SKANSKA

Ny järnväg – Industrialiserad fältundersökning

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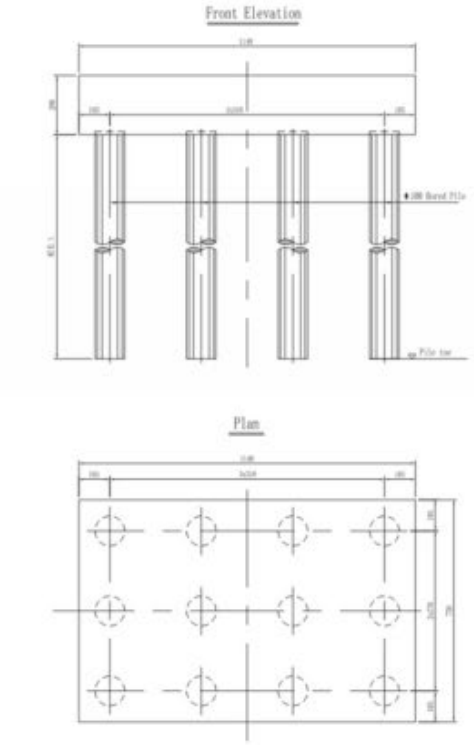
Skanska Stora Projekt

Ny järnväg – exempel nya stambanor

Kortare byggtid och förutsägbar kostnad - hur?

- Nya stambanor – en helhet
- Brobanor issf banvall
- Kinesiskt know-how
- Industriellt byggande
- Prefabricering
- Byggautomation

