SAFER-LC

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

SAFER-LC Workshop 2, Paris, 27 March 2018
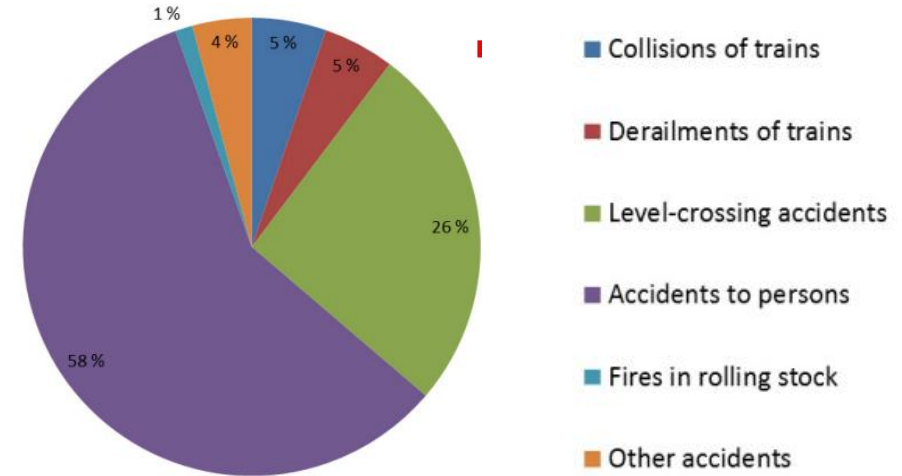
Overview

Marie-Hélène Bonneau

Background

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

- Collisions of trains — 5 %
- Derailments of trains — 5 %
- Level-crossing accidents — 26 %
- Accidents to persons — 58 %
- Fires in rolling stock — 1 %
- Other accidents — 4 %

▲Relative share of victims per category of persons (2012-2014)- ERA Figures
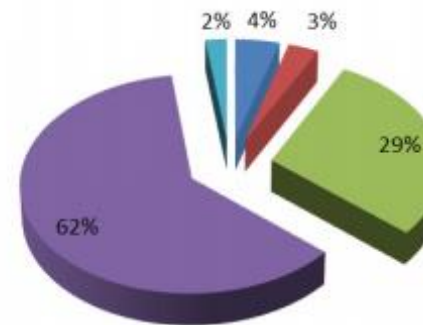
Fatalities on railways disregarding railway suicides — 2% 4% 3% 29% 62%
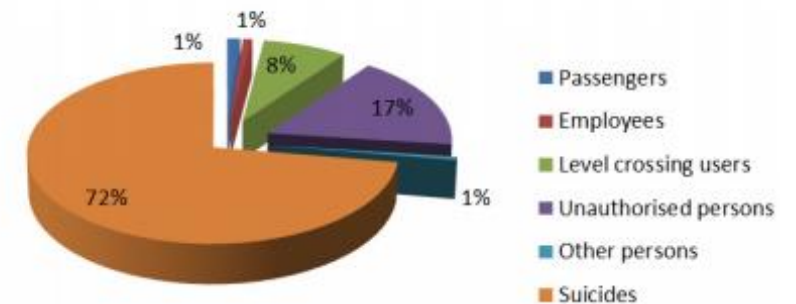
Fatalities on railways including railway suicides — 1% 1% 8% 17% 1% 72%

- Passengers
- Employees
- Level crossing users
- Unauthorised persons
- Other persons
- 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
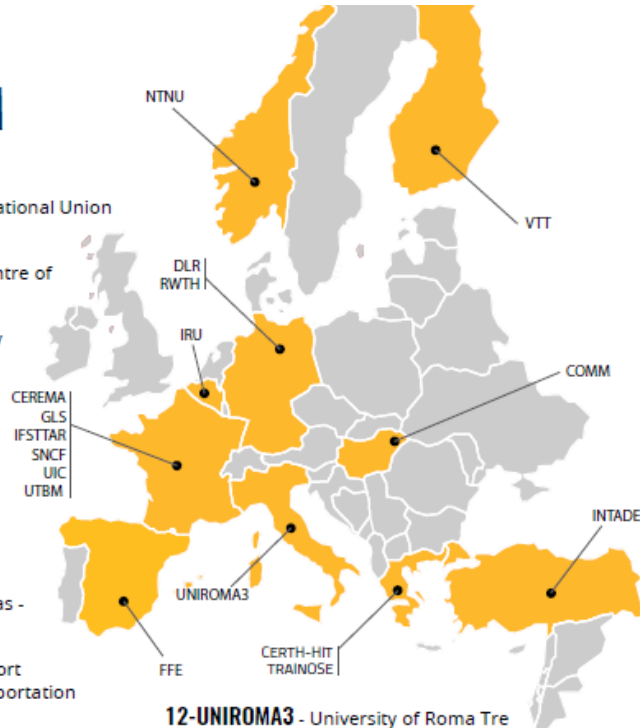
12-UNIROMA3 - University of Roma Tre

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

SAFER-LC Second Workshop, Paris, 27 March 2018

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

Work achieved

▲ Analysis of level crossing safety in Europe and beyond (D1.1 – FFE)

▲ Level crossing accidents and factors behind them (D1.2 – VTT)

▲ Needs and requirements for improving level crossing safety (D1.3 – UIC)

▲ State of the art of LC safety analysis: identification of key safety indicators concerning human errors and violation (D2.1 – FFE)

Deliverables available at http://safer-lc.eu/deliverables-publications-5

Selected scenario

▲Scenario for risk assessment :

  ▲ Risk evaluation based on user behaviors using automatic video data analysis

▲Scenario for Smart detection system :

  ▲ car stuck or stopped at LC.

  ▲ information sharing in case of a train approaching

▲Scenario for early detection of failures on the LC's equipment

▲Scenario for surveillance of the road and rail surface at the LC

▲Scenario for Optimized closure time

▲Communication system for information sharing

Next Events

Mid-term conference	Wednesday 10 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