Level crossing safety in the EU

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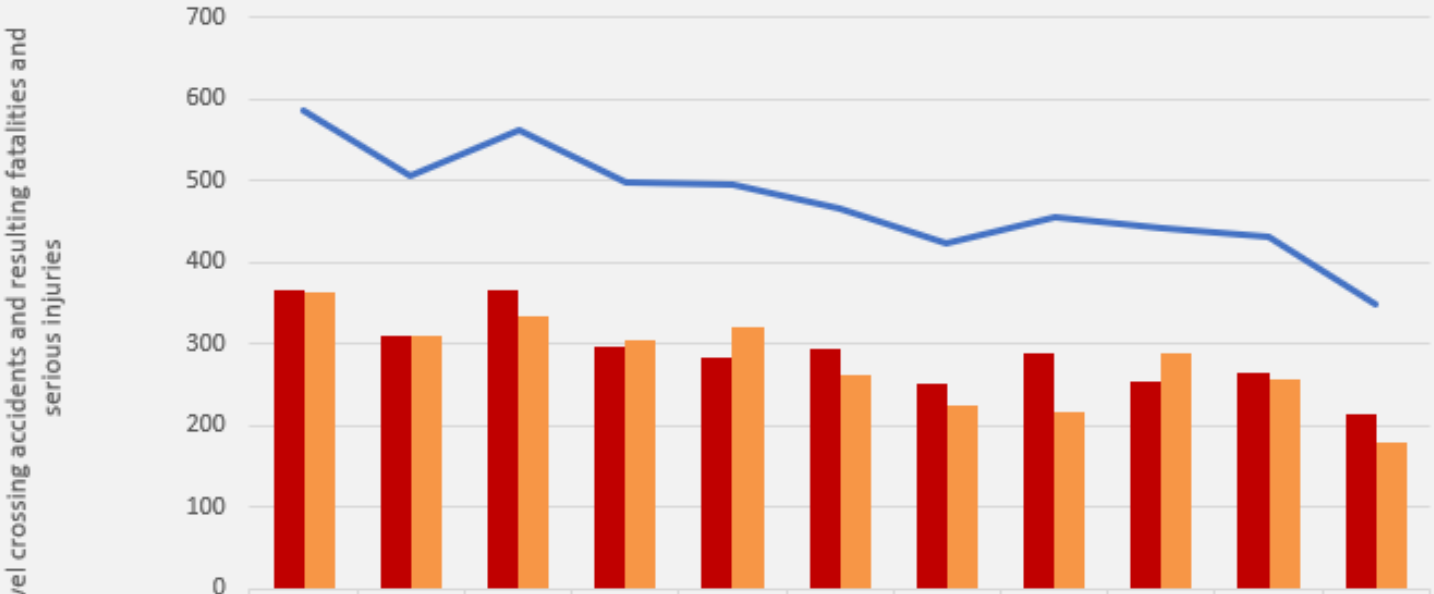
Introduction

- Road and rail networks are crossing due to historical design of roads/rail, urban areas or farming, cycling and walking paths;
- Level crossings are a serious hazard for rail safety killing more than 200 people/year in the EU. Material damages are also substantial in terms of loss of assets and disruptions to traffic

Main safety outcomes in the EU

Level crossing accidents and resulting casualties, EU-27

Significant accidents, fatalities and serious injuries



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Fatalities	367	309	365	298	284	294	252	289	254	265	213
Serious injuries	363	311	335	305	321	263	225	217	290	257	179
Accidents	585	506	563	498	495	465	424	456	442	432	350

