



SAFER LEVEL CROSSING BY INTEGRATING AND
OPTIMIZING ROAD-RAIL INFRASTRUCTURE
MANAGEMENT AND DESIGN

SAFER-LC Workshop 1, Paris, 28 September 2017

Overview

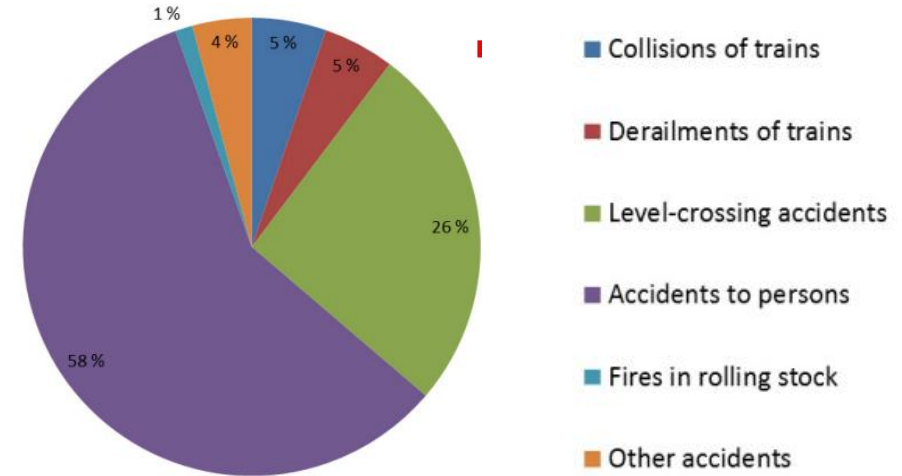
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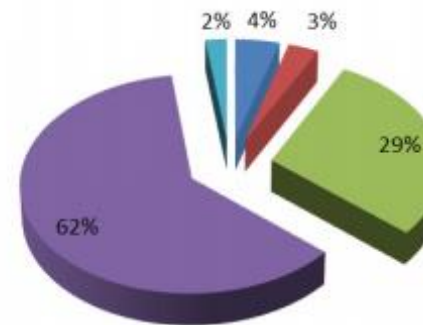


Background

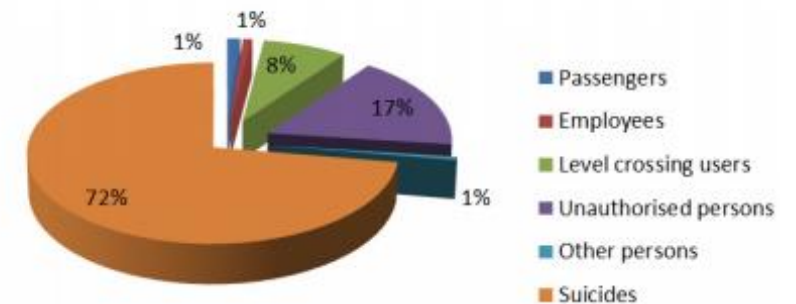
▲ Breakdown of significant accidents (2012-2014) – ERA Figures



▲ Relative share of victims per category of persons (2012-2014)- ERA Figures



Fatalities on railways disregarding railway suicides



Fatalities on railways including railway suicides

Objectives

- ▲ Improve safety and minimize risks at and around level crossings (LCs)
 - by developing innovative solutions and tools to detect as early as possible potentially dangerous situations leading to collisions at LCs and to prevent incidents at level crossing
- ▲ Focus both on technical solutions and on human processes
 - to adapt infrastructure design to end-users
 - to enhance coordination and cooperation between different stakeholders from different transportation modes.
- ▲ Develop a toolbox which will integrate all the project results and solutions to help both rail and road managers to improve safety at level crossings.



Key facts

- ▲ Framework : H2020 Call 2016-2017 Mobility for Growth
 - Topic: MG-3.4-2016 : Transport infrastructure innovation to increase the transport system safety at modal and intermodal level (including nodes and interchanges)
- ▲ Project submitted in September 2016 and selected in January 2017
- ▲ Starting date
 - 1st May 2017 for 3 years
- ▲ Budget
 - 4 888 927 €
- ▲ Total effort
 - 487,75 MM



Consortium



CONSORTIUM

COORDINATOR: 1-UIC - International Union of Railways

2-VTT - Technical Research Centre of Finland Ltd

3-NTNU - Norwegian University of Science and Technology

4-IFSTTAR - French institute of science and technology for transport, development and networks

5-FFE - Spanish Railways Foundation

6-CERTH-HIT - Centre for Research and Technology Hellas - Hellenic Institute of Transport

