

Slab Track ends: what's next?



PWI Lunch & Learn, 2026-02-03

Stefan Vonbun

Rhomberg Sersa Rail Group



Wanted: 
proven & reliable
solutions.

and: **competent**
implementation
partners.

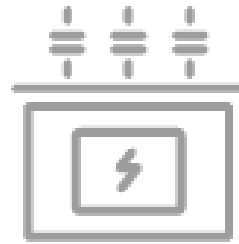


Rhomberg Sersa Rail Group

Full-service Provider for Railway Technology



**Track
Infrastructure**



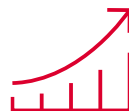
**Electrotechnical
Equipment**



**Products &
Services**



3 Continents



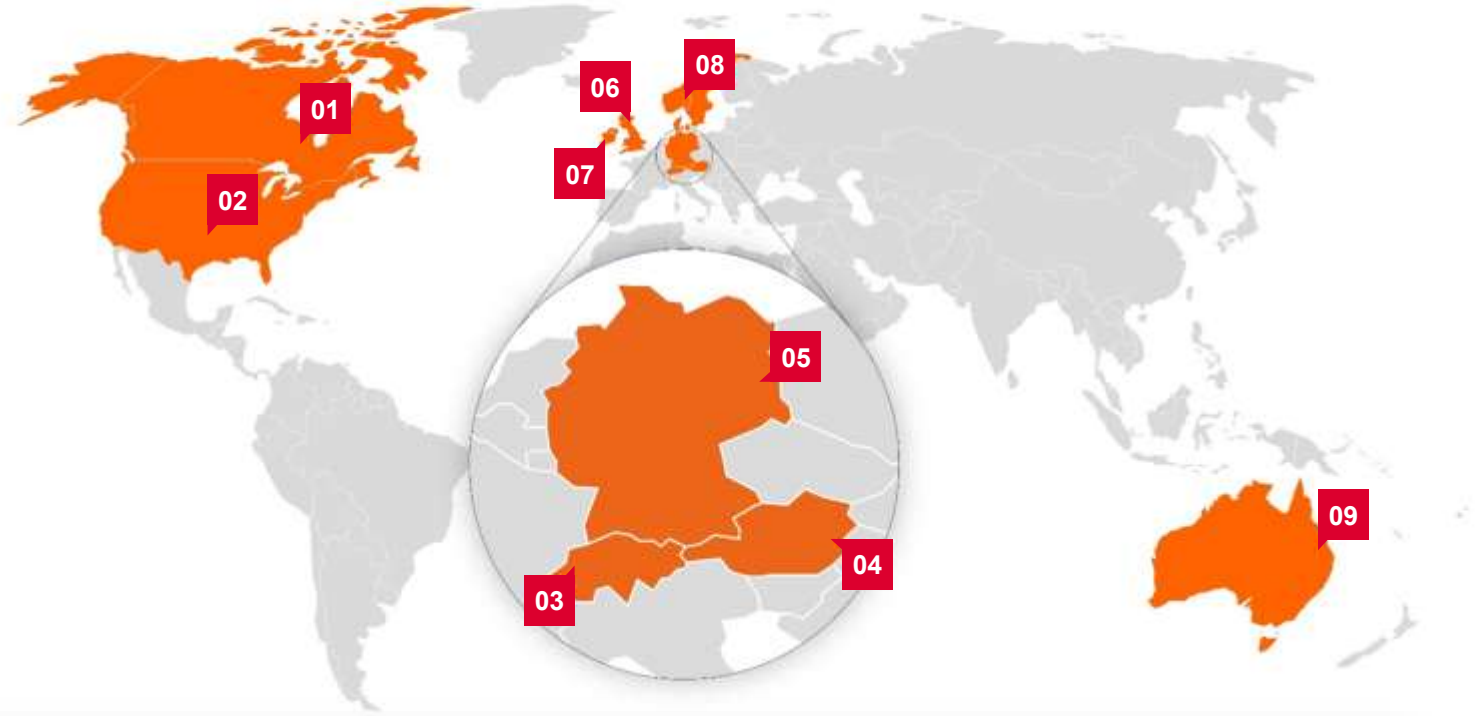
800 M€



3100

3 Continents
9 Markets
100 Branches

Worldwide



North America

- 01 Canada
- 02 USA

Europe

- 03 Switzerland
- 04 Austria
- 05 Germany

09 Australia

- 06 UK
- 07 Ireland
- 08 Nordics

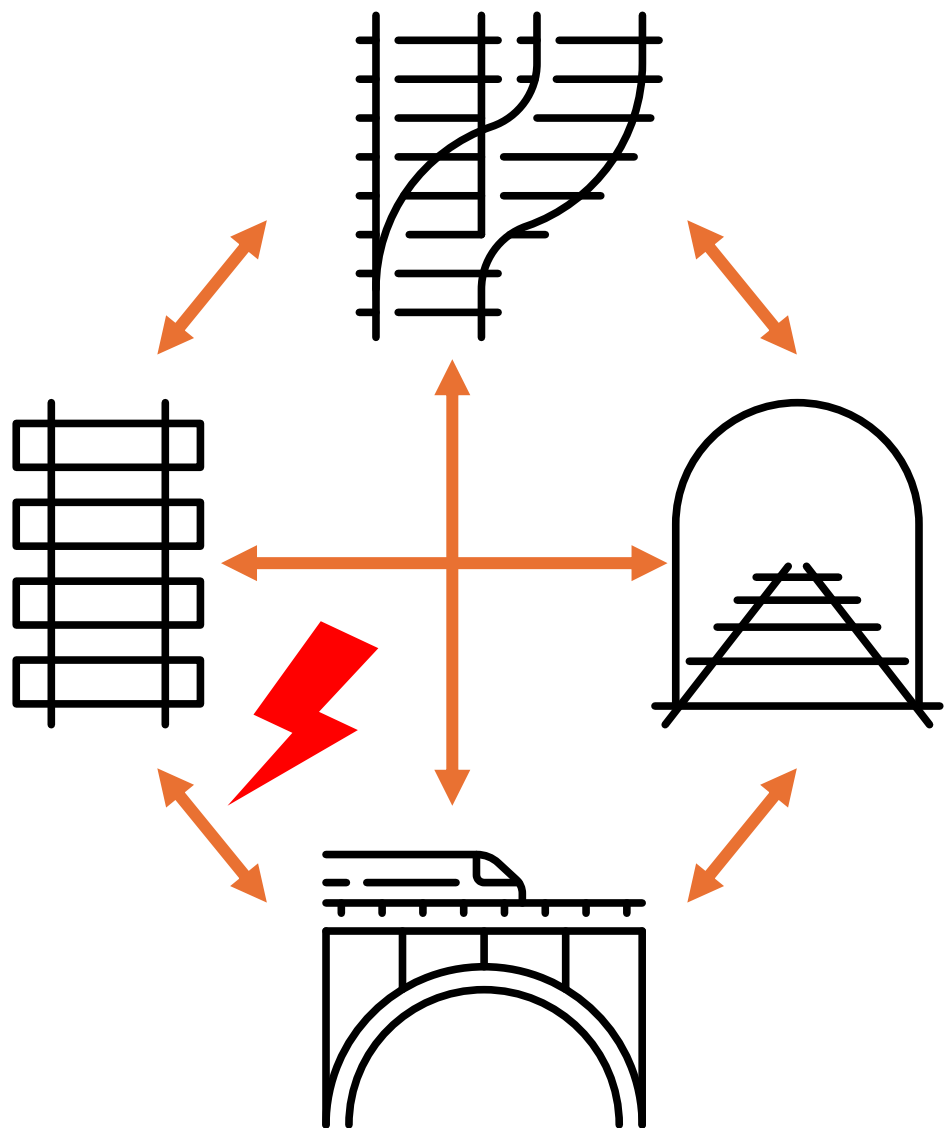
Project business internationally selective

