



Needs Tailored Interoperable Railway Infrastructure

Track innovations and results (WP2)

NeTIRail-INFRA final conference, Ljubljana – 24th May 2018

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WP2 - Introduction



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WP2 - Summary



- **Work package number:** WP2
- **Work package title:** Tailored track infrastructure, design and maintenance
- **Lead beneficiary:** 12 – SZ (SŽ-Infrastruktura d.o.o.)
- **Partners (10):** SZ, USFD, UIC, ADS-ELECTRONIC RESEARCH SRL, AFER, TU Delft, IFSTTAR, TCDD, INTADER, RCCF
- **Start month:** 1
- **End month:** 33

WP2 - Tasks Overview



Tasks	Deliverables
T2.1 Geospatial comparison of rail infrastructure cost and maintenance drivers for high and low density lines	D2.1
T2.2 Practices and track technology tailored to particular lines	D2.2
T2.3 Application of lean and automotive industry techniques to railway S&C	
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T2.6 Cost effective transition zone design	
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T2.1 Overview



T2.1 Geospatial comparison of rail infrastructure cost and maintenance drivers for high and low density lines

- Lead partner: ADS
- Partners: USFD, SZ, AFER, TCDD, UIC, RCCF

General Objectives:

- Application of Geographic Information System (GIS) mapping to the failure data to reveal correlations and underlying drivers of cost and maintenance which have not been previously visible

T2.2 Overview



T2.2 Practices and track technology tailored to particular lines

- Lead partner: ADS
- Partners: USFD, SZ, AFER, INTADER, UIC, RCCF

General Objectives:

- Identifying the best practices for installation, operation and maintenance of lines in the NeTIRail-INFRA case study categories:
 - busy passenger
 - low density rural/secondary line
 - freight dominated route

T2.3 Overview



T2.3.2 Application of lean and automotive industry techniques to railway S&C

- Lead partner: IFSTTAR
- Partners: SZ, RCCF, TCDD, AFER, USFD, UIC, INTADER

General Objectives:

- Apply lean and automotive industry techniques to railway S&C, to produce a step change in railway switch and crossing (S&C) life and costs
- Analyse and optimize the maintenance process, in particular installation/replacement of S&C

T2.3 Innovation



Innovation → LEAN

Lean improvement of S&C design, replacement and maintenance.



T2.4 Overview



T2.4.2 Traffic dependent tailoring of plain line to preventing corrugation

- Lead partner: TUD
- Partners: USFD, SZ, AFER, INTADER, TCDD

General Objectives:

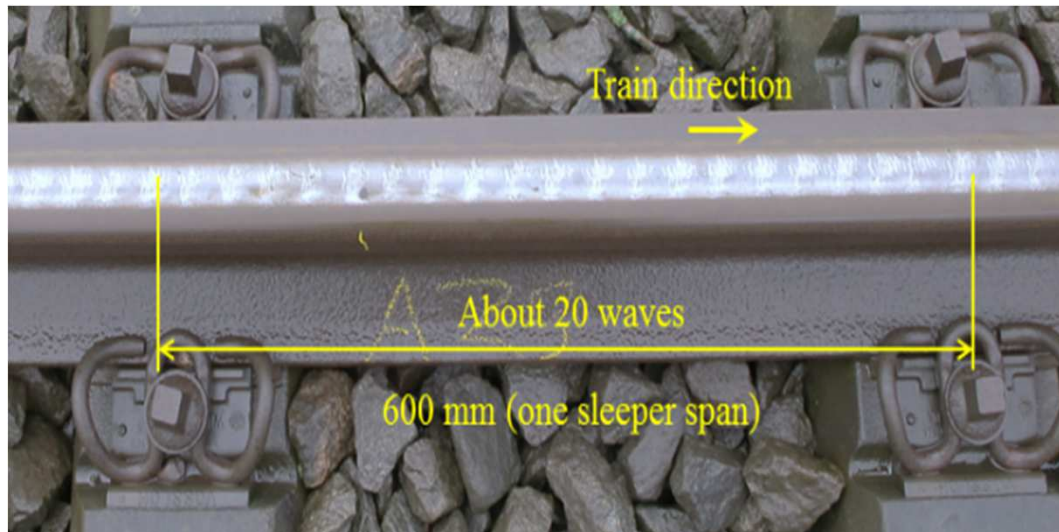
- Extend the life of plain line through better understanding of how corrugations (rail surface irregularity and waviness) can be prevented
- To test various forms of pads and clips in the testing ring track for evaluation of the line corrugation