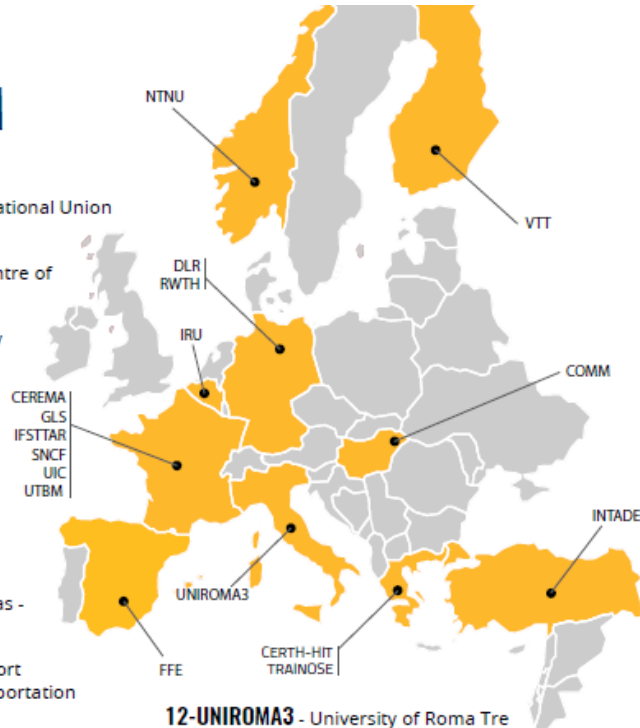
7-TRAINOSE - Trainose Transport - Passenger and Freight Transportation Services SA

8-INTADER - Intermodal Transportation and Logistics Research Association

9-CEREMA - Centre for Studies and Expertise on Risks, Environment, Mobility, and Urban and Country planning

10-GLS - Geoloc Systems

11-RWTH - Rheinisch-Westfaelische Technische Hochschule Aachen University



12-UNIROMA3 - University of Roma Tre

13-COMM - Commsignia Ltd

14-IRU - International Road Transport Union - Projects ASBL

15-SNCF - French Railways

16-DLR - German Aerospace Center - Institute of transportation Systems

17-UTBM - University of Technology of Belfort-Montbéliard

▲ Coordinator : UIC

▲ 17 partners

▲ 8 European Union countries

▲ 2 associate countries

Advisory Board

- ▲ composed of 20 members
 - ▲ Rail infrastructure managers in Europe
 - ▲ Road and rail safety organisation
 - ▲ Transport authorities (from Europe and USA)
 - ▲ Universities
 - ▲ Expert for Standardisation

- ▲ provide inputs, advice or assessment for the project work, cooperation on events and workshops