Engineering Services Construction Maintenance



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Transition Zones

„Hot Spots“











Ballast destruction happens **NOW!**

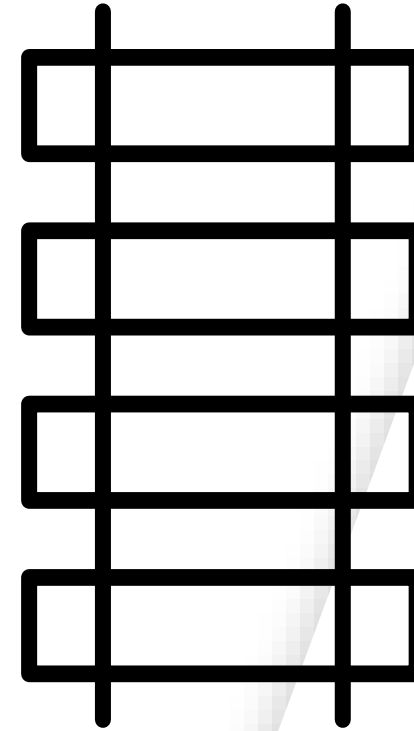
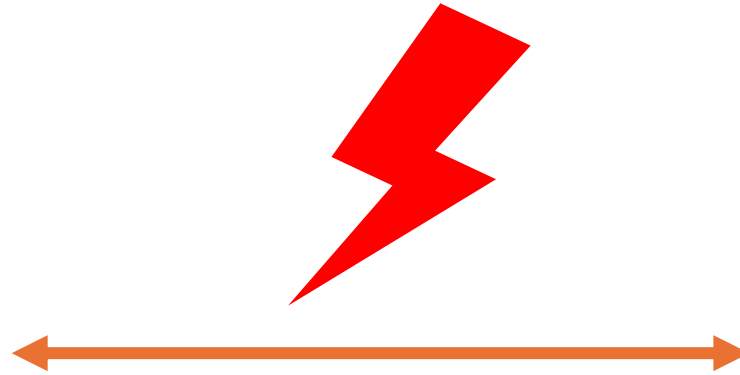
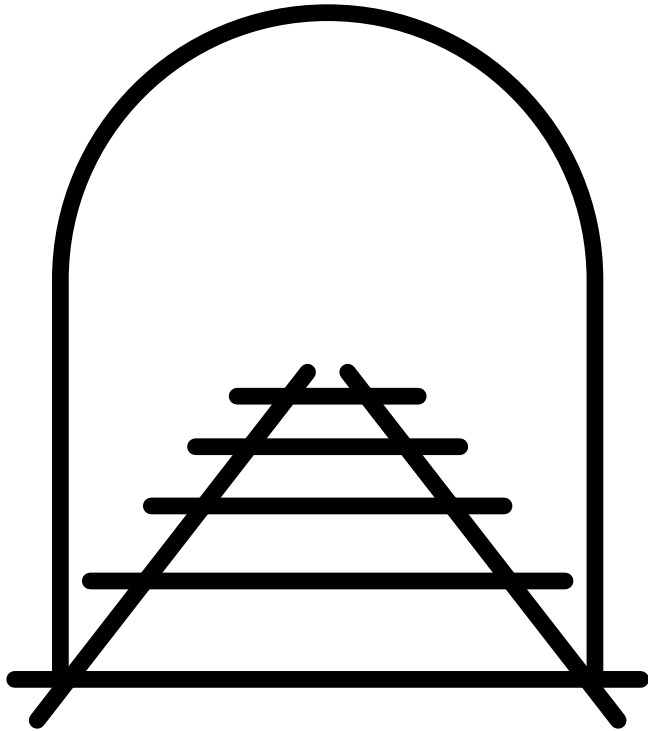
3,6 kg/s

12,9 to/h

311 to/d

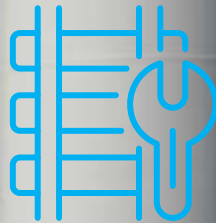
Calculation for Network of DB Deutsche Bahn
(33.440 km; ballast for maintenance: 3,6 to/km/a, source: DB)

