SALCEF GROUP
Leading the Railway

FAST System
Beyond ballastless track

1949 / 2024

Overail track solutions | SALCEF GROUP | RECO RAILWAY ENGINEERING | srt RAILWAY TECHNOLOGY

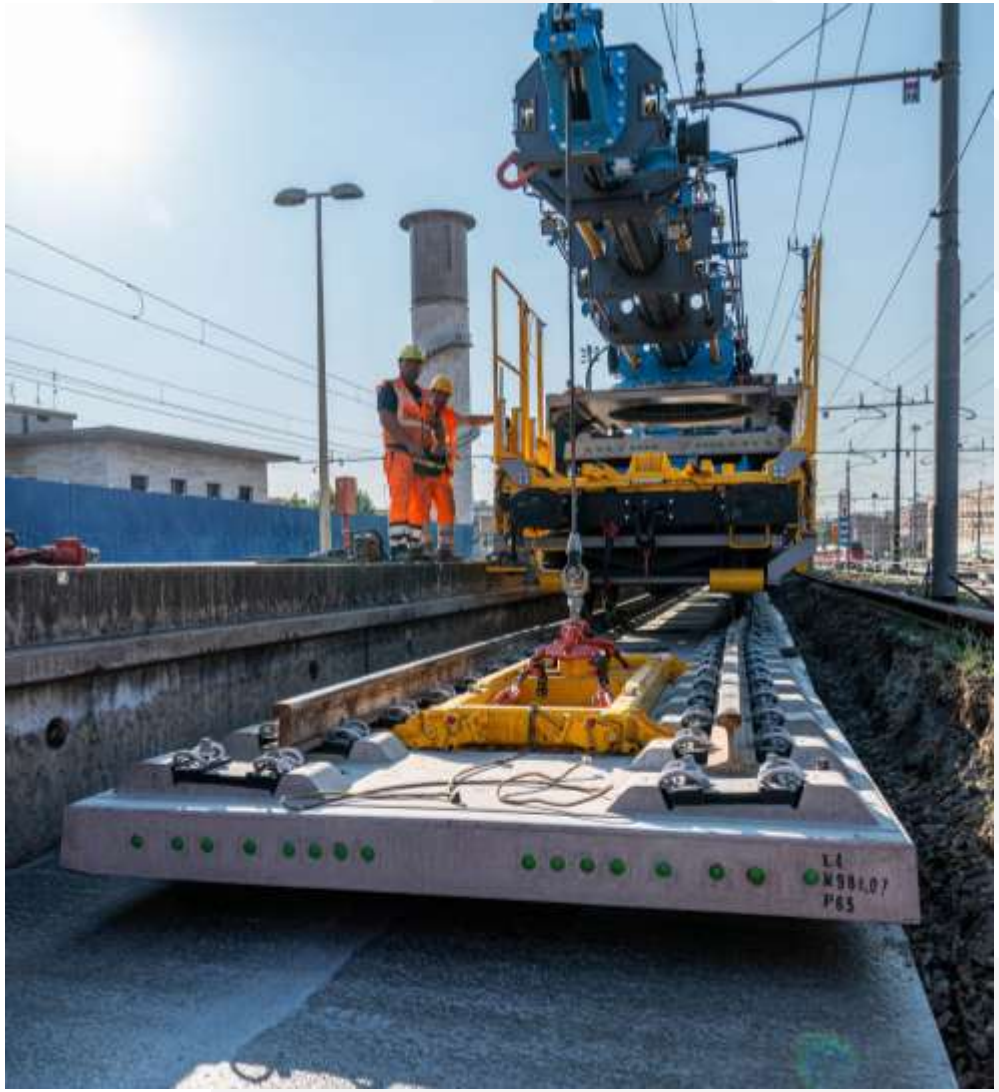
Railway Forum 2025 - Slab track
06-07 November 2025 | Naples, Italy

SALCEF GROUP

What's the main issue in trackwork?

FAST: From ballasted track to slab track overnight

- Built on Salcef Group's proven **expertise** and real-world operational feedback
- **Advanced production technology** for consistent, superior quality
- **High-speed installation** with dedicated, proprietary machinery
- Applicable to **maintenance and new construction** for metro, conventional and high-speed networks



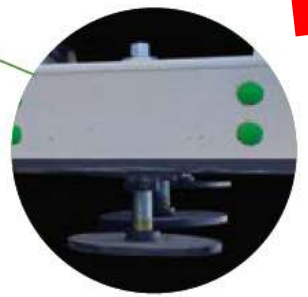
KEY ELEMENTS

Stoppers

Reinforced concrete retainers cast in place to counteract actions on track surface, in both longitudinal and transverse directions.