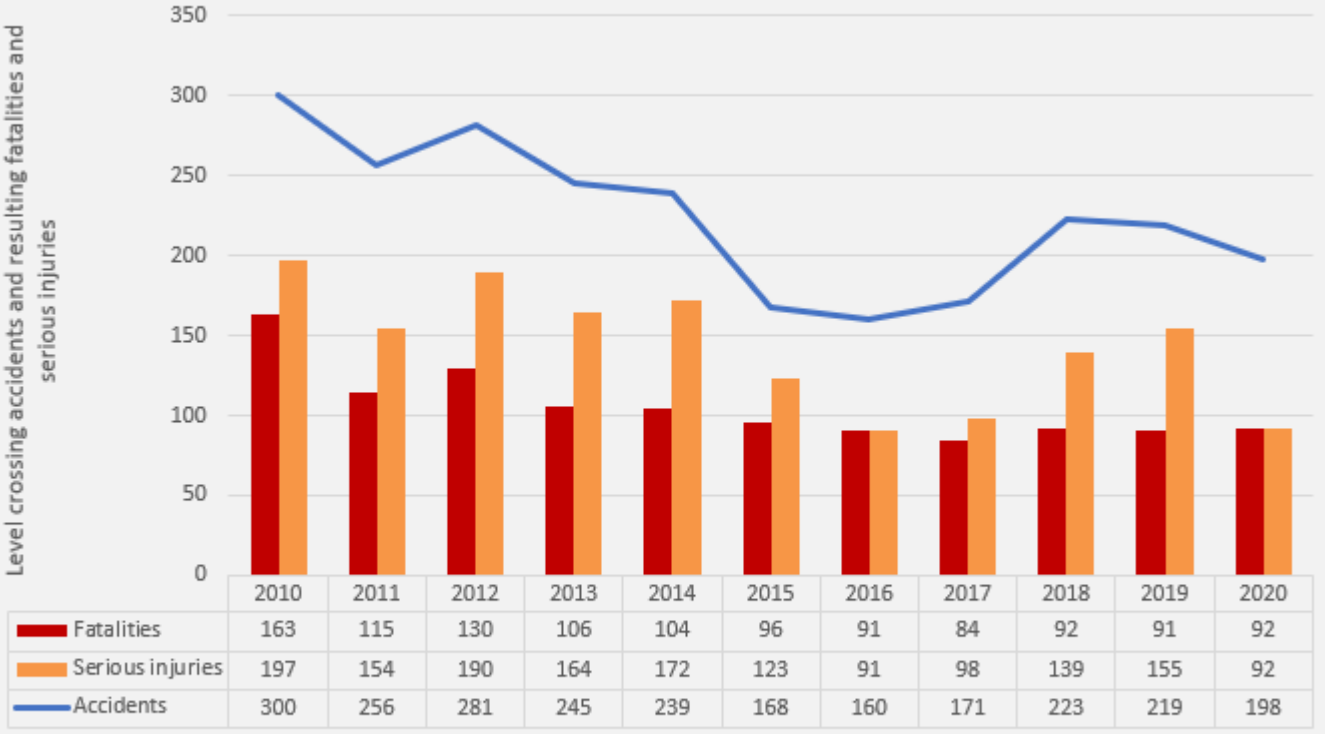
Source: Common Safety Indicators (CSIs) as reported by National Safety Authorities (NSAs) to the Agency, published in ERAIL

https://www.era.europa.eu/library/corporate-publications_en

Main safety outcomes in the Danube Macro Region

Level crossing accidents and resulting casualties, Danube macro-region*

Significant accidents, fatalities and serious injuries



	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Fatalities	163	115	130	106	104	96	91	84	92	91	92
Serious injuries	197	154	190	164	172	123	91	98	139	155	92
Accidents	300	256	281	245	239	168	160	171	223	219	198

Source: Common Safety Indicators (CSIs) as reported by National Safety Authorities (NSAs) to the Agency, published in ERAIL, Ilcad for data on Serbia