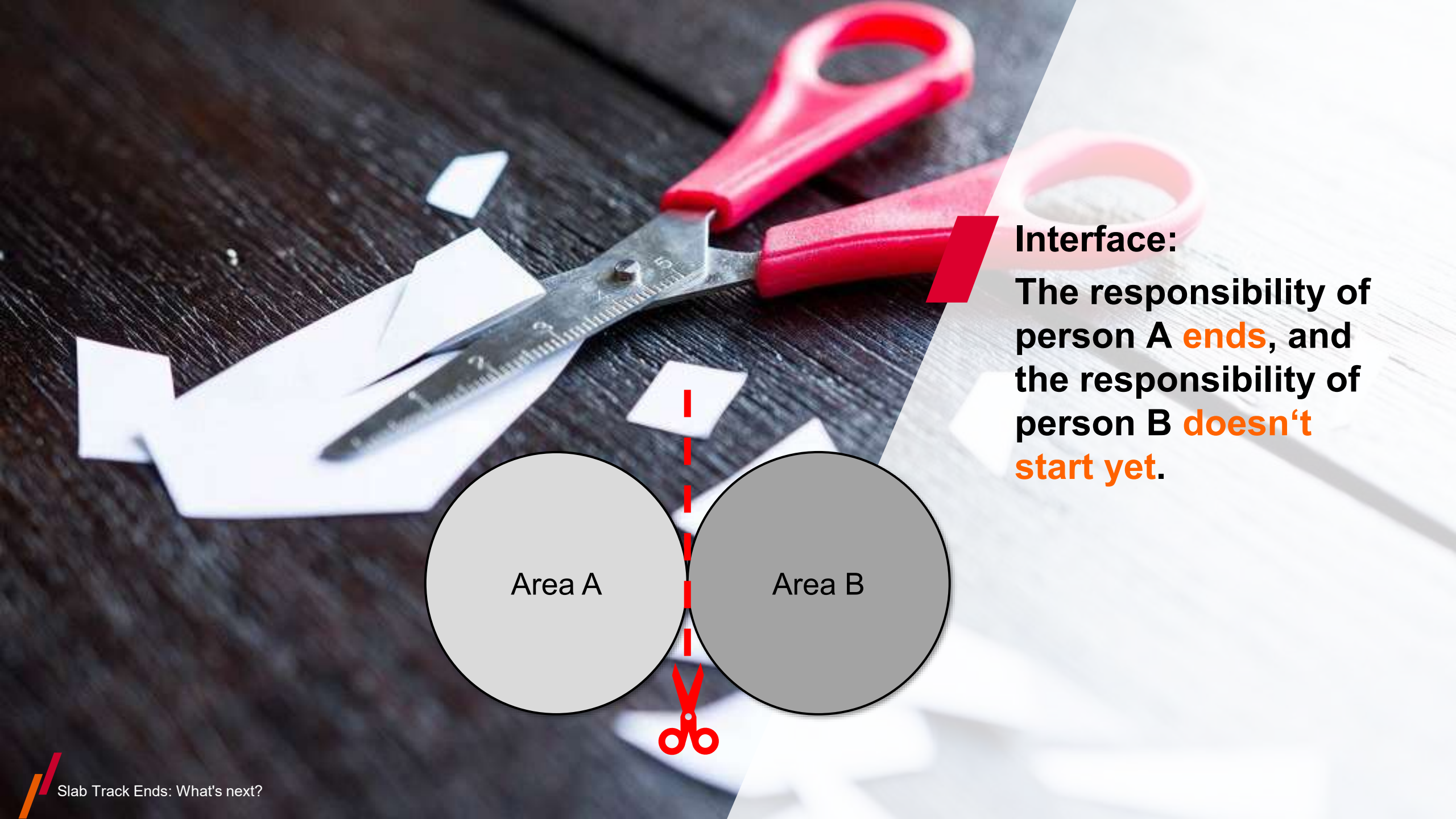
Hot Spot: Slab Track to Ballasted Track



Organisations also have „transition zones“

**Different
departments.
Different silos.**



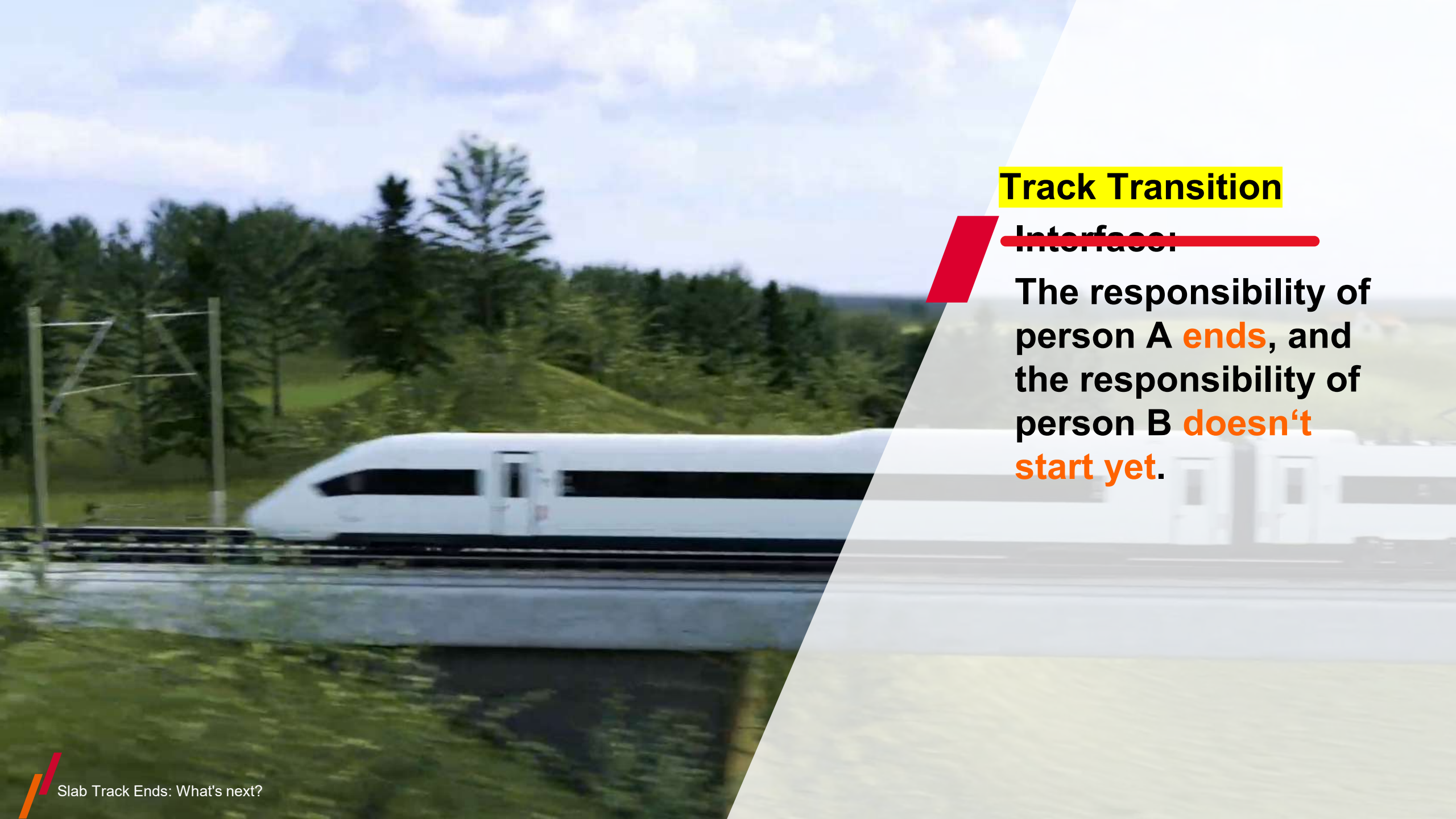


Interface:

The responsibility of person A **ends**, and the responsibility of person B **doesn't start yet**.

Area A

Area B

A high-speed train, likely a Shinkansen, is shown in motion on a track. The train is white with a black stripe and is moving from left to right. The background consists of a lush green landscape with trees and a blue sky with scattered clouds. The train is on a concrete viaduct. The image is partially obscured by a white diagonal overlay on the right side, which contains text.

