



Lessons learned from previous skid resistance harmonization attempts

Work Package 2.1

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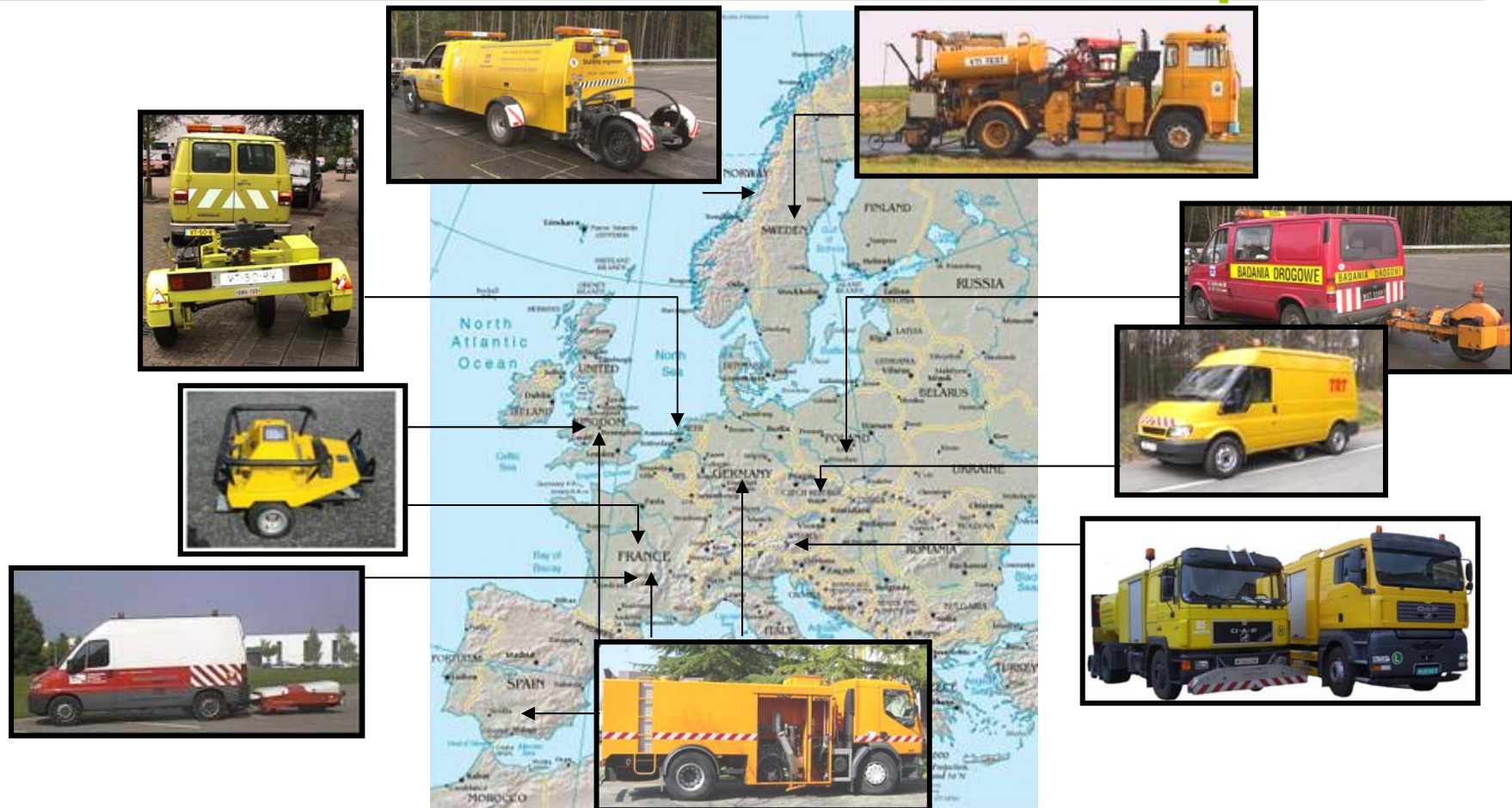
Objectives

Several serious harmonisation attempts by e.g. PIARC 1992 and HERMES 2005, but still no workable solution

The objective of TYROSAFE WP 2 is:

.....Road map or implementation plan towards the final harmonisation of skid resistance measurement method approach in 2020.....

How skid-resistance is measured in Europe?

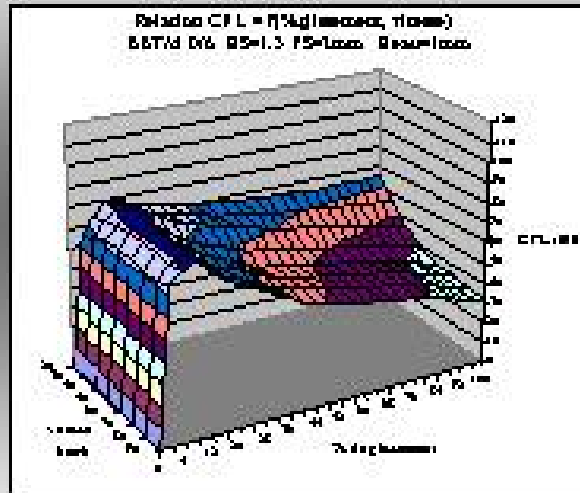


Pictures provided by CEN/TC227/WG5 and Arsenal Research

Road surface

*microtexture
macrotexture
particle size*

**friction varies with
slip ratio and speed**



Tyre properties

*dimensions
construction type
inflation pressure
rubber compound
...*

Test conditions

*vertical load
water film thickness
temperature
season*

Scope for skid resistance in TYROSAFE

Focus on skid measurements for:

- in service road monitoring for maintenance
- new work approval
- only roads, no airfields
- only wet conditions

What is harmonisation and how can we do it?

Common scale

- defining a reference value by floating average of a group of devices and find correlating formulas for individual devices
- defining a reference device and find correlating formulas for all other devices

Standardization

- defining a single and common device

Lessons learned from IFI (PIARC) and EFI (HERMES)

Approach

- reference value by floating average of a large group of devices
- adjusting formula for slip ratio, operating speed and dependend on surface texture

Findings

- poor reproducibility

Learnings

- reduce number of device configurations or even choose a reference device
- reduce range of conditions
- need for improved models

Lessons learned from IRFI (airfield experiments)

Approach

- reference device
- adjusting formula for slip ratio, operating speed and dependend on surface texture
- no speed harmonisation



Findings

- better reproducibility

Learnings

- positive effect on accuracy by narrow range of slip ratio and separate formulae for two different speeds

Conclusions

- Harmonisation by common scale will inevitable result in a loss of accuracy (imprecision)
- The IRFI common scale approach shows best performance
- Discussion is needed what accuracy is needed