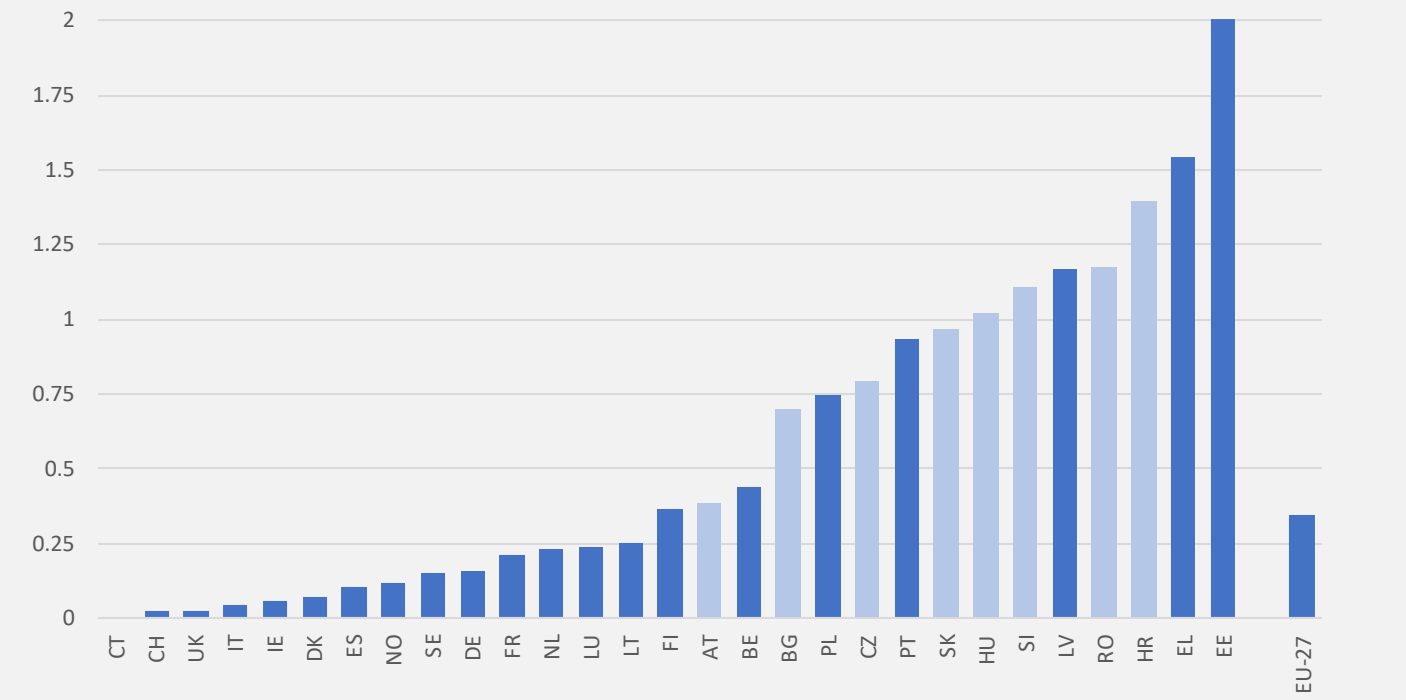
*excluding Baden-Württemberg and Bayern, Bosnia & Herzegovina, Montenegro, Moldova and Ukraine's regions

- The Danube Macro Region includes Austria, Bosnia & Herzegovina, Bulgaria, Croatia, Czechia, Hungary, Moldova, Montenegro, Romania, Serbia, Slovakia, Slovenia and some regions of Germany and Ukraine
- Over 2018-2020, compared to EU27 the Danube macro-region EU MS accounted for:
  - 41% of accidents, 35% of fatalities, 53% of serious injuries

Accident rates weighted by rail traffic

Level crossing accident rates

Significant accidents at level crossings per million train-km, 2018-2020



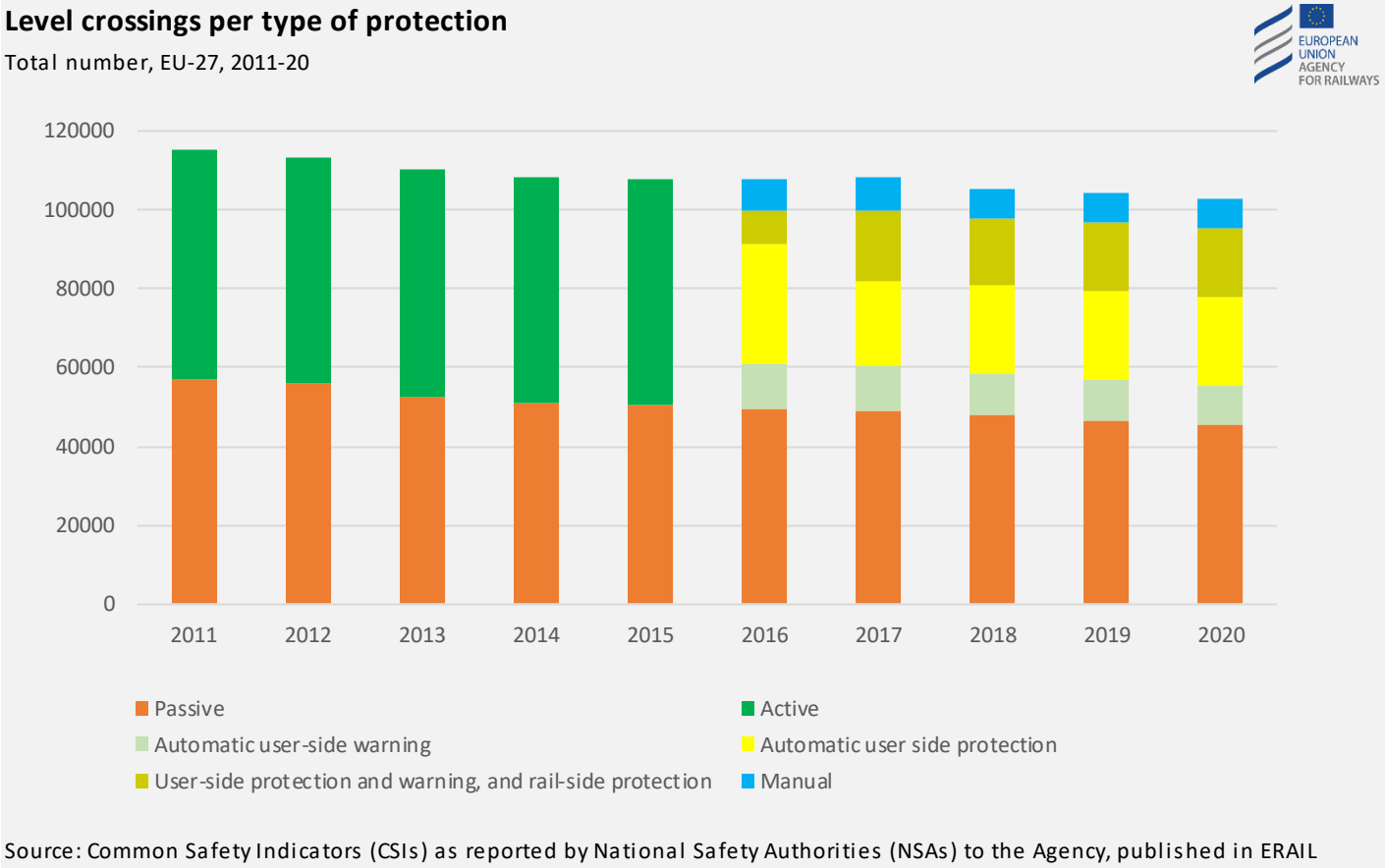
Source: Common Safety Indicators (CSIs) as reported by National Safety Authorities (NSAs) to the Agency, published in ERAIL

