



Needs Tailored Interoperable Railway Infrastructure

Introduction to the NeTIRail-INFRA project and mid-term conference

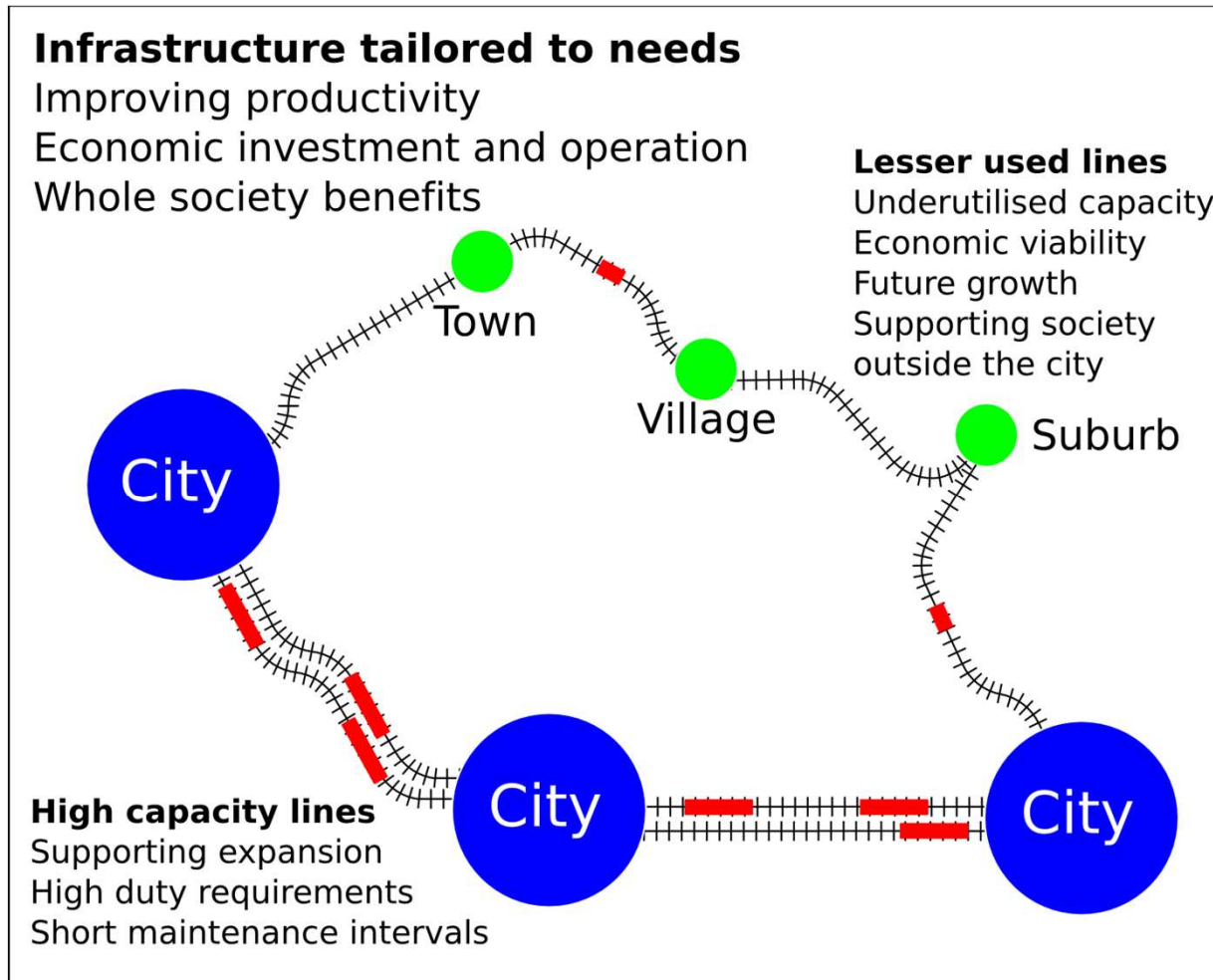
David Fletcher



The NeTIRail-INFRA concept



NeTIRail - Needs Tailored Interoperable Railway



Developing and demonstrating technologies and best practice tailored to the needs of different categories of rail systems

- Modern solutions alongside aging infrastructure
- Unlocking capacity
- Maintaining economic viability of under utilised lines.