Track Transition

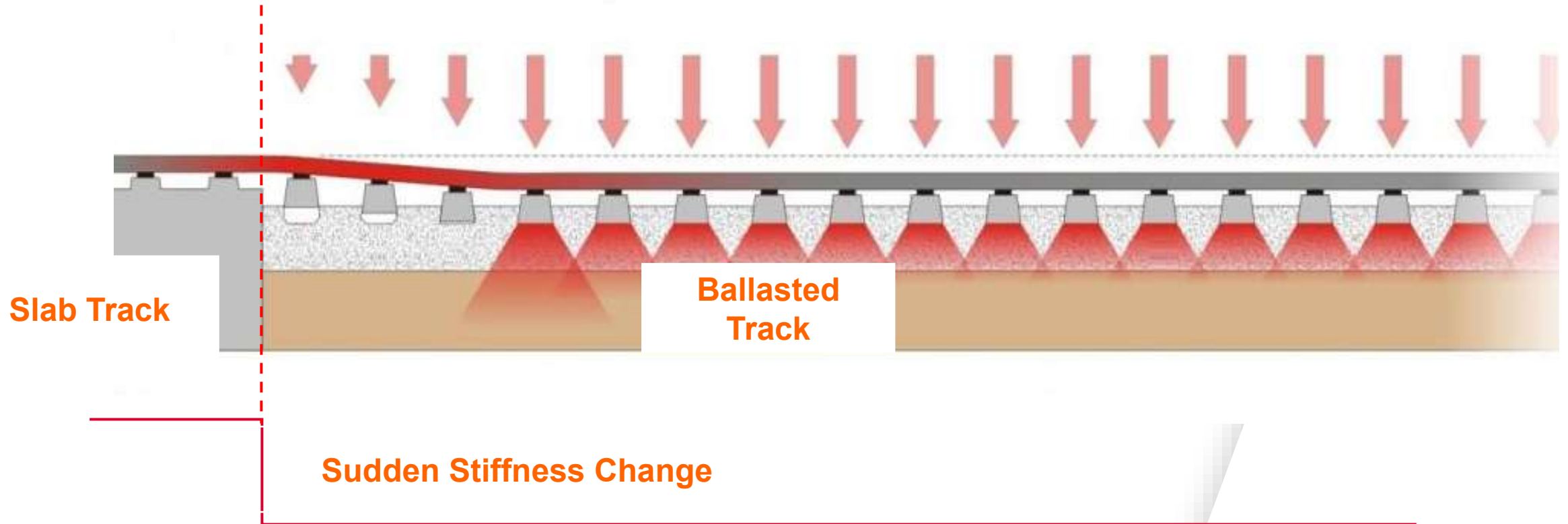
~~Interface:~~

The responsibility of person A **ends**, and the responsibility of person B **doesn't start yet**.

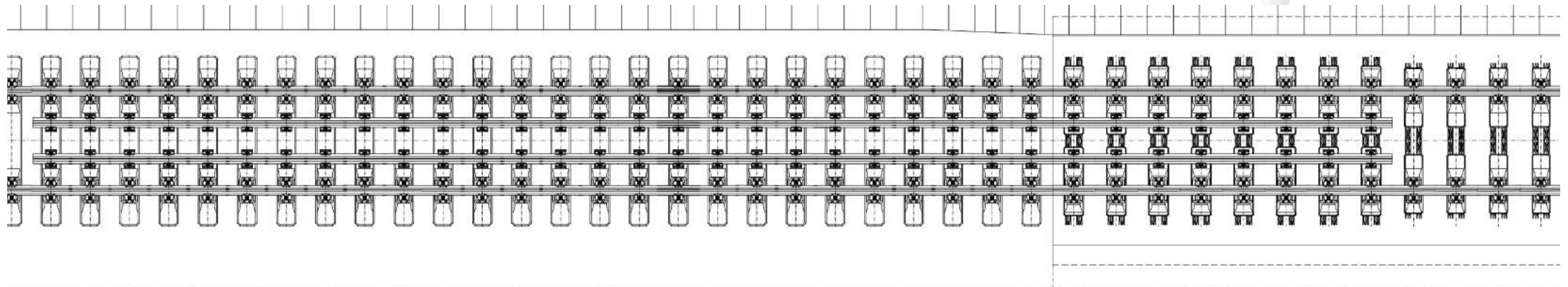
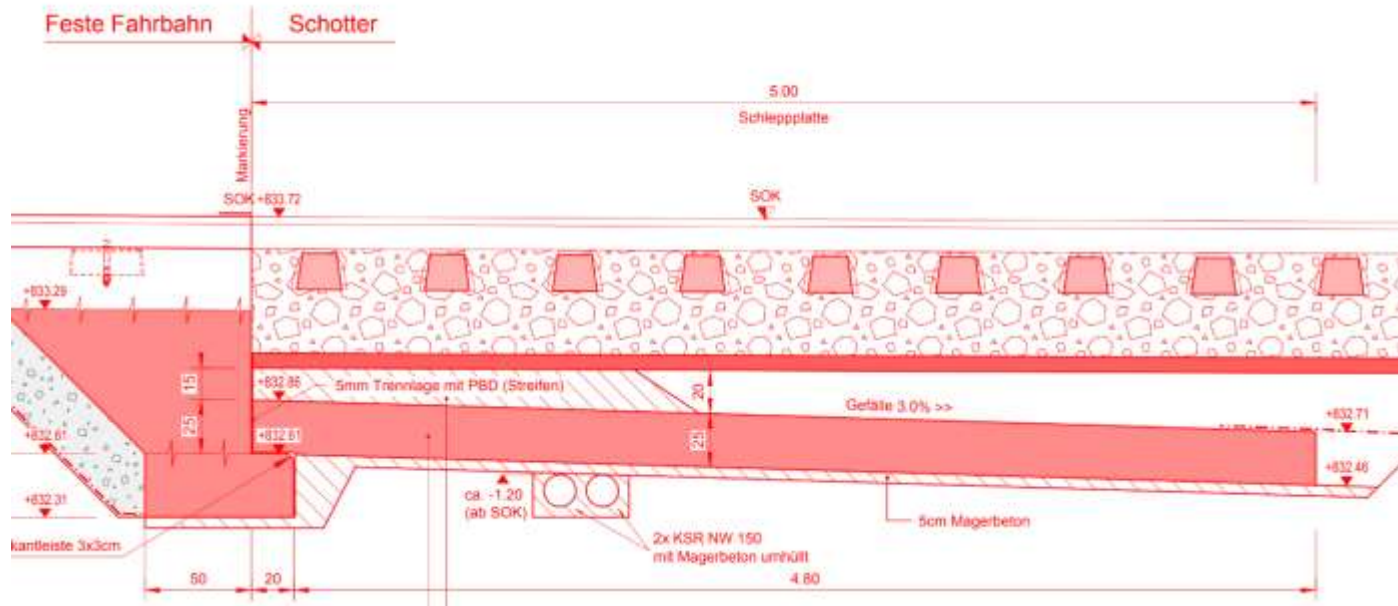
Back to track...