Temporary supports

As well as enabling accurate adjustment of the slab's position, they distribute the loads and allow railway traffic to be resumed immediately during track renewal jobs.



Reinforced shoulders

Non-tensioned reinforcement

Consisting of a cage covering the whole volume of the slab.

Post-tensioned slab

Post-tensioned in both longitudinal and transverse directions.

Removal mat

Provides disconnection between the slab and the concrete casting for easier replacement of the prefabricated element.

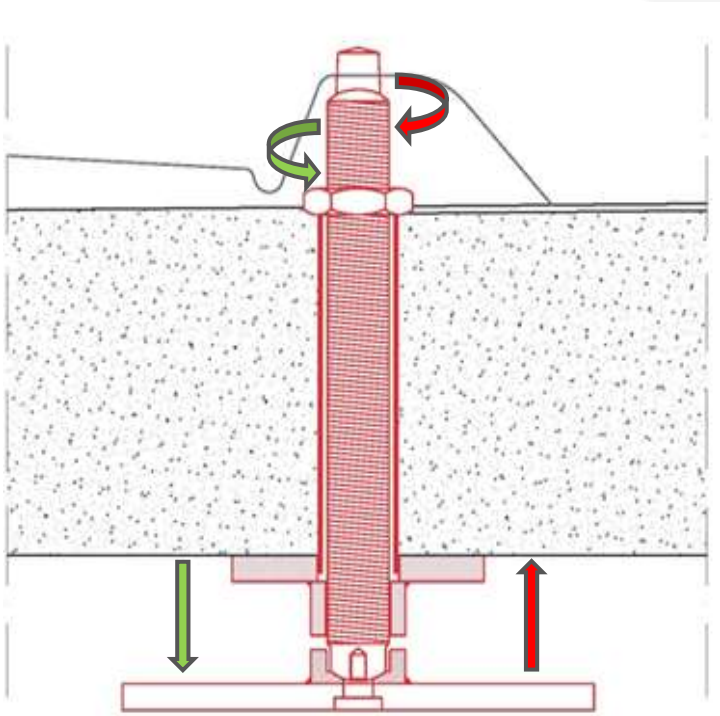
KEY ELEMENTS

Precast Slab – main features:

- Length: **4.750 mm**
- Width: **2.450 mm**
- Number of rail seats: **8**
- Rail seat spacing: **600 mm**
- Distance between rail foot and top of the slab: **60 mm**
- Prestressed in both longitudinal and transverse directions
- Two openings along the track axis for installing stoppers
- Rail profile and gauge can be adapted according to project requirements

MECHANICAL SUPPORT SYSTEM

The spindles allow **train operation** to resume and enable **precise vertical adjustment** of the precast slab:



MECHANICAL SUPPORT SYSTEM

The spindles allow **train operation** to resume and enable **precise vertical adjustment** of the precast slab:

- **Temporary support** during installation: each slab rests on up to 14 spindles. In this temporary configuration, the slab is fully supported mechanically, allowing train operation to resume before the concrete filling layer is cast.
- **Vertical adjustment:** by acting on the threaded screws, the slab can be adjusted to reach the exact design alignment.
- **Maintainability:** in case of damage, the spindles can be re-inserted, allowing the slab to be removed and replaced.