T2.4 Innovation



Innovation → CORRUGATION

To control short pitch corrugation by the choice of railpad and fastening system.



T2.5 Overview



T2.5.2 Tailoring lubrication to duty and climate

- Lead partner: INTADER
- Partners: USFD, UIC, SZ

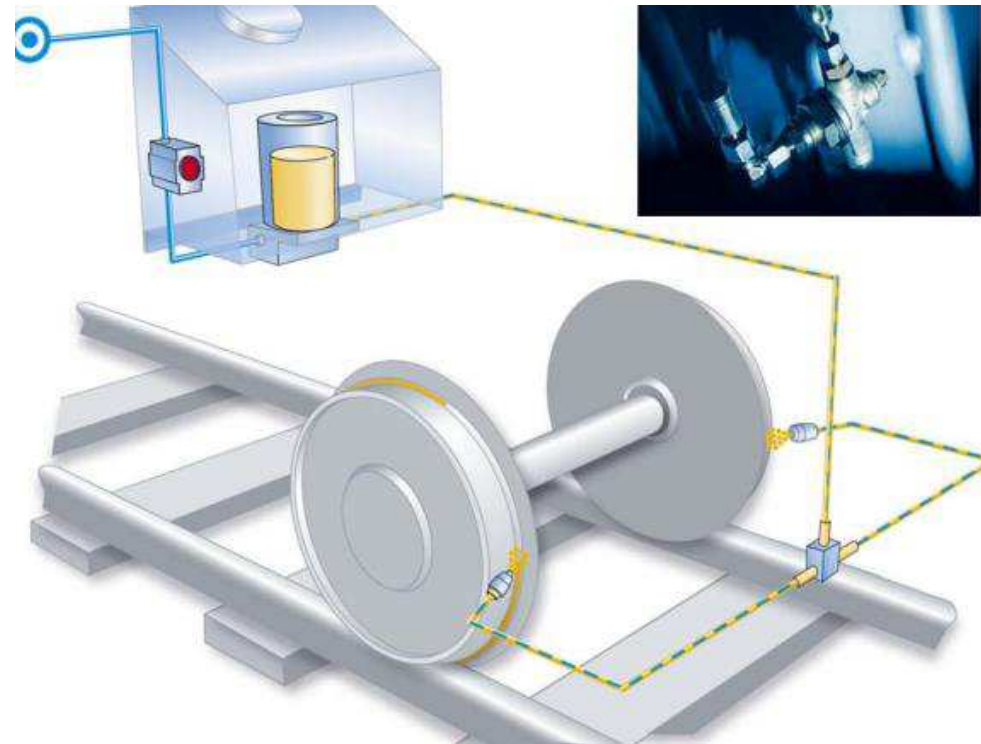
General Objectives:

- Research and test the rail-wheel lubrication and appropriateness for different lines/traffic density of operations and weather conditions
- Identify which lubrication works best in different climate areas (some lab tests, some manufacturers data)

T2.5 Innovation

Innovation → LUBRICATION

Optimal lubrication techniques for different density of rail lines and weather conditions.