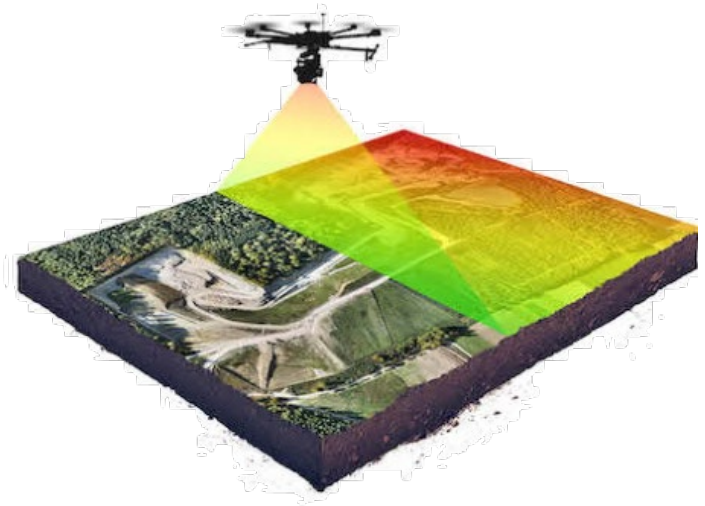
Grundläggning av pelare

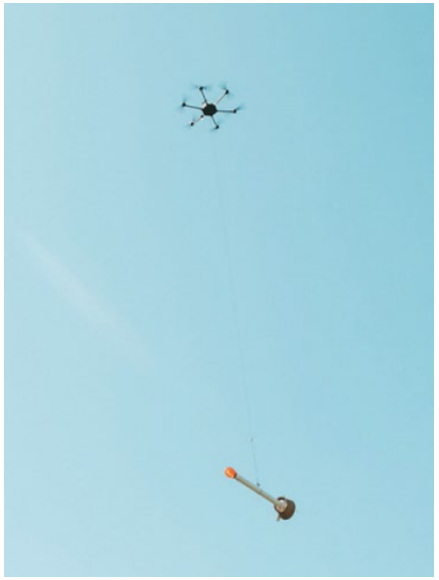


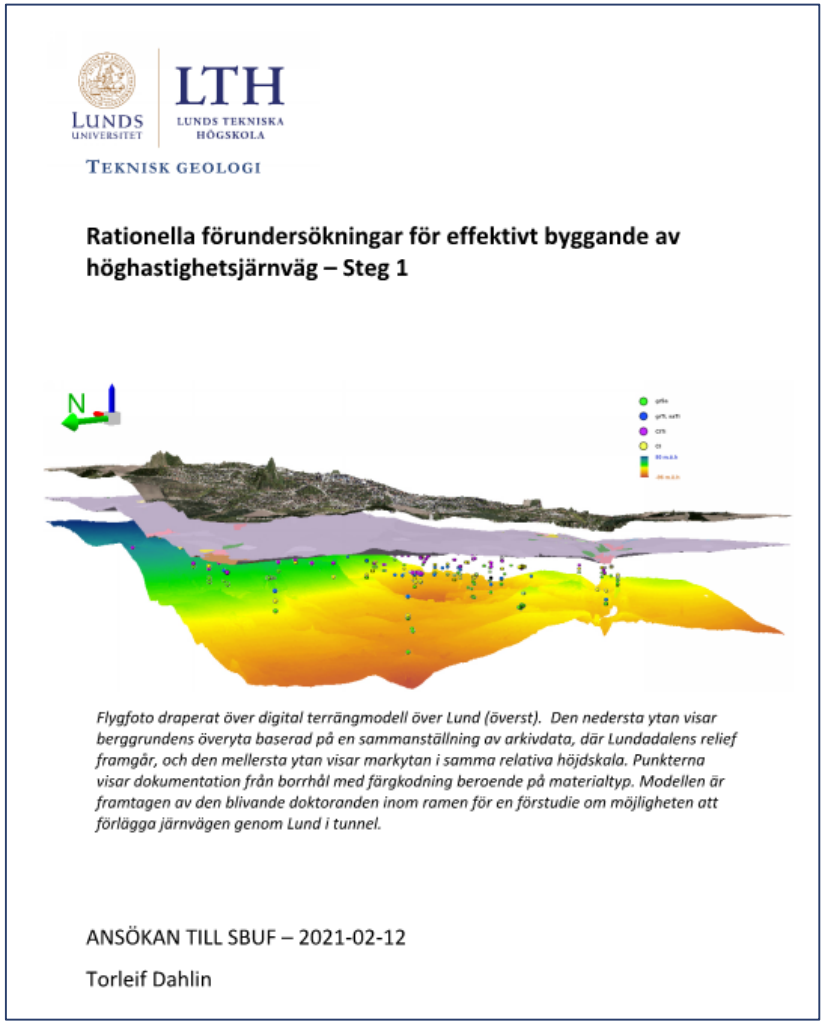
- Pelare med en medelhöjd på 12 meter
- Fundament 171 m3 betong
- 12 st borrade grävpålar medeldjup 15 meter djupa

Industrialiserad fältundersökning, LTH

1. Drönarburen geofysik
2. Markbaserad geofysik
3. Konventionell provtagning







Extern finansiering

- Vinnova (InfraSweden2030) – 8,5 msek

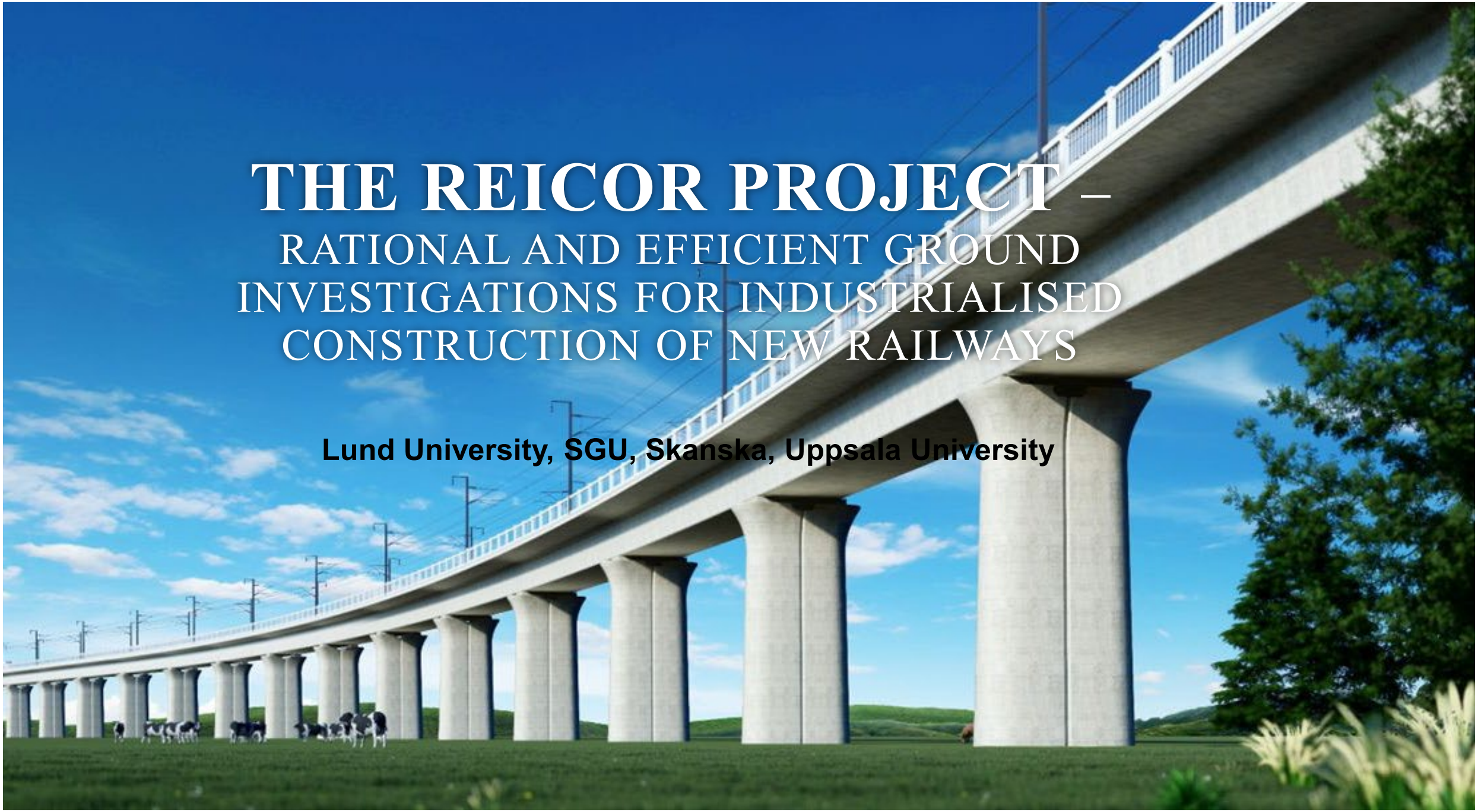
Rationella och effektiva markundersökningar för industrialiserat byggande av nya järnvägar