VARIABLE GEOMETRY SYSTEM

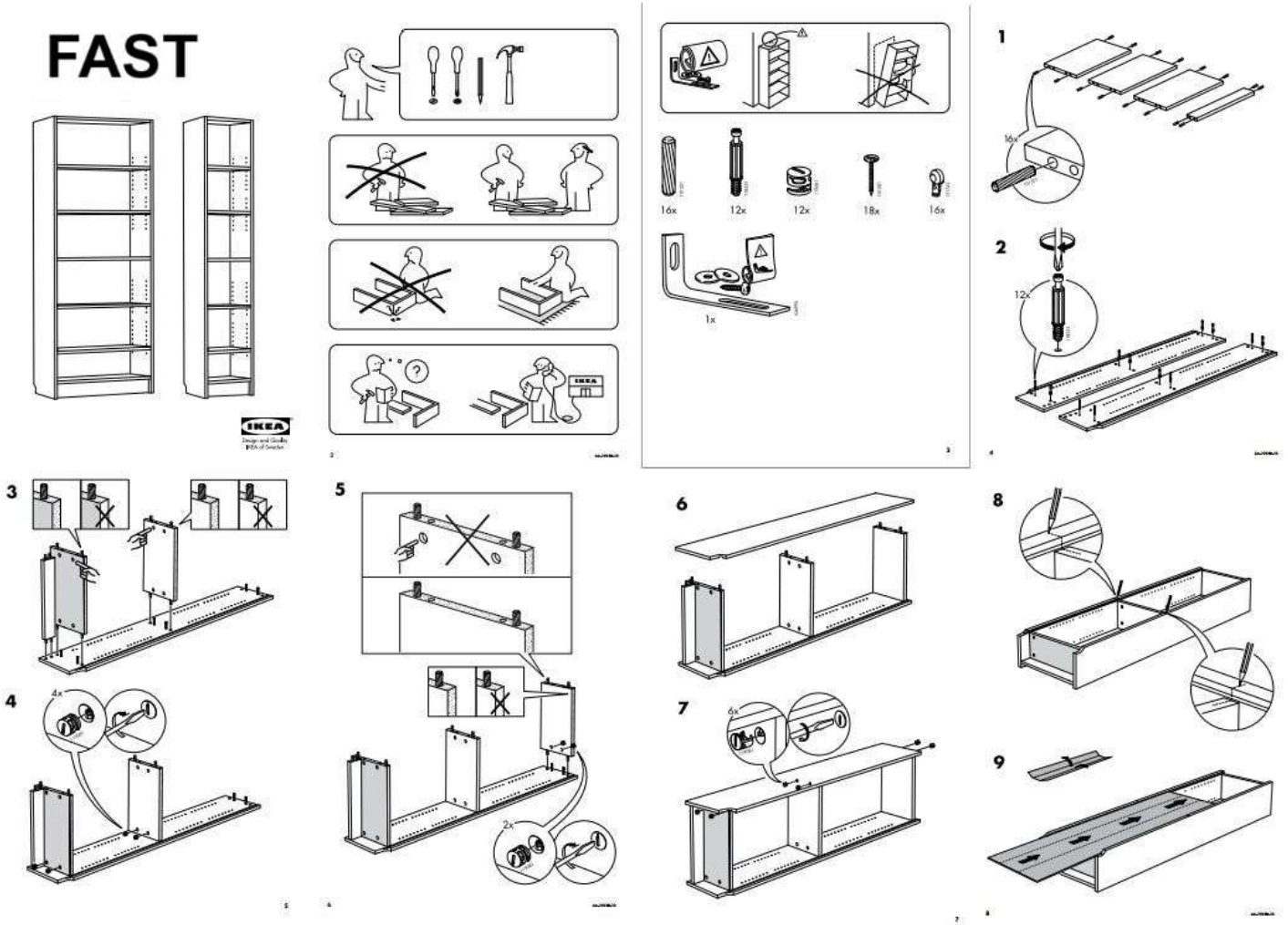
Enables **controlled displacement and rotation** of the rail seats

VARIABLE GEOMETRY SYSTEM

Enables **controlled displacement and rotation** of the rail seats:

- Use of special patented molds to produce **customised slabs**
- Every rail seat is positioned precisely according to the design alignment
- High accuracy in **tight curves and transition curves**
- **Uniform stress distribution** within the slab, avoiding stress peaks and reducing the risk of damage in the rail seat area
- The **adjustment capacity** of the fastening system remains fully **available to the infrastructure manager** for future maintenance.