T2.6 Overview



T2.6.2 Predictive and cost effective transition zone design

- Lead partner: USFD
- Partners: SZ, INTADER

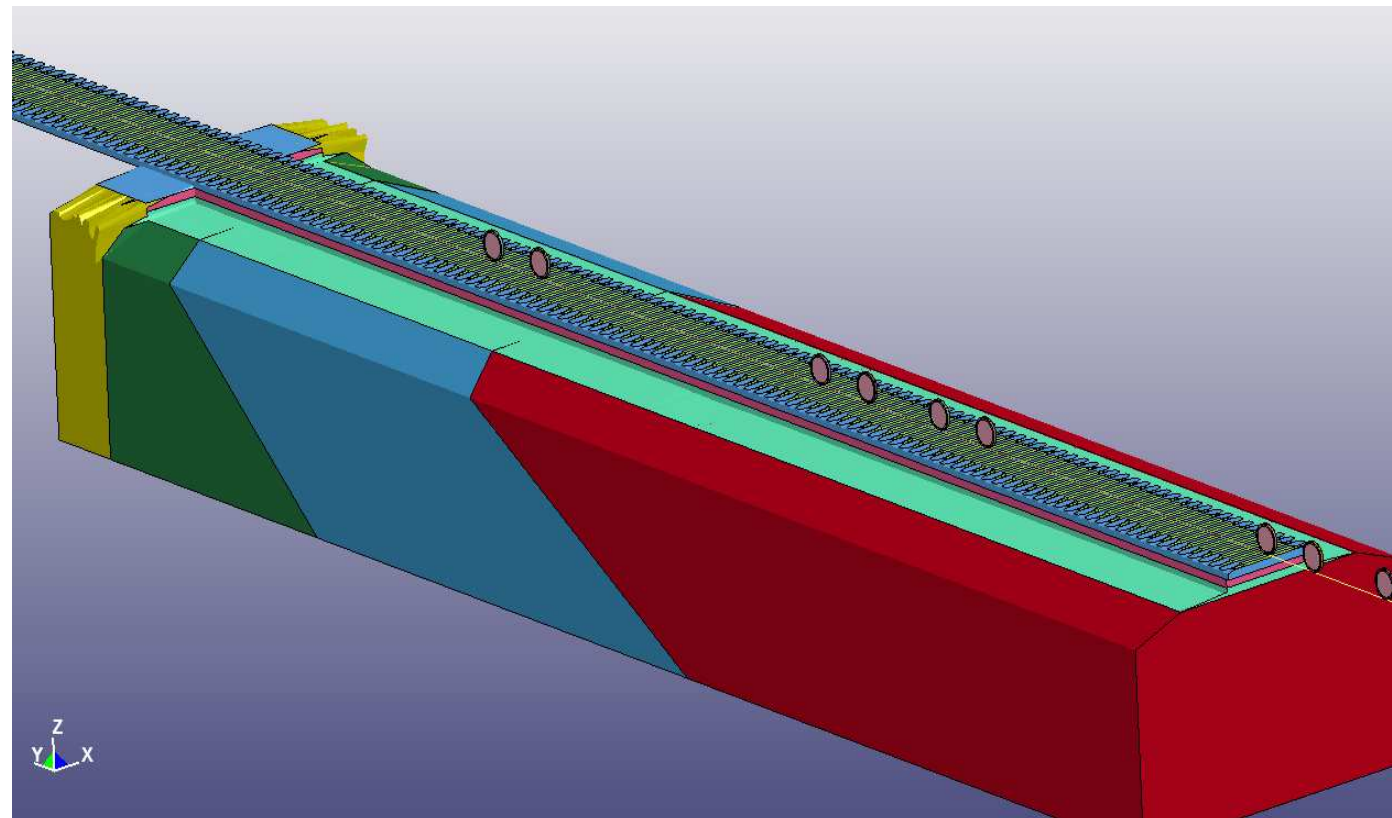
General Objectives:

- Develop a novel track vertical stiffness transition zone design; changes in vertical stiffness occur when the track moves on and off bridges and other structures or locations
- Transition zone modelling; look for modification stiffness without changing sleeper spacing but instead focus on dimension and mass

T2.6 Innovation

Innovation → TRANSITION ZONES

Cost effective transition zone design based on varying the slippers mass.





THANK YOU for your attention!

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