- Over 2018-2020, the Danube macro-region EU MS show high accident rates

Level crossing types

- Accidents are mostly due to road users' behaviours;
- Level crossing types do influence the accident rates:
  - Passive
  - Active
    - Automatic user side warning
    - Automatic user side protection
    - User-side protection and warning, and rail-side protection
    - Manual

Level crossing types in the EU27

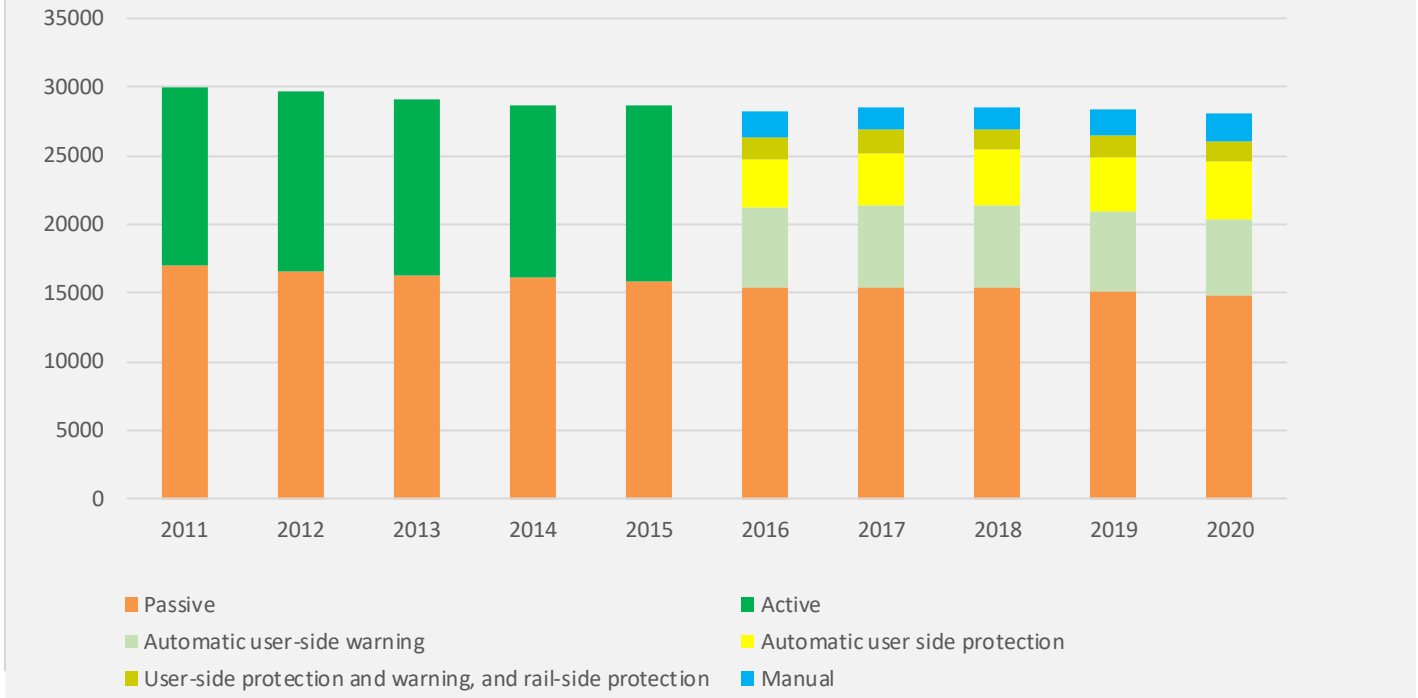


- Over 2011-2020, passive LC reduced by 21%
- In 2020 there are still more than 40000 passive LC

Level crossing types in the Danube macro-region EU MS

Level crossings per type of protection

Total number, Danube macro-region EU MS*, 2011-20



Source: Common Safety Indicators (CSIs) as reported by National Safety Authorities (NSAs) to the Agency, published in ERAIL