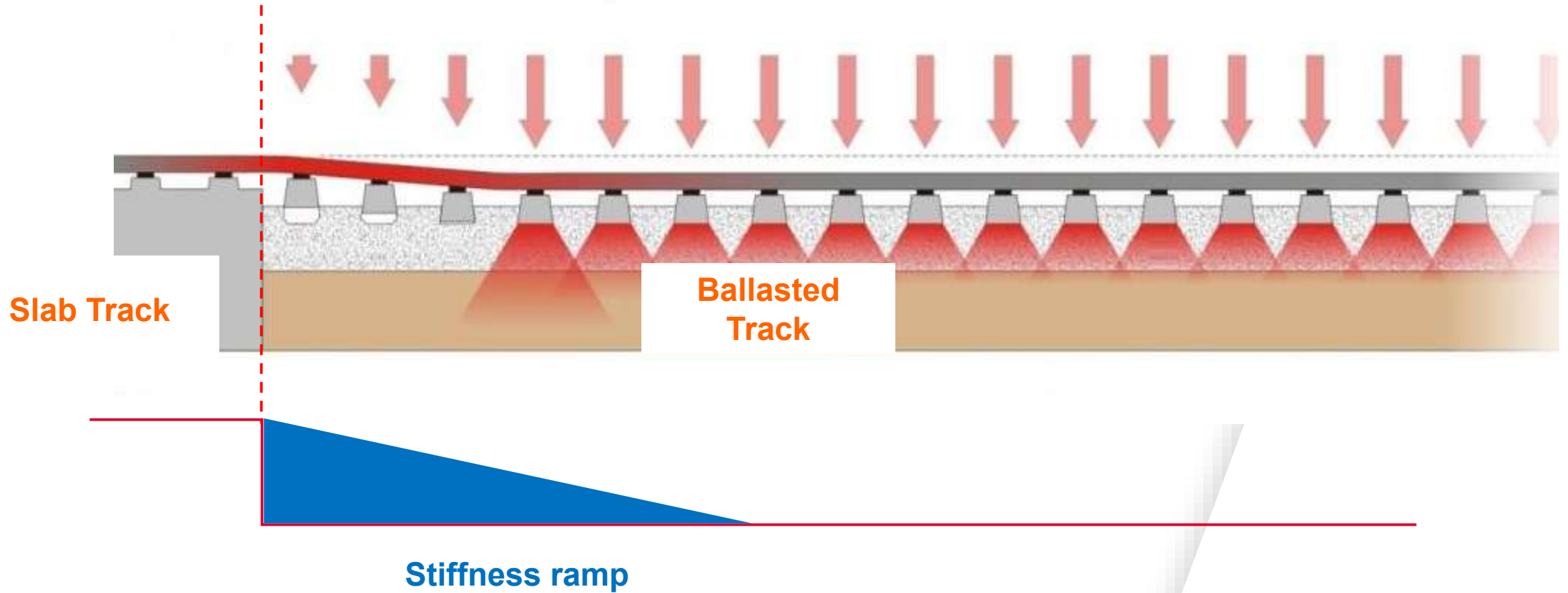
What happens directly at the transition?



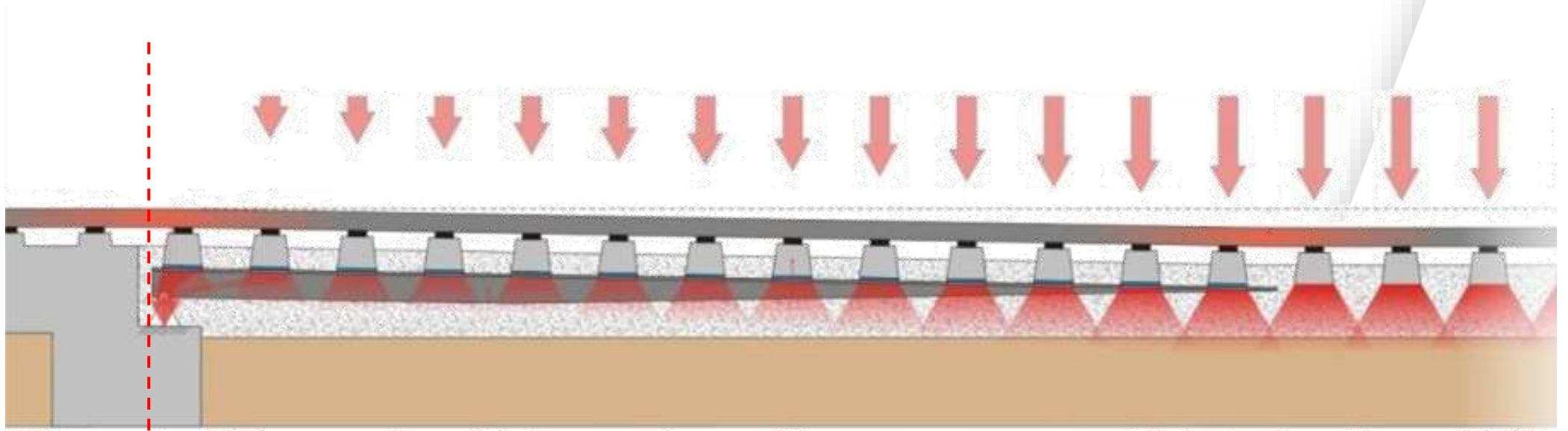
Conventional Solutions



Idea: Make it smoother!



Idea: Make it smoother!

