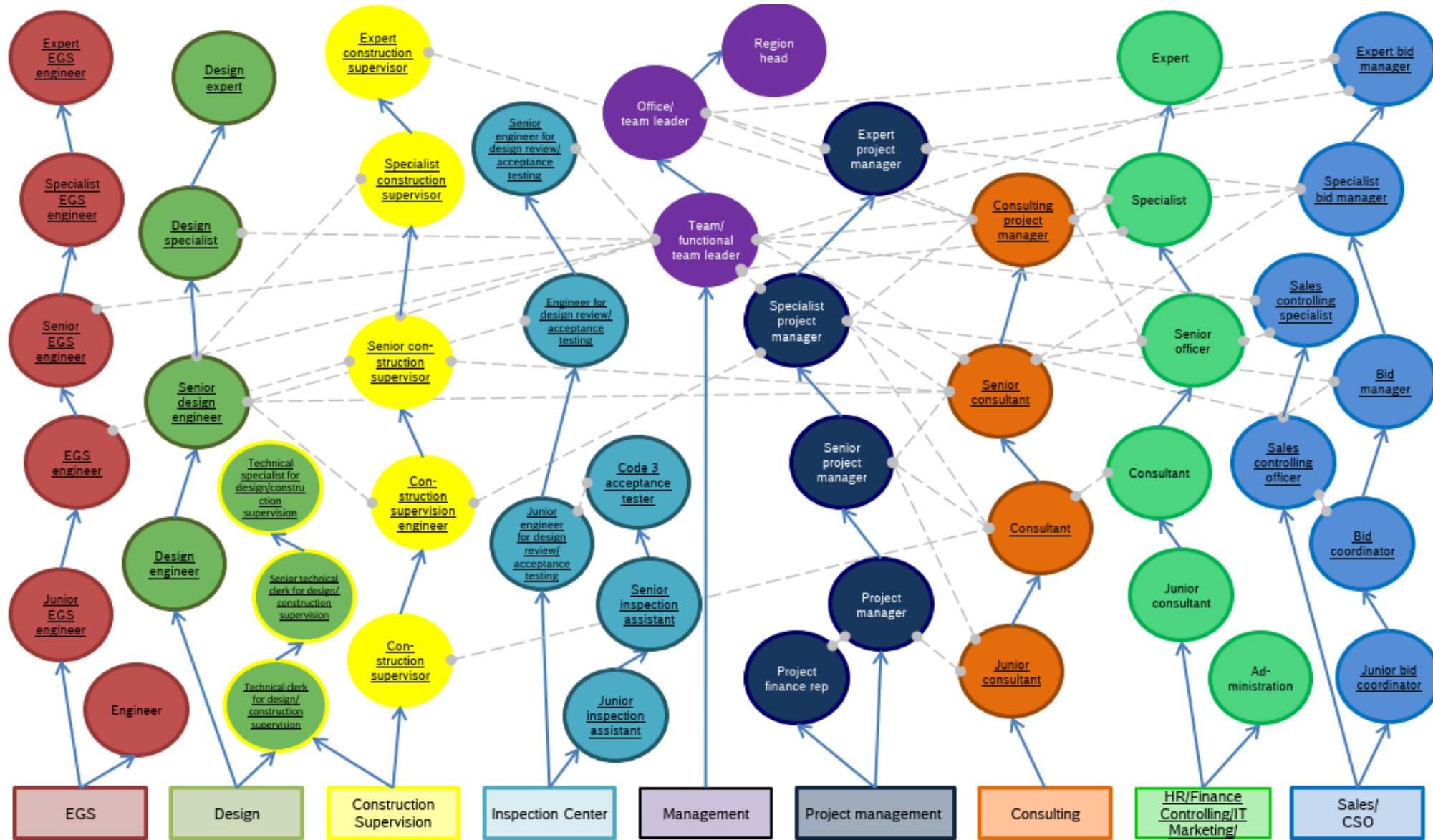
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Dezvoltare profesionala - oportunitati



- ✓ Cursuri de formare profesionala / perfectionare, intern / extern
- ✓ Cursuri de Limba Germana
- ✓ Cursuri de Limba Engleza
- ✓ Experienta Internationala / Nationala
- ✓ Deplasari internationale
- ✓ Program flexibil
- ✓ Regim lucru hibrid

Dezvoltare profesionala



Job Openings within DB E&C – Design Centre Romania



- 
- ✓ **Railway Design Engineer**
 - ✓ **Bridge Design Engineer for Germany and International Projects**
 - ✓ **Roads Design Engineer**
 - ✓ **Geotechnical Engineer**
 - ✓ **Survey Engineer**

Multumim pentru atentie !

CONTACT

- **Asteptam aplicatiile voastre pe site-ul nostru de cariere:**

https://jobs.deutschebahngroup.careers/en_US/jobsGlobal/SearchJobs/?3_387_3=235157&3_388_3=108523

- **Contact DB Engineering & Consulting Bucuresti**

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Anton Jugaru

Sr. Recruiter

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