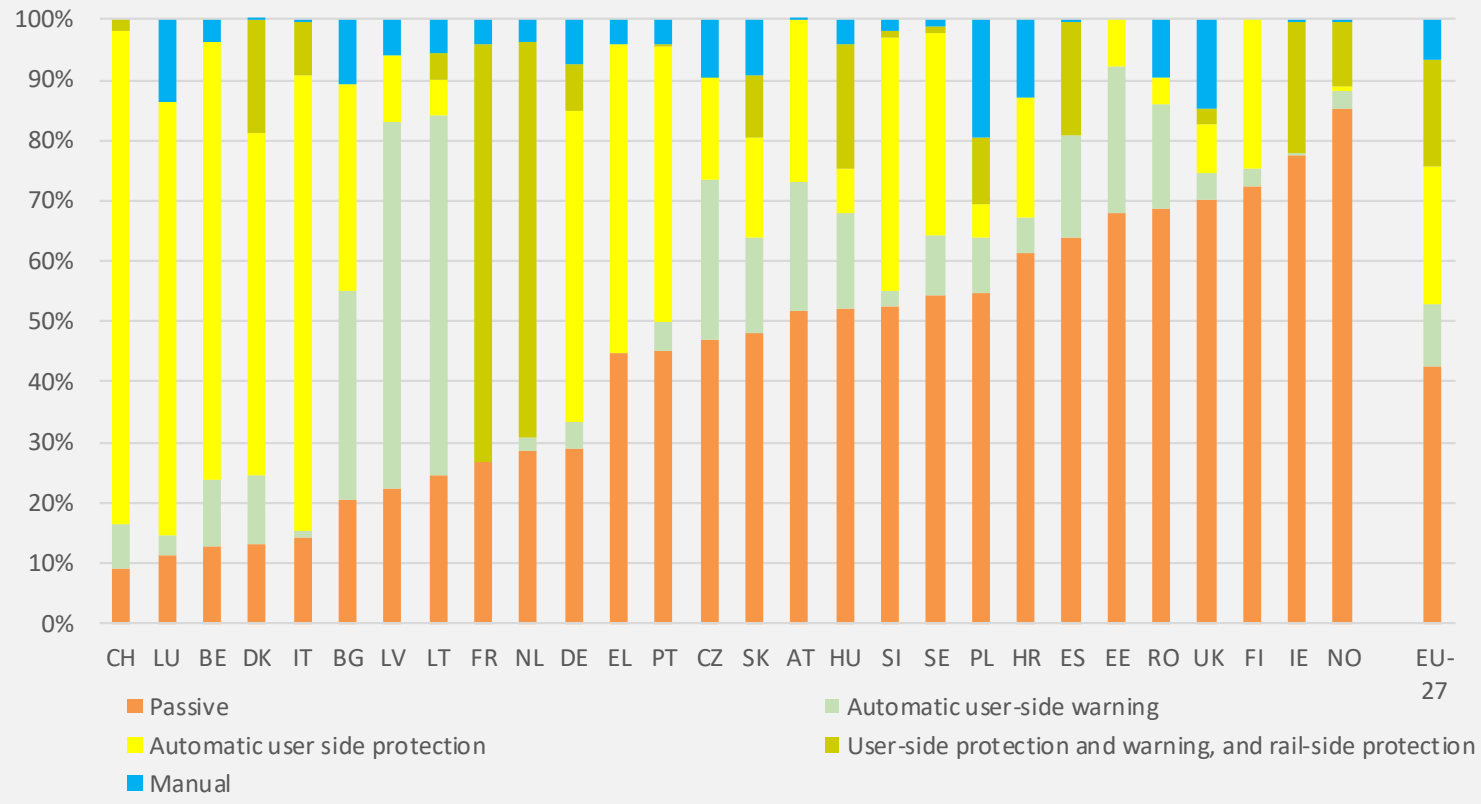
*excluding Baden-Württemberg and Bayern

- Over 2011-2020, passive LC reduced by 13%
- In 2020 there are still more than 14000 passive LC out of 28000 LC in total

Focus on per country figures

Level crossings per type of protection per country (ERA countries, 2020)

