TYROSAFE

Tyre and Road Surface Optimisation for Skid Resistance and Further Effects

Funding: European (7th RTD Framework Programme)
Duration: Jul 2008 - Jun 2010
Status: Complete with results
Total project cost: €1,165,359
EU contribution: €1,165,359

Call for proposal: FP7-SST-2007-RTD-1
CORDIS RCN : 89459

Background & policy context:

TYROSAFE is a Coordination Action funded by the European Community's Seventh Framework Programme (FP7/2007-2013) under grant agreement no. 217920. The TYROSAFE project began on the 1st of July 2008.

The contribution that the road surface makes to road safety is often underestimated. Whilst first advances have already been made in the technology of tyres and braking systems, at the time of an accident or near-accident one of the major underlying factors is the condition of the road. The awareness of such issues varies widely across the EU. In the United Kingdom, which has one of the best road safety records in Europe, the importance of skidding resistance, as safety indicating parameter of the road surface, has been recognised for decades.

It is interesting to note that it is on the roads where such skidding resistance policies are applied where there are the lowest accident records. The reasons why such policies are not adopted more routinely across the EU are various. The project addressed the three most fundamental factors. These are the lack of awareness of the importance and contribution of skidding resistance, the lack of harmonised systems of comparing skidding resistance (even within Member States), and the concern over conflicts with other important characteristics of road surfaces (like rolling resistance and noise emissions). Very often policies are only focused to optimise road surfaces for only one parameter, whilst disregarding the other characteristics. That often led to negative impact on other related parameters.

The benefit that the project set out to provide to all three areas will help public authorities in Member States to make a contribution already, based on the coordinated application of existing research knowledge, towards reducing fatalities as well as negative environmental effects. In addition, the project will also create a solid platform for the development of new harmonised technologies that will contribute towards casualty reduction and additionally decrease CO2 and noise emissions in all Member States.

Objectives:

The main objectives of the project were to raise awareness, to coordinate and prepare for European harmonisation and to optimise the assessment and management of essential tyre/road interaction parameters in order to increase safety and support greening of European road transport.

This Coordination Action not only focussed on the road surface but also on tyres and on the interaction between the road surface and tyres. Only an optimised interaction can lead to a high level of safety for drivers on the roads in European countries while ensuring the most positive greening effect, through reduction of CO2 output and noise emissions.

This project provided a synopsis of the current state of scientific understanding and its current application in national and European standards. It identified the needs for future research and propose a way forward in the context of the future objectives of European road administrations in order to
optimise three key properties of European roads: skid resistance, rolling resistance and tyre/road noise emission.

**Methodology:**

In addition to Administrative Management and Dissemination, there were four technical work packages (WP’s):

- WP1: Policies of EU countries for: skid resistance / rolling resistance / noise emissions;
- WP2: Harmonisation of skid resistance test methods and choice of reference surfaces;
- WP3: Road surfaces properties: skid resistance / rolling resistance / noise emissions;
- WP4: Environmental effects and impact of climate change: skid resistance / rolling resistance / noise emissions;
- WP5: Dissemination and raising awareness; and
- WP6: Project Management.

**Parent Programmes:**

FP7-TRANSPORT - Transport (Including Aeronautics) - Horizontal activities for implementation of the transport programme (TPT)

**Institute type:** Public institution

**Institute name:** The European Commission

**Funding type:** Public (EU)

**Lead Organisation:**

Österreichisches Forschungs- Und Prüfzentrum Arsenal Ges.m.b.h

**Address:**
Giefinggasse 2
1210 VIENNA
Austria

**Organisation Website:**
http://www.arsenal.ac.at

**EU Contribution:** €365,976

**Partner Organisations:**

Ministerie Van Verkeer En Waterstaat

**Address:**
Zuidervagenplein 2
8200 AA Lelystad
Netherlands

**EU Contribution:** €38,165

Trl Limited

**Address:**
Crowthorne House Nine Mile Ride 0
Wokingham
RG40 3GA
United Kingdom

**Organisation Website:**
http://www.trl.co.uk

**EU Contribution:** €180,356
The primary results of the project include:

- The project studied tyre and road dynamics to achieve better interaction between the two, which would increase safety for drivers, reduce CO2 emissions and minimise noise.

- It outlined cutting-edge technical and scientific advances in the field and mapped future research priorities that advance skid resistance, rolling resistance and noise.
Tyrosafe produced an in-depth assessment of all the elements involved (tyres, skidding, noise, safety) and their interaction with the environment.

It filled knowledge gaps and produced recommendations to manage critical road surface properties, unveiling how best to standardise assessment methods and harmonise design and safety policies.

Policy implications

The project provided a wealth of knowledge to the car industry, road transport administrations and government authorities. If exploited and applied, the results of the project will enable EU Member States to reduce accidents and road fatalities, in addition to promoting greener road transport and reducing noise pollution.

Other results

The results of the project include a thorough evaluation of the role of the key road surface parameters skid resistance, rolling resistance and noise emission of road surfaces in the context of the European road transport system including their interdependencies and the interaction with the climate.

Strategy targets

- Innovating for the future: technology and behaviour
- Promoting more sustainable development.

Documents:

- [TYROSAFE FINAL Summary Report (Final report)](#)

STRIA Roadmaps: Infrastructure

Transport mode: Road transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Safety/Security, Environmental/Emissions aspects

Geo-spatial type: Other