NeTIRail-INFRA – facts & figures

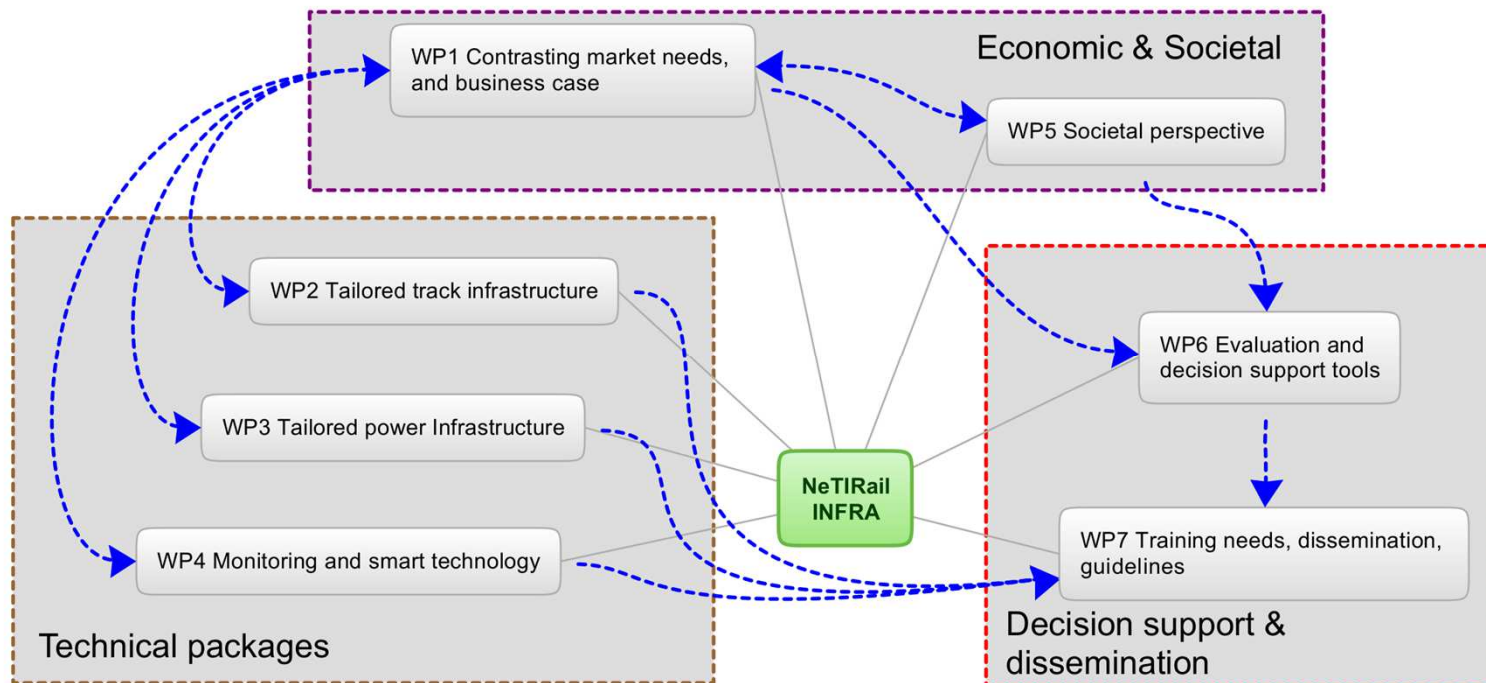
- Grant number – 636237
- Call topic MG-2.1-2014 – Intelligent infrastructure
- Total costs & EU Contribution 5.467M€
- June 2015 – May 2018
- 13 partners from eight different countries