Share among all level crossings



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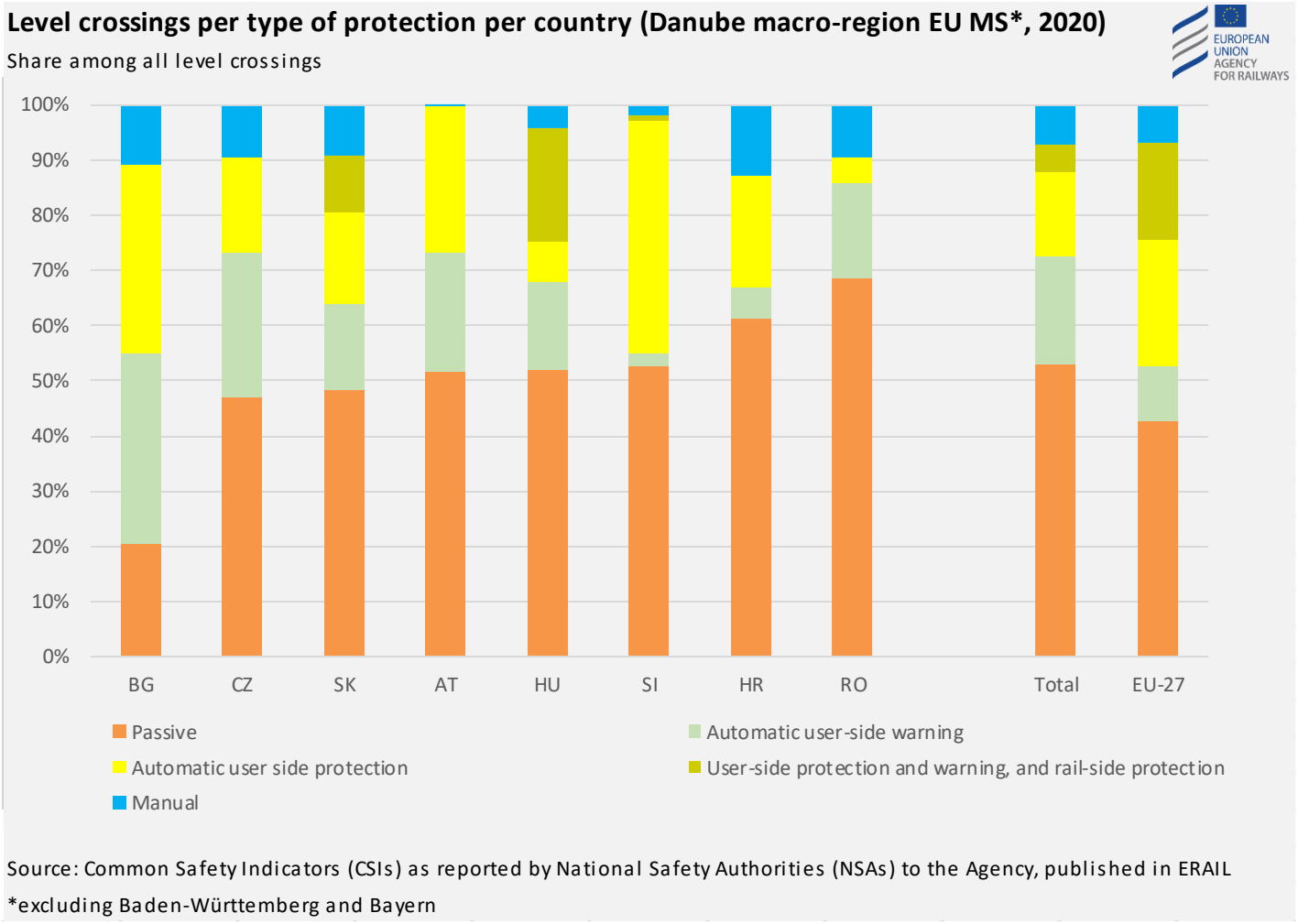
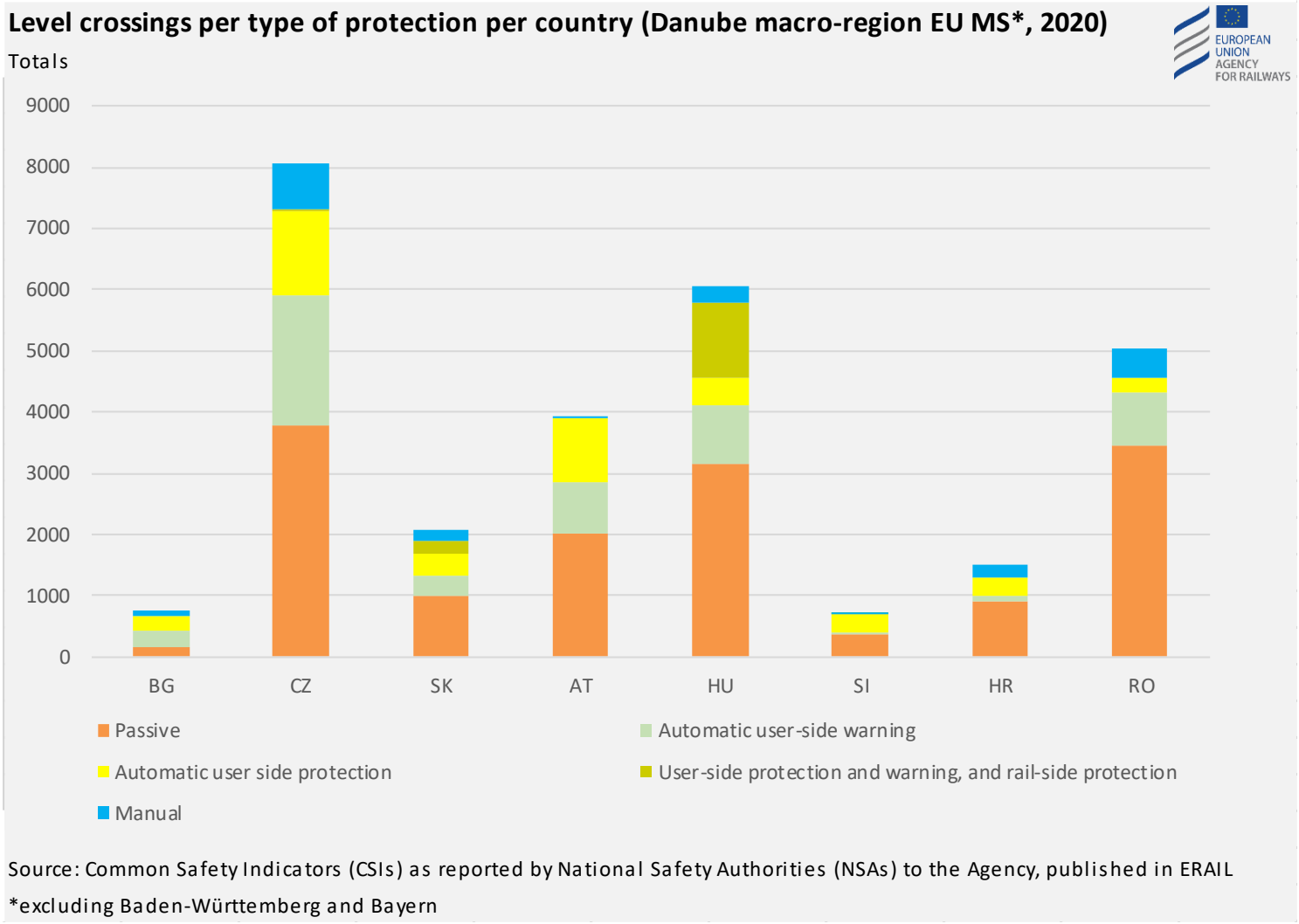
Focus on per country figures Danube macro-region EU MS



- In 2020 the EU MS Danube Region accounted for 29% of all LC in the EU27, however:
  - 36% of all passive LC, 56% of all LC with automatic user-side warning and only 8% of LC with also rail-side protection