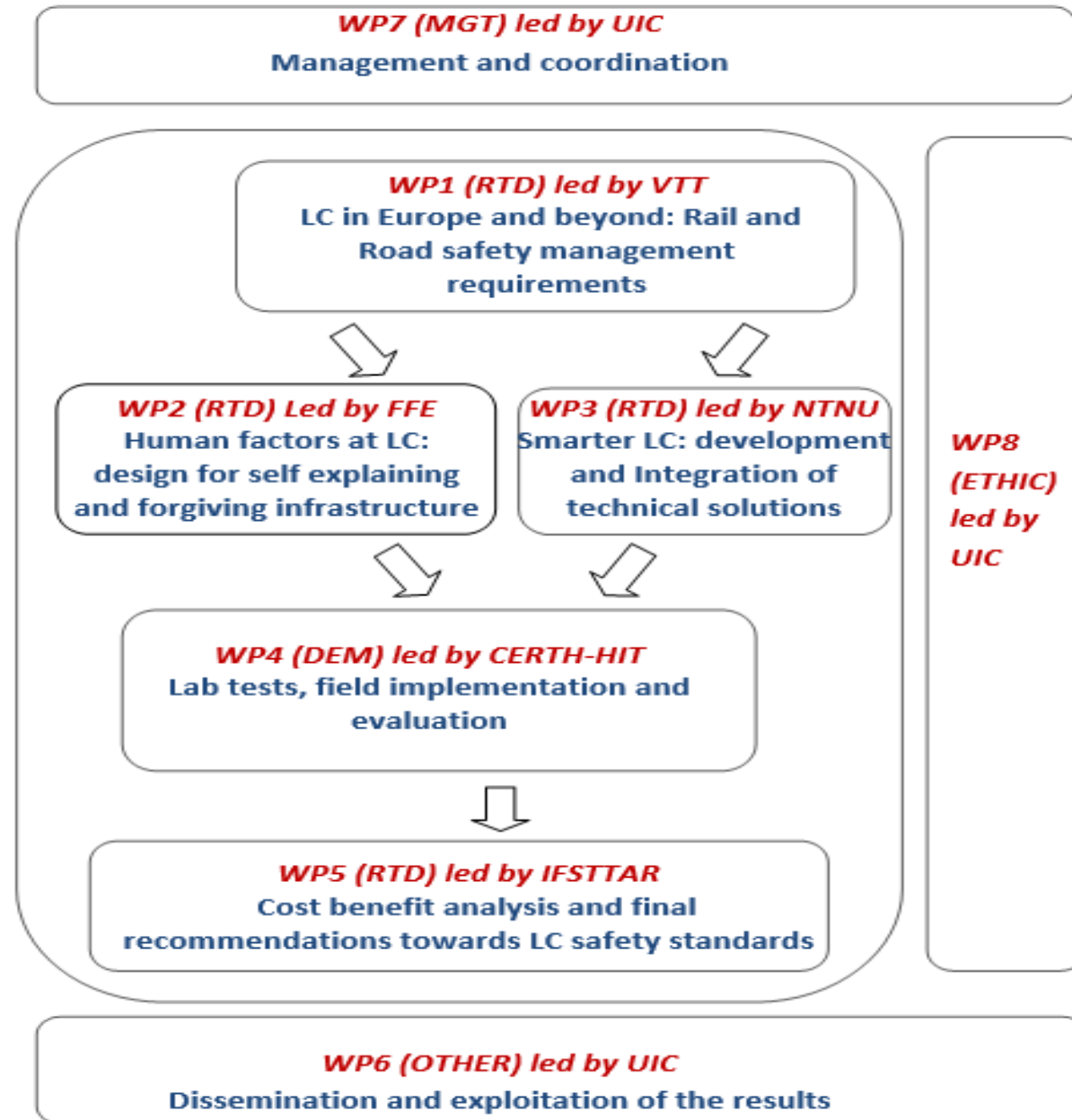


Approach

- ▲ Analysis of LC safety systems and definition of needs and requirements of the rail and road users for safer level crossings
- ▲ Development of innovative measures
 - ▲ Human centered low cost measures
 - ▲ Technical solutions
- ▲ Field-test and evaluation of the measures
- ▲ Elaboration of recommendations and guidelines
- ▲ Collection of all results in a toolbox



Structure



Rail and road requirements

WP1 - LC in Europe and beyond: Rail and road safety management requirements (led by VTT)
T1.1 : Analysis of LC safety in Europe and beyond
T1.2 : Identification of typical factors behind LC accidents
T1.3 : Summary of needs and requirements for safe LC management

Design, development and integration

WP2 - Human Factor at LC: Design for self-explaining and forgiving infrastructure (Led by FFE)
T2.1 : Analysis of Human Factors in LC safety systems
T2.2 : "Human factor" methodological framework
T2.3 : Design and evaluation of human centred low cost measures

WP3 - Smarter LC: development and Integration of technical solutions (Led by NTNU)
T3.1 : Risk evaluation
T3.2 : Smart detection system
T3.3 : Monitoring and remote maintenance
T3.4 : Communication systems for cross-modal information sharing

Test and evaluation

WP4 - Lab tests, field implementation and evaluation (Led by CERTH)
T4.1 : Testing framework
T4.2 : Execution and evaluation of simulation and controlled tests
T4.3 : Execution and evaluation of field implementations

Recommendations

WP5 - Cost- benefit analysis and final recommendations for Safer LC (led by IFSTTAR)
T5.1 : Harmonised Cost Benefit Analysis approach.
T5.2 : Business Models for the deployment of the suggested solutions
T5.3 : Recommendations and guidelines.

Management

WP7 - Management (led by UIC)
T7.1 : Scientific and technical coordination
T7.2 : Administrative and financial management
T7.3 : Quality assurance

Dissemination

WP6 - Dissemination and exploitation of the results (led by UIC)
T6.1 : Communication and Dissemination Strategy
T6.2 : Involvement of the Stakeholders
T6.3 : ToolBox development
T6.4 : Exploitation Strategy
T6.5 : Clustering and liaising with other relevant RDI projects

**SAFER-LC
TOOLBOX**

Ethics

WP8 - Ethical Requirements (led by UIC)
T8.1 : Ethical framework for humans
T8.2 : Ethical framework for data protection
T8.3 : Follow up of the ethical requirements

Next Events

Workshop 2 on Human factor at LC	March 2018	Paris
Common workshop with other related projects	June 2018	Brussels
Mid-term conference	October 2018	Madrid
Workshop 3 on the toolbox evaluation	December 2019	Paris
Final conference and workshop 4 on the toolbox training	April 2020	Paris





▲ Website available at www.SAFER-LC.eu

▲ Contact Info@safer-lc.eu