- SBUF 13996 (doktorand, LTH) – 2 msek

Rationella förundersökningar för effektivt byggande av höghastighetsjärnväg

- SBUF 14113 (doktorand, LTH) – 2 msek

Integrerad förundersökningsteknik för kartläggning av dynamiska egenskapers rumsliga variation



THE REICOR PROJECT –

RATIONAL AND EFFICIENT GROUND INVESTIGATIONS FOR INDUSTRIALISED CONSTRUCTION OF NEW RAILWAYS

Lund University, SGU, Skanska, Uppsala University

Project partners

- Lund University, Skanska, SGU, Uppsala University (Archaeology)
- 2022-05-31 – 2025-05-30
- Total budget: 8.5 MSEK, Vinnova – Infra Sweden: 3.9 MSEK
- Co-financing: own budgets, SBUF, Trafikverket

Tina Martin	LTH	Geophysicist, project leader
Torleif Dahlin	LTH	Geophysicist, ground based geophysics
Joakim Robygd	LTH	Engineering geologist, GIS database
Peter Jonsson	LTH	Engineering geologist, drone GPR
Matteo Rossi	LTH	Geophysicist, hydrogeologist
Alfredo Mendoza	LTH	Hydrogeolog, Engineering geologist
Rikard Tyllström	LUSA	drone expert
Johan Eldh	LUSA	drone expert
Joel Sköld	LUSA	drone expert & laywer
Merhdad Bastani	SGU	Geophysicist, drone based geophysics
Lena Persson	SGU	Geophysicist
Henrik Johansson	SGU	Geophysicist
Ulf Håkansson	Skanska	Technical manager
Lennart Stenman	Skanska	Project manager
William Bjureland	Skanska	Geotechnical Engineer
Karl-Johan Lindholm	UU	Archaeologist
Daniel Löwenborg	UU	Archaeologist

Motivation/Background

- **To reach climate goals**: fast transition from road and air traffic to train traffic → increase of capacities!
- Costs for infrastructure projects usually underestimated. Reasons: **insufficient knowledge about the site** and other "unforeseen" conditions
- Insufficient underground analysis is one of the three structurally cost-driving components that cause delays and cost increases → a combination of geological, geophysical and geotechnical methods are desirable
- Regardless of design, industry **needs effective methods to plan, to project and to build** with the right dimensioning basis

An integrated and effective process for creating a robust and risk-minimizing planning documents is needed!

Project idea and aim

- **Aim:** Development of a **methodology for rational ground investigations** for efficient industrialized railway construction
- All relevant information is entered into a **digital geomodel which is continuously updated** with new results, and which is maintained throughout the facility's lifetime → facilitates the **transfer of experience** and makes **maintenance work more efficient**
- Enables the implementation of Nya Stambanor with an **industrialized large-scale layout** where preliminary land surveys are done step by step over large areas and **adapted to a new planning process methodology** and procurement steps for close collaboration with industry
- **Sustainability through rationalization, cost-effectiveness and holistic interpretation** of results from soil investigations.
- Methodology is **adaptable and scalable** → can be used in different environments, sizes and layouts of projects

Work packages overview

WP1. Integration of data in geodatabases with visualization tools - started

WP2. Engineering geological and geotechnical analysis and forecast - started

WP3. Archaeological terrain analysis – starts soon

WP4. Drone-based investigations – starts soon

WP5. Ground-based investigations

WP6. Analysis, evaluation and reporting

Timeplan

Lösningar för snabbare omställning till hållbar transportinfrastruktur