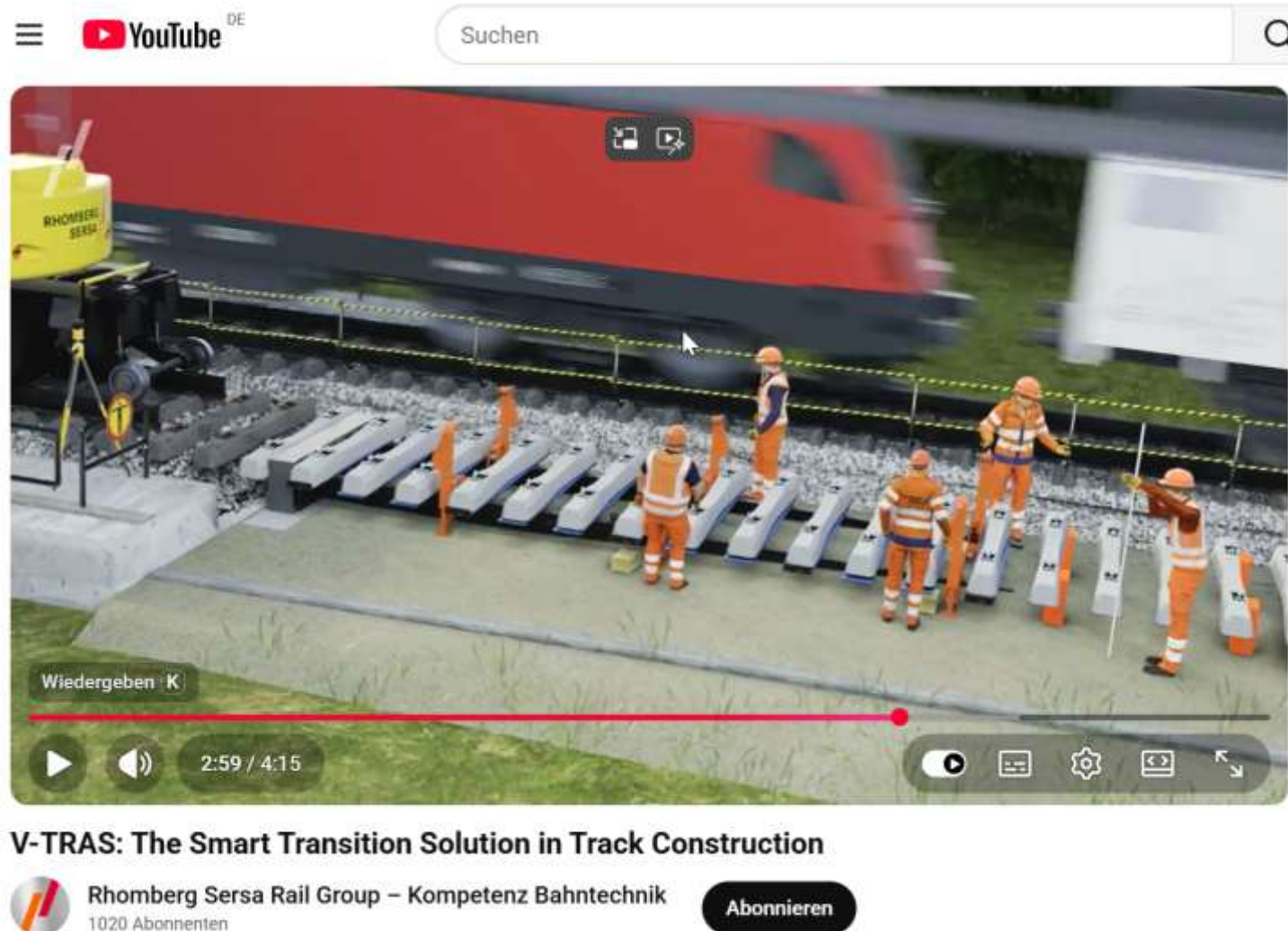


Stiffness ramp

Steel Structure 8m long



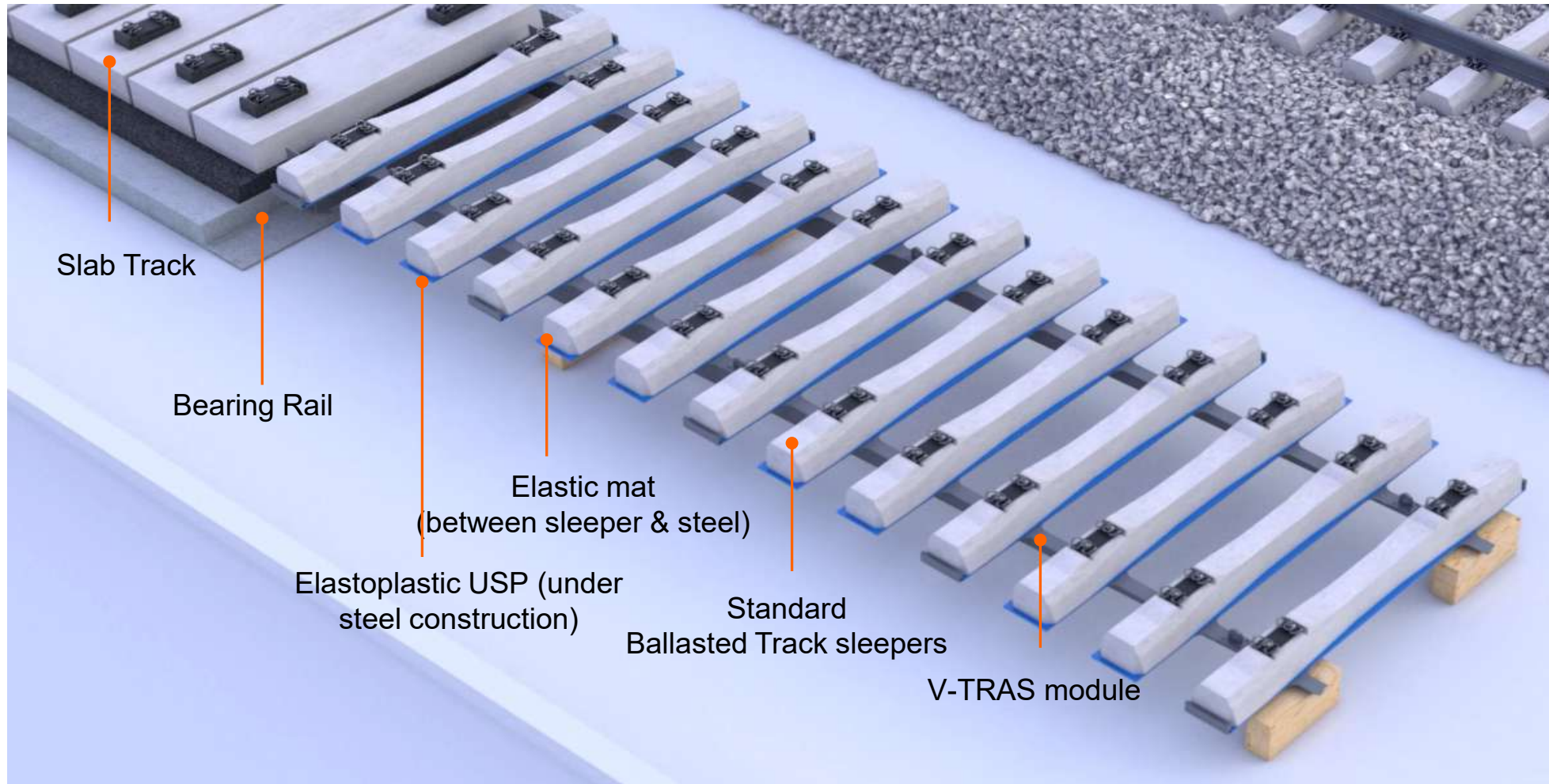
Video on YouTube



Link:

V-TRAS: The Smart Transition Solution
in Track Construction

Bridging the Gap: V-TRAS

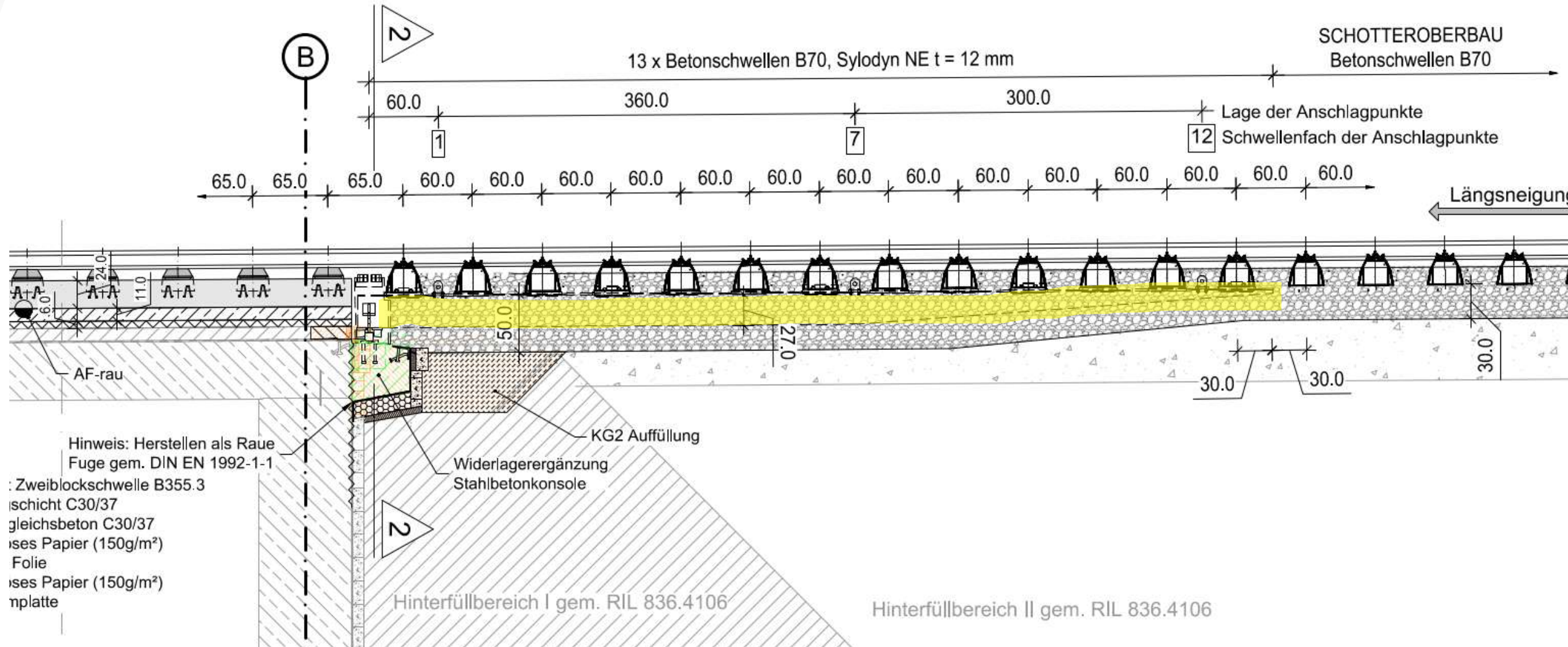








Excerpt: Design Transition Slab Track – Ballasted Track









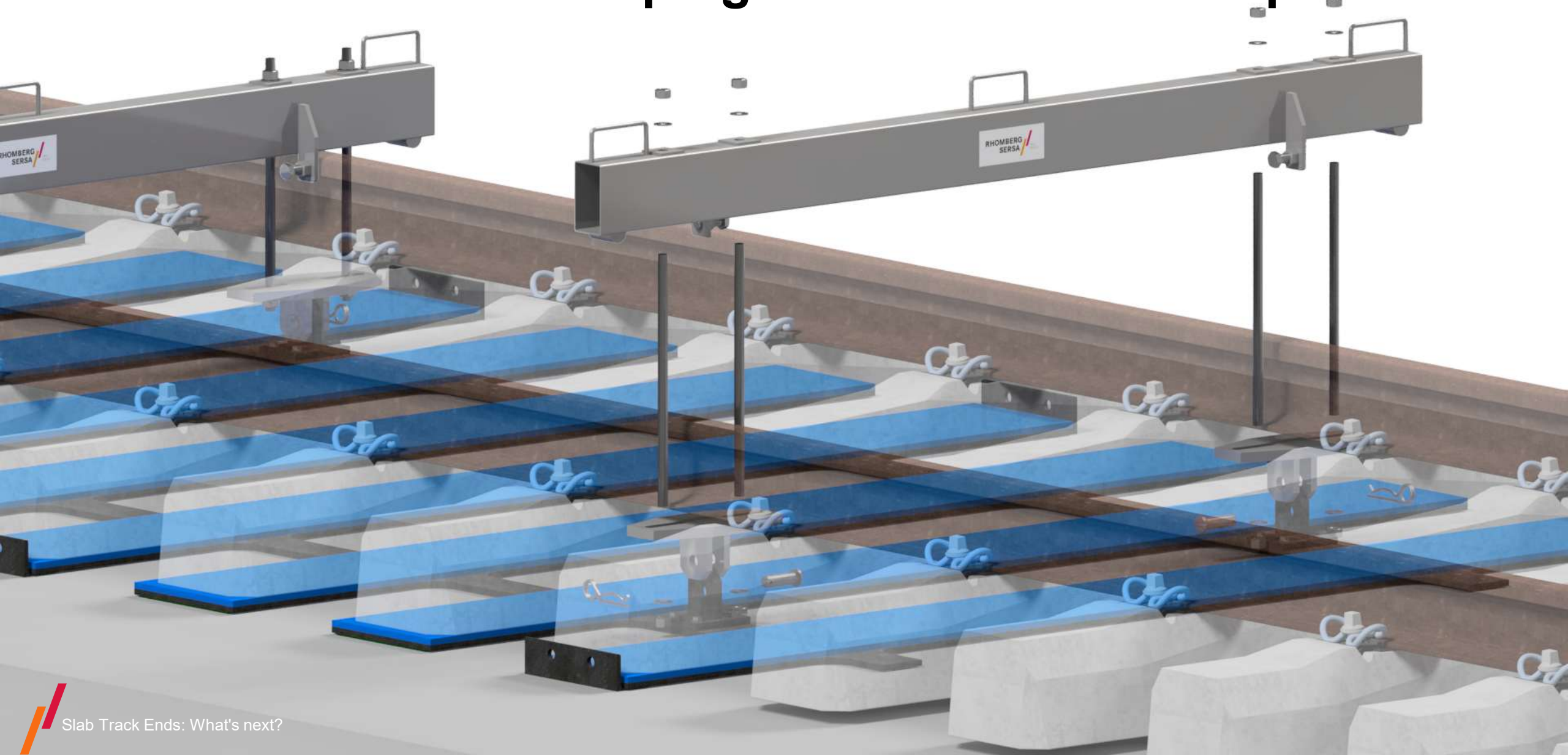
BRANXTON WEIGHBRIDGE

NO TAMP

UP MAIN BETWEEN
215.640KM - 216.080KM



Maintenance: hand tamping / excavator with tamper



Maintenance: hand tamping / excavator with



Reduction of forces on ballast

Verfasser: Buba Ingenieure GmbH	Buba Ingenieure	
Programm:		
Bauwerk: Übergangskonstruktion V-TRAS, kurze Variante	ASB-NR.:	Datum: Januar 2020

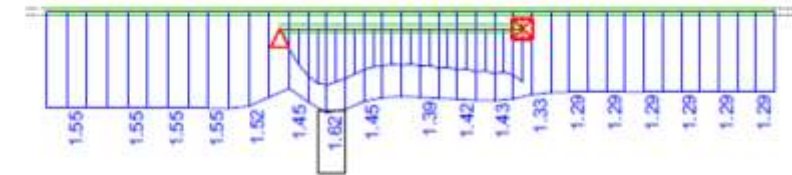
	Schotterlast bei:	
Schotterlast:	Bettung hart [kN]	Bettung weich [kN]
ohne V-TRAS	38,2	34,3
mit V-TRAS	28,6	24,9
Reduzierung der Schotterbeanspruchung	-25%	-27%

reduction of forces:
-25%

weiche Bettung, mit Störung

FF

Sch.O.