1. University of Sheffield (USFD) - coordinator
2. University of Leeds (ULEEDS)
3. International Union of Railways (UIC)
4. ADS Electronics (ADS)
5. Romanian Railway Authority (AFER)
6. Technical University Delft (TUD)
7. Albert-Ludwigs-Universität, Freiburg (ALU)
8. French Institute of Science and Technology for Transport, Development and Networks (IFSTTAR)
9. Turkish State Railway (TCDD)
10. Intermodal Transportation and Logistics Research Association (INTADER)
11. Swedish National Road and Transport Research Institute (VTI)
12. Slovenian Railways, SZ-Infrastruktura, d.o.o. (SZ)
13. RCCF-TRANS (RCCF)



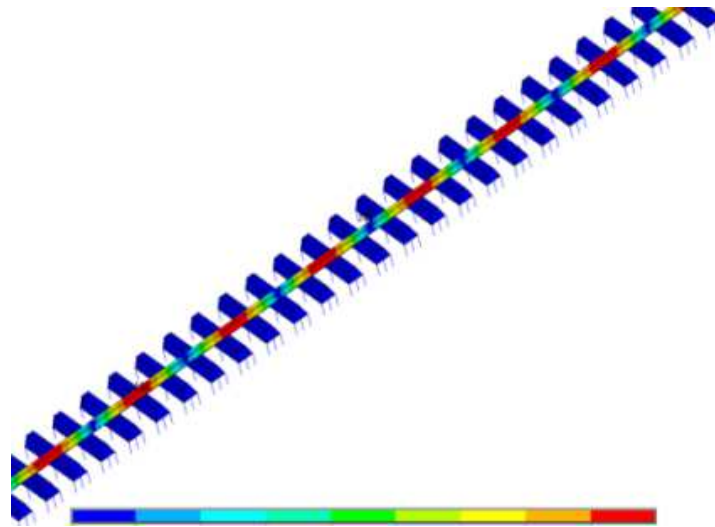
NeTIRail-INFRA WPs

- WP1: Contrasting market needs, and business case
- WP2: Tailored track infrastructure, design and maintenance
- WP3: Tailored overhead line power supply infrastructure
- WP4: Monitoring and smart technology
- WP5: Societal perspective
- WP6: Evaluation and decision support tools
- WP7: Dissemination, training needs and influence on guidelines and standards

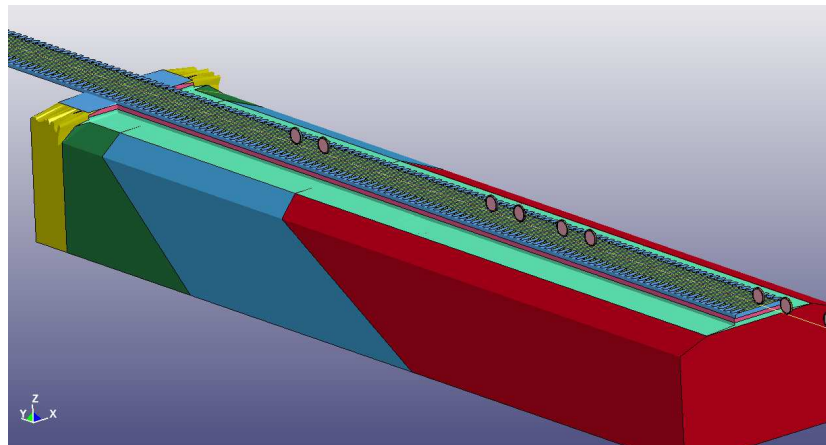
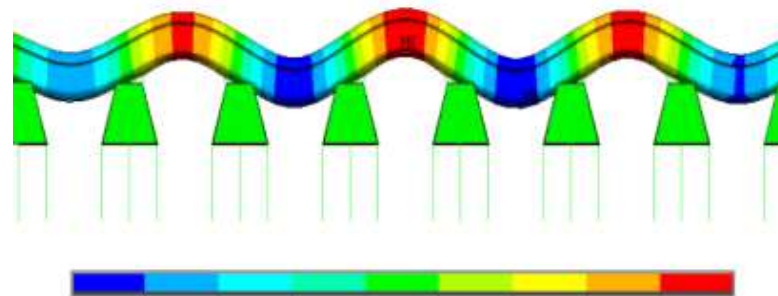