Focus on per country figures in the Danube macro-region EU MS



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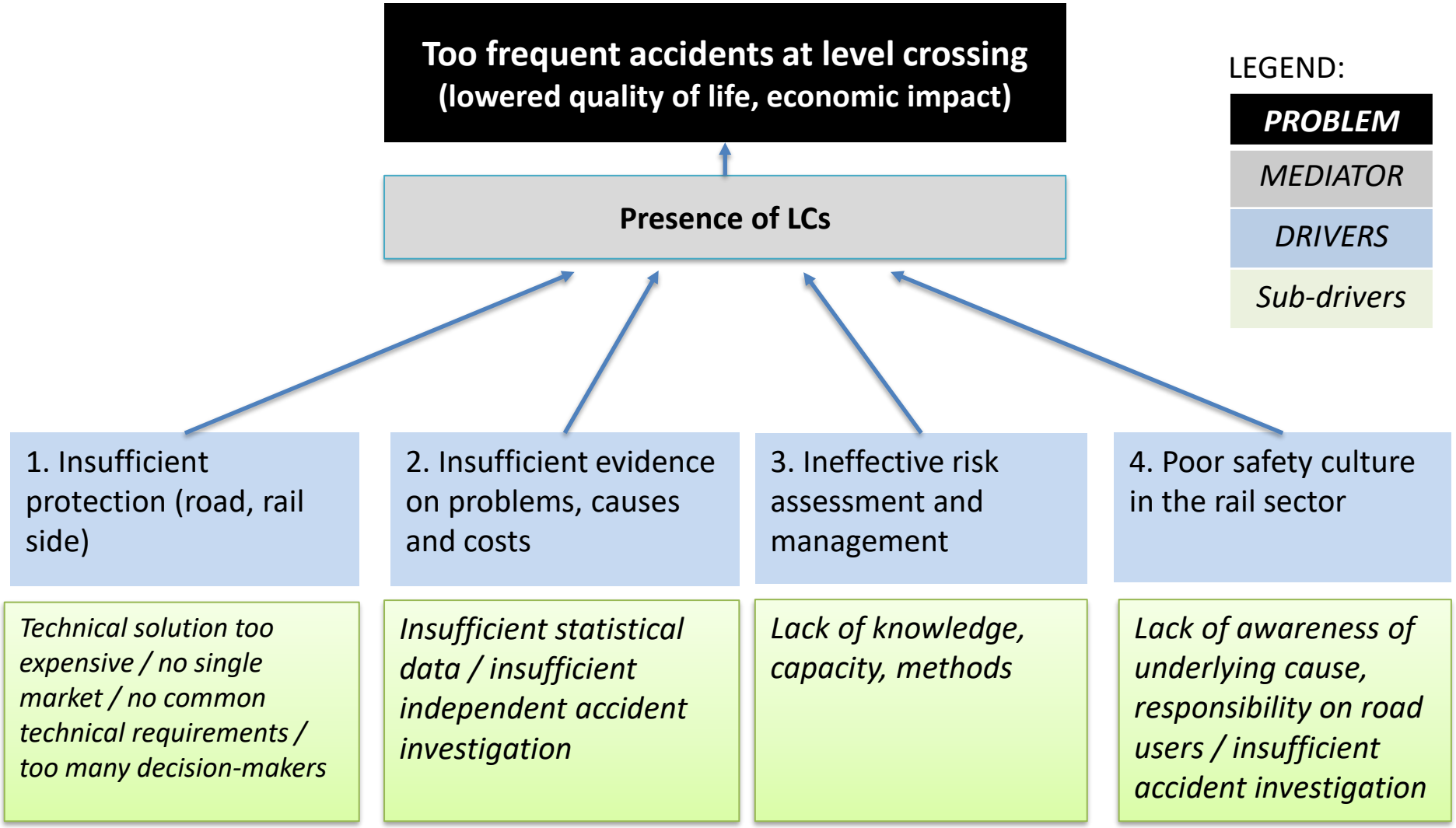
Problem and problem drivers



Problems turned into actions

1. Eliminate LCs, upgrade LCs with protective devices user and rail side	2. Collect and analyze data and information from LC accidents	3. Use of risk assessment and management techniques	4. Improving safety culture
Credible plan: target, strategy, actions, measures	*Better statistical and in-depth investigation data*	*Knowledge and capacity building, methods and tools*	*Raising awareness of genuine underlying causes, just and reporting culture*

- Many IMs and governments succeeded in eliminating LCs
- Until all LCs are eliminated, LCs need to be fully protected road/rail side and connected to ETCS or other train protection systems

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