Summary:

„V-TRAS reduces disturbances with negative influence (like hollow areas under sleepers)“



Increase of tamping intervals

Zur verallgemeinerten Beschreibung des Nutzens von V-TRAS® wird deshalb die Streckung des Instandhaltungsintervalls berechnet, welche näherungsweise als unabhängig von den genannten Einflussgrößen verstanden werden kann:

$$\text{Streckung} = \frac{\Delta B_{\text{mit V-TRAS®}}}{\Delta B_{\text{ohne V-TRAS®}}}$$

Tabelle 2: Streckungsfaktor als verallgemeinerter Nutzen von V-TRAS®

Variante	Streckung
FF – SchOB ohne V-TRAS®	100%
FF – SchOB mit V-TRAS®	150%
BBW - SchOB ohne V-TRAS®	100%
BBW – SchOB mit V-TRAS®	123%

**Simulation of settlements:
Tamping intervals
stretched by 150%**

References

Year	Project	Client / Authority
2012	Test track RCR	Rhomberg Sersa Rail Group
2014	Rhomberg Slab Track Test Site - Asfordby Tunnel DRL South/Chord (Old Dalby Test Site)	Network Rail
2014	Test loop of All-Russian Scientific Research Institute of Railway transport	Russian Railways
2015	EGIP Edinburgh-Glasgow Improvement Projekt	Network Rail
2016	EGIP Edinburgh-Glasgow Improvement Projekt	Network Rail
2016	GOB-E, Gospel Oak to Barking	Network Rail
2016	Renovation of the railway station Zweisimmen/ gauge adjustment facility	Montreux-Berner Oberland-Bahn
2016	Northern Hub and Electrification, Chorley Station	Network Rail
2017	Doncaster College Test Track	Doncaster College
2017		
2017	Branxton Recorder	Bahn
2018		
2020	Ki	

Approvals:

- EBA (Germany)
- ARTC (AUS)
- Network Rail (UK)



Certificate of Acceptance

PA05/06000

Manufacturer:
Rhomberg Sersa Rail Group

Issue : 1
Valid From : 01-04-2017

"V-TRAS" type Track Transition Unit

Product Description

The track vertical settlement transition unit V-TRAS unit is a supplementary track support element for the control of differential settlement and stiffness transition control across track formation and structural support interfaces. The system accepts conventional concrete sleepers spaced at 0.6m centres.

The unit is designed to be used as a transitional track element between different track construction types typically slab and ballasted track forms that can also be applied at the interface between different structural elements, such as bridge decks, tunnels and other features where on one side the track is fixed. The system provides for a low maintenance method of achieving correct track support without the negative effect of differential vertical settlement.

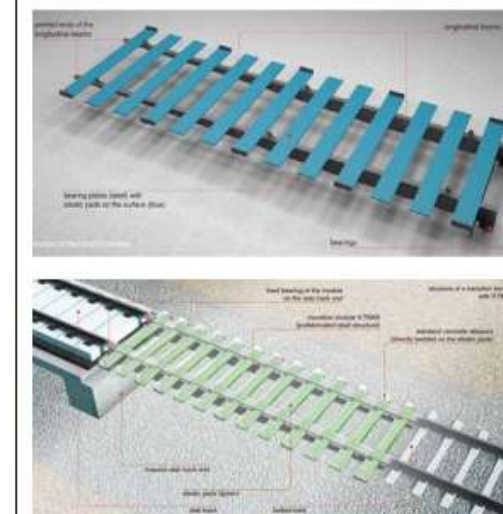
The system can be relevelled and the ballast under it may be tamped but the aim is to provide a solution that reduces the risk of severe geometric deterioration and results in a lower overall maintenance requirement.

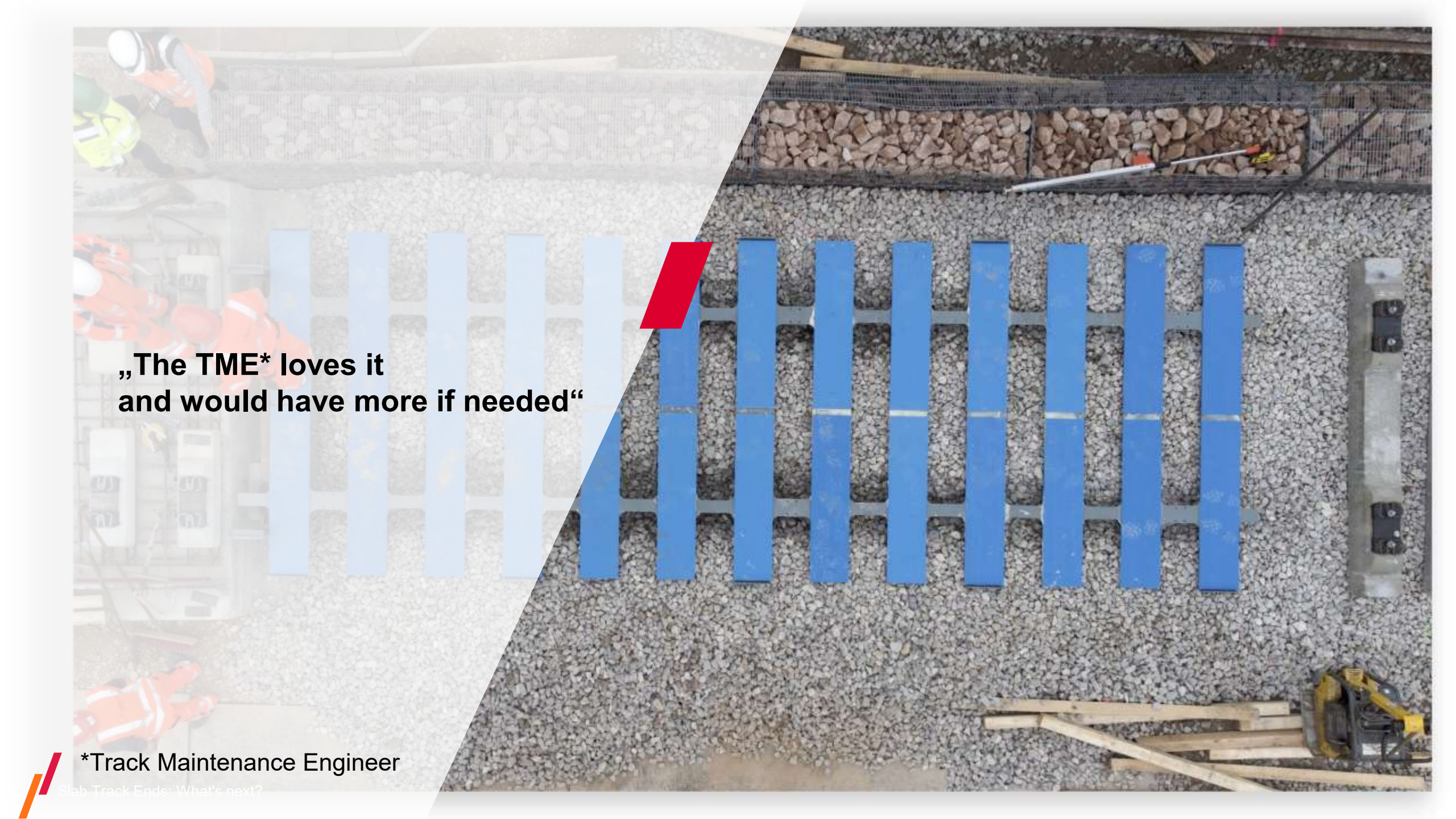
Scope of Acceptance - Full Acceptance

This certificate is valid for the supply of the Rhomberg Sersa V-TRAS unit on Network Rail Infrastructure from 1st April 2017 onwards.

Product Image

V-TRAS Unit





**„The TME* loves it
and would have more if needed“**

***Track Maintenance Engineer**

Slab Track Ends: What's next?





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 → Get in touch!

Thanks!