NeTIRail-INFRA - outputs

- Tailored track infrastructure, design and maintenance



Drivers of rail corrugation:
Modelling rail vertical vibration



Understanding transition zone
design – how to achieve smooth
running without such extensive
earthworks

NeTIRail-INFRA - outputs

- Overhead power lines: Low cost monitoring and smart technology



NeTIRail has developed and tested a range of instrumentation:

- Contact wire accelerometers
- On-board voltage and current measurement
- High speed video capture of the catenary system and contact wire

These low cost options for measurement and monitoring were successfully trialled in Turkey, Slovenia and Romania

NeTIRail-INFRA - outputs

- Track: Low cost monitoring and smart technology



Solutions were developed for low cost accelerometer sensors for track

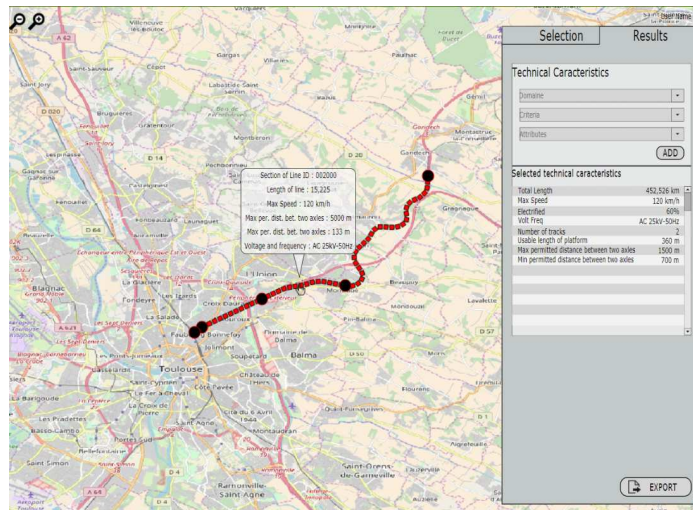
Tested on track in Romania, Slovenia and in Turkey.

These low cost sensors are designed to be deployed on track and S&C:

- Better understand the damage mechanisms
- Direct preventative maintenance strategies
- Detect damaging rolling stock

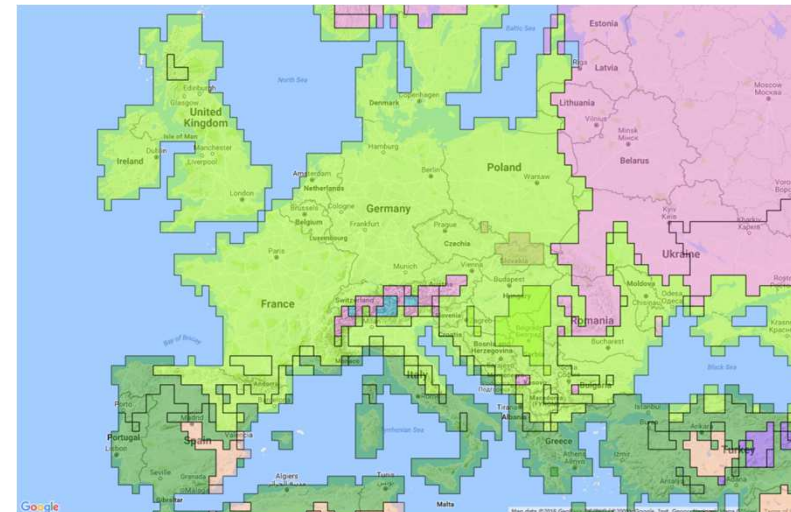
NeTIRail-INFRA - outputs

- Combining engineering, economic and social data from the project



A web based GIS (geographic information system) tool for use by railway infrastructure managers

Easily assess the impacts of the NeTIRail-INFRA innovations and identify the most appropriate technologies for different lines.



GIS map of climate zones to which lubrication recommendations can be mapped