A COMPLETE SYSTEM



WORK PHASES

1. TRACK AND BALLAST REMOVAL

2. POSITIONING OF THE SLABS

3. RAIL INSTALLATION AND FINAL CHECK

4. GROUTING

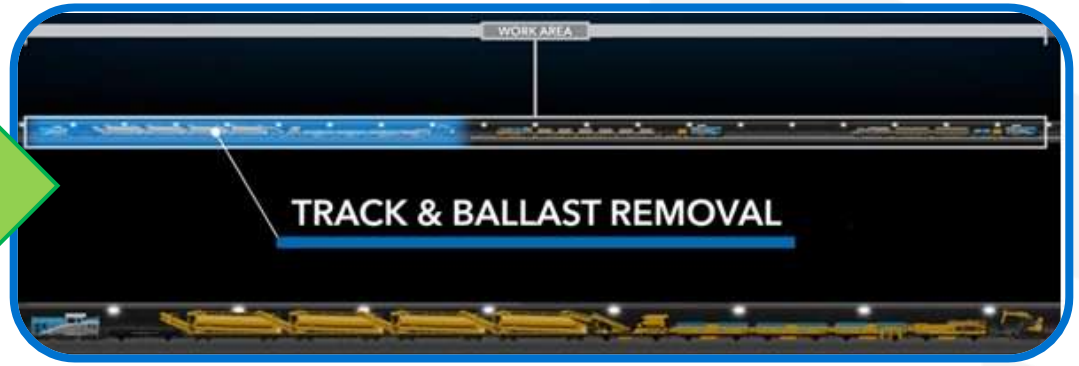
EQUIPMENT

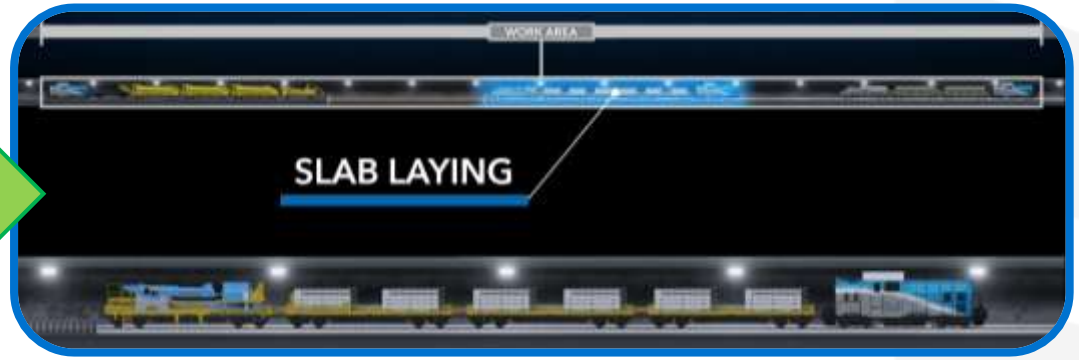
The work process is optimized through the use of **dedicated work trains** developed by SRT (Smart Railway Technology):

- Flat wagons equipped with **specialized work units**
- **Automated** ballast removal, slab placement, and concrete work
- **flexible composition** for different project configurations

The construction site is divided into **sequential work zones** that follow a **streamlined installation process**

INSTALLATION





PRODUCTIVITY

High performance in renewal projects & construction

TRACK RENEWAL

7-hour track possession

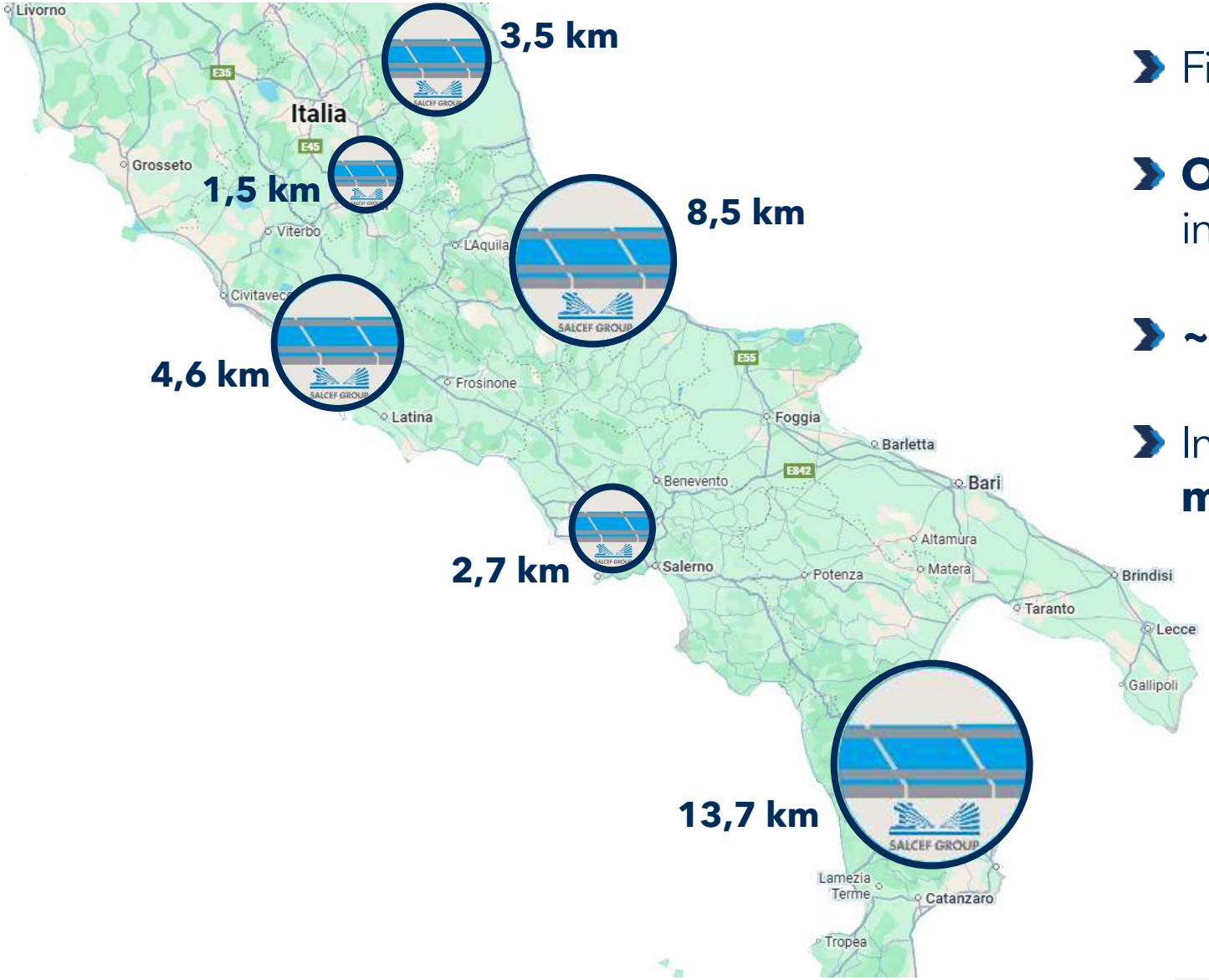
12 slabs -> 57 m

NEW TRACK CONSTRUCTION

8-hour shift

60 slabs -> 288 m per work train

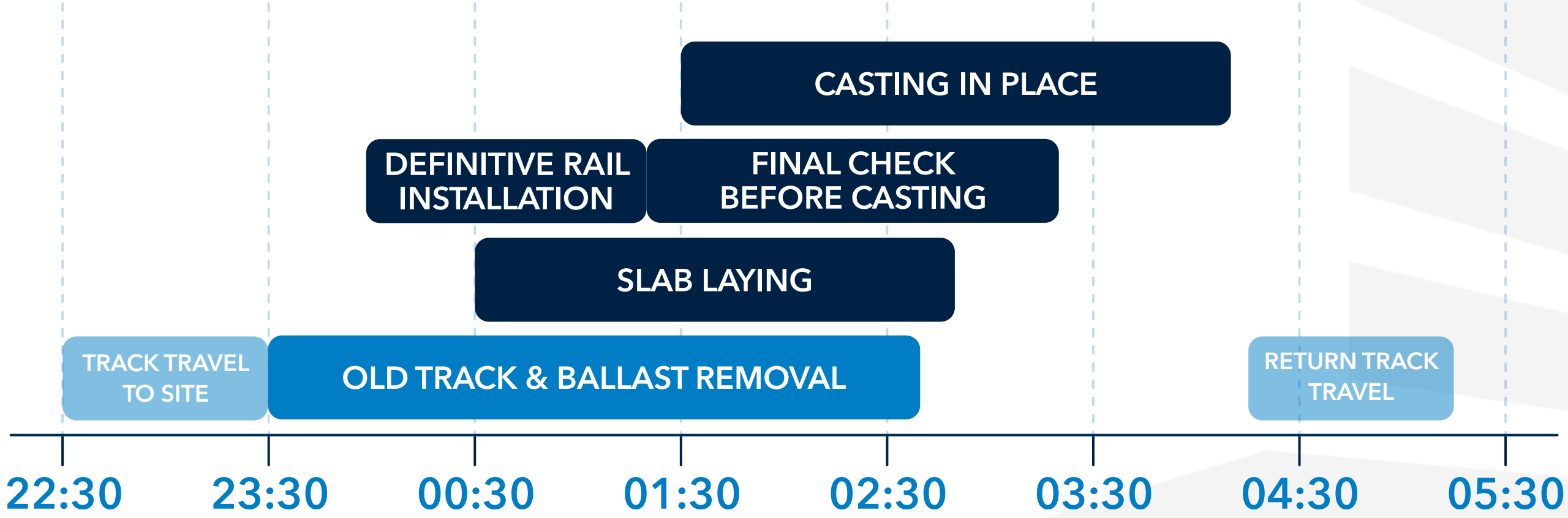
TRACK RECORD



- First installation: **July 2023**
- **Over 32 km** of FAST Slab Track installed
- **~ 6.800 FAST slabs** installed
- Installed on both **railway and metro networks**

CASE STUDY: TYPICAL WORK SCHEDULE

22:30 —— 7-HOUR TRACK POSSESSION —— 05:30



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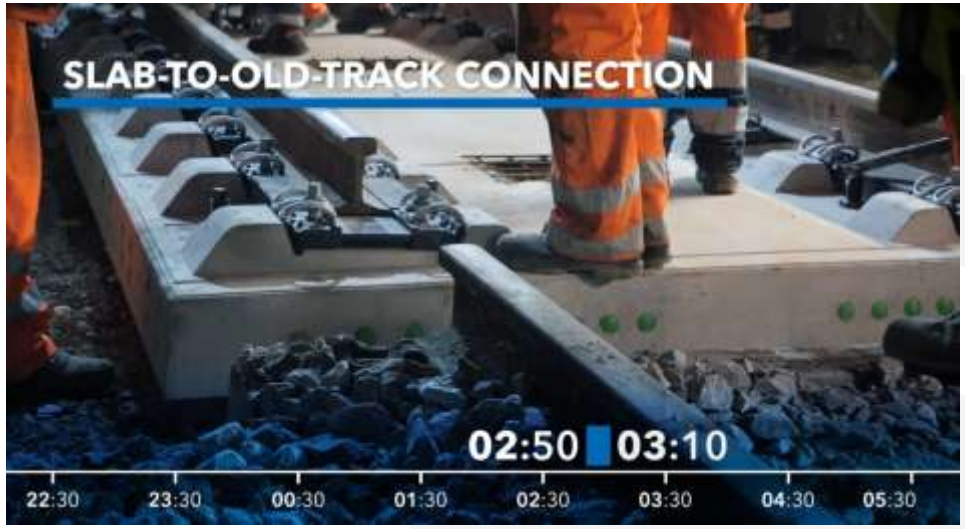

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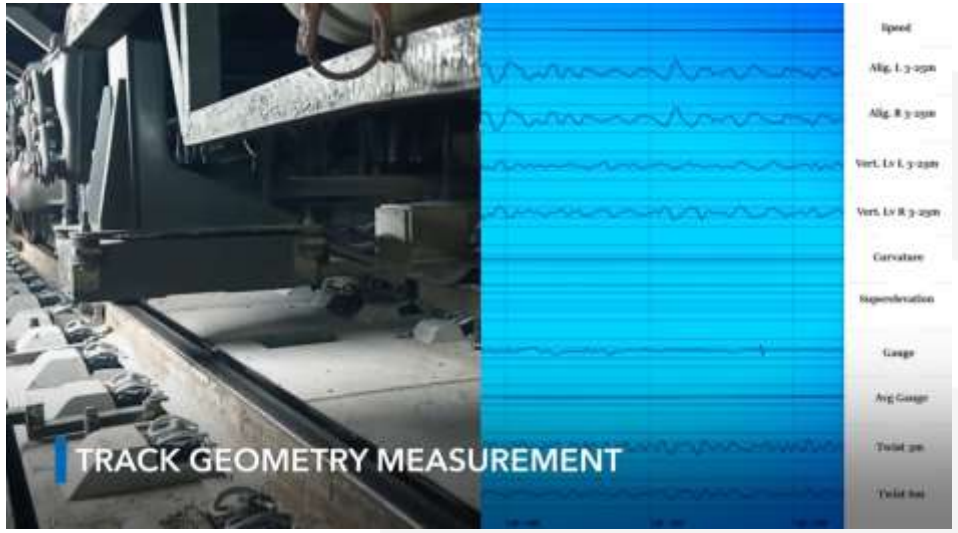

CASE STUDY: 7-h TRACK RENEWAL

CLOSING REMARKS

Why FAST System?

- ✓ Suitable for **night-time possessions**
- ✓ **High productivity**: up to 57 m installed per 7-hour shift
- ✓ **Daily resumption of train operations**
- ✓ **Rail seats** positioned with high precision for **optimal alignment**
- ✓ Possibility to **replace individual slabs**

SALCEF GROUP

FAST
Not just a slab
but a complete slab track solution

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Development and Innovation Manager | Salcef Group

Learn more at **www.salcef.com** | **www